APPENDIX B

Belmont Terminal Technical Memorandum

Evergreen Note: App B electronic files for Aestus report cannot be uploaded to website but are available upon request. Please use website comment form.

Stantec

Technical Memo

To:	Tiffani Doerr, Lead Specialist Evergreen Resources Operations 2 Righter Parkway, Suite 120 Wilmington, DE 19803	From:	Stantec Consulting Services Inc. 1060 Andrew Drive, Suite 140 West Chester, PA 19380
Project/File:	213403364	Date:	June 27, 2022

Reference: High Resolution Site Characterization Activities
Belmont Terminal
2700 West Passyunk Avenue
Philadelphia, Pennsylvania

1 Introduction

Stantec Consulting Services Inc. (Stantec) has prepared this Technical Memorandum for Evergreen Resources Group, LLC (Evergreen) summarizing high resolution site characterization (HRSC) and other subsurface investigation activities conducted at the Energy Transfer Marketing & Terminals L.P. (ET) Belmont Terminal (facility, see **Figure 1**) in 2020 and 2021. The primary goal of the ongoing project is to characterize the geologic framework, potential preferential pathways, and distribution of petroleum hydrocarbon related contamination in the context of the State of Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2) with focus on the requirements for future submission of a Remedial Investigation Report (RIR) for the Belmont Terminal (§250.408). Some work was performed on adjacent portions of the former Philadelphia Refinery in support of the development of a conceptual site model (CSM) for the Belmont Terminal. It is anticipated that an RIR for the Belmont Terminal will be submitted to the Pennsylvania Department of Environmental Protection (PADEP) in late 2022 to early 2023. The goal of this memo is to document recent site activities. As required, the upcoming RIR will include a detailed site history and document historical data in addition to recent data.

2 Investigation Activities

Investigation activities performed as part of the 2020-2021 HRSC included electrical resistivity imaging, confirmation drilling, well gauging, and groundwater sampling. Stantec performed the investigation activities in coordination with Evergreen.

2.1 Electrical Resistivity Imaging

To develop a high-resolution CSM for the Belmont Terminal, Aestus, LLC (Aestus) was contracted to conduct electrical resistivity imaging (ERI). The goal of imaging was to collect data in support of the ongoing

CSM development by acquiring ultra-high resolution subsurface imagery detailing the geologic framework, potential preferential pathways, and distribution of petroleum hydrocarbon related contamination. Imaging was performed in the Belmont Terminal and immediately adjacent portions of the former Philadelphia Refinery.

The process used by Aestus to collect and analyze subsurface imagery is discussed in detail in their report provided as **Attachment A,** including supporting figures. Stantec and Evergreen worked with Aestus through review of onsite and offsite data to select areas for imaging onsite at the Belmont Terminal and offsite in adjacent Area of Interest (AOI) 1 and 2 of the former Philadelphia Refinery. Stantec oversaw the installation of 23 GeoTrax Survey™ lines (PHL-01 through PHL-23) by Aestus between January and March 2020. Prior to subsurface work, a Pennsylvania One Call Notification was completed, and Master Locators, a Ground Penetrating Radar Systems LLC (GPRS) Company., performed private utility clearance. To collect the resistivity data along each survey line, Aestus drilled small-diameter (1/2-inch) holes through which 3/8-inch diameter stainless steel electrodes were driven to a maximum depth of approximately 14 inches below ground surface (bgs) to make adequate soil contact. Nominal electrode spacing ranged from 1 meter to 4 meters resulting in total line lengths of approximately 271 feet (ft) to 722 ft, allowing for imaging depths ranging from approximately 54ft bgs to 144 ft bgs. Cables were placed at the land surface connecting the electrodes, and a 12-volt deep cycle marine battery was used to inject a current into the ground.

The results of the GeoTrax Survey™ included in **Attachment A** were used to select follow up locations for the confirmation drilling program to be described in **Section 2.2** and further discussed in **Section 3**.

2.2 Confirmation Drilling Program

Stantec designed and implemented a field program to collect subsurface data in general accordance with the suggestions provided by Aestus following the GeoTrax Survey™. Confirmation drilling activities were conducted in December 2020 through March 2021. Stantec field personnel located and marked 20 confirmation drilling locations utilizing distances from survey markers placed by Aestus during implementation of the electrical resistivity profiling. Prior to subsurface work, a Pennsylvania One Call Notification was completed, and Master Locators performed private utility clearance.

A Stantec geologist oversaw drilling and performed logging of the advancement of 20 standard penetration test borings at the confirmation drilling locations. Drilling was performed by Parratt Wolff, Inc. (PWI). Test borings were continuously sampled with a split-barrel sampler and hollow stem auger/mud rotary to the terminal depths recommended by Aestus, except for several borings completed to the depth of the lower aquifer. Generally, these borings were sampled continuously until the clay unit, identified as the middle clay, was identified. Sampling continued at a regular interval until a sand unit, indicative of the lower aquifer, was identified; then sampling resumed to boring completion. Soil boring logs are included in **Attachment B**. Note that boring prefixes “CD” and “BT” were both used during the work and can be considered interchangeable.

During test boring advancement, Stantec scanned core samples with a combination photoionization detector (PID) and flame ionization detector (FID) to assess for presence or absence of organic/inorganic vapor compounds, including methane. Stantec collected 51 soil samples and 14 groundwater samples from discrete depths/depth intervals following Aestus’ suggestions and field observations to sufficiently

characterize and calibrate electrical anomalies identified in interim reporting. Soil samples were collected from the standard penetration test cores after they were split, measured, and scanned. Groundwater was sampled via low-flow methodology through a two-inch diameter, three-foot long stainless-steel temporary well point installed by PWI.

A Stantec geologist specified well construction based on the boring data and performed field oversight of well installation and well development activities of 20 two-inch diameter permanent monitoring wells (S-452 through S-470 and S-472). Five wells (S-454, S-459, S-460, S-462, and S-470) were screened in the lower (semi-confined) aquifer, and the remaining 14 wells were installed with screens in the water-table (unconfined) aquifer. Wells were developed by PWI following installation via pump/surge until the groundwater was observed to be free of turbidity. Well logs for S-452 through S-470 and S-472 are included in **Attachment B**, and well locations are shown on **Figure 2**.

Groundwater and sediment generated during well development was store onsite in totes. The liquids were emptied by Total Quality Drilling of Mullica Hill, New Jersey using a vacuum truck and the water was treated at the facility's wastewater treatment plant. Soil cuttings and drilling mud were containerized a roll off container and disposed offsite at Clean Earth of North Jersey in Kearny, New Jersey. Disposal documentation is included in **Attachment C**.

In general, soil samples collected during the confirmation drilling program were analyzed for Evergreen Petroleum Short List compounds plus tertiary butyl alcohol (TBA), and total petroleum hydrocarbons (TPH), separated by carbon number into the gasoline, diesel, and heavier ranges for crude oil. Groundwater samples were additionally analyzed for the general chemistry parameters: nitrate; chloride; sulfate; total sulfide; ammonia as nitrogen; total iron; major ions; alkalinity as calcium carbonate; total organic carbon; and dissolved gasses (headspace hydrocarbons methane, ethane, and ethene). Note that some discrete groundwater sampling intervals produced limited water; so, some groundwater samples were not analyzed for all parameters. Select soil and groundwater samples were also analyzed as part of the forensics sampling program which will be described in further detail in **Section 2.5**. Soil sample results are summarized on **Table 1**; groundwater results for the depth-discrete groundwater samples are summarized on **Table 2;** and select soil and groundwater analytical results are also displayed on the Aestus GeoTrax™ Survey figures in **Attachment A**. Soil results are screened against the soil to groundwater (S to GW) Medium Specific Concentrations (MSCs) and the non-residential direct contact (NRDC) MSC. Note that some samples were collected in the permanently saturated zone; therefore, the S to GW MSCs are not applicable but are shown for comparison purposes. Groundwater analytical results are screened against PADEP MSCs for non-residential properties overlying used aquifers with total dissolved solids (TDS) less than or equal to 2,500 milligrams per liter (mg/L), also referred to as the Statewide Health Standard (SHS). Laboratory analytical reports are included in **Attachment D**.

2.3 Well Gauging

Groundwater gauging of the new monitoring wells were performed in the spring and fall of 2021 (see **Table 3**). Field personnel collected liquid level data, including depth to water and where applicable depth to light nonaqueous phase liquid (LNAPL) measurements, in accordance with the *Evergreen Field Procedures Manual* (see **Attachment E**).

2.4 Monitoring Well Sampling

Two characterization groundwater sampling events were conducted in 2021, in the spring and the fall. Monitoring wells were sampled during two events conducted in 2021 in accordance with the *Evergreen Field Procedures Manual* (**Attachment E**). Samples were generally collected via low-flow methodology. The samples were analyzed for the following compounds:

- Evergreen Petroleum Short List plus TBA
- TPH
- sulfate
- total iron
- total calcium
- total carbon
- total inorganic carbon
- total organic carbon
- total Kjeldahl nitrogen
- alkalinity as calcium carbonate
- dissolved gasses (headspace hydrocarbons methane, ethane, and ethene)

During the spring 2021 event, select monitoring wells in proximity to City of Philadelphia (City) combined sewers were sampled for sucralose as a line of information supporting groundwater and sewage interactions (sewer leaks). Sucralose samples were analyzed by the Environmental Analysis Research Laboratory Southeast Environmental Research Center at Florida International University of Miami, Florida. A subset of monitoring wells was also sampled for metagenomic analysis during the spring 2021 sampling event. These samples were sent to Microbac to be analyzed for total eubacteria (EBAC) through quantitative polymerase chain reaction (qPCR) functional gene analysis and for metagenomic analysis. For enhanced understanding of the fate and transport and potential source for petroleum compounds in the Belmont area, select wells were sampled for compound specific isotope analysis (CSIA). CSIA samples were analyzed at the University of Oklahoma, School of Geosciences (OU). Additionally, in December 2019, a forensics sampling program was implemented that included soil, LNAPL, and groundwater sample characterization for the former Philadelphia Refinery and nearby areas including the Belmont Terminal. This program is discussed in additional detail in **Section 2.5** and **Attachment F**.

A summary of Evergreen Petroleum Short List constituents of concern (COCs) plus TBA concentrations, stabilized field parameters, and general chemistry parameters in groundwater samples collected for the Belmont Terminal investigation program in 2021 is presented in **Table 4** (unconfined aquifer wells) and **Table 5** (lower aquifer wells). These tables show the groundwater analytical results screened against the non-residential SHS. Sucralose results are presented on **Table 6** and EBAC results are presented on **Table 7**. Note also that select groundwater analytical results are also displayed on the Aestus GeoTrax™ Survey Figures in **Attachment A.** Environmental forensics analytical data reports are presented in **Attachment F**. Monitoring well locations are shown on **Figure 2**. Laboratory analytical reports for groundwater are included in **Attachment D**.

2.5 Environmental Forensics Program

An environmental forensics sampling program was completed to bolster the routine chemistry data with a comprehensive characterization and statistical analysis of chemical compositional patterns exploring multiple sample media to support the characterization and delineation of Belmont Terminal contaminant sources. CSIA samples were collected to support the forensics lines of information by investigating forensic differences in stable isotope chemistry of groundwater samples.

2.5.1 MOLECULAR DATA EXPLORATION AND INTERPRETIVE REPORTING

ChemQuants was retained by Stantec on behalf of Evergreen to perform an environmental forensics investigation in support of the Belmont Terminal investigation. The initial objective was to fingerprint selected samples from the drilling program to explore the various sources and where possible, to age-constrain the timing of petroleum releases.

In the Belmont Terminal, five soil samples were collected for forensic analysis:

- BT-05-S-9-20201210
- BT-18B-S-11-20210126
- BT-03-S-41-20210129
- BT-22A-S-32-20210303
- BT-01-S-33-20210216

Attachment F includes ChemQuants reports that describe basic forensics interpretations for these samples. In September 2021, Evergreen submitted the Remedial Investigation Report (RIR) Addendum for Area of Interest (AOI) 4 at the former Philadelphia Refinery which included as an appendix the forensics dataset to that point in time. The Sitewide Fate and Transport RIR, to which this memo is an appendix, includes as another attachment, the updated version of the forensics dataset as prepared by ChemQuants that is inclusive of the Belmont Terminal samples.

2.5.2 CSIA PETROLEUM SOURCE IMPLICATIONS AND BIODEGRADATION

CSIA is a powerful forensics tool that complements environmental forensics as an additional line of information regarding differentiation of sources, extent of biodegradation, and biodegradation pathways which often associate with other pathways of groundwater flow. Stantec retained MES, LLC (MES) on behalf of Evergreen to interpret the CSIA dataset and provide expertise in geochemistry on the project.

The September 2021 AOI 4 RIR Addendum included as an appendix the data and interpretation of the CSIA dataset up to that point. The Sitewide Fate and Transport RIR, to which this memo is an appendix, includes as another attachment, the updated version of CSIA dataset as prepared by MES that is inclusive of groundwater samples collected in the Belmont Terminal.

3 Results and Discussion

3.1 Constituents of Concern

The upcoming RIR for Belmont Terminal will have a comprehensive discussion of historical soil and groundwater data collected at the facility including a discussion of delineation. This discussion is based on data collected during the HRSC investigation between 2020 and 2021. Distribution of COCs is discussed in additional detail in the Aestus report in **Attachment A**.

3.1.1 SOIL

- In the 2-15 ft bgs interval, benzene was detected in two samples above the NRDC MSC of 330 milligrams per kilogram (mg/kg) at locations S-463 and S-464 (**Table 1**).
- Benzene, methyl tertiary butyl ether (MTBE), and toluene were detected above their respective S to GW MSCs at multiple locations.
- 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene were detected above their respective S to GW MSCs at location S-467.

3.1.2 GROUNDWATER

- In the unconfined aquifer, the following compounds were detected above the SHS (**Table 4**): benzene; 1,2,-dichloroethane; ethylbenzene; MTBE; naphthalene; toluene; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; xylenes; benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; benzo(g,h,i)perylene; chrysene; and dissolved lead.
- In the lower aquifer, benzene was detected above the SHS at all locations in spring 2021 (**Table 5**). Benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, and chrysene were detected above the SHS at S-394.

3.2 Aestus Technical Memorandum

The technical memorandum prepared by Aestus, included in **Attachment A**, provides a detailed analysis of the electrical resistivity survey results integrated with the data collected during the confirmation drilling program and some historical data. Key takeaways from the Aestus summary include the following:

- The electrical resistivity survey identified areas where electrical anomalies vertically crossed the clay layer. These areas were investigated in the confirmation drilling program as potential zones of middle clay discontinuity.
- Each of the 18 soil borings advanced to the expected depth of the middle clay encountered the clay unit.

- The subsurface in Belmont Terminal is biologically active as indicated by the high electrical conductivity measured during the electrical resistivity testing.
- Groundwater samples showed signatures of degraded petroleum as evidenced by benzene, toluene, and xylene ratios.
- Isolated resistive features were present below the middle clay. These features were interpreted to be indicative of gas pockets, likely due to buildup of carbon dioxide resulting from petroleum degradation below the middle clay.
- Geochemical signatures indicate partitioning of microbiomes above and below the middle clay. The biogeochemistry is distinctly different in the unconfined and lower aquifers with higher methane and nitrogen concentrations above the middle clay and higher sulfate below.
- Contaminant concentrations are distinct above and below the middle clay with significantly higher concentrations in the unconfined aquifer.
- MTBE is largely contrained within the “central zone”. Areas of highest concentrations of benzene are in the northeastern zone of the property, along the Shunk Street sewer, and the southern portion of the “central” zone.

3.3 Data Analysis/Summary of HRSC Findings

- The ERI performed by Aestus as a screening tool identified subsurface anomalous zones (discrete target features) that were explored through test drilling at 20 locations. Twenty new monitoring wells were installed at the test drilling locations to allow for sampling of groundwater in both water-bearing, hydrostratigraphic units (the unconfined and lower aquifers).
- The ERI combined with soil and groundwater sampling support that the Potomac-Raritan-Magothy (PRM) aquifer series middle clay unit aquitard is spatially contiguous below the Belmont Terminal area and demonstrated to be effective at minimizing the downward migration of shallow groundwater contamination into the lower aquifer in that area. This confirms the middle clay interpretation from the existing 2016 AOI 1 RIR conceptual site model and how the aquitard is represented in the Groundwater Flow (GWF) Model presented in the 2022 Sitewide Fate and Transport RIR to which this memo is an attachment.
- Results from the groundwater gauging and sampling indicate that the general groundwater flow pattern is from north to south but with an area of convergence near the Shunk Street sewer where it intersects Frontage Road and Passyunk Avenue (**Attachment A, Inset Graphic 4**). The pattern supports that the Shunk Street sewer leaks and is removing groundwater from the area.

- There is significant petroleum hydrocarbon biodegradation occurring beneath Belmont Terminal and proximity. Bioactivity is pervasive in the form of electrically conductive biofilms that effectively allow for transfer of electrons resulting from hydrocarbon breakdown in shallow zones to deeper and adjacent substrate. Metagenomic data supporting this finding are discussed further in the Sitewide Fate and Transport RIR. Other lines of data supporting this finding are elevated groundwater temperatures, elevated biogenic gases (methane and carbon dioxide), and petroleum forensics.

- The horizontal and vertical extents of petroleum hydrocarbon contamination have been further characterized in both water bearing units. The lower aquifer is significantly less impacted than the unconfined aquifer, generally by an order of magnitude or more.

- No significant LNAPL sources were identified with the HRSC tools. The dataset supports that the sources of petroleum to shallow groundwater are areas of residual LNAPL present in granular deposits, and possibly back diffusing from intervening mud layers common to the Pleistocene-age deposits and PRM upper clay unit, where present.

- The most significant groundwater benzene impacts in the water table are in the northeast corner of Belmont Terminal generally on the north side of the Shunk Street sewer. There are two additional elevated benzene areas in central portions, extending into the Former Philadelphia Refinery AOI 1, and along the northern perimeter near the terminal entrance. MTBE is mostly constrained to central parts of the terminal with perimeter extending north towards Frontage Road and south into AOI 1.

- A submerged oil was identified in several borings on top of the PRM upper clay unit, in the deepest interval of Pleistocene-age deposits. Forensic analysis, detailed in the Sitewide Fate and Transport RIR, indicates that this oil consists of manufactured gas plant (MGP) pyrogenic residues in some places mixed with sulfur rich residual range petroleum. The MGP residues appear to have been derived from a naphtha range to light distillate range petroleum feedstock. Similar signatures were identified in upgradient samples to the north and west around the Philadelphia Gas Works (PGW) Passyunk Facility perimeter. Data supports that the source of this oil is the PGW Passyunk Facility.

- MGP residues are generally enriched in polycyclic aromatic hydrocarbon (PAH) compounds such as naphthalene and benzo(a)pyrene, and it is plausible that a significant portion of these compounds identified in Belmont Terminal shallow groundwater migrated south from PGW Passyunk Facility sources and/or directly partitioned from the migrating PGW Passyunk Facility oil body.

- CSIA, as detailed in the Sitewide Fate and Transport RIR was performed to understand sources and extent of biodegradation of benzene, toluene, ethyl benzene and xylenes (BTEX),

Reference: High Resolution Site Characterization Activities, Belmont Terminal, 2700 West Passyunk Avenue, Philadelphia, Pennsylvania

two naphthene compounds, and MTBE. Belmont Terminal samples were part of a larger dataset used to expand upon findings of Stantec's AOI 4 RIR Addendum. Benzene and toluene CSIA support that there is a PGW Passyunk Facility source that is impacting both Belmont Terminal and an onsite area of AOI 8. There is also a prevalent Belmont Terminal benzene source that impacts AOI 1 and areas offsite along 26th Street.

Thank you,

STANTEC CONSULTING SERVICES INC.

Jenny Kachel, P.G.
Geologist
Phone: (610) 840-2561
Mobile: (484) 757-7890
jenny.kachel@stantec.com

Andrew Klingbeil, P.G.
Associate Geologist
Phone: (610) 840-2525
Mobile: (610) 850-1420
andrew.klingbeil@stantec.com

Attachment:
Figure 1: Belmont Terminal Site Location Map
Figure 2: Belmont Terminal Site Plan
Table1: Soil Sampling Analytical Results Summary
Table 2: Groundwater Analytical Results – Discrete Groundwater Samples
Table 3: Liquid Level Measurements (2021)
Table 4: Groundwater Analytical Results – Unconfined Aquifer (2021)
Table 5: Groundwater Analytical Results – Lower Aquifer (2021)
Table 6: Groundwater Analytical Results – Sucralose
Table 7: Groundwater Analytical Results – Bacterial Biomass
Attachment A: Aestus Technical Memo
Attachment B: Soil Boring and Well Construction Logs
Attachment C: Disposal Documentation
Attachment D: Laboratory Analytical Reports
Attachment E: Evergreen Field Procedures Manual
Attachment F: Forensics Reports

TABLES

Table 1: Soil Sampling Analytical Results Summary
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location				S-452_CD	S-453_CD		S-454_CD			S-455_CD	S-456_CD		S-457_CD		
Sample Date				1-Dec-20	2-Dec-20	3-Dec-20	3-Dec-20	8-Dec-20	8-Dec-20	10-Dec-20	14-Dec-20	15-Dec-20	28-Dec-20	16-Dec-20	29-Dec-20
Sample ID				BT-02B-S-10-20201201	BT-11A-S-8-20201202	BT-11A-S-32-20201203	BT-11B-S-8-20201203	BT-11B-S-50-20201208	BT-11B-S-78-20201208	BT-05-S-9-20201210	BT-02A-S-10-20201214	BT-02A-S-37-20201215	BT-09-S-8-20201228	BT-09-S-22-20201216	BT-09-S-47-20201229
Sample Depth				10 ft	8 ft	32 ft	8 ft	50 ft	78 ft	9 ft	10 ft	37 ft	8 ft	22 ft	47 ft
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory				LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order				410-22543-1	410-22720-1	410-22720-1	410-22930-1	410-23184-1	410-23368-1	410-23573-1	410-24132-1	410-24132-1	410-25174-1	410-24240-1	410-25174-1
Laboratory Sample ID	Units	MSC-PA A	MSC-PA B	410-22543-1	410-22720-1	410-22720-3	410-22930-1	410-23184-2	410-23368-1	410-23573-1	410-24132-1	410-24132-2	410-25174-1	410-24240-2	410-25174-3
Volatile Organic Compounds															
BENZENE	mg/kg	0.5	330	0.0042 H	0.29 J	**0.66 H[A]**	ND (0.33)	**4.5 H[A]**	0.0024 J	**1.2[A]**	ND (0.055)	0.021	ND (0.28)	0.23 J	**6.6[A]**
1,2-DIBROMOETHANE (EDB)	mg/kg	0.005	4.2	ND (0.0042) H	*ND (0.024)*	ND (0.00043)	*ND (0.027)*	ND (0.0044)	ND (0.0048)	*ND (0.024)*	*ND (0.044)*	ND (0.0050)	*ND (0.022)*	*ND (0.026)*	*ND (0.026)*
1,2-DICHLOROETHANE (EDC)	mg/kg	0.5	98	ND (0.0042) H	ND (0.30)	0.0049 J	ND (0.33)	0.0024 J	ND (0.0048)	ND (0.31)	ND (0.066)	ND (0.0050)	ND (0.28)	ND (0.33)	ND (0.33)
ETHYLBENZENE	mg/kg	70	1,000	ND (0.0042) H	0.029 J	0.0075	0.055 J	1.3 H	0.0028 J	6.6	ND (0.55)	0.0016 J	ND (0.28)	0.56	ND (0.33)
ISOPROPYLBENZENE (CUMENE)	mg/kg	2,500	10,000	ND (0.0042) H	0.64	0.010	4.2	0.023	0.00078 J	11	4.1	0.017	0.27 J	0.94	0.028 J
METHYL TERTIARY BUTYL ETHER	mg/kg	2	9,800	0.0024 J H	ND (0.30)	0.24	ND (0.33)	0.11	0.00091 J	ND (0.31)	ND (0.55)	0.012	ND (0.28)	ND (0.33)	**2.9[A]**
TERT-BUTYL ALCOHOL	mg/kg	n/v	n/v	0.35 H	ND (6.0)	61 H	ND (6.7)	160 H	0.094 J	ND (6.1)	ND (11)	1.4	ND (5.6)	ND (6.5)	61
TOLUENE	mg/kg	100	10,000	0.00068 J H	ND (0.30)	ND (0.0053)	ND (0.33)	0.027	ND (0.0048)	0.61	ND (0.55)	0.0013 J	ND (0.28)	0.094 J	ND (0.33)
1,2,4-TRIMETHYLBENZENE	mg/kg	300	5,400	ND (0.0042) H	ND (0.30)	0.0022 J	0.036 J	0.059	0.0037 J	0.15 J	ND (0.55)	0.0020 J	ND (0.28)	6.9	ND (0.33)
1,3,5-TRIMETHYLBENZENE	mg/kg	93	5,400	ND (0.0042) H	ND (0.30)	0.00098 J	0.035 J	0.018	0.00089 J	5.3	ND (0.55)	0.0019 J	ND (0.28)	2.4	ND (0.33)
XYLENES, TOTAL (DIMETHYLBENZENE)	mg/kg	1,000	9,100	ND (0.0085) H	ND (0.60)	0.0016 J	0.14 J	0.52	0.0034 J	6.4	ND (1.1)	0.0041 J	ND (0.56)	0.45 J	ND (0.66)
Semi-Volatile Organic Compounds															
ANTHRACENE	mg/kg	350	190,000	ND (0.019)	ND (0.021)	ND (0.021)	0.044	0.0043 J	ND (0.020)	ND (0.020)	0.053	0.0053 J	0.014 J	0.026	0.028
BENZO(A)ANTHRACENE	mg/kg	340	190,000	ND (0.019)	0.013 J	ND (0.021)	0.012 J	ND (0.020)	ND (0.020)	0.0087 J	0.026	ND (0.020)	ND (0.019)	0.032	0.024
BENZO(A)PYRENE	mg/kg	46	190,000	ND (0.019)	0.011 J	ND (0.021)	0.0082 J	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.019)	ND (0.020)	0.0045 J	0.011 J	0.017 J
BENZO(B)FLUORANTHENE	mg/kg	170	190,000	ND (0.019)	0.010 J	ND (0.021)	0.0074 J	0.0058 J	ND (0.020)	0.0097 J	0.016 J	ND (0.020)	0.0056 J	0.016 J	0.028
BENZO(G,H,I)PERYLENE	mg/kg	180	190,000	ND (0.019)	ND (0.021)	ND (0.021)	0.0046 J	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.019)	ND (0.020)	ND (0.019)	ND (0.019)	0.013 J
CHRYSENE	mg/kg	230	190,000	ND (0.019)	0.020 J	ND (0.021)	0.0089 J	0.0054 J	ND (0.020)	0.011 J	ND (0.019)	ND (0.020)	0.0059 J	0.028	0.028
FLUORENE	mg/kg	3,800	190,000	ND (0.019)	1.8	ND (0.021)	0.66	0.0054 J	ND (0.020)	0.027	0.22	0.012 J	0.11	0.11	0.039
NAPHTHALENE	mg/kg	25	77	ND (0.019)	ND (0.021)	ND (0.021)	ND (0.020)	0.45	0.010 J	2.6	ND (0.019)	ND (0.020)	ND (0.019)	1.2	0.37
PHENANTHRENE	mg/kg	10,000	190,000	ND (0.019)	3.9	0.0056 J	0.35	0.017 J	0.0091 J	0.058	0.24	0.015 J	0.10	0.067	0.15
PYRENE	mg/kg	2,200	190,000	ND (0.019)	0.055	ND (0.021)	0.031	0.0082 J	ND (0.020)	0.022	0.071	0.016 J	0.010 J	0.063	0.063
Metals															
LEAD, Total	mg/kg	450	190,000	8.4	9.8	22	11	14	2.7	9.9	12	6.5	7.7	13	14
Petroleum Hydrocarbons															
>C12-C22	mg/kg	n/v	n/v	ND (14)	3,000	ND (15)	1,100	ND (15)	ND (14)	110	1,600	ND (14)	1,100	390	ND (15)
>C22-C44	mg/kg	n/v	n/v	ND (14)	ND (300)	ND (15)	60 J	ND (15)	ND (14)	9.3 J	150	6.3 J	53 J	7.3 J	9.2 J
TOTAL PETROLEUM HYDROCARBON	mg/kg	n/v	n/v	ND (14)	3,000	ND (15)	1,200	ND (15)	ND (14)	120	1,800	6.3 J	1,200	400	9.2 J

See notes on last page.

Table 1: Soil Sampling Analytical Results Summary
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location				S-458_CD			S-459_CD			S-460_CD			S-461_CD	
Sample Date				29-Dec-20	29-Dec-20	30-Dec-20	4-Jan-21	4-Jan-21	6-Jan-21	7-Jan-21	7-Jan-21	11-Jan-21	12-Jan-21	13-Jan-21
Sample ID				BT-19-S-15-20201229	BT-19-S-40-20201229	BT-19-S-50-20201230	BT-13-S-5-20210104	BT-13-S-22-20210104	BT-13-S-60-20210106	BT-14-S-25-20210107	BT-14-S-34-20210107	BT-14-S-60-20210111	BT-17B-S-15-20210112	BT-17B-S-45-20210113
Sample Depth				15 ft	40 ft	50 ft	5 ft	22 ft	60 ft	25 ft	34 ft	60 ft	15 ft	45 ft
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory				LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order				410-25174-1	410-25255-1	410-25255-1	410-25450-1	410-25450-1	410-25584-1	410-25740-1	410-25740-1	410-26092-1	410-26291-1	410-26291-1
Laboratory Sample ID	Units	MSC-PA A	MSC-PA B	410-25174-4	410-25255-1	410-25255-4	410-25450-1	410-25450-2	410-25584-1	410-25740-1	410-25740-2	410-26092-1	410-26291-1	410-26291-3
Volatile Organic Compounds														
BENZENE	mg/kg	0.5	330	ND (0.32)	0.0032 J	0.0047 J	ND (0.28)	**1.0**[A]	ND (0.0056)	**4.7**[A]	ND (0.30)	0.0014 J	0.12 J	0.014
1,2-DIBROMOETHANE (EDB)	mg/kg	0.005	4.2	*ND (0.026)*	ND (0.0050)	ND (0.00046)	*ND (0.023)*	*ND (0.025)*	ND (0.00045)	*ND (0.032)*	*ND (0.024)*	ND (0.0040)	*ND (0.021)*	ND (0.0049)
1,2-DICHLOROETHANE (EDC)	mg/kg	0.5	98	ND (0.32)	ND (0.0050)	ND (0.0057)	ND (0.28)	ND (0.31)	0.0010 J	ND (0.39)	ND (0.30)	ND (0.0040)	ND (0.26)	ND (0.0049)
ETHYLBENZENE	mg/kg	70	1,000	ND (0.32)	ND (0.0050)	ND (0.0057)	ND (0.28)	0.40	ND (0.0056)	9.8	ND (0.30)	0.0016 J	0.23 J	ND (0.0049)
ISOPROPYLBENZENE (CUMENE)	mg/kg	2,500	10,000	0.32	ND (0.0050)	ND (0.0057)	1.2	0.092 J	ND (0.0056)	0.89	0.11 J	ND (0.0040)	0.66	ND (0.0049)
METHYL TERTIARY BUTYL ETHER	mg/kg	2	9,800	ND (0.32)	ND (0.0050)	ND (0.0057)	ND (0.28)	ND (0.31)	ND (0.0056)	**5.1**[A]	ND (0.30)	0.00092 J	ND (0.26)	ND (0.0049)
TERT-BUTYL ALCOHOL	mg/kg	n/v	n/v	ND (6.4) TL	ND (0.099)	ND (0.11)	ND (5.7)	ND (6.2)	0.039 J	21	ND (6.0)	ND (0.079)	1.6 J	0.076 J
TOLUENE	mg/kg	100	10,000	ND (0.32)	ND (0.0050)	ND (0.0057)	ND (0.28)	ND (0.31)	ND (0.0056)	26	0.054 J	0.0076	ND (0.26)	ND (0.0049)
1,2,4-TRIMETHYLBENZENE	mg/kg	300	5,400	ND (0.32)	ND (0.0050)	ND (0.0057)	ND (0.28)	1.1	0.00092 J	23	0.048 J	0.0018 J	0.12 J	ND (0.0049)
1,3,5-TRIMETHYLBENZENE	mg/kg	93	5,400	ND (0.32)	ND (0.0050)	ND (0.0057)	ND (0.28)	0.40	ND (0.0056)	7.7	ND (0.30)	0.00062 J	0.069 J	ND (0.0049)
XYLENES, TOTAL (DIMETHYLBENZENE)	mg/kg	1,000	9,100	ND (0.64)	ND (0.0099)	ND (0.011)	ND (0.57)	0.48 J	ND (0.011)	57	0.13 J	0.0076 J	0.93	ND (0.0098)
Semi-Volatile Organic Compounds														
ANTHRACENE	mg/kg	350	190,000	0.013 J	ND (0.019)	ND (0.019)	ND (0.019)	0.031	ND (0.019)	0.11 B	0.48	ND (0.019)	0.28	ND (0.035)
BENZO(A)ANTHRACENE	mg/kg	340	190,000	0.013 J	ND (0.019)	ND (0.019)	ND (0.019)	ND (0.023)	ND (0.019)	0.037	0.15	ND (0.019)	0.010 J	ND (0.035)
BENZO(A)PYRENE	mg/kg	46	190,000	0.0091 J	ND (0.019)	ND (0.019)	ND (0.019)	ND (0.023)	ND (0.019)	0.023	0.092	ND (0.019)	0.0067 J	ND (0.035)
BENZO(B)FLUORANTHENE	mg/kg	170	190,000	0.012 J	ND (0.019)	ND (0.019)	ND (0.019)	ND (0.023)	ND (0.019)	0.025	0.11	ND (0.019)	0.0060 J	ND (0.035)
BENZO(G,H,I)PERYLENE	mg/kg	180	190,000	0.0062 J	ND (0.019)	ND (0.019)	ND (0.019)	ND (0.023)	ND (0.019)	0.023	0.040	ND (0.019)	0.0044 J	ND (0.035)
CHRYSENE	mg/kg	230	190,000	0.016 J	ND (0.019)	ND (0.019)	0.044	0.0092 J	ND (0.019)	0.038	0.17	ND (0.019)	0.013 J	ND (0.035)
FLUORENE	mg/kg	3,800	190,000	0.019 J	ND (0.019)	ND (0.019)	ND (0.019)	0.21	0.0071 J	0.37 B	1.2	0.0047 J	1.1	ND (0.035)
NAPHTHALENE	mg/kg	25	77	ND (0.020)	ND (0.019)	ND (0.019)	ND (0.019)	5.8	0.014 J	13 B	0.079	0.016 J	1.5	ND (0.035)
PHENANTHRENE	mg/kg	10,000	190,000	0.058	0.0052 J	0.0068 J	ND (0.019)	0.26	0.011 J	0.69 B	1.9	0.012 J	3.3	ND (0.035)
PYRENE	mg/kg	2,200	190,000	0.035	0.0053 J	0.0068 J	0.13	0.049	0.0063 J	0.16	0.51	0.0049 J	0.10	ND (0.035)
Metals														
LEAD, Total	mg/kg	450	190,000	14	3.2	1.6	7.3	13	1.2	6.5	5.8	18	5.4	11
Petroleum Hydrocarbons														
>C12-C22	mg/kg	n/v	n/v	ND (14)	ND (14)	ND (13)	690	40	ND (13)	820	450	ND (14)	2,100	ND (15)
>C22-C44	mg/kg	n/v	n/v	8.7 J	ND (14)	ND (13)	150	5.9 J	ND (13)	120	22	ND (14)	95 J	24
TOTAL PETROLEUM HYDROCARBON	mg/kg	n/v	n/v	8.7 J	ND (14)	ND (13)	840	46	ND (13)	940	470	ND (14)	2,200	24

See notes on last page.

Table 1: Soil Sampling Analytical Results Summary
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location				S-462_CD				S-463_CD			S-464_CD		
Sample Date				13-Jan-21	14-Jan-21	15-Jan-21	19-Jan-21	20-Jan-21	21-Jan-21	22-Jan-21	26-Jan-21	26-Jan-21	27-Jan-21
Sample ID				BT-17A-S-13-20210113	BT-17A-S-43-20210114	BT-17A-S-76-20210115	BT-17A-S-79-20210119	BT-18A-S-10-20210120	BT-18A-S-26-20210121	BT-18A-S-49-20210122	BT-18B-S-11-20210126	BT-18B-S-26-20210126	BT-18B-S-49-20210127
Sample Depth				13 ft	43 ft	76 ft	79 ft	10 ft	26 ft	49 ft	11 ft	26 ft	49 ft
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory				LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order				410-26447-1	410-26586-1	410-26586-1	410-27011-1	410-27204-1	410-27204-1	410-27301-1	410-27600-1	410-27600-1	410-27735-1
Laboratory Sample ID	Units	MSC-PA A	MSC-PA B	410-26447-1	410-26586-3	410-26586-4	410-27011-3	410-27204-1	410-27204-4	410-27301-3	410-27600-1	410-27600-3	410-27735-2
Volatile Organic Compounds													
BENZENE	mg/kg	0.5	330	**1.6**[A]	**1.9**[A]	0.043	ND (0.0067)	**1,000 H**[AB]	**210 H**[A]	0.056 J	**880 H**[AB]	**640**[AB]	**12**[A]
1,2-DIBROMOETHANE (EDB)	mg/kg	0.005	4.2	*ND (0.021)*	ND (0.00050)	ND (0.0046)	ND (0.00054)	*ND (0.28) H*	*ND (0.027)*	*ND (0.034)*	*ND (0.56)*	*ND (1.1)*	*ND (0.027)*
1,2-DICHLOROETHANE (EDC)	mg/kg	0.5	98	ND (0.26)	ND (0.0063)	ND (0.0046)	ND (0.0067)	ND (0.41) H	ND (0.34)	ND (0.43)	*ND (0.84)*	*ND (1.7)*	ND (0.33)
ETHYLBENZENE	mg/kg	70	1,000	22	0.010	0.054	0.00065 J	13 H	1.7	0.16 J	7.4	7.6 J	ND (0.33)
ISOPROPYLBENZENE (CUMENE)	mg/kg	2,500	10,000	2.2	0.0041 J	0.0054	ND (0.0067)	33 H	6.0	0.038 J	16	15	ND (0.33)
METHYL TERTIARY BUTYL ETHER	mg/kg	2	9,800	0.89	0.0020 J	0.0037 J	ND (0.0067)	ND (0.34) H	ND (0.34)	ND (0.43)	ND (0.70)	ND (1.4)	ND (0.33)
TERT-BUTYL ALCOHOL	mg/kg	n/v	n/v	13	0.45	ND (0.092)	ND (0.13)	ND (69) H	ND (6.8)	9.2	ND (140)	ND (280)	3.0 J
TOLUENE	mg/kg	100	10,000	32	0.037	0.20	0.0023 J	**320 H**[A]	8.0	ND (0.43)	**150**[A]	62	0.046 J
1,2,4-TRIMETHYLBENZENE	mg/kg	300	5,400	73	0.011	0.096	0.0016 J	3.0 J H	1.0	0.061 J	1.2 J	3.8 J	ND (0.33)
1,3,5-TRIMETHYLBENZENE	mg/kg	93	5,400	23	0.0046 J	0.035	ND (0.0067)	1.9 J H	0.59	ND (0.43)	0.72 J	1.6 J	ND (0.33)
XYLENES, TOTAL (DIMETHYLBENZENE)	mg/kg	1,000	9,100	130	0.044	0.33	0.0035 J	51 H	5.9	ND (0.85)	33	37	ND (0.66)
Semi-Volatile Organic Compounds													
ANTHRACENE	mg/kg	350	190,000	0.011 J	ND (0.022)	ND (0.019)	ND (0.023)	ND (0.020)	ND (0.47)	ND (0.22)	0.22	0.11	ND (0.021)
BENZO(A)ANTHRACENE	mg/kg	340	190,000	ND (0.018)	ND (0.022)	ND (0.019)	ND (0.023)	0.060	0.72	ND (0.22)	0.22	0.16	ND (0.021)
BENZO(A)PYRENE	mg/kg	46	190,000	0.0045 J	ND (0.022)	ND (0.019)	ND (0.023)	0.051	0.64	1.3	0.17	0.090	ND (0.021)
BENZO(B)FLUORANTHENE	mg/kg	170	190,000	0.0041 J	0.0049 J	ND (0.019)	ND (0.023)	0.060	0.62	ND (0.22)	0.17	0.12	0.0047 J
BENZO(G,H,I)PERYLENE	mg/kg	180	190,000	0.0044 J	ND (0.022)	ND (0.019)	ND (0.023)	0.030	0.30 J	ND (0.22)	0.10	0.069	ND (0.021)
CHRYSENE	mg/kg	230	190,000	0.0046 J	ND (0.022)	0.0038 J	ND (0.023)	0.068	1.1	ND (0.22)	0.22	0.16	ND (0.021)
FLUORENE	mg/kg	3,800	190,000	0.051	ND (0.022)	ND (0.019)	ND (0.023)	0.12	ND (0.47)	ND (0.22)	0.20	0.12	ND (0.021)
NAPHTHALENE	mg/kg	25	77	1.2	ND (0.022)	0.010 J	ND (0.023)	0.79	6.5	ND (0.22)	0.65	0.36	ND (0.021)
PHENANTHRENE	mg/kg	10,000	190,000	0.098	ND (0.022)	ND (0.019)	ND (0.023)	0.29	5.2	ND (0.22)	0.84	0.53	ND (0.021)
PYRENE	mg/kg	2,200	190,000	0.023	0.0064 J	ND (0.019)	ND (0.023)	0.17	2.1	ND (0.22)	0.47	0.32	0.0067 J
Metals													
LEAD, Total	mg/kg	450	190,000	11	13	3.0	3.5	31	16	25	17	30	16
Petroleum Hydrocarbons													
>C12-C22	mg/kg	n/v	n/v	30	8.5 J	ND (14)	ND (17)	3,100	1,800	ND (16)	940	830	ND (15)
>C22-C44	mg/kg	n/v	n/v	ND (13)	31	ND (14)	130	820	520	28	330	150	32
TOTAL PETROLEUM HYDROCARBON	mg/kg	n/v	n/v	30	40	ND (14)	130	3,900	2,300	28	1,300	980	32

See notes on last page.

Table 1: Soil Sampling Analytical Results Summary
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location				S-465_CD			S-466_CD			S-467_CD			S-468_CD	
Sample Date				21-Jan-21	4-Feb-21	4-Feb-21	28-Jan-21	28-Jan-21	29-Jan-21	17-Feb-21	22-Feb-21	22-Feb-21	12-Feb-21	16-Feb-21
Sample ID				BT-21-S-15-20210121	BT-21-S-26-20210204	BT-21-S-42-20210204	BT-03-S-18-20210128	BT-03-S-46-20210128	BT-03-S-72-20210129	BT-22B-S-14-20210217	BT-22B-S-31-20210222	BT-22B-S-40-20210222	BT-01-S-15-20210212	BT-01-S-44-45-20210216
Sample Depth				15 ft	26 ft	42 ft	18 ft	46 ft	72 ft	14 ft	31 ft	40 ft	15 ft	44 - 45 ft
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory				LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order				410-27204-1	410-28485-1	410-28654-1	410-27876-1	410-28040-1	410-28040-1	410-29945-1	410-30035-1	410-30035-1	410-29478-1	410-29616-1
Laboratory Sample ID	Units	MSC-PA A	MSC-PA B	410-27204-3	410-28485-1	410-28654-1	410-27876-1	410-28040-1	410-28040-3	410-29945-1	410-30035-1	410-30035-2	410-29478-1	410-29616-1
Volatile Organic Compounds														
BENZENE	mg/kg	0.5	330	**87**[A]	**5.9**[A]	0.0017 J	**0.93**[A]	**1.8**[A]	ND (0.0052)	**37**[A]	0.14 J	0.25 J	ND (0.30)	0.00061 J
1,2-DIBROMOETHANE (EDB)	mg/kg	0.005	4.2	*ND (0.023)*	ND (0.0045)	ND (0.00042)	*ND (0.022)*	*ND (0.028)*	ND (0.00042)	*ND (0.29)*	*ND (0.021)*	ND (0.00046)	*ND (0.024)*	ND (0.00041)
1,2-DICHLOROETHANE (EDC)	mg/kg	0.5	98	ND (0.29)	0.073	ND (0.0053)	ND (0.27)	ND (0.35)	ND (0.0052)	ND (0.43)	ND (0.26)	ND (0.0058)	ND (0.30)	ND (0.0052)
ETHYLBENZENE	mg/kg	70	1,000	14	0.025	ND (0.0053)	3.3	ND (0.35)	ND (0.0052)	38	0.84	0.070	0.053 J	0.00046 J
ISOPROPYLBENZENE (CUMENE)	mg/kg	2,500	10,000	8.7	0.032	ND (0.0053)	1.6	ND (0.35)	ND (0.0052)	29	3.0	0.069	0.32	ND (0.0052)
METHYL TERTIARY BUTYL ETHER	mg/kg	2	9,800	ND (0.29)	ND (0.0045)	ND (0.0053)	ND (0.27)	0.23 J	ND (0.0052)	ND (0.36)	ND (0.26)	0.62	ND (0.30)	0.048
TERT-BUTYL ALCOHOL	mg/kg	n/v	n/v	ND (5.7) TL	ND (0.091)	ND (0.11)	ND (5.4)	60	ND (0.10)	ND (72)	ND (5.1)	61 TL	ND (6.0)	1.3
TOLUENE	mg/kg	100	10,000	62	0.080	ND (0.0053)	0.18 J	0.097 J	ND (0.0052)	0.55 J	0.064 J	0.0088	0.047 J	0.00083 J
1,2,4-TRIMETHYLBENZENE	mg/kg	300	5,400	38	0.011	ND (0.0053)	11	ND (0.35)	ND (0.0052)	**660**[A]	0.47	0.063	ND (0.30)	ND (0.0052)
1,3,5-TRIMETHYLBENZENE	mg/kg	93	5,400	13	0.0054	ND (0.0053)	3.8	ND (0.35)	ND (0.0052)	**95**[A]	3.2	0.013	ND (0.30)	ND (0.0052)
XYLENES, TOTAL (DIMETHYLBENZENE)	mg/kg	1,000	9,100	87	0.14	ND (0.011)	11	ND (0.70)	ND (0.010)	49	0.57	0.10	ND (0.60)	ND (0.010)
Semi-Volatile Organic Compounds														
ANTHRACENE	mg/kg	350	190,000	0.33	ND (0.018)	ND (0.021)	ND (0.018)	0.049	0.0089 J	0.017 J	6.4	0.0091 J	0.0092 J	ND (0.020)
BENZO(A)ANTHRACENE	mg/kg	340	190,000	0.18	ND (0.018)	ND (0.021)	ND (0.018)	0.031	0.0096 J	0.0052 J	2.7	ND (0.022)	0.0067 J	0.0040 J
BENZO(A)PYRENE	mg/kg	46	190,000	0.13	ND (0.018)	ND (0.021)	ND (0.018)	0.024	ND (0.021)	ND (0.019)	2.2	ND (0.022)	ND (0.020)	ND (0.020)
BENZO(B)FLUORANTHENE	mg/kg	170	190,000	0.15	ND (0.018)	ND (0.021)	ND (0.018)	0.025	0.0074 J	0.0040 J	2.1	ND (0.022)	ND (0.020)	ND (0.020)
BENZO(G,H,I)PERYLENE	mg/kg	180	190,000	0.068	ND (0.018)	ND (0.021)	ND (0.018)	0.0096 J	ND (0.021)	ND (0.019)	0.82	ND (0.022)	ND (0.020)	ND (0.020)
CHRYSENE	mg/kg	230	190,000	0.19	0.0038 J	ND (0.021)	ND (0.018)	0.037	0.0082 J	0.0055 J	2.9	ND (0.022)	ND (0.020)	ND (0.020)
FLUORENE	mg/kg	3,800	190,000	0.69	0.0055 J	ND (0.021)	ND (0.018)	0.086	0.015 J	0.090	8.0	0.011 J	ND (0.020)	ND (0.020)
NAPHTHALENE	mg/kg	25	77	12	0.034	0.017 J	1.2	0.16	0.074	1.2	22	3.8	ND (0.020)	0.0080 J
PHENANTHRENE	mg/kg	10,000	190,000	1.3	0.023 B	0.0055 J	ND (0.018)	0.26	0.039	0.12	26	0.025	0.036	0.0095 J
PYRENE	mg/kg	2,200	190,000	0.49	0.012 J	0.0057 J	ND (0.018)	0.096	0.017 J	0.013 J	8.7	0.014 J	0.018 J	0.0073 J
Metals														
LEAD, Total	mg/kg	450	190,000	7.5	7.0	15	8.6	19	16	5.8	5.2	9.4	5.0	7.5
Petroleum Hydrocarbons														
>C12-C22	mg/kg	n/v	n/v	2,300	7.5 J	ND (15)	120	ND (15)	ND (15)	50	920	7.4 J	85	ND (14)
>C22-C44	mg/kg	n/v	n/v	460	8.0 J	6.2 J	56	6.4 J	16	10 J	120	36	12 J	15
TOTAL PETROLEUM HYDROCARBON	mg/kg	n/v	n/v	2,800	16	6.2 J	180	6.4 J	16	60	2,000	51	97	15

See notes on last page.

Table 1: Soil Sampling Analytical Results Summary
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location				S-469_CD		S-470_CD				S-472_CD
Sample Date				9-Feb-21	9-Feb-21	23-Feb-21	25-Feb-21	26-Feb-21	8-Mar-21	2-Mar-21
Sample ID				BT-08A-S-11-20210209	BT-08A-S-38-20210209	BT-08B-S-12-20210223	BT-08B-S-28-20210225	BT-08B-S-48-20210226	BT-08B-S-71-20210308	BT-22A-S-16-20210302
Sample Depth				11 ft	38 ft	12 ft	28 ft	48 ft	71 ft	16 ft
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory				LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order				410-28885-1	410-29037-1	410-30035-1	410-30432-1	410-30631-1	410-31756-1	410-31075-1
Laboratory Sample ID	Units	MSC-PA A	MSC-PA B	410-28885-1	410-29037-1	410-30035-4	410-30432-1	410-30631-3	410-31756-1	410-31075-1
Volatile Organic Compounds										
BENZENE	mg/kg	0.5	330	ND (0.0054)	0.00086 J	0.035 J	0.060 J	0.0053	ND (0.0060)	0.0012 J
1,2-DIBROMOETHANE (EDB)	mg/kg	0.005	4.2	ND (0.00043)	ND (0.00046)	*ND (0.025)*	*ND (0.023)*	ND (0.0044)	ND (0.00048)	ND (0.00047)
1,2-DICHLOROETHANE (EDC)	mg/kg	0.5	98	ND (0.0054)	ND (0.0058)	ND (0.31)	ND (0.29)	ND (0.0044)	ND (0.0060)	ND (0.0058)
ETHYLBENZENE	mg/kg	70	1,000	ND (0.0054)	ND (0.0058)	0.13 J	0.045 J	0.00060 J	ND (0.0060)	ND (0.0058)
ISOPROPYLBENZENE (CUMENE)	mg/kg	2,500	10,000	ND (0.0054)	ND (0.0058)	4.6	1.3	0.00035 J	ND (0.0060)	ND (0.0058)
METHYL TERTIARY BUTYL ETHER	mg/kg	2	9,800	ND (0.0054)	ND (0.0058)	ND (0.31)	0.090 J	0.050	ND (0.0060)	ND (0.0058)
TERT-BUTYL ALCOHOL	mg/kg	n/v	n/v	ND (0.11)	ND (0.12)	ND (6.1)	1.5 J	1.2	ND (0.12)	ND (0.12)
TOLUENE	mg/kg	100	10,000	ND (0.0054)	ND (0.0058)	0.076 J	0.065 J	0.0014 J	ND (0.0060)	ND (0.0058)
1,2,4-TRIMETHYLBENZENE	mg/kg	300	5,400	ND (0.0054)	ND (0.0058)	0.050 J	ND (0.29)	ND (0.0044)	ND (0.0060)	ND (0.0058)
1,3,5-TRIMETHYLBENZENE	mg/kg	93	5,400	ND (0.0054)	ND (0.0058)	0.086 J	0.049 J	ND (0.0044)	ND (0.0060)	ND (0.0058)
XYLENES, TOTAL (DIMETHYLBENZENE)	mg/kg	1,000	9,100	ND (0.011)	ND (0.012)	0.27 J	0.11 J	0.0015 J	ND (0.012)	ND (0.012)
Semi-Volatile Organic Compounds										
ANTHRACENE	mg/kg	350	190,000	ND (0.021)	ND (0.020)	0.47	0.11	ND (0.020)	ND (0.021)	ND (0.018)
BENZO(A)ANTHRACENE	mg/kg	340	190,000	ND (0.021)	ND (0.020)	0.081	0.036	ND (0.020)	ND (0.021)	ND (0.018)
BENZO(A)PYRENE	mg/kg	46	190,000	ND (0.021)	ND (0.020)	0.060	0.027	ND (0.020)	ND (0.021)	ND (0.018)
BENZO(B)FLUORANTHENE	mg/kg	170	190,000	ND (0.021)	ND (0.020)	0.068	0.029	ND (0.020)	ND (0.021)	ND (0.018)
BENZO(G,H,I)PERYLENE	mg/kg	180	190,000	ND (0.021)	ND (0.020)	0.028	0.014 J	ND (0.020)	ND (0.021)	ND (0.018)
CHRYSENE	mg/kg	230	190,000	ND (0.021)	ND (0.020)	0.087	0.040	ND (0.020)	ND (0.021)	ND (0.018)
FLUORENE	mg/kg	3,800	190,000	ND (0.021)	ND (0.020)	1.4	0.26	ND (0.020)	ND (0.021)	ND (0.018)
NAPHTHALENE	mg/kg	25	77	0.010 J	ND (0.020)	ND (0.020)	0.087	ND (0.020) B	ND (0.021)	ND (0.018)
PHENANTHRENE	mg/kg	10,000	190,000	ND (0.021)	ND (0.020)	2.3	0.63	0.0060 J	ND (0.021)	ND (0.018)
PYRENE	mg/kg	2,200	190,000	ND (0.021)	ND (0.020)	0.33	0.12	ND (0.020)	ND (0.021)	ND (0.018)
Metals										
LEAD, Total	mg/kg	450	190,000	16	5.9 F2	3.0	8.7	12	3.2	9.8
Petroleum Hydrocarbons										
>C12-C22	mg/kg	n/v	n/v	ND (15)	ND (14)	1,700	80	ND (14)	ND (15)	ND (13)
>C22-C44	mg/kg	n/v	n/v	9.5 J	ND (14)	150 J	7.5 J	14	ND (15)	ND (13)
TOTAL PETROLEUM HYDROCARBON	mg/kg	n/v	n/v	9.5 J	ND (14)	3,600	88	14	ND (15)	ND (13)

See notes on last page.

Table 1: Soil Sampling Analytical Results Summary
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Notes:

MSC-PA	Pennsylvania Department of Environmental Protection (PADEP) - Medium Specific Concentrations
A	Medium Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Soil – Soil to Groundwater, Higher of the 100x the Groundwater MSC and the Generic Value (Unsaturated), Non-Residential
B	Medium-Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Soil – Direct Contact, Non-Residential Subsurface Soil (2-15 ft)
190[A]	Concentration exceeds standard A.
190[B]	Concentration exceeds standard B.
15.2	Measured concentration did not exceed the indicated standard.
ND (0.50)	Indicates the laboratory method detection limit (if available) was above the applicable standard. The reporting limit is shown if the laboratory method detection limit is not available.
ND (0.03)	Indicates concentration not detected above the laboratory reporting limit (in parentheses) except when the reporting limit is greater than the standard in which case the method detection limit is listed in parentheses.
n/v	No standard/guideline value
-	Parameter not analyzed / not available
B	Indicates the analyte is detected in the associated blank as well as in the sample.
E	Indicates compounds whose concentrations exceed the calibration range of the instrument.
F2	Matrix spike/matrix spike duplicate (MS/MSD) relative percent difference (RPD) exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time.
J	Indicates an estimated value
TL	Internal standards response or retention time outside acceptable limits.
mg/kg	milligrams per kilogram
ft	feet
LANCASTER	Eurofins Lancaster Laboratories, Inc.

Table 2: Groundwater Analytical Results – Discrete Groundwater Samples
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location	Units	MSC-PA	S-452_CD	S-453_CD	S-454_CD	S-456_CD	S-457_CD	S-458_CD	S-459_CD	S-460_CD	S-462_CD		S-463_CD	S-464_CD	S-470_CD	
Sample Date			2-Dec-20	3-Dec-20	7-Dec-20	15-Dec-20	28-Dec-20	30-Dec-20	5-Jan-21	8-Jan-21	14-Jan-21	19-Jan-21	21-Jan-21	27-Jan-21	25-Feb-21	8-Mar-21
Sample ID			BT-02B-W-28-20201202	BT-11A-W-29-20201203	BT-11B-W-37-20201207	BT-02A-W-36-20201215	BT-09-W-32-20201228	BT-19-W-40-20201230	BT-13-W-40-20210105	BT-14-W-44-20210108	BT-17A-W-40-20210114	BT-17A-W-73-20210119	BT-18A-W-38-20210121	BT-18B-W-38-20210127	BT-08B-W-37-20210225	BT-08B-W-71-20210308
Sample Depth			28 ft	29 ft	37 ft	36 ft	32 ft	40 ft	40 ft	44 ft	40 ft	73 ft	38 ft	38 ft	37 ft	71 ft
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order			410-22543-1	410-22720-1	410-23184-1	410-24240-1	410-25174-1	410-25255-1	410-25450-1	410-25856-1	410-26586-1	410-27011-1	410-27301-1	410-27735-1	410-30631-1	410-31756-1
Laboratory Sample ID			410-22543-2	410-22720-4	410-23184-1	410-24240-1	410-25174-2	410-25255-3	410-25450-4	410-25856-1	410-26586-1	410-27011-1	410-27301-1	410-27735-1	410-30631-1	410-31756-3
Volatile Organic Compounds																
BENZENE	µg/L	5	***20***	***26***	-	***110***	***560***	***63***	***130***	***690***	***240***	***400***	***12,000***	***100,000***	***75***	0.35 J
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	-	-	-	-	-	-	-	*ND (1.0)*	-	-	-	-	-	-
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (1.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	*ND (30)*	ND (1.0)	ND (1.0)
ETHYLBENZENE	µg/L	700	45	89	-	6.3	130	4.4	97	***920***	350	290	62	160	31	ND (1.0)
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	6.1	23 J	-	72	6.6 J	5.5	13 J	53	17 J	14 J	69	140 J	84	0.42 J
METHYL TERTIARY BUTYL ETHER	µg/L	20	ND (1.0)	1.7 J	-	***98***	6.7	ND (1.0)	***43***	***7,000***	***130***	***47***	ND (5.0)	ND (20)	***140***	2.3
NAPHTHALENE	µg/L	100	-	-	-	-	-	-	-	***660***	-	-	-	-	-	-
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (50)	79 J	-	8,200	ND (250)	ND (50)	1,700	13,000	410	120 J	ND (250)	ND (5,000)	3,800	29 J
TOLUENE	µg/L	1,000	1.8	ND (5.0)	-	9.0	80	1.9	7.3	800	***2,200***	***1,900***	910	***3,300***	160	0.47 J
1,2,4-TRIMETHYLBENZENE	µg/L	530	30	130	-	5.7 J	82	3.1 J	110	250	330	260	37	ND (500)	39	ND (5.0)
1,3,5-TRIMETHYLBENZENE	µg/L	530	9.0	44	-	3.1 J	22 J	0.96 J	37	70	100	78	12 J	ND (500)	20	ND (5.0)
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	120	140	-	26 J	470	14	360	1,100	2,000	1,600	280	590 J	180	ND (6.0)
C4-C12-TPH-GRO	µg/L	n/v	890	2,900	-	3,900	2,900	270	2,600	-	12,000	9,400	21,000	160,000	6,900	82
Volatile Organic Compounds (SW8011)																
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.029)	ND (0.021)	-	ND (0.029)	ND (0.029)	ND (0.029)	ND (0.029)	-	ND (0.029)	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.029)	ND (0.029)
Semi-Volatile Organic Compounds																
ANTHRACENE	µg/L	66	-	-	-	-	-	ND (0.50) H	0.35 J	-	-	0.34 J	-	-	1.7	0.12 J
BENZO(A)ANTHRACENE	µg/L	3.9	-	-	-	-	-	ND (0.50) H	0.13 J	-	-	ND (1.2)	-	-	ND (0.50)	ND (0.50)
BENZO(A)PYRENE	µg/L	0.2	-	-	-	-	-	ND (0.10) H	ND (0.10)	-	-	*ND (0.24)*	-	-	ND (0.11)	ND (0.11)
BENZO(B)FLUORANTHENE	µg/L	1.2	-	-	-	-	-	ND (0.50) H	0.12 J	-	-	ND (1.2)	-	-	ND (0.50)	ND (0.50)
BENZO(G,H,I)PERYLENE	µg/L	0.26	-	-	-	-	-	ND (0.10) H	ND (0.10)	-	-	ND (0.24)	-	-	ND (0.10)	ND (0.10)
CHRYSENE	µg/L	1.9	-	-	-	-	-	ND (0.50) H	0.19 J	-	-	ND (1.2)	-	-	ND (0.50)	ND (0.50)
FLUORENE	µg/L	1,900	-	-	-	-	-	ND (0.50) H	1.3	-	-	1.4	-	-	12	0.36 J
NAPHTHALENE	µg/L	100	-	-	-	-	-	ND (0.50) H	2.0	-	-	40	-	-	7.6	0.74
PHENANTHRENE	µg/L	1,100	-	-	-	-	-	0.40 J H	1.9	-	-	3.0	-	-	8.6	0.81
PYRENE	µg/L	130	-	-	-	-	-	ND (0.50) H	0.57	-	-	0.52 J	-	-	0.60	0.15 J
Metals																
CALCIUM, Total	µg/L	n/v	-	62,000	-	56,000	38,000	110,000	46,000	-	33,000	53,000	91,000	61,000	78,000	51,000
IRON, Total	µg/L	n/v	-	440,000	-	240,000	10,000	3,100 B	5,400	-	3,000	42,000	5,900	14,000	31,000	46,000
LEAD, Dissolved	µg/L	5	-	0.23 J	-	ND (0.52)	-	ND (0.52)	0.31 J	-	0.16 J	0.17 J	0.17 J B	ND (0.52)	2.9	0.32 J
MAGNESIUM, Total	µg/L	n/v	-	48,000	-	48,000	9,400	31,000	15,000	-	8,400	45,000	30,000	21,000	43,000	44,000
POTASSIUM, Total	µg/L	n/v	-	16,000	-	15,000	3,900	15,000	5,200	-	3,800	7,200	10,000	10,000	15,000	3,500
SODIUM, Total	µg/L	n/v	-	170,000	-	150,000	76,000	180,000	77,000	-	67,000	110,000	100,000	190,000	250,000	72,000
Petroleum Hydrocarbons																
>C12-C22	µg/L	n/v	-	7,500 B	-	3,300	-	190	3,100	-	3,000	3,000	2,900	3,900	1,300	10,000
>C22-C44	µg/L	n/v	-	ND (950)	-	970	-	160	440	-	120 J	190	210	380	170	ND (950) B
TOTAL PETROLEUM HYDROCARBON	µg/L	n/v	-	7,500	-	4,300	-	350	3,500	-	3,100	3,200	3,100	4,300	1,500	10,000
General Chemistry																
ALKALINITY TO pH 4.5	µg/L	n/v	-	260,000	-	220,000	-	360,000	73,000	-	190,000	170,000	270,000	310,000	370,000	130,000
CHLORIDE (AS CL)	µg/L	n/v	-	94,000	-	200,000	110,000	220,000	150,000	-	82,000	81,000	140,000	160,000	400,000	77,000
ETHANE	µg/L	n/v	ND (5.0)	ND (5.0)	-	1.1 J	ND (5.0)	ND (5.0)	ND (5.0)	1.1 J	ND (5.0)	1.5 J	ND (5.0)	1.8 J	7.2	ND (5.0)
ETHENE	µg/L	n/v	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
METHANE	µg/L	n/v	52	140	-	7,900	81	8.0	150	410	44	86	82	170	14,000	31
NITROGEN, AMMONIA (AS N)	µg/L	n/v	-	660 J	-	4,400	-	ND (1,500)	900 J	-	3,200	1,500 J	600 J	600 J	940	2,300
NITROGEN, NITRATE (AS N)	µg/L	10,000	-	2,700	-	300 J H	5,600	2,200	2,200	-	2,800	840	390 J	1,200	530	550
SULFATE (AS SO4)	µg/L	n/v	-	65,000	-	24,000	150,000	82,000	41,000	-	57,000	260,000	150,000	120,000	18,000	280,000
SULFIDE	µg/L	n/v	-	ND (300)	-	ND (3,000)	-	ND (300)	ND (300)	-	ND (300)	ND (300)	ND (300)	100 J	ND (300)	ND (300)
TOTAL ORGANIC CARBON	µg/L	n/v	51,000	53,000	21,000	46,000	210,000	6,000	33,000	-	60,000	58,000	30,000	30,000	15,000	16,000

Notes:

MSC-PA	Pennsylvania Department of Environmental Protection
	Medium-Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Groundwater - Used Aquifer, Non Residential, TDS ≤ 2500
6.5	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
ND (0.50)	Indicates the laboratory method detection limit (if available) was above the applicable standard. The reporting limit is shown if the laboratory method detection limit is not available.
ND (0.03)	Indicates concentration not detected above the laboratory reporting limit (in parentheses) except when the reporting limit is greater than the standard in which case the method detection limit is listed in parentheses.
n/v	No standard/guideline value
-	Parameter not analyzed / not available
B	Indicates the analyte is detected in the associated blank as well as in the sample.
H	Sample was prepped or analyzed beyond the specified holding time.
J	Indicates an estimated value
µg/L	Micrograms per liter

Table 2: Groundwater Analytical Results – Discrete Groundwater Samples
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Notes:

MSC-PA	Pennsylvania Department of Environmental Protection
	Medium-Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Groundwater - Used Aquifer, Non Residential, TDS ≤ 2500
6.5	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
ND (0.50)	Indicates the laboratory method detection limit (if available) was above the applicable standard. The reporting limit is shown if the laboratory method detection limit is not available.
ND (0.03)	Indicates concentration not detected above the laboratory reporting limit (in parentheses) except when the reporting limit is greater than the standard in which case the method detection limit is listed in parentheses.
n/v	No standard/guideline value
-	Parameter not analyzed / not available
B	Indicates the analyte is detected in the associated blank as well as in the sample.
H	Sample was prepped or analyzed beyond the specified holding time.
J	Indicates an estimated value
µg/L	Micrograms per liter

Table 3: Liquid Level Measurements (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Well ID	Date	Depth to LNAPL (feet btoc)	Depth to Water (feet btoc)	Apparent LNAPL Thickness (ft)	Corrected Water Level Elevation (ft NAVD88)
S-452	26-Mar-21	---	26.08	---	4.46
S-452	20-Apr-21	---	26.06	---	4.48
S-452	28-Oct-21	---	25.68	---	4.86
S-453	26-Mar-21	---	25.90	---	4.45
S-453	20-Apr-21	---	25.85	---	4.50
S-453	27-Oct-21	---	25.53	---	4.82
S-454	26-Mar-21	---	27.70	---	2.95
S-454	20-Apr-21	---	27.50	---	3.15
S-454	26-Oct-21	---	27.50	---	3.15
S-455	26-Mar-21	---	23.26	---	4.68
S-455	20-Apr-21	---	23.39	---	4.55
S-455	28-Oct-21	---	23.16	---	4.78
S-456	24-Mar-21	---	26.33	---	3.80
S-456	20-Apr-21	---	26.23	---	3.90
S-456	17-May-21	---	26.31	---	3.82
S-456	27-Oct-21	---	25.84	---	4.29
S-457	26-Mar-21	---	24.74	---	4.58
S-457	20-Apr-21	---	24.86	---	4.46
S-457	18-May-21	---	24.98	---	4.34
S-457	29-Oct-21	NM	NM	NM	NM
S-458	23-Mar-21	---	27.50	---	4.81
S-458	20-Apr-21	---	27.34	---	4.97
S-458	14-May-21	---	27.44	---	4.87
S-458	26-Oct-21	---	27.12	---	5.19
S-459	24-Mar-21	---	24.12	---	2.46
S-459	20-Apr-21	---	23.53	---	3.05
S-459	26-Oct-21	---	23.86	---	2.72
S-460	23-Mar-21	---	26.65	---	2.70
S-460	20-Apr-21	---	26.39	---	2.96
S-460	17-May-21	---	26.92	---	2.43
S-460	26-Oct-21	---	26.54	---	2.81
S-461	22-Mar-21	---	22.44	---	4.46
S-461	20-Apr-21	---	22.33	---	4.57
S-461	17-May-21	---	22.42	---	4.48
S-461	27-Oct-21	---	22.13	---	4.77
S-462	20-Apr-21	---	23.68	---	3.25
S-462	26-Oct-21	---	24.08	---	2.85
S-463	22-Mar-21	---	26.78	---	4.75
S-463	26-Apr-21	---	26.70	---	4.83
S-463	14-May-21	---	26.75	---	4.78
S-463	28-Oct-21	---	26.42	---	5.11
S-464	22-Mar-21	---	27.25	---	4.38
S-464	20-Apr-21	---	26.78	---	4.85

Table 3: Liquid Level Measurements (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Well ID	Date	Depth to LNAPL (feet btoc)	Depth to Water (feet btoc)	Apparent LNAPL Thickness (ft)	Corrected Water Level Elevation (ft NAVD88)
S-464	18-May-21	---	26.92	---	4.71
S-464	28-Oct-21	---	26.53	---	5.10
S-465	25-Mar-21	---	26.90	---	5.30
S-465	20-Apr-21	---	26.88	---	5.32
S-465	19-May-21	---	27.01	---	5.19
S-465	28-Oct-21	---	26.71	---	5.49
S-466	24-Mar-21	---	27.00	---	2.91
S-466	20-Apr-21	---	26.88	---	3.03
S-466	18-May-21	---	27.50	---	2.41
S-466	27-Oct-21	---	26.94	---	2.97
S-467	24-Mar-21	---	26.61	---	4.61
S-467	20-Apr-21	---	26.53	---	4.69
S-467	26-Oct-21	---	26.14	---	5.08
S-468	24-Mar-21	---	26.73	---	4.14
S-468	20-Apr-21	---	26.57	---	4.30
S-468	26-Oct-21	---	25.93	---	4.94
S-469	25-Mar-21	---	25.70	---	4.04
S-469	20-Apr-21	---	25.24	---	4.50
S-469	19-May-21	---	25.36	---	4.38
S-469	27-Oct-21	---	25.07	---	4.67
S-470	25-Mar-21	---	23.50	---	1.95
S-470	23-Apr-21	---	23.48	---	1.97
S-470	27-Oct-21	---	23.40	---	2.05
S-470	29-Oct-21	---	22.98	---	2.47
S-472	24-Mar-21	---	28.25	---	4.94
S-472	20-Apr-21	---	28.61	---	4.58
S-472	14-May-21	---	28.76	---	4.43
S-472	22-Oct-21	---	28.22	---	4.97
S-472	29-Oct-21	---	28.11	---	5.08

Notes:
ft = feet
btoc = below top of casing
NAVD88 = North American Vertical Datum of 1988
LNAPL = Light Non Aqueous Phase Liquid
--- = LNAPL not present
NM = not measured

Table 4: Groundwater Analytical Results - Unconfined Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			MW-35	MW-36		MW-37		MW-38		MW-44		OW-19		OW-20	
Sample Date			27-Oct-21	23-Mar-21	29-Oct-21	23-Mar-21	29-Oct-21	22-Apr-21	26-Oct-21	23-Apr-21	27-Oct-21	29-Oct-21	1-Nov-21	23-Apr-21	29-Oct-21
Sample ID			MW-35_20211027	MW-36-20210323	MW-36_20211029	MW-37-20210323	MW-37_20211029	MW-38_20210422	MW-38_20211026	MW-44_20210423	MW-44_20211027	OW-19_20211029	OW-19_20211101	OW-20_20210423	OW-20_20211029
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order			410-61053-1	410-33523-1	410-61302-1	410-33523-1	410-61302-1	410-37142-1	410-60816-1	410-37313-1	410-61053-1	410-61302-1	410-61414-1	410-37313-1	410-61302-1
Laboratory Sample ID			410-61053-7	410-33523-8	410-61302-10	410-33523-5	410-61302-11	410-37142-2	410-60816-2	410-37313-1	410-61053-4	410-61302-13	410-61414-1	410-37313-3	410-61302-9
Hydrostratigraphic Unit	Units	MSC-PA	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined
Field Parameters															
DISSOLVED OXYGEN, FIELD MEASURED	mg/L	n/v	0	0.54	8.79	1.18	0.38	0	0.78	0.01	0	0.21	-	0.46	0.91
OXIDATION REDUCTION POTENTIAL, FIELD MEASURED	mV	n/v	-137	-112	-90	-117	-85	-23	-119	-41	-102	-149	-	-125	-160
pH, FIELD MEASURED	S.U.	n/v	6.46	6.38	5.68	6.19	6.36	5.53	6.99	5.2	6.07	6.87	-	5.85	6.69
SPECIFIC CONDUCTANCE FIELD	mS/cm	n/v	1.42	8.97	5.21	1.24	0.593	1.82	1.9	1.7	1.46	5.31	-	5.8	6.88
TEMPERATURE, FIELD MEASURED	deg c	n/v	20.63	20.38	20.17	17.85	15.93	15.89	16.89	15.51	20.95	20.18	-	18.29	17.07
TURBIDITY	NTU	n/v	69.5	36	27.6	20.9	50.3	5.1	14.9	102	38.9	1,000	-	0	961
Volatile Organic Compounds															
BENZENE	µg/L	5	16	550,000	490,000	210,000	160,000	0.62 J	ND (1.0)	11,000	12,000	7,300	-	19,000	25,000
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (5.0)	1,600	1,100	*ND (30)*	*ND (30)*	ND (1.0)	ND (1.0)	ND (3.0)	ND (3.0)	*ND (15)*	-	*ND (300)*	150
ETHYLBENZENE	µg/L	700	150	250	500	ND (100)	ND (100)	ND (1.0)	ND (1.0)	1,400	1,300	3,500	-	1,200	890
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	120	83 J	ND (2,500)	28 J	ND (500)	ND (5.0)	ND (5.0)	55	54	400	-	1,600 J	67 J
METHYL TERTIARY BUTYL ETHER	µg/L	20	2.1 J	40 J	*ND (100)*	ND (20)	ND (20)	2.0	150	160	480	22,000	-	2,700	4,200
NAPHTHALENE	µg/L	100	-	670	-	ND (100)	-	-	-	-	-	-	-	-	-
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (250)	ND (5,000)	ND (25,000)	ND (5,000)	ND (5,000)	13 J	820	1,400	9,200	36,000	-	20,000 J	19,000
TOLUENE	µg/L	1,000	ND (5.0)	12,000	9,200	1,700	1,200	ND (1.0)	ND (1.0)	390	200	18,000	-	10,000	7,800
1,2,4-TRIMETHYLBENZENE	µg/L	530	180	130 J	ND (500)	ND (500)	ND (500)	ND (5.0)	ND (5.0)	1,500	1,300	22,000	-	2,000 J	1,800
1,3,5-TRIMETHYLBENZENE	µg/L	530	69	49 J	ND (150)	ND (500)	ND (500)	ND (5.0)	ND (5.0)	450	410	4,800	-	720 J	660
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	64	920	1,700 J	ND (600)	ND (600)	ND (6.0)	ND (6.0)	7,900	5,200	50,000	-	15,000	11,000
Volatile Organic Compounds (SW8011)															
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.028)	ND (0.029)	0.022 J	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.029)	0.021 J IQ	0.011 J	-	ND (0.028)	0.013 J
Semi-Volatile Organic Compounds															
ANTHRACENE	µg/L	66	5.3	1.4	1.2	0.23 J	0.14 J	ND (0.51)	ND (0.53)	1.0	0.88	-	6.2	36	7.0
BENZO(A)ANTHRACENE	µg/L	3.9	0.38 J	ND (0.53)	ND (0.58)	0.40 J	0.35 J	ND (0.51)	ND (0.53)	1.9	0.33 J	-	7.7	25	4.1 J
BENZO(A)PYRENE	µg/L	0.2	0.26 J	ND (0.12)	ND (0.13)	0.58	0.38 J	ND (0.11)	ND (0.12)	3.0	0.43 J	-	5.6	17	3.6 J
BENZO(B)FLUORANTHENE	µg/L	1.2	0.31 J	ND (0.53)	ND (0.58)	1.1	0.62	ND (0.51)	ND (0.53)	4.8	0.73	-	6.4	21	3.1 J
BENZO(G,H,I)PERYLENE	µg/L	0.26	0.12 J	ND (0.11)	ND (0.12)	0.41 J	0.26 J	ND (0.10)	ND (0.11)	2.0	0.42 J	-	2.8 J	6.8	1.6 J
CHRYSENE	µg/L	1.9	0.43 J	0.12 J	ND (0.58)	0.81	0.45 J	ND (0.51)	ND (0.53)	4.5	0.57	-	7.9	24	3.7 J
FLUORENE	µg/L	1,900	48	8.3	5.1	0.55	0.28 J	ND (0.51)	ND (0.53)	4.6	5.3	-	18	57	11
NAPHTHALENE	µg/L	100	730	550	770	5.1	2.1	0.96	ND (0.53)	330	320	-	370	1,300	290
PHENANTHRENE	µg/L	1,100	32	8.1	6.2	1.4	0.73	ND (0.51)	ND (0.53)	8.7	6.5	-	28	130	26
PYRENE	µg/L	130	2.1	0.72	0.40 J	1.3	0.84	0.37 J	0.32 J	6.5	1.3	-	21	82	17
Metals															
CALCIUM, Total	µg/L	n/v	60,000	290,000	200,000	63,000	40,000 ^L	77,000	96,000	50,000	44,000	-	120,000	230,000	240,000
IRON, Total	µg/L	n/v	38,000	67,000	53,000	36,000	25,000	7,200	5,200	77,000	72,000	-	120,000	540,000	500,000 ^L
LEAD, Dissolved	µg/L	5	ND (0.52)	ND (0.52)	0.091 J	0.13 J	0.85	ND (0.52)	ND (0.52)	5.4	4.0	-	11	2.8	25
General Chemistry															
ALKALINITY TO pH 4.5	µg/L	n/v	290,000	520,000	490,000	300,000	160,000	390,000	390,000	150,000	140,000	-	370,000	68,000	91,000
ETHANE	µg/L	n/v	ND (5.0)	7.7	10	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	8.4	6.3	2.1 J	-	7.7	4.1 J
ETHENE	µg/L	n/v	ND (5.0)	20	11	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	2.3 J	ND (5.0)	ND (5.0)	-	2.0 J	1.2 J
METHANE	µg/L	n/v	18,000 IQ	7,900	11,000	2,900	4,800	720	700	15,000	19,000 IQ	12,000	-	12,000	12,000
SULFATE (AS SO4)	µg/L	n/v	2,300 J IQ	3,100 J	ND (5,000)	3,800 J	2,500	37,000	53,000	6,800 J	ND (5,000) IQ	-	ND (5,000)	ND (5,000)	7,700
TOTAL CARBON	µg/L	n/v	88,000 !	470,000	380,000 !	190,000	130,000 !	76,000	110,000 !	150,000	110,000 !	-	280,000 !	1,100,000	830,000 !
TOTAL INORGANIC CARBON	µg/L	n/v	81,000 !	290,000	260,000 !	120,000	85,000 !	73,000	100,000 !	85,000	82,000 !	-	190,000 !	630,000	290,000 !
TOTAL KJELDAHL NITROGEN	µg/L	n/v	730 J	12,000	8,500	6,100	3,200	630 J	ND (1,000)	21,000	3,900	-	21,000	69,000	24,000
TOTAL ORGANIC CARBON	µg/L	n/v	7,300	180,000	120,000	68,000	45,000	3,500	6,200	65,000	28,000	-	87,000	470,000	540,000

See notes on last page.

Table 4: Groundwater Analytical Results - Unconfined Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			RW-1		RW-26			S-395		S-452		S-453	
Sample Date			26-Mar-21	27-Oct-21	22-Apr-21	22-Apr-21	27-Oct-21	22-Apr-21	28-Oct-21	26-Mar-21	28-Oct-21	26-Mar-21	27-Oct-21
Sample ID			RW-1-20210326	RW-1_20211027	RW-26_20210422	DUP-2_20210422	RW-26_20211027	S-395_20210422	S-395_20211028	S-452-20210326	S-452_20211028	S-453-20210326	S-453_20211027
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order			410-33879-1	410-61053-1	410-37142-1	410-37142-1	410-61053-1	410-37142-1	410-61302-1	410-33879-1	410-61302-1	410-33879-1	410-61053-1
Laboratory Sample ID			410-33879-11	410-61053-6	410-37142-1	410-37142-4	410-61053-5	410-37142-3	410-61302-4	410-33879-15	410-61302-6	410-33879-13	410-61053-10
Hydrostratigraphic Unit	Units	MSC-PA	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined
Field Parameters													
DISSOLVED OXYGEN, FIELD MEASURED	mg/L	n/v	0.52	7.78	0.1	-	7.12	0.15	0.69	0.94	0	0.52	10.38
OXIDATION REDUCTION POTENTIAL, FIELD MEASURED	mV	n/v	-116	-91	-106	-	-111	-19	-91	-125	-144	-118	-68
pH, FIELD MEASURED	S.U.	n/v	5.96	6.08	5.8	-	6.13	5.42	6.63	6.64	6.71	6.52	5.46
SPECIFIC CONDUCTANCE FIELD	mS/cm	n/v	3.6	3.16	1.9	-	2.34	1.23	0.978	1.32	1.31	1.34	1.46
TEMPERATURE, FIELD MEASURED	deg c	n/v	23.46	21.29	16.88	-	19.5	17.46	18.81	21.81	22.21	21.26	22.66
TURBIDITY	NTU	n/v	5	74.1	145	-	30.5	55.2	8.1	43	45.1	7.5	147
Volatile Organic Compounds													
BENZENE	µg/L	5	230	250	440	440	130	0.45 J	ND (1.0)	3,200	6,400	3,800	3,900
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (5.0)	ND (3.0)	ND (5.0)	ND (5.0)
ETHYLBENZENE	µg/L	700	28	68	170	180	5.1	ND (1.0)	ND (1.0)	760	1,100	1,300	1,300
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	61	89	22 J	23 J	8.5	ND (5.0)	ND (5.0)	83	110	66	75
METHYL TERTIARY BUTYL ETHER	µg/L	20	11,000	6,500	350	350	390	ND (1.0)	ND (1.0)	1,000	2,000	50	90
NAPHTHALENE	µg/L	100	99	-	-	-	-	-	-	1,300	-	400	-
TERT-BUTYL ALCOHOL	µg/L	n/v	48,000	26,000	18,000 E	18,000 E	22,000	ND (50)	ND (50)	22,000	44,000	ND (250)	5,400
TOLUENE	µg/L	1,000	27	180	6.7	6.8	5.3	ND (1.0)	ND (1.0)	57	97	50	51
1,2,4-TRIMETHYLBENZENE	µg/L	530	810	890	100	100	27	ND (5.0)	ND (5.0)	320	430	690	670
1,3,5-TRIMETHYLBENZENE	µg/L	530	200	210	27	28	6.7	ND (5.0)	ND (5.0)	110	160	220	200
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	1,100	1,400	170	170	42	ND (6.0)	ND (6.0)	1,600	2,200	1,800	2,000
Volatile Organic Compounds (SW8011)													
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.029)	ND (0.028) IQ	ND (0.029)	ND (0.029)	ND (0.029)	ND (0.029)	ND (0.028)	ND (0.029)	0.019 J	ND (0.029)	ND (0.028) IQ
Semi-Volatile Organic Compounds													
ANTHRACENE	µg/L	66	2.3	4.9 IQ	2.0	1.9	0.33 J	ND (0.53)	ND (0.51)	5.6	6.1	ND (0.51)	ND (0.57)
BENZO(A)ANTHRACENE	µg/L	3.9	0.32 J	1.5 IQ	0.11 J	ND (0.54)	ND (0.52)	ND (0.53)	ND (0.51)	1.0	1.2	ND (0.51)	0.18 J
BENZO(A)PYRENE	µg/L	0.2	0.17 J	0.72 IQ	ND (0.12)	ND (0.12)	ND (0.11)	ND (0.12)	ND (0.11)	0.58	0.72	ND (0.11)	0.15 J
BENZO(B)FLUORANTHENE	µg/L	1.2	0.19 J	0.76 IQ	ND (0.53)	ND (0.54)	ND (0.52)	ND (0.53)	ND (0.51)	0.77	0.84	ND (0.51)	0.20 J
BENZO(G,H,I)PERYLENE	µg/L	0.26	ND (0.10)	0.38 J IQ	ND (0.11)	ND (0.11)	ND (0.10)	ND (0.11)	ND (0.10)	0.27 J	0.27 J	ND (0.10)	0.12 J
CHRYSENE	µg/L	1.9	0.35 J	1.4 IQ	0.11 J	0.11 J	ND (0.52)	ND (0.53)	ND (0.51)	1.2	1.2	ND (0.51)	0.21 J
FLUORENE	µg/L	1,900	12	16 IQ	13	13	2.4	ND (0.53)	ND (0.51)	21	17	2.7	1.9
NAPHTHALENE	µg/L	100	61	79 IQ	1,900	1,800	97	0.52 J	0.59	1,300	1,700	300	270
PHENANTHRENE	µg/L	1,100	9.9	18 IQ	12	12	1.9	ND (0.53)	ND (0.51)	30	31	1.9	1.9
PYRENE	µg/L	130	2.5	7.2 IQ	1.1	1.0	0.18 J	ND (0.53)	ND (0.51)	4.6	4.6	0.17 J	0.43 J
Metals													
CALCIUM, Total	µg/L	n/v	110,000	130,000	110,000	110,000	110,000	100,000	100,000 ^L	39,000	46,000 ^L	43,000	49,000
IRON, Total	µg/L	n/v	47,000	60,000 B	37,000	37,000	54,000	13,000	11,000	50,000	55,000	74,000	100,000
LEAD, Dissolved	µg/L	5	0.84	1.1	ND (0.52)	ND (0.52)	ND (0.52)	0.28 J	ND (0.52)	1.0	2.9	8.9	9.1
General Chemistry													
ALKALINITY TO pH 4.5	µg/L	n/v	480,000	310,000	320,000	320,000	320,000	270,000	260,000	290,000	260,000	150,000	110,000
ETHANE	µg/L	n/v	ND (5.0)	ND (5.0)	7.1	7.0	4.1 J	ND (5.0)	ND (5.0)	2.8 J	3.4 J	2.4 J	2.7 J
ETHENE	µg/L	n/v	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
METHANE	µg/L	n/v	17,000	19,000 IQ	8,600	8,300	16,000 IQ	ND (5.0)	ND (5.0)	14,000	19,000	17,000	14,000 IQ
SULFATE (AS SO4)	µg/L	n/v	1,800 J	ND (5,000) IQ	4,300 J	4,200 J	ND (5,000) IQ	120,000	140,000	ND (5,000)	ND (1,000)	7,000	ND (2,000) IQ
TOTAL CARBON	µg/L	n/v	200,000	140,000 !	98,000	110,000	120,000 !	61,000	66,000 !	120,000	140,000 !	75,000	82,000 !
TOTAL INORGANIC CARBON	µg/L	n/v	160,000	120,000 !	84,000	95,000	100,000 !	59,000	64,000 !	97,000	100,000 !	56,000	61,000 !
TOTAL KJELDAHL NITROGEN	µg/L	n/v	29,000	12,000	2,500	3,100	11,000	630 J	ND (1,000)	3,400	2,800	580 J	600 J
TOTAL ORGANIC CARBON	µg/L	n/v	38,000	24,000	14,000	15,000	18,000	2,000	2,300	23,000	38,000	19,000	21,000

See notes on last page.

Table 4: Groundwater Analytical Results - Unconfined Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			S-455			S-456		S-457		S-458		S-461		S-463	
Sample Date			26-Mar-21	28-Oct-21	28-Oct-21	24-Mar-21	27-Oct-21	26-Mar-21	29-Oct-21	23-Mar-21	26-Oct-21	22-Mar-21	27-Oct-21	22-Mar-21	28-Oct-21
Sample ID			S-455-20210326	S-455_20211028	DUP-1_20211028	S-456-20210324	S-456_20211027	S-457-20210326	S-457_20211029	S-458-20210323	S-458_20211026	S-461-20210322	S-461_20211027	S-463-20210322	S-463_20211028
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order			410-33879-1	410-61302-1	410-61302-1	410-33879-1	410-61053-1	410-33879-1	410-61302-1	410-33523-1	410-60816-1	410-33523-1	410-61053-1	410-33523-1	410-61302-1
Laboratory Sample ID			410-33879-14	410-61302-2	410-61302-3	410-33879-4	410-61053-1	410-33879-10	410-61302-8	410-33523-7	410-60816-3	410-33523-2	410-61053-8	410-33523-1	410-61302-5
Hydrostratigraphic Unit	Units	MSC-PA	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined
Field Parameters															
DISSOLVED OXYGEN, FIELD MEASURED	mg/L	n/v	0.42	0	-	0.06	0	0.88	5.18	0.15	0.6	0.75	0	0.27	1.2
OXIDATION REDUCTION POTENTIAL, FIELD MEASURED	mV	n/v	-110	-149	-	-37	-129	-144	-66	23	-65	-98	-102	-44	-66
pH, FIELD MEASURED	S.U.	n/v	6.03	6.79	-	5.89	6.34	6.82	5.71	5.87	7.14	6.32	6.42	6.22	6.89
SPECIFIC CONDUCTANCE FIELD	mS/cm	n/v	2.67	2.8	-	1.4	1.61	1.91	2.56	1.67	1.5	2.17	2.23	1.14	0.885
TEMPERATURE, FIELD MEASURED	deg c	n/v	21.17	21.19	-	18.21	21.33	18.38	18.58	19.26	16.61	19.62	19.06	19.92	19.66
TURBIDITY	NTU	n/v	0	2.1	-	228	223	37.1	230	8.9	37.4	40.7	107	0.5	0
Volatile Organic Compounds															
BENZENE	µg/L	5	6,300	7,700	7,700	220	160	18,000	20,000	270	560	1,000	30	8,400	2,300
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (5.0)	ND (3.0)	ND (3.0)	ND (1.0)	ND (1.0)	ND (3.0)	*ND (15)*	6.4	ND (5.0)	ND (5.0)	ND (5.0)	2.2 J	ND (5.0)
ETHYLBENZENE	µg/L	700	530	700	700	9.6	23	1,400	1,800	ND (5.0)	ND (5.0)	21	5.7	3.8 J	ND (5.0)
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	120	130	130	44	86	53	63 J	ND (25)	2.1 J	25	14 J	4.4 J	ND (25)
METHYL TERTIARY BUTYL ETHER	µg/L	20	400	360	380	33	100	3,700	4,400	ND (5.0)	ND (5.0)	28	140	ND (5.0)	ND (5.0)
NAPHTHALENE	µg/L	100	4,800	-	-	23	-	4,300	-	ND (25)	-	ND (25)	-	ND (25)	-
TERT-BUTYL ALCOHOL	µg/L	n/v	2,200	3,200	3,200	1,200	3,900	23,000	22,000	ND (250)	ND (250)	1,100	820	ND (250)	ND (250)
TOLUENE	µg/L	1,000	410	550	590	14	10	770	1,100	2.5 J	ND (5.0)	470	8.9	16	6.7
1,2,4-TRIMETHYLBENZENE	µg/L	530	280	300	300	6.5	12	550	770	5.2 J	ND (25)	18 J	ND (25)	ND (25)	ND (25)
1,3,5-TRIMETHYLBENZENE	µg/L	530	170	190	190	4.6 J	11	150	210 J	2.3 J	ND (25)	1.8 J	ND (25)	ND (25)	ND (25)
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	580	960	1,000	10	19	3,500	5,200	ND (30)	ND (30)	200	45	17 J	ND (30)
Volatile Organic Compounds (SW8011)															
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.029)	ND (0.028)	ND (0.028)	ND (0.029)	ND (0.029)	ND (0.029)	0.017 J	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.029)	ND (0.029)	ND (0.029)
Semi-Volatile Organic Compounds															
ANTHRACENE	µg/L	66	6.9	6.9	7.4	2.4	5.0	1.6	2.3	ND (0.53)	ND (0.51)	ND (0.51)	ND (0.52)	ND (0.52)	ND (0.51)
BENZO(A)ANTHRACENE	µg/L	3.9	0.29 J	0.20 J	0.22 J	1.9	0.36 J	0.15 J	0.81	ND (0.53)	ND (0.51)	ND (0.51)	0.11 J	ND (0.52)	ND (0.51)
BENZO(A)PYRENE	µg/L	0.2	ND (0.11)	ND (0.12)	ND (0.12)	2.8	0.24 J	ND (0.11)	0.35 J	ND (0.12)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)
BENZO(B)FLUORANTHENE	µg/L	1.2	0.11 J	ND (0.52)	ND (0.54)	6.0	0.38 J	ND (0.51)	0.44 J	ND (0.53)	ND (0.51)	ND (0.51)	ND (0.52)	ND (0.52)	ND (0.51)
BENZO(G,H,I)PERYLENE	µg/L	0.26	ND (0.10)	ND (0.10)	ND (0.11)	2.6	0.17 J	ND (0.10)	0.16 J	ND (0.11)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
CHRYSENE	µg/L	1.9	*ND (10)*	0.28 J	0.27 J	5.5	0.45 J	0.19 J	0.79	ND (0.53)	ND (0.51)	ND (0.51)	ND (0.52)	ND (0.52)	ND (0.51)
FLUORENE	µg/L	1,900	43	37	46	9.6	29	14	10	ND (0.53)	ND (0.51)	0.25 J	ND (0.52)	ND (0.52)	0.13 J
NAPHTHALENE	µg/L	100	4,400	2,900	2,900	7.1	25	3,100	2,500	0.67	ND (0.51)	0.94	0.79	3.4	0.35 J
PHENANTHRENE	µg/L	1,100	38	37	36	5.7	19	13	15	0.22 J	ND (0.51)	0.24 J	0.13 J	0.21 J	0.19 J
PYRENE	µg/L	130	2.8	2.7	2.7	8.6	2.5	0.86	2.4	ND (0.53)	ND (0.51)	0.25 J	1.1	ND (0.52)	ND (0.51)
Metals															
CALCIUM, Total	µg/L	n/v	76,000	70,000	70,000	41,000	51,000	77,000	120,000 ^L	110,000	110,000 ^L	130,000	130,000	95,000	95,000
IRON, Total	µg/L	n/v	41,000	41,000	41,000	29,000	60,000	36,000	73,000	3,300	2,500	31,000	37,000	7,100	5,500
LEAD, Dissolved	µg/L	5	3.3	3.0	3.0	ND (0.52)	0.36 J	1.3	5.2	ND (0.52)	ND (0.52)	ND (0.52)	ND (0.52)	ND (0.52)	ND (0.52)
General Chemistry															
ALKALINITY TO pH 4.5	µg/L	n/v	400,000	390,000	390,000	150,000	170,000	240,000	180,000	370,000	370,000	400,000	400,000	250,000	250,000
ETHANE	µg/L	n/v	2.4 J	3.0 J	3.1 J	1.2 J	2.0 J	6.4	8.0	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
ETHENE	µg/L	n/v	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
METHANE	µg/L	n/v	19,000	23,000	22,000	12,000	18,000	14,000	18,000	17	40	7,800	10,000 IQ	120	29
SULFATE (AS SO4)	µg/L	n/v	ND (5,000)	ND (1,000)	ND (1,000)	9,000	930 J IQ	2,200 J	ND (5,000)	89,000	110,000	30,000	20,000 IQ	150,000	130,000
TOTAL CARBON	µg/L	n/v	120,000	110,000 !	130,000 !	48,000	77,000 !	140,000	120,000 !	81,000	93,000 !	100,000	120,000 !	61,000	60,000 !
TOTAL INORGANIC CARBON	µg/L	n/v	110,000	96,000 !	120,000 !	38,000	63,000 !	96,000	92,000 !	78,000	91,000 !	88,000	110,000 !	56,000	58,000 !
TOTAL KJELDAHL NITROGEN	µg/L	n/v	7,200	6,400	6,800	2,000	2,900	970 J	980 J	ND (1,000)	ND (1,000)	1,200	2,100	ND (1,000)	ND (1,000)
TOTAL ORGANIC CARBON	µg/L	n/v	13,000	14,000	14,000	9,800	14,000	44,000	28,000	3,000	2,400	12,000	14,000	5,000	1,800

See notes on last page.

Table 4: Groundwater Analytical Results - Unconfined Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			S-464		S-465		S-467		S-468		S-469		S-472		TV
Sample Date			22-Mar-21	28-Oct-21	25-Mar-21	28-Oct-21	24-Mar-21	26-Oct-21	24-Mar-21	26-Oct-21	25-Mar-21	27-Oct-21	24-Mar-21	29-Oct-21	23-Mar-21
Sample ID			S-464-20210322	S-464_20211028	S-465-20210325	S-465_20211028	S-467-20210324	S-467_20211026	S-468-20210324	S-468_20211026	S-469-20210325	S-469_20211027	S-472-20210324	S-472_20211029	TW-5-20210323
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order			410-33523-1	410-61302-1	410-33879-1	410-61302-1	410-33879-1	410-60816-1	410-33879-1	410-60816-1	410-33879-1	410-61053-1	410-33879-1	410-61302-1	410-33523-1
Laboratory Sample ID			410-33523-3	410-61302-7	410-33879-7	410-61302-1	410-33879-3	410-60816-6	410-33879-1	410-60816-8	410-33879-8	410-61053-9	410-33879-5	410-61302-14	410-33523-4
Hydrostratigraphic Unit	Units	MSC-PA	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined	unconfined
Field Parameters															
DISSOLVED OXYGEN, FIELD MEASURED	mg/L	n/v	0.56	4.73	0.32	0	0.83	0.87	1.81	0.17	0.35	0	1.92	0	0.68
OXIDATION REDUCTION POTENTIAL, FIELD MEASURED	mV	n/v	-103	-37	-42	-109	-145	-135	-178	-172	59	-18	-87	-61	-97
pH, FIELD MEASURED	S.U.	n/v	6.32	5.52	6.56	6.71	6.83	7.29	6.99	7.57	6.54	6.28	6.44	5.51	6.03
SPECIFIC CONDUCTANCE FIELD	mS/cm	n/v	1.62	1.11	1.43	1.4	2.88	1.64	2.11	2.5	1.74	1.45	2.67	3.02	3.61
TEMPERATURE, FIELD MEASURED	deg c	n/v	18.73	21.07	17.17	18.61	18.3	18.43	18.82	18.13	16.54	21.93	17.89	19.37	17.28
TURBIDITY	NTU	n/v	2	2.8	31.1	5	7	7.3	105	33.5	11.8	13.9	211	184	117
Volatile Organic Compounds															
BENZENE	µg/L	5	120,000	170,000	30,000	32,000	370	500	410	360	28	3.4	180	190	640,000
1,2-DICHLOROETHANE (EDC)	µg/L	5	*ND (30)*	*ND (6.0)*	ND (3.0)	*ND (15)*	0.65 J	ND (1.0)	ND (1.0)	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (5.0)	*ND (30)*
ETHYLBENZENE	µg/L	700	70 J	69	88	86	25	33	400	370	ND (1.0)	ND (1.0)	970	1,500	430
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	92 J	84 J	19 J	23 J	100	87	130	130	ND (5.0)	ND (5.0)	110	160	100 J
METHYL TERTIARY BUTYL ETHER	µg/L	20	ND (20)	ND (20)	ND (10)	ND (10)	78	160	13	10	ND (1.0)	ND (1.0)	0.79 J	ND (5.0)	ND (20)
NAPHTHALENE	µg/L	100	ND (100)	-	36 J	-	85	-	3,100	-	ND (5.0)	-	3,500	-	ND (100)
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (5,000)	ND (1,000)	ND (500)	ND (2,500)	570	900	360	ND (250)	ND (50)	ND (50)	25 J	ND (250)	ND (5,000)
TOLUENE	µg/L	1,000	750	1,000	1,300	520	20	21	23	17	1.1	ND (1.0)	8.8	7.2	8,400
1,2,4-TRIMETHYLBENZENE	µg/L	530	ND (500)	ND (100)	36 J	ND (250)	64	39	280	260	ND (5.0)	ND (5.0)	490	750	ND (500)
1,3,5-TRIMETHYLBENZENE	µg/L	530	ND (500)	ND (100)	12 J	ND (250)	22	29	94	76	ND (5.0)	ND (5.0)	130	210	ND (500)
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	320 J	270	470	450	55	51	210	170	ND (6.0)	ND (6.0)	290	480	2,000
Volatile Organic Compounds (SW8011)															
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.028)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.029)
Semi-Volatile Organic Compounds															
ANTHRACENE	µg/L	66	0.13 J	ND (0.57)	0.14 J	0.14 J	6.3	2.5	16	13	ND (0.51)	ND (0.51)	9.9	7.7	0.21 J
BENZO(A)ANTHRACENE	µg/L	3.9	ND (0.51)	ND (0.57)	ND (0.51)	ND (0.51)	0.38 J	ND (0.53)	2.8	3.1	ND (0.51)	ND (0.51)	2.4	0.93	ND (0.53)
BENZO(A)PYRENE	µg/L	0.2	ND (0.11)	ND (0.13)	ND (0.11)	ND (0.11)	0.20 J	ND (0.12)	1.9	1.7	ND (0.11)	ND (0.11)	1.6	0.52 J	ND (0.12)
BENZO(B)FLUORANTHENE	µg/L	1.2	ND (0.51)	ND (0.57)	ND (0.51)	ND (0.51)	0.31 J	ND (0.53)	2.0	2.0	ND (0.51)	ND (0.51)	1.8	0.57 J	0.11 J
BENZO(G,H,I)PERYLENE	µg/L	0.26	ND (0.10)	ND (0.11)	ND (0.10)	ND (0.10)	ND (0.13)	ND (0.11)	0.60	0.65	ND (0.10)	ND (0.10)	0.62	0.20 J	ND (0.11)
CHRYSENE	µg/L	1.9	ND (0.51)	ND (0.57)	ND (0.51)	ND (0.51)	0.55 J	ND (0.53)	3.4	3.2	ND (0.51)	ND (0.51)	2.7	1.1	ND (0.53)
FLUORENE	µg/L	1,900	0.42 J	0.24 J	0.24 J	0.38 J	32	15	67	63	ND (0.51)	ND (0.51)	38	41	0.72
NAPHTHALENE	µg/L	100	9.6	7.2	21	19	66	86	3,200	2,400	ND (0.51)	0.56	5,800	5,500	18
PHENANTHRENE	µg/L	1,100	0.64	0.31 J	0.13 J	0.48 J	39	13	85	76	ND (0.51)	ND (0.51)	49	41	1.2
PYRENE	µg/L	130	ND (0.51)	ND (0.57)	ND (0.51)	0.19 J	3.0	0.85	12	11	ND (0.51)	ND (0.51)	8.6	4.3	0.35 J
Metals															
CALCIUM, Total	µg/L	n/v	97,000	83,000	110,000	110,000	50,000	39,000 ^L	33,000	53,000 ^L	78,000	88,000	77,000	71,000 ^L	240,000
IRON, Total	µg/L	n/v	20,000	23,000	5,700	25,000	51,000	53,000	50,000	67,000	260	540 B	140,000	110,000	29,000
LEAD, Dissolved	µg/L	5	ND (0.52)	ND (0.52)	0.12 J	ND (0.52)	0.38 J	0.45 J	ND (0.52)	ND (0.52)	0.089 J	ND (0.52)	0.43 J	0.32 J	ND (0.52)
General Chemistry															
ALKALINITY TO pH 4.5	µg/L	n/v	310,000	250,000	310,000	320,000	230,000	180,000	160,000	170,000	310,000	350,000	120,000	33,000	710,000
ETHANE	µg/L	n/v	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	2.8 J	3.2 J	1.2 J	1.9 J	ND (5.0)	ND (5.0)	4.1 J	2.0 J	ND (5.0)
ETHENE	µg/L	n/v	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
METHANE	µg/L	n/v	2,700	3,200	150	260	18,000	16,000	15,000	19,000	ND (5.0)	7.1	12,000	23,000	3,800
SULFATE (AS SO4)	µg/L	n/v	100,000	49,000	96,000	87,000	6,600	ND (5,000)	2,500 J	ND (1,000)	81,000	96,000 IQ	19,000	ND (2,000)	93,000
TOTAL CARBON	µg/L	n/v	110,000	130,000 !	88,000	120,000 !	89,000	72,000 !	71,000	71,000 !	75,000	79,000 !	85,000	60,000 !	400,000
TOTAL INORGANIC CARBON	µg/L	n/v	91,000	110,000 !	70,000	97,000 !	64,000	53,000 !	55,000	56,000 !	73,000	77,000 !	59,000	51,000 !	290,000
TOTAL KJELDAHL NITROGEN	µg/L	n/v	1,100	840 J	1,100	1,400	8,900	4,900	6,200	5,800	ND (1,000)	ND (1,000)	4,300	3,100	13,000
TOTAL ORGANIC CARBON	µg/L	n/v	19,000	19,000	18,000	23,000	25,000	19,000	16,000	15,000	2,000	2,200	26,000	9,100	110,000

See notes on last page.

Table 4: Groundwater Analytical Results - Unconfined Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			I-5
Sample Date			29-Oct-21
Sample ID			TW-5_20211029
Sampling Company			STANTEC
Laboratory			LANCASTER
Laboratory Work Order			410-61302-1
Laboratory Sample ID			410-61302-12
Hydrostratigraphic Unit	Units	MSC-PA	unconfined
Field Parameters			
DISSOLVED OXYGEN, FIELD MEASURED	mg/L	n/v	0
OXIDATION REDUCTION POTENTIAL, FIELD MEASURED	mV	n/v	-82
pH, FIELD MEASURED	S.U.	n/v	5.77
SPECIFIC CONDUCTANCE FIELD	mS/cm	n/v	3.71
TEMPERATURE, FIELD MEASURED	deg c	n/v	19.48
TURBIDITY	NTU	n/v	99
Volatile Organic Compounds			
BENZENE	µg/L	5	680,000
1,2-DICHLOROETHANE (EDC)	µg/L	5	*ND (150)*
ETHYLBENZENE	µg/L	700	480 J
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	ND (2,500)
METHYL TERTIARY BUTYL ETHER	µg/L	20	*ND (100)*
NAPHTHALENE	µg/L	100	-
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (25,000)
TOLUENE	µg/L	1,000	8,100
1,2,4-TRIMETHYLBENZENE	µg/L	530	ND (500)
1,3,5-TRIMETHYLBENZENE	µg/L	530	ND (150)
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	1,900 J
Volatile Organic Compounds (SW8011)			
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	0.022 J
Semi-Volatile Organic Compounds			
ANTHRACENE	µg/L	66	0.19 J
BENZO(A)ANTHRACENE	µg/L	3.9	ND (0.57)
BENZO(A)PYRENE	µg/L	0.2	ND (0.12)
BENZO(B)FLUORANTHENE	µg/L	1.2	ND (0.57)
BENZO(G,H,I)PERYLENE	µg/L	0.26	ND (0.11)
CHRYSENE	µg/L	1.9	ND (0.57)
FLUORENE	µg/L	1,900	0.36 J
NAPHTHALENE	µg/L	100	9.7
PHENANTHRENE	µg/L	1,100	0.57
PYRENE	µg/L	130	0.11 J
Metals			
CALCIUM, Total	µg/L	n/v	240,000 ^L
IRON, Total	µg/L	n/v	25,000
LEAD, Dissolved	µg/L	5	ND (0.52)
General Chemistry			
ALKALINITY TO pH 4.5	µg/L	n/v	620,000
ETHANE	µg/L	n/v	ND (5.0)
ETHENE	µg/L	n/v	ND (5.0)
METHANE	µg/L	n/v	6,300
SULFATE (AS SO4)	µg/L	n/v	120,000
TOTAL CARBON	µg/L	n/v	450,000 !
TOTAL INORGANIC CARBON	µg/L	n/v	330,000 !
TOTAL KJELDAHL NITROGEN	µg/L	n/v	13,000
TOTAL ORGANIC CARBON	µg/L	n/v	120,000

See notes on last page.

Table 4: Groundwater Analytical Results - Unconfined Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Notes:

MSC-PA	Pennsylvania Department of Environmental Protection
	Medium-Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Groundwater - Used Aquifer, Non Residential, TDS ≤ 2500
6.5	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
ND (0.50)	Indicates the laboratory method detection limit (if available) was above the applicable standard. The reporting limit is shown if the laboratory method detection limit is not available.
ND (0.03)	Indicates concentration not detected above the laboratory reporting limit (in parentheses) except when the reporting limit is greater than the standard in which case the method detection limit is listed in parentheses.
n/v	No standard/guideline value
-	Parameter not analyzed / not available
!	Laboratory is not accredited for this parameter.
^L	Reporting Limit Check Standard is outside acceptance limits, high biased
B	Indicates the analyte is detected in the associated blank as well as in the sample.
E	Indicates compounds whose concentrations exceed the calibration range of the instrument.
IQ	Indeterminate qualifier. Refer to associated laboratory report.
J	Indicates an estimated value
mg/L	Milligrams per liter
mV	Millivolts
S.U.	Standard Units
mS/cm	Millisiemens per centimeter
deg c	Degrees Celcius
NTU	Nephelometric Turbidity Units
µg/L	Micrograms per liter

Table 5: Groundwater Analytical Results- Lower Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			S-393D		S-394		S-454		S-459		S-460		S-462	
Sample Date			23-Mar-21	27-Oct-21	23-Apr-21	26-Oct-21	26-Mar-21	26-Oct-21	24-Mar-21	26-Oct-21	23-Mar-21	26-Oct-21	23-Mar-21	26-Oct-21
Sample ID			S-393D-20210323	S-393D_20211027	S-394_20210423	S-394_20211026	S-454-20210326	S-454_20211026	S-459-20210324	S-459_20211026	S-460-20210323	S-460_20211026	S-462-20210323	S-462_20211026
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order			410-33523-1	410-61053-1	410-37313-1	410-60816-1	410-33879-1	410-60816-1	410-33523-1	410-60816-1	410-33523-1	410-60816-1	410-33523-1	410-60816-1
Laboratory Sample ID			410-33523-6	410-61053-2	410-37313-2	410-60816-7	410-33879-12	410-60816-1	410-33523-14	410-60816-4	410-33523-10	410-60816-5	410-33523-9	410-60816-9
Hydrostratigraphic Unit	Units	MSC-PA	lower aquifer	lower aquifer	lower aquifer	lower aquifer	lower aquifer	lower aquifer	lower aquifer	lower aquifer	lower aquifer	lower aquifer	lower aquifer	lower aquifer
Field Parameters														
DISSOLVED OXYGEN, FIELD MEASURED	mg/L	n/v	0.75	0	0.99	0	0.41	0	0.27	1.01	0.94	0.04	-	0
OXIDATION REDUCTION POTENTIAL, FIELD MEASURED	mV	n/v	0	29	54	22	-8	-28	-19	-94	39	-37	-	-32
pH, FIELD MEASURED	S.U.	n/v	5.88	5.37	4.75	5.36	6.1	5.57	5.75	5.95	5.95	5.68	-	5.52
SPECIFIC CONDUCTANCE FIELD	mS/cm	n/v	1.02	0.958	1.13	1.08	1.07	0.931	1	0.914	1.01	0.874	-	0.92
TEMPERATURE, FIELD MEASURED	deg c	n/v	16.18	17.33	16.76	19.37	18.55	20.36	16.75	19.97	17.76	20.18	-	19.67
TURBIDITY	NTU	n/v	4.7	88.4	48.9	37.4	50.6	19.1	25.5	31	6.9	15.1	-	301
Volatile Organic Compounds														
BENZENE	µg/L	5	65	ND (1.0)	19	ND (1.0)	12	ND (1.0)	13	2.3	22	2.4	39	ND (1.0)
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	0.62 J	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
ETHYLBENZENE	µg/L	700	ND (5.0)	ND (1.0)	1.4	ND (1.0)	0.65 J	ND (1.0)	14	2.9	4.7	ND (1.0)	17	ND (1.0)
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	ND (25)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	3.3 J	1.3 J	1.3 J	ND (5.0)	2.2 J	ND (5.0)
METHYL TERTIARY BUTYL ETHER	µg/L	20	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)	0.88 J	0.74 J	ND (1.0)	0.40 J	2.3	0.31 J	9.5	ND (1.0)
NAPHTHALENE	µg/L	100	ND (25)	-	-	-	ND (5.0)	-	36	-	22	-	5.5	-
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (250)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	120	ND (50)	51	20 J	ND (50)
TOLUENE	µg/L	1,000	ND (5.0)	ND (1.0)	0.56 J	ND (1.0)	0.57 J	ND (1.0)	0.63 J	ND (1.0)	0.68 J	ND (1.0)	1.8	ND (1.0)
1,2,4-TRIMETHYLBENZENE	µg/L	530	ND (25)	ND (5.0)	1.2 J	ND (5.0)	ND (5.0)	ND (5.0)	40	6.6	12	ND (5.0)	47	ND (5.0)
1,3,5-TRIMETHYLBENZENE	µg/L	530	ND (25)	ND (5.0)	0.45 J	ND (5.0)	ND (5.0)	ND (5.0)	14	2.8 J	3.9 J	1.3 J	18	ND (5.0)
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	ND (30)	ND (6.0)	8.2	ND (6.0)	1.7 J	ND (6.0)	49	ND (6.0)	12	ND (6.0)	100	ND (6.0)
Volatile Organic Compounds (SW8011)														
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.028)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.028)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.028)
Semi-Volatile Organic Compounds														
ANTHRACENE	µg/L	66	ND (0.52)	ND (0.52)	ND (0.54)	ND (0.52)	ND (0.51)	ND (0.52)	0.14 J	0.11 J	0.36 J	0.31 J	ND (0.52)	ND (0.66)
BENZO(A)ANTHRACENE	µg/L	3.9	ND (0.52)	ND (0.52)	0.69	0.13 J	ND (0.51)	ND (0.52)	ND (0.51)	ND (0.51)	ND (0.52)	ND (0.50)	ND (0.52)	ND (0.66)
BENZO(A)PYRENE	µg/L	0.2	ND (0.11)	ND (0.11)	1.6	0.34 J	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.11)	ND (0.15)
BENZO(B)FLUORANTHENE	µg/L	1.2	0.11 J	ND (0.52)	2.9	0.63	ND (0.51)	ND (0.52)	ND (0.51)	ND (0.51)	ND (0.52)	ND (0.50)	ND (0.52)	ND (0.66)
BENZO(G,H,I)PERYLENE	µg/L	0.26	ND (0.10)	ND (0.10)	1.3	0.35 J	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.13)
CHRYSENE	µg/L	1.9	ND (0.52)	ND (0.52)	2.1	0.40 J	ND (0.51)	ND (0.52)	ND (0.51)	ND (0.51)	ND (0.52)	ND (0.50)	ND (0.52)	ND (0.66)
FLUORENE	µg/L	1,900	ND (0.52)	ND (0.52)	ND (0.54)	ND (0.52)	ND (0.51)	ND (0.52)	0.92	0.78	1.2	0.87	ND (0.52)	ND (0.66)
NAPHTHALENE	µg/L	100	ND (0.52)	0.38 J	0.42 J	0.21 J	1.4	0.12 J	28	1.4	1.8	0.11 J	2.2	0.35 J
PHENANTHRENE	µg/L	1,100	ND (0.52)	ND (0.52)	1.4	0.27 J	0.18 J	ND (0.52)	0.52	0.43 J	1.6	1.5	ND (0.52)	ND (0.66)
PYRENE	µg/L	130	0.10 J	0.11 J	2.8	0.56	0.19 J	ND (0.52)	ND (0.51)	ND (0.51)	ND (0.52)	0.11 J	ND (0.52)	ND (0.66)
Metals														
CALCIUM, Total	µg/L	n/v	55,000	56,000	74,000	68,000	53,000	55,000 ^L	58,000	54,000 ^L	50,000	49,000 ^L	72,000	96,000 ^L
IRON, Total	µg/L	n/v	20,000	22,000	34,000	25,000	22,000	11,000	27,000	37,000	26,000	46,000	20,000	41,000
LEAD, Dissolved	µg/L	5	0.25 J	ND (0.52)	0.99	0.082 J	ND (0.52)	0.24 J	0.15 J	ND (0.52)	0.11 J	ND (0.52)	ND (0.52)	ND (0.52)
General Chemistry														
ALKALINITY TO pH 4.5	µg/L	n/v	130,000	110,000	91,000	100,000	130,000	120,000	150,000	130,000	110,000	100,000	160,000	160,000
ETHANE	µg/L	n/v	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
ETHENE	µg/L	n/v	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
METHANE	µg/L	n/v	4.1 J	5.8	21	10	3.8 J	3.9 J	14	40	28	27	7.9	8.6
SULFATE (AS SO4)	µg/L	n/v	250,000	260,000 IQ	350,000	370,000	200,000	230,000	320,000	240,000	250,000	280,000	190,000	280,000
TOTAL CARBON	µg/L	n/v	39,000	34,000 !	56,000	58,000 !	40,000	47,000 !	50,000	59,000 !	42,000	44,000 !	46,000	49,000 !
TOTAL INORGANIC CARBON	µg/L	n/v	37,000	32,000 !	50,000	53,000 !	38,000	46,000 !	46,000	54,000 !	40,000	42,000 !	43,000	47,000 !
TOTAL KJELDAHL NITROGEN	µg/L	n/v	ND (1,000)	590 J	1,100	570 J	ND (1,000)	ND (1,000)	570 J	ND (1,000)	ND (1,000)	660 J	ND (1,000)	750 J
TOTAL ORGANIC CARBON	µg/L	n/v	1,700	1,600	5,600	5,200	2,000	1,400	4,000	4,700	2,500	2,300	3,500	2,500

See notes on last page.

Table 5: Groundwater Analytical Results- Lower Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			S-466		S-470	
Sample Date			24-Mar-21	27-Oct-21	25-Mar-21	27-Oct-21
Sample ID			S-466-20210324	S-466_20211027	S-470-20210325	S-470_20211027
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			LANCASTER	LANCASTER	LANCASTER	LANCASTER
Laboratory Work Order			410-33879-1	410-61053-1	410-33879-1	410-61053-1
Laboratory Sample ID			410-33879-2	410-61053-3	410-33879-6	410-61053-11
Hydrostratigraphic Unit	Units	MSC-PA	lower aquifer	lower aquifer	lower aquifer	lower aquifer
Field Parameters						
DISSOLVED OXYGEN, FIELD MEASURED	mg/L	n/v	0.15	0	1.94	0.59
OXIDATION REDUCTION POTENTIAL, FIELD MEASURED	mV	n/v	-12	-49	-22	-65
pH, FIELD MEASURED	S.U.	n/v	5.62	5.83	6.13	6.65
SPECIFIC CONDUCTANCE FIELD	mS/cm	n/v	0.979	0.91	1.2	0.773
TEMPERATURE, FIELD MEASURED	deg c	n/v	18.09	20.26	15.19	15.57
TURBIDITY	NTU	n/v	12	5.3	23.9	38.9
Volatile Organic Compounds						
BENZENE	µg/L	5	18	ND (1.0)	7.0	4.3
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
ETHYLBENZENE	µg/L	700	10	ND (1.0)	ND (1.0)	ND (1.0)
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	2.0 J	0.31 J	ND (5.0)	ND (5.0)
METHYL TERTIARY BUTYL ETHER	µg/L	20	0.64 J	0.75 J	1.9	2.0
NAPHTHALENE	µg/L	100	93	-	1.6 J	-
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (50)	ND (50)	16 J	28 J
TOLUENE	µg/L	1,000	1.4	ND (1.0)	0.38 J	ND (1.0)
1,2,4-TRIMETHYLBENZENE	µg/L	530	26	1.3 J	ND (5.0)	ND (5.0)
1,3,5-TRIMETHYLBENZENE	µg/L	530	8.0	1.5 J	ND (5.0)	ND (5.0)
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	35	ND (6.0)	ND (6.0)	ND (6.0)
Volatile Organic Compounds (SW8011)						
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.028)	ND (0.029)	ND (0.029)	ND (0.029)
Semi-Volatile Organic Compounds						
ANTHRACENE	µg/L	66	0.37 J	0.21 J	ND (0.51)	ND (0.52) IQ
BENZO(A)ANTHRACENE	µg/L	3.9	ND (0.52)	ND (0.52)	ND (0.51)	ND (0.52) IQ
BENZO(A)PYRENE	µg/L	0.2	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.11) IQ
BENZO(B)FLUORANTHENE	µg/L	1.2	ND (0.52)	ND (0.52)	ND (0.51)	ND (0.52) IQ
BENZO(G,H,I)PERYLENE	µg/L	0.26	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10) IQ
CHRYSENE	µg/L	1.9	ND (0.52)	ND (0.52)	ND (0.51)	ND (0.52) IQ
FLUORENE	µg/L	1,900	1.9	0.96	ND (0.51)	ND (0.52) IQ
NAPHTHALENE	µg/L	100	57	1.9	1.5	ND (0.52) IQ
PHENANTHRENE	µg/L	1,100	1.6	1.4	ND (0.51)	0.11 J IQ
PYRENE	µg/L	130	ND (0.52)	ND (0.52)	ND (0.51)	0.14 J IQ
Metals						
CALCIUM, Total	µg/L	n/v	56,000	50,000	56,000	51,000
IRON, Total	µg/L	n/v	31,000	28,000	64,000	78,000
LEAD, Dissolved	µg/L	5	ND (0.52)	ND (0.52)	ND (0.52)	ND (0.52)
General Chemistry						
ALKALINITY TO pH 4.5	µg/L	n/v	140,000	120,000	160,000	73,000
ETHANE	µg/L	n/v	ND (5.0)	ND (5.0)	1.3 J	ND (5.0)
ETHENE	µg/L	n/v	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
METHANE	µg/L	n/v	14	11	32	58
SULFATE (AS SO4)	µg/L	n/v	230,000	240,000 IQ	300,000	290,000 IQ
TOTAL CARBON	µg/L	n/v	44,000	39,000 !	69,000	62,000 !
TOTAL INORGANIC CARBON	µg/L	n/v	41,000	37,000 !	54,000	52,000 !
TOTAL KJELDAHL NITROGEN	µg/L	n/v	ND (1,000)	ND (1,000)	650 J	620 J
TOTAL ORGANIC CARBON	µg/L	n/v	3,200	1,800	15,000	10,000

See notes on last page.

Table 5: Groundwater Analytical Results- Lower Aquifer (2021)
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Notes:

MSC-PA	Pennsylvania Department of Environmental Protection
	Medium-Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Groundwater - Used Aquifer, Non Residential, TDS ≤ 2500
6.5	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
ND (0.50)	Indicates the laboratory method detection limit (if available) was above the applicable standard. The reporting limit is shown if the laboratory method detection limit is not available.
ND (0.03)	Indicates concentration not detected above the laboratory reporting limit (in parentheses) except when the reporting limit is greater than the standard in which case the method detection limit is listed in parentheses.
n/v	No standard/guideline value
-	Parameter not analyzed / not available
!	Laboratory is not accredited for this parameter.
^L	Reporting Limit Check Standard is outside acceptance limits, high biased
B	Indicates the analyte is detected in the associated blank as well as in the sample.
E	Indicates compounds whose concentrations exceed the calibration range of the instrument.
IQ	Indeterminate qualifier. Refer to associated laboratory report.
J	Indicates an estimated value
mg/L	Milligrams per liter
mV	Millivolts
S.U.	Standard Units
mS/cm	Millisiemens per centimeter
deg c	Degrees Celcius
NTU	Nephelometric Turbidity Units
µg/L	Micrograms per liter

Table 6: Groundwater Analytical Results Summary - Sucralose
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location		MW-36	MW-37	MW-38	MW-44	OW-20	RW-26	S-75	S-394	S-395	S-456	S-458	S-460	S-461	S-463	S-464	S-465	S-466	S-469	S-472	TW-5
Sample Date		17-May-21	14-May-21	22-Apr-21	23-Apr-21	23-Apr-21	22-Apr-21	17-May-21	23-Apr-21	22-Apr-21	17-May-21	14-May-21	17-May-21	17-May-21	14-May-21	18-May-21	19-May-21	18-May-21	19-May-21	14-May-21	17-May-21
Sample ID		MW-36 MW-36_20210517	MW-37 MW-37_20210514	MW-38 MW-38_20210422	MW-44 MW-44_20210423	OW-20 OW-20_202104223	RW-26 RW-26_20210422	S-75 S-75_20210517	S-394 S-394_20210423	S-395 S-395_20210422	S-456 S-456_20210517	S-458 S-458_20210514	S-460 S-460_20210517	S-461 S-461_20210517	S-463 S-463_20210514	S-464 S-464_20210518	S-465 S-465_20210519	S-466 S-466_20210518	S-469 S-469_20210519	S-472 S-472_20210514	TW-5 TW-5_20210517
Sampling Company		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory		EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL	EARL
Laboratory Work Order		M2105F	M2105F	M2105B	M2105B	M2105B	M2105B	M2105F	M2105B	M2105B	M2105F	M2105F	M2105F	M2105F	M2105F	M2105F	M2105F	M2105F	M2105F	M2105F	M2105F
Laboratory Sample ID	Units	W19491	W19489	W19433	W19435	W19437	W19432	W19494	W19436	W19434	W19496	W19488	W19495	W19493	W19490	W19497	W19500	W19498	W19499	W19487	W19492
General Chemistry																					
SUCRALOSE	ng/L	ND (145)	ND (145)	90.0 J	325 J	ND (3,630)	66.9 J	172	ND (726)	117 J	833	84.1	43.2 J	ND (145)	ND (363)	ND (145)	ND (145)	ND (145)	150	129	ND (145)

Notes:

ND (0.03)	Analyte was not detected at a concentration greater than the laboratory reporting limit.
J	Indicates an estimated value
ng/L	Nanograms per liter
EARL	Environmental Analysis Research Laboratory

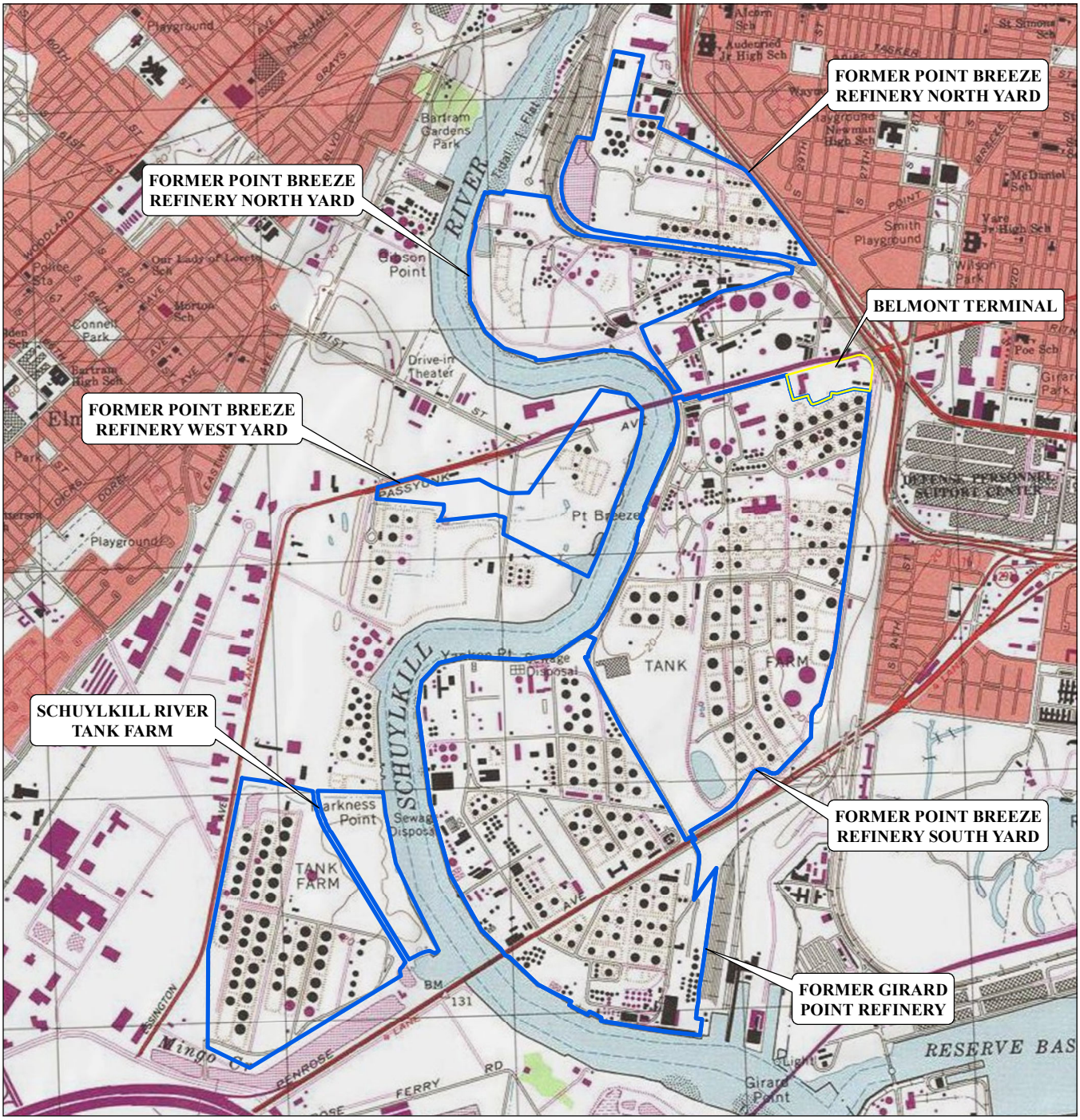
Table 7: Groundwater Analytical Results – Bacterial Biomass
Belmont Terminal
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

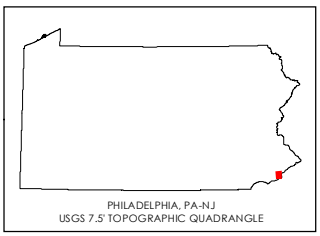
Sample Location		S-453	S-456	S-460	S-462	S-462	S-463
Sample Date		10-Feb-21	10-Feb-21	10-Feb-21	10-Feb-21	10-Feb-21	10-Feb-21
		S-453_CD	S-452_CD	S-460_CD	S-462_CD	S-462_CD	S-463_CD
Sample ID		BT-11A-W-29-20210210	BT-02A-W-38-20210210	BT-14-W-65-20210210	BT-17A-W-83-20210210	BT-17B-W-43-20210210	BT-18A-W-41-20210210
Sample Depth		29 ft	38 ft	65 ft	83 ft	43 ft	41 ft
Sampling Company		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory		MICROBAC	MICROBAC	MICROBAC	MICROBAC	MICROBAC	MICROBAC
Laboratory Work Order		Z1B0085	Z1B0090	Z1B0090	Z1B0085	Z1B0085	Z1B0090
Laboratory Sample ID	Units	Z1B0085-01	Z1B0090-02	Z1B0090-03	Z1B0085-02	Z1B0085-03	Z1B0090-01
QPCR							
Estimated Bacterial Biomass	gc/L	2,500,000,000	6,200,000	6,700,000,000	3,400,000,000	4,700,000,000	1,500,000,000

Notes:

QPCR	quantitative polymerase chain reaction
gc/L	gene copies per liter
ft	feet

FIGURES





Legend

- BELMONT TERMINAL
- FORMER PHILADELPHIA REFINERY

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N

Stantec

EVERGREEN

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Sources: Stantec, USGS
3. Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

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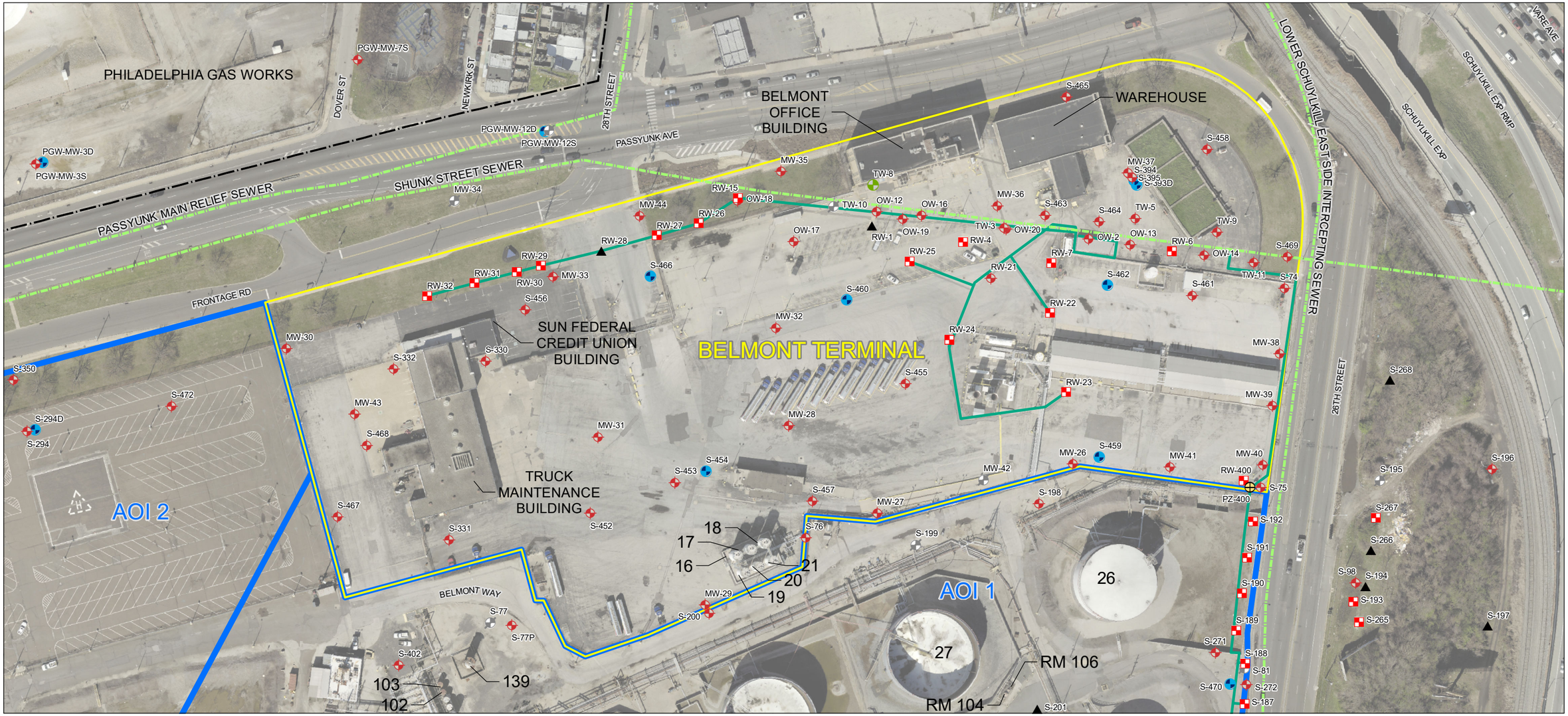
Project Location
City of Philadelphia, Philadelphia County, Pennsylvania

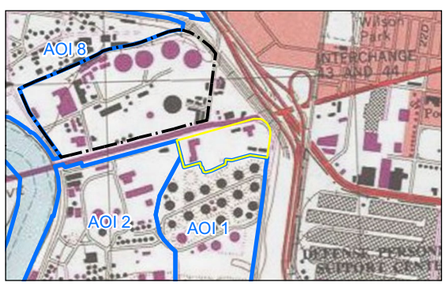
213403364
Prepared by GWC on 5/31/2022
Technical Review by JLM on 6/20/2022
Independent Review by AJW on 6/13/2022

Client/Project
PHILADELPHIA REFINERY OPERATIONS, A SERIES OF EVERGREEN RESOURCES GROUP, LLC
FORMER PHILADELPHIA REFINERY
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Figure No.
1

Title
BELMONT TERMINAL SITE LOCATION MAP





LEGEND

- MONITORING WELL
- RECOVERY WELL
- LOWER AQUIFER MONITORING WELL
- DAMAGED MONITORING WELL
- DESTROYED MONITORING WELL
- UNABLE TO ACCESS OR UNABLE TO LOCATE WELL
- PIEZOMETER
- APPROXIMATE LOCATION OF PHILADELPHIA WATER DEPARTMENT SEWER
- REMEDIATION SYSTEM AND PIPING
- BELMONT TERMINAL PROPERTY BOUNDARY
- FORMER PHILADELPHIA REFINERY
- PHILADELPHIA GAS WORKS PROPERTY BOUNDARY

0 120 240 Feet

1:1,440 (At original document size of 11x17)

N

Stantec

EVERGREEN

Project Location 213403364

City of Philadelphia, Pennsylvania

Prepared by GWC on 5/31/2022
Technical Review by JLM on 6/21/2022
Independent Review by AJB on 6/21/2022

Client/Project
PHILADELPHIA REFINERY OPERATIONS, A SERIES OF EVERGREEN RESOURCES GROUP, LLC
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Figure No.
2

Title
BELMONT TERMINAL SITE PLAN

Notes
1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Sources:
3. Copyright:© 2013 National Geographic Society, i-cubed
PEMA Philadelphia County Mosaic 2020 Aerial Imagery

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APPENDIX A

Aestus Technical Memo

FINAL TECHNICAL MEMORANDUM

AESTUS GEOTRAX CSM+™
ULTRA-HIGH RESOLUTION SITE CHARACTERIZATION AND CONCEPTUAL SITE MODEL UPDATE PROCESS

EVERGREEN BELMONT TERMINAL SITE
PHILADELPHIA, PENNSYLVANIA, USA

May 20, 2022

Aestus Project No. 19-113-50

Prepared for:

Stantec

Stantec Consulting Services
1060 Andrew Drive, Suite 140
West Chester, PA 19380

Prepared by:
Aestus, LLC
(888) GEO-TRAX

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1.0 PROJECT OVERVIEW

Aestus, LLC (Aestus) performed its GeoTrax CSM+™ conceptual site model (CSM) update process for Stantec at the Belmont Terminal Site located within the former Philadelphia Refinery in Philadelphia, Pennsylvania. Inset Graphic 1 below summarizes Aestus' GeoTrax CSM+™ Process employed to complete the project. Please read the remainder of the report for more detailed discussion, conclusions, and supporting data.



Inset Graphic 1 – Aestus' GeoTrax CSM+™ 5-Step Process

1.1 Project Objectives

In the context of updating the CSM for the Belmont Terminal Site the abovementioned GeoTrax CSM+™ process was applied to accomplish the following project objectives as requested by Stantec:

1. Determine extent of contamination related to petroleum hydrocarbons released to the subsurface from a century of product storage, nearby blending, and distribution
2. Map geological and geotechnical engineering data, including:
    a. Stratigraphy with regard to aquitard (Middle Clay) extent
    b. Potential water-bearing unit connectivity
    c. Extent of bioactive zones

Aestus helped Stantec achieve the above projects goals as discussed in Section 5.0 of this report.

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1.2 Summary of Scope of Work and Results

Review and integration of historical site data is Step 1 of Aestus' process shown in Inset Graphic 1 above. Aestus requested, and received, from Stantec historical site characterization data as outlined in Section 2 below. Aestus integrated these data into our 3D visualization model to further capitalize on the investment of collecting these historical data for CSM updates and for calibration of the GeoTrax Survey™ electrical images.

Field data acquisition is Step 2 of Aestus' process shown in Inset Graphic 1 above. Aestus acquired twenty-three (23) proprietary GeoTrax Survey™ electrical resistivity 2D subsurface images (PHL-01 to PHL-23) January through March 2020. All images undergo strict QA/QC review during and after acquisition. During this review, the image for survey transect line PHL-10 was found to be of insufficient quality presumably due to a considerable number of buried metallic utility lines in various orientations along the image plane. Therefore, PHL-10 was not used in subsequent interpretation nor is it included in the Figures. The remaining image data (see Figures) were of good quality and their locations are shown on Figure PV-1.

During Step 3 of Aestus' GeoTrax CSM+ process, Aestus integrated the GeoTrax Survey™ electrical resistivity imaging data with available historical data. Aestus then interpreted these combined multiple lines of evidence to develop an updated conceptual site model (CSM) and identify areas of uncertainty to be investigated with the targeted confirmation drilling. After completing this process, the updated CSM hypotheses and targeted confirmation drilling (CD) locations were presented to Stantec and Evergreen in August and September 2020.

The primary objectives of the confirmation drilling (CD) program (Step 4 of Aestus' process shown in Inset Graphic 1 above) were to assist in characterization of the more anomalous zones in the GeoTrax Survey™ data to aid in data calibration and the completion of the above project objectives. Stantec performed the CD program during December 2020 through March 2021. Of the 20 CD targets, all 20 were over the applicable regulatory standard for benzene and 7 were over standard for MTBE. These results are discussed further in Section 5.

The last step (Step 5) of Aestus' process involved integration of the newly obtained CD data and sample results from pre-existing wells with the electrical resistivity imaging and other historical data sets. Aestus re-interpreted the data sets and presented Stantec and Evergreen with an updated CSM in April 2022.

The abovementioned data sets resulting from Aestus' work are summarized in Section 4.0 of this report, and an explanation of the conclusions from the collaborative CSM update process are discussed in Section 5.0. Recommendations relative to how to utilize the data and conclusions included with this report are provided in Section 6.0. Aestus' GeoTrax CSM+™ update process is described in more detail in Appendix A.

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2.0 HISTORICAL DATA SUMMARY

Historical site data collected and generated by others prior to Aestus' involvement on this project includes but may not be limited to the following:

- Boring and monitoring log data
- Modeled geologic surfaces
- Lithologic cross sections
- Impact plume maps
- Modeled aquifer surfaces
- Historical aerial photographs

Aestus incorporated the following data sets in its Step 1 historical data integration process, as shown on the 2D Figures and 3D model included with this report:

- Geology from boring logs
- Geologic models for the following lithologic surfaces:
    - Bottom of Alluvium
    - Top of Middle Clay
    - Bottom of Middle Clay
    - Top of Bedrock
- Records of staining, odor, and NAPL from boring logs
- Analytical soil data and PID measurements during drilling
- Groundwater analytical data
- Groundwater elevation and NAPL thickness measurements
- Buried utility line locations including nearby sewers
- Nearby site features (buildings, former sources, tank farm, etc.)

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3.0 PROJECT SCHEDULE

This section provides summary of overall project schedule milestones for work performed for the Belmont Terminal Site by Aestus and Stantec during the GeoTrax CSM+™ process:

January 28 – March 2, 2020:	Aestus performed GeoTrax Survey™ field data acquisition
March – September 2020:	Historical data integration and interpretation performed by Aestus through collaboration with Stantec
September 9, 2020:	Aestus presented Interim Report stage updated CSM and suggested confirmation drilling locations to Stantec and project team
December 2020 – March 2021:	Stantec performed confirmation drilling (20 total confirmation borings)
February 11, 2022:	Aestus received complete confirmation drilling results from Stantec
February – April 2022:	Aestus integrated confirmation drilling results and calibrated the electrical data to provide an updated CSM through collaboration with Stantec
April 29, 2022:	Aestus presented Final Report stage updated CSM conclusions to Stantec and project team
May 20, 2022:	Aestus is submitting this Final Technical Memorandum

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4.0 RESULTING DATA SETS

This section summarizes the data sets collected by Aestus and Stantec during the collaborative 5-step GeoTrax CSM+™ process. Conclusions based on these data are provided in Section 5.0 of this report.

4.1 GeoTrax Surveys™ and Metadata, Elevation Slices, & 3D Visualization Model

Aestus used subsurface imaging technology to scan the earth's subsurface (i.e., ~54 to ~144 feet below ground surface), at the locations selected by the project team shown on Figure PV-1. A total of twenty-two (22) GeoTrax Survey™ images (PHL-01 through PHL-23) were subsequently generated for the site as shown in Figures 1 through 23, respectively. As noted in Section 1.1, the image for survey transect line PHL-10 was found to be of insufficient quality, presumably due to a considerable number of buried metallic utility lines in various orientations along the image plane. Therefore, PHL-10 was not used in subsequent interpretation nor is it included in the Figure set.

Figure PV-1 shows the location and orientation (i.e., the green ends of the survey lines represent End Electrode 1, and the red ends represent End Electrode 56) of the surveys performed at the Belmont Terminal Site. The final electrode spacing, resulting survey line length and imaging depth at the Belmont Terminal Site are shown in the legend on Figure PV-1 and are also listed in Table 1. GeoTrax Survey™ end electrode land survey coordinates are also listed on Table 1.

Appendix B contains Aestus' field notes for each survey line, which provide metadata about the line location, proximate site features, and photographs along the line. Representative site photographs taken during field work are provided on Figure 24. XYZ geospatial data are also collected for the endpoints and every few electrodes along each survey line. Appendix C contains data output files for each image in XYZR data format (i.e., where XYZ is geospatial data, and R is resistivity data at a defined point in space).

Aestus employed its GeoTrax Viz™ process to effectively integrate and view available data (i.e., geophysical and historical data) together on the survey images to assist with interpreting electrical resistivity image data relative to updating the CSM. These integrated data sets for survey images PHL-01 through PHL-23 are shown in a site-specific color contouring scheme, with superimposed historical data in Figures 1 through 23, respectively. Details on the development of the site-specific color contouring scheme can be found in Appendix A, Section E.4.

The abovementioned imagery and site data have also been integrated into Aestus' 3D visualization model provided with this report for the client's use (see Appendix D which contains the 3D model electronic files and free viewer software).

Aestus developed its "XYZR" software to interpolate between the vertical GeoTrax Survey™ 2D imagery in plan view "slices" at specific elevations. Some of these elevation slices are shown in various graphical data outputs contained in this report and in the 3D model (Appendix D).

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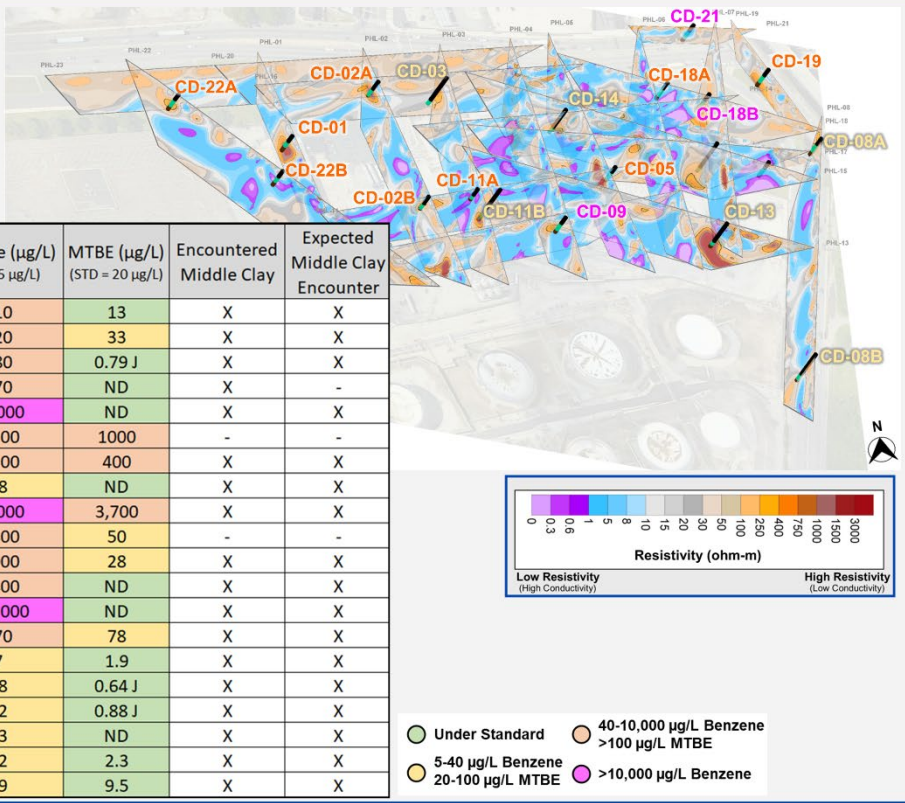
4.2 Confirmation Drilling and Sampling Data Summary

The interpretation of the GeoTrax Survey™ electrical resistivity imaging data acquired by Aestus is focused on understanding the meaning of "anomalous" resistivity geometric patterns and the resistivity values (i.e., more or less resistive than background). For this project, calibration of electrical image data to site geochemical conditions was conducted using the integration of pre-existing site-specific data as well as the results from the confirmation drilling program performed by Stantec.

The 20 confirmation drilling (CD) locations (see Inset Graphic 2 below and Figure PV-3) were targeted base on the anomalous zones in the electrical resistivity and integrated historical drilling data and were identified as part of Aestus' Interim Report submitted previously. The tabulated data shown in Inset Graphic 2 below, summarizes some of the key results of the CD program that will be discussed further in the following conclusions section of this report.



As-Built CD	Shallow/Deep Screen (</> 40 ft BGS)	Benzene (µg/L) (STD = 5 µg/L)	MTBE (µg/L) (STD = 20 µg/L)	Encountered Middle Clay	Expected Middle Clay Encounter
CD-01/S468	Shallow	410	13	X	X
CD-02A/S-456	Shallow	220	33	X	X
CD-22A/S-472	Shallow	180	0.79 J	X	X
CD-19/S-458	Shallow	270	ND	X	-
CD-21/S-465	Shallow	30,000	ND	X	X
CD-02B/S-452	Shallow	3,200	1000	-	-
CD-05/S-455	Shallow	6,300	400	X	X
CD-08A/S-469	Shallow	28	ND	X	X
CD-09/S-457	Shallow	18,000	3,700	X	X
CD-11A/SB-453	Shallow	3,800	50	-	-
CD-17B/S-461	Shallow	1,000	28	X	X
CD-18A/S-463	Shallow	8,400	ND	X	X
CD-18B/S-464	Shallow	120,000	ND	X	X
CD-22B/S-467	Shallow	370	78	X	X
CD-08B/S-470	Deep	7	1.9	X	X
CD-03/S-466	Deep	18	0.64 J	X	X
CD-11B/S-454	Deep	12	0.88 J	X	X
CD-13/S-459	Deep	13	ND	X	X
CD-14/S-460	Deep	22	2.3	X	X
CD-17A/S-462	Deep	39	9.5	X	X

Inset Graphic 2 – 3D View of GeoTrax Survey™ Imagery and Summary of Confirmation Drilling/Sampling Results

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5.0 CONCLUSIONS AND CONCEPTUAL SITE MODEL (CSM) UPDATES

Aestus performed its 5-Step GeoTrax CSM+™ process collaboratively with Stantec's project team to successfully develop a high data density, robust, updated CSM for the Belmont Terminal Site. Integration of historical and confirmation drilling data with GeoTrax Survey™ image data in 2D (report Figures) and 3D visualization model (Appendix D) allowed robust data interpretation using multiple lines of evidence in the correct geospatial context. Data interpretation and conclusions relative to project objectives, are discussed in the entirety of Section 5.0 of this report in the following subsections:

1. Updated Geology CSM
2. Updated Hydrogeology CSM
3. Updated Bioactivity CSM
4. Updated Contaminant CSM
5. Interpreted Site Zones (for Remedial Strategy & Targeting)
6. Summary of Conclusions Relative to Overall Project Objectives

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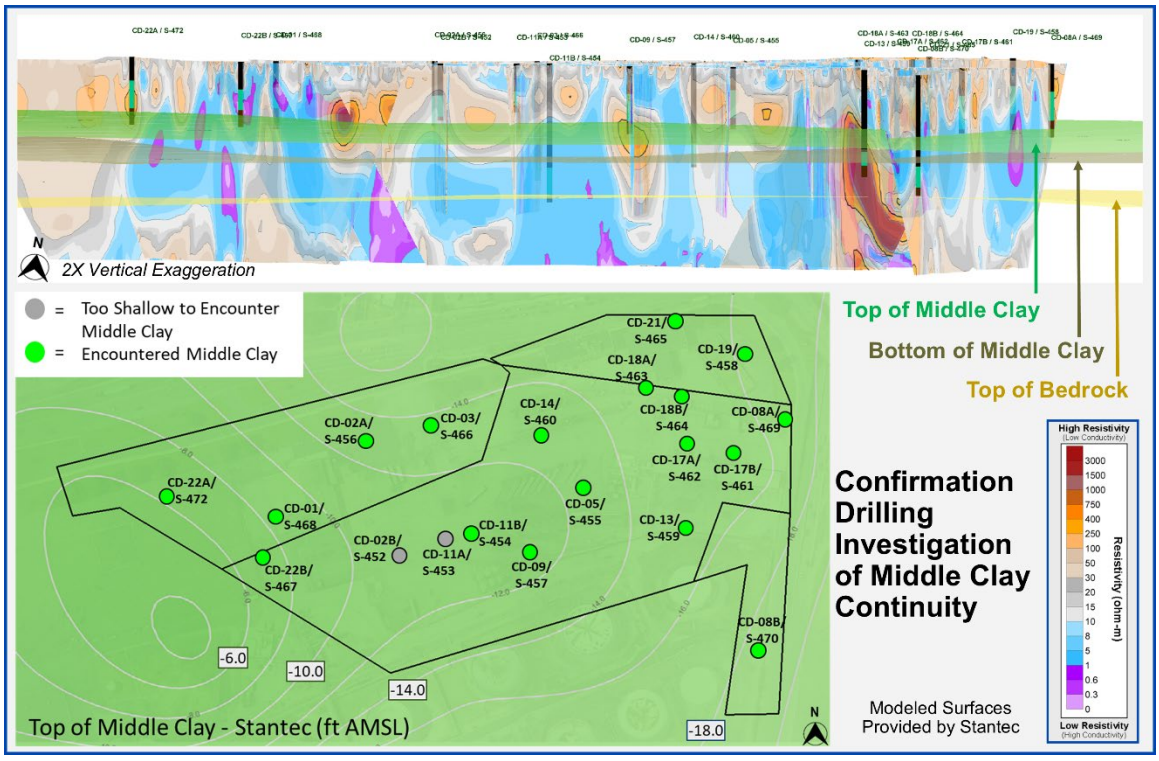
5.1 Updated Geology CSM

The following is a summary of Aestus' understanding of the historical site geologic CSM of relevance for the investigated area:

- Ground surface to ~ 45 feet BGS: Fill, alluvium, and sands
- ~45 to ~65 feet BGS: Middle Clay Unit
- ~65 to ~100 feet BGS: Sand/gravel layer
- ~100 feet BGS: Bedrock encountered

Stantec's modeled middle clay and bedrock surfaces were integrated in Aestus' 3D visualization model and the 2D figures and align with electrical resistivity breaks in the GeoTrax Survey™ data (see Inset Graphic 3 below). In some areas of the subsurface, electrical anomalies vertically cross the clay layer (e.g., on PHL-08, the resistive anomaly located laterally ~560 feet from Electrode 1 targeted by CD-08B as shown on Figure 8.3). These vertical electrical anomalies were investigated in the confirmation drilling program as potential zones of middle clay discontinuity.

Eighteen of the twenty CDs confirmed the presence of the middle clay unit, see Inset Graphic 3 below. The other two CD locations (CD-02B/S-452 and CD-11A/S-453) were not drilled to the expected depth of the middle clay unit and, as anticipated, did not encounter the unit. In conclusion, the integrated GeoTrax Survey™ electrical resistivity and boring log data support the presence of a continuous middle clay unit across the area of imaging.



Inset Graphic 3 – Confirming Continuity of Middle Clay Layer

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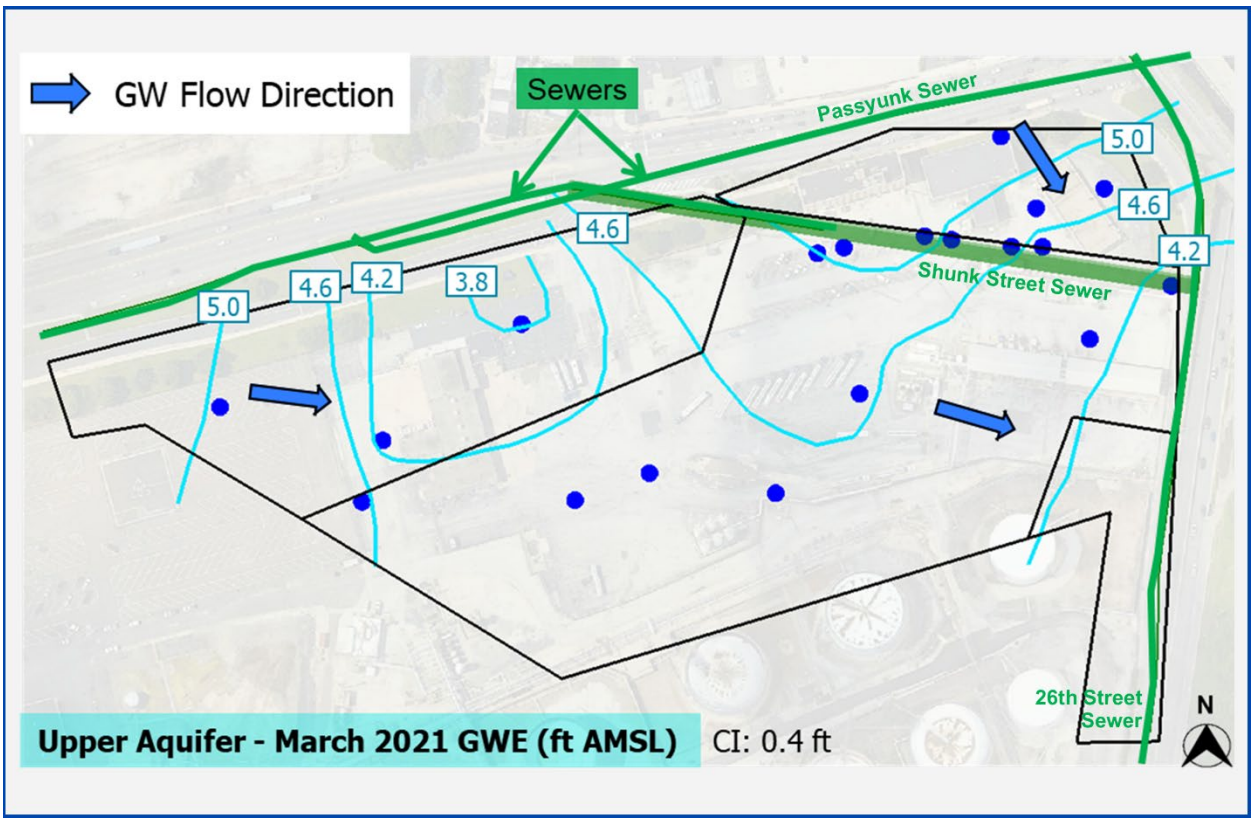
5.2 Updated Hydrogeology CSM

Groundwater flow in the upper aquifer at the Belmont Terminal Site is complex due to the influence of several factors including a flat coastal plain setting with tidal fluctuation, nearby sewer lines, and remediation systems. At the time the CDs were gauged for fluid levels in March 2021, several notable trends were present in the horizontal groundwater gradient (see Inset Graphic 4 below):

- On-site flow from the northeast
- On-site flow from the northwest
- The sewers appeared to be influencing the groundwater elevation

The middle clay unit acts as a geologic control on groundwater flow and appears to function as a semi-aquitard impeding vertical communication despite the presence of a downward vertical gradient based on site monitoring well data. Additional evidence for limited vertical communication across the site is discussed in more detail in Sections 5.3 and 5.4.



Inset Graphic 4 – Complex Upper Aquifer Horizontal Groundwater Gradient

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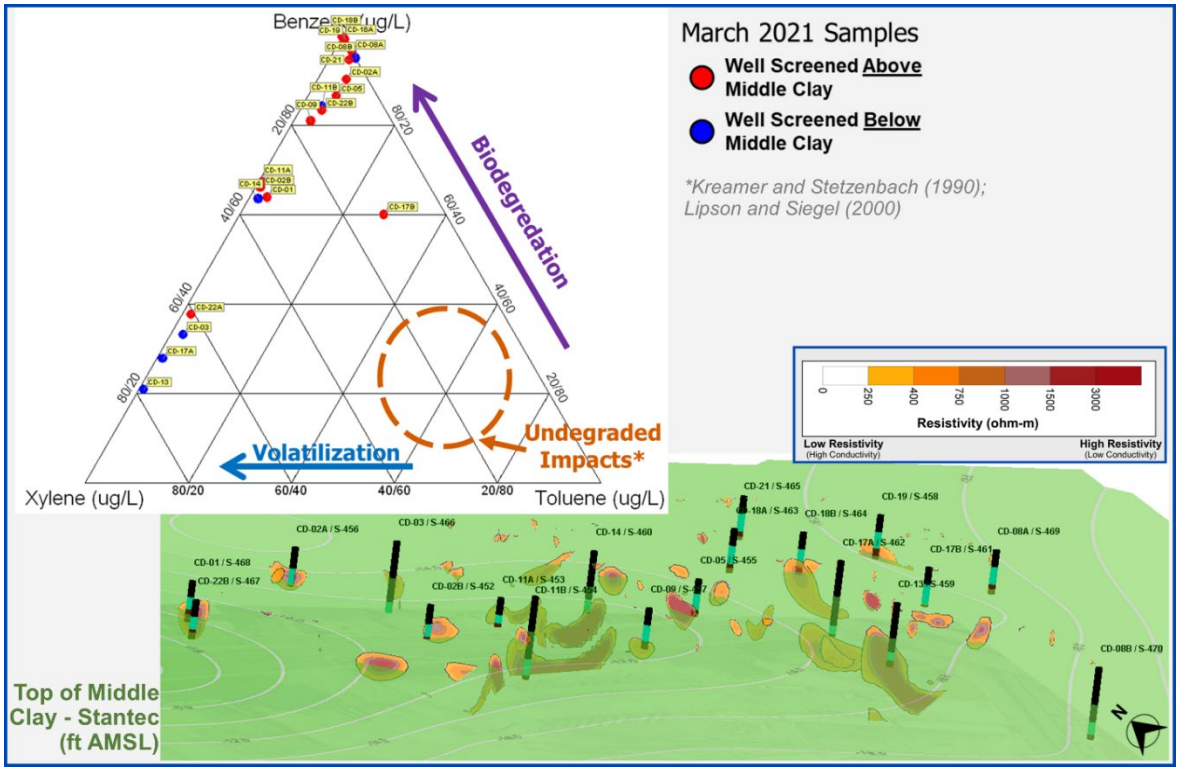
5.3 Updated Bioactivity CSM

Evidence of contaminant biodegradation exists across the Belmont Terminal Site. Overall, the Belmont Terminal site is very electrically conductive with a median value of 16 ohmmeters. From Aestus' experience on 200+ sites, electrically conductive zones measuring less than 10 ohmmeters (blue and purple-colored zones on Figures) is typically indicative of bioactivity. More electrically resistive signatures (i.e., greater than 250 ohmmeters shown as orange and burgundy-colored zones on Figures) are typically indicative of gaseous phase zones resulting from bioactivity, very dry/coarse geology, or undegraded NAPL-related impacts. The levels of electrical conductivity present on this site were expected by Aestus given that it is an older, weathered, refinery site with limited undegraded impacts.

In addition, Inset Graphic 5 below contains a ternary diagram showing relative concentrations of benzene, toluene, and xylenes (i.e., from March 2021 CD sampling event) helps degradation mechanisms occurring at various depths:

- Shallow (i.e., screened above the Middle Clay, 0 to 40 feet BGS; colored as red dots in the ternary diagram)
- Deep (i.e., screened below the Middle Clay, 40 feet BGS and below; colored as blue dots in the ternary diagram)

The groundwater samples from the CD program did not contain any undegraded signatures. In addition, these data indicate that volatilization of contaminants tends to be more prevalent below the middle clay and biodegradation of contaminants appears to be most significant above the middle clay.



Inset Graphic 5 – Ternary Evaluation of Contaminant Degradation and Spatial Distribution of Electrically Resistive Zones

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The site appears to be electrically divided with the majority of electrical resistors > 250 ohm-meters (dark orange and burgundy-colored zones in Figures) appearing below the middle clay surface, see Inset Graphic 5 above. As stated above, electrical resistors of this value are typically indicative of the presence of gases in the subsurface, but the wells screened below the middle clay had relatively low methane detects, see Inset Table 1 below, and limited impacts (see Section 5.4 for further discussion on impacts). A quick screening of the deeper-screened well heads for other gases in May 2022 revealed CO_2 concentrations as high as 18,700 ppm (in well CD-14/S-460), indicating the strong electrical resistors at depth are likely due to build-up of CO_2 that is trapped beneath the middle clay.

Furthermore, concentrations in groundwater of several ions and gases demonstrate a distinct geochemical difference across the middle clay. A subset of these is detailed in Inset Table 1 below. The highest concentrations of methane and nitrogen were found to be present in the wells screened above the upper clay, indicating methanogenesis appears to be ongoing in the shallow subsurface (< 40 ft BGS). Wells screened below the middle clay, however, had the highest sulfate concentrations and limited methane production. The presence of CO_2 in those well heads could be an additional indicator of a different degradation process occurring at depth.

*All samples are from Mar. 2021 CD Sampling Event. Averages rounded to two significant figures.	**Methane (µg/L)**	**Nitrogen (µg/L)**	**Sulfate (µg/L)**
Average Concentration **Above Middle Clay***	9,400	2,600	42,000
Average Concentration **Below Middle Clay***	17	200	250,000

Inset Table 1 – Select Biogeochemistry Results Above and Below the Middle Clay

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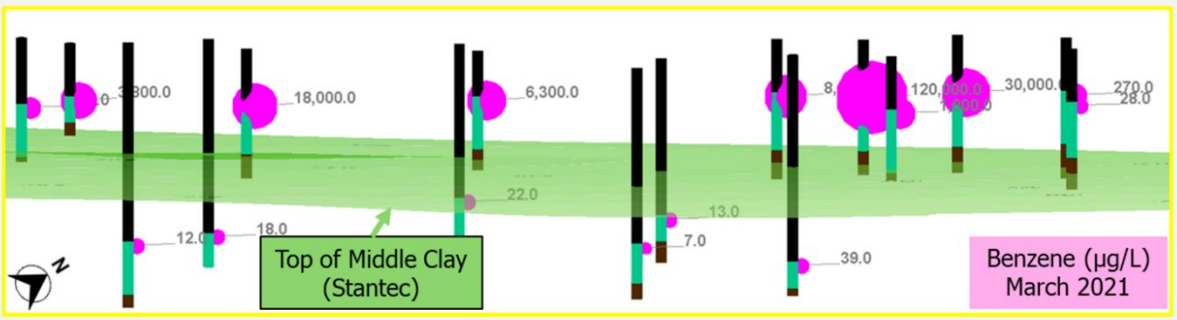
5.4 Updated Contaminant CSM

This section discusses integrated GeoTrax Survey™ imagery and targeted confirmation drilling data relative to updating the contaminant CSM including identifying vertical and horizontal extent of impacts and how the impact CSM is influenced by site geology/hydrogeology factors discussed in the previous sections.

5.4.1 Vertical Extent of Impacted Zones

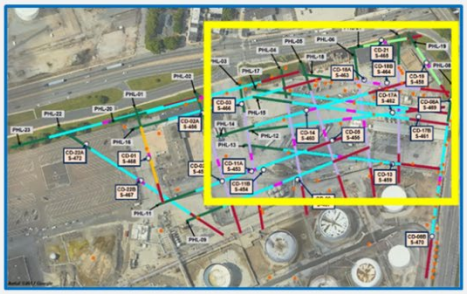
The vertical extent of impacts is influenced heavily by the middle clay unit. Similar to the apparent partitioning of upper and lower microbiomes, contaminant concentrations are distinct above and below the middle clay, note the difference in benzene concentrations in Inset Graphic 6 below. In general, impacts above the middle clay are much more prevalent than below the middle clay: no MTBE concentrations above regulatory standard were detected below the middle clay while benzene concentrations were an order of magnitude less than concentrations above the middle clay, see the table in Inset Graphic 6. In addition, all of the maximum PID readings from the CD program occurred above the middle clay and no signs of free product were found below the middle clay.

The electrical resistivity anomalies that were of potential concern extending through or below the middle clay were investigated and the data suggest there are not significant contaminants of concern below the middle clay or discontinuities of concern in the middle clay unit. In conclusion, even though the benzene concentrations are above standard below the middle clay, the continuity of the middle clay unit coupled with how minimal the deeper impacts are (when compared with the concentrations above the middle clay) indicate that focusing remediation efforts above the middle clay would be effective.



	Benzene (µg/L)	MTBE (µg/L)
Max **Above** Middle Clay	120,000	3,700
Max **Below** Middle Clay	39	9.5

Benzene Regulatory Standard = 5 µg/L
MTBE Regulatory Standard = 20 µg/L
No regulatory standard for methane
Values from Mar. 2021 Sampling Event



Inset Graphic 6 – Vertical Partitioning of Contaminant Concentrations

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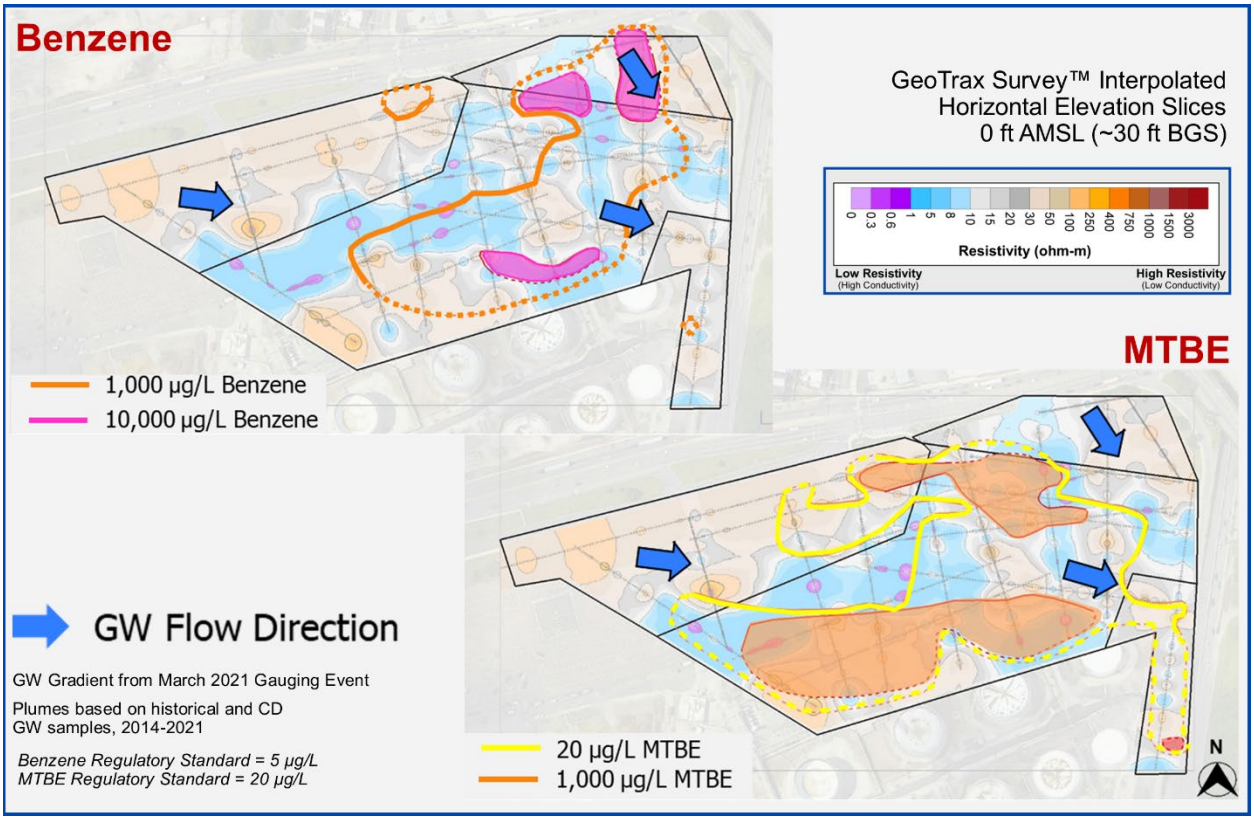
5.4.2 Horizontal Extent of Impacted Zones

Aestus understands that the Belmont Terminal site has historically had free product in wells with thicknesses up to 20 feet. The greatest NAPL thicknesses appeared to be focused along the Shunk Street sewer and the product lines (a known source); locations shown in Figure PV-2 and Inset Graphic 7 below. As of the date of this report, Aestus is not aware of any free product currently existing in the historical and CD monitoring wells based on recent 2021 gauging data

Regarding dissolved phase impacts, benzene concentrations over regulatory standard (5 µg/L) extend across the imaging domain. The distribution of the higher concentrations of benzene (i.e., the orange contour line representing > 1,000 µg/L) and MTBE over regulatory standards (i.e., the yellow MTBE contour line representing > 20 µg/L) appear to be heavily influenced by the site groundwater flow as shown in Inset Graphic 7 below.



Inset Graphic 7 – Lateral Extent of Impacts

The highest concentrations of benzene (i.e., pink-colored zone representing > 10,000 µg/L) and MTBE (orange-colored zones representing > 1,000 µg/L) are located around the historic pipeline (known historic source in the southern part of the Central Site Zone) and the Shunk Street sewer along the northeast and central zone boundary.

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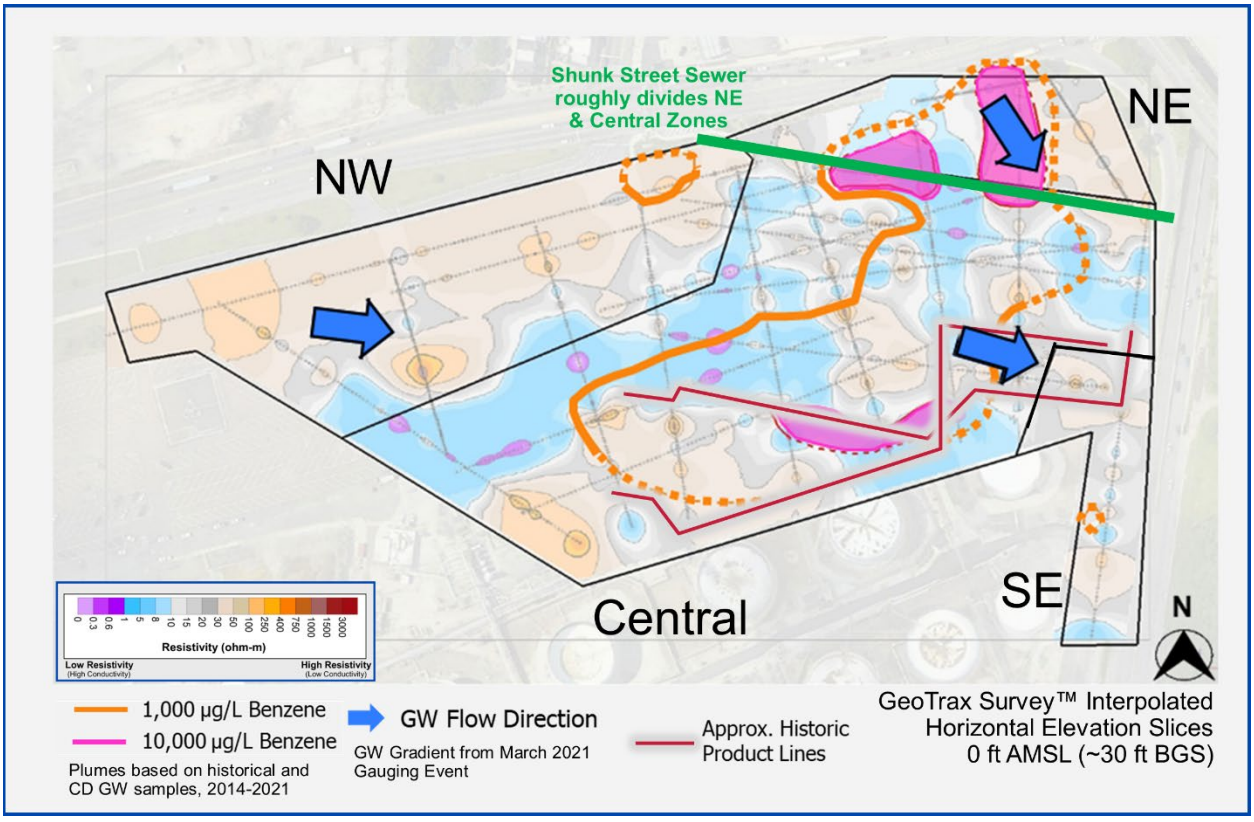
5.5 Interpreted Site Zones (for Remedial Strategy & Targeting)

Integrated GeoTrax Survey™ electrical resistivity and well hydrogeochemistry data revealed four distinct zones across the site that Aestus characterized as follows (see Inset Graphic 8 below):

- Northeast Zone: Intermediate electrical resistivity values with higher benzene concentrations and no MTBE
- Northwest Zone: Electrically resistive with less-weathered impacts
- Central Zone: Variable electrical resistivity values and weathered refinery impacts; historic product lines were located across the southern section of this zone and 2019 free product was present only in this zone
- Southeast Zone: Limited data available but currently lower refinery impacts than rest of site

Dividing the site into different zones is helpful for remedial strategy considerations. For example, Aestus understands Stantec has collected other lines of evidence which indicate some percentage of petroleum compounds found on site may originate from one or more off-site sources (e.g., manufactured gas plant site located immediately upgradient and proximal to the site's northwest zone which could contribute to this zone's distinct characteristics).



Inset Graphic 8 – Interpreted Site Zones

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5.6 Summary of Conclusions Relative to Overall Project Objectives

The project objectives discussed in Section 1.1 of this report were achieved, and interpretation of the updated CSM resulted in the following conclusions:

- ✓ Site was delineated into four electrically and geochemically distinct zones (i.e., Northeast, Northwest, Central, and Southeast) to assist with remedial strategy and targeting (see Section 5.5 above)
- ✓ Stratigraphy mapping was further refined regarding aquitard (i.e., middle clay) extent and potential water-bearing unit connectivity; the middle clay unit was confirmed to be continuous across the site and vertical communication across the middle clay unit appears to be limited.
- ✓ Bioactivity was assessed across the site using GeoTrax Survey™ data and groundwater chemistry analysis as markers for degradation; the middle clay unit functions as a microbiome partition with methanogenesis occurring above the middle clay and CO_2 production (and other processes) likely occurring below the middle clay layer
- ✓ Vertical extent of NAPL related impacts appear to exist predominately above the middle clay unit with no evidence of free product below the middle clay; however, some benzene impacts over regulatory standards exist below the middle clay unit
- ✓ Horizontal extent of NAPL related impacts appear to be controlled by the variable groundwater gradient as well as potential offsite impacts migrating onto the site and influence from sewers relative to the distribution of the highest benzene and MTBE concentrations; specifically:
    - MTBE is largely constrained within the mapped Central Zone.
    - Benzene is of greatest concern in the Northeast Zone, along the Shunk Street Sewer, and in the southern portion of the Central Zone.
    - The benzene plume above regulatory standards (> 5 µg/L) extends across Aestus imaging domain including at the edges which indicates that horizontal extent is not fully bounded relative to aqueous phase impacts

This resulting updated CSM based on many lines of evidence is intended to assist Stantec and Evergreen with facilitating more targeted and cost-effective remediation of the Belmont Terminal Site and indicates that bio remedies should be considered.

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6.0 RECOMMENDATIONS

This section provides Aestus' recommendations moving forward, based on the results and conclusions developed from our work.

6.1 In Person or Web Conference Meeting Review

Because this report discusses a complex site and multiple data sets encompassing thousands of field data points, Aestus is available to meet with Stantec and other project stakeholders to review conclusions contained in this report and address technical questions regarding the data sets. Use of the information contained in this report for planning future drilling and/or remediation work at the site could also be discussed. A web conference format for this meeting could be used if an in-person meeting is not feasible.

6.2 3D Visualization Model Review

To be able to fully understand the integrated imaging and drilling data sets and visualize them in a robust manner in 3D, Aestus recommends the reader use the provided free 3D visualization model viewer (see Appendix D) to view integrated site data more closely on-screen and from different perspectives. The screen capture graphics from the 3D visualization model shown within the above text sections of this report may not provide a complete understanding of the available integrated site data.

6.3 Use of GeoTrax CSM+™ Conclusions for Future Site Work

Because the data sets discussed in this report are ultra-high data density and have been helpful to develop a robust updated CSM for the Belmont Terminal Site, Aestus recommends Stantec use the findings and data contained in this report to guide additional site characterization and/or remediation work at the site.

6.4 Ongoing Project Support

Aestus will remain available to discuss how the data sets integrated during subsequent phases of this project can assist Stantec with further data integration and interpretation work, should any additional confirmation drilling and/or remediation activities be performed at the Belmont Terminal Site.

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TABLE

Table 1
GeoTrax Survey™ Line Properties and Endpoint Electrode Land Survey Coordinates
Belmont Terminal
Philadelphia, PA, USA

Survey ID	Electrode Spacing	Line Length (ft)	Image Depth (ft)	Survey Date	Coordinate System and Datum	Electrode 1				Electrode 56			
						Easting (ft)	Northing (ft)	Elevation (ft)	Endpoint Marker Type[1]	Easting (ft)	Northing (ft)	Elevation (ft)	Endpoint Marker Type[1]
PHL-01	2.00	361	72	2/8/2020	PA South Zone SPCS, NAD83, Feet	2,685,023.67	224,330.99	28.03	Brass	2,685,125.28	223,984.03	31.99	Brass
PHL-02	3.00	541	108	2/8/2020		2,685,242.20	224,383.43	29.45	Plastic	2,685,407.20	223,868.51	30.44	Brass
PHL-03	3.00	541	108	2/5/2020		2,685,403.98	224,424.56	29.44	Brass	2,685,485.87	223,889.25	29.33	Brass
PHL-04	3.00	541	108	2/4/2020		2,685,550.98	224,468.75	30.73	Plastic	2,685,652.77	223,937.03	26.13	Brass
PHL-05	3.00	541	108	1/30/2020		2,685,631.49	224,495.54	31.22	Plastic	2,685,796.20	223,981.63	27.14	Brass
PHL-06	3.00	541	108	1/30/2020		2,685,819.41	224,543.29	32.47	Plastic	2,685,896.56	224,007.51	26.36	Brass
PHL-07	3.00	541	108	1/31/2020		2,685,982.27	224,594.92	30.94	Brass	2,685,980.84	224,053.54	25.98	Brass
PHL-08	4.00	722	144	2/7/2020		2,686,181.80	224,420.23	30.03	Plastic	2,686,086.45	223,704.72	25.66	Brass
PHL-09	4.00	722	144	2/3/2020		2,685,208.32	223,913.48	30.42	Brass	2,685,875.28	224,189.36	27.68	Brass
PHL-11	4.00	722	144	2/4/2020		2,685,107.40	223,976.11	31.44	Brass	2,685,784.10	224,227.16	27.83	Brass
PHL-12	4.00	722	144	1/31/2020		2,685,435.55	224,246.94	30.59	Brass	2,686,152.22	224,333.48	27.55	Brass
PHL-13	4.00	722	144	2/1/2020		2,685,420.20	224,196.30	30.76	Brass	2,686,136.70	224,109.71	27.77	Brass
PHL-14	4.00	722	144	2/1/2020		2,685,324.34	224,221.48	30.48	Brass	2,686,015.69	224,428.91	32.18	Brass
PHL-15	4.00	722	144	1/29/2020		2,685,446.03	224,369.33	30.09	Brass	2,686,160.79	224,268.41	27.82	Brass
PHL-16	4.00	722	144	2/5/2020		2,685,003.59	224,248.32	31.62	Brass	2,685,700.46	224,436.46	30.57	Brass
PHL-17	4.00	722	144	1/29/2020		2,685,446.63	224,399.80	30.40	Plastic	2,686,163.02	224,312.08	27.29	Brass
PHL-18	3.00	541	108	1/28/2020		2,685,643.12	224,449.88	30.14	Plastic	2,686,180.40	224,384.31	29.56	Plastic
PHL-19	1.50	271	54	1/28/2020		2,686,014.16	224,599.18	31.53	Plastic	2,686,161.55	224,372.44	30.89	Plastic
PHL-20	4.00	722	144	2/9/2020		2,684,925.85	224,277.40	30.17	Plastic	2,685,623.07	224,463.94	30.66	Plastic
PHL-21	1.50	271	54	2/9/2020		2,685,798.69	224,541.49	32.18	Plastic	2,686,068.52	224,589.37	30.97	Plastic
PHL-22	4.00	722	144	3/2/2020		2,684,745.04	224,258.99	27.29	Plastic	2,685,345.53	223,858.53	29.75	Brass
PHL-23	4.00	722	144	3/2/2020		2,684,570.65	224,182.57	31.96	Plastic	2,685,268.21	224,369.20	29.75	Plastic

Notes:

1. GeoTrax Survey™ Endpoint Types (for Electrodes 1 and 56):

Brass Marker



Plastic Marker



2. GeoTrax Survey™ PHL-10 not included in integrated data set due to failing QA/QC tests from substantial amounts of buried metallic materials.

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FIGURES



GeoTrax CSM+ ™
Conceptual Site Model Update
Final Report
Belmont Terminal Site
Philadelphia, Pennsylvania, USA

GEOTRAX CSM+™
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Approved By: SMF/SWM
Date: 05/20/22
Project No.: 19-113-50

GeoTrax CSM+™ Development Results
Belmont Terminal Site
Philadelphia, Pennsylvania, USA

FINAL REPORT

Prepared for Stantec

EVERGREEN

FIGURE
TP
TITLE PAGE
REPORT FIGURES

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Electrical Contaminant Hydrogeology Mapping & Conceptual Site Model Update Process

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GeoTrax CSM+™ Process

We Are Here

1 Data Transfer to Aestus

- Visualize historic site data using *GeoTrax Viz*™

2 Ultra-High Resolution Scan

- Acquire *GeoTrax Survey*™ 2D Imagery
- Use dynamic work strategy with QA/QC

3 Interim Report (w/Hypotheses)

- Integrate data sets in 2D&3D (*GeoTrax Viz*™)
- Select confirmation drilling locations

4 Confirmation Drilling (by Client)

- Perform targeted drilling/sampling to test CSM

5 Final CSM+ Report

- Integrate confirmation data (*GeoTrax Viz*™)
- Finalize GeoTrax CSM+™

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GeoTrax CSM+™ Development Results
Belmont Terminal Site
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FIGURE
PS
PROCESS SUMMARY

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Legend and Symbols

(for reference when reviewing all Figures)

Site Features

Indicates various site features which are labeled accordingly on the figures

Former Product Piping *

Demolished building footprint

Light pole

Vapor Recovery Unit

Fence

Above ground pipes

Overhead Pipes with Electric Support

STA-02

Indicates areas where GeoTrax Surveys™ intersect

* *Former Product Piping Includes Piping for: Solvents, Imperial Gasoline, Regular Gasoline, Kerosene, Diesel, Fuel Oil*

Groundwater sample from a specific interval/screen interval

Water sample where one or more constituents are above standards

Groundwater sample from a specific interval/screen interval

Water sample where one or more constituents are above standards

Soil sample from a specific interval

Soil sample where one or more constituents are above standards

Soil Forensics Data available

Groundwater Bio Sample

Analytical Data

Analytical Soil, Water, and Groundwater Quality Parameters and site standards for Wells Near GeoTrax Surveys ™ provided by Stantec.
Standards for groundwater: PADEP Non-Residential (Non Residential) Statewide Health Standard MSCs for aquifers (TDS <= 2500). Standards for soil: PADEP Non Residential Direct-Contact Values

Bold: Constituent concentration exceeds Standards
J: Estimated value
B: Analyte detected in blank as well as in sample
U: Analyzed for but not detected
F: Result suspect
H: Qualified due to holding time violation
L: Qualified due to accuracy issues (LCS recoveries outside control limits)
Q: Problem with associated field QC sample

NA: Not Analyzed
ND: Non Detect from lab

Well Gauging Data		
Well		MW-44
Sample Date		5/8/17
Parameters	*Units*	
Depth to Water	ft btoc	26.14
Depth to LNAPL	ft btoc	26.11
Product Thickness	ft	0.03
Product Density		0.7802

Groundwater Sample Results		
Well		MW-44
Sample Date		11/12/19
Parameters (µg/L)	Standards (µg/L)	
BENZENE	5	3000
TOLUENE	1000	320
ETHYLBENZENE	700	500
XYLENES, TOTAL	10000	3800
METHYL TERTIARY BUTYL ETHER	20	50
NAPHTHALENE	100	120
PYRENE	130	9

Geologic Data

Bottom Alluvium

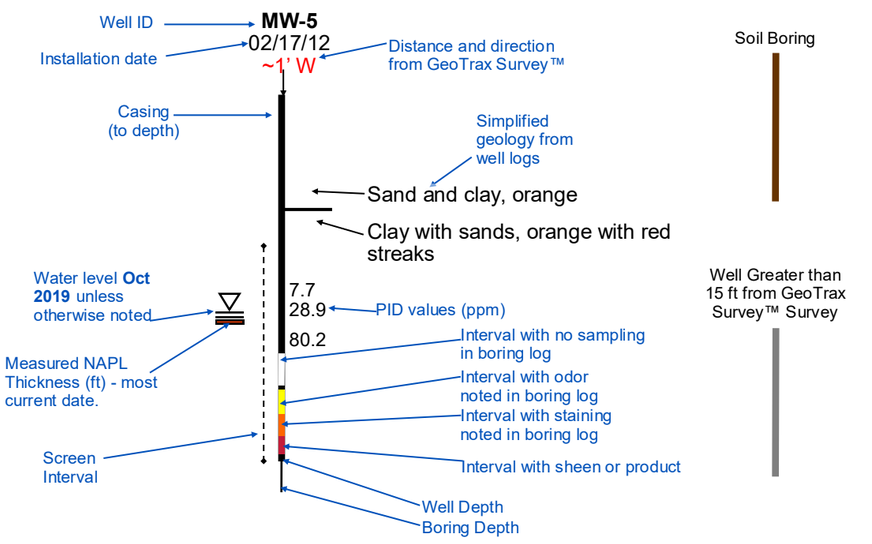
Top Middle Clay

Bottom Middle Clay

Top of Bedrock

Bottom of Alluvium approximated from Cross Section DD' provided by Stantec.
Top of Middle Clay, Bottom of Middle Clay, and Top of Bedrock modeled surfaces provided by Stantec and projected onto GeoTrax Survey™ data.

Monitoring Well Explanation



Utilities

Water

Gas

Electric

Telecommunication Line

Storm Sewer

City Sewer

Sanitary Sewer

Reme-diation

Manhole

Unknown Utility

Process water

Storm Sewer Catch Basin/ Drain/ Grate

Overhead Power Lines

Fire Hydrant

Steam

Fire Line

Dotted utility symbols mark measured feature from historic site maps or a noted "possible" utility from Aestus field notes. Solid utility symbols indicate feature marked in field and added to field notes.

General Notes: *Locations of site features (e.g., utilities, wells, etc.) are approximate*

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FIGURE
LS-1
LEGENDS AND SYMBOLS

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Legend and Symbols

(for reference when reviewing all Figures)

Unified Soil Classification System

Gravels:
GW: Well graded gravels, gravel-sand mixtures, little or no fines
GP: Poorly-graded gravels, gravel-sand mixtures, little or no fines
GM: Silty gravels, gravel-sand-silt mixtures
GC: Clayey gravels, gravel-sand-clay mixtures

Sands:
SW: Well-graded sands, gravelly sands, little or no fines
SP: Poorly graded sands, gravelly sands, little or no fines
SM: Silty sands, sand-silt mixtures
SC: Clayey sands, sand-clay mixtures

Silts and Clays (liquid limit < 50%):
ML: Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
CL: Inorganic clays or low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
OL: Organic silts and organic silty clays or low plasticity

Silts and Clays (liquid limit > 50%):
MH: Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
CH: Inorganic clays of high plasticity, fat clays
OH: Organic clays of medium to high plasticity, organic silts

Highly Organic Soils:
PT: Peat and other highly organic soils

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FIGURE
LS-2
LEGENDS AND SYMBOLS

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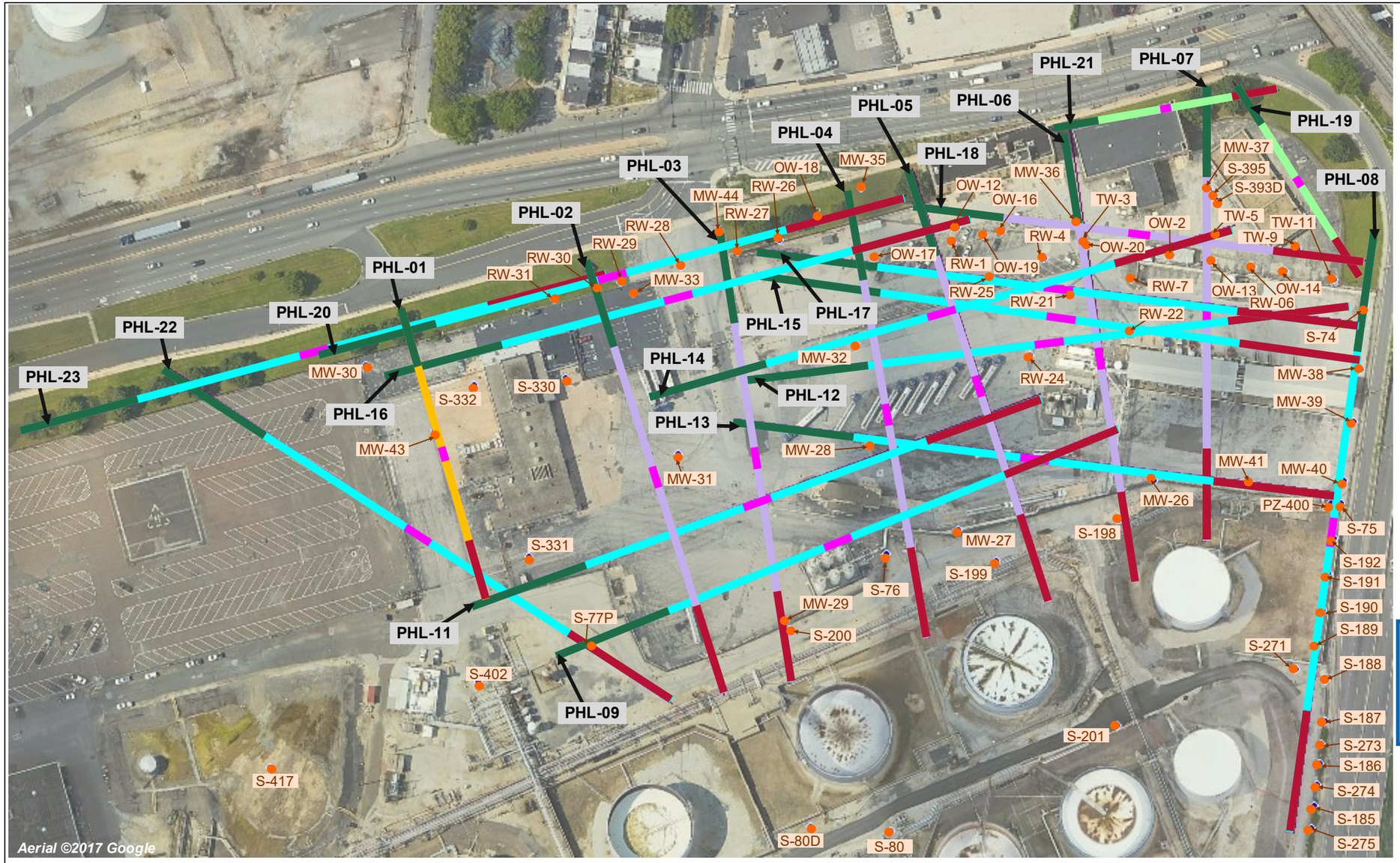

GeoTrax Survey™ Orientation and Designation

Electrode 1

Electrode 56

PHL-19

1.5 Meter Electrode Spacing
Line Length ~271 feet (~82.5 m)
Image Depth ~54 feet (~16.5 m)

PHL-01

2.0 Meter Electrode Spacing
Line Length ~ 361 feet (110 m)
Image Depth ~ 72 feet (22 m)

PHL-02

3.0 Meter Electrode Spacing
Line Length ~541 feet (~165 m)
Image Depth ~108 feet (~33 m)

PHL-08

4.0 Meter Electrode Spacing
Line Length ~722 feet (~220 m)
Image Depth ~144 feet (~44 m)

Instrument Location at Center of Pink Box

Full depth of trapezoidal shaped image exists in center zone; partial depth in green and red zones

LEGEND:

Monitoring Well

N

0 100 200

Feet

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Project No.: 19-113-50

GeoTrax Survey™ and Historical Monitoring Well Locations
Belmont Terminal Site
Philadelphia, Pennsylvania

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Prepared for

Stantec

EVERGREEN

FIGURE
PV-1
PLAN VIEW FIGURE

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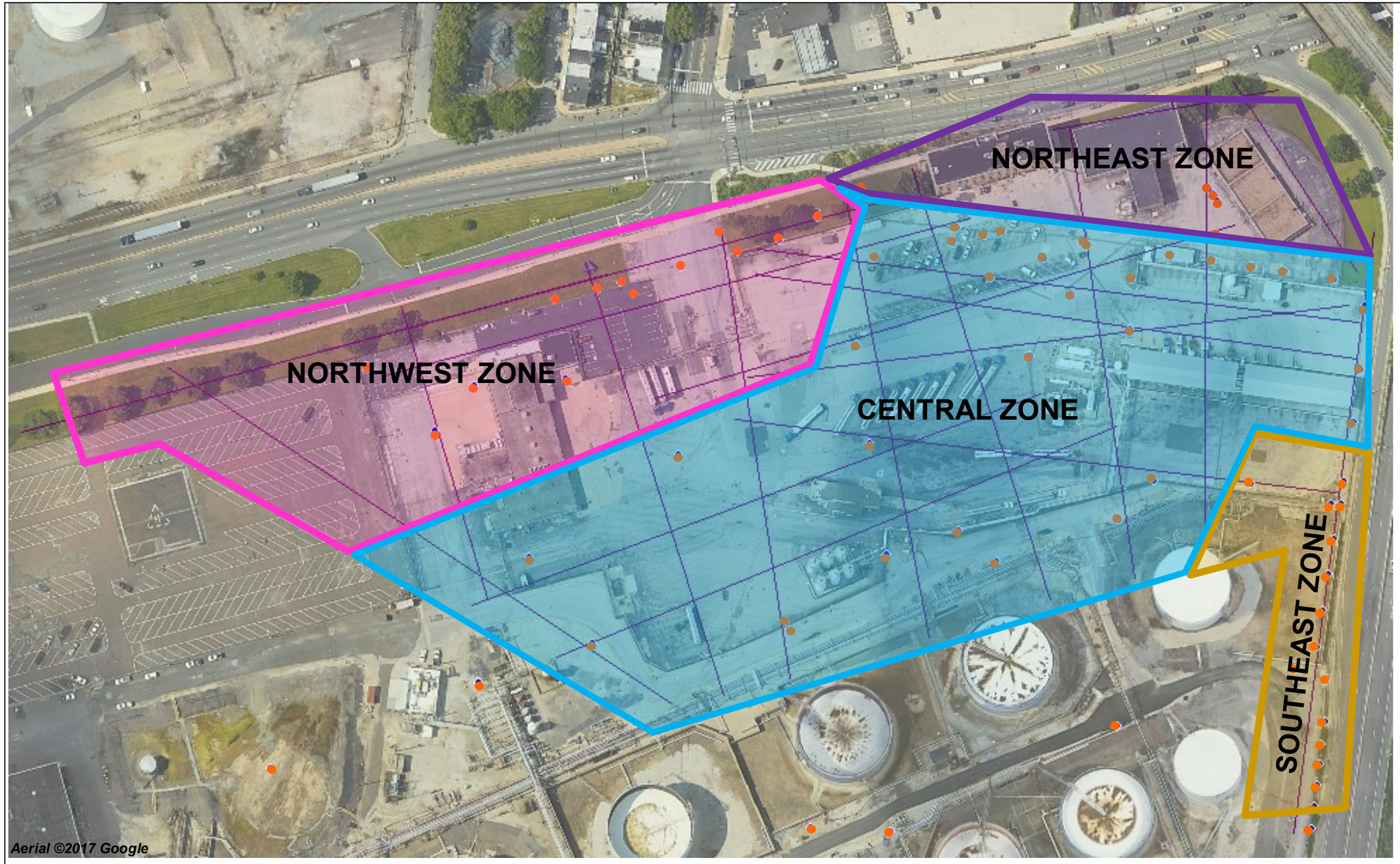

Interpreted Site Zone Designations

LEGEND:

- Monitoring Well

N 0 100 200 Feet

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Potential Site Zones
Belmont Terminal Site
Philadelphia, Pennsylvania

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FIGURE
PV-2
PLAN VIEW FIGURE

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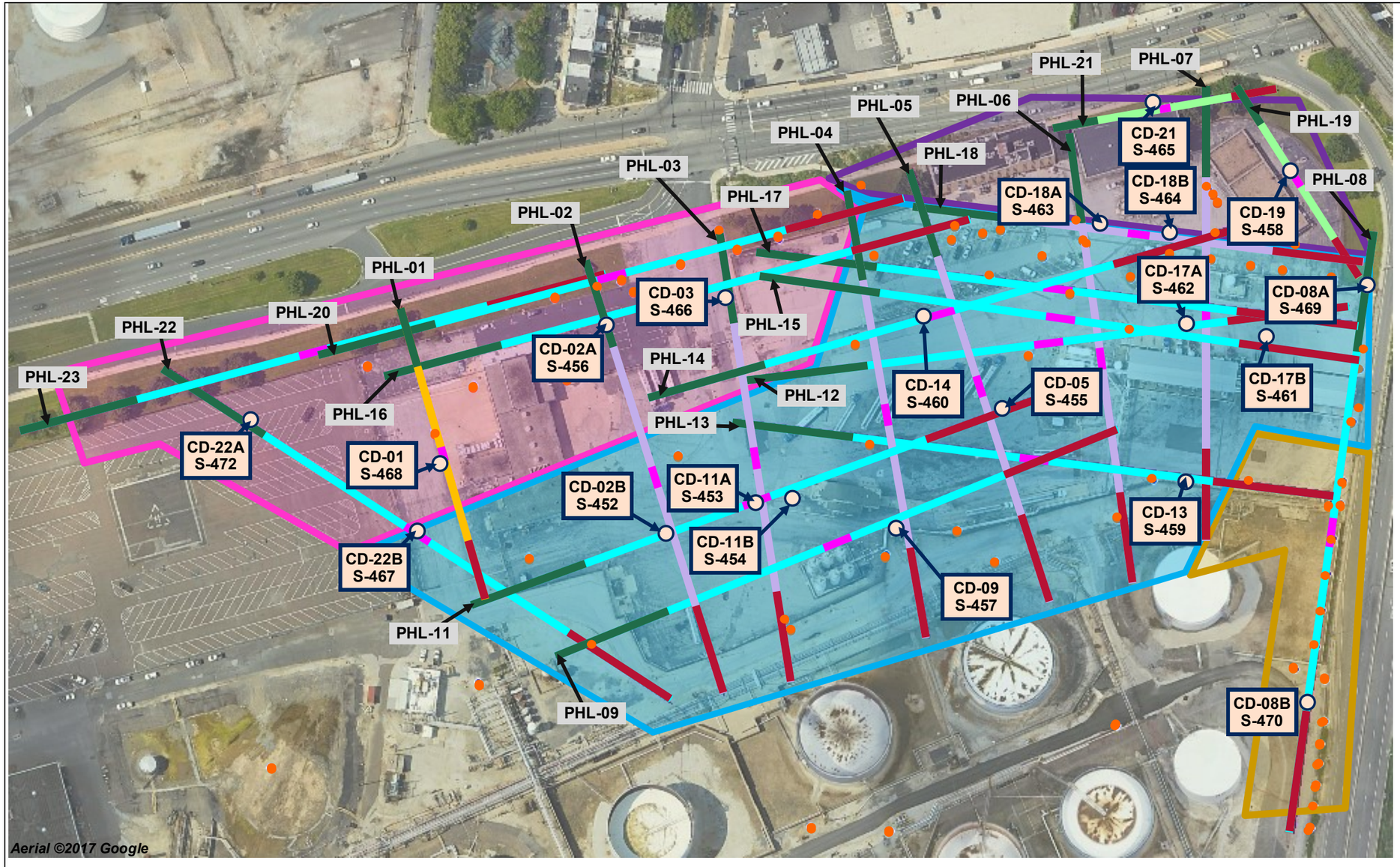

GeoTrax Survey™ Orientation and Designation (see Legend on Figure PV-1)

LEGEND:

- Prior Site Monitoring Well

As Built Confirmation Drilling (CD) Locations (Dec 2020 to March 2021)

- CD-01 S 4-68 — As Built CD Well Location with Soil Boring ID

N 0 100 200 Feet

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As-Built Confirmation Boring Locations
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FIGURE
PV-3
PLAN VIEW FIGURE

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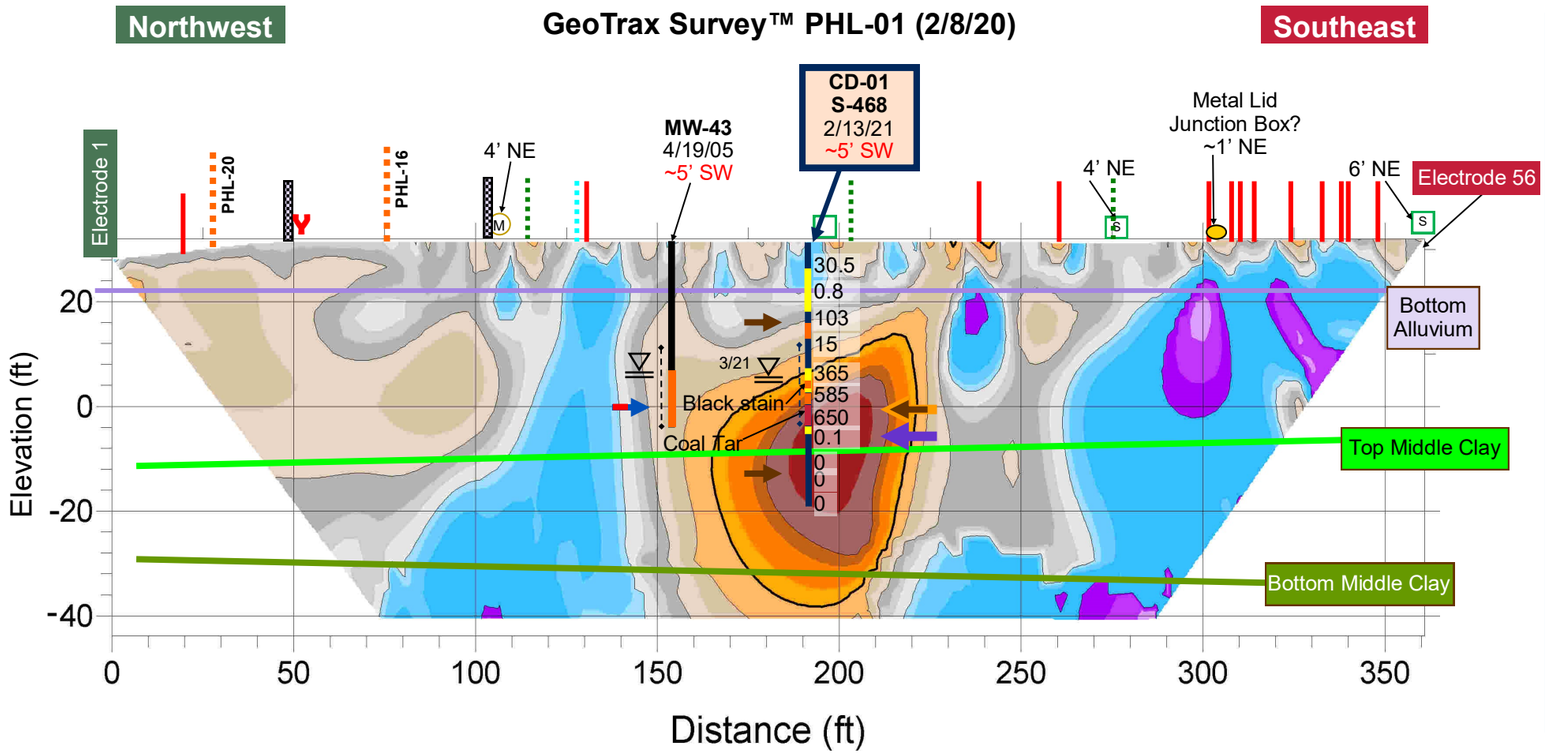
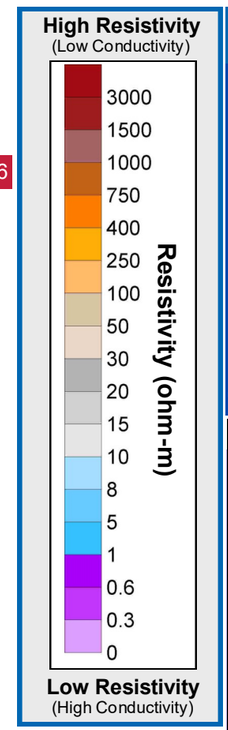
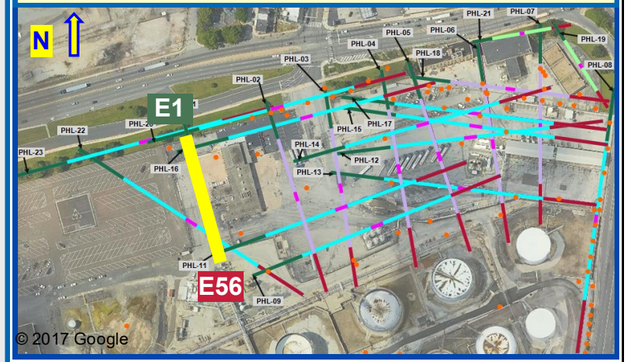




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	**CD-02A**
Boring	**S-456**
Sample Date	2/11/21
Sample Depth ft. BGS	38
Data Set IDs	
# reads for sample (millions)	NA
Bacterial	
Antibiotic resistant	
Fungal	
Protists	
Dark Matter	
Phages	
Virus	
Virulence Factors	
QPCR	
Bacterial Biomass (gene copies / L)	6,200,000

CD Groundwater Grab Results		
Well		**CD-01**
Boring		**S-468**
Sample Date		
Sample Depth ft. BGS		
Parameters µg/L	**MSCs µg/L**	
BENZENE	**5**	NA
TOLUENE	**1000**	
ETHYLBENZENE	**700**	
XYLENES, TOTAL	**10000**	
MTBE	**20**	
1,2,4-TMB	**62**	
>C12-C22		
>C22-C44		
C4-C12-TPH-GRO		
TOTAL ORG. CARBON		
TPH		

CD Groundwater Grab Results		
Well		**CD-01**
Boring		**S-468**
Sample Date		
Sample Depth		
Parameters (µg/L)		
ALKALINITY TO pH 4.5		NA
CALCIUM		
CHLORIDE (AS CL)		
IRON		
MAGNESIUM		
METHANE		
NITROGEN, AMMONIA		
NITROGEN, NITRATE		
POTASSIUM		
SODIUM		
SULFATE (AS SO4)		

CD Soil Sample Results			
Well		**CD-01**	
Boring		**S-468**	
Sample Date		**2/12/21**	**2/16/21**
Sample Depth ft BGS		**15**	**44**
Parameters mg/kg	**MCLs mg/kg**		
BENZENE	330	ND	0.00061 J
TOLUENE	10000	0.047 J	0.00083 J
ETHYLBENZENE	1000	0.053 J	0.00046 J
XYLENES, TOTAL	9100	ND	ND
MTBE	9900	ND	0.048
>C12-C22		85	ND
>C22-C44		12 J	15
C4-C12-TPH-GRO		93	0.19
TPH		97	15

CD Soil Forensics	
Well	**CD-01**
Boring	**S-468**
Sample Date	**3/19/21**
Sample Depth ft BGS	**33**
See Report for full details	Pyrogenic signature likely related to

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FIGURE
1.1
INITIAL CD DATA INTEGRATION

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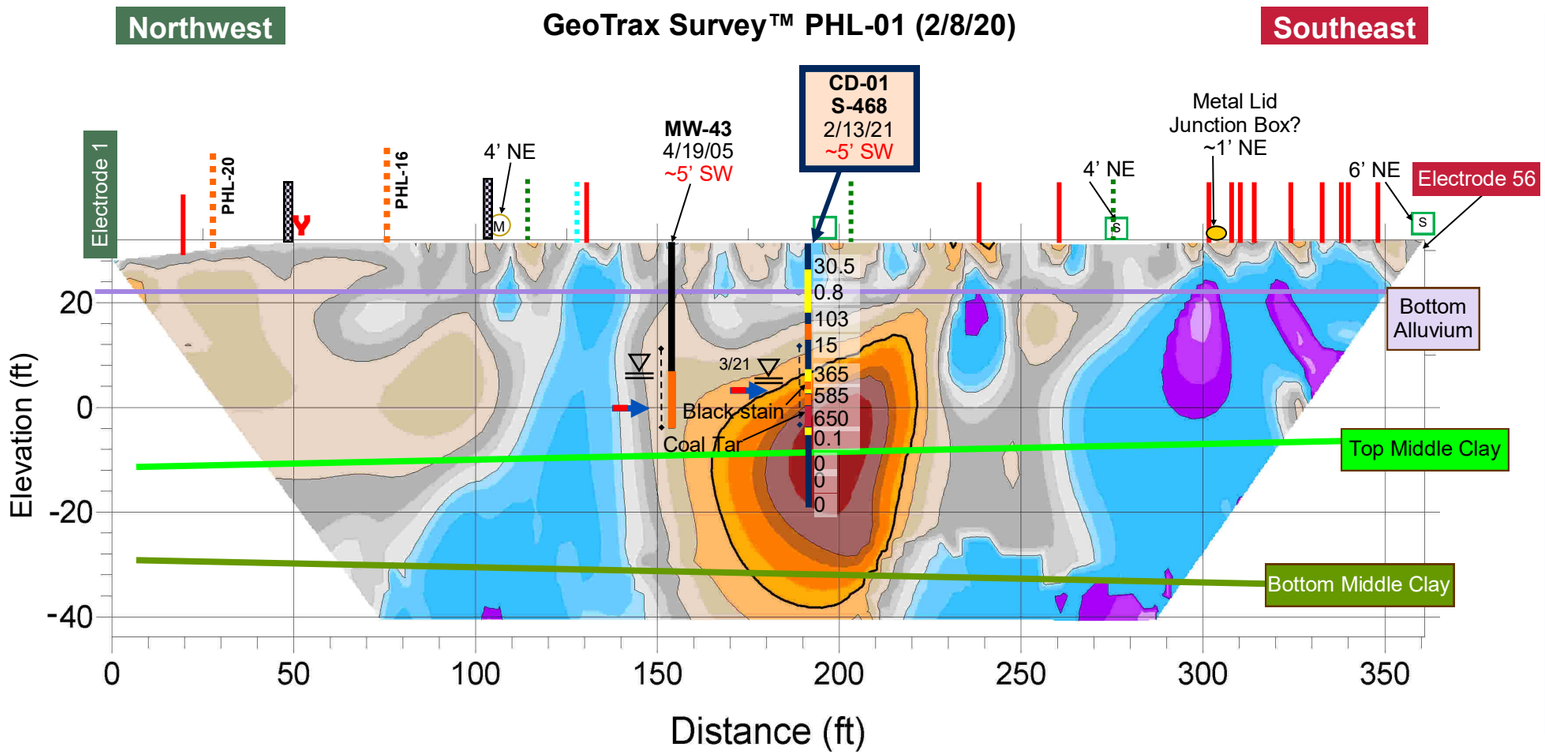
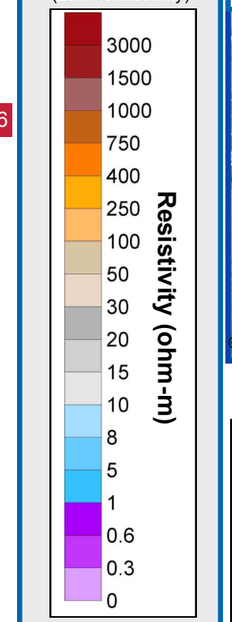
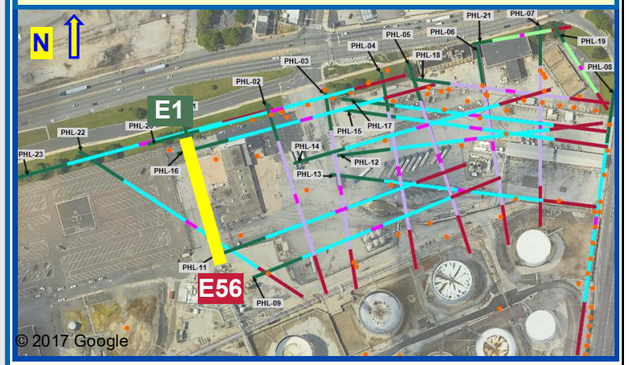




GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results		
Well		MW-43
Sample Date		7/27/18
Parameters (µg/L)	Standards (µg/L)	
BENZENE	**5**	**165**
TOLUENE	**1000**	10.8
ETHYLBENZENE	**700**	191
XYLENES, TOTAL	**10000**	122
MTBE	**20**	1.36
NAPHTHALENE	**100**	**847**
PYRENE	**130**	2.03
ANTHRACENE	**66**	2.28
ISOPROPYLBENZENE	**3500**	46.2
FLUORENE	**1900**	11.4
CHRYSENE	**1.9**	0.941
PHENANTHRENE	**1100**	12.9
LEAD	**5**	ND
1,2,4-TRIMETHYLBENZENE	**62**	51.6
1,2-DIBROMOETHANE	**0.05**	ND
1,2-DICHLOROETHANE (	**5**	ND
1,3,5-TRIMETHYLBENZENE	**1200**	14.6
BENZO(A)ANTHRACENE	**4.9**	0.471
BENZO(A)PYRENE	**0.2**	**0.64**
BENZO(B)FLUORANTHENE	**0.55**	**1.22**
BENZO(G,H,I)PERYLENE	**0.26**	**0.607**

CD Groundwater Sample Results		
Well		CD-01
Boring		S-468
Sample Date		3/24/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**410**
TOLUENE	**1000**	23
ETHYLBENZENE	**700**	400
XYLENES, TOTAL	**10000**	210
MTBE	**20**	13
NAPHTHALENE SW8270D	**100**	**3200**
1,2,4-TMB	**62**	**280**
1,3,5-TMB	**1200**	94
ISOPROPYLBENZENE	**3500**	130
TERT-BUTYL ALCOHOL		360

CD Groundwater Sample Results	
Well	CD-01
Boring	S-468
Sample Date	3/24/21
Parameters µg/L	
ALKALINITY TO pH 4.5	160,000
CALCIUM	33,000
IRON	50,000
METHANE	15,000
SULFATE (AS SO4)	2500 J
TOTAL CARBON	71,000
TOTAL INORGANIC CARBON	55,000
TOTAL KJELDAHL NITROGEN	6,200
TOTAL ORGANIC CARBON	16,000

CD Groundwater Quality Results		
Well		CD-01
Boring		S-468
Sample Date		3/24/21
Parameters	*Units*	
DO	mg/L	1.81
ORP	mV	-178
pH	S.U.	6.99
EC	mS/cm	2.11
Temperature	ºC	18.82
Turbidity	NTU	105

CD-01: Oil globules present on outside of tubing after purge

Groundwater Quality Sample Results		
Well		MW-43
Sample Date		7/27/18
Parameters	*Units*	
DO	mg/L	0
ORP	mV	59
pH	S.U.	6.08
EC	mS/cm	0.803
Temperature	ºC	19.45
Turbidity	NTU	27.1

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FIGURE
1.2
ANALYTICAL DATA INTEGRATION

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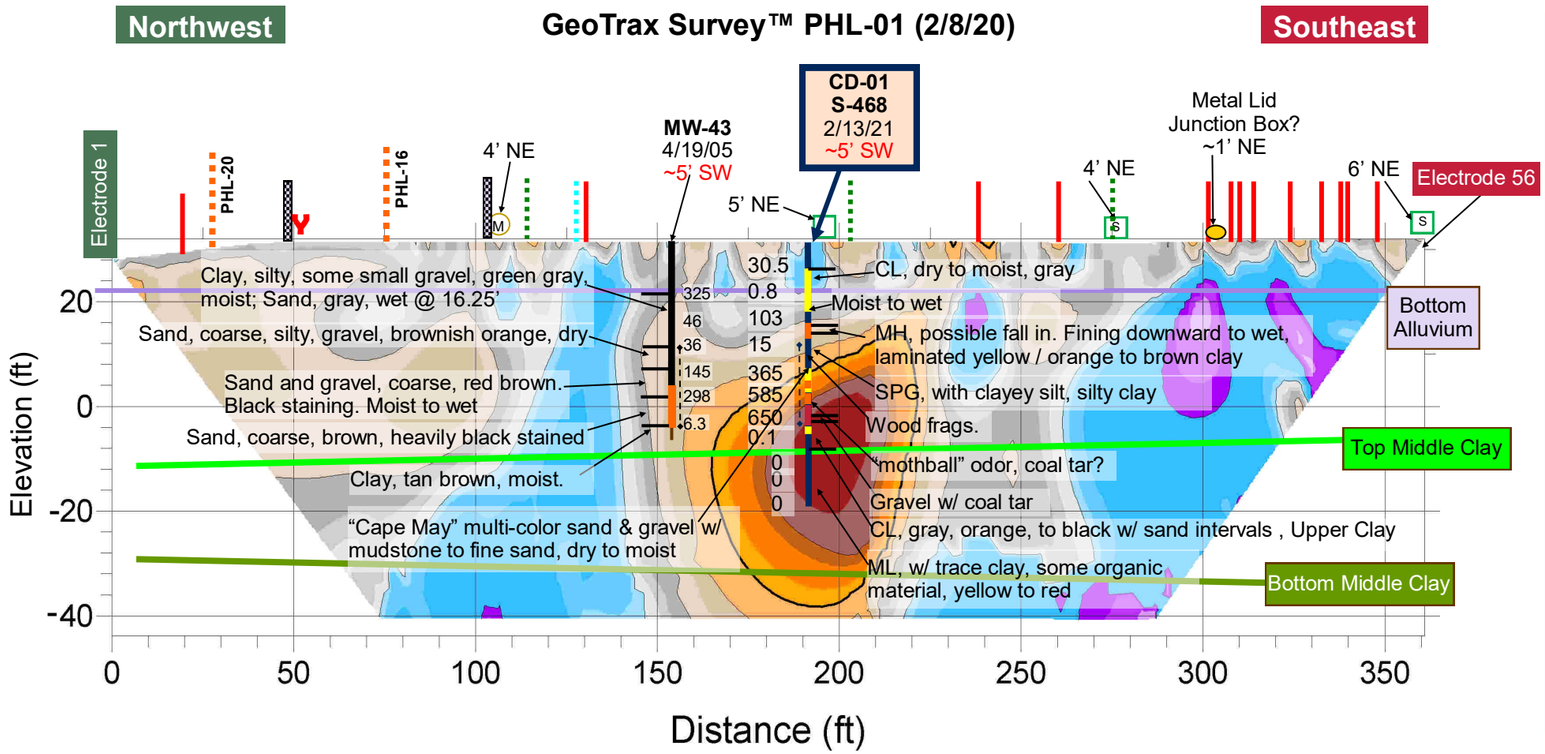

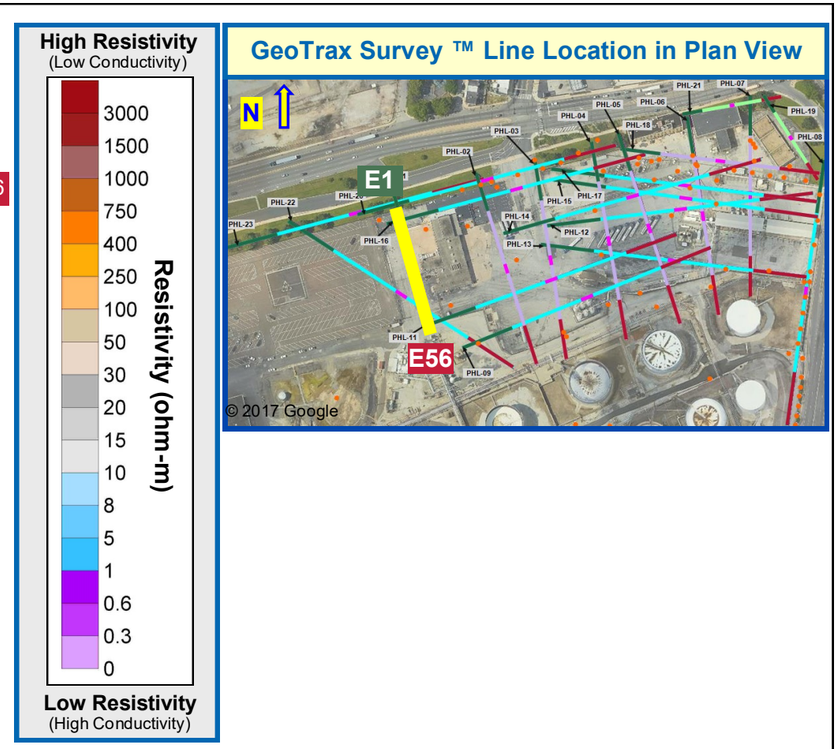

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FIGURE
1.3
GEOLOGY
DATA
INTEGRATION

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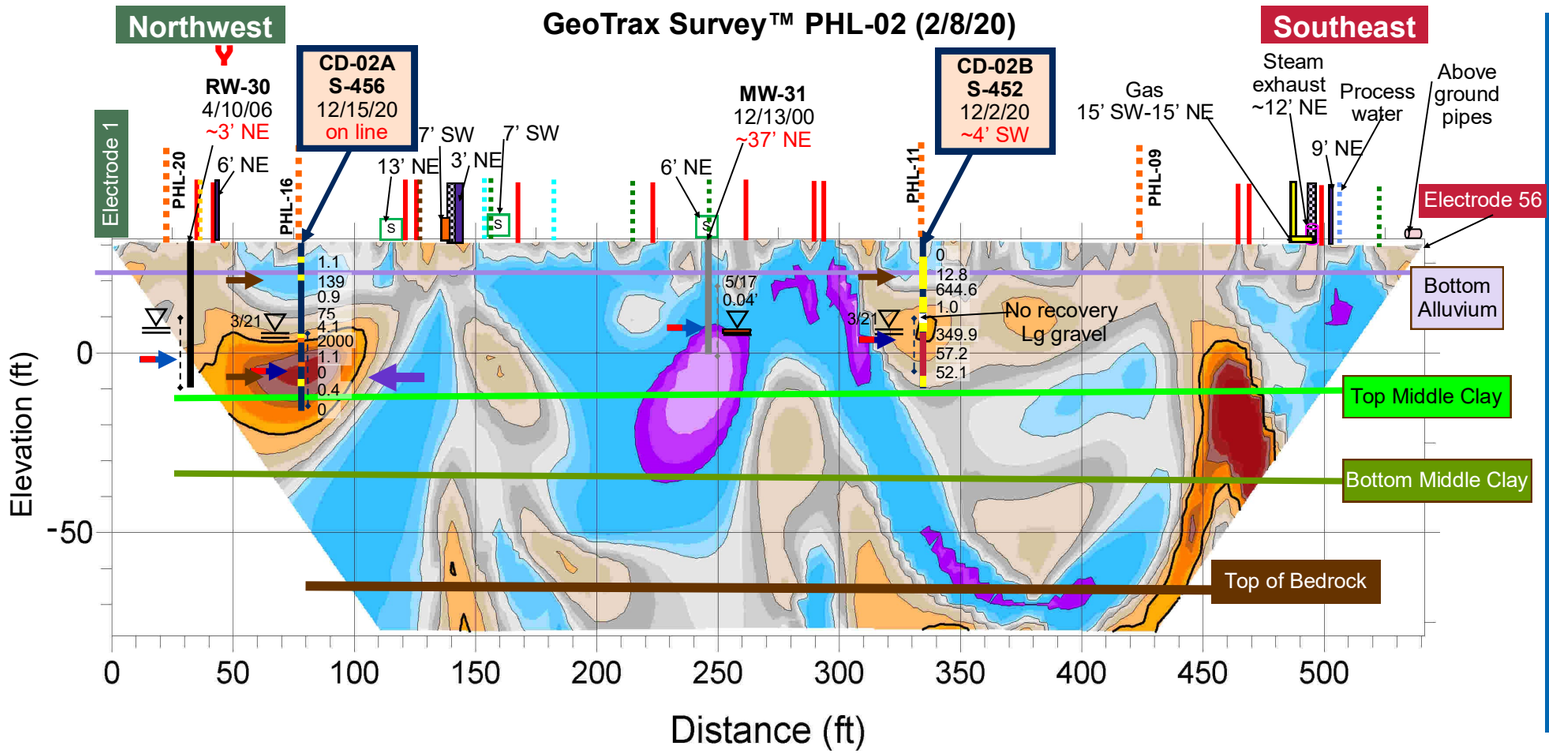
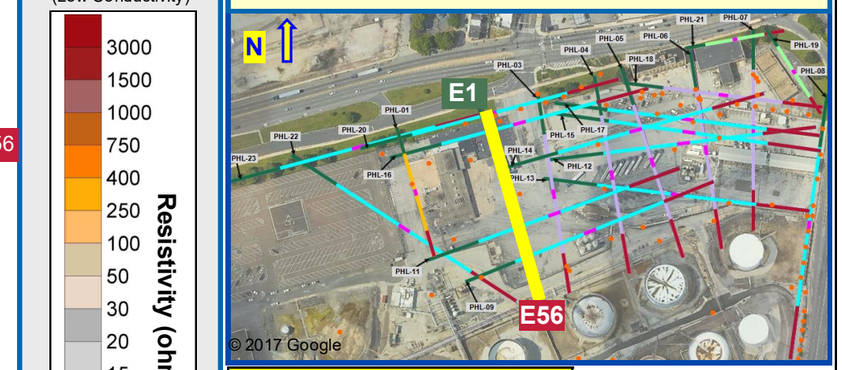
GeoTrax Survey™ PHL-02 (2/8/20)





GeoTrax Survey ™ Line Location in Plan View

CD Groundwater Bio Data	
Well	**CD-02A**
Boring	**S-456**
Sample Date	2/11/21
Sample Depth ft. BGS	38
Data Set IDs	
# reads for sample (millions)	NA
Bacterial	
Antibiotic resistant	
Fungal	
Protists	
Dark Matter	
Phages	
Virus	
Virulence Factors	
QPCR	
Bacterial Biomass (gene copies / L)	6,200,000

CD Groundwater Grab Results

Well		CD-02A	CD-02B
Boring		**S-456**	**S-452**
Sample Date		**12/15/20**	**12/2/20**
Sample Depth ft. BGS		**36**	**28**
Parameters µg/L	**MSCs µg/L**		
BENZENE	**5**	**110**	**20**
TOLUENE	**1000**	9	1.8
ETHYLBENZENE	**700**	6.3	45
XYLENES, TOTAL	**10000**	26 J	120
MTBE	**20**	**98**	ND
1,2,4-TMB	**62**	5.7 J	30
>C12-C22		3300	NA
>C22-C44		970	NA
C4-C12-TPH-GRO		3900	890
TOTAL ORG. CARBON		46000	51000
TPH		4300	NA

CD Groundwater Grab Results

Well	CD-02A	CD-02B
Boring	**S-456**	**S-452**
Sample Date	**12/15/20**	**12/2/20**
Sample Depth	**36**	**28**
Parameters (µg/L)		
ALKALINITY TO pH 4.5	220,000	
CALCIUM	56,000	
CHLORIDE (AS CL)	200,000	NA
IRON	240,000	
MAGNESIUM	48,000	
METHANE	7,900	52
NITROGEN, AMMONIA	4,400	
NITROGEN, NITRATE	300 J H	
POTASSIUM	15,000	NA
SODIUM	150,000	
SULFATE (AS SO4)	24,000	

CD Soil Sample Results

Well /Boring		CD-02A		CD-02B
		S-456		S-452
Sample Date		**12/14/20**	**12/15/20**	**12/1/20**
Sample Depth ft BGS		**10**	**37**	**10**
Parameters mg/kg	**MCLs mg/kg**			
BENZENE	330	ND	0.021	0.0042 H
TOLUENE	10000	ND	0.0013 J	0.00068 J H
ETHYLBENZENE	1000	ND	0.0016 J	ND H
XYLENES, TOTAL	9100	ND	0.0041 J	ND H
MTBE	9900	ND	0.012	0.0024 J H
>C12-C22		1600	ND	ND
>C22-C44		150	6.3 J	ND
C4-C12-TPH-GRO		3400	1.7	0.68 H
TPH		1800	6.3 J	ND

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GeoTrax Viz™ 2-D Data Integration
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FIGURE
2.1
INITIAL CD DATA INTEGRATION

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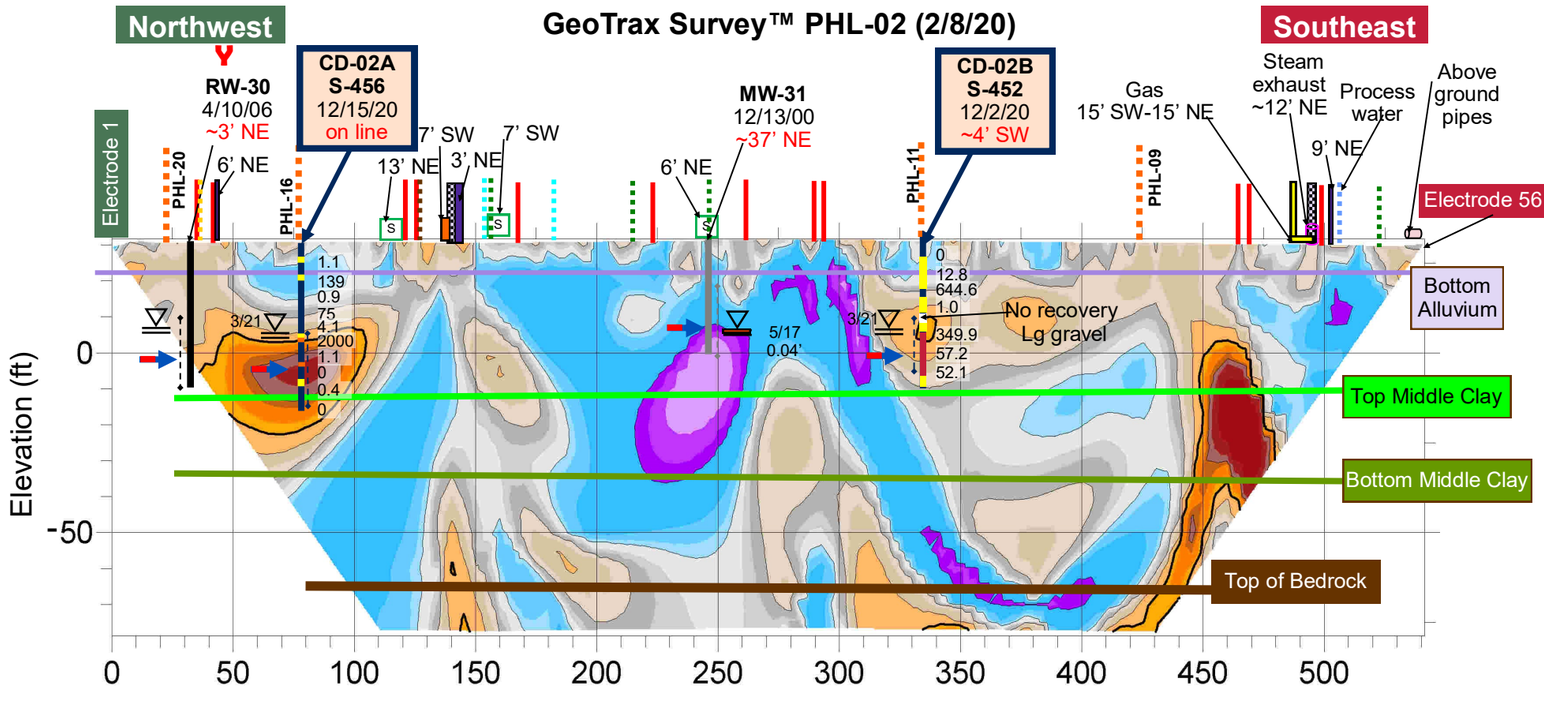
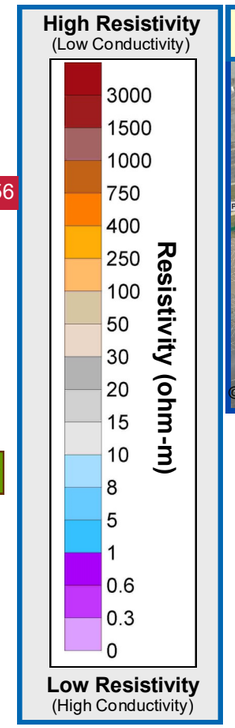
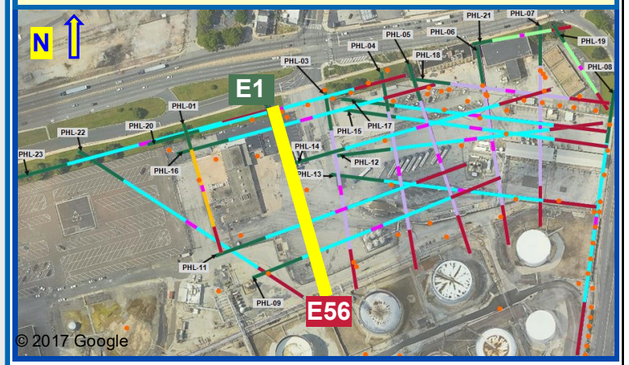




GeoTrax Survey ™ Line Location in Plan View



Sucralose	
Well	CD-02A
Boring	S-456
Sample Date	5/17/21
Sucralose ng/L	833

CD Groundwater Sample Results			
Well		CD-02A	CD-02B
Boring		S-456	S-452
Sample Date		3/24/21	3/26/21
Parameters µg/L	MCLs µg/L		
BENZENE	5	220	3200
TOLUENE	1000	14	57
ETHYLBENZENE	700	9.6	760
XYLENES, TOTAL	10000	10	1600
MTBE	20	33	1000
NAPHTHALENE	100	7.1	1300
1,2,4-TMB	62	6.5	320
1,3,5-TMB	1200	4.6 J	110
ISOPROPYLBENZENE	3500	44	83
TERT-BUTYL ALCOHOL		1200	22000

CD Groundwater Sample Results		
Well	CD-02A	CD-02B
Boring	S-456	S-452
Sample Date	3/24/21	3/26/21
Parameters µg/L		
ALKALINITY TO pH 4.5	150,000	290,000
CALCIUM	41,000	39,000
IRON	29,000	50,000
METHANE	12,000	14,000
SULFATE (AS SO4)	9,000	ND
TOTAL CARBON	48,000	120,000
TOTAL INORGANIC CARBON	38,000	97,000
TOTAL KJELDAHL NITROGEN	2,000	3,400
TOTAL ORGANIC CARBON	9,800	23,000

CD Groundwater Quality Results			
Well		CD-02A	CD-02B
Boring		S-456	S-452
Sample Date		3/24/21	3/26/21
Parameters	*Units*		
DO	mg/L	0.06	0.94
ORP	mV	-37	-125
pH	S.U.	5.89	6.64
EC	mS/cm	1.4	1.32
Temperature	ºC	18.21	21.81
Turbidity	NTU	228	43

Groundwater Quality Sample Results			
Well		RW-30	MW-31
Sample Date		7/31/18	7/25/18
Parameters	*Units*		
DO	mg/L	1.92	0
ORP	mV	-143	0
pH	S.U.	6.57	6.36
EC	mS/cm	1.83	1.4
Temperature	ºC	20.07	24.98
Turbidity	NTU	218	357

Well Product Data	
Well	MW-31
Sample Date	5/17/17
Product Description	65% GASOLINE, 35% MIDDLE DISTILLATE

Groundwater Sample Results			
Well		RW-30	MW-31
Sample Date		7/31/18	7/25/18
Parameters (µg/L)	Standards (µg/L)		
BENZENE	5	375	428
TOLUENE	1000	11.4	37.2
ETHYLBENZENE	700	ND	62.2
XYLENES, TOTAL	10000	ND	96.2
MTBE	20	90.1	ND
NAPHTHALENE	100	50.2	25.4
PYRENE	130	5.92	12.8
ANTHRACENE	66	6.82	6.75
ISOPROPYLBENZENE	3500	55.3	221
FLUORENE	1900	26	47.6
CHRYSENE	1.9	1.58	2.75
PHENANTHRENE	1100	31.4	48.4
LEAD	5	ND	ND
1,2,4-TMB	62	40.8	366
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TMB	1200	18.2	485
BENZO(A)ANTHRACENE	4.9	1.57	3.23
BENZO(A)PYRENE	0.2	1.16	3.51
BENZO(B)FLUORANTHENE	0.55	1.22	6.05
BENZO(G,H,I)PERYLENE	0.26	0.536	3.43

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FIGURE
2.2
ANALYTICAL DATA INTEGRATION

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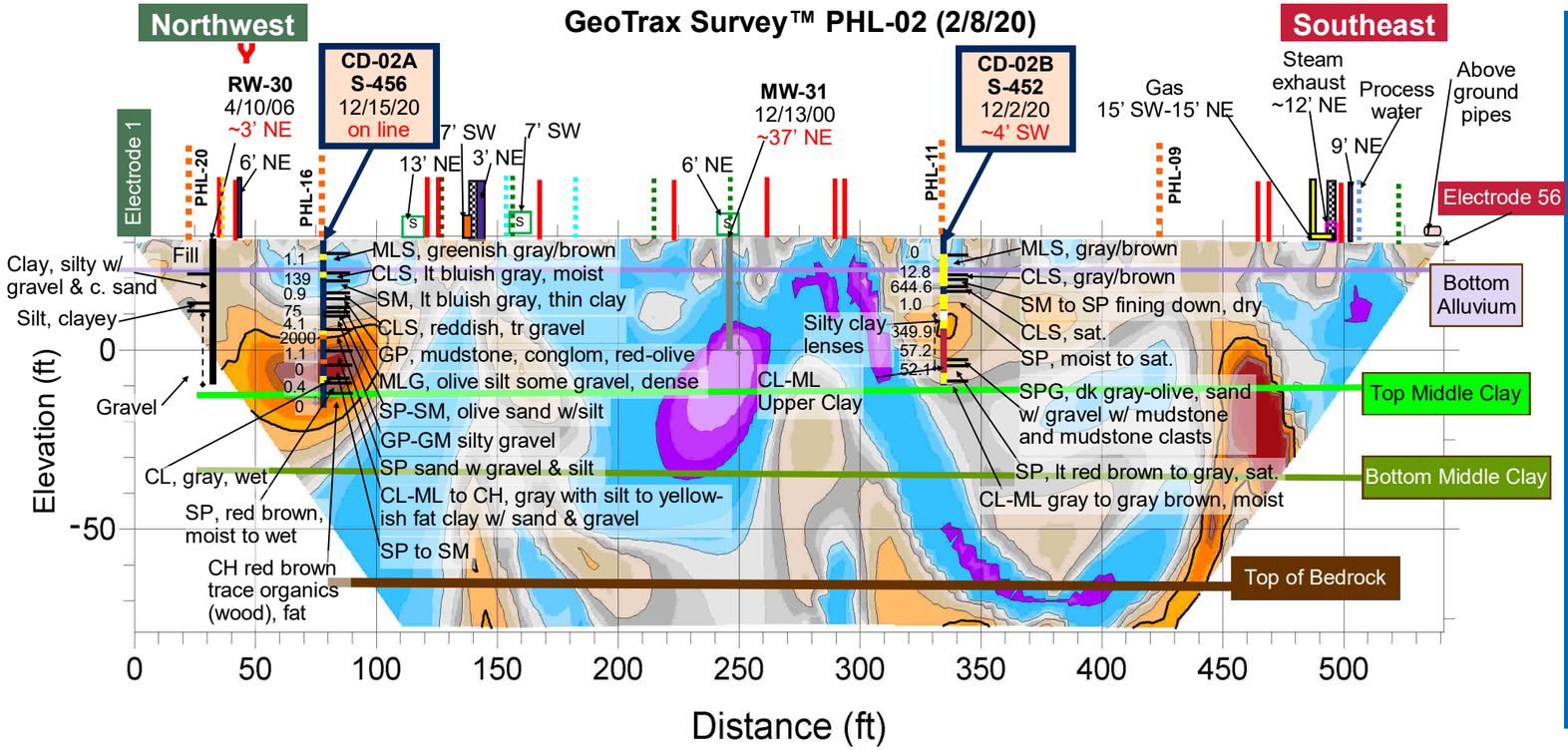
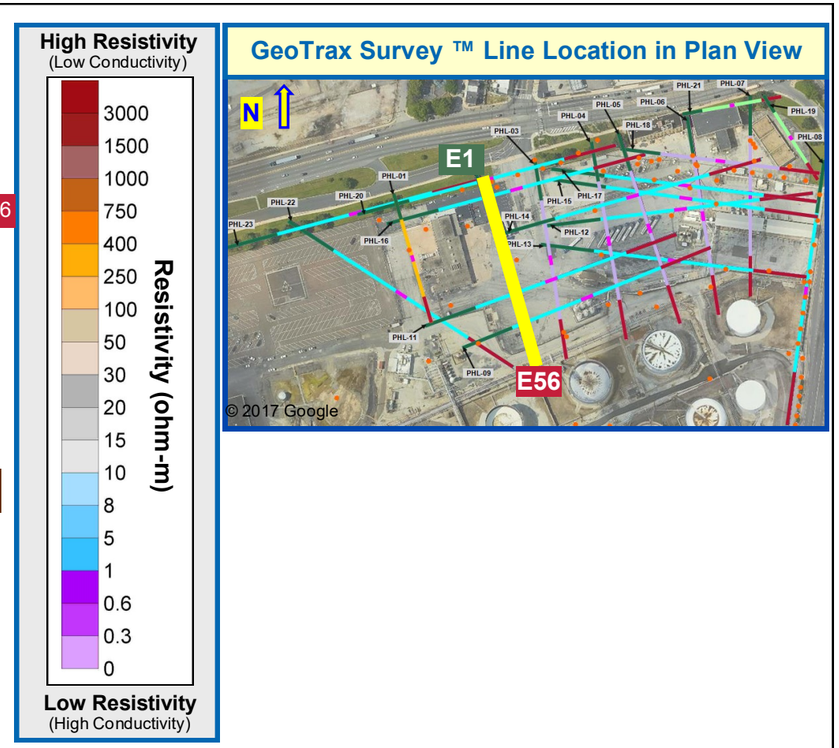
GeoTrax Survey™ PHL-02 (2/8/20)





GeoTrax Survey ™ Line Location in Plan View

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FIGURE
2.3
GEOLOGY
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INTEGRATION

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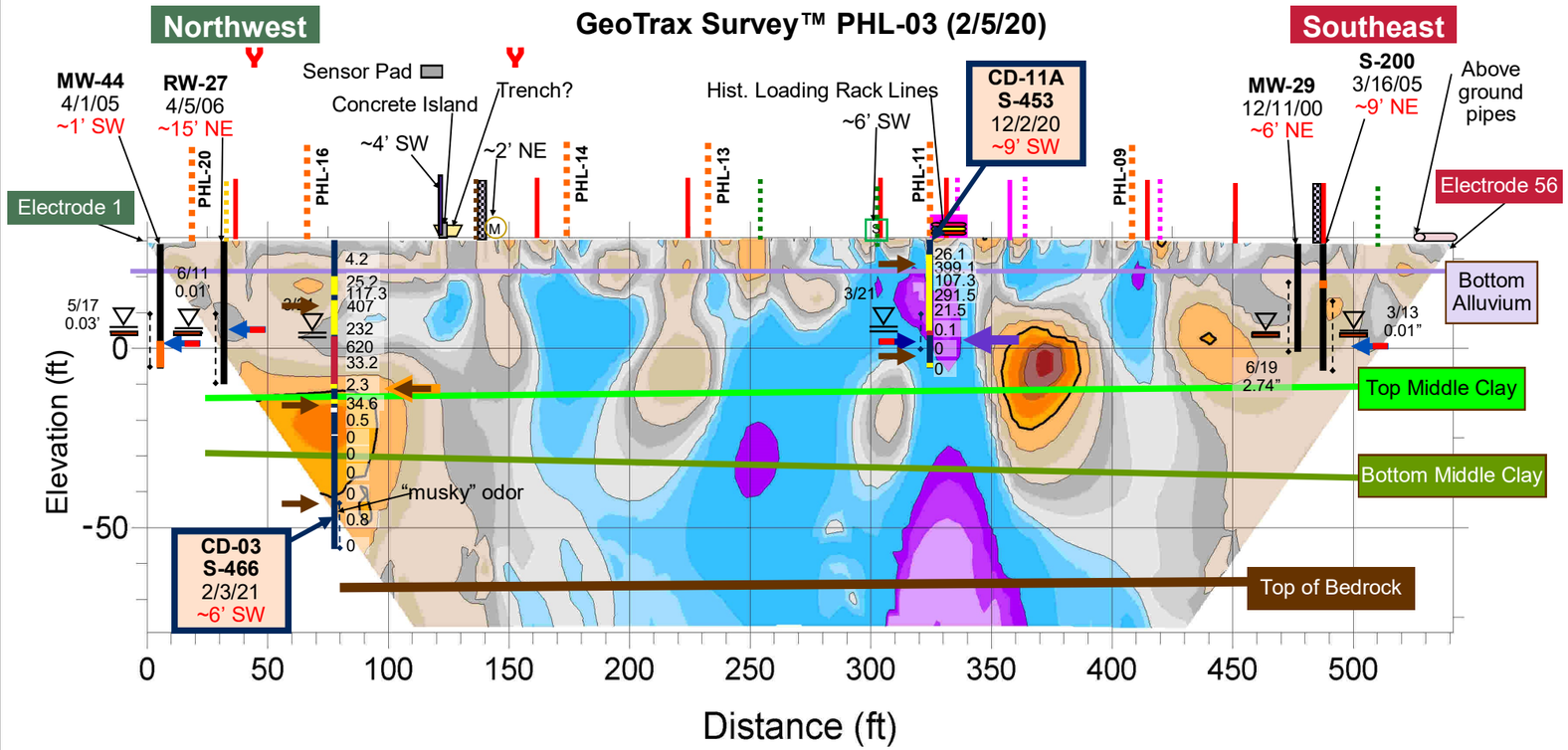

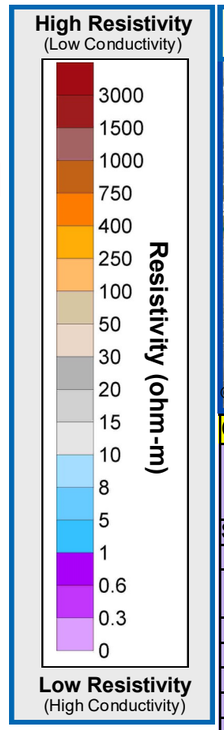

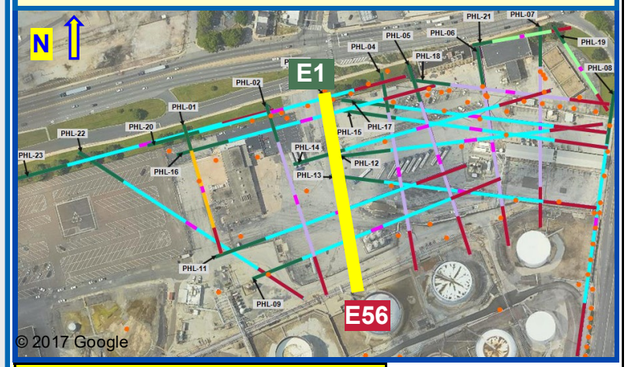

CD Groundwater Bio Data		
Well		**CD-11A**
Boring		**S-453**
Sample Date		2/11/21
Sample Depth ft. BGS		29
Data Set IDs		
# reads for sample (millions)		5.812
Bacterial		73
Antibiotic resistant		1
Fungal		6
Protists		2
Dark Matter		174
Phages		1
Virus		1
Virulence Factors		4
QPCR		
Bacterial Biomass (gene copies / L)		2,500,000,000

CD Groundwater Grab Results			
Well		**CD-03**	**CD-11A**
Boring		**S-466**	**S-453**
Sample Date			**12/3/20**
Sample Depth ft. BGS			**29**
Parameters µg/L	**MSCs µg/L**		
BENZENE	**5**	NA	**26**
TOLUENE	**1000**		ND
ETHYLBENZENE	**700**		89
XYLENES, TOTAL	**10000**		140
MTBE	**20**		1.7 J
1,2,4-TMB	**62**		130
>C12-C22			7500 B
>C22-C44			ND
C4-C12-TPH-GRO			2900
TOTAL ORG. CARBON			53000
TPH			7500

CD Groundwater Grab Results		
Well	**CD-03**	**CD-11A**
Boring	**S-466**	**S-453**
Sample Date		**12/3/20**
Sample Depth		**29**
Parameters (µg/L)		
ALKALINITY TO pH 4.5	NA	260,000
CALCIUM		62,000
CHLORIDE (AS CL)		94,000
IRON		440,000
MAGNESIUM		48,000
METHANE		140
NITROGEN, AMMONIA		660 J
NITROGEN, NITRATE		2,700
POTASSIUM		16,000
SODIUM		170,000
SULFATE (AS SO4)		65,000

CD Soil Sample Results						
Well /Boring		**CD-03 S-466**			**CD-11A S-453**	
Sample Date		**1/28/21**	**1/28/21**	**1/29/21**	**12/2/20**	**12/3/20**
Sample Depth ft BGS		**18**	**46**	**72**	**8**	**32**
Parameters mg/kg	**MCLs mg/kg**					
BENZENE	330	0.93	1.8	ND	0.29 J	0.66 H
TOLUENE	10000	0.18 J	0.097 J	ND	ND	ND
ETHYLBENZENE	1000	3.3	ND	ND	0.029 J	0.0075
XYLENES, TOTAL	9100	11	ND	ND	ND	0.0016 J
MTBE	9900	ND	0.23 J	ND	ND	0.24
>C12-C22		120	ND	ND	3000	ND
>C22-C44		56	6.4 J	16	ND	ND
C4-C12-TPH-GRO		650	3.9 J	5.6 *	350 H	4
TPH		180	6.4 J	16	3000	ND

CD Soil Forensics	
Well	**CD-03**
Boring	**S-466**
Sample Date	1/29/21
Sample Depth ft BGS	41
See Report for full details	Petroleum that spans light distillate range to

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FIGURE
3.1
INITIAL CD DATA INTEGRATION

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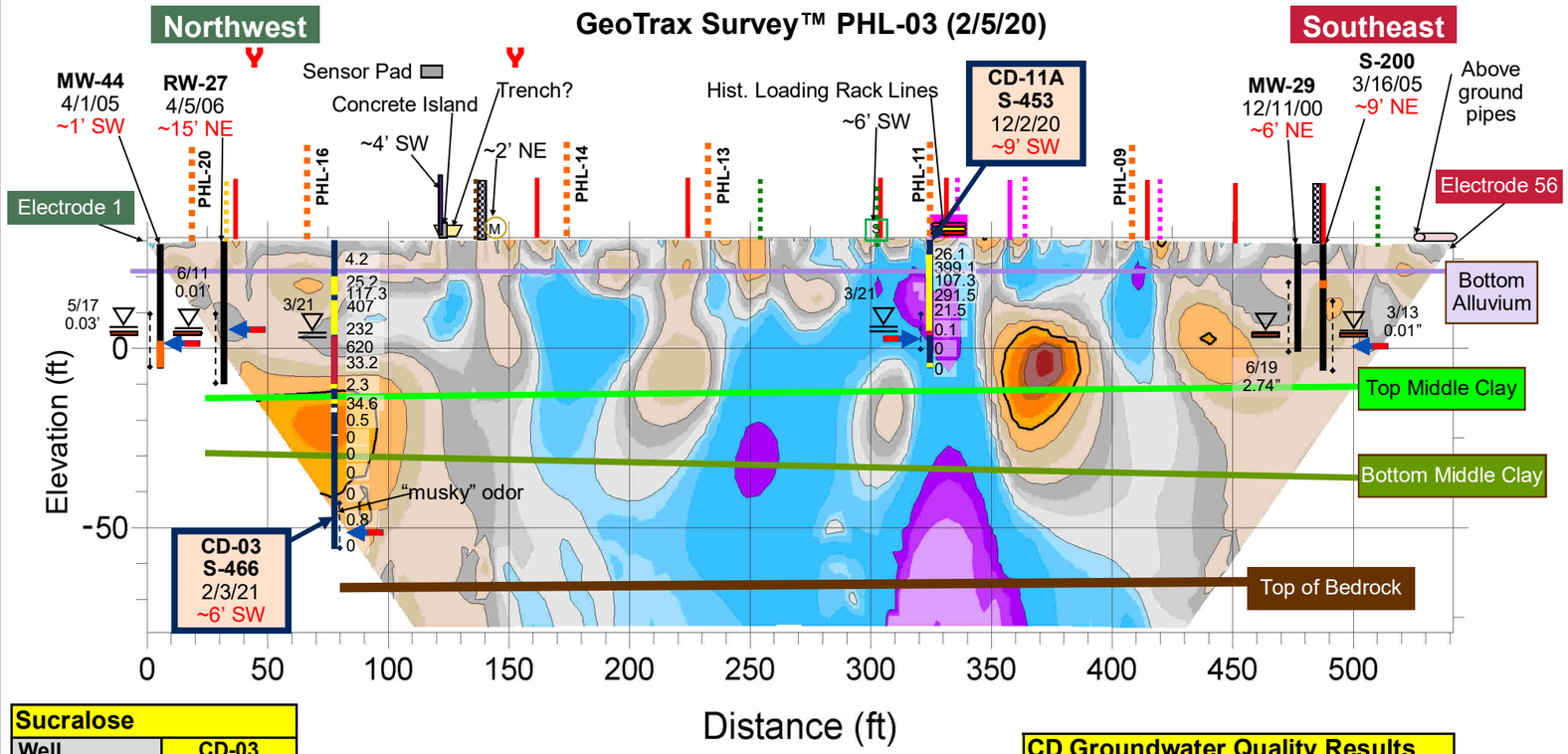

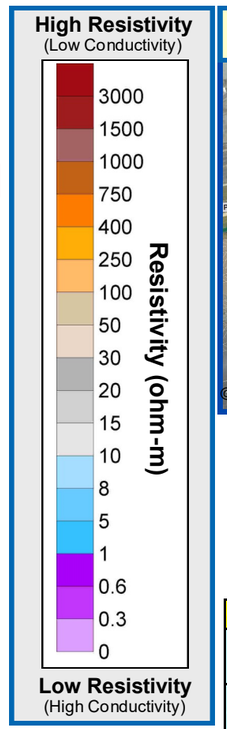

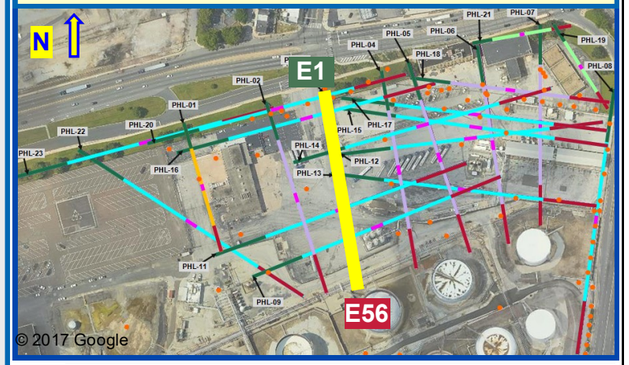

Well Product Data

Well	MW-44	RW-27	S-200
Sample Date	5/8/17	6/6/11	3/25/13
Product Description	70% GASOLINE, 30% MIDDLE DISTILLATE	70% GASOLINE, 30% MIDDLE DISTILLATE	60% GASOLINE, 40% MIDDLE DISTILLATE

Groundwater Sample Results

Well		MW-44	RW-27	S-200
Sample Date		11/12/19	8/1/18	7/25/18
Parameters (µg/L)	Stds (µg/L)			
BENZENE	**5**	**3000**	**3270**	**7600**
TOLUENE	**1000**	320	43	108
ETHYLBENZENE	**700**	500	568	585
XYLENES, TOTAL	**10000**	3800	1080	1300
MTBE	**20**	**50**	**4340**	**1360**
NAPHTHALENE	**100**	**120**	**2340**	**1380**
PYRENE	**130**	9	2.26	10.6
ANTHRACENE	**66**	2	2.85	9.24
ISOPROPYLBENZENE	**3500**	22 J	77.7	35.2
FLUORENE	**1900**	6	25.2	36.5
CHRYSENE	**1.9**	**7**	0.309	**3.32**
PHENANTHRENE	**1100**	12	23	47.2
LEAD	**5**	7.1	ND	ND
1,2,4-TMB	**62**	**690**	**933**	**831**
1,2-DIBROMOETHANE	**0.05**	ND	ND	ND
1,2-DICHLOROETHANE	**5**	ND	ND	ND
1,3,5-TMB	**1200**	220	64.8	344
BENZO(A)ANTHRACENE	**4.9**	3	0.347	3.11
BENZO(A)PYRENE	**0.2**	**4**	0.187	**1.85**
BENZO(B)FLUORANTHENE	**0.55**	**8**	0.244	**2.54**
BENZO(G,H,I)PERYLENE	**0.26**	**4**	0.145	**0.719**

Sucralose

Well	CD-03
Boring	S-466
Sample Date	5/18/21
Sucralose ng/L	ND

CD Groundwater Quality Results

Well		CD-03	CD-11A
Boring		S-466	S-453
Sample Date		3/24/21	3/26/21
Parameters	*Units*		
DO	mg/L	0.15	0.52
ORP	mV	-12	-118
pH	S.U.	5.62	6.52
EC	mS/cm	0.979	1.34
Temperature	°C	18.09	21.26
Turbidity	NTU	12	7.5

CD Groundwater Sample Results

Well		CD-03	CD-11A
Boring		S-466	S-453
Sample Date		3/24/21	3/26/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	18	3800
TOLUENE	**1000**	1.4	50
ETHYLBENZENE	**700**	10	1300
XYLENES, TOTAL	**10000**	35	1800
MTBE	**20**	0.64 J	50
NAPHTHALENE	**100**	57	300
1,2,4-TMB	**62**	26	690
1,3,5-TMB	**1200**	8	220
ISOPROPYLBENZENE	**3500**	2 J	66
TERT-BUTYL ALCOHOL		ND	ND

CD Groundwater Sample Results

Well	CD-03	CD-11A
Boring	S-466	S-453
Sample Date	3/24/21	3/26/21
Parameters µg/L		
ALKALINITY TO pH 4.5	140,000	150,000
CALCIUM	56,000	43,000
IRON	31,000	74,000
METHANE	14	17,000
SULFATE (AS SO4)	230,000	7000 FH
TOTAL CARBON	44,000	75,000
TOTAL INORGANIC CARBON	41,000	56,000
TOTAL KJELDAHL NITROGEN	ND	580 J
TOTAL ORGANIC CARBON	3,200	19,000

Groundwater Quality Sample Results

Well		MW-44	RW-27	S-200
Sample Date		7/1/19	8/1/18	7/25/18
Parameters	*Units*			
DO	mg/L	0.61	0	0
ORP	mV	-30	-91	-35
pH	S.U.	5.53	6.66	6.62
EC	mS/cm	1.11	2.3	2.82
Temperature	°C	21.1	19.14	20.79
Turbidity	NTU	30.7	91.3	10.5

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FIGURE
3.2
ANALYTICAL DATA INTEGRATION

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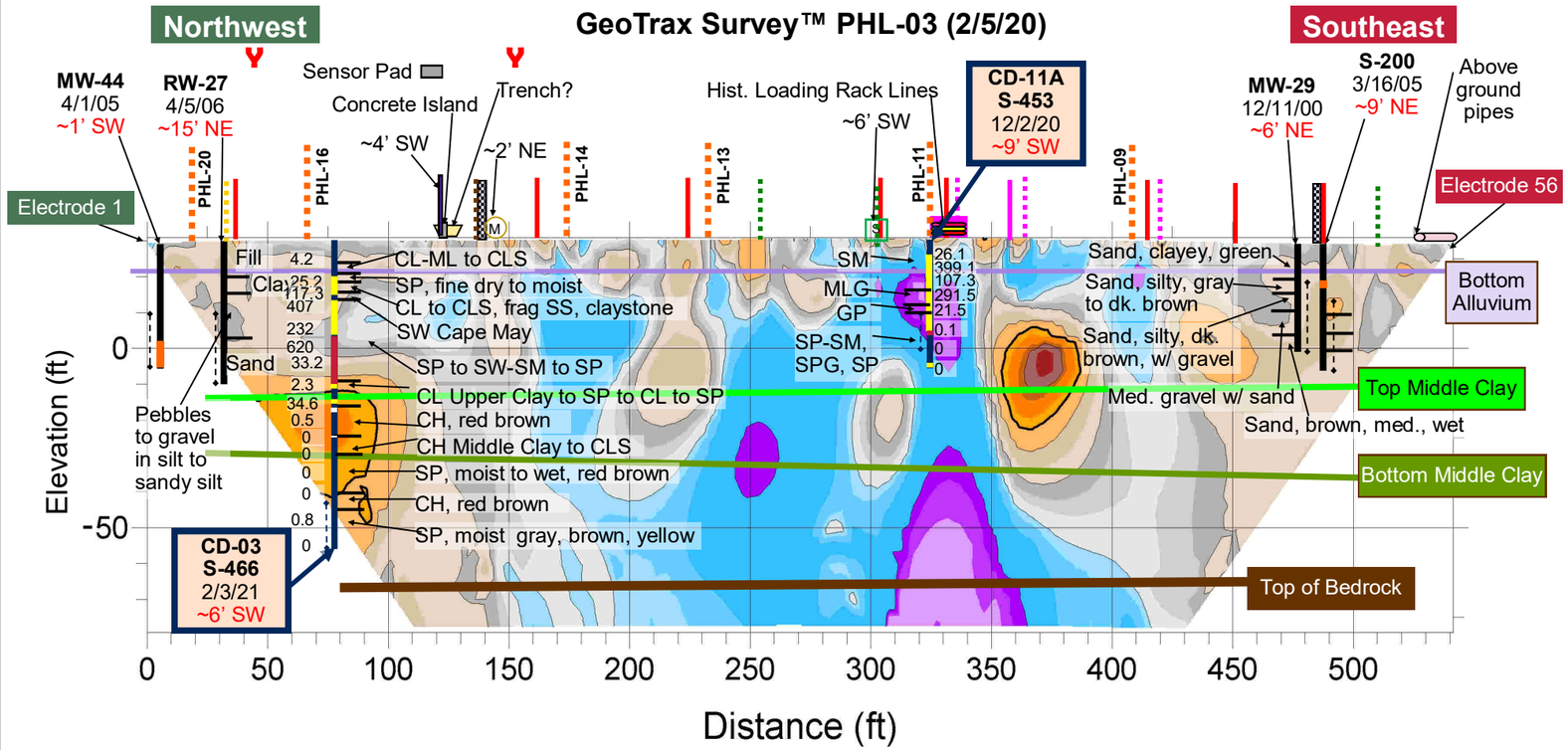
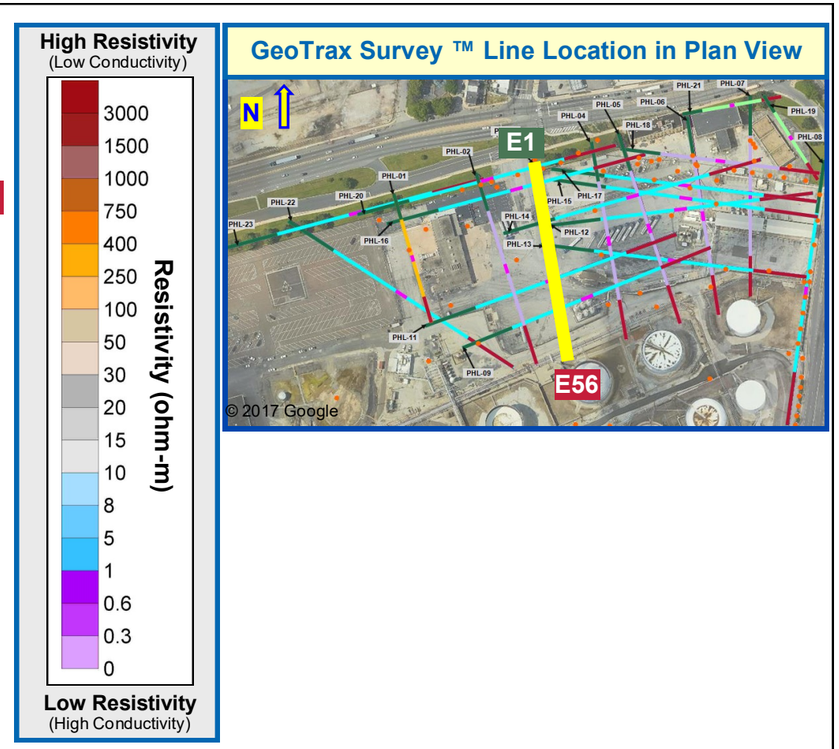
GeoTrax Survey™ PHL-03 (2/5/20)





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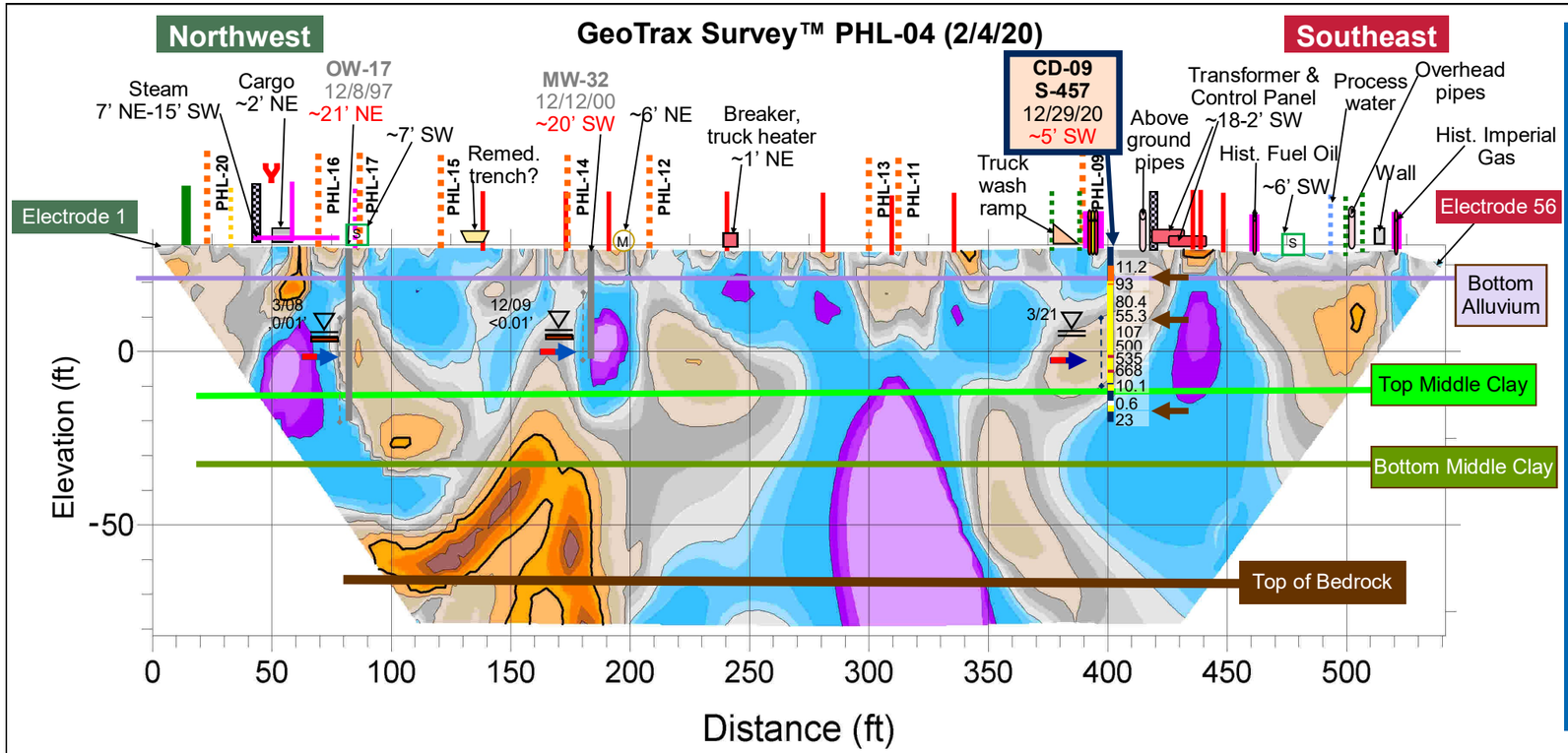

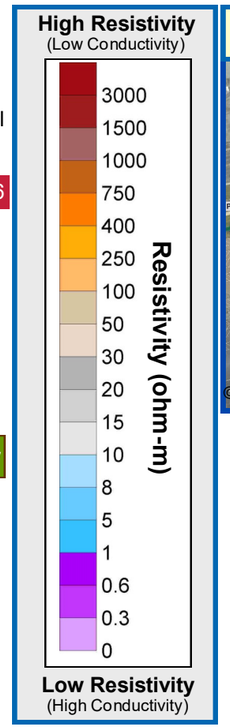

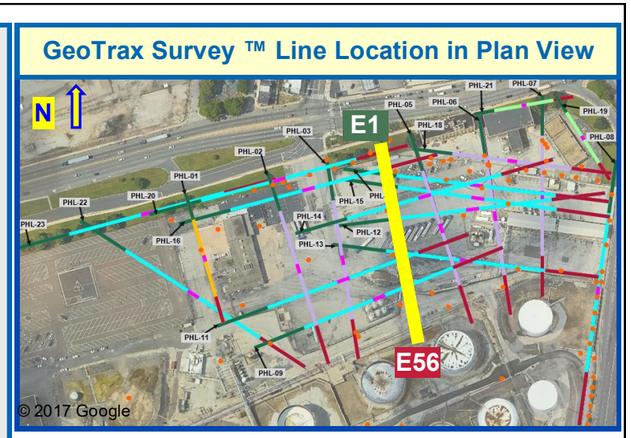

CD Groundwater Grab Results		
Well		CD-09
Boring		S-457
Sample Date		12/2/20
Sample Depth ft. BGS		32
Parameters µg/L	MSCs µg/L	
BENZENE	**5**	**560**
TOLUENE	**1000**	80
ETHYLBENZENE	**700**	130
XYLENES, TOTAL	**10000**	470
MTBE	**20**	6.7
1,2,4-TMB	**62**	**82**
>C12-C22		NA
>C22-C44		NA
C4-C12-TPH-GRO		2900
TOTAL ORG. CARBON		210000
TPH		NA

CD Groundwater Grab Results	
Well	CD-09
Boring	S-457
Sample Date	12/2/20
Sample Depth	32
Parameters (µg/L)	
ALKALINITY TO pH 4.5	NA
CALCIUM	38,000
CHLORIDE (AS CL)	110,000
IRON	10,000
MAGNESIUM	9,400
METHANE	81
NITROGEN, AMMONIA	NA
NITROGEN, NITRATE	5,600
POTASSIUM	3,900
SODIUM	76,000
SULFATE (AS SO4)	150,000

CD Soil Sample Results				
Well /Boring		CD-09 S-457		
Sample Date		12/28/20	12/16/20	12/29/20
Sample Depth ft BGS		8	22	47
Parameters mg/kg	MCLs mg/kg			
BENZENE	330	ND	0.23 J	6.6
TOLUENE	10000	ND	0.094 J	ND
ETHYLBENZENE	1000	ND	0.56	ND
XYLENES, TOTAL	9100	ND	0.45 J	ND
MTBE	9900	ND	ND	2.9
>C12-C22		1100	390	ND
>C22-C44		53 J	7.3 J	9.2 J
C4-C12-TPH-GRO		320	680	16
TPH		1200	400	9.2 J

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FIGURE
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INITIAL CD DATA INTEGRATION

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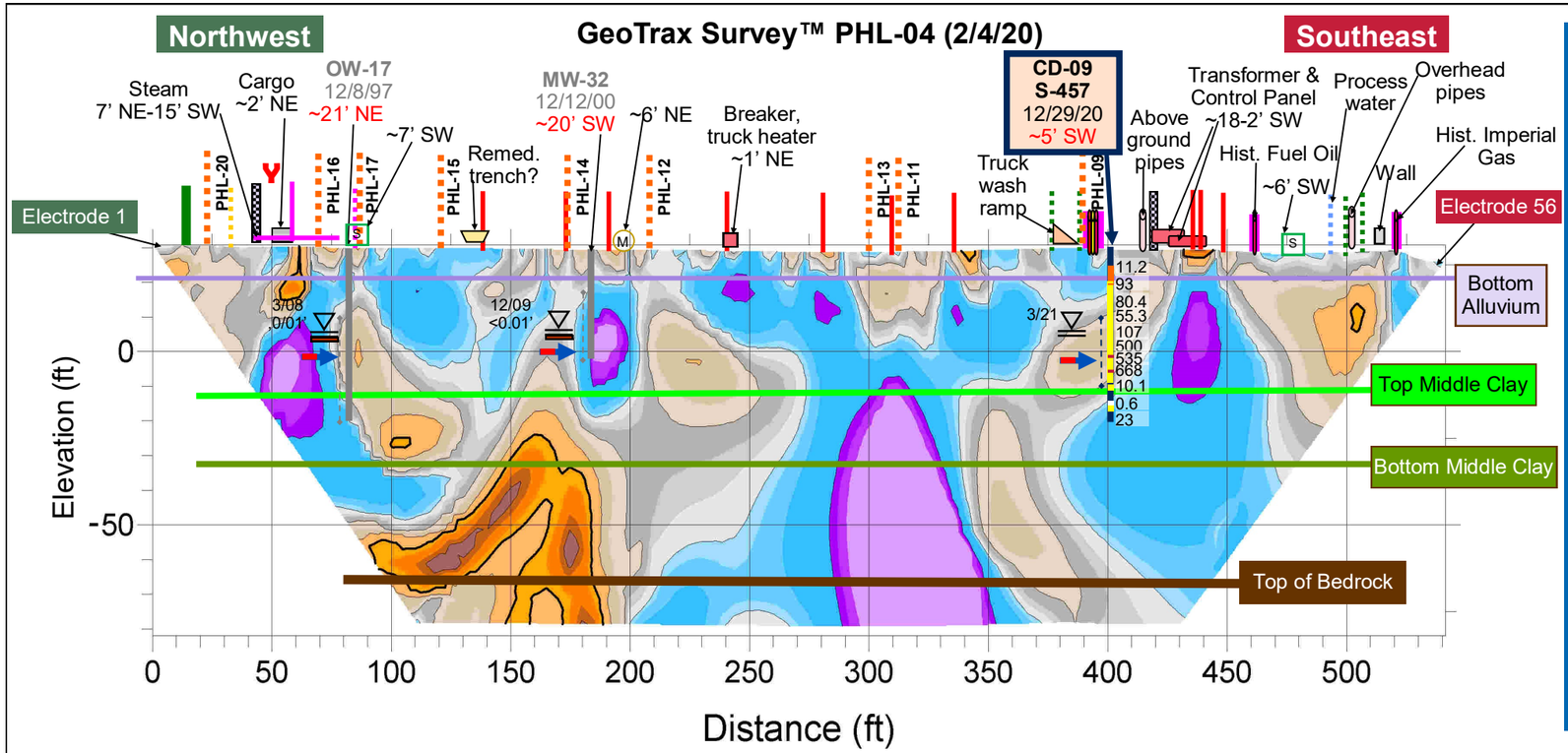
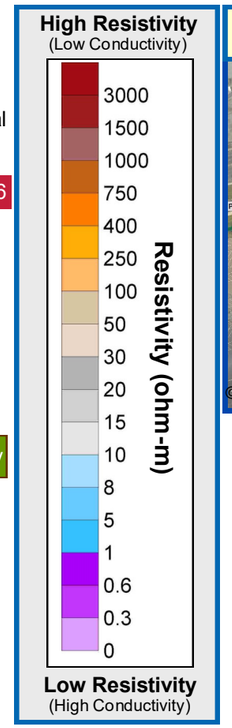
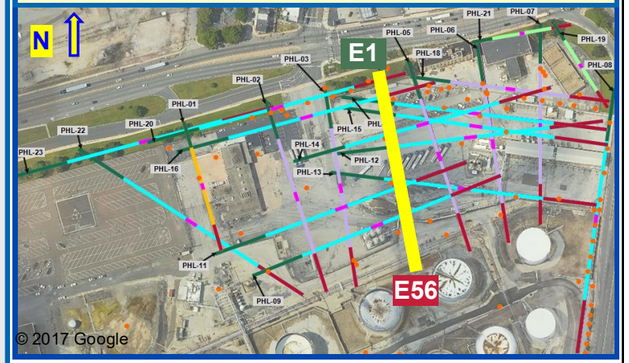




GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results

Well		OW-17	MW-32
Sample Date		7/30/18	7/30/18
Parameters (µg/L)	Stds (µg/L)		
BENZENE	5	ND	**19.2**
TOLUENE	1000	ND	3.37
ETHYLBENZENE	700	ND	196
XYLENES, TOTAL	10000	ND	351
MTBE	20	**54.8**	**114**
NAPHTHALENE	100	82.2	29
PYRENE	130	7.81	3.34
ANTHRACENE	66	8.25	0.306
ISOPROPYLBENZENE	3500	81	20.9
FLUORENE	1900	28.1	0.367
CHRYSENE	1.9	1.51	**2.66**
PHENANTHRENE	1100	36.8	1.71
LEAD	5	2.31	ND
1,2,4-TRIMETHYLBENZENE	62	ND	**372**
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TRIMETHYLBENZENE	1200	ND	133
BENZO(A)ANTHRACENE	4.9	1.42	1.1
BENZO(A)PYRENE	0.2	**1.1**	**1.98**
BENZO(B)FLUORANTHENE	0.55	**1.51**	**4.29**
BENZO(G,H,I)PERYLENE	0.26	**0.571**	**2.4**

CD Groundwater Sample Results

Well		CD-09
Boring		S-457
Sample Date		3/26/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**18000**
TOLUENE	**1000**	770
ETHYLBENZENE	**700**	**1400**
XYLENES, TOTAL	**10000**	3500
MTBE	**20**	**3700**
NAPHTHALENE	**100**	**3100**
1,2,4-TMB	**62**	**550**
1,3,5-TMB	**1200**	150
ISOPROPYLBENZENE	**3500**	53
TERT-BUTYL ALCOHOL		23000

CD Groundwater Sample Results

Well	CD-09
Boring	S-457
Sample Date	3/26/21
Parameters µg/L	
ALKALINITY TO pH 4.5	240,000
CALCIUM	77,000
IRON	36,000
METHANE	14,000
SULFATE (AS SO4)	2200 J
TOTAL CARBON	140,000
TOTAL INORGANIC CARBON	96,000
TOTAL KJELDAHL NITROGEN	970 J
TOTAL ORGANIC CARBON	44,000

CD Groundwater Quality Results

Well		CD-09
Boring		S-457
Sample Date		3/26/21
Parameters	*Units*	
DO	mg/L	0.88
ORP	mV	-144
pH	S.U.	6.82
EC	mS/cm	1.91
Temperature	ºC	18.38
Turbidity	NTU	37.1

Well Product Data

Well	OW-17	MW-32
Sample Date	3/20/08	12/31/09
Product Description	90% GASOLINE, 10% MIDDLE DISTILLATE	Not Available

Groundwater Quality Sample Results

Well		OW-17	MW-32
Sample Date		7/30/18	7/30/18
Parameters	*Units*		
DO	mg/L	0	0
ORP	mV	-2	-21
pH	S.U.	6.46	6.58
EC	mS/cm	2.66	0.246
Temperature	ºC	21.43	22.24
Turbidity	NTU	15.8	0

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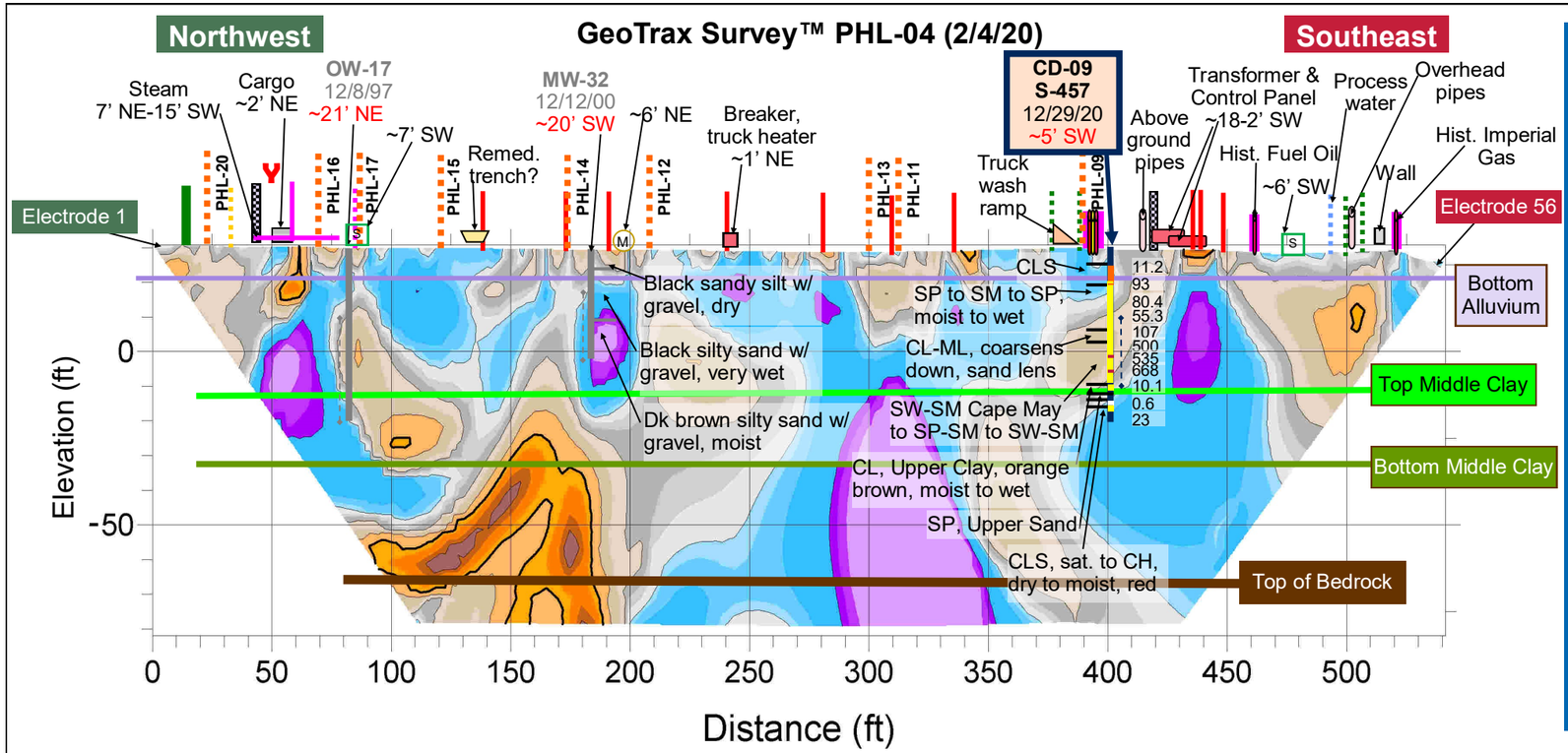

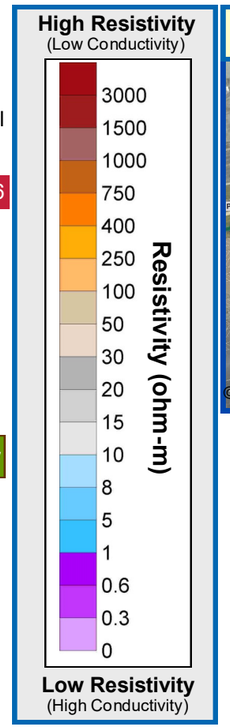

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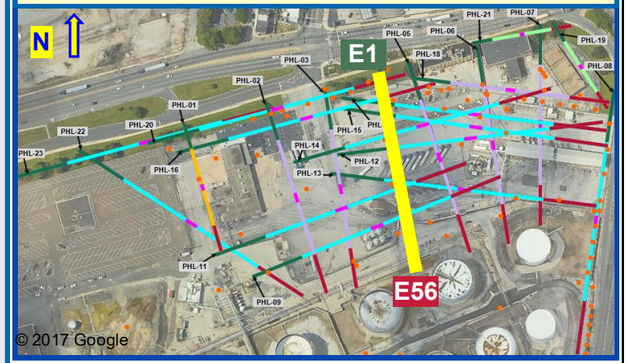

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FIGURE
4.3
GEOLOGY
DATA
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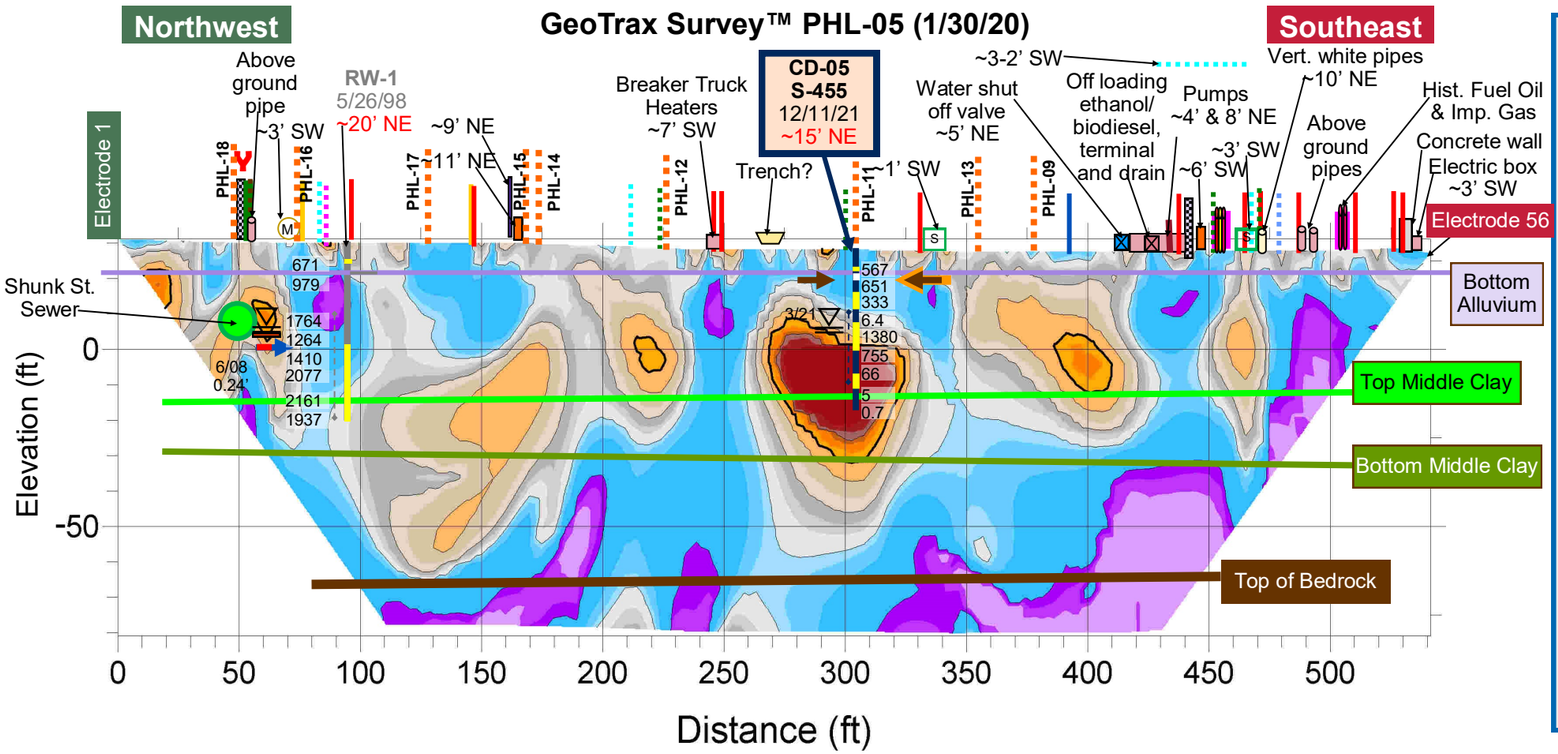

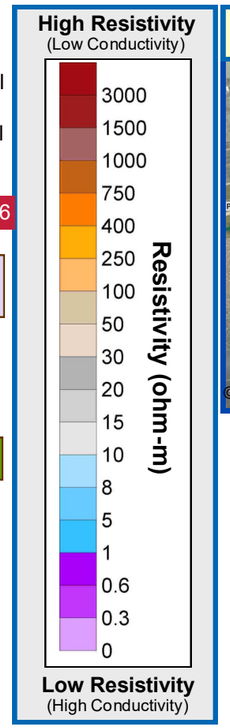

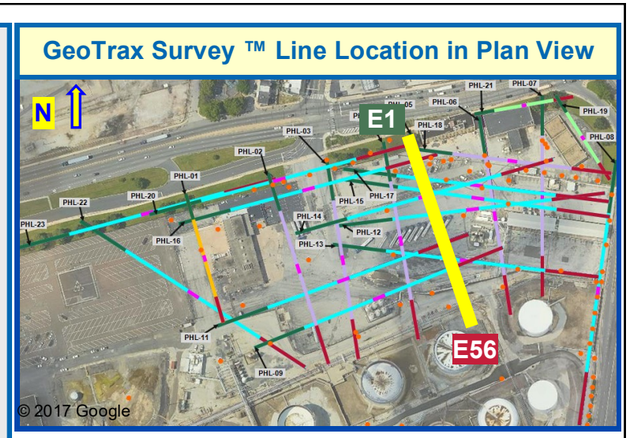

CD Groundwater Grab Results		
Well		CD-05
Boring		S-455
Sample Date		
Sample Depth ft. BGS		
Parameters µg/L	MSCs µg/L	
BENZENE	5	
TOLUENE	1000	
ETHYLBENZENE	700	
XYLENES, TOTAL	10000	
MTBE	20	
1,2,4-TMB	62	NA
>C12-C22		
>C22-C44		
C4-C12-TPH-GRO		
TOTAL ORG. CARBON		
TPH		

CD Groundwater Grab Results	
Well	CD-05
Boring	S-457
Sample Date	
Sample Depth	
Parameters (µg/L)	
ALKALINITY TO pH 4.5	
CALCIUM	
CHLORIDE (AS CL)	
IRON	
MAGNESIUM	
METHANE	NA
NITROGEN, AMMONIA	
NITROGEN, NITRATE	
POTASSIUM	
SODIUM	
SULFATE (AS SO4)	

CD Soil Sample Results		
Well /Boring		CD-05 / S-455
Sample Date		12/10/20
Sample Depth ft BGS		9
Parameters mg/kg	MCLs mg/kg	
BENZENE	330	1.2
TOLUENE	10000	0.61
ETHYLBENZENE	1000	6.6
XYLENES, TOTAL	9100	6.4
MTBE	9900	ND
>C12-C22		110
>C22-C44		9.3 J
C4-C12-TPH-GRO		2400
TPH		120

CD Soil Forensics	
Well	CD-05
Boring	S-455
Sample Date	12/10/20
Sample Depth ft BGS	9
See Report for full details	Dominant Gasoline range. Gasoline or a mixture of gasoline and light

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FIGURE
5.1
INITIAL CD DATA INTEGRATION

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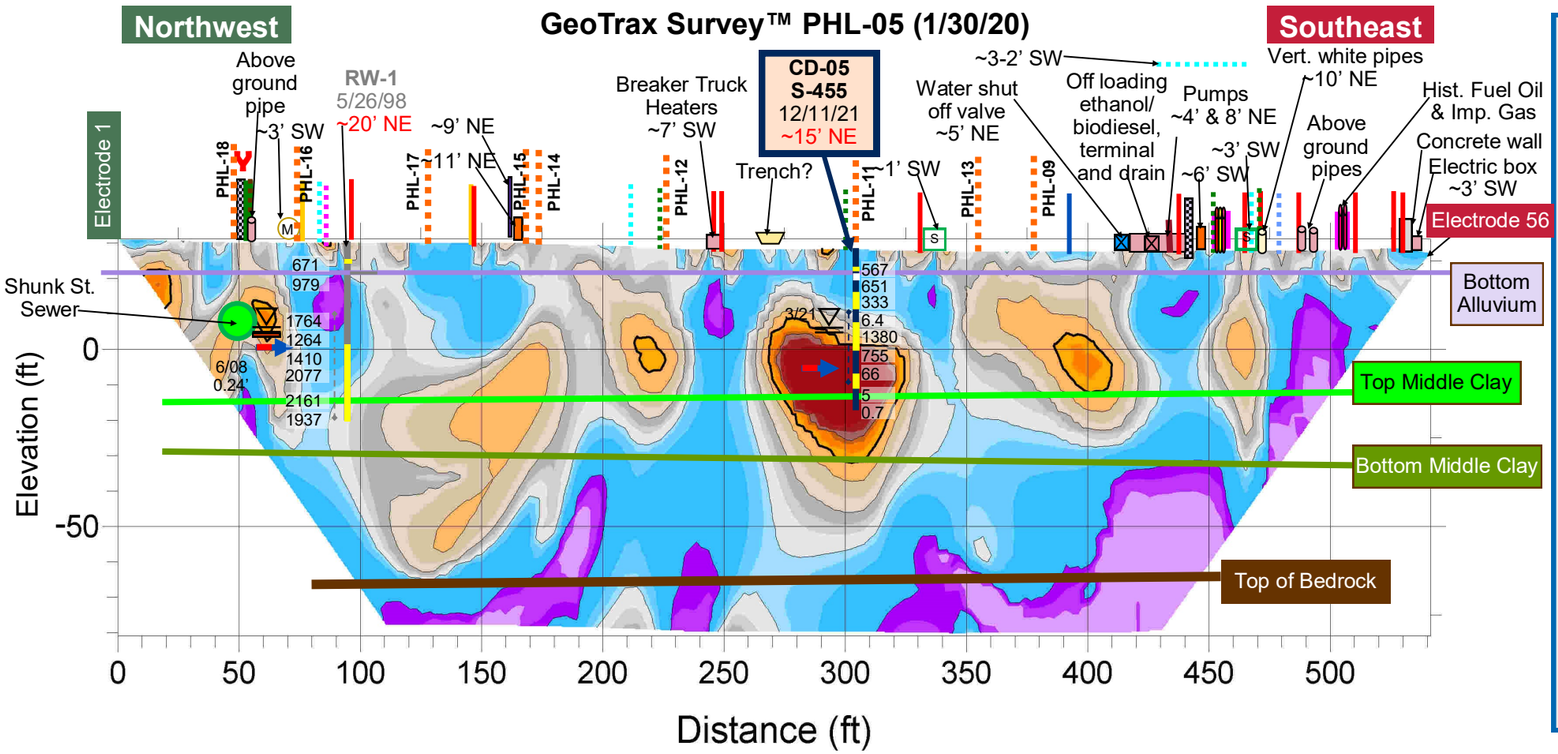
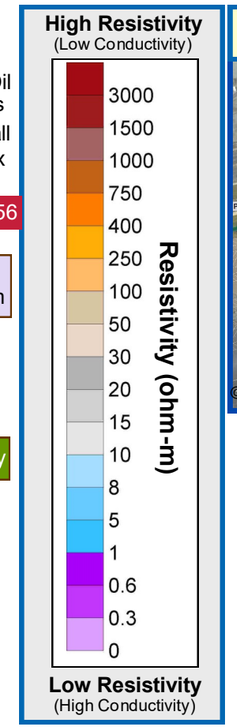
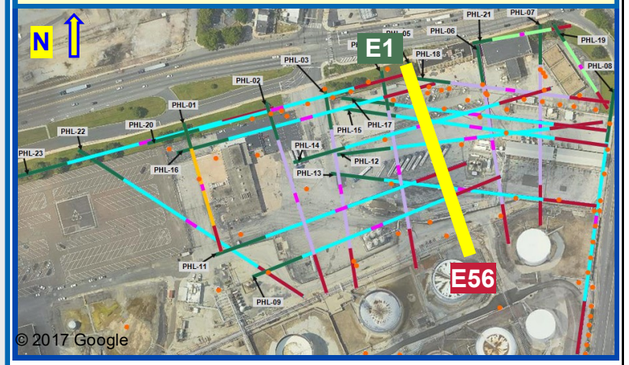




GeoTrax Survey ™ Line Location in Plan View



Well Product Data	
Well	RW-1
Sample Date	6/3/08
Product Description	UNKNOWN% GASOLINE

Groundwater Sample Results		
Well		RW-1
Sample Date		8/14/18
Parameters (µg/L)	Standards (µg/L)	
BENZENE	5	543
TOLUENE	1000	260
ETHYLBENZENE	700	121
XYLENES, TOTAL	10000	3990
MTBE	20	11200
NAPHTHALENE	100	303
PYRENE	130	2.44
ANTHRACENE	66	3.34
ISOPROPYLBENZENE	3500	ND
FLUORENE	1900	21.5
CHRYSENE	1.9	0.232
PHENANTHRENE	1100	15.7
LEAD	5	ND
1,2,4-TMB	62	1480
1,2-DIBROMOETHANE	0.05	ND
1,2-DICHLOROETHANE	5	ND
1,3,5-TMB	1200	357
BENZO(A)ANTHRACENE	4.9	0.279
BENZO(A)PYRENE	0.2	0.128
BENZO(B)FLUORANTHENE	0.55	0.155
BENZO(G,H,I)PERYLENE	0.26	ND

CD Groundwater Sample Results		
Well		CD-05
Boring		S-455
Sample Date		3/26/21
Parameters µg/L	MCLs µg/L	
BENZENE	5	6300
TOLUENE	1000	410
ETHYLBENZENE	700	530
XYLENES, TOTAL	10000	580
MTBE	20	400
NAPHTHALENE	100	4400
1,2,4-TMB	62	280
1,3,5-TMB	1200	170
ISOPROPYLBENZENE	3500	120
TERT-BUTYL ALCOHOL		2200

CD Groundwater Sample Results		
Well		CD-05
Boring		S-455
Sample Date		3/26/21
Parameters µg/L		
ALKALINITY TO pH 4.5		400,000
CALCIUM		76,000
IRON		41,000
METHANE		19,000
SULFATE (AS SO4)		ND
TOTAL CARBON		120,000
TOTAL INORGANIC CARBON		110,000
TOTAL KJELDAHL NITROGEN		7,200
TOTAL ORGANIC CARBON		13,000

CD Groundwater Quality Results		
Well		CD-05
Boring		S-455
Sample Date		3/26/21
Parameters	*Units*	
DO	mg/L	0.42
ORP	mV	-110
pH	S.U.	6.03
EC	mS/cm	2.67
Temperature	ºC	21.17
Turbidity	NTU	0

Groundwater Quality Sample Results		
Well		RW-1
Sample Date		8/14/18
Parameters	*Units*	
DO	mg/L	1.79
ORP	mV	-32
pH	S.U.	6.66
EC	mS/cm	3.65
Temperature	ºC	20.69
Turbidity	NTU	32.1

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FIGURE
5.2
ANALYTICAL DATA INTEGRATION

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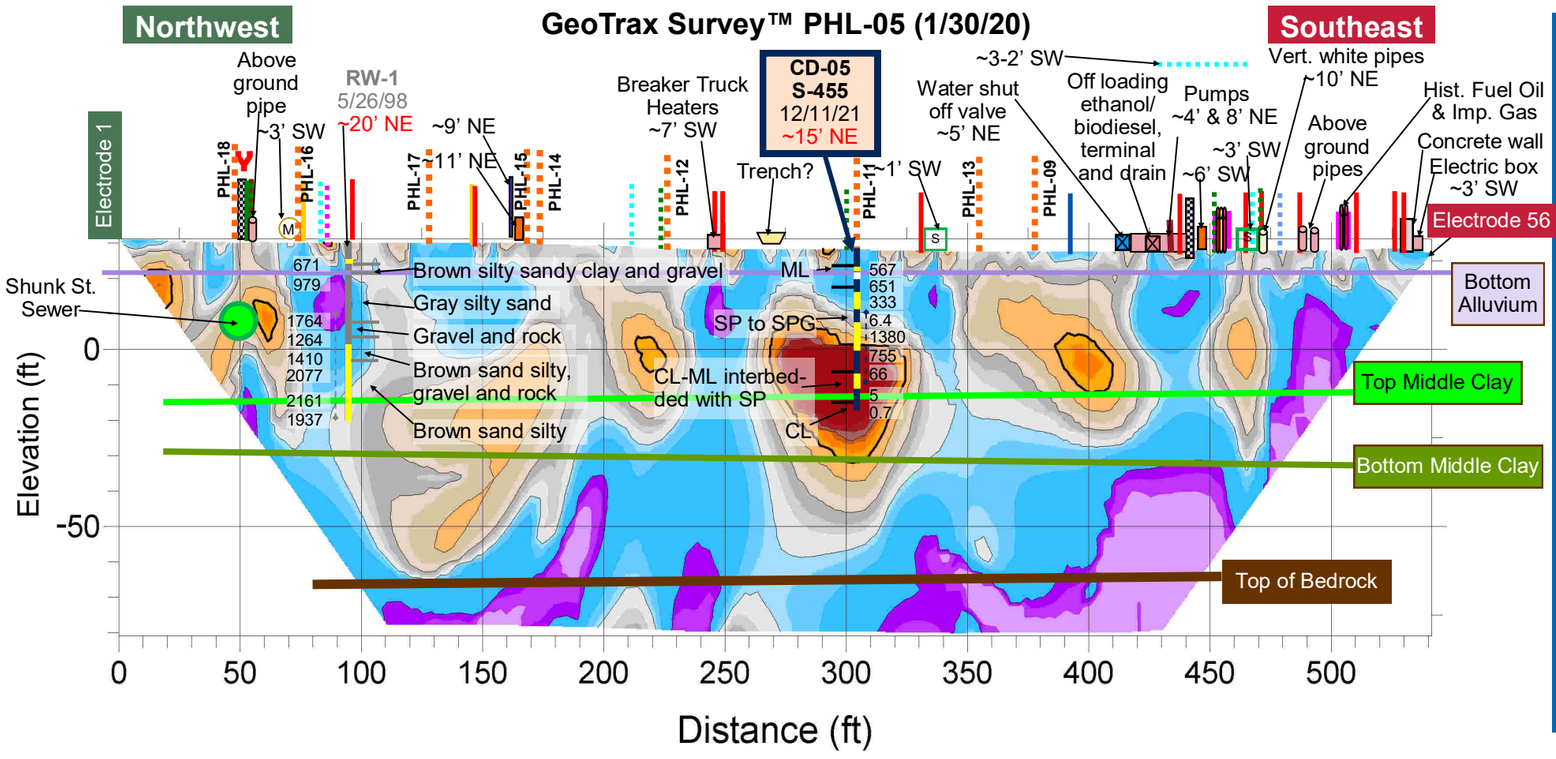

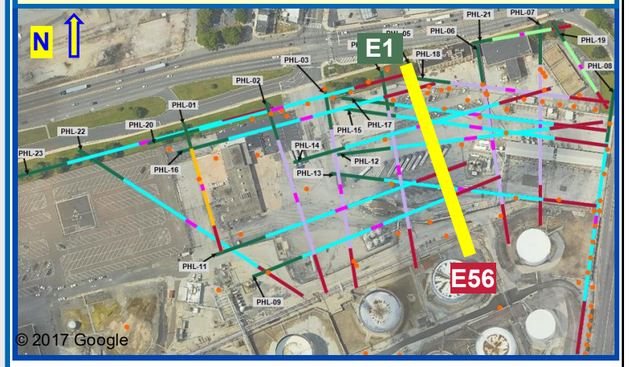

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FIGURE
5.3
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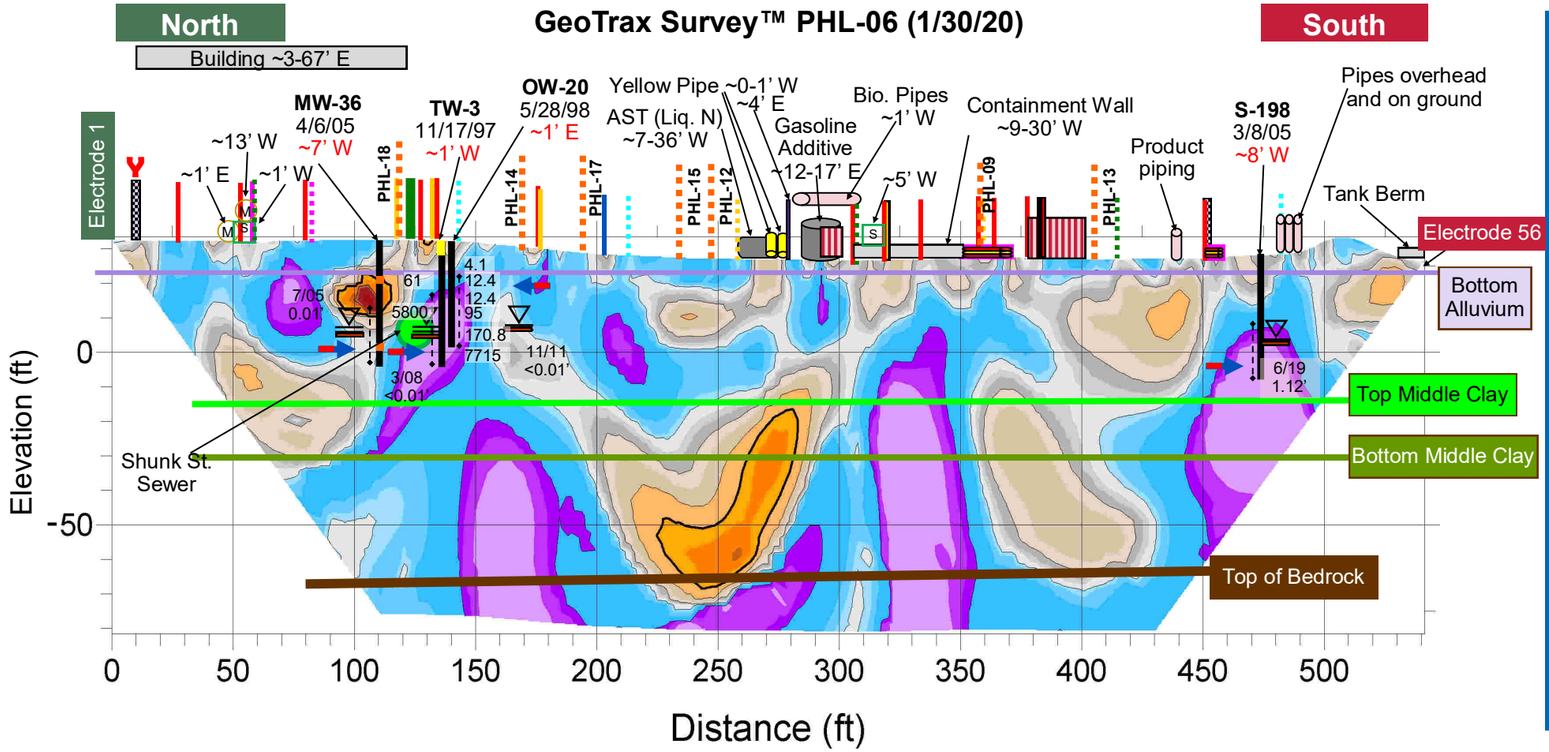

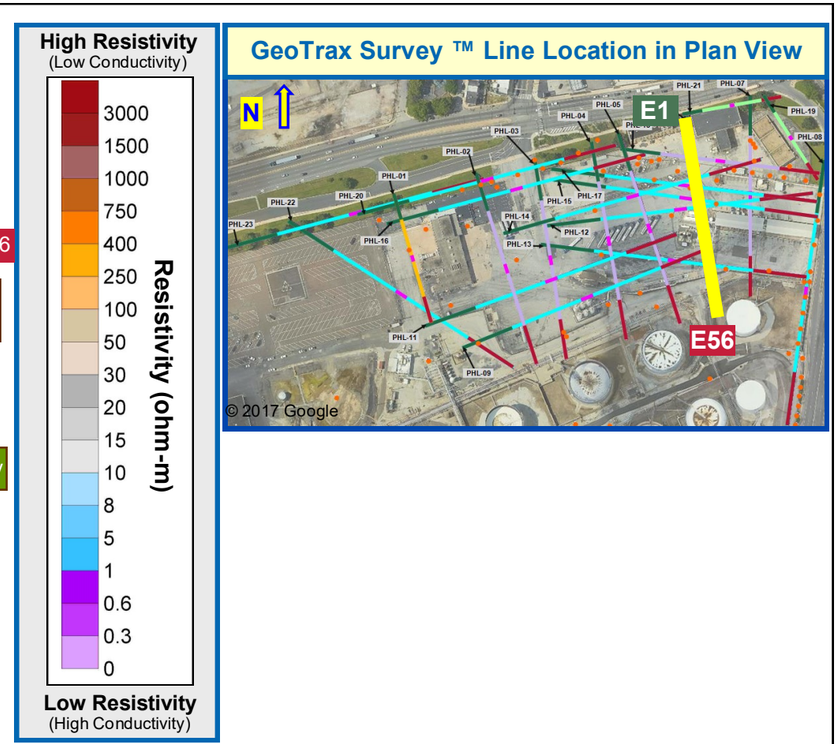

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FIGURE
6.1
INITIAL CD DATA INTEGRATION

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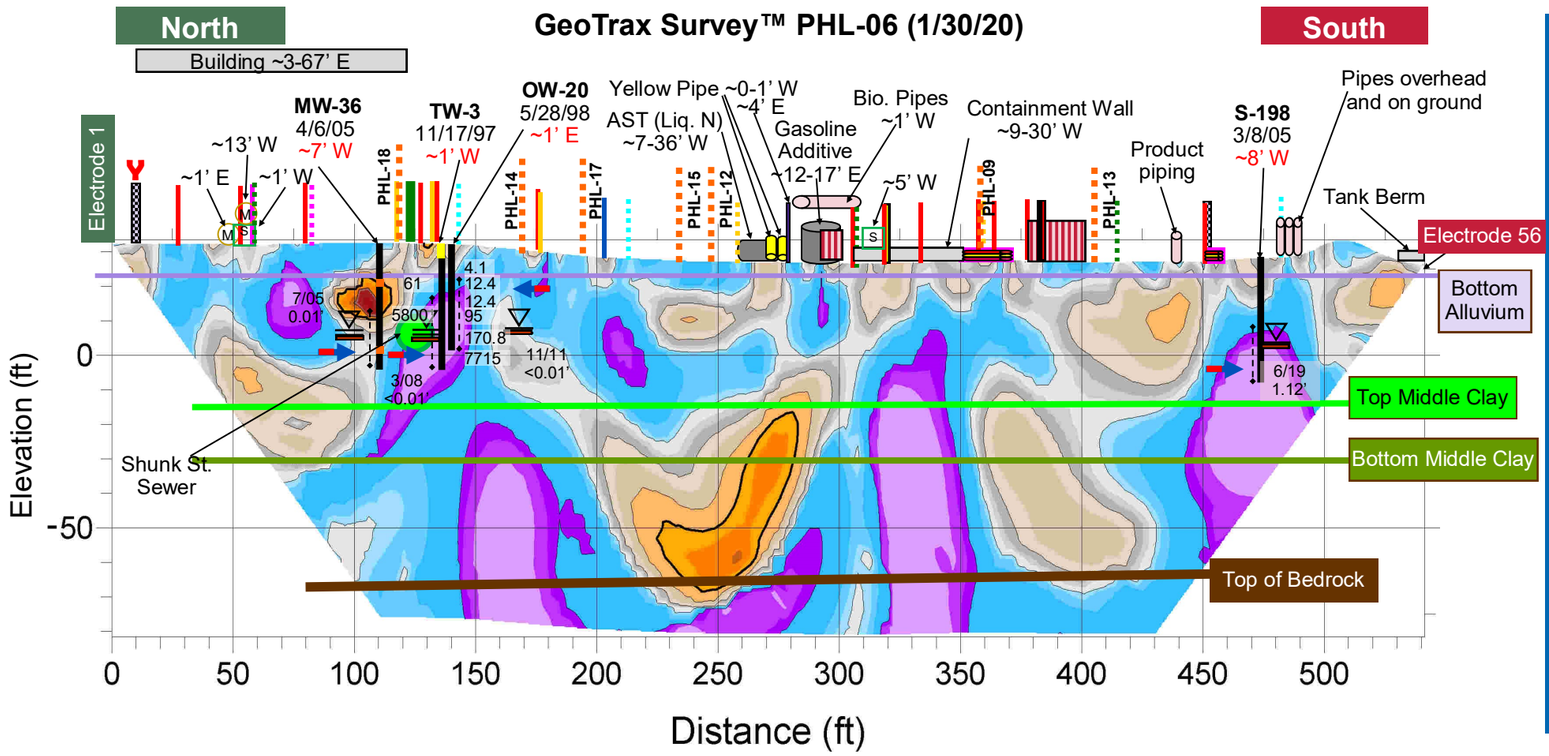

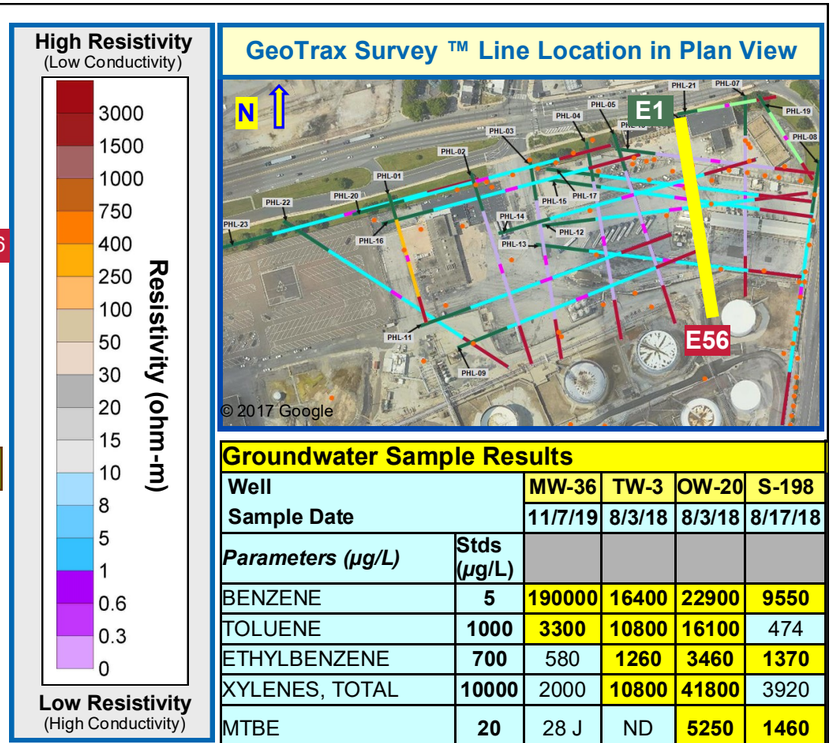

Groundwater Sample Results

Well		MW-36	TW-3	OW-20	S-198
Sample Date		11/7/19	8/3/18	8/3/18	8/17/18
Parameters (µg/L)	Stds (µg/L)				
BENZENE	**5**	**190000**	**16400**	**22900**	**9550**
TOLUENE	**1000**	**3300**	**10800**	**16100**	474
ETHYLBENZENE	**700**	580	**1260**	**3460**	**1370**
XYLENES, TOTAL	**10000**	2000	**10800**	**41800**	3920
MTBE	**20**	28 J	ND	**5250**	**1460**
NAPHTHALENE	**100**	**1800**	**740**	**549**	**9930**
PYRENE	**130**	0.9	17.4	52.1	**247**
ANTHRACENE	**66**	1	11.8	28	**194**
ISOPROPYLBENZENE	**3500**	41 J	ND	548	136
FLUORENE	**1900**	9	31	38.6	356
CHRYSENE	**1.9**	0.3 J	**5.24**	**16.2**	**92.1**
PHENANTHRENE	**1100**	8	43.2	109	826
LEAD	**5**	0.8	4.43 B	4.46	ND
1,2,4-TMB	**62**	240 J	**1670**	**12500**	**1360**
1,2-DIBROMOETHANE	**0.05**	ND	ND	ND	ND
1,2-DCE	**5**	470 J	ND	ND	ND
1,3,5-TMB	**1200**	81 J	536	**4260**	468
BENZO(A) ANTHRACENE	**4.9**	0.2 J	**5.2**	**16.3**	**91.2**
BENZO(A)PYRENE	**0.2**	0.3 J	**3.27**	**9.62**	**56.4**
BENZO(B) FLUORANTHENE	**0.55**	0.4 J	**4.04**	**11.6**	**73.9**
BENZO(G,H,I) PERYLENE	**0.26**	ND	**1.84**	**5.53**	**24.8**

Groundwater Quality Sample Results

Well		MW-36	TW-3	OW-20	S-198
Sample Date		7/16/19	8/3/18	8/3/18	8/17/18
Parameters	*Units*				
DO	mg/L	0	0	0	5.81
ORP	mV	-130	-49	-54	-31
pH	S.U.	6.84	6.6	6.81	7.03
EC	mS/cm	1.22	1.94	4.07	1.46
Temperature	ºC	19.99	21.03	20.98	20.38
Turbidity	NTU	76.6	0	1000	251

Well Gauging Data

Well		MW-36	TW-3	OW-2	S-198
Sample Date		7/1/05	3/20/08	5/8/06	6/3/19
Parameters	*Units*				
Depth to Water	ft btoc	28.5	28.12	27.93	25.31
Depth to LNAPL	ft btoc	28.49	28.12	27.93	24.19
Product Thickness	ft	**0.01**	**<0.01**	**<0.01**	**1.12**
Product Density		0.78	0.7593	0.8084	0.7923
Product Description		UNKNOWN % GASOLINE	GASOLINE	90% GASOLINE, 10% MIDDLE DISTILLATE	55% GASOLINE, 45% MIDDLE DISTILLATE

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FIGURE
6.2
ANALYTICAL DATA INTEGRATION

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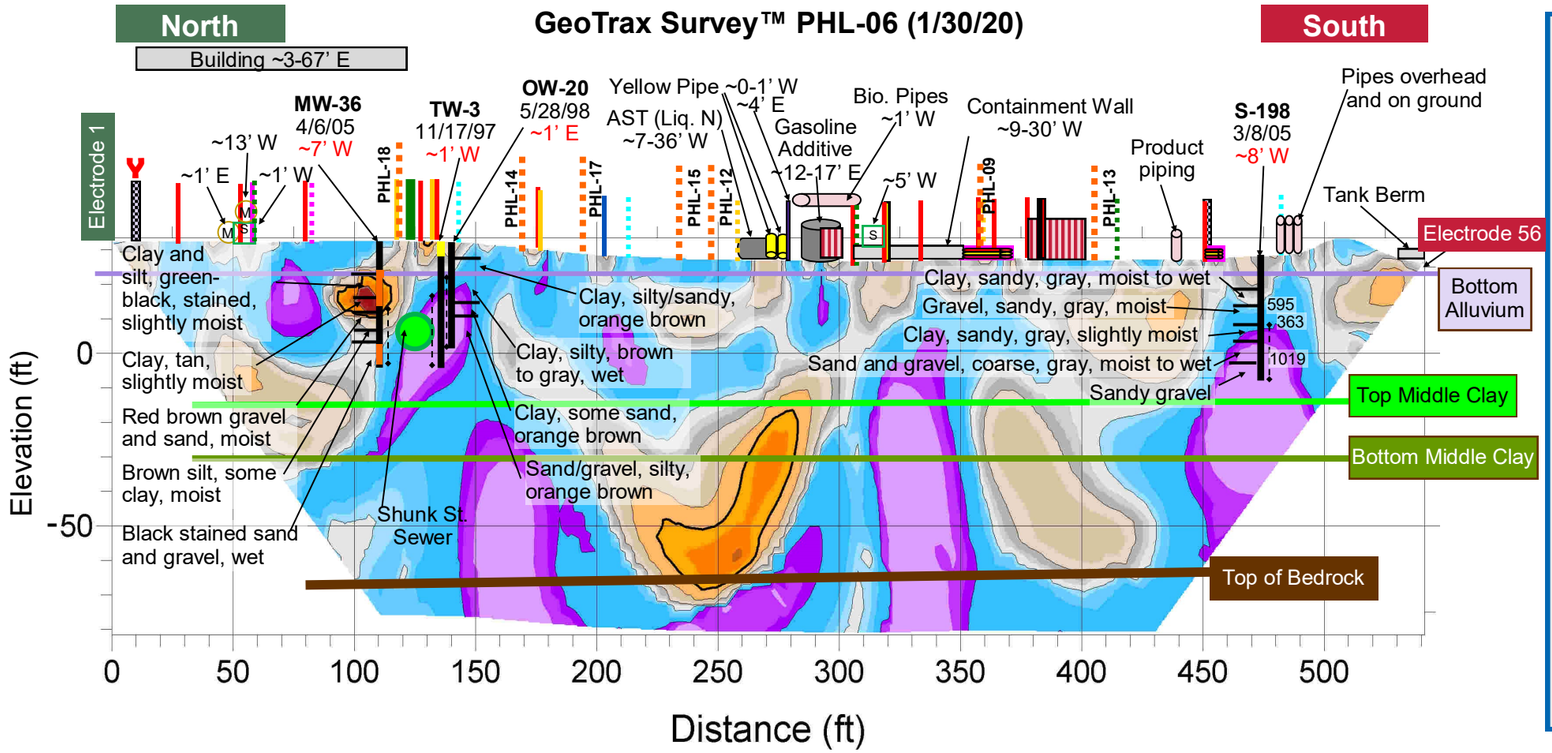

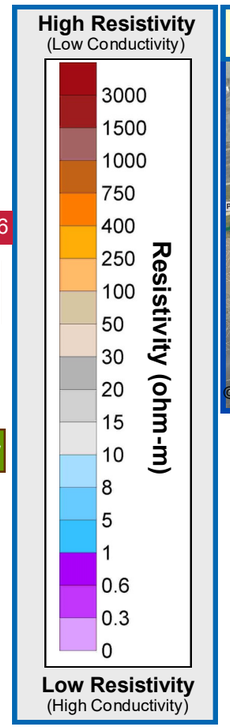

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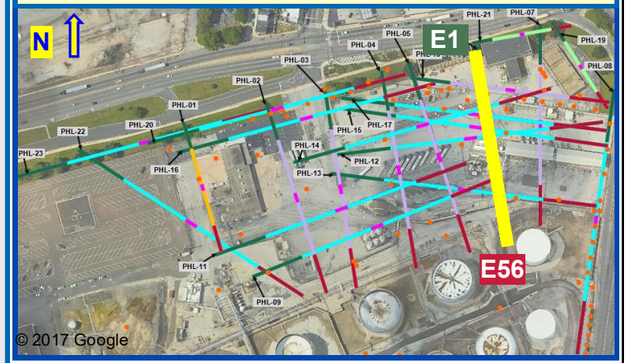

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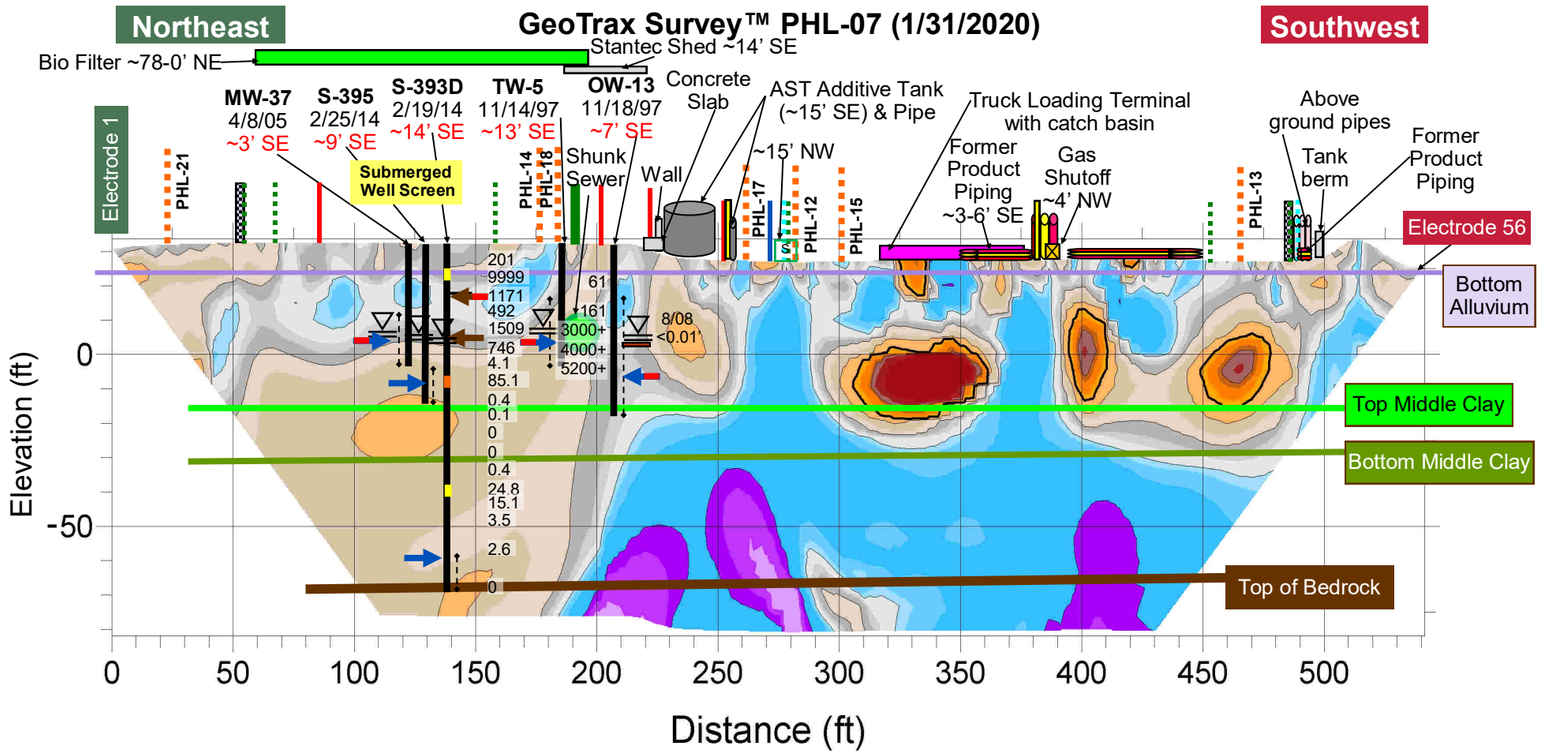

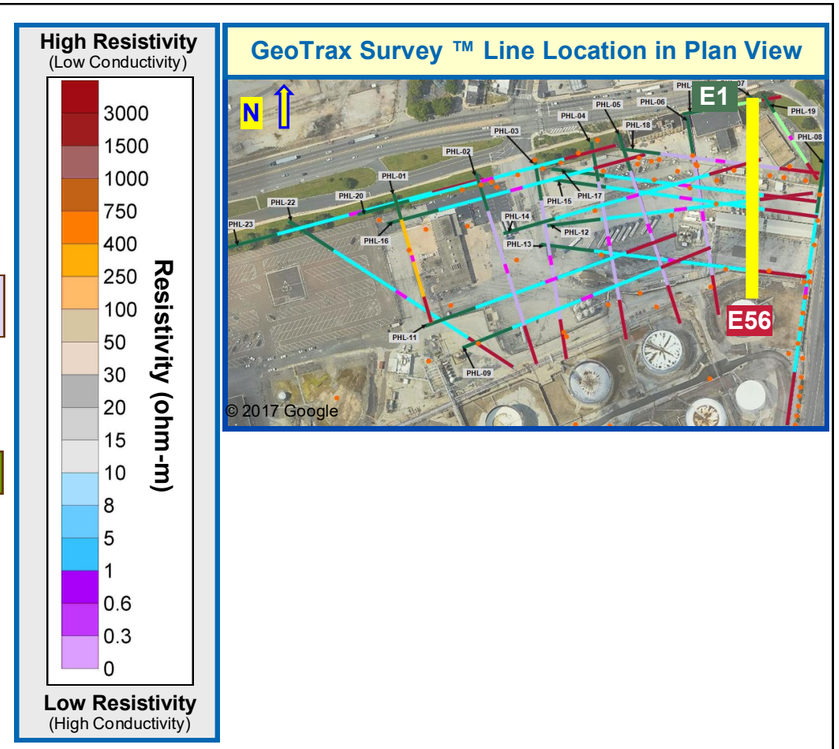

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FIGURE
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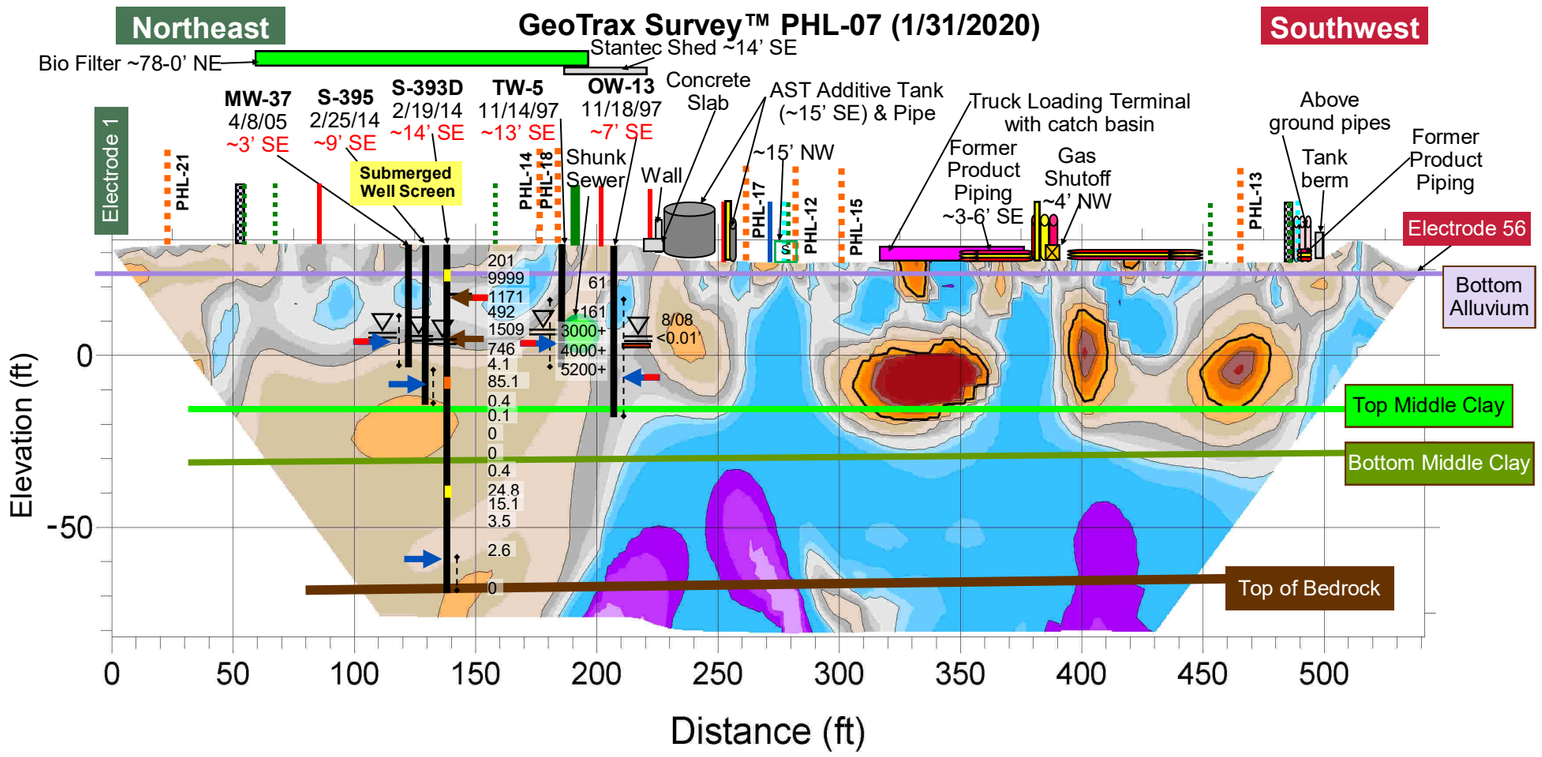

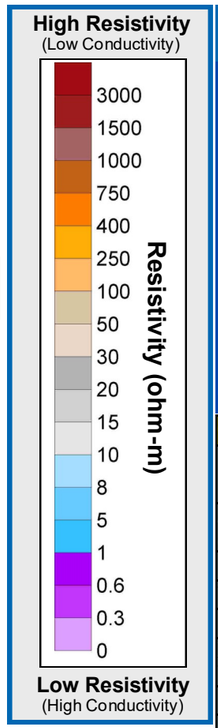

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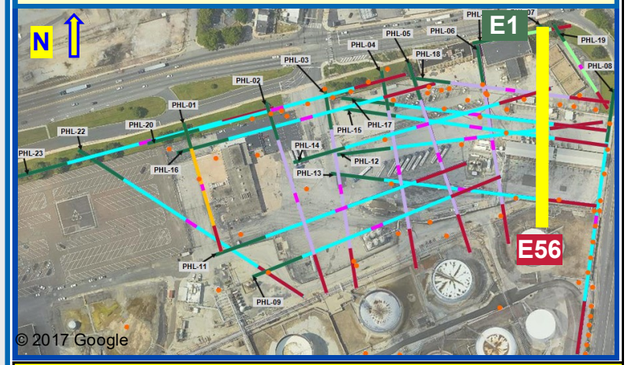

Groundwater Sample Results

Well		MW-37	S-395	S-393D	TW-5	OW-13
Sample Date		11/7/19	11/6/19	8/1/18	11/7/19	8/14/18
Parameters (µg/L)	Stds (µg/L)					
BENZENE	**5**	**170000**	ND	ND	**610000**	**39600**
TOLUENE	**1000**	680	ND	ND	**7500**	**8280**
ETHYLBENZENE	**700**	28 J	ND	ND	420	**709**
XYLENES, TOTAL	**10000**	170 J	ND	ND	1800	7970
MTBE	**20**	ND	ND	ND	ND	ND
NAPHTHALENE	**100**	4	ND	ND	14	**165**
PYRENE	**130**	0.3 J	ND	0.118	ND	0.16
ANTHRACENE	**66**	ND	ND	ND	ND	0.112
ISOPROPYLBENZENE	**3500**	33 J	ND	ND	110 J	ND
FLUORENE	**1900**	0.4 J	ND	ND	0.5	0.724
CHRYSENE	**1.9**	ND	ND	0.0735	ND	ND
PHENANTHRENE	**1100**	0.6	ND	0.0706	1	0.641
LEAD	**5**	1.4	0.12 J	ND	1.2	2.16
1,2,4-TMB	**62**	ND	ND	ND	ND	**913**
1,2-DI-BROMOETHANE	**0.05**	ND	ND	ND	ND	ND
1,2-DCE	**5**	ND	ND	ND	ND	ND
1,3,5-TMB	**1200**	ND	ND	ND	ND	295
BENZO(A) ANTHRACENE	**4.9**	0.1 J	ND	ND	ND	ND
BENZO(A) PYRENE	**0.2**	0.2 J	ND	0.0667	ND	ND
BENZO(B) FLUORANTHENE	**0.55**	0.4 J	ND	0.114	ND	ND
BENZO(G,H,I) PERYLENE	**0.26**	0.2 J	ND	0.0901	ND	ND

Groundwater Quality Sample Results

Well		MW-37	S-395	S-393D	TW-5	OW-13
Sample Date		7/2/19	7/8/19	8/1/18	7/3/19	8/14/18
Parameters	*Units*					
DO	mg/L	0	0	0	0	0.39
ORP	mV	-163	-97	140	-151	-56
pH	S.U.	6.43	6.5	5.82	6.45	6.67
EC	mS/cm	3.97	1.93	0.848	5.16	1.88
Temperature	ºC	18.52	18.7	18.68	18.69	20.62
Turbidity	NTU	66.2	2.7	23.7	68.4	47.1

Well Gauging Data

Well		OW-13
Sample Date		8/18/08
Parameters	*Units*	
Depth to Water	ft btoc	28.35
Depth to LNAPL	ft btoc	28.35
Product Thickness	ft	**<0.01**
Product Density		0.8084
Product Description		90% GASOLINE, 10% MIDDLE

Soil Sample Results

Well		S-393D	S-393D
Sample Date		2/4/14	2/4/14
Sample Depth ft BGS		14-15	27-28
Parameters (mg/kg)	Standards (mg/kg)		
BENZENE	330	**11200**	98.8
TOLUENE	10000	1010	10.4
ETHYLBENZENE	1000	31.6	0.583
XYLENES, TOTAL	9100	138	2.47
METHYL TERTIARY BUTYL ETHER	9900	ND	ND
NAPHTHALENE	190000	3.67 J	0.0744
PYRENE	190000	2.45 J	0.0495
ANTHRACENE	190000	1.03 J	0.0194
ISOPROPYLBENZENE (CUMENE)	10000	88.7	1.56
FLUORENE	130000	1.07J	0.0272
CHRYSENE	190000	1.04 J	0.0184
PHENANTHRENE	190000	4.79	0.0936
LEAD	190000	23.2	5.5

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FIGURE
7.2
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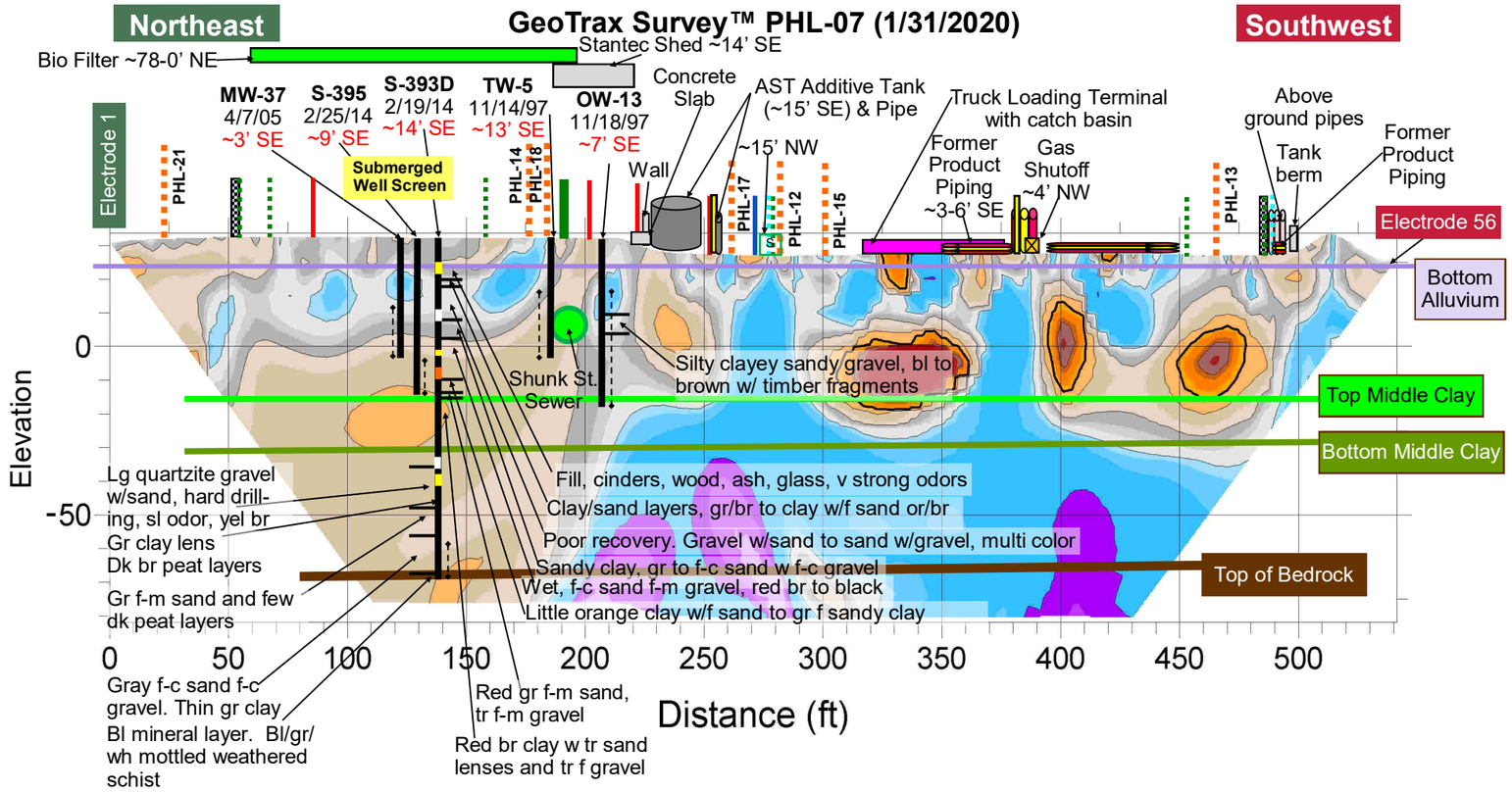

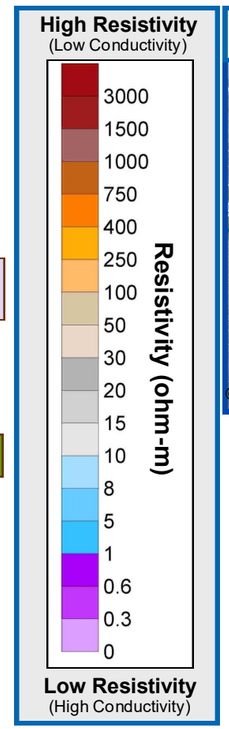

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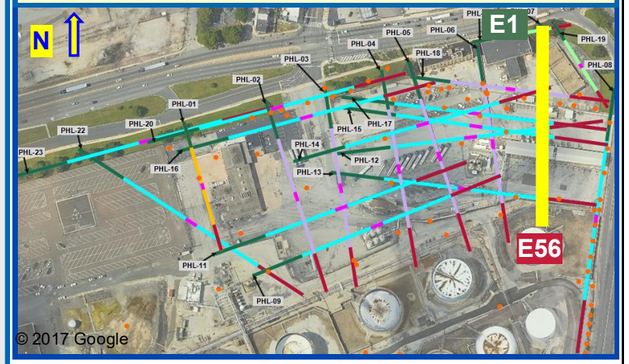

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FIGURE
7.3
GEOLOGY
DATA
INTEGRATION

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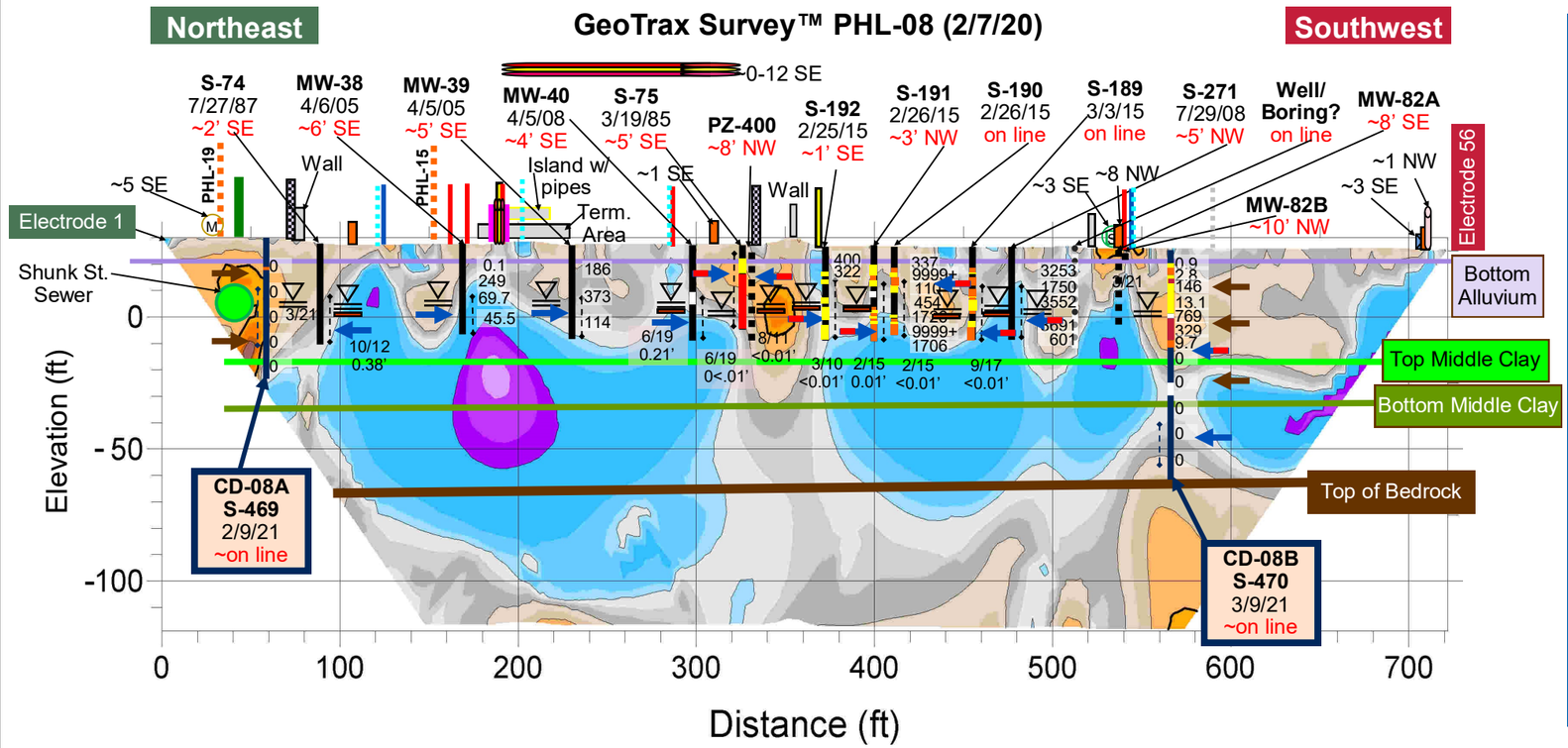

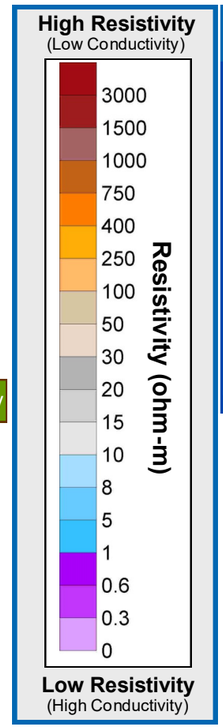

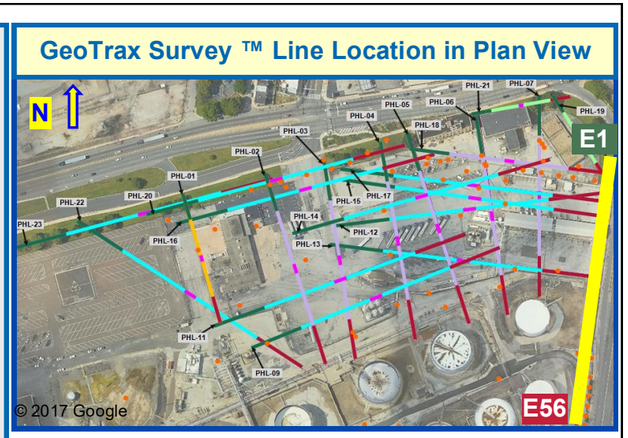

CD Groundwater Grab Results				
Well		CD-08A	CD-08B	
Boring		S-469	S-470	
Sample Date			2/25/21	3/8/21
Sample Depth ft. BGS			37	71
Parameters µg/L	MSCs µg/L			
BENZENE	5		75	0.35 J
TOLUENE	1000		160	0.47 J
ETHYLBENZENE	700		31	ND
XYLENES, TOTAL	10000		180	ND
MTBE	20		140	2.3
1,2,4-TMB	62	NA	39	ND
>C12-C22			1300	10000
>C22-C44			170	ND B
C4-C12-TPH-GRO			6900	82
TOTAL ORG. CARBON			15000	16000
TPH			1500	10000

CD Groundwater Grab Results			
Well	CD-08A	CD-08B	
Boring	S-469	S-470	
Sample Date		2/25/21	3/8/21
Sample Depth		37	71
Parameters (µg/L)			
ALKALINITY TO pH 4.5		370,000	130,000
CALCIUM		78,000	51,000
CHLORIDE (AS CL)		400,000	77,000
IRON		31,000	46,000
MAGNESIUM		43,000	44,000
METHANE	NA	14,000	31
NITROGEN, AMMONIA		940	2,300
NITROGEN, NITRATE		530	550
POTASSIUM		15,000	3,500
SODIUM		250,000	72,000
SULFATE (AS SO4)		18,000	280,000

CD Soil Sample Results							
Well /Boring		CD-08A S-469		CD-08B S-470			
Sample Date		2/9/21	2/9/21	2/23/21	2/25/21	2/26/21	3/8/21
Sample Depth ft BGS		11	38	12	28	48	71
Parameters mg/kg	MCLs mg/kg						
BENZENE	330	ND	0.00086 J	0.035 J	0.06 J	0.0053	ND
TOLUENE	10000	ND	ND	0.076 J	0.065 J	0.0014 J	ND
ETHYLBENZENE	1000	ND	ND	0.13 J	0.045 J	0.0006 J	ND
XYLENES, TOTAL	9100	ND	ND	0.27 J	0.11 J	0.0015 J	ND
MTBE	9900	ND	ND	ND	0.09 J	0.05	ND
>C12-C22		ND	ND	1700	80	ND	ND
>C22-C44		9.5 J	ND	150 J	7.5 J	14	ND
C4-C12-TPH-GRO		ND	ND	1200 B	440	0.31	ND
TPH		9.5 J	ND	3600	88	14	ND

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FIGURE
8.1
INITIAL CD DATA INTEGRATION

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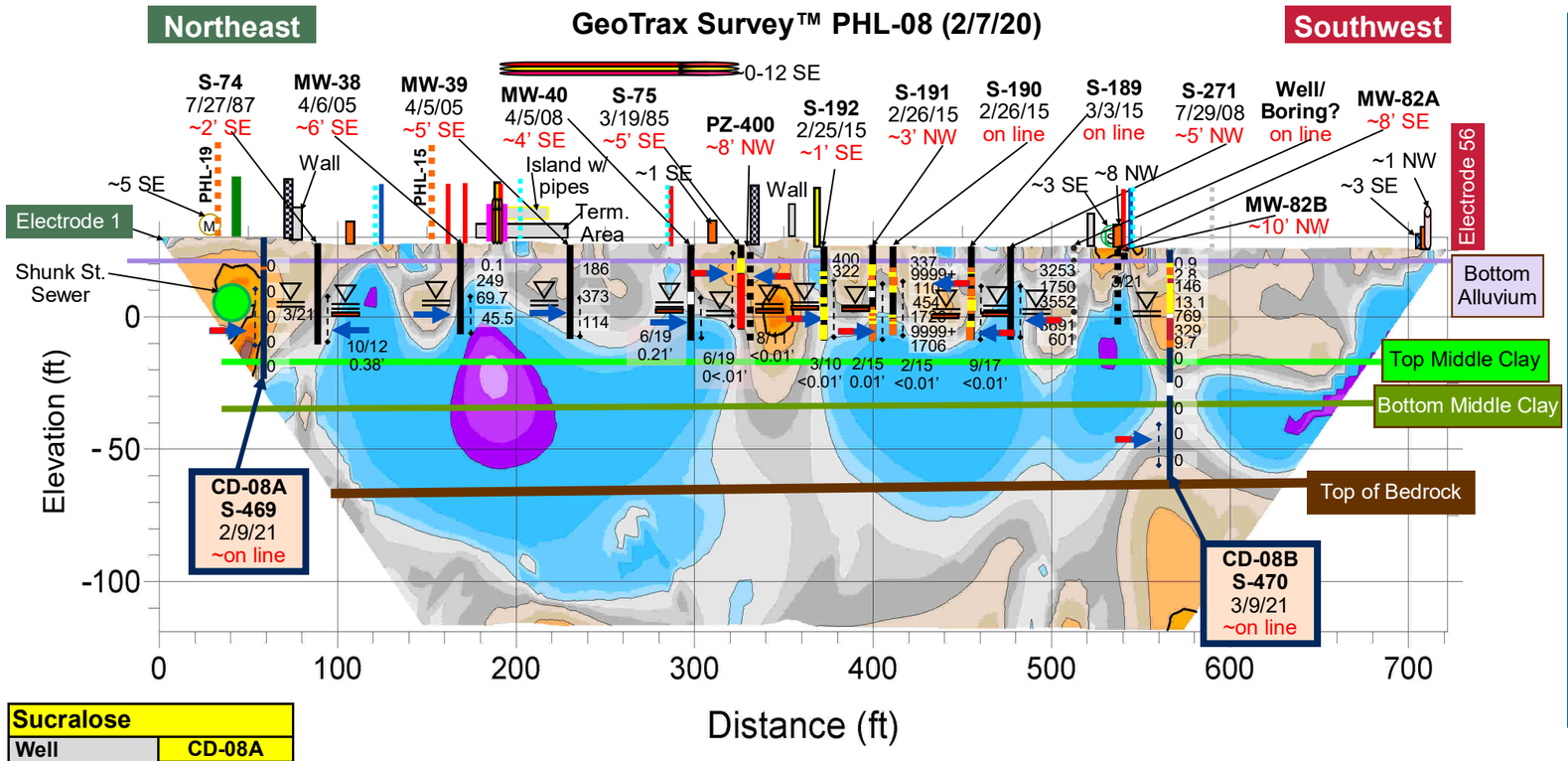
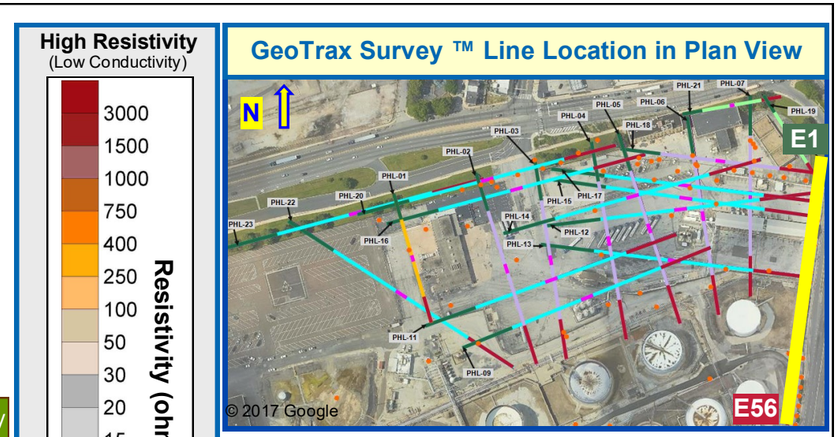
GeoTrax Survey™ PHL-08 (2/7/20)





GeoTrax Survey ™ Line Location in Plan View

Sucralose	
Well	CD-08A
Boring	S-469
Sample Date	5/19/21
Sucralose ng/L	150

CD Groundwater Sample Results			
Well		CD-08A	CD-08B
Boring		S-469	S-470
Sample Date		3/25/21	3/25/21
Parameters µg/L	MCLs µg/L		
BENZENE	5	28	7
TOLUENE	1000	1.1	0.38 J
ETHYLBENZENE	700	ND	ND
XYLENES, TOTAL	10000	ND	ND
MTBE	20	ND	1.9
NAPHTHALENE	100	ND	1.5
1,2,4-TMB	62	ND	ND
1,3,5-TMB	1200	ND	ND
ISOPROPYLBENZENE	3500	ND	ND
TERT-BUTYL ALCOHOL		ND	16 J

CD Groundwater Sample Results		
Well	CD-08A	CD-08B
Boring	S-469	S-470
Sample Date	3/25/21	3/25/21
Parameters µg/L		
ALKALINITY TO pH 4.5	310,000	160,000
CALCIUM	78,000	56,000
IRON	260	64,000
METHANE	ND	32
SULFATE (AS SO4)	81,000	300,000
TOTAL CARBON	75,000	69,000
TOTAL INORGANIC CARBON	73,000	54,000
TOTAL KJELDAHL NITROGEN	ND	650 J
TOTAL ORGANIC CARBON	2,000	15,000

CD Groundwater Quality Results			
Well		CD-08A	CD-08B
Boring		S-469	S-470
Sample Date		3/25/21	3/25/21
Parameters	*Units*		
DO	mg/L	0.35	1.94
ORP	mV	59	-22
pH	S.U.	6.54	6.13
EC	mS/cm	1.74	1.2
Temperature	ºC	16.54	15.19
Turbidity	NTU	11.8	23.9

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FIGURE
8.2 A
ANALYTICAL DATA INTEGRATION

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Groundwater Sample Results

Well		S-74	MW-38	MW-39	MW-40	S-75	PZ-400	S-192	S-191	S-190	S-189	S-271
Sample Date		7/26/18	11/6/19	7/26/18	8/2/18	11/13/19	12/8/14	12/11/14	12/12/14	12/12/14	5/27/14	10/30/19
Parameters (µg/L)	Standards (µg/L)											
BENZENE	**5**	ND	ND	ND	1.76	**39**	2.7	0.49 J	**202**	**138**	**154**	**110**
TOLUENE	**1000**	ND	ND	ND	ND	2	1.1	0.34 J	6	24.5	155	24
ETHYLBENZENE	**700**	ND	ND	ND	ND	0.6 J	0.84 J	ND	160	30.4	41.2	8
	10000	ND	ND	ND	ND	1 J	2.5	0.76 J	248	49.7	191	50
MTBE	**20**	ND	2	6.79	1.64	4	**27.1**	15.8	**41.5**	**358**	**296**	**450**
NAPHTHALENE	**100**	ND	ND	ND	6.28	ND	ND	ND	24.2	20.5	ND	5
PYRENE	**130**	0.162	0.3 J	0.223	0.998	ND	2.02	0.5	4.54	1.06	4	0.7 Q
ANTHRACENE	**66**	ND	ND	ND	ND	0.6	1.11	0.28	ND	1.01	ND	2
ISOPROPYLBENZENE	**3500**	ND	ND	ND	9.75	14	19.9	6.2	53.4	104	12.5	81
FLUORENE	**1900**	ND	ND	0.161	10.4	2	2.39	0.838	12.4	5.08	ND	12
CHRYSENE	**1.9**	ND	ND	ND	ND	ND	0.644	ND	0.941	0.36	1.18	ND
PHENANTHRENE	**1100**	ND	ND	ND	11.8	1	1.23	0.324	13.4	4.05	3.77	13
LEAD	**5**	ND	0.083 J	ND	ND	0.97	**13**	2.3 B	12.9	**12**	**6.8**	**7.8**
1,2,4-TRIMETHYLBENZENE	**62**	ND	ND	ND	ND	ND	2	0.72 J	**396**	**152**	**120**	ND
1,2-DIBROMOETHANE	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-TRIMETHYLBENZENE	**1200**	ND	ND	ND	ND	0.6 J	6.5	0.45 J	216	57.4	44.2	13 J
BENZO(A)ANTHRACENE	**4.9**	ND	ND	ND	ND	ND	0.748	ND	1.26	0.355	0.739	ND
BENZO(A)PYRENE	**0.2**	ND	ND	ND	ND	ND	**0.238**	ND	**0.523**	0.164	**0.772**	ND
BENZO(B)FLUORANTHENE	**0.55**	ND	ND	ND	ND	ND	0.336	ND	**0.653**	0.234	**0.872**	ND
BENZO(G,H,I)PERYLENE	0.26	ND	ND	ND	ND	ND	0.159	ND	**0.346**	ND	**0.648**	ND

Well Product Data

Well	S-74	MW-40	S-75	PZ-400	S-192	S-191	S-190	S-189
Sample Date	10/18/12	6/3/19	6/3/19	8/3/11	3/24/10	2/10/15	2/18/15	9/5/17
Parameters								
Product Description	UNKNOWN% GASOLINE Unknown% Distillate	65% MIDDLE DISTILLATE 35% GASOLINE	UNKNOWN% GASOLINE Unknown% Distillate	65% MIDDLE DISTILLATE 35% GASOLINE	90% GASOLINE, 10% MIDDLE DISTILLATE	90% GASOLINE, 10% MIDDLE DISTILLATE	90% GASOLINE, 10% MIDDLE DISTILLATE	90% GASOLINE, 10% MIDDLE DISTILLATE

Groundwater Quality Sample Results

Well		S-74	MW-38	MW-39	MW-40	S-75	PZ-400	S-192	S-191	S-190	S-189	S-271
Sample Date		7/26/2018	7/2/2019	7/26/2018	8/2/2018	7/2/2019	12/8/2014	12/11/2014	12/12/2014	12/12/2014	5/27/2014	6/18/2019
Parameters	*Units*											
DO	mg/L	0	0	0	0	0	1.6	1.52	1.55	4.27	2.13	1.7
ORP	mV	47	-125	17	41	-172	-84	-105	-93	-103	-10	-58
pH	S.U.	6.49	6.57	6.58	6.28	6.67	6.88	7.57	6.85	7.19	6.85	6.11
EC	mS/cm	1.89	2.26	2.18	1.6	2.09	1.8	2.05	2.35	1.92	1.27	1.6
Temperature	ºC	17.92	26.41	19.63	21.1	18.15	15.63	16.23	17.63	15.45	19.55	21.73
Turbidity	NTU	0	56.9	0	263	63.4	229	23.9	212	404	376	13.3

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FIGURE
8.2 B
ANALYTICAL DATA INTEGRATION

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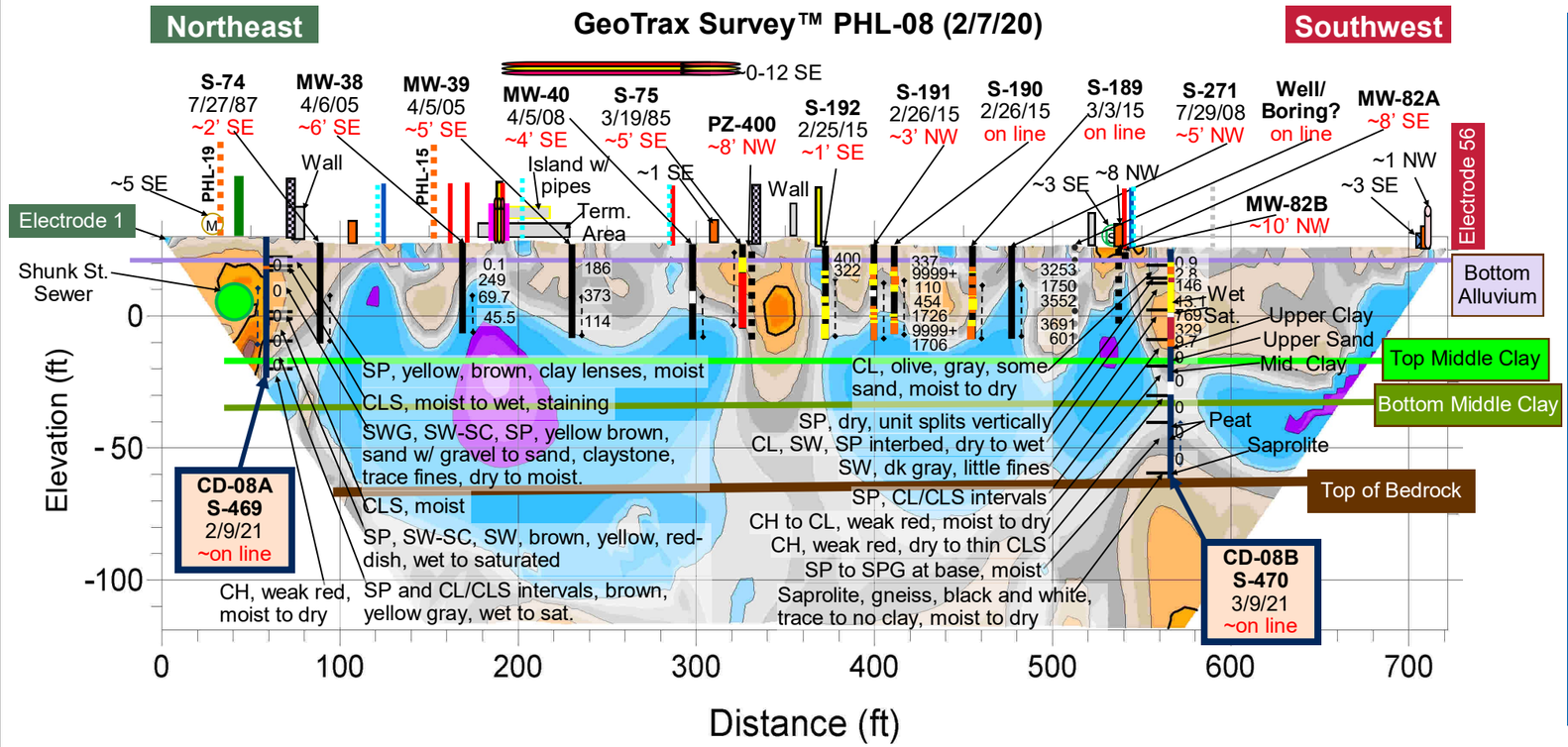

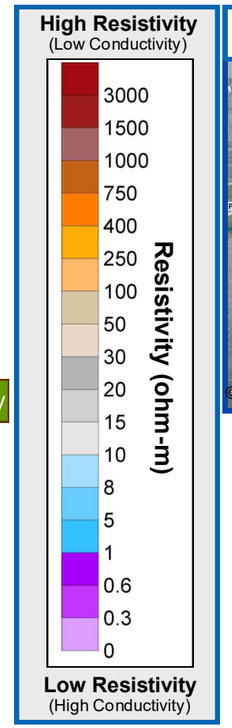

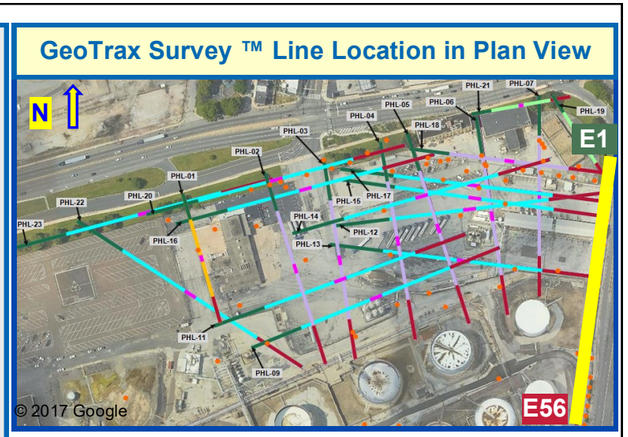

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FIGURE
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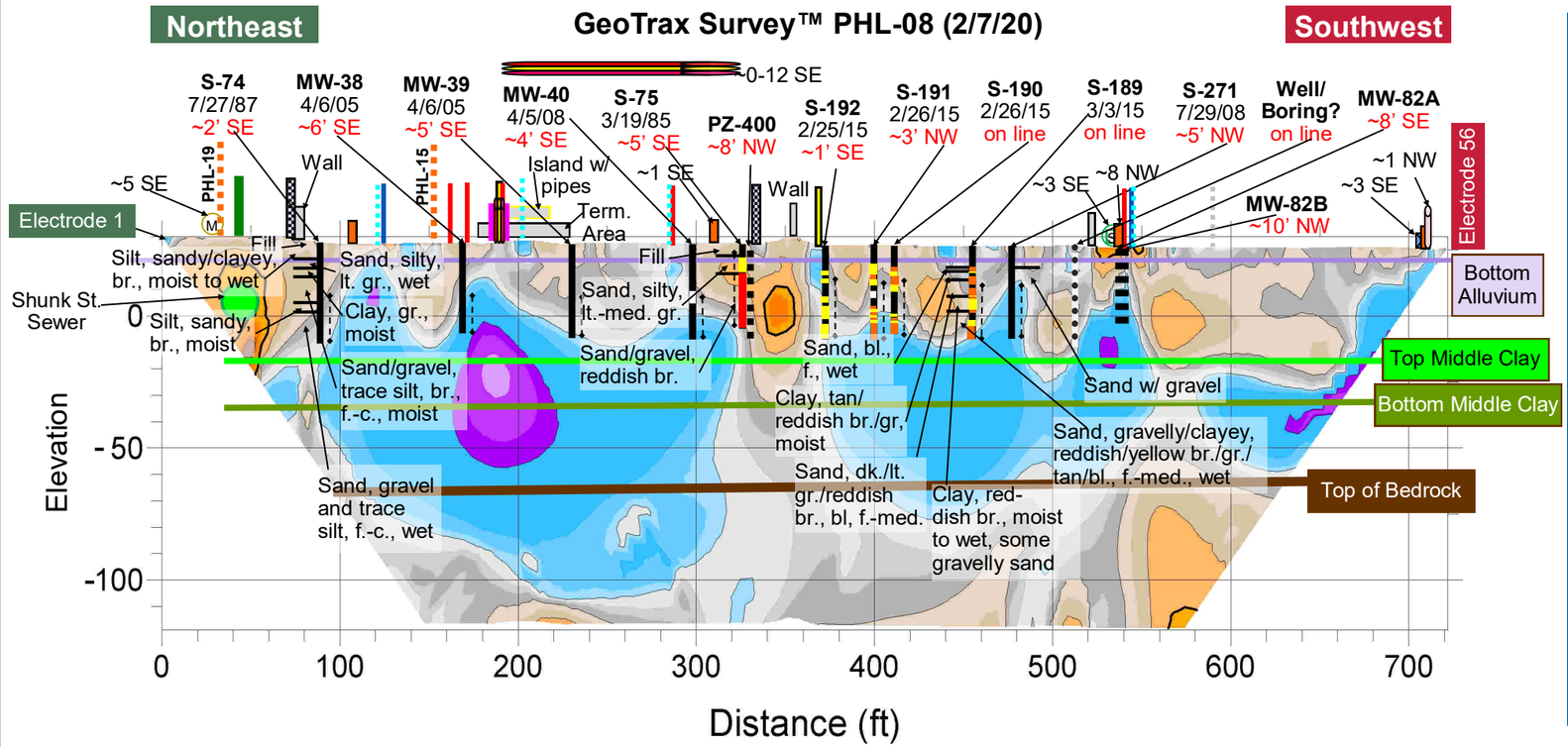

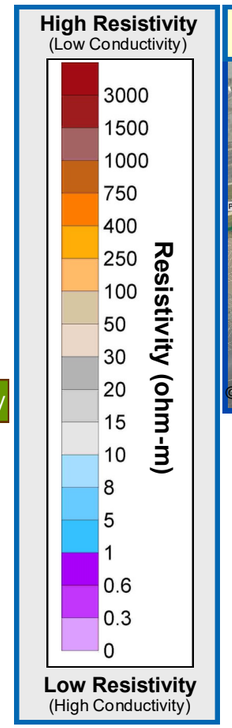

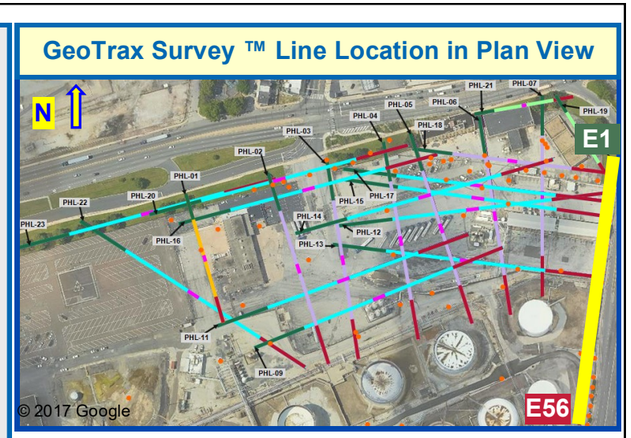

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FIGURE
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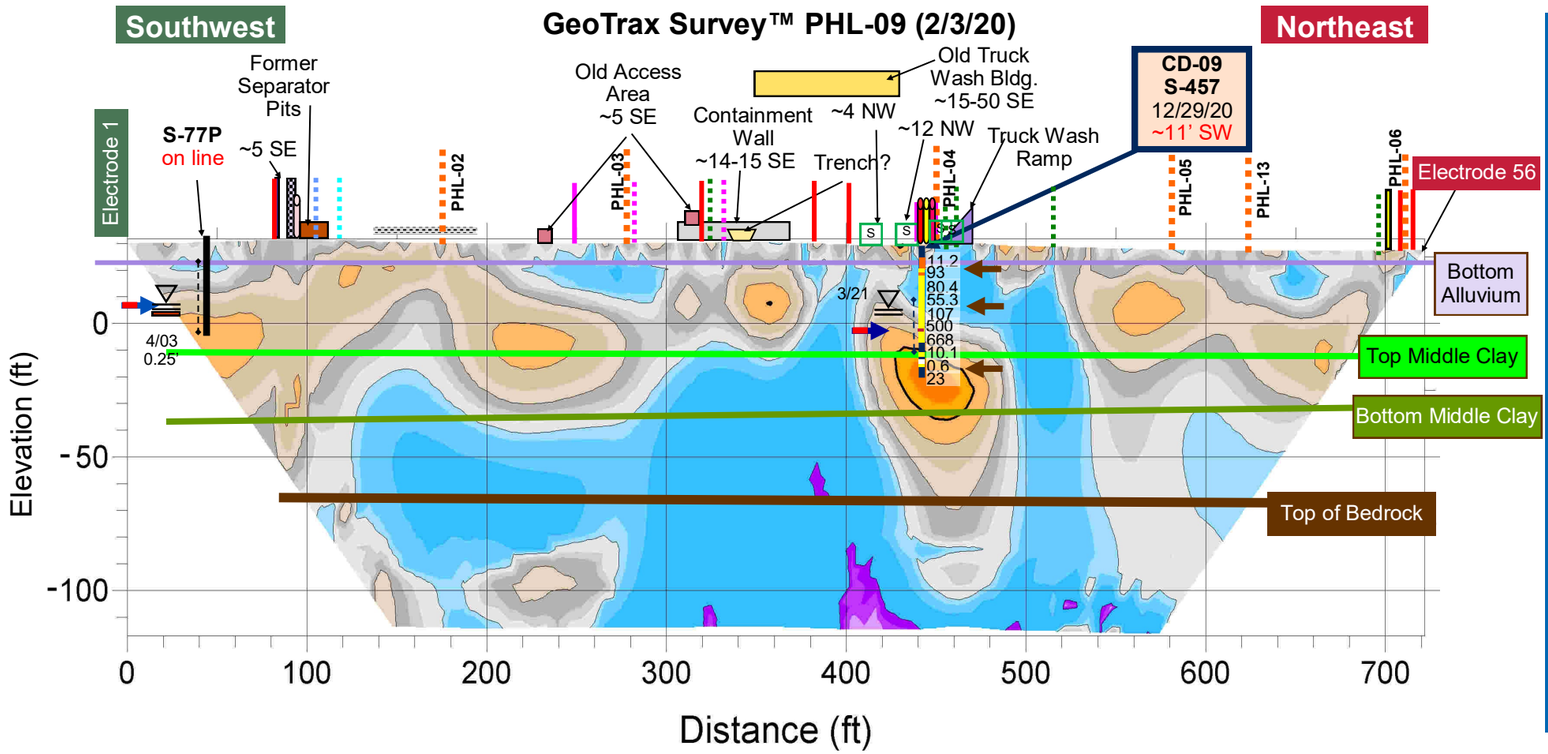
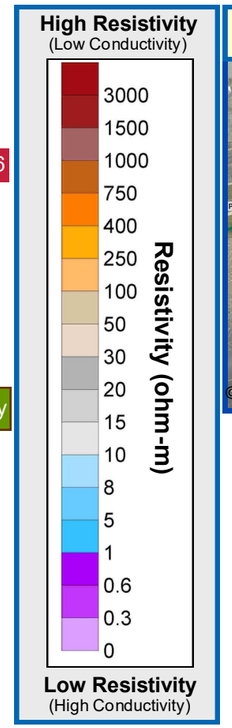
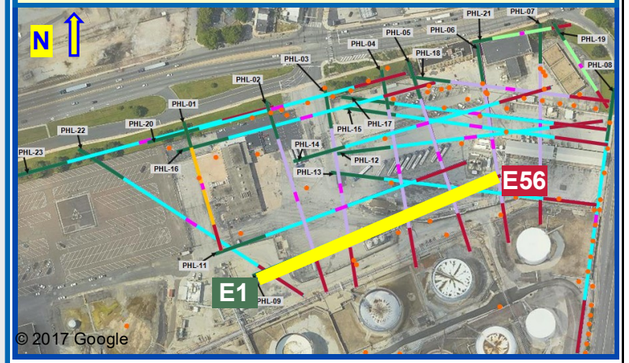




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Grab Results		
Well		**CD-09**
Boring		**S-457**
Sample Date		**12/2/20**
Sample Depth ft. BGS		**32**
Parameters µg/L	**MSCs µg/L**	
BENZENE	**5**	**560**
TOLUENE	**1000**	80
ETHYLBENZENE	**700**	130
XYLENES, TOTAL	**10000**	470
MTBE	**20**	6.7
1,2,4-TMB	**62**	**82**
>C12-C22		NA
>C22-C44		NA
C4-C12-TPH-GRO		2900
TOTAL ORG. CARBON		210000
TPH		NA

CD Groundwater Grab Results	
Well	**CD-09**
Boring	**S-457**
Sample Date	**12/2/20**
Sample Depth	**32**
Parameters (µg/L)	
ALKALINITY TO pH 4.5	NA
CALCIUM	38,000
CHLORIDE (AS CL)	110,000
IRON	10,000
MAGNESIUM	9,400
METHANE	81
NITROGEN, AMMONIA	NA
NITROGEN, NITRATE	5,600
POTASSIUM	3,900
SODIUM	76,000
SULFATE (AS SO4)	150,000

CD Soil Sample Results				
Well /Boring		**CD-09 S-457**		
Sample Date		**12/28/20**	**12/16/20**	**12/29/20**
Sample Depth ft BGS		**8**	**22**	**47**
Parameters mg/kg	**MCLs mg/kg**			
BENZENE	330	ND	0.23 J	6.6
TOLUENE	10000	ND	0.094 J	ND
ETHYLBENZENE	1000	ND	0.56	ND
XYLENES, TOTAL	9100	ND	0.45 J	ND
MTBE	9900	ND	ND	2.9
>C12-C22		1100	390	ND
>C22-C44		53 J	7.3 J	9.2 J
C4-C12-TPH-GRO		320	680	16
TPH		1200	400	9.2 J

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FIGURE
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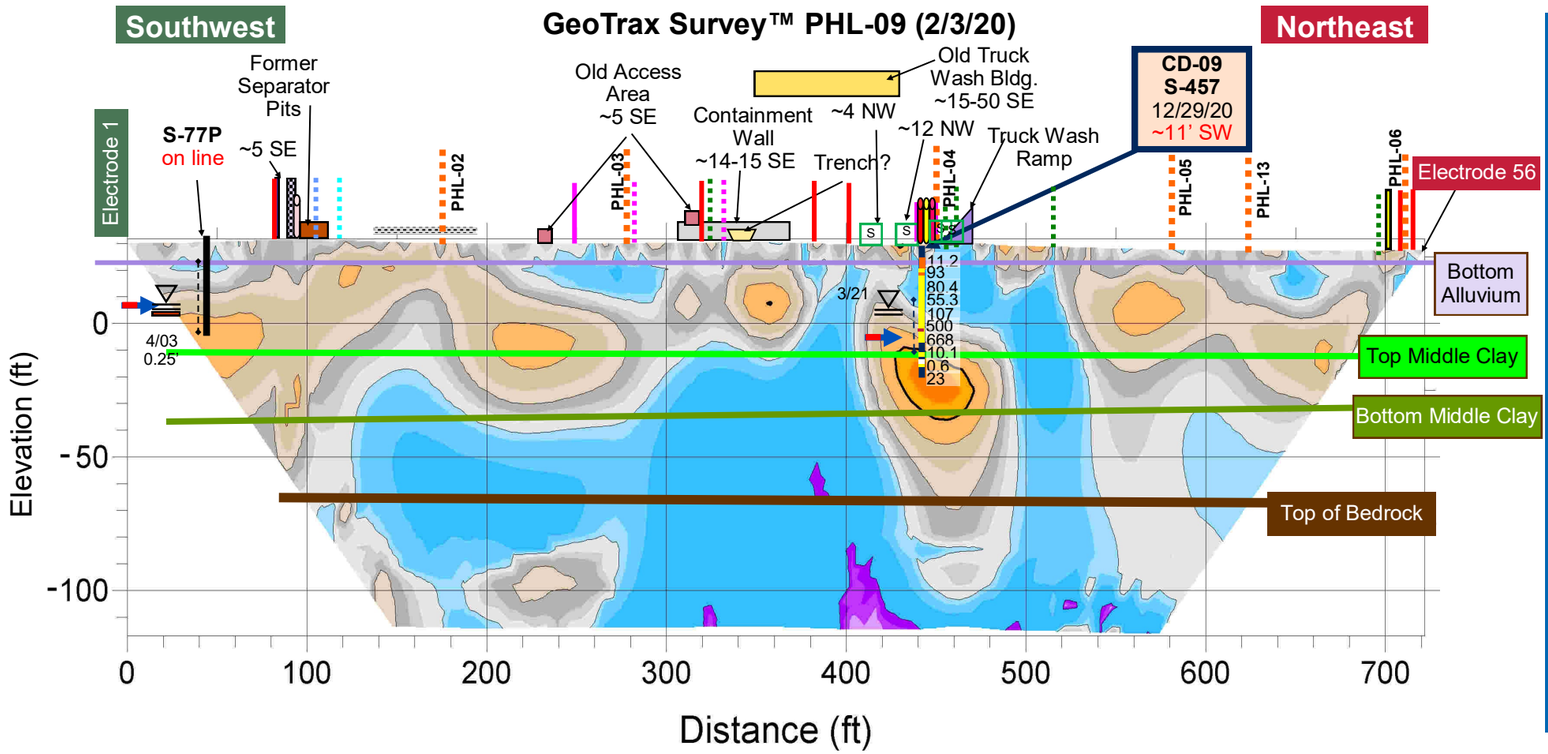

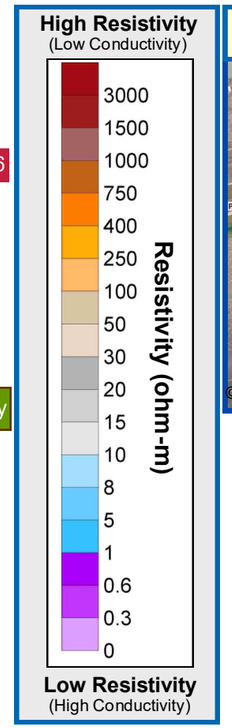

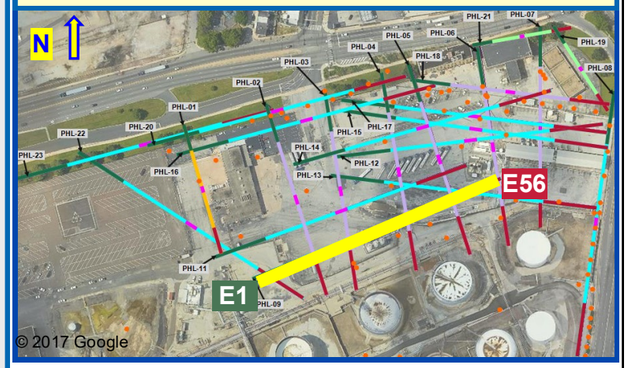

Groundwater Sample Results		
Well		S-77P
Sample Date		7/25/18
Parameters (µg/L)	Standards (µg/L)	
BENZENE	**5**	**222**
TOLUENE	**1000**	23.5
ETHYLBENZENE	**700**	8.18
XYLENES, TOTAL	**10000**	57
MTBE	**20**	**2090**
NAPHTHALENE	**100**	8.04
PYRENE	**130**	0.549
ANTHRACENE	**66**	1.48
ISOPROPYLBENZENE	**3500**	128
FLUORENE	**1900**	14.1
CHRYSENE	**1.9**	0.112
PHENANTHRENE	**1100**	6.74
LEAD	**5**	ND
1,2,4-TRIMETHYLBENZENE	**62**	2.16
1,2-DIBROMOETHANE	**0.05**	ND
1,2-DICHLOROETHANE	**5**	ND
1,3,5-TRIMETHYLBENZENE	**1200**	2.98
BENZO(A)ANTHRACENE	**4.9**	0.0774
BENZO(A)PYRENE	**0.2**	ND
BENZO(B)FLUORANTHENE	**0.55**	ND
BENZO(G,H,I)PERYLENE	0.26	ND

CD Groundwater Sample Results		
Well		CD-09
Boring		S-457
Sample Date		3/26/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**18000**
TOLUENE	**1000**	770
ETHYLBENZENE	**700**	**1400**
XYLENES, TOTAL	**10000**	3500
MTBE	**20**	**3700**
NAPHTHALENE	**100**	**3100**
1,2,4-TMB	**62**	**550**
1,3,5-TMB	**1200**	150
ISOPROPYLBENZENE	**3500**	53
TERT-BUTYL ALCOHOL		23000

CD Groundwater Sample Results	
Well	CD-09
Boring	S-457
Sample Date	3/26/21
Parameters µg/L	
ALKALINITY TO pH 4.5	240,000
CALCIUM	77,000
IRON	36,000
METHANE	14,000
SULFATE (AS SO4)	2200 J
TOTAL CARBON	140,000
TOTAL INORGANIC CARBON	96,000
TOTAL KJELDAHL NITROGEN	970 J
TOTAL ORGANIC CARBON	44,000

CD Groundwater Quality Results		
Well		CD-09
Boring		S-457
Sample Date		3/26/21
Parameters	*Units*	
DO	mg/L	0.88
ORP	mV	-144
pH	S.U.	6.82
EC	mS/cm	1.91
Temperature	ºC	18.38
Turbidity	NTU	37.1

Groundwater Quality Sample Results		
Well		S-77P
Sample Date		7/25/18
Parameters	*Units*	
DO	mg/L	0.11
ORP	mV	-58
pH	S.U.	6.92
EC	mS/cm	0.927
Temperature	ºC	18.99
Turbidity	NTU	13.1

Well Product Data	
Well	S-77P
Sample Date	4/23/03
Product Description	95% HEAVY VIRGIN NAPHTHA, 5% MIDDLE DISTILLATE

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FIGURE
9.2
ANALYTICAL DATA INTEGRATION

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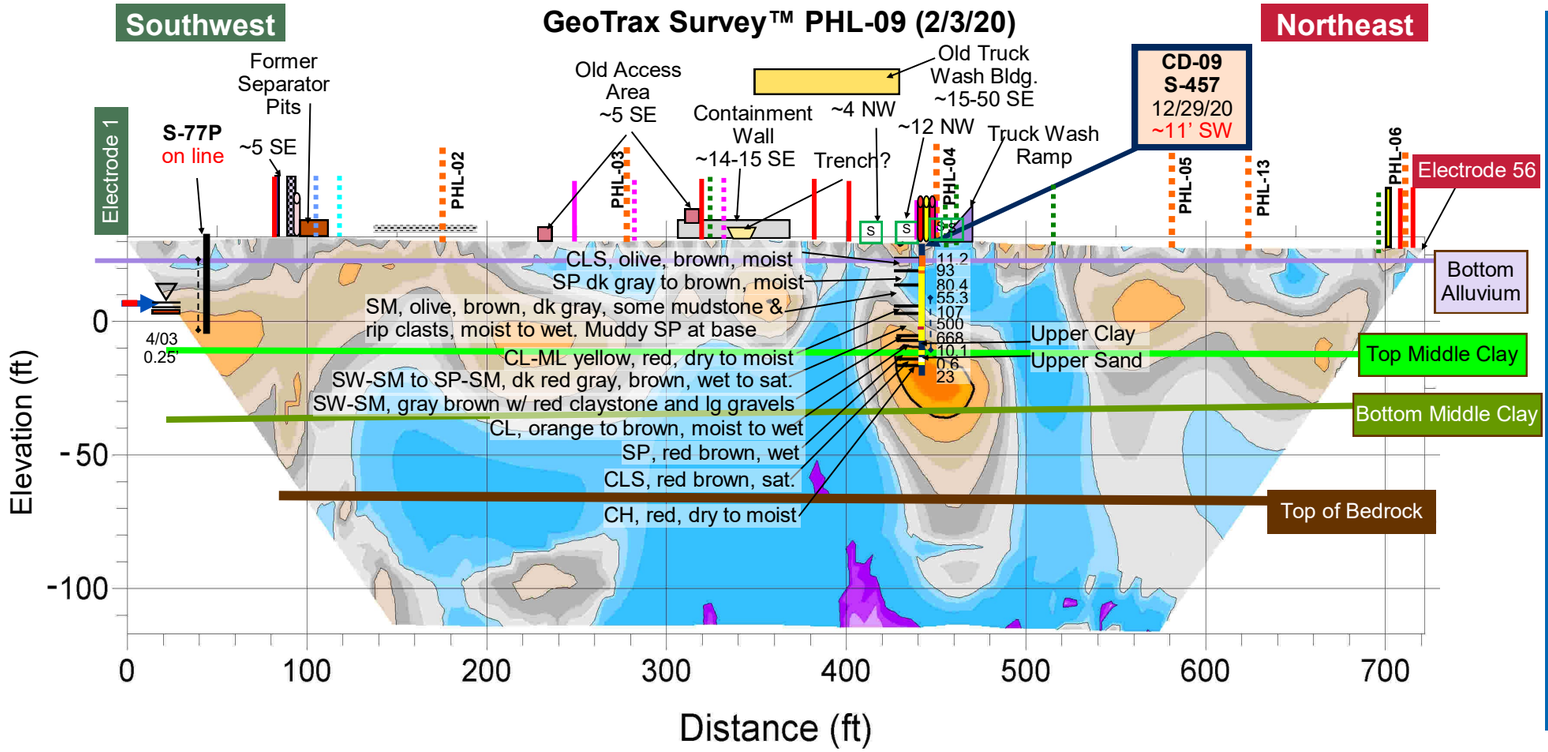
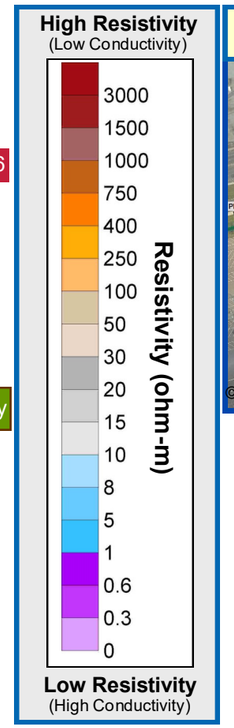
GeoTrax Survey™ PHL-09 (2/3/20)





GeoTrax Survey ™ Line Location in Plan View

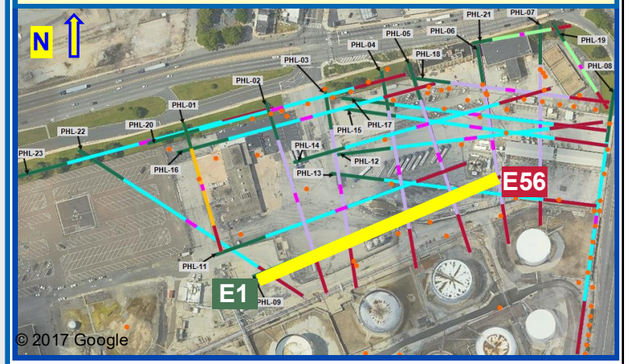


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FIGURE
9.3
GEOLOGY
DATA
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FIGURE
10

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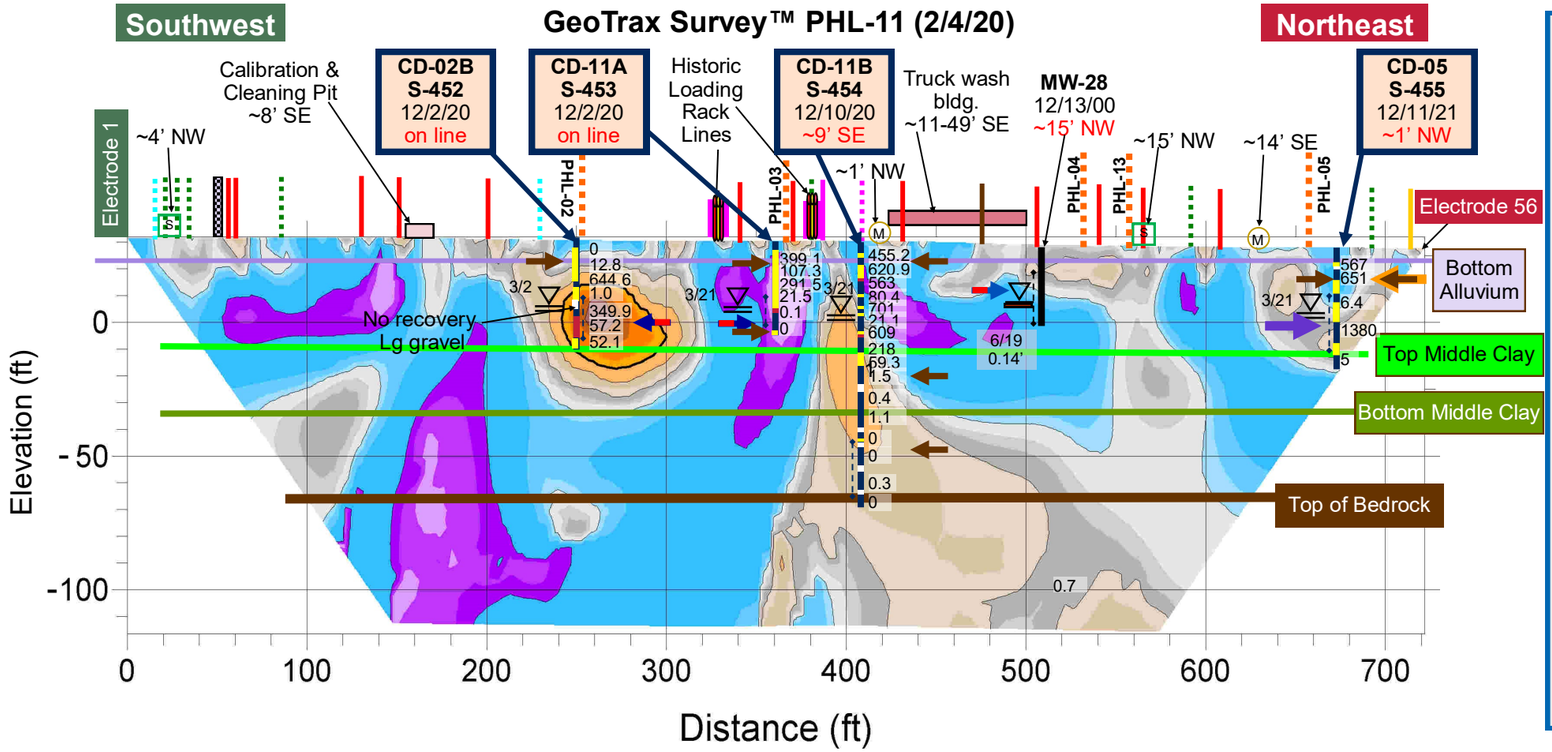
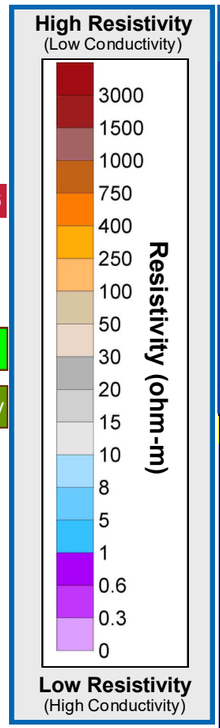
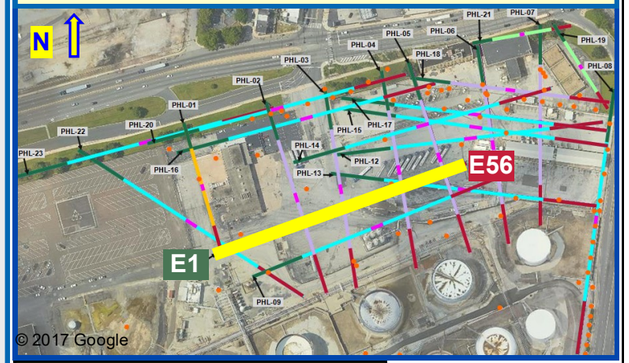




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	CD-11A
Boring	S-453
Sample Date	2/11/21
Sample Depth ft. BGS	29
Data Set IDs	
# reads for sample (millions)	5.812
Bacterial	73
Antibiotic resistant	1
Fungal	6
Protists	2
Dark Matter	174
Phages	1
Virus	1
Virulence Factors	4
QPCR	
Bacterial Biomass (gene copies / L)	2,500,000,000

CD Groundwater Grab Results

Well		CD-02B	CD-11A	CD-11B	CD-05
Boring		S-452	S-453	S-454	S-455
Sample Date		12/2/20	12/3/20	12/7/20	
Sample Depth ft. BGS		28	29	37	
Parameters µg/L	MSCs µg/L				
BENZENE	5	20	26		
TOLUENE	1000	1.8	ND		
ETHYLBENZENE	700	45	89		
XYLENES, TOTAL	10000	120	140		
MTBE	20	ND	1.7 J	NA	NA
1,2,4-TMB	62	30	130		
>C12-C22		NA	7500 B		
>C22-C44		NA	ND		
C4-C12-TPH-GRO		890	2900		
TOTAL ORG. CARBON		51000	53000	21000	
TPH		NA	7500	NA	

CD Groundwater Grab Results

Well	CD-02B	CD-11A	CD-11B	CD-05
Boring	S-452	S-453	S-454	S-455
Sample Date	12/2/20	12/3/20	12/7/20	
Sample Depth	28	29	37	
Parameters (µg/L)				
ALKALINITY TO pH 4.5		260,000		
CALCIUM		62,000		
CHLORIDE (AS CL)	NA	94,000	NA	NA
IRON		440,000		
MAGNESIUM		48,000		
METHANE	52	140		
NITROGEN, AMMONIA		660 J		
NITROGEN, NITRATE		2,700		
POTASSIUM	NA	16,000		
SODIUM		170,000		
SULFATE (AS SO4)		65,000		

CD Soil Sample Results

Well /Boring		CD-02B	CD-11A	CD-11B				CD-05
		S-452	S-453	S-454				S-455
Sample Date		12/1/20	12/2/20	12/3/20	12/3/20	12/8/20	12/8/20	12/10/20
Sample Depth ft BGS		10	8	32	8	50	78	9
Parameters mg/kg	MCLs mg/kg							
BENZENE	330	0.0042 H	0.29 J	0.66 H	ND	4.5 H	0.0024 J	1.2
TOLUENE	10000	0.00068 JH	ND	ND	ND	0.027	ND	0.61
ETHYLBENZENE	1000	ND	0.029 J	0.0075	0.055 J	1.3 H	0.0028 J	6.6
XYLENES, TOTAL	9100	ND	ND	0.0016 J	0.14 J	0.52	0.0034 J	6.4
MTBE	9900	0.0024 JH	ND	0.24	ND	0.11	0.00091 J	ND
>C12-C22		ND	3000	ND	1100	ND	ND	110
>C22-C44		ND	ND	ND	60 J	ND	ND	9.3 J
C4-C12-TPH-GRO		0.68 H	350 H	4 ^c	1800	14 H	0.99	2400
TPH		ND	3000	ND	1200	ND	ND	120

CD Soil Forensics

Well	CD-05
Boring	S-455
Date	12/10/20
Depth ft BGS	9
See Report for full details	Dominant Gasoline range. Gasoline or a mixture of gasoline and light straight run Naphtha

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FIGURE
11.1
INITIAL CD DATA INTEGRATION

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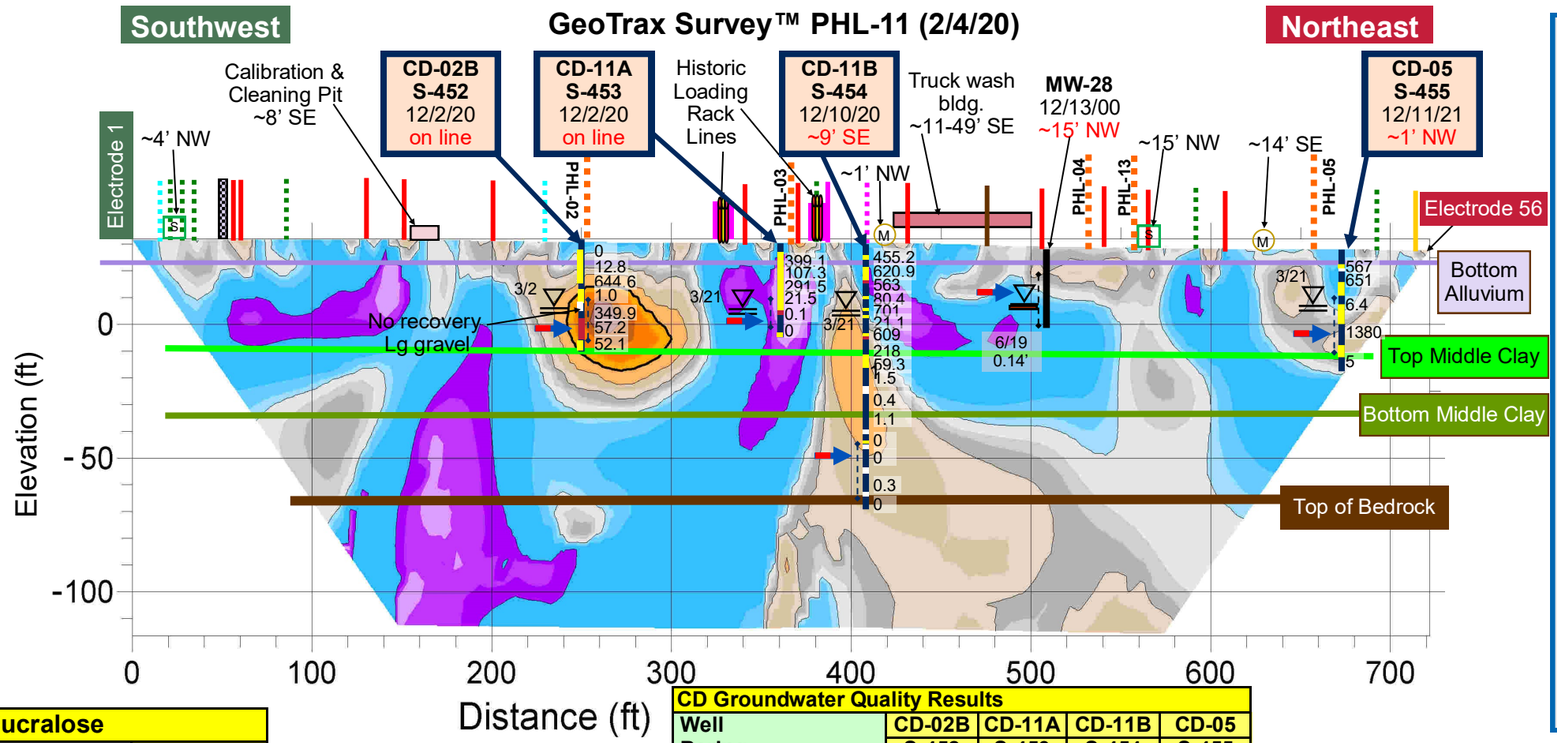

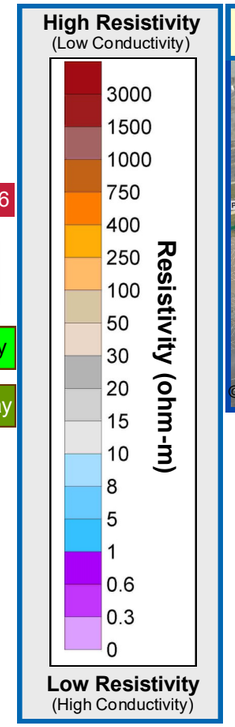

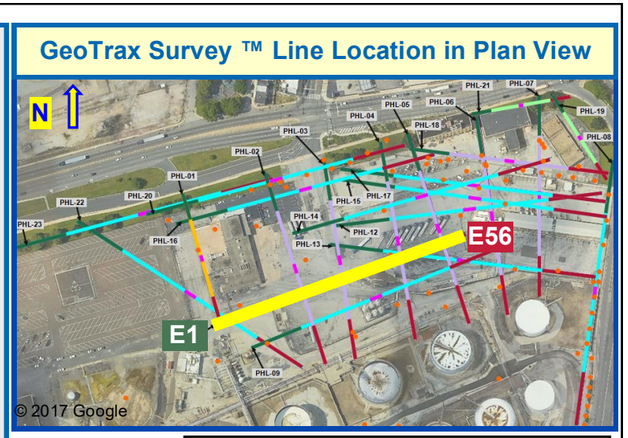

Well Product Data	
Well	MW-28
Sample Date	6/3/19
Product Description	65% GASOLINE, 35% MIDDLE DISTILLATE

Sucralose	
Well	CD-02B
Boring	S-452
Sample Date	5/18/21
Sucralose ng/L	ND

CD Groundwater Quality Results					
Well		CD-02B	CD-11A	CD-11B	CD-05
Boring		S-452	S-453	S-454	S-455
Sample Date		3/26/21	3/26/21	3/26/21	3/26/21
Parameters	*Units*				
DO	mg/L	0.94	0.88	0.52	0.42
ORP	mV	-125	-144	-118	-110
pH	S.U.	6.64	6.82	6.52	6.03
EC	mS/cm	1.32	1.91	1.34	2.67
Temperature	ºC	21.81	18.38	21.26	21.17
Turbidity	NTU	43	37.1	7.5	0

Groundwater Sample Results			
Well		MW-28	
Sample Date		12/19/14	
Parameters (µg/L)	Standards (µg/L)		
BENZENE	**5**	**2960**	
TOLUENE	**1000**	125	
ETHYLBENZENE	**700**	158	
XYLENES, TOTAL	**10000**	1000	
MTBE	**20**	**377**	
NAPHTHALENE	**100**	45.3	
PYRENE	**130**	2.09	
ANTHRACENE	**66**	0.275	
ISOPROPYLBENZENE	**3500**	17 J	
FLUORENE	**1900**	1.39	
CHRYSENE	**1.9**	1.48	
PHENANTHRENE	**1100**	2.6	
LEAD	**5**	ND	
1,2,4-TMB	**62**	**449**	
1,2-DIBROMOETHANE	**0.05**	ND	
1,2-DICHLOROETHANE	**5**	ND	
1,3,5-TMB	**1200**	162	
BENZO(A)ANTHRACENE	**4.9**	0.529	
BENZO(A)PYRENE	**0.2**	**0.451**	
BENZO(B)FLUORANTHENE	**0.55**	**1.36**	
BENZO(G,H,I)PERYLENE	**0.26**	**0.607**	

CD Groundwater Sample Results					
Well		CD-02B	CD-11A	CD-11B	CD-05
Boring		S-452	S-453	S-454	S-455
Sample Date		3/26/21	3/26/21	3/26/21	3/26/21
Parameters µg/L	MCLs µg/L				
BENZENE	**5**	**3200**	**3800**	**12**	**6300**
TOLUENE	**1000**	57	50	0.57 J	410
ETHYLBENZENE	**700**	**760**	**1300**	0.65 J	530
XYLENES, TOTAL	**10000**	1600	1800	1.7 J	580
MTBE	**20**	**1000**	**50**	0.88 J	**400**
NAPHTHALENE	**100**	**1300**	**300**	1.4	**4400**
1,2,4-TMB	**62**	**320**	**690**	ND	**280**
1,3,5-TMB	**1200**	110	220	ND	170
ISOPROPYLBENZENE	**3500**	83	66	ND	120
TERT-BUTYL ALCOHOL		22000	ND	ND	2200

CD Groundwater Sample Results				
Well	CD-02B	CD-11A	CD-11B	CD-05
Boring	S-452	S-453	S-454	S-455
Sample Date	3/26/21	3/26/21	3/26/21	3/26/21
Parameters µg/L				
ALKALINITY TO pH 4.5	290,000	150,000	130,000	400,000
CALCIUM	39,000	43,000	53,000	76,000
IRON	50,000	74,000	22,000	41,000
METHANE	14,000	17,000	3.8 J	19,000
SULFATE (AS SO4)	ND	7000 FH	200,000	ND
TOTAL CARBON	120,000	75,000	40,000	120,000
TOTAL INORGANIC CARBON	97,000	56,000	38,000	110,000
TOTAL KJELDAHL NITROGEN	3,400	580 J	ND	7,200
TOTAL ORGANIC CARBON	23,000	19,000	2,000	13,000

Groundwater Quality Sample Results		
Well		MW-28
Sample Date		12/19/14
Parameters	*Units*	
DO	mg/L	0.47
ORP	mV	-33
pH	S.U.	6.75
EC	mS/cm	1.83
Temperature	ºC	18.34
Turbidity	NTU	770

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FIGURE
11.2
ANALYTICAL DATA INTEGRATION

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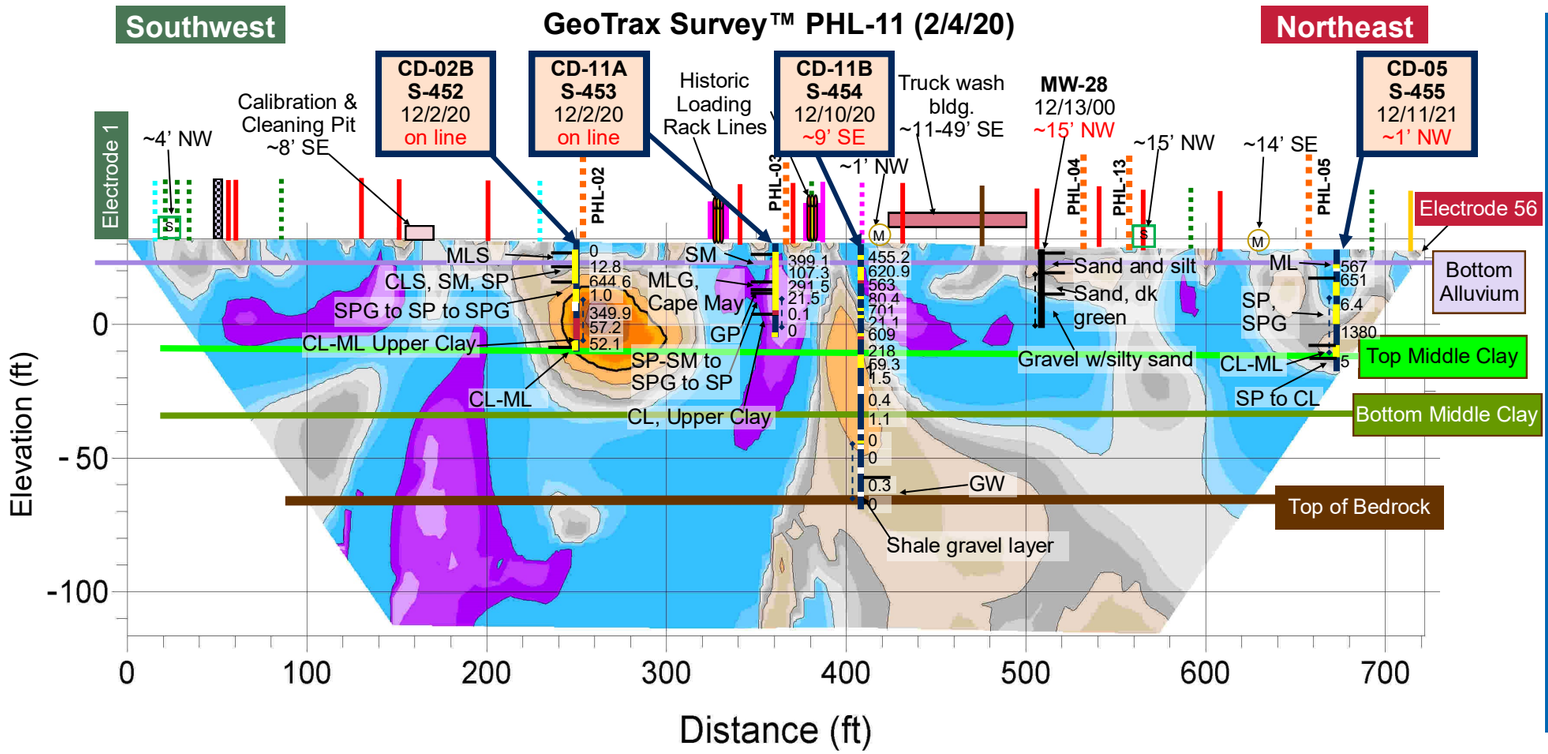

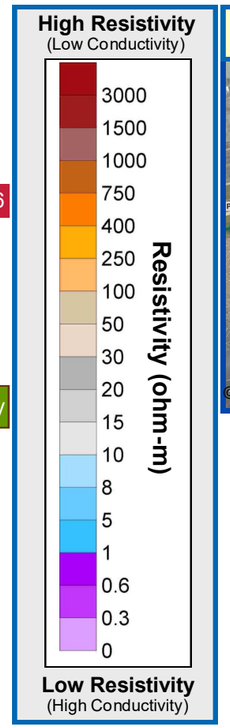

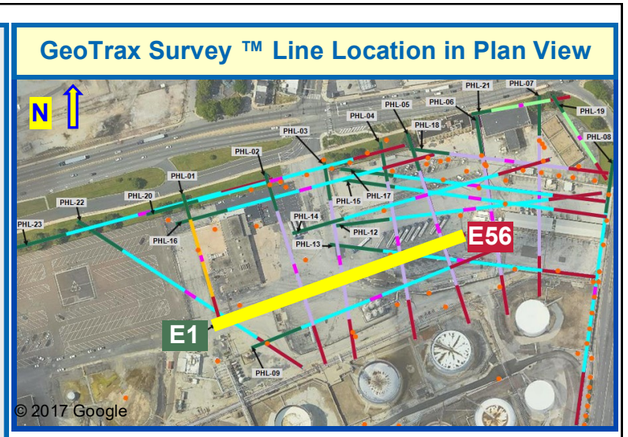

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FIGURE
11.3
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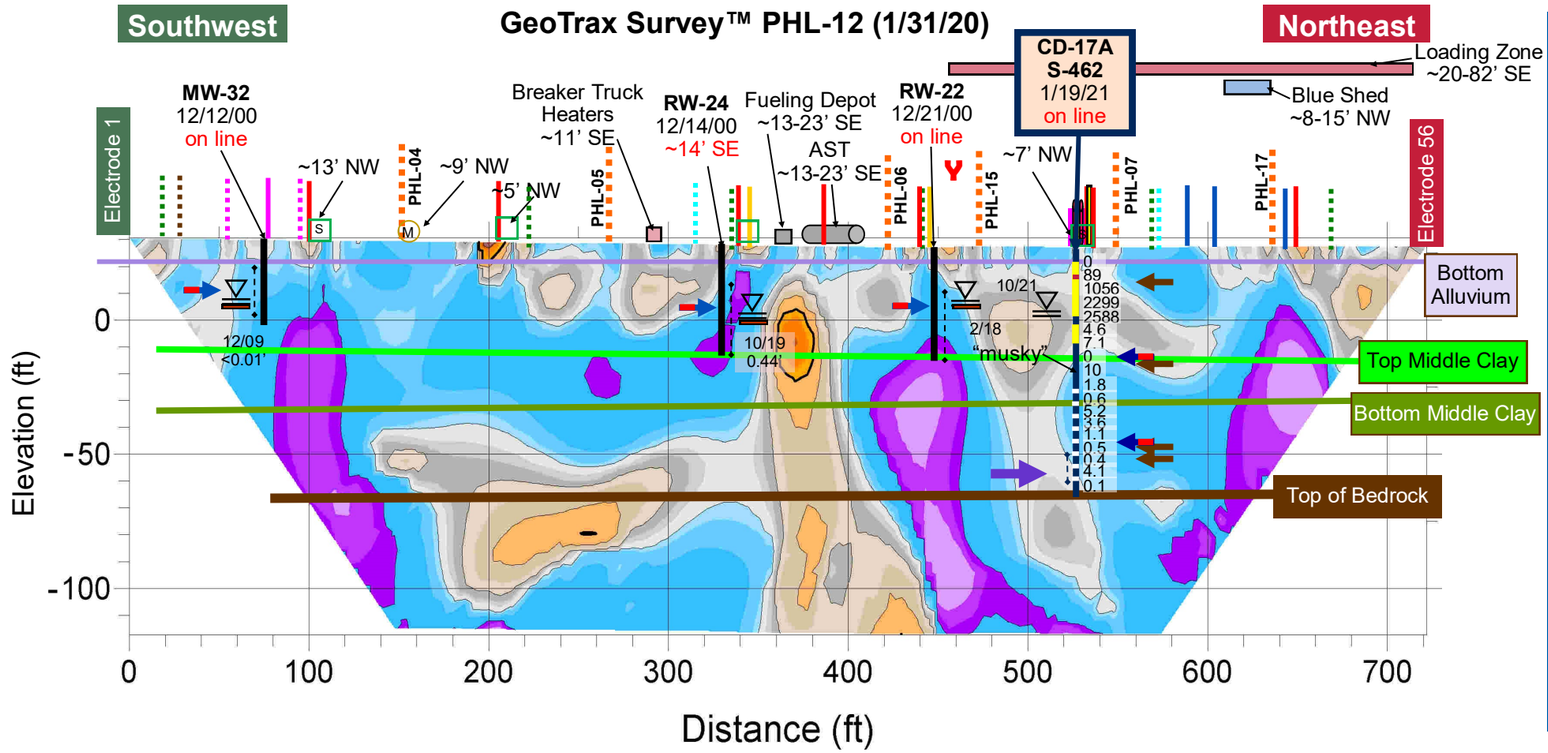
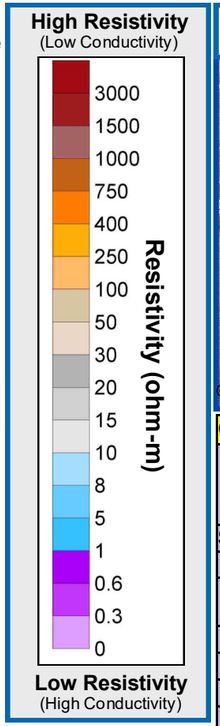
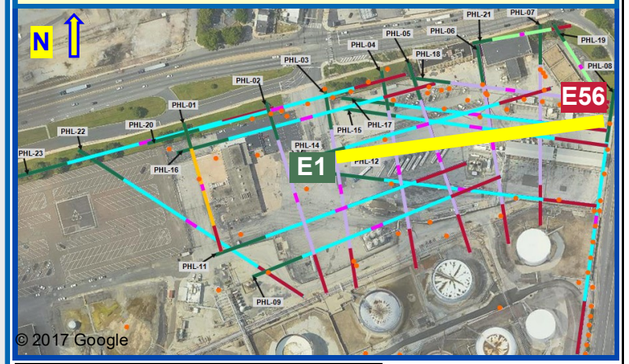




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	CD-17A
Boring	S-462
Sample Date	2/11/21
Sample Depth ft. BGS	83
Data Set IDs	
# reads for sample (millions)	3.84
Bacterial	120
Antibiotic resistant	1
Fungal	8
Protists	2
Dark Matter	75
Phages	4
Virus	0
Virulence Factors	14
QPCR	
Bacterial Biomass (gene copies / L)	3,400,000,000

CD Groundwater Grab Results			
Well		CD-17A	
Boring		S-462	
Sample Date		1/14/21	1/19/21
Sample Depth ft. BGS		40	73
Parameters µg/L	MSCs µg/L		
BENZENE	5	240	400
TOLUENE	1000	2200	1900
ETHYLBENZENE	700	350	290
XYLENES, TOTAL	10000	2000	1600
MTBE	20	130	47
1,2,4-TMB	62	330	260
>C12-C22		3000	3000
>C22-C44		120 J	190
C4-C12-TPH-GRO		12000	9400
TOTAL ORG. CARBON		60000	58000
TPH		3100	3200

CD Groundwater Grab Results			
Well		CD-17A	
Boring		S-462	
Sample Date		1/14/21	1/19/21
Sample Depth		40	73
Parameters (µg/L)			
ALKALINITY TO pH 4.5		190,000	170,000 FL
CALCIUM		33,000	53,000
CHLORIDE (AS CL)		82,000	81,000
IRON		3,000	42,000
MAGNESIUM		8,400	45,000
METHANE		44	86
NITROGEN, AMMONIA		3,200	1500 J
NITROGEN, NITRATE		2800 FL	840
POTASSIUM		3,800	7,200
SODIUM		67,000	110,000
SULFATE (AS SO4)		57,000	260,000

CD Soil Sample Results					
Well /Boring		CD-17A S-462			
Sample Date		1/13/21	1/14/21	1/15/21	1/19/21
Sample Depth ft BGS		13	43	76	79
Parameters mg/kg	MCLs mg/kg				
BENZENE	330	1.6	1.9	0.043	ND
TOLUENE	10000	32	0.037	0.2	0.0023 J
ETHYLBENZENE	1000	22	0.01	0.054	0.00065 J
XYLENES, TOTAL	9100	130	0.044	0.33	0.0035 J
MTBE	9900	0.89	0.002 J	0.0037 J	ND
>C12-C22		30	8.5 J	ND	ND
>C22-C44		ND	31	ND	130
C4-C12-TPH-GRO		1200 B	0.39 B	3.3 B	ND
TPH		30	40	ND	130

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FIGURE
12.1
INITIAL CD DATA INTEGRATION

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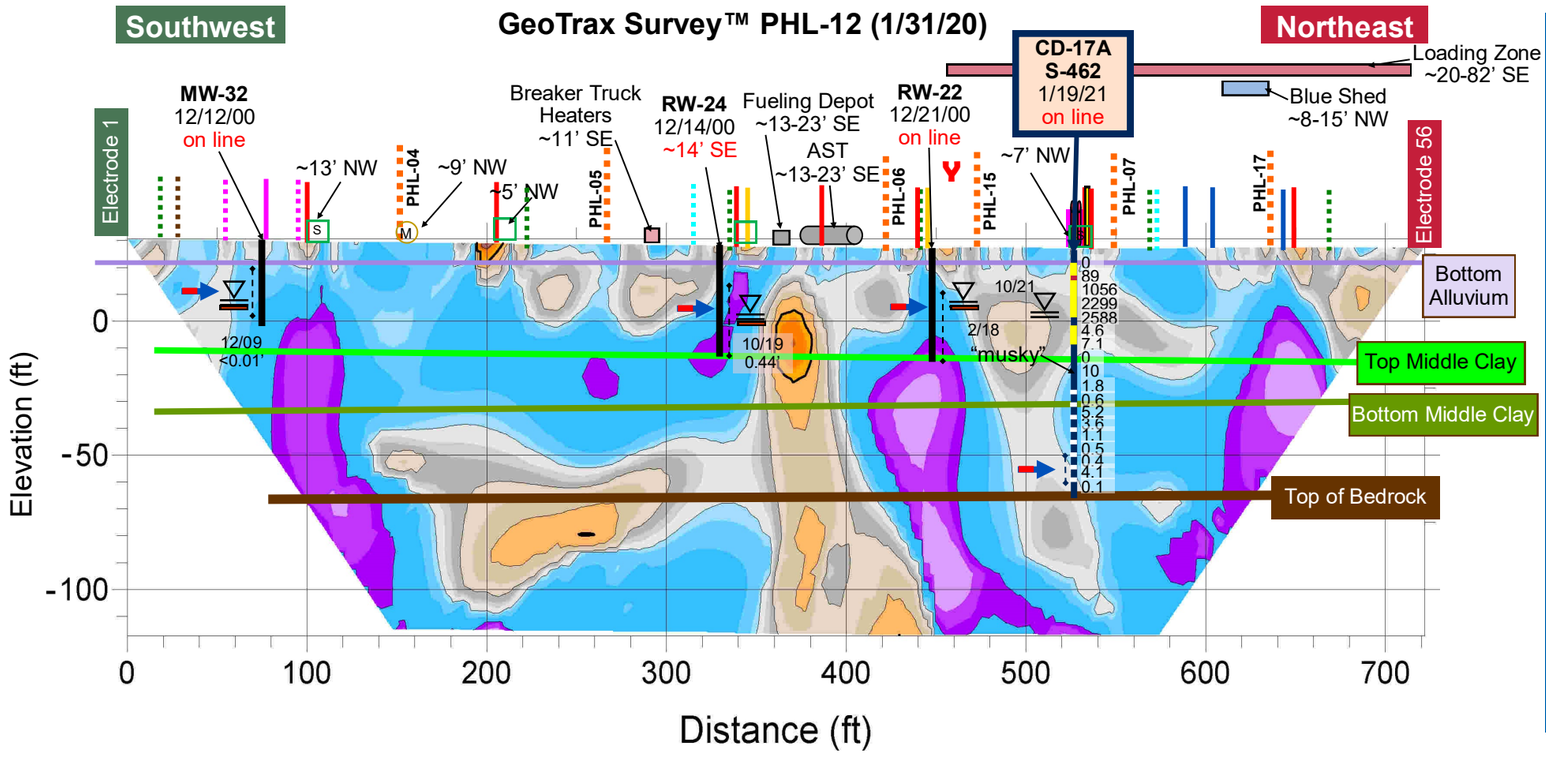

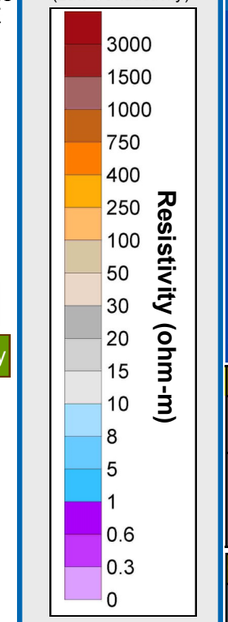

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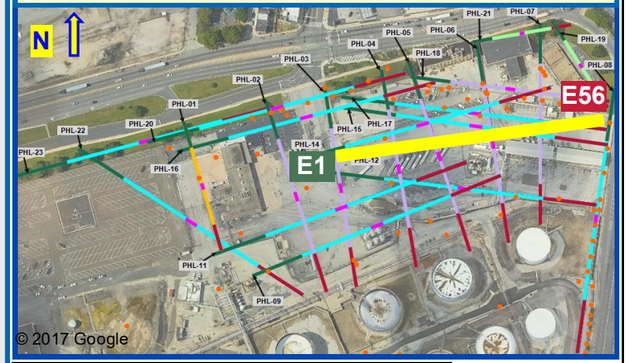

Well Product Data

Well	MW-32	RW-24	RW-22
Sample Date	12/31/09	10/11/19	2/15/18
Product Description	Not Available	UN-KNOWN	95% GASOLINE, 5% MIDDLE DISTILLATE

Groundwater Sample Results

Well		MW-32	RW-24	RW-22
Sample Date		7/30/18	12/19/14	5/30/14
Parameters (µg/L)	Stds (µg/L)			
BENZENE	5	**19.2**	**7020**	**1670**
ETHYLBENZENE	1000	3.37	**4150**	683
TOLUENE	700	196	**1360**	168
XYLENES, TOTAL	10000	351	8260	1370
MTBE	20	**114**	**12900**	**2830**
NAPHTHALENE	100	29	**751**	59.6
PYRENE	130	3.34	9.64	1.98
ANTHRACENE	66	0.306	6.62	0.834
ISOPROPYLBENZENE	3500	20.9	173	27.8
FLUORENE	1900	0.367	29.6	3.85
CHRYSENE	1.9	**2.66**	1.44	0.2
PHENANTHRENE	1100	1.71	34.1	2.26
LEAD	5	ND	4.2	3.8
1,2,4-TMB	62	**372**	**1780**	**606**
1,2-DIBROMOETHANE	0.05	ND	ND	ND
1,2-DICHLOROETHANE	5	ND	ND	ND
1,3,5-TMB	1200	133	566	151
BENZO(A)ANTHRACENE	4.9	1.1	1.48	0.229
BENZO(A)PYRENE	0.2	**1.98**	**0.5**	ND
BENZO(B)FLUORANTHENE	0.55	**4.29**	**0.718**	0.157
BENZO(G,H,I)PERYLENE	0.26	**2.4**	**0.328**	0.105

CD Groundwater Sample Results

Well		CD-17A
Boring		S-462
Sample Date		3/23/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**39**
TOLUENE	**1000**	1.8
ETHYLBENZENE	**700**	17
XYLENES, TOTAL	**10000**	100
MTBE	**20**	9.5
NAPHTHALENE	**100**	2.2
1,2,4-TMB	**62**	47
1,3,5-TMB	**1200**	18
ISOPROPYLBENZENE	**3500**	2.2 J
TERT-BUTYL ALCOHOL		20 J

CD Groundwater Sample Results

Well	CD-17A
Boring	S-462
Sample Date	3/23/21
Parameters µg/L	
ALKALINITY TO pH 4.5	160,000
CALCIUM	72,000
IRON	20,000
METHANE	8
SULFATE (AS SO4)	190,000
TOTAL CARBON	46,000
TOTAL INORGANIC CARBON	43,000
TOTAL KJELDAHL NITROGEN	ND
TOTAL ORGANIC CARBON	3,500

CD Groundwater Quality Results

Well		CD-17A
Boring		S-462
Sample Date		
Parameters	*Units*	
DO	mg/L	NA
ORP	mV	
pH	S.U.	
EC	mS/cm	
Temperature	ºC	
Turbidity	NTU	

Groundwater Quality Sample Results

Well		MW-32	RW-24	RW-22
Sample Date		7/30/18	12/19/14	5/30/14
Parameters	*Units*			
DO	mg/L	0	0.36	0.8
ORP	mV	-21	-103	146
pH	S.U.	6.58	7.3	6.35
EC	mS/cm	0.246	3.87	1.74
Temperature	ºC	22.24	18.01	18.68
Turbidity	NTU	0	36.7	48

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FIGURE
12.2
ANALYTICAL DATA INTEGRATION

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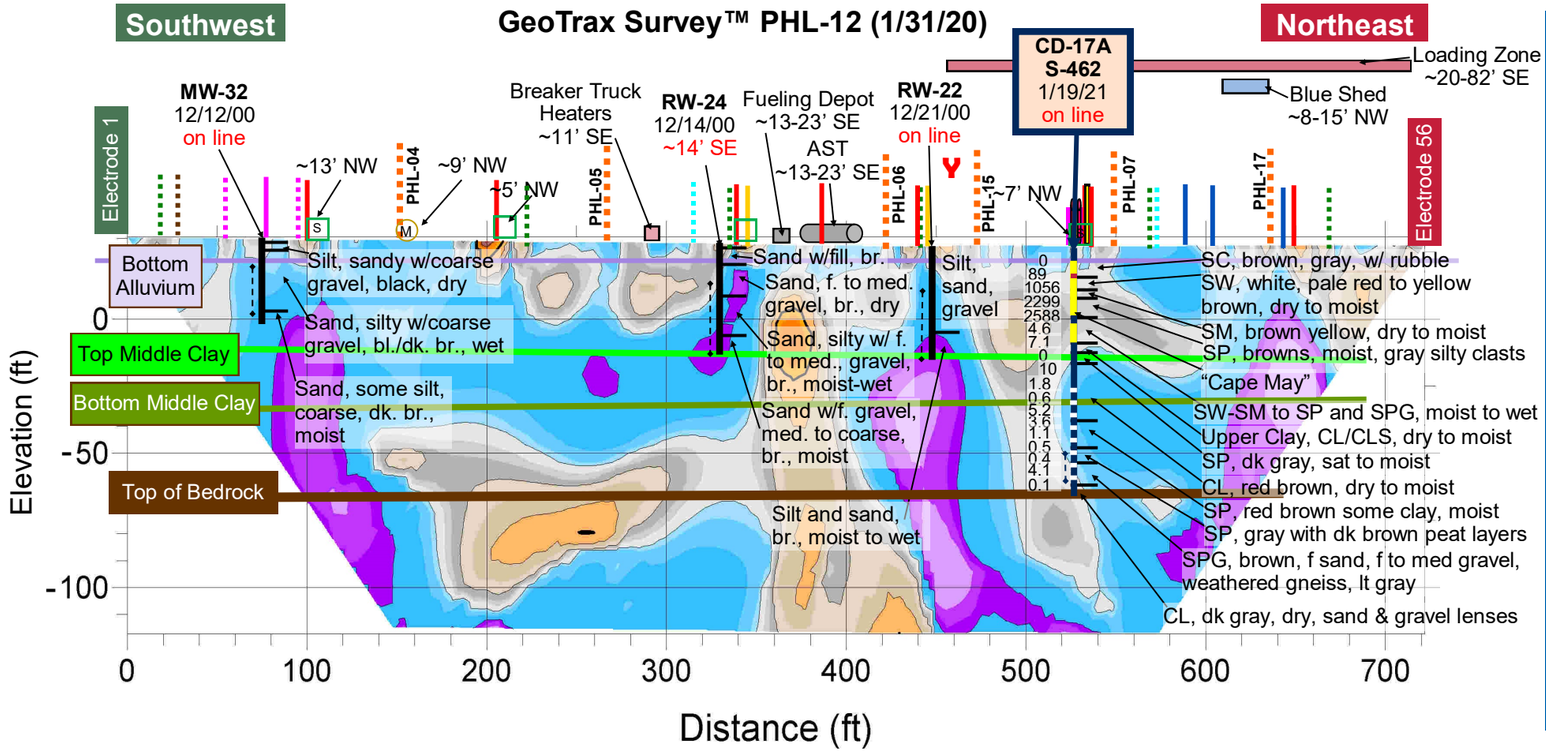
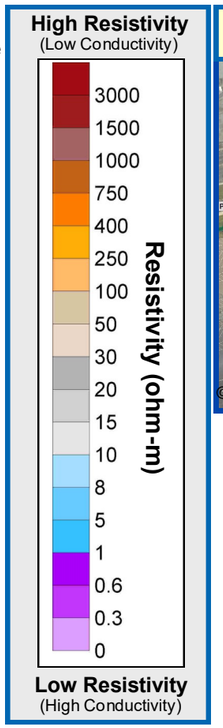
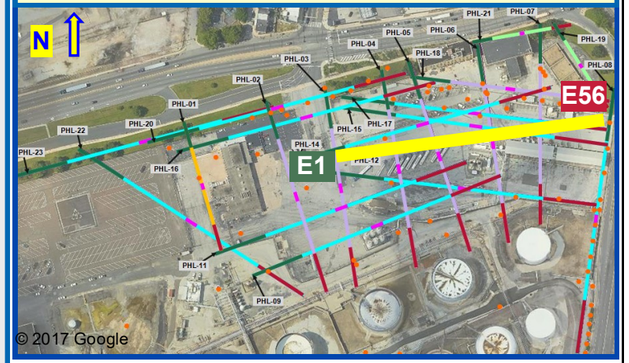
GeoTrax Survey™ PHL-12 (1/31/20)





GeoTrax Survey ™ Line Location in Plan View



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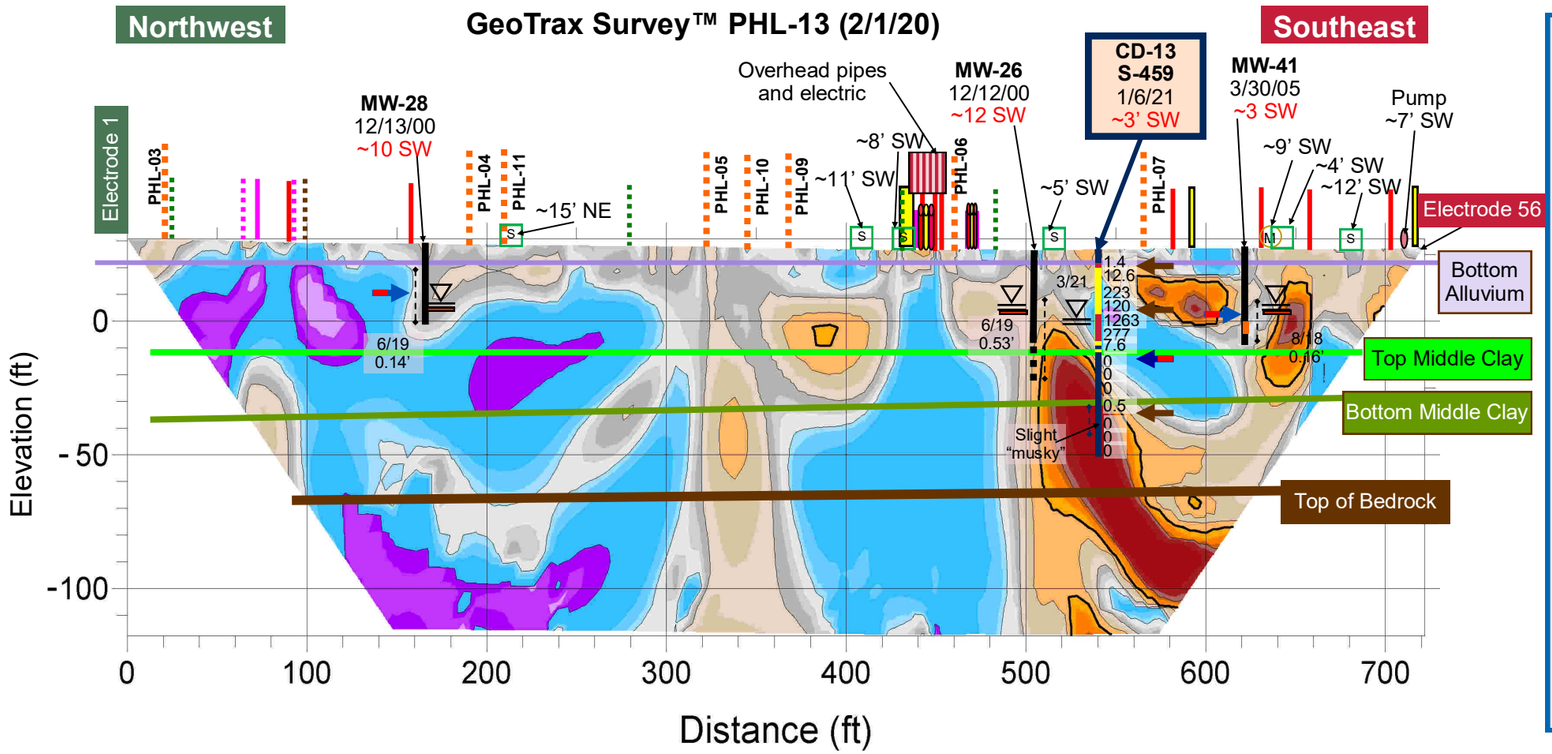

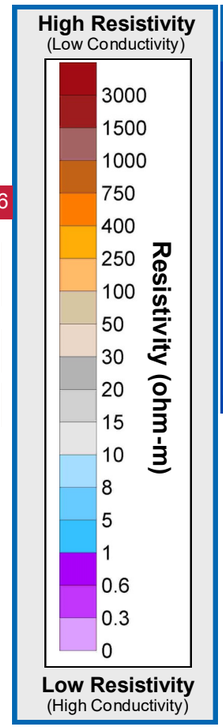

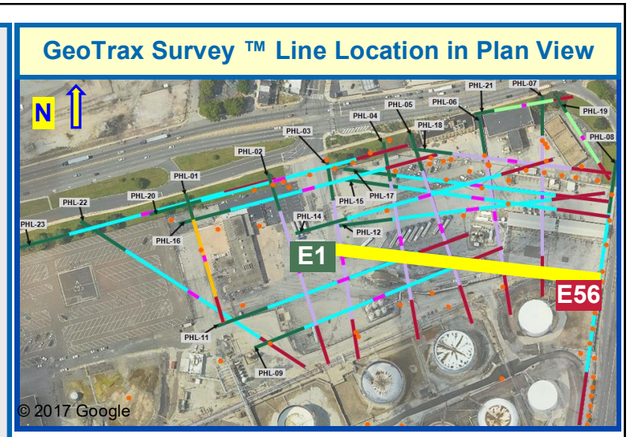

CD Groundwater Grab Results		
Well		CD-13
Boring		S-459
Sample Date		1/5/21
Sample Depth ft. BGS		40
Parameters µg/L	MSCs µg/L	
BENZENE	5	130
TOLUENE	1000	7.3
ETHYLBENZENE	700	97
XYLENES, TOTAL	10000	360
MTBE	20	43
1,2,4-TMB	62	110
>C12-C22		3100
>C22-C44		440
C4-C12-TPH-GRO		2600
TOTAL ORG. CARBON		33000
TPH		3500

CD Groundwater Grab Results	
Well	CD-13
Boring	S-459
Sample Date	1/5/21
Sample Depth	40
Parameters (µg/L)	
ALKALINITY TO pH 4.5	73,000
CALCIUM	46,000
CHLORIDE (AS CL)	150,000
IRON	5,400
MAGNESIUM	15,000
METHANE	150
NITROGEN, AMMONIA	900 J
NITROGEN, NITRATE	2,200
POTASSIUM	5,200
SODIUM	77,000
SULFATE (AS SO4)	41,000 FH

CD Soil Sample Results				
Well /Boring		CD-13 S-459		
Sample Date		1/4/21	1/4/21	1/6/21
Sample Depth ft BGS		5	22	60
Parameters mg/kg	MCLs mg/kg			
BENZENE	330	ND	1	ND
TOLUENE	10000	ND	ND	ND
ETHYLBENZENE	1000	ND	0.4	ND
XYLENES, TOTAL	9100	ND	0.48 J	ND
MTBE	9900	ND	ND	ND
>C12-C22		690	40	ND
>C22-C44		150	5.9 J	ND
C4-C12-TPH-GRO		600	25	0.067 J
TPH		840	46	ND

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13.1
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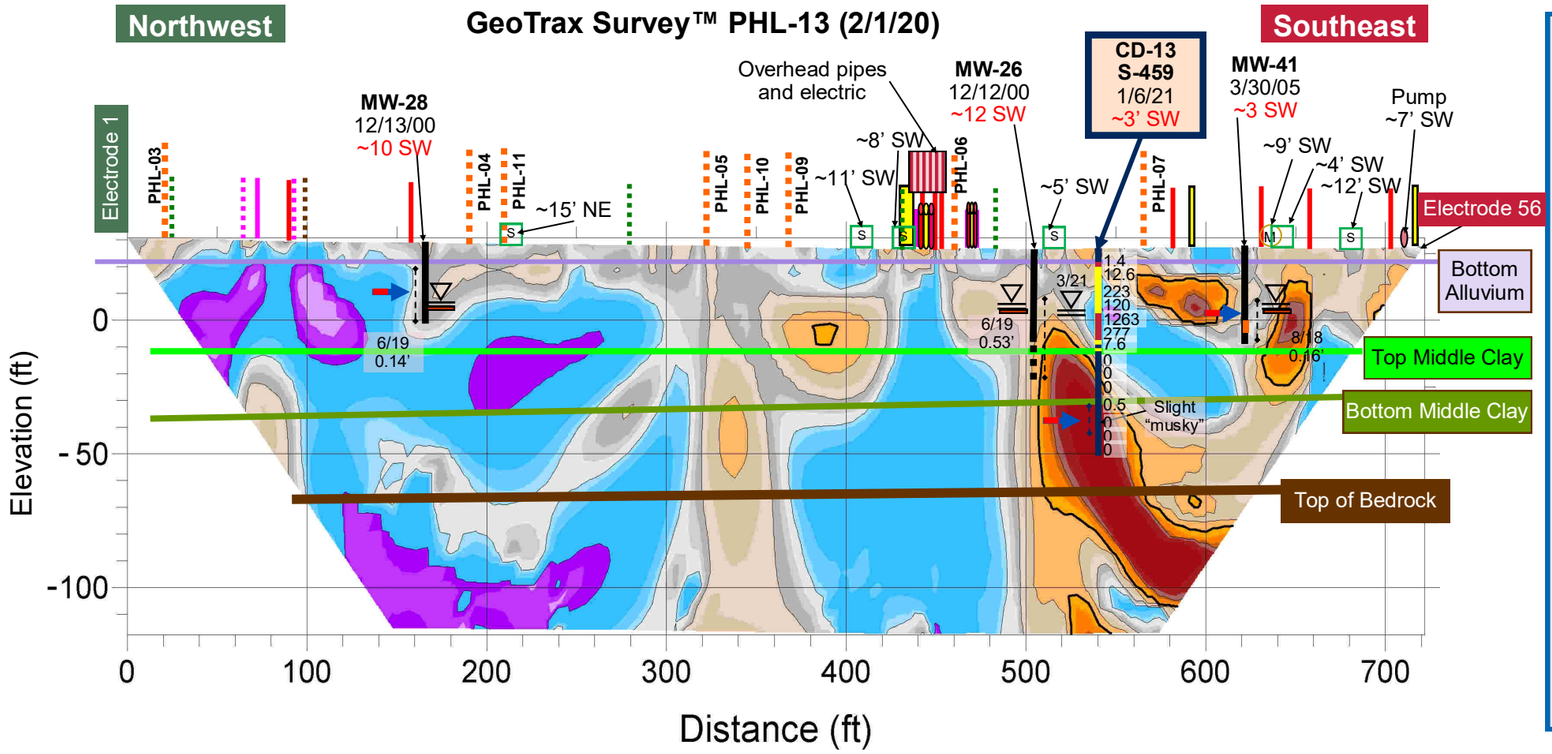

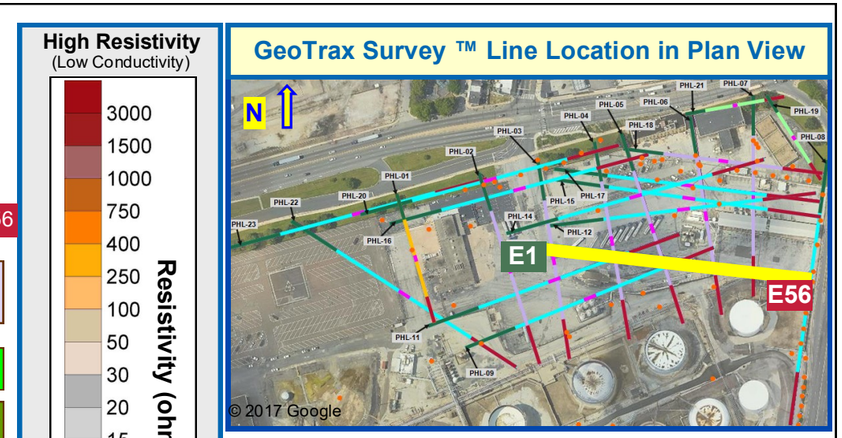

GeoTrax Survey ™ Line Location in Plan View

Groundwater Sample Results

Well		MW-28	MW-41
Sample Date		12/19/14	12/11/14
Parameters (µg/L)	Standards (µg/L)		
BENZENE	5	**2960**	**169**
ETHYLBENZENE	1000	125	0.531
TOLUENE	700	158	5.3
XYLENES, TOTAL	10000	1000	7.2
MTBE	20	**377**	15.1
NAPHTHALENE	100	45.3	3.03
PYRENE	130	2.09	14.9
ANTHRACENE	66	0.275	3.03
ISOPROPYLBENZENE	3500	17 J	6.1
FLUORENE	1900	1.39	8.03
CHRYSENE	1.9	1.48	**11.6**
PHENANTHRENE	1100	2.6	19.4
LEAD	5	ND	2.4 B
1,2,4-TMB	62	**449**	12.5
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TMB	1200	162	27.1
BENZO(A)ANTHRACENE	4.9	0.529	4.21
BENZO(A)PYRENE	0.2	**0.451**	**6.75**
BENZO(B)FLUORANTHENE	0.55	**1.36**	**10.7**
BENZO(G,H,I)PERYLENE	0.26	**0.607**	**7.09**

Well Product Data

Well	MW-28	MW-26	MW-41
Sample Date	6/3/19	6/3/19	8/2/18
Product Description	65% GASOLINE, 35% MIDDLE DISTILLATE	Not Available	65% MIDDLE DISTILLATE 35% GASOLINE

CD Groundwater Sample Results

Well		CD-13
Boring		S-459
Sample Date		3/24/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**13**
TOLUENE	**1000**	0.63 J
ETHYLBENZENE	**700**	14
XYLENES, TOTAL	**10000**	49
MTBE	**20**	ND
NAPHTHALENE	**100**	28
1,2,4-TMB	**62**	40
1,3,5-TMB	**1200**	14
ISOPROPYLBENZENE	**3500**	3.3 J
TERT-BUTYL ALCOHOL		ND

CD Groundwater Sample Results

Well	CD-13
Boring	S-459
Sample Date	3/24/21
Parameters µg/L	
ALKALINITY TO pH 4.5	150,000
CALCIUM	58,000
IRON	27,000
METHANE	14
SULFATE (AS SO4)	320,000
TOTAL CARBON	50,000
TOTAL INORGANIC CARBON	46,000
TOTAL KJELDAHL NITROGEN	570 J
TOTAL ORGANIC CARBON	4,000

CD Groundwater Quality Results

Well		CD-13
Boring		S-459
Sample Date		3/24/21
Parameters	*Units*	
DO	mg/L	0.27
ORP	mV	-19
pH	S.U.	5.75
EC	mS/cm	1
Temperature	ºC	16.75
Turbidity	NTU	25.5

Groundwater Quality Sample Results

Well		MW-28	MW-41
Sample Date		12/19/14	8/2/18
Parameters	*Units*		
DO	mg/L	0.47	5.63
ORP	mV	-33	118
pH	S.U.	6.75	7.07
EC	mS/cm	1.83	0.142
Temperature	ºC	18.34	23.54
Turbidity	NTU	770	0

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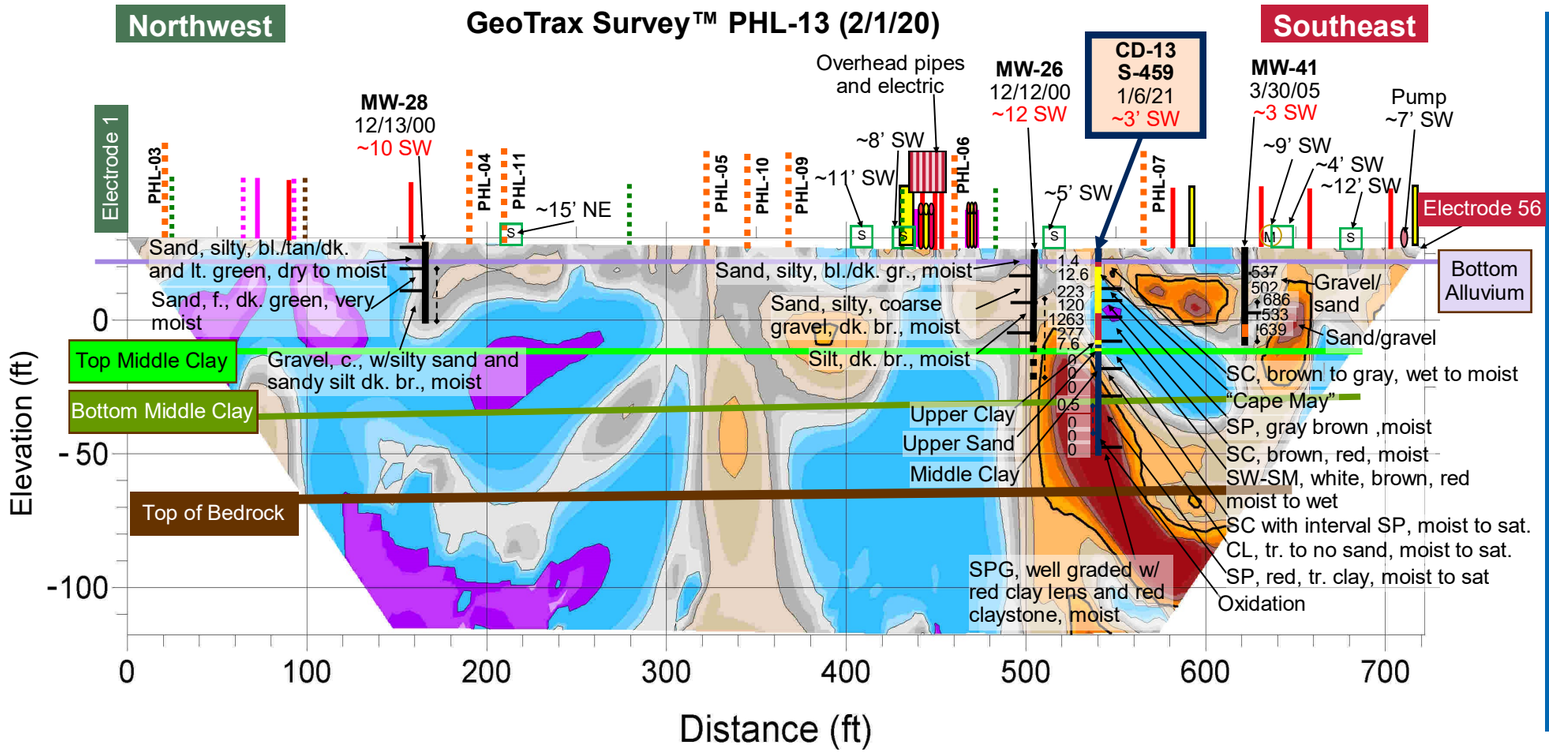
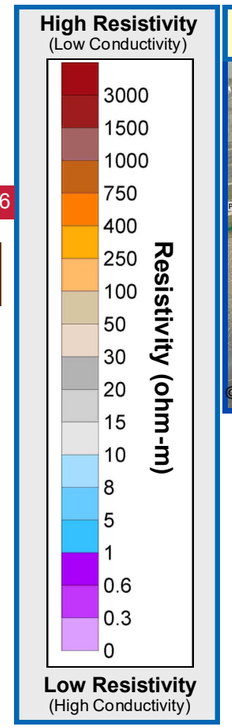
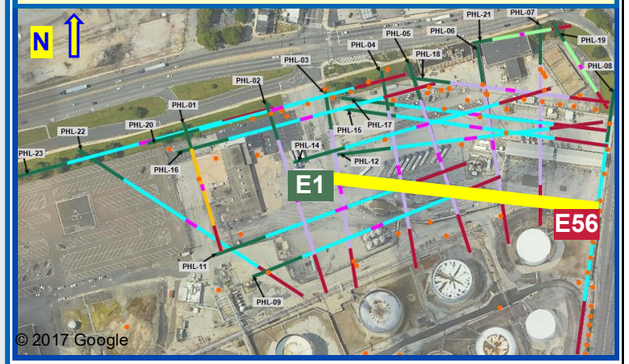




GeoTrax Survey ™ Line Location in Plan View



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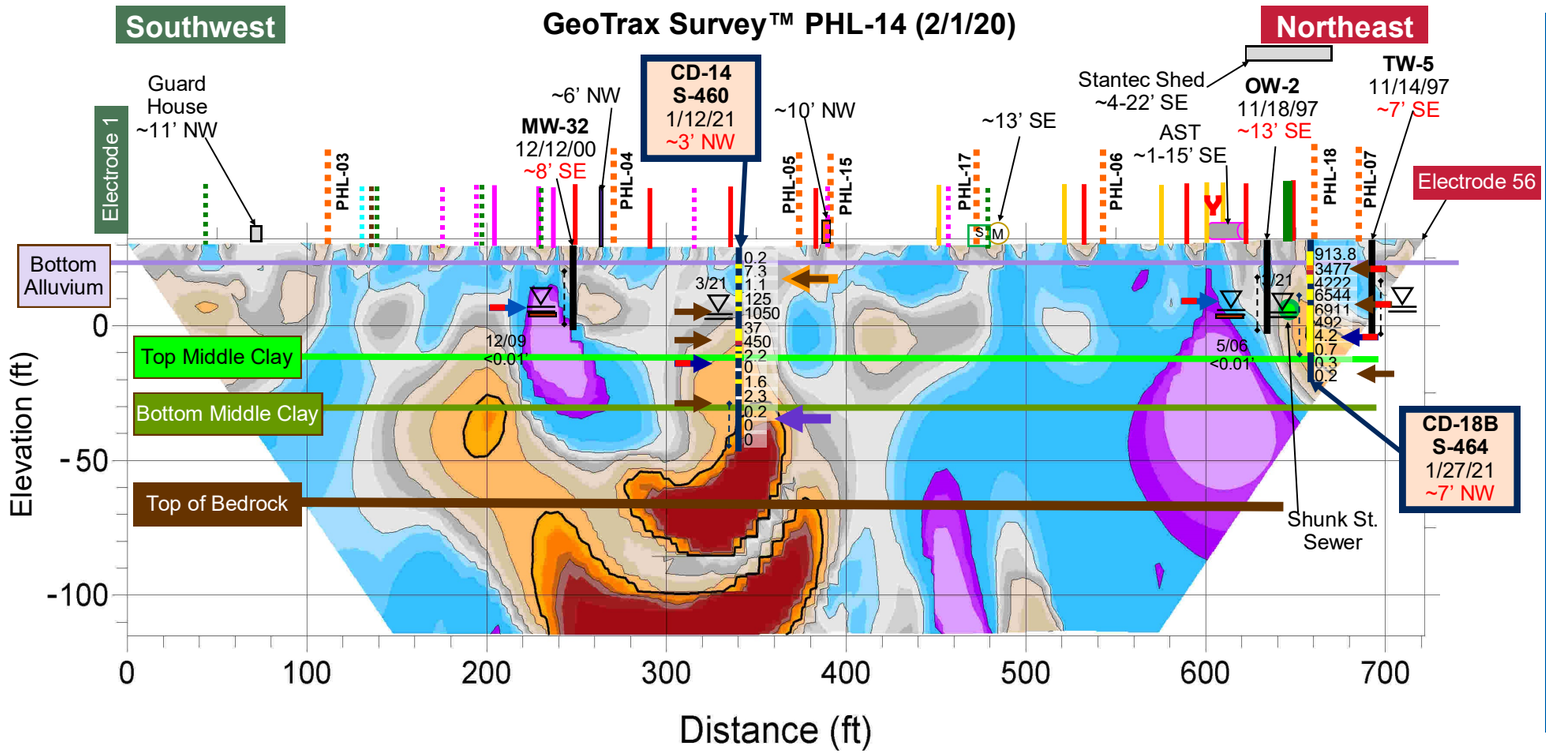

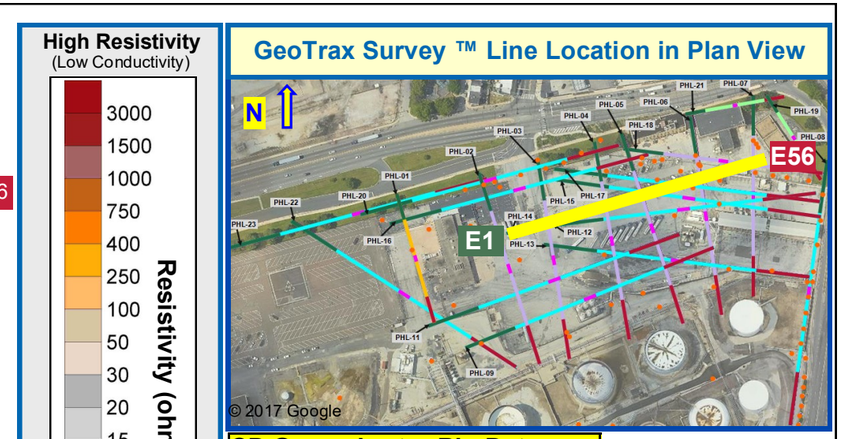

GeoTrax Survey ™ Line Location in Plan View

CD Groundwater Bio Data	
Well	**CD-14**
Boring	**S-460**
Sample Date	2/11/21
Sample Depth ft. BGS	65
Data Set IDs	
# reads for sample (millions)	5.476
Bacterial	169
Antibiotic resistant	4
Fungal	14
Protists	8
Dark Matter	84
Phages	4
Virus	0
Virulence Factors	18
QPCR	
Bacterial Biomass (gene copies / L)	6,700,000,000

CD Groundwater Grab Results

Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		1/8/21	1/27/21
Sample Depth ft. BGS		44	38
Parameters µg/L	MSCs µg/L		
BENZENE	5	690	100,000
TOLUENE	1000	800	3,300
ETHYLBENZENE	700	920	160
XYLENES, TOTAL	10000	1100	590 J
MTBE	20	7,000	ND
1,2,4-TMB	62	250	ND
>C12-C22		NA	3900
>C22-C44			380
C4-C12-TPH-GRO			160000
TOTAL ORG. CARBON			30000
TPH			4300

CD Groundwater Grab Results

Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		1/8/21	1/27/21
Sample Depth		44	38
Parameters (µg/L)			
ALKALINITY TO pH 4.5			310,000
CALCIUM			61,000
CHLORIDE (AS CL)		NA	160,000
IRON			14,000
MAGNESIUM			21,000
METHANE		410	170
NITROGEN, AMMONIA			600 J
NITROGEN, NITRATE			1,200
POTASSIUM		NA	10,000
SODIUM			190,000
SULFATE (AS SO4)			120,000

CD Soil Sample Results

Well /Boring		CD-14			CD-18B		
		S-460			S-464		
Sample Date		1/7/21	1/7/21	1/11/21	1/26/21	1/26/21	1/27/21
Sample Depth ft BGS		25	34	60	11	26	49
Parameters mg/kg	MCLs mg/kg						
BENZENE	330	4.7	ND	0.0014 J	**880 H**	**640**	12
TOLUENE	10000	26	0.054 J	0.0076	150	62	0.046 J
ETHYLBENZENE	1000	9.8	ND	0.0016 J	7.4	7.6 J	ND
XYLENES, TOTAL	9100	57	0.13 J	0.0076 J	33	37	ND
MTBE	9900	5.1	ND	0.00092 J	ND	ND	ND
>C12-C22		820	450	ND	940	830	ND
>C22-C44		120	22	ND	330	150	32
C4-C12-TPH-GRO		500	42	1.8	1300	1100	2.9 J
TPH		940	470	ND	1300	980	32

CD Soil Forensics

Well	CD-018B
Boring	S-464
Sample Date	1/26/21
Sample Depth ft BGS	11

See Report for full details

Spans the gasoline range to the residual range

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FIGURE
14.1
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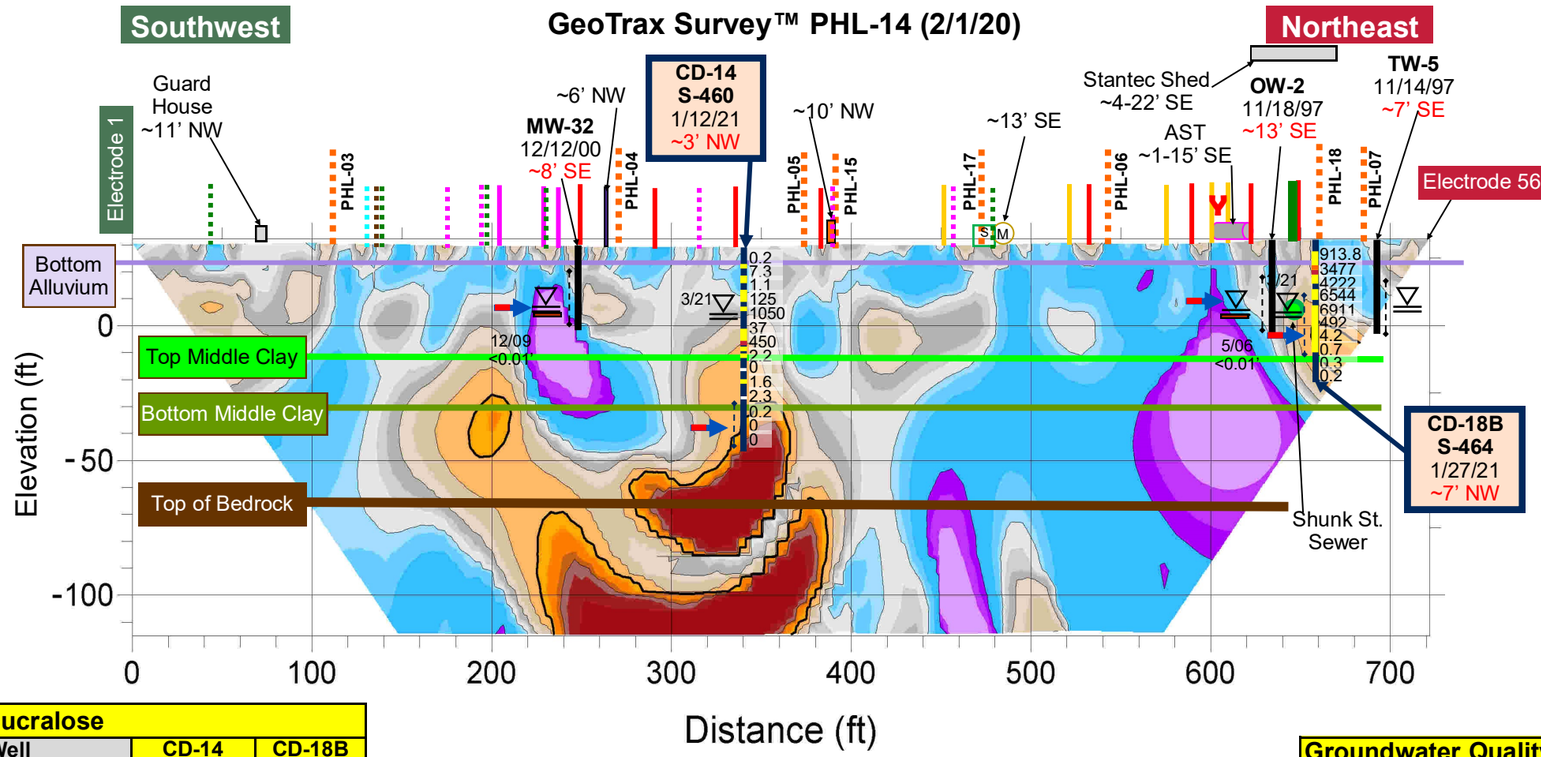

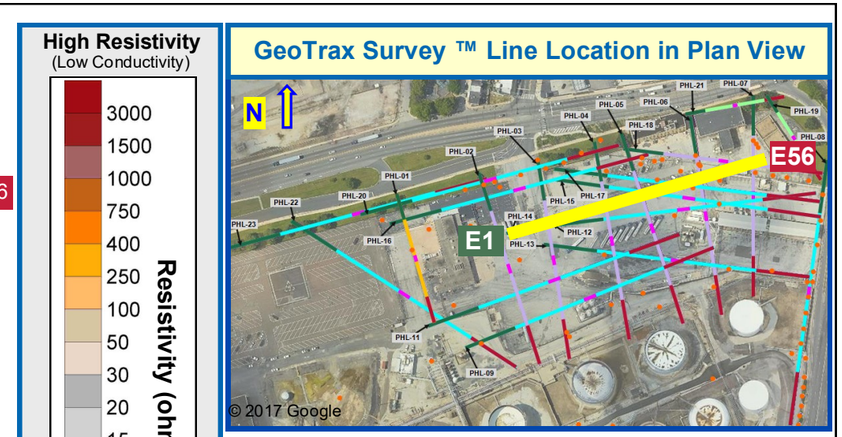

GeoTrax Survey ™ Line Location in Plan View

Well Product Data		
Well	MW-32	OW-2
Sample Date	12/31/09	5/8/06
Product Description	Not Available	90% GASOLINE, 10% MIDDLE DISTILLATE

Groundwater Sample Results				
Well		MW-32	OW-2	TW-5
Sample Date		7/30/18	8/13/18	11/7/19
Parameters (µg/L)	Stds (µg/L)			
BENZENE	5	**19.2**	**333**	**610000**
ETHYLBENZENE	1000	3.37	3.16	**7500**
TOLUENE	700	196	10.3	420
XYLENES, TOTAL	10000	351	22.9	1800
MTBE	20	**114**	2.34	ND
NAPHTHALENE	100	29	0.87	14
PYRENE	130	3.34	0.331	ND
ANTHRACENE	66	0.306	0.213	ND
ISOPROPYLBENZENE	3500	20.9	20.7	110 J
FLUORENE	1900	0.367	0.437	0.5
CHRYSENE	1.9	**2.66**	ND	ND
PHENANTHRENE	1100	1.71	0.0714	1
LEAD	5	ND	ND	1.2
1,2,4-TMB	62	**372**	9.95	ND
1,2-DIBROMOETHANE	0.05	ND	ND	ND
1,2-DICHLOROETHANE	5	ND	ND	ND
1,3,5-TMB	1200	133	ND	ND
BENZO(A)ANTHRACENE	4.9	1.1	ND	ND
BENZO(A)PYRENE	0.2	**1.98**	ND	ND
BENZO(B)FLUORANTHENE	0.55	**4.29**	ND	ND
BENZO(G,H,I)PERYLENE	0.26	**2.4**	ND	ND

Sucralose		
Well	CD-14	CD-18B
Boring	S-460	S-464
Sample Date	5/17/21	5/18/21
Sucralose ng/L	43.2 J	ND

CD Groundwater Sample Results			
Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		3/23/21	3/22/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	**22**	**120,000**
TOLUENE	**1000**	0.68 J	750
ETHYLBENZENE	**700**	4.7	70 J
XYLENES, TOTAL	**10000**	12	320 J
MTBE	**20**	2.3	ND
NAPHTHALENE	**100**	1.8	9.6
1,2,4-TMB	**62**	12	ND
1,3,5-TMB	**1200**	3.9 J	ND
ISOPROPYLBENZENE	**3500**	1.3 J	92 J
TERT-BUTYL ALCOHOL		ND	ND

CD Groundwater Sample Results			
Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		3/23/21	3/22/21
Parameters µg/L			
ALKALINITY TO pH 4.5		110,000	310,000
CALCIUM		50,000	97,000
IRON		26,000	20,000
METHANE		28	2,700
SULFATE (AS SO4)		250,000	100,000
TOTAL CARBON		42,000	110,000
TOTAL INORGANIC CARBON		40,000	91,000
TOTAL KJELDAHL NITROGEN		ND	1,100
TOTAL ORGANIC CARBON		2,500	19,000

Groundwater Quality Sample Results				
Well		MW-32	OW-2	TW-5
Sample Date		7/30/18	8/13/18	7/3/19
Parameters	*Units*			
DO	mg/L	0	0.31	0
ORP	mV	-21	-98	-151
pH	S.U.	6.58	6.93	6.45
EC	mS/cm	0.246	2.83	5.16
Temperature	ºC	22.24	21.58	18.69
Turbidity	NTU	0	21.3	68.4

CD Groundwater Quality Results			
Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		3/23/21	3/22/21
Parameters	*Units*		
DO	mg/L	0.94	0.56
ORP	mV	39	-103
pH	S.U.	5.95	6.32
EC	mS/cm	1.01	1.62
Temperature	ºC	17.76	18.73
Turbidity	NTU	6.9	2

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FIGURE
14.2
ANALYTICAL DATA INTEGRATION

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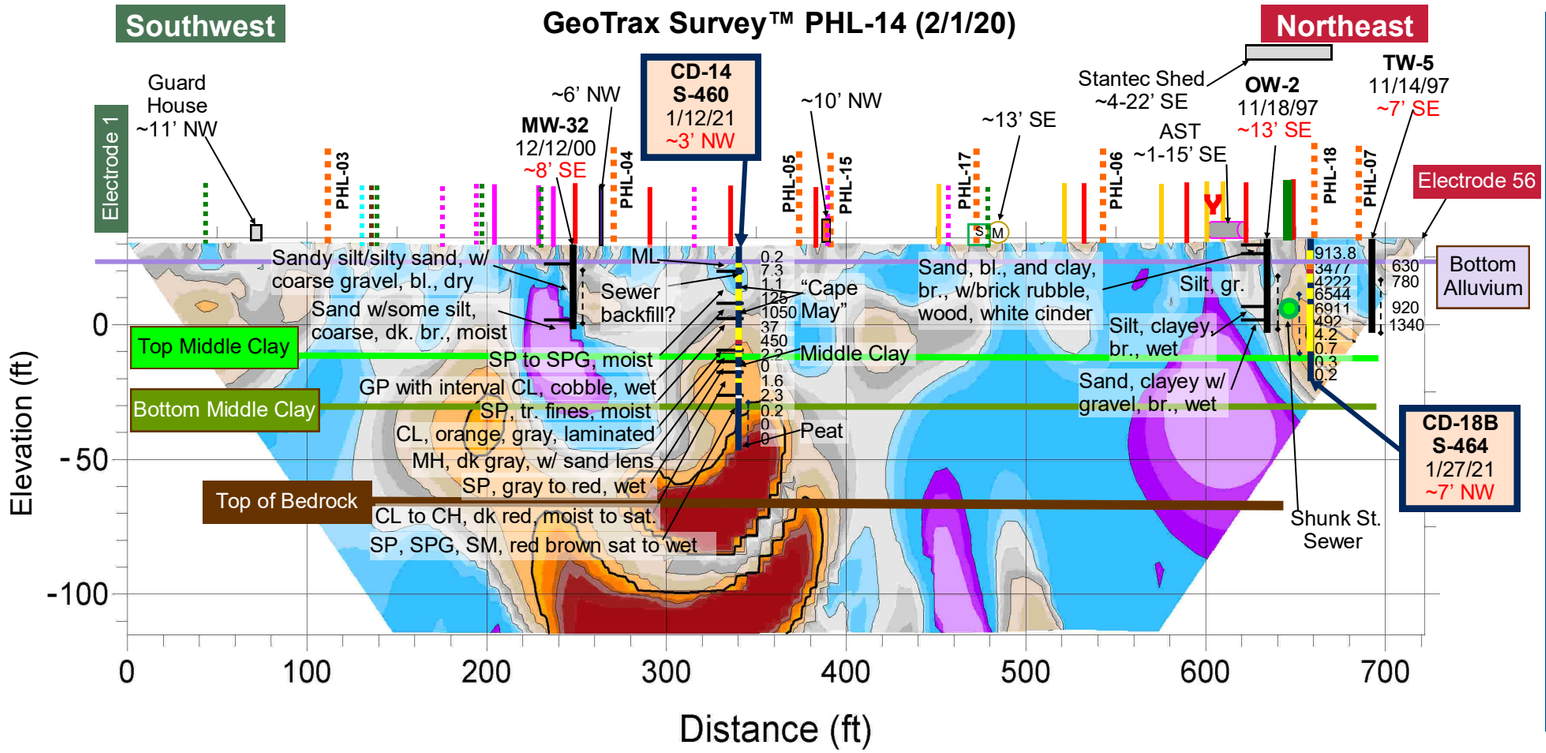

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FIGURE
14.3
GEOLOGY DATA INTEGRATION

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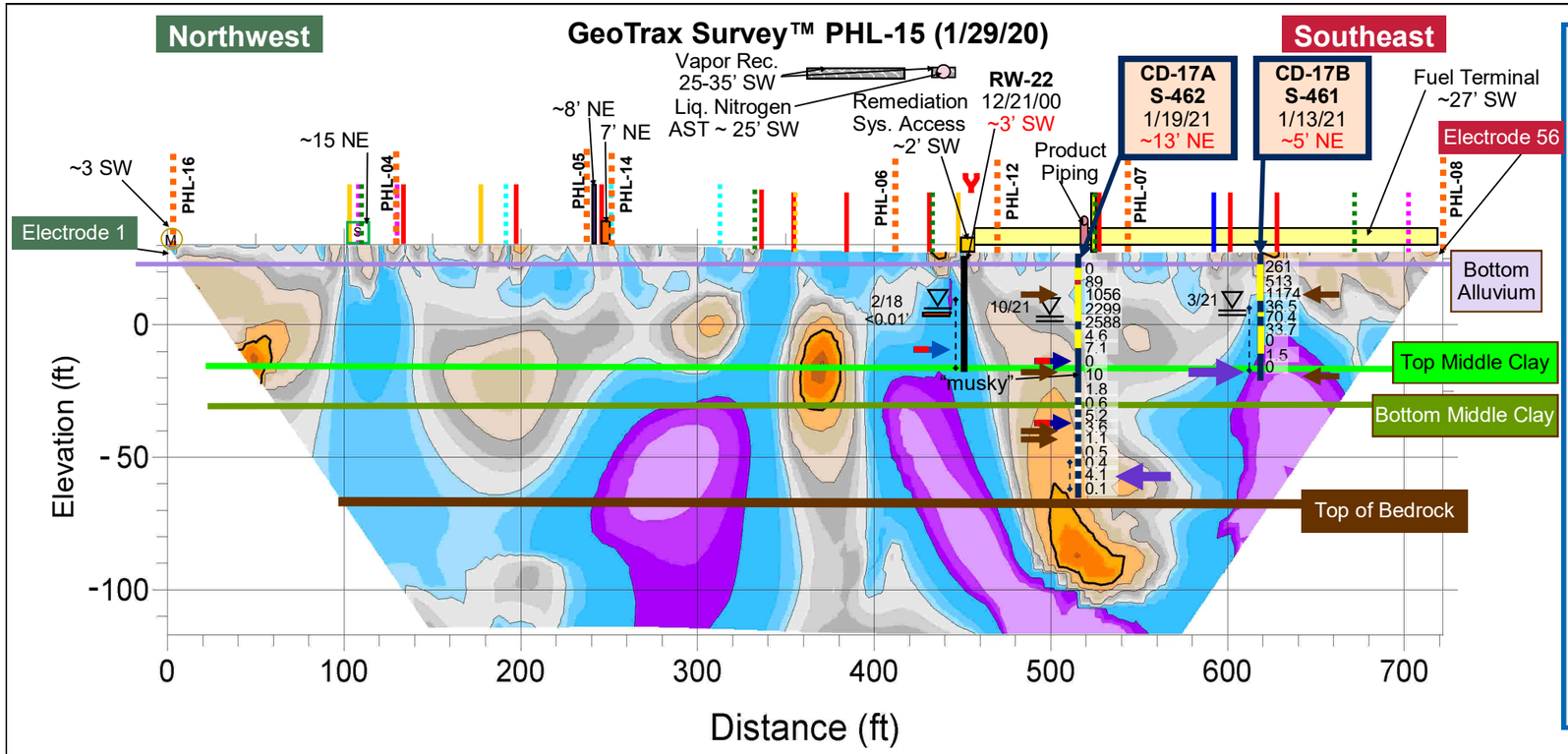
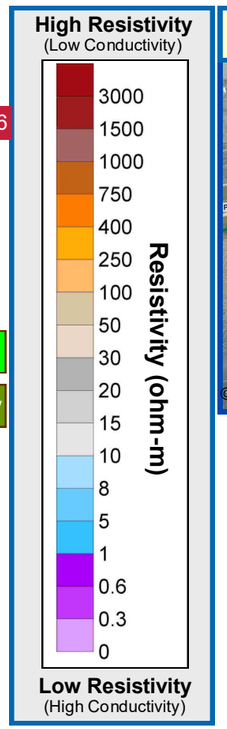
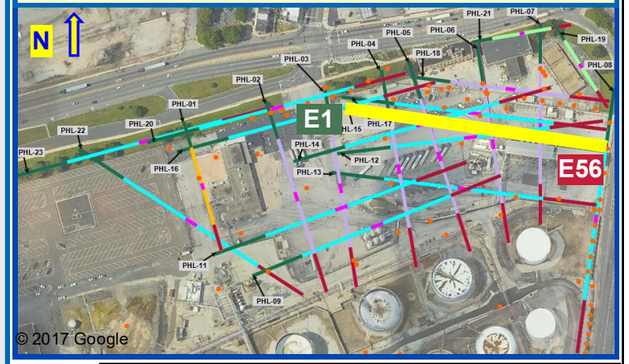




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data		
Well	**CD-17A**	**CD-17B**
Boring	**S-462**	**S-461**
Sample Date	2/11/21	2/11/21
Sample Depth ft. BGS	83	43
Data Set IDs		
# reads for sample (millions)	3.84	4.102
Bacterial	120	167
Antibiotic resistant	1	2
Fungal	8	8
Protists	2	4
Dark Matter	75	201
Phages	4	4
Virus	0	0
Virulence Factors	14	21
QPCR		
Bacterial Biomass (gene copies / L)	3,400,000,000	4,700,000,000

CD Groundwater Grab Results

Well		CD-17A		CD-17B
Boring		S-462		S-461
Sample Date		1/14/21	1/19/21	
Sample Depth ft. BGS		40	73	
Parameters µg/L	**MSCs µg/L**			
BENZENE	**5**	**240**	**400**	NA
TOLUENE	**1000**	**2200**	**1900**	
ETHYLBENZENE	**700**	350	290	
XYLENES, TOTAL	**10000**	2000	1600	
MTBE	**20**	**130**	**47**	
1,2,4-TMB	**62**	**330**	**260**	
>C12-C22		3000	3000	
>C22-C44		120 J	190	
C4-C12-TPH-GRO		12000	9400	
TOTAL ORG. CARBON		60000	58000	
TPH		3100	3200	

CD Groundwater Grab Results

Well	CD-17A		CD-17B
Boring	S-462		S-461
Sample Date	1/14/21	1/19/21	
Sample Depth	40	73	
Parameters (µg/L)			
ALKALINITY TO pH 4.5	190,000	170,000 FL	NA
CALCIUM	33,000	53,000	
CHLORIDE (AS CL)	82,000	81,000	
IRON	3,000	42,000	
MAGNESIUM	8,400	45,000	
METHANE	44	86	
NITROGEN, AMMONIA	3,200	1500 J	
NITROGEN, NITRATE	2800 FL	840	
POTASSIUM	3,800	7,200	
SODIUM	67,000	110,000	
SULFATE (AS SO4)	57,000	260,000	

CD Soil Sample Results

Well /Boring		CD-17A S-462				CD-17B S-461	
Sample Date		1/13/21	1/14/21	1/15/21	1/19/21	1/12/21	1/13/21
Sample Depth ft BGS		13	43	76	79	15	45
Parameters mg/kg	**MCLs mg/kg**						
BENZENE	330	1.6	1.9	0.043	ND	0.12 J	0.014
TOLUENE	10000	32	0.037	0.2	0.0023 J	ND	ND
ETHYLBENZENE	1000	22	0.01	0.054	0.00065 J	0.23 J	ND
XYLENES, TOTAL	9100	130	0.044	0.33	0.0035 J	0.93	ND
MTBE	9900	0.89	0.002 J	0.0037 J	ND	ND	ND
>C12-C22		30	8.5 J	ND	ND	2100	ND
>C22-C44		ND	31	ND	130	95 J	24
C4-C12-TPH-GRO		1200 B	0.39 B	3.3 B	ND	390 B	0.059 J
TPH		30	40	ND	130	2200	24

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FIGURE
15.1
INITIAL CD DATA INTEGRATION

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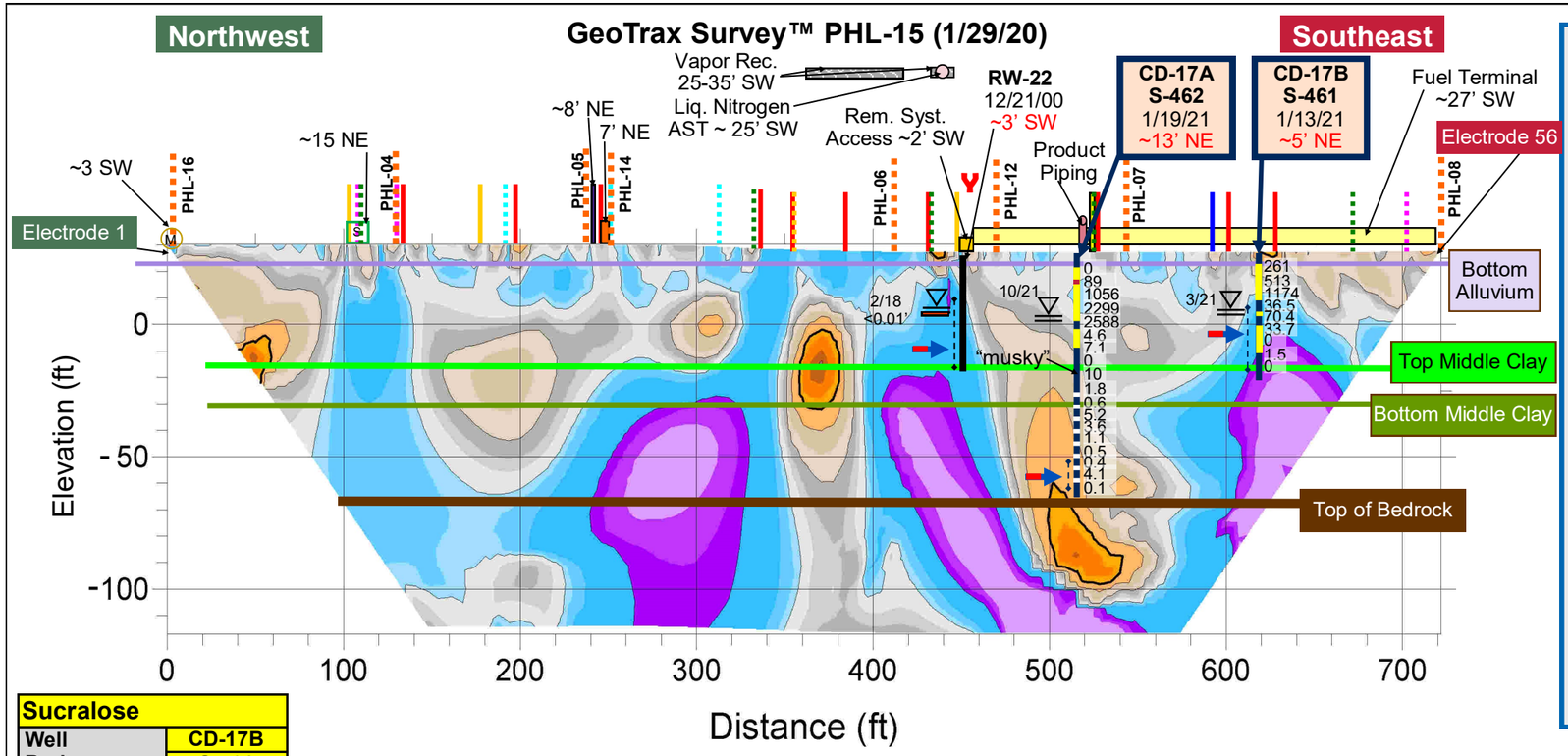
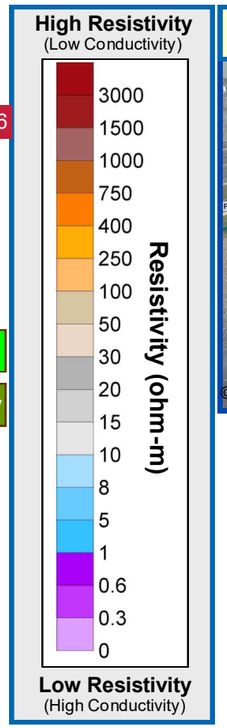
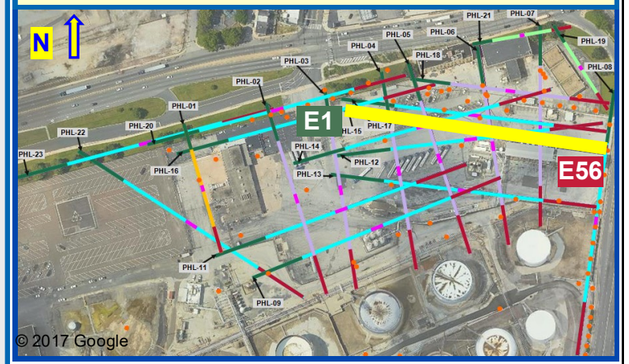




GeoTrax Survey ™ Line Location in Plan View



Well Product Data	
Well	RW-22
Sample Date	2/15/18
Product Description	95% GASOLINE, 5% MIDDLE DISTILLATE

Groundwater Sample Results		
Well		RW-22
Sample Date		5/30/14
Parameters (µg/L)	Standards (µg/L)	
BENZENE	5	**1670**
ETHYLBENZENE	1000	683
TOLUENE	700	168
XYLENES, TOTAL	10000	1370
MTBE	20	**2830**
NAPHTHALENE	100	59.6
PYRENE	130	1.98
ANTHRACENE	66	0.834
ISOPROPYLBENZENE	3500	27.8
FLUORENE	1900	3.85
CHRYSENE	1.9	0.2
PHENANTHRENE	1100	2.26
LEAD	5	3.8
1,2,4-TMB	62	**606**
1,2-DIBROMOETHANE	0.05	ND
1,2-DICHLOROETHANE	5	ND
1,3,5-TMB	1200	151
BENZO(A)ANTHRACENE	4.9	0.229
BENZO(A)PYRENE	0.2	ND
BENZO(B)FLUORANTHENE	0.55	0.157
BENZO(G,H,I)PERYLENE	0.26	0.105

Sucralose	
Well	CD-17B
Boring	S-461
Sample Date	5/17/21
Sucralose ng/L	ND

CD Groundwater Sample Results			
Well		CD-17A	CD-17B
Boring		S-462	S-461
Sample Date		3/23/21	3/22/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	**39**	**1000**
TOLUENE	**1000**	1.8	470
ETHYLBENZENE	**700**	17	21
XYLENES, TOTAL	**10000**	100	200
MTBE	**20**	9.5	**28**
NAPHTHALENE	**100**	2.2	0.94
1,2,4-TMB	**62**	47	18 J
1,3,5-TMB	**1200**	18	1.8 J
ISOPROPYLBENZENE	**3500**	2.2 J	25
TERT-BUTYL ALCOHOL		20 J	1100

CD Groundwater Sample Results		
Well	CD-17A	CD-17B
Boring	S-462	S-461
Sample Date	3/23/21	3/22/21
Parameters µg/L		
ALKALINITY TO pH 4.5	160,000	400,000
CALCIUM	72,000	130,000
IRON	20,000	31,000
METHANE	8	7,800
SULFATE (AS SO4)	190,000	30,000
TOTAL CARBON	46,000	100,000
TOTAL INORGANIC CARBON	43,000	88,000
TOTAL KJELDAHL NITROGEN	ND	1,200
TOTAL ORGANIC CARBON	3,500	12,000

CD Groundwater Quality Results			
Well		CD-17A	CD-17B
Boring		S-462	S-461
Sample Date			3/22/21
Parameters	*Units*		
DO	mg/L	NA	0.75
ORP	mV		-98
pH	S.U.		6.32
EC	mS/cm		2.17
Temperature	ºC		19.62
Turbidity	NTU		40.7

Groundwater Quality Sample Results		
Well		RW-22
Sample Date		5/30/14
Parameters	*Units*	
DO	mg/L	0.8
ORP	mV	146
pH	S.U.	6.35
EC	mS/cm	1.74
Temperature	ºC	18.68
Turbidity	NTU	48

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FIGURE
15.2
ANALYTICAL DATA INTEGRATION

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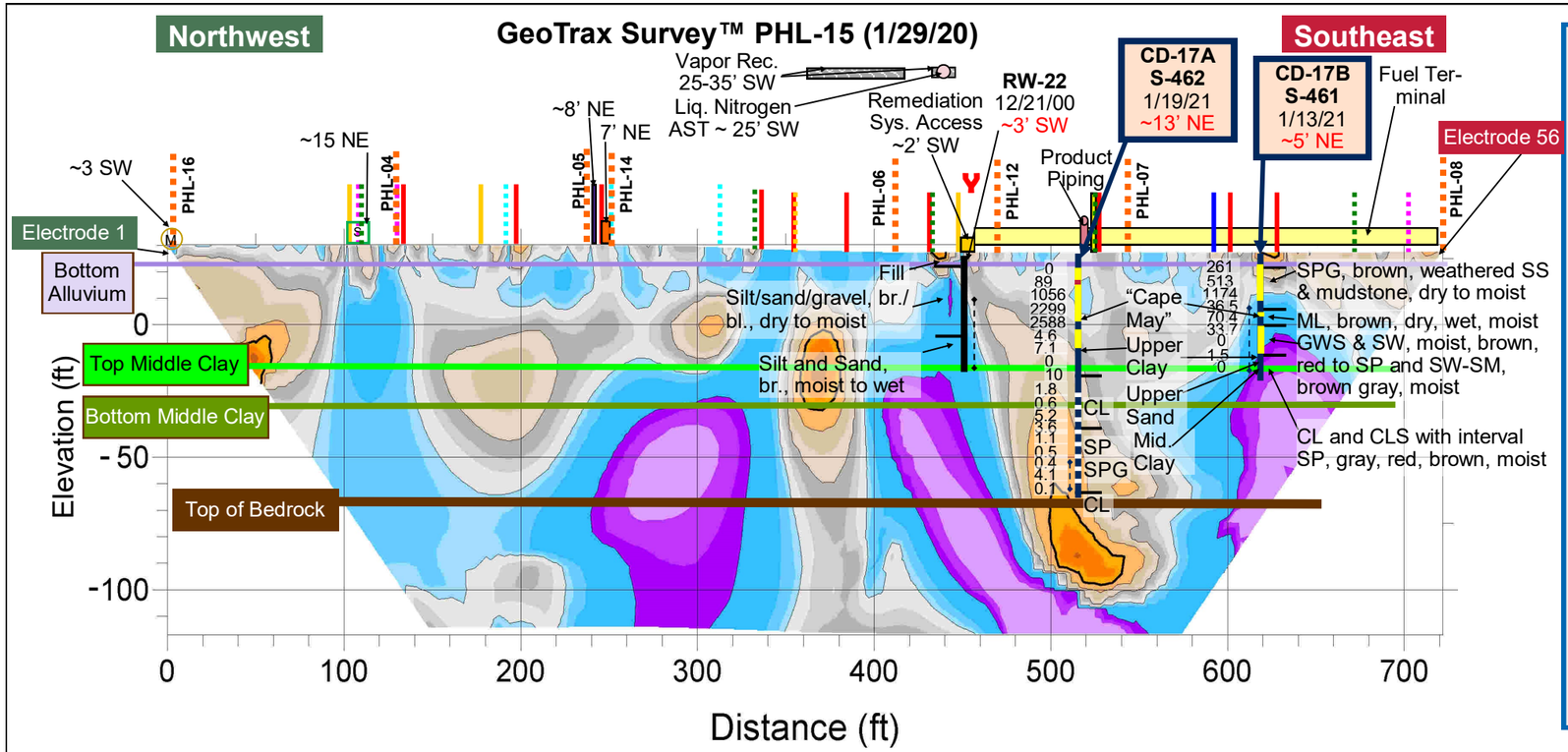

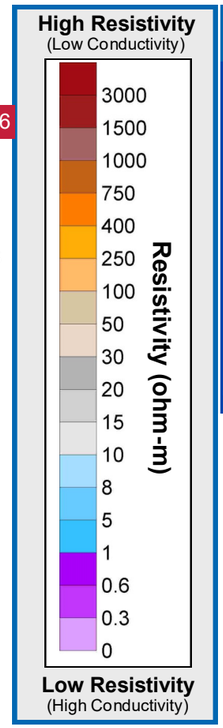

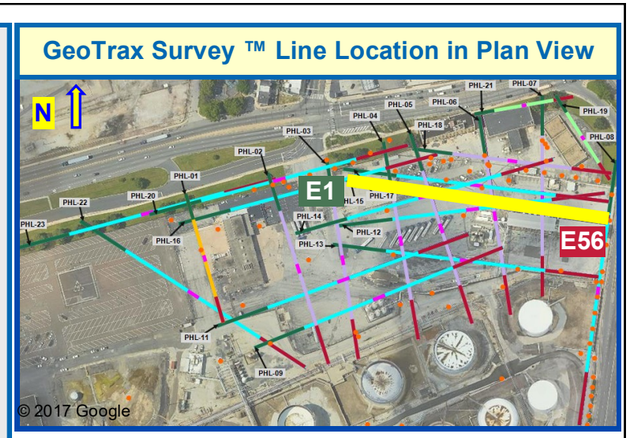

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FIGURE
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GEOLOGY
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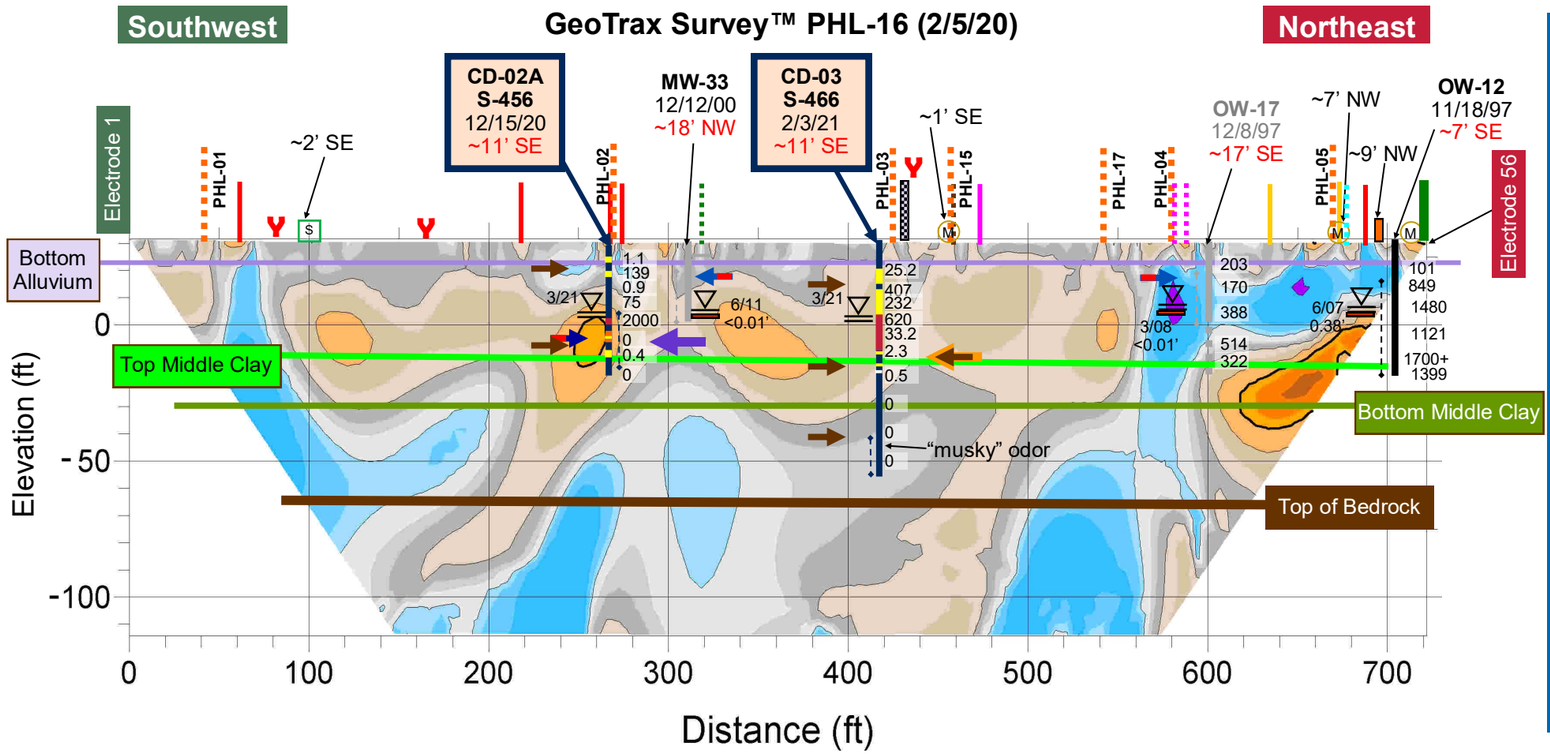
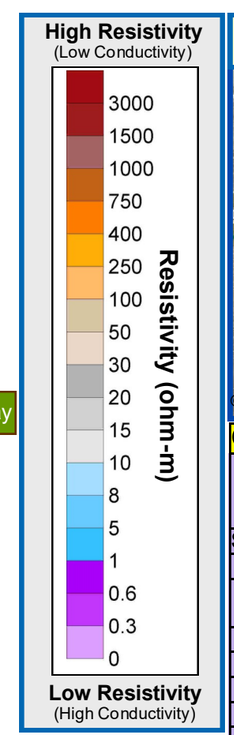
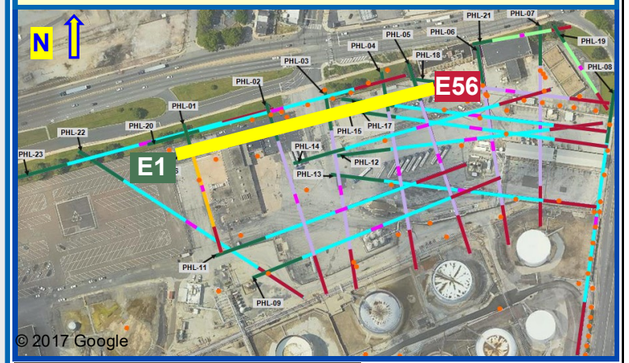




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	**CD-02A**
Boring	**S-456**
Sample Date	2/11/21
Sample Depth ft. BGS	38
Data Set IDs	
# reads for sample (millions)	NA
Bacterial	
Antibiotic resistant	
Fungal	
Protists	
Dark Matter	
Phages	
Virus	
Virulence Factors	
QPCR	
Bacterial Biomass (gene copies / L)	6,200,000

CD Groundwater Grab Results

Well		CD-02A	CD-03
Boring		**S-456**	**S-466**
Sample Date		**12/15/20**	
Sample Depth ft. BGS		**36**	
Parameters µg/L	**MSCs µg/L**		
BENZENE	**5**	**110**	NA
TOLUENE	**1000**	9	
ETHYLBENZENE	**700**	6.3	
XYLENES, TOTAL	**10000**	26 J	
MTBE	**20**	**98**	
1,2,4-TMB	**62**	5.7 J	
>C12-C22		3300	
>C22-C44		970	
C4-C12-TPH-GRO		3900	
TOTAL ORG. CARBON		46000	
TPH		4300	

CD Groundwater Grab Results

Well	CD-02A	CD-03
Boring	**S-456**	**S-466**
Sample Date	**12/15/20**	
Sample Depth	**36**	
Parameters (µg/L)		
ALKALINITY TO pH 4.5	220,000	NA
CALCIUM	56,000	
CHLORIDE (AS CL)	200,000	
IRON	240,000	
MAGNESIUM	48,000	
METHANE	7,900	
NITROGEN, AMMONIA	4,400	
NITROGEN, NITRATE	300 J H	
POTASSIUM	15,000	
SODIUM	150,000	
SULFATE (AS SO4)	24,000	

CD Soil Sample Results

Well /Boring		CD-02A S-456		CD-03 S-466		
Sample Date		**12/14/20**	**12/15/20**	**1/28/21**	**1/28/21**	**1/29/21**
Sample Depth ft BGS		**10**	**37**	**18**	**46**	**72**
Parameters mg/kg	**MCLs mg/kg**					
BENZENE	330	ND	0.021	0.93	1.8	ND
TOLUENE	10000	ND	0.0013 J	0.18 J	0.097 J	ND
ETHYLBENZENE	1000	ND	0.0016 J	3.3	ND	ND
XYLENES, TOTAL	9100	ND	0.0041 J	11	ND	ND
MTBE	9900	ND	0.012	ND	0.23 J	ND
>C12-C22		1600	ND	120	ND	ND
>C22-C44		150	6.3 J	56	6.4 J	16
C4-C12-TPH-GRO		3400	1.7	650	3.9 J	5.6*
TPH		1800	6.3 J	180	6.4 J	16

CD Soil Forensics	
Well	**CD-03**
Boring	**S-466**
Sample Date	1/29/21
Sample Depth ft BGS	41
See Report for full details	Petroleum that spans light distillate range to

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FIGURE
16.1
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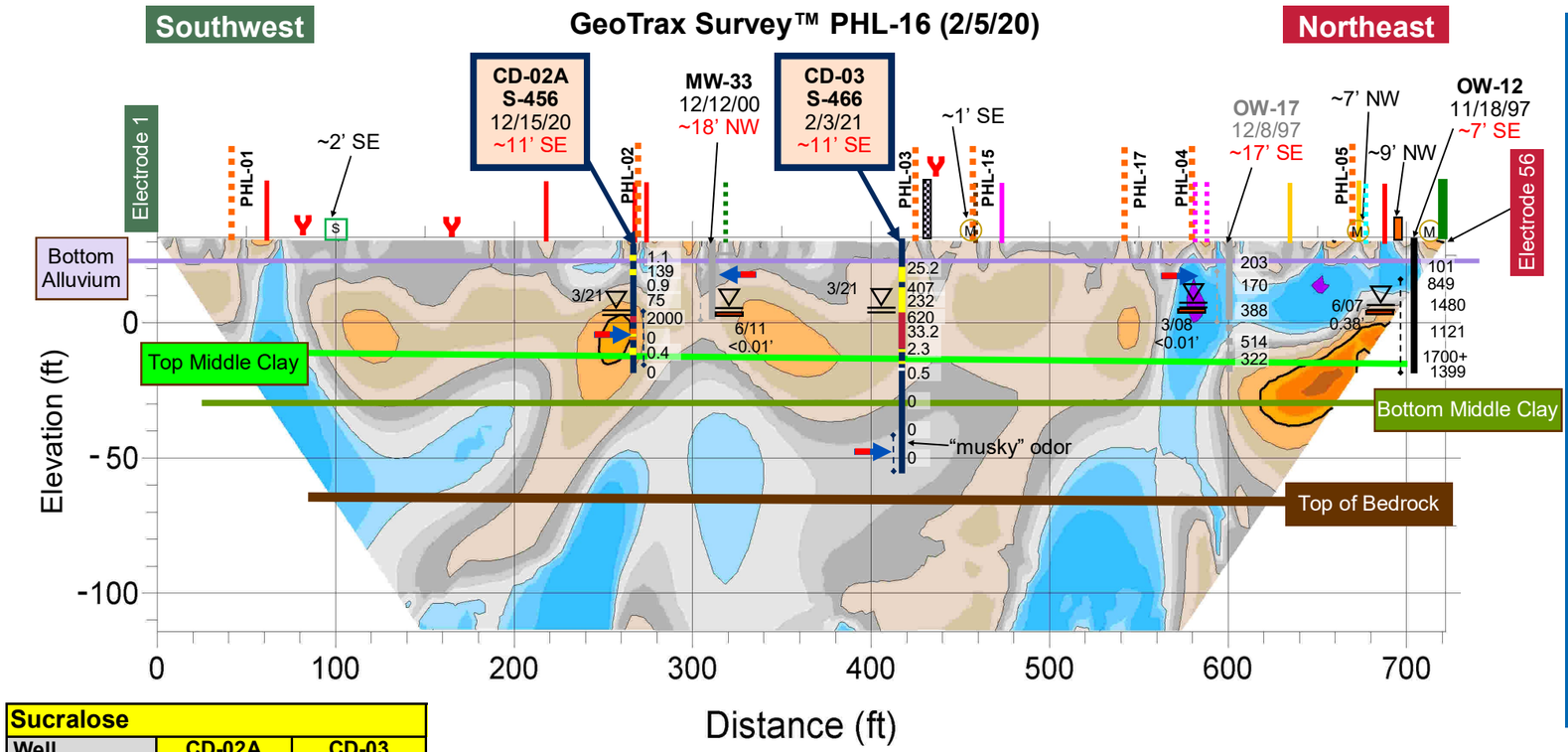
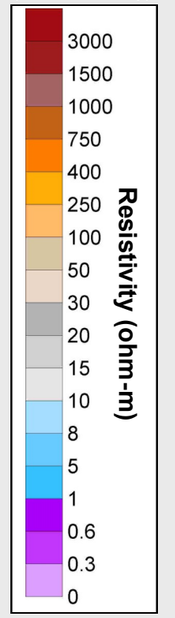


High Resistivity
(Low Conductivity)



Low Resistivity
(High Conductivity)

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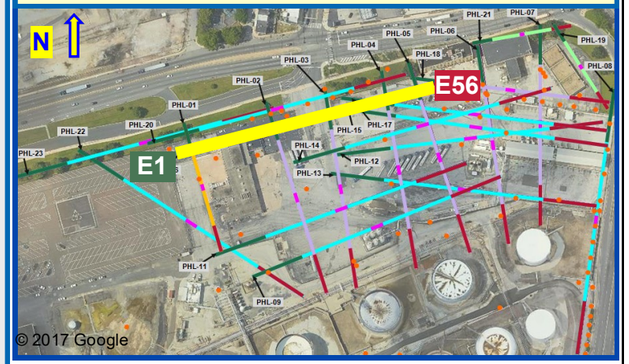

Well Product Data

Well	MW-33	OW-17	OW-12
Date	6/6/11	3/20/08	6/4/07
Product Description	*GASOLINE	90% GASOLINE, 10% MID. DISTIL.	75% GASOLINE, 25% MID. DISTIL.

Groundwater Sample Results

Well		MW-33	OW-17
Sample Date		7/31/18	7/30/18
Parameters (µg/L)	Stds (µg/L)		
BENZENE	5	97.2	ND
ETHYLBENZENE	1000	ND	ND
TOLUENE	700	ND	ND
XYLENES, TOTAL	10000	ND	ND
MTBE	20	ND	54.8
NAPHTHALENE	100	ND	82.2
PYRENE	130	45.1	7.81
ANTHRACENE	66	2.21	8.25
ISOPROPYLBENZENE	3500	ND	81
FLUORENE	1900	ND	28.1
CHRYSENE	1.9	41.9	1.51
PHENANTHRENE	1100	12.5	36.8
LEAD	5	ND	2.31
1,2,4-TMB	62	ND	ND
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TMB	1200	ND	ND
BENZO(A)ANTHRACENE	4.9	23.8	1.42
BENZO(A)PYRENE	0.2	34.8	1.1
BENZO(B)FLUORANTHENE	0.55	58.4	1.51
BENZO(G,H,I)PERYLENE	0.26	36.7	0.571

Sucralose

Well	CD-02A	CD-03
Boring	S-456	S-466
Sample Date	5/17/21	5/18/21
Sucralose ng/L	833	ND

CD Groundwater Sample Results

Well		CD-02A	CD-03
Boring		S-456	S-466
Sample Date		3/24/21	3/24/21
Parameters µg/L	MCLs µg/L		
BENZENE	5	220	18
TOLUENE	1000	14	1.4
ETHYLBENZENE	700	9.6	10
XYLENES, TOTAL	10000	10	35
MTBE	20	33	0.64 J
NAPHTHALENE	100	7.1	57
1,2,4-TMB	62	6.5	26
1,3,5-TMB	1200	4.6 J	8
ISOPROPYLBENZENE	3500	44	2 J
TERT-BUTYL ALCOHOL		1200	ND

CD Groundwater Sample Results

Well	CD-02A	CD-03
Boring	S-456	S-466
Sample Date	3/24/21	3/24/21
Parameters µg/L		
ALKALINITY TO pH 4.5	150,000	140,000
CALCIUM	41,000	56,000
IRON	29,000	31,000
METHANE	12,000	14
SULFATE (AS SO4)	9,000	230,000
TOTAL CARBON	48,000	44,000
TOTAL INORGANIC CARBON	38,000	41,000
TOTAL KJELDAHL NITROGEN	2,000	ND
TOTAL ORGANIC CARBON	9,800	3,200

CD Groundwater Quality Results

Well		CD-02A	CD-03
Boring		S-456	S-466
Sample Date		3/24/21	3/24/21
Parameters	*Units*		
DO	mg/L	0.06	0.15
ORP	mV	-37	-12
pH	S.U.	5.89	5.62
EC	mS/cm	1.4	0.979
Temperature	ºC	18.21	18.09
Turbidity	NTU	228	12

Groundwater Quality Sample Results

Well		MW-33	OW-17
Sample Date		7/31/18	7/30/18
Parameters	*Units*		
DO	mg/L	0	0
ORP	mV	105	-2
pH	S.U.	6.35	6.46
EC	mS/cm	1.82	2.66
Temperature	ºC	22.63	21.43
Turbidity	NTU	988	15.8

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FIGURE
16.2
ANALYTICAL DATA INTEGRATION

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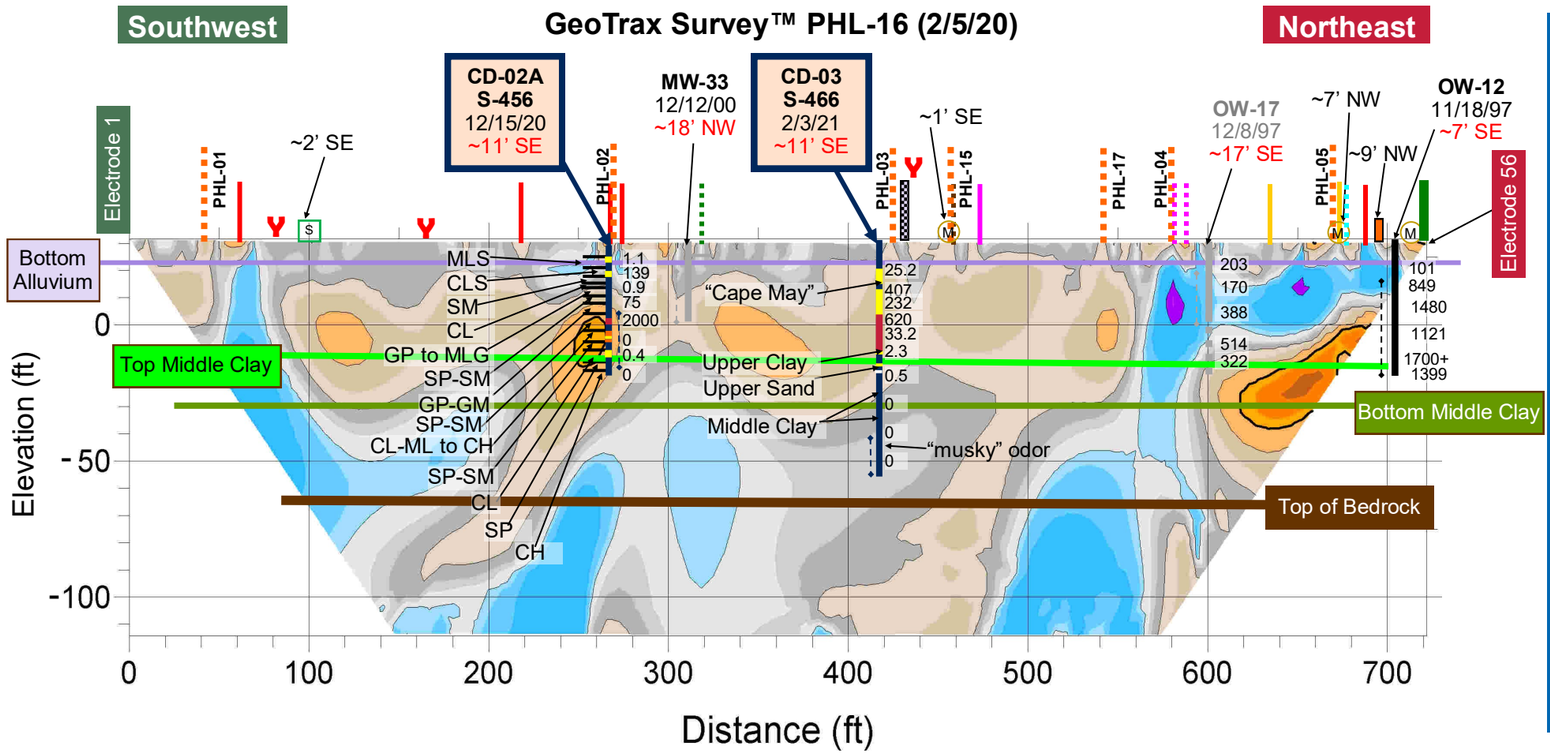

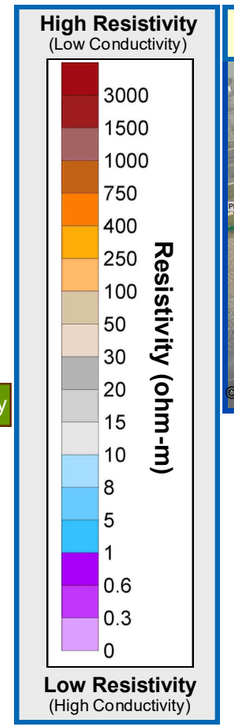

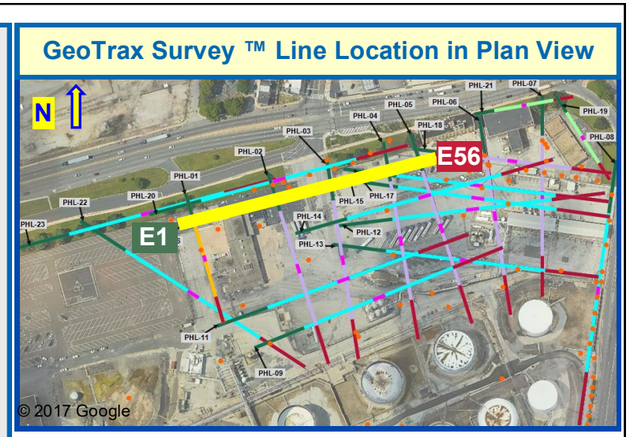

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FIGURE
16.3
GEOLOGY
DATA
INTEGRATION

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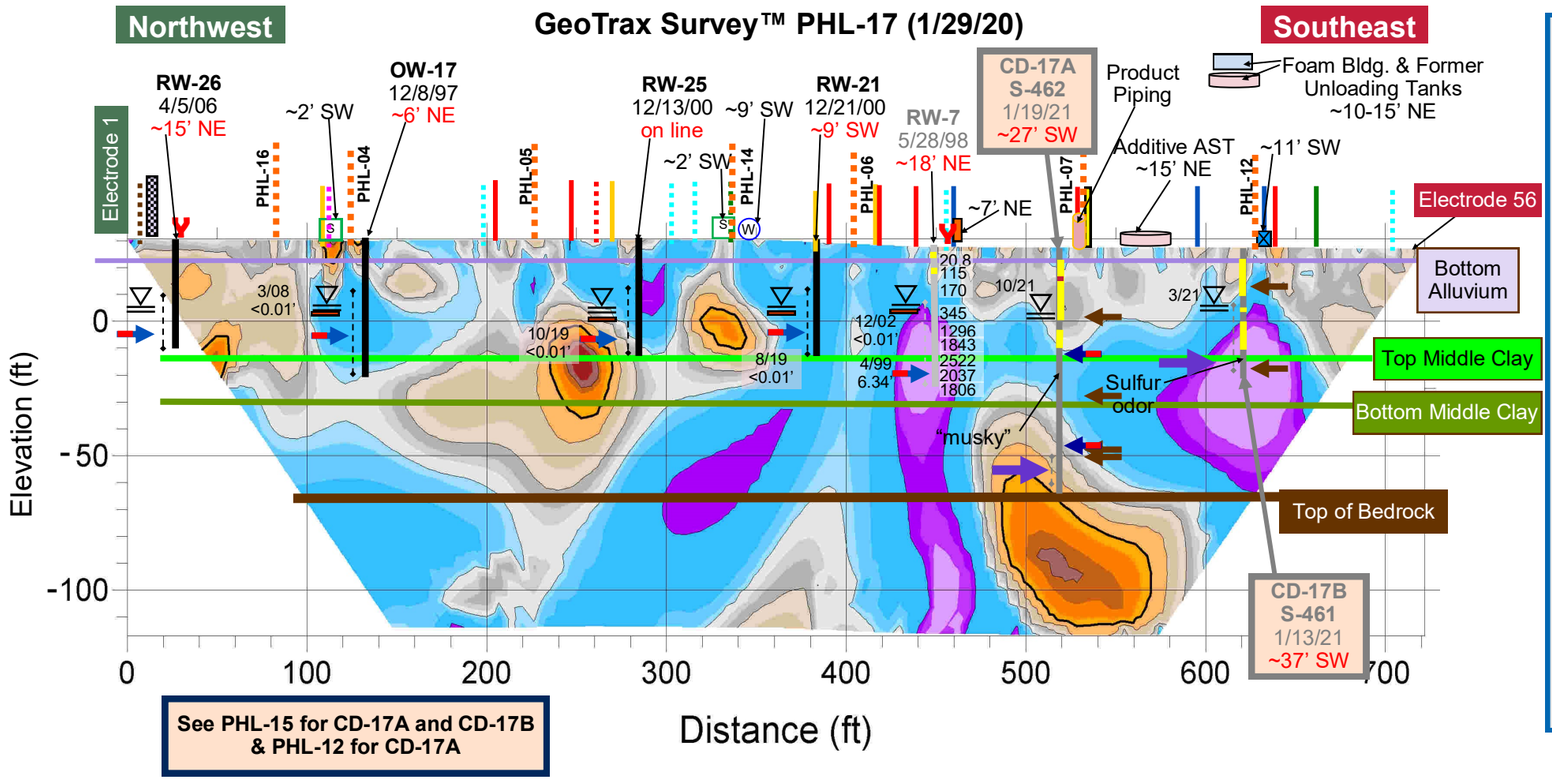
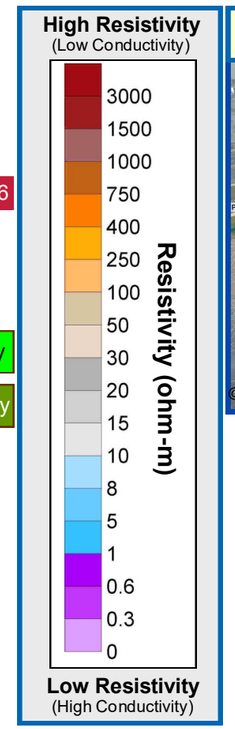
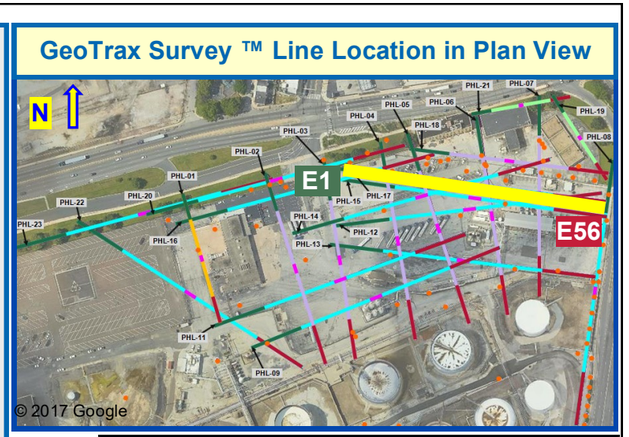


See PHL-15 for CD-17A and CD-17B & PHL-12 for CD-17A





CD Groundwater Bio Data

Well	CD-17A	CD-17B
Boring	S-462	S-461
Sample Date	2/11/21	2/11/21
Sample Depth ft. BGS	83	43
Data Set IDs		
# reads for sample (millions)	3.84	4.102
Bacterial	120	167
Antibiotic resistant	1	2
Fungal	8	8
Protists	2	4
Dark Matter	75	201
Phages	4	4
Virus	0	0
Virulence Factors	14	21
QPCR		
Bacterial Biomass (gene copies / L)	3,400,000,000	4,700,000,000

CD Groundwater Grab Results

Well		CD-17A		CD-17B
Boring		S-462		S-461
Sample Date		1/14/21	1/19/21	
Sample Depth ft. BGS		40	73	
Parameters µg/L	**MSCs µg/L**			
BENZENE	**5**	**240**	**400**	
TOLUENE	**1000**	**2200**	**1900**	
ETHYLBENZENE	**700**	350	290	
XYLENES, TOTAL	**10000**	2000	1600	
MTBE	**20**	**130**	**47**	
1,2,4-TMB	**62**	**330**	**260**	NA
>C12-C22		3000	3000	
>C22-C44		120 J	190	
C4-C12-TPH-GRO		12000	9400	
TOTAL ORG. CARBON		60000	58000	
TPH		3100	3200	

CD Groundwater Grab Results

Well	CD-17A		CD-17B
Boring	S-462		S-461
Sample Date	1/14/21	1/19/21	
Sample Depth	40	73	
Parameters (µg/L)			
ALKALINITY TO pH 4.5	190,000	170000 FL	
CALCIUM	33,000	53,000	
CHLORIDE (AS CL)	82,000	81,000	
IRON	3,000	42,000	
MAGNESIUM	8,400	45,000	
METHANE	44	86	NA
NITROGEN, AMMONIA	3,200	1500 J	
NITROGEN, NITRATE	2800 FL	840	
POTASSIUM	3,800	7,200	
SODIUM	67,000	110,000	
SULFATE (AS SO4)	57,000	260,000	

CD Soil Sample Results

Well /Boring		CD-17A				CD-17B	
		S-462				S-461	
Sample Date		1/13/21	1/14/21	1/15/21	1/19/21	1/12/21	1/13/21
Sample Depth ft BGS		13	43	76	79	15	45
Parameters mg/kg	**MCLs mg/kg**						
BENZENE	330	1.6	1.9	0.043	ND	0.12 J	0.014
TOLUENE	10000	32	0.037	0.2	0.0023 J	ND	ND
ETHYLBENZENE	1000	22	0.01	0.054	0.00065 J	0.23 J	ND
XYLENES, TOTAL	9100	130	0.044	0.33	0.0035 J	0.93	ND
MTBE	9900	0.89	0.002 J	0.0037 J	ND	ND	ND
>C12-C22		30	8.5 J	ND	ND	2100	ND
>C22-C44		ND	31	ND	130	95 J	24
C4-C12-TPH-GRO		1200 B	0.39 B	3.3 B	ND	390 B	0.059 J
TPH		30	40	ND	130	2200	24

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FIGURE
17.1
INITIAL CD DATA INTEGRATION

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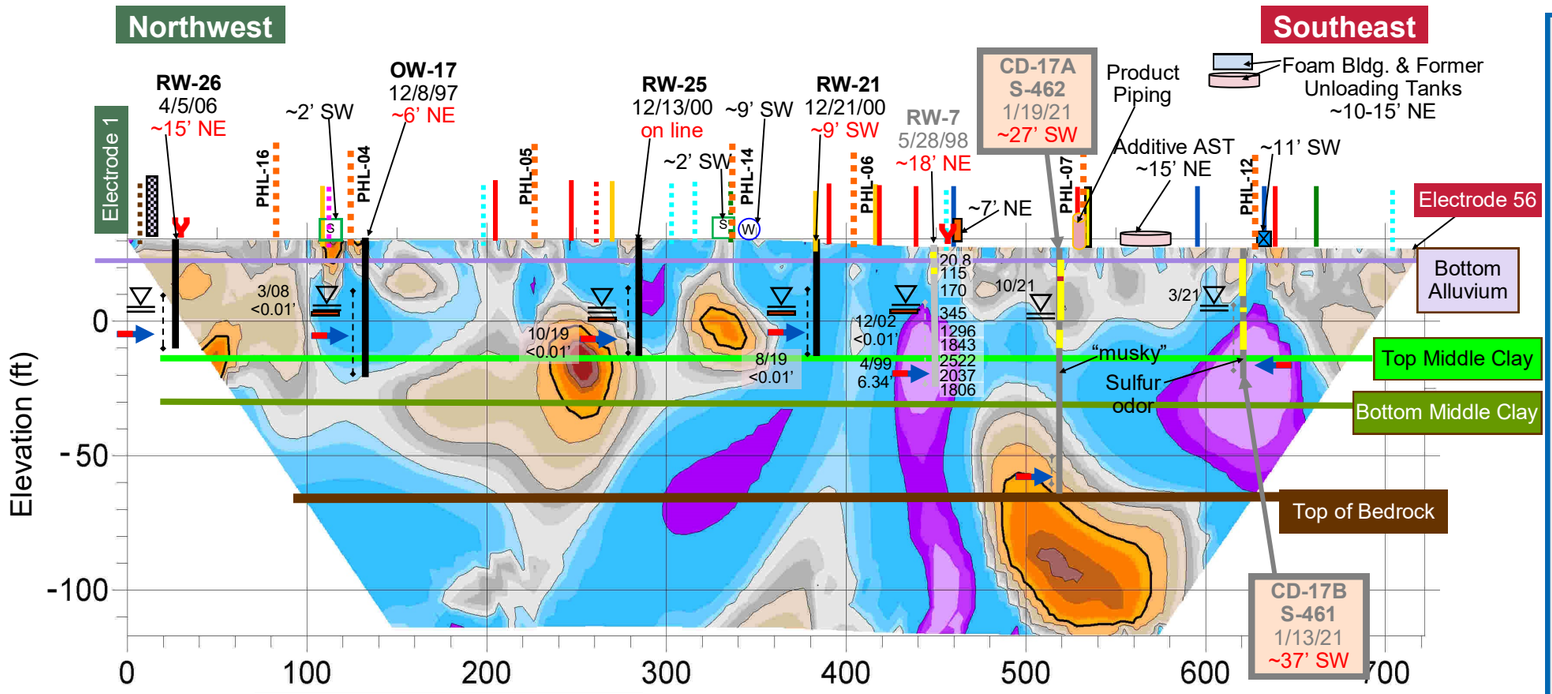
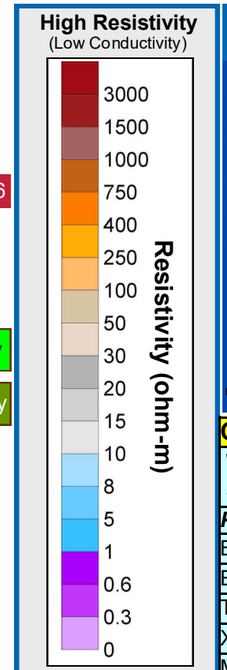
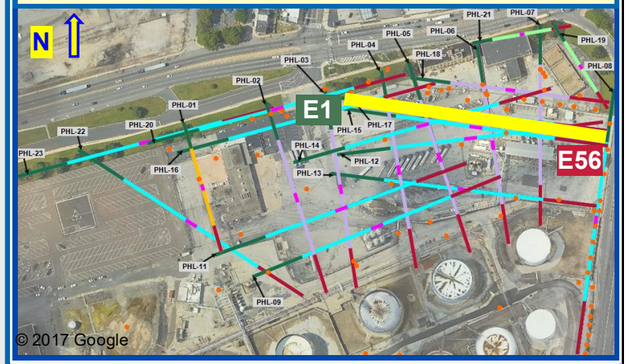




GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results

Well	RW-26	OW-17	RW-25	RW-21	RW-7
Sample Date	11/12/19	7/30/18	7/26/18	8/17/18	8/14/18
Parameters (µg/L)					
BENZENE	**2800**	ND	**583**	**454**	**1180**
ETHYLBENZENE	26	ND	329	47.2	**3050**
TOLUENE	500	ND	145	16.1	89.9
XYLENES, TOTAL	620	ND	444	152	2160
MTBE	**1200**	**54.8**	**2770**	**481**	ND
NAPHTHALENE	**1600**	82.2	**385**	19.4	56.9
PYRENE	1	7.81	10.1	3.65	0.891
ANTHRACENE	3	8.25	2.49	2.17	0.718
ISOPROPYLBENZENE	59	81	40.8	29.5	54.4
FLUORENE	19	28.1	14.3	8.23	5.05
CHRYSENE	ND	1.51	0.459	0.192	0.0771
PHENANTHRENE	17	36.8	7.04	7.57	1.77
LEAD	ND	2.31	ND	ND	ND
1,2,4-TMB	**310**	ND	**99.5**	35.5	**229**
1,2-DIBROMOETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	3.72	ND	ND
1,3,5-TMB	84	ND	30.1	15.6	52.4
BENZO(A)ANTHRACENE	ND	1.42	0.479	0.268	0.0873
BENZO(A)PYRENE	ND	**1.1**	ND	0.0706	ND
BENZO(B)FLUORANTHENE	ND	**1.51**	ND	0.0981	0.0875
BENZO(G,H,I)PERYLENE	ND	**0.571**	ND	ND	ND

Sucralose

Well / Boring	CD-17B S-461
Sample Date	5/17/21
Sucralose ng/L	ND

See PHL-15 for CD-17A and CD-17B & PHL-12 for CD-17A

Groundwater Quality Sample Results

Well		RW-26	OW-17	RW-21	RW-7
Sample Date		7/3/19	7/30/18	8/17/18	8/14/18
Parameters	*Units*				
DO	mg/L	2.61	0	3.21	0
ORP	mV	-46	-2	20	-65
pH	S.U.	5.95	6.46	6	6.65
EC	mS/cm	1.81	2.66	1.78	2.81
Temperature	ºC	20.78	21.43	18.86	19.35
Turbidity	NTU	318	15.8	74.3	150

CD Groundwater Sample Results

Well / Boring / Sample Date		CD-17A S-462 3/23/21	CD-17B S-461 3/22/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	**39**	**1000**
TOLUENE	**1000**	1.8	470
ETHYLBENZENE	**700**	17	21
XYLENES, TOTAL	**10000**	100	200
MTBE	**20**	9.5	**28**
NAPHTHALENE	**100**	2.2	0.94
1,2,4-TMB	**62**	47	18 J
1,3,5-TMB	**1200**	18	1.8 J
ISOPROPYLBENZENE	**3500**	2.2 J	25
TERT-BUTYL ALCOHOL		20 J	1100

CD Groundwater Sample Results

Well / Boring / Sample Date	CD-17A S-462 3/23/21	CD-17B S-461 3/22/21
Parameters µg/L		
ALKALINITY TO pH 4.5	160,000	400,000
CALCIUM	72,000	130,000
IRON	20,000	31,000
METHANE	8	7,800
SULFATE (AS SO4)	190,000	30,000
TOTAL CARBON	46,000	100,000
TOTAL INORGANIC CARBON	43,000	88,000
TOTAL KJELDAHL NITROGEN	ND	1,200
TOTAL ORGANIC CARBON	3,500	12,000

CD Groundwater Quality Results

Well / Boring / Sample Date		CD-17A S-462	CD-17B S-461 3/22/21
Parameters	*Units*		
DO	mg/L	NA	0.75
ORP	mV		-98
pH	S.U.		6.32
EC	mS/cm		2.17
Temperature	ºC		19.62
Turbidity	NTU		40.7

Well Product Data

Well	OW-17
Date	3/20/08
Product Descrip.	90% GASOLINE, 10% MID. DIST.

Well Product Data

Well	RW-21	RW-7
Date	8/13/19	12/2/02
Product Descrip.	95% GASOLINE, 5% MID. DIST.	GASOLINE

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FIGURE
17.2
ANALYTICAL DATA INTEGRATION

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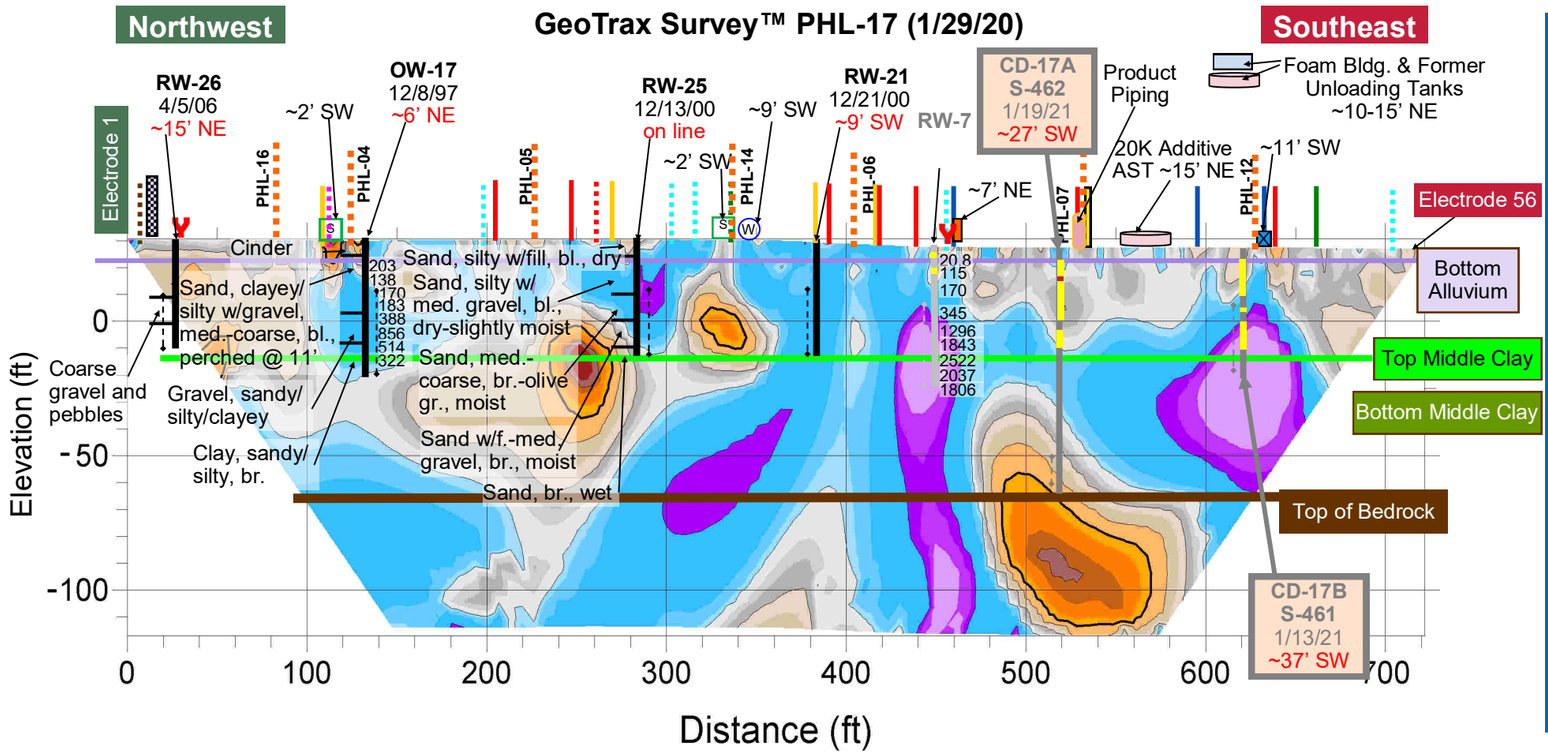

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FIGURE
17.3
GEOLOGY
DATA
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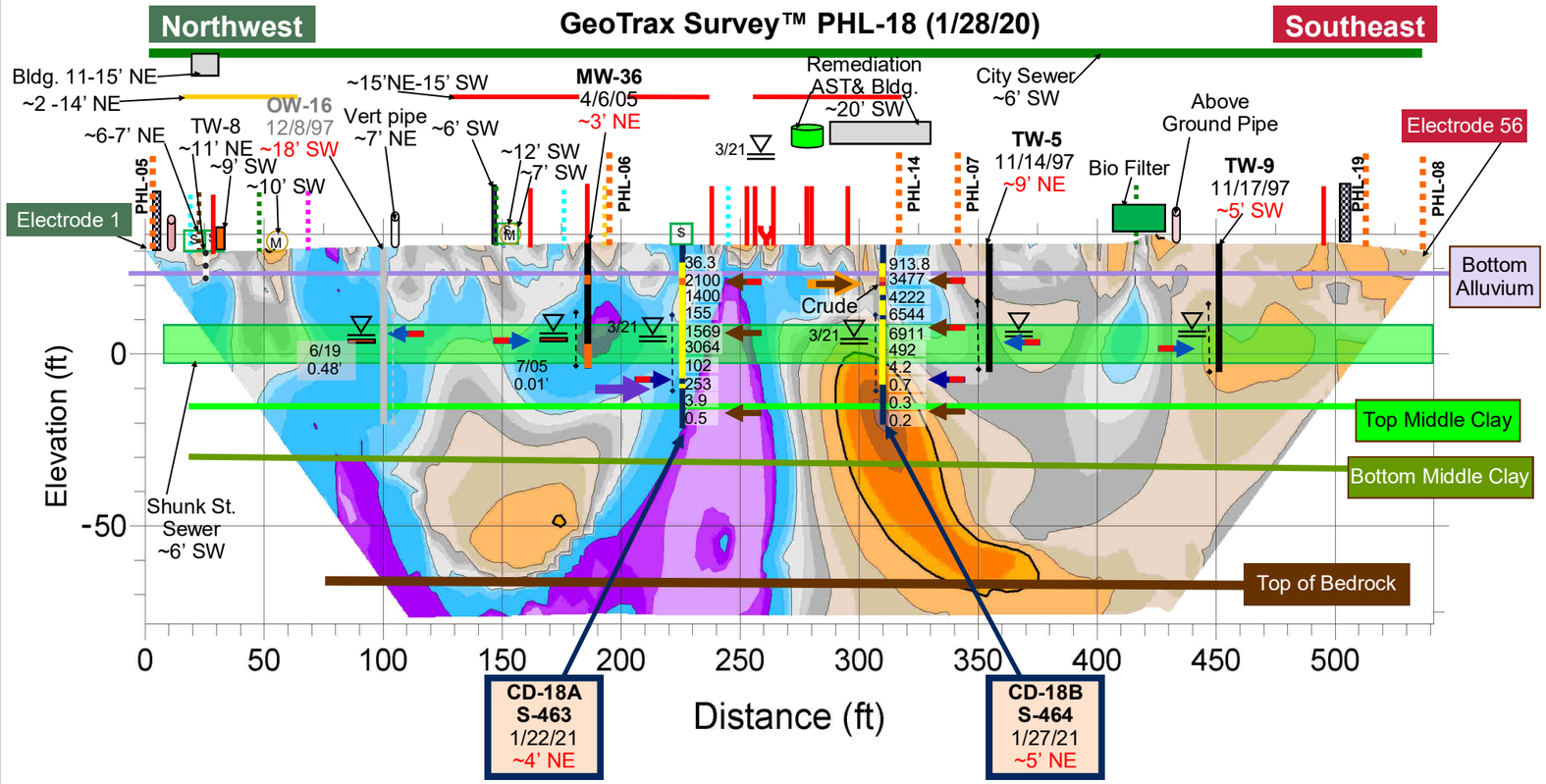
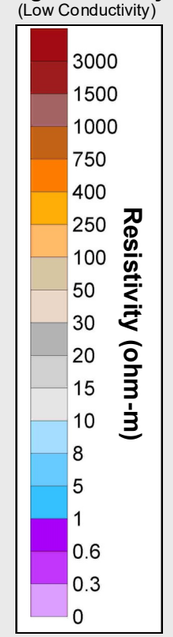
GeoTrax Survey™ PHL-18 (1/28/20)

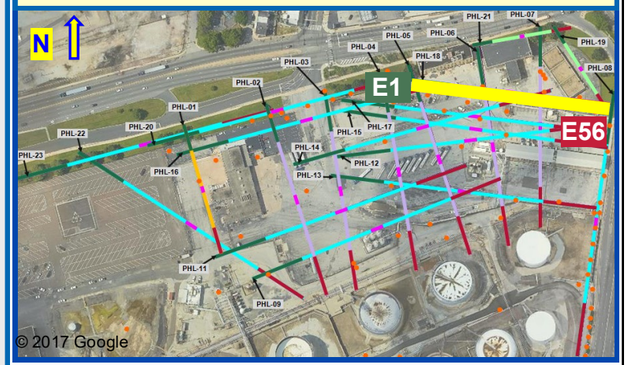


High Resistivity
(Low Conductivity)



Low Resistivity
(High Conductivity)

GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	**CD-18A**
Boring	**S-463**
Sample Date	2/11/21
Sample Depth ft. BGS	41
Data Set IDs	
# reads for sample (millions)	4.191
Bacterial	185
Antibiotic resistant	3
Fungal	12
Protists	4
Dark Matter	147
Phages	21
Virus	0
Virulence Factors	18
QPCR	
Bacterial Biomass (gene copies / L)	1,500,000,000

CD Groundwater Grab Results

Well		CD-18A	CD-18B
Boring		**S-463**	**S-464**
Sample Date		**1/21/21**	**1/27/21**
Sample Depth ft. BGS		**38**	**38**
Parameters µg/L	**MSCs µg/L**		
BENZENE	**5**	**12,000**	**100,000**
TOLUENE	**1000**	910	**3,300**
ETHYLBENZENE	**700**	62	160
XYLENES, TOTAL	**10000**	280	590 J
MTBE	**20**	ND	ND
1,2,4-TMB	**62**	37	ND
>C12-C22		2900	3900
>C22-C44		210	380
C4-C12-TPH-GRO		21000	160000
TOTAL ORG. CARBON		30000	30000
TPH		3100	4300

CD Groundwater Grab Results

Well	CD-18A	CD-18B
Boring	**S-463**	**S-464**
Sample Date	**1/21/21**	**1/27/21**
Sample Depth	**38**	**38**
Parameters (µg/L)		
ALKALINITY TO pH 4.5	270,000	310,000
CALCIUM	91,000	61,000
CHLORIDE (AS CL)	140,000	160,000
IRON	5,900	14,000
MAGNESIUM	30,000	21,000
METHANE	82	170
NITROGEN, AMMONIA	600 J	600 J
NITROGEN, NITRATE	390 J FH	1,200
POTASSIUM	10,000	10,000
SODIUM	100,000	190,000
SULFATE (AS SO4)	150,000	120,000

CD Soil Sample Results

Well /Boring		CD-18A S-463			CD-18B S-464		
Sample Date		**1/20/21**	**1/21/21**	**1/22/21**	**1/26/21**	**1/26/21**	**1/27/21**
Sample Depth ft BGS		**10**	**26**	**49**	**11**	**26**	**49**
Parameters mg/kg	**MCLs mg/kg**						
BENZENE	330	**1000 H**	210 H	0.056 J	**880 H**	**640**	12
TOLUENE	10000	320 H	8	ND	150	62	0.046 J
ETHYLBENZENE	1000	13 H	1.7	0.16 J	7.4	7.6 J	ND
XYLENES, TOTAL	9100	51 H	5.9	ND	33	37	ND
MTBE	9900	ND H	ND	ND	ND	ND	ND
>C12-C22		3100	1800	ND	940	830	ND
>C22-C44		820	520	28	330	150	32
C4-C12-TPH-GRO		3700 H	600	7.6 J	1300	1100	2.9 J
TPH		3900	2300	28	1300	980	32

CD Soil Forensics	
Well	**CD-018B**
Boring	**S-464**
Sample Date	1/26/21
Sample Depth ft BGS	11
See Report for full details	Spans the gasoline range to the residual range

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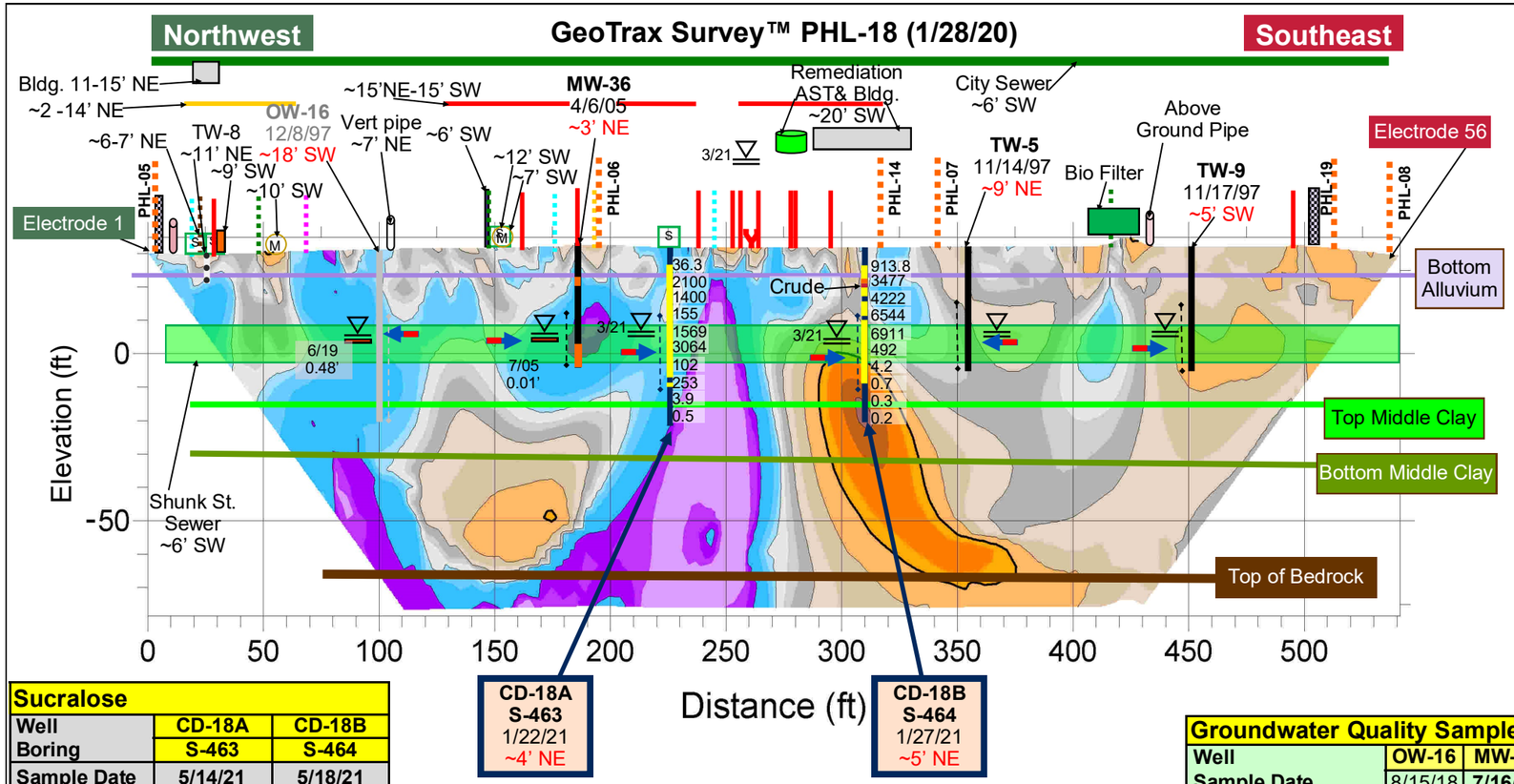


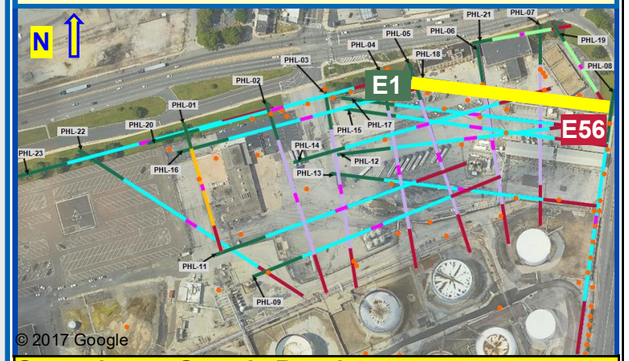
High Resistivity
(Low Conductivity)

3000
1500
1000
750
400
250
100
50
30
20
15
10
8
5
1
0.6
0.3
0

Resistivity (ohm-m)

Low Resistivity
(High Conductivity)

GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results

Well		OW-16	MW-36	TW-5	TW-9
Sample Date		8/15/18	11/7/19	11/7/19	12/8/14
Parameters (µg/L)	Stds (µg/L)				
BENZENE	5	**14600**	**190000**	**610000**	0.22 J
ETHYLBENZENE	1000	**37000**	**3300**	**7500**	ND
TOLUENE	700	**3340**	580	420	ND
XYLENES, TOTAL	10000	**36600**	2000	1800	0.2 J
MTBE	20	**156000**	28 J	ND	0.96 J
NAPHTHALENE	100	**816**	**1800**	14	ND
PYRENE	130	10.5	0.9	ND	0.746
ANTHRACENE	66	6.54	1	ND	ND
ISOPROPYLBENZENE	3500	ND	41 J	110 J	3.1
FLUORENE	1900	21.5	9	0.5	0.146
CHRYSENE	1.9	1.47	0.3 J	ND	0.454
PHENANTHRENE	1100	19.8	8	1	0.488
LEAD	5	ND	0.8	1.2	2.1 B
1,2,4-TMB	62	**8400**	240 J	ND	ND
1,2-DIBROMOETHANE	0.05	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ND	470 J	ND	ND
1,3,5-TMB	1200	**3010**	81 J	ND	ND
BENZO(A) ANTHRACENE	4.9	1.72	0.2 J	ND	0.292
BENZO(A)PYRENE	0.2	**0.942**	0.3 J	ND	**0.337**
BENZO(B) FLUORANTHENE	0.55	**1.23**	0.4 J	ND	**0.703**
BENZO(G,H,I) PERYLENE	0.26	**0.772**	ND	ND	**0.343**

Sucralose

Well	CD-18A	CD-18B
Boring	S-463	S-464
Sample Date	5/14/21	5/18/21
Sucralose ng/L	ND	ND

CD Groundwater Sample Results

Well		CD-18A	CD-18B
Boring		S-463	S-464
Sample Date		3/22/21	3/22/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	**8,400**	**120,000**
TOLUENE	**1000**	16	750
ETHYLBENZENE	**700**	3.8 J	70 J
XYLENES, TOTAL	**10000**	17 J	320 J
MTBE	**20**	ND	ND
NAPHTHALENE	**100**	3.4	9.6
1,2,4-TMB	**62**	ND	ND
1,3,5-TMB	**1200**	ND	ND
ISOPROPYLBENZENE	**3500**	4.4 J	92 J
TERT-BUTYL ALCOHOL		ND	ND

CD Groundwater Sample Results

Well	CD-18A	CD-18B
Boring	S-463	S-464
Sample Date	3/22/21	3/22/21
Parameters µg/L		
ALKALINITY TO pH 4.5	250,000	310,000
CALCIUM	95,000	97,000
IRON	7,100	20,000
METHANE	120	2,700
SULFATE (AS SO4)	150,000	100,000
TOTAL CARBON	61,000	110,000
TOTAL INORGANIC CARBON	56,000	91,000
TOTAL KJELDAHL NITROGEN	ND	1,100
TOTAL ORGANIC CARBON	5,000	19,000

Groundwater Quality Sample Results

Well		OW-16	MW-36	TW-5	TW-9
Sample Date		8/15/18	7/16/19	7/3/19	12/8/14
Parameters	*Units*				
DO	mg/L	0	0	0	1.78
ORP	mV	-17	-130	-151	-13
pH	S.U.	6.62	6.84	6.45	6.98
EC	mS/cm	3.99	1.22	5.16	0.301
Temperature	ºC	19.84	19.99	18.69	13.68
Turbidity	NTU	399	76.6	68.4	246

CD Groundwater Quality Results

Well		CD-18A	CD-18B
Boring		S-463	S-464
Sample Date		3/22/21	3/22/21
Parameters	*Units*		
DO	mg/L	0.27	0.56
ORP	mV	-44	-103
pH	S.U.	6.22	6.32
EC	mS/cm	1.14	1.62
Temperature	ºC	19.92	18.73
Turbidity	NTU	0.5	2

Well Gauging Data

Well	OW-16	MW-36
Date	6/3/19	7/1/05
Prod. Descr.	75% GASOLINE, 25% MID. DIST.	UNKNOWN% GASOLINE

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FIGURE
18.2
ANALYTICAL DATA INTEGRATION

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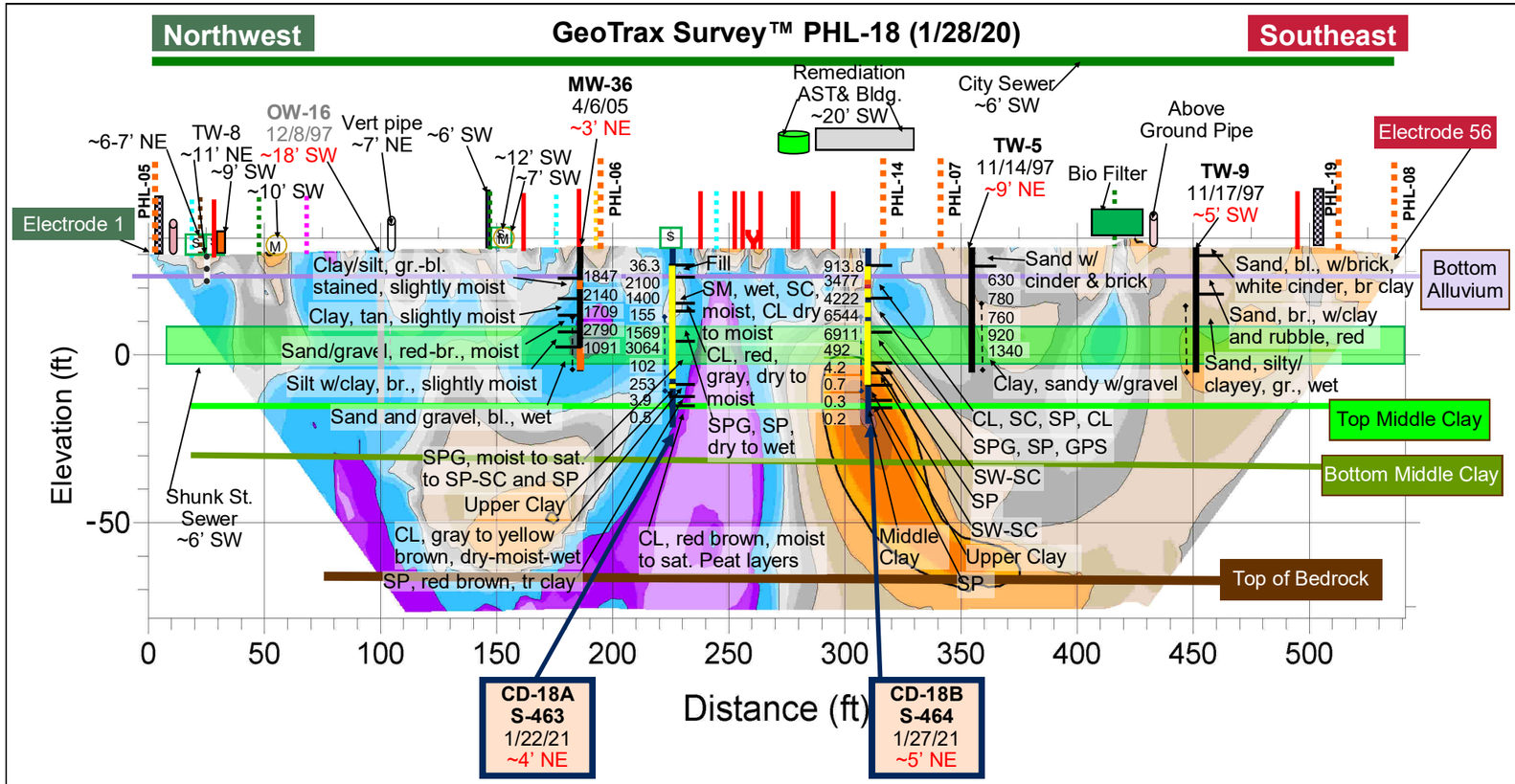

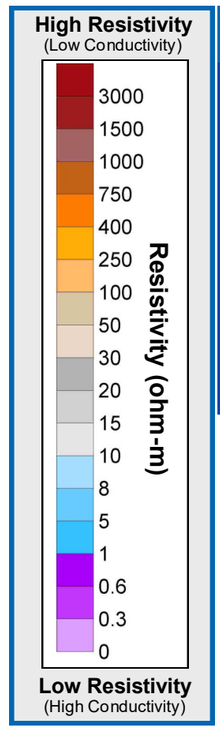

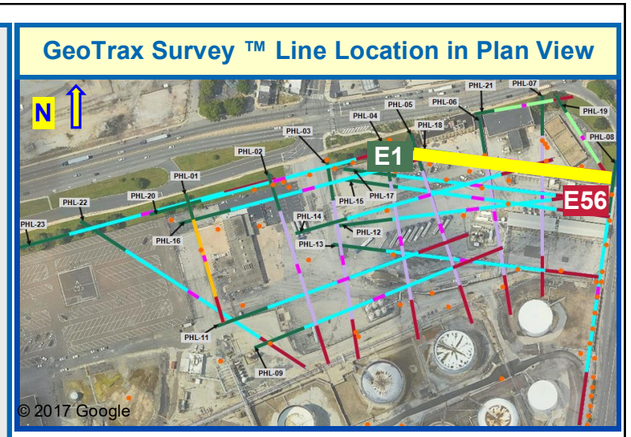

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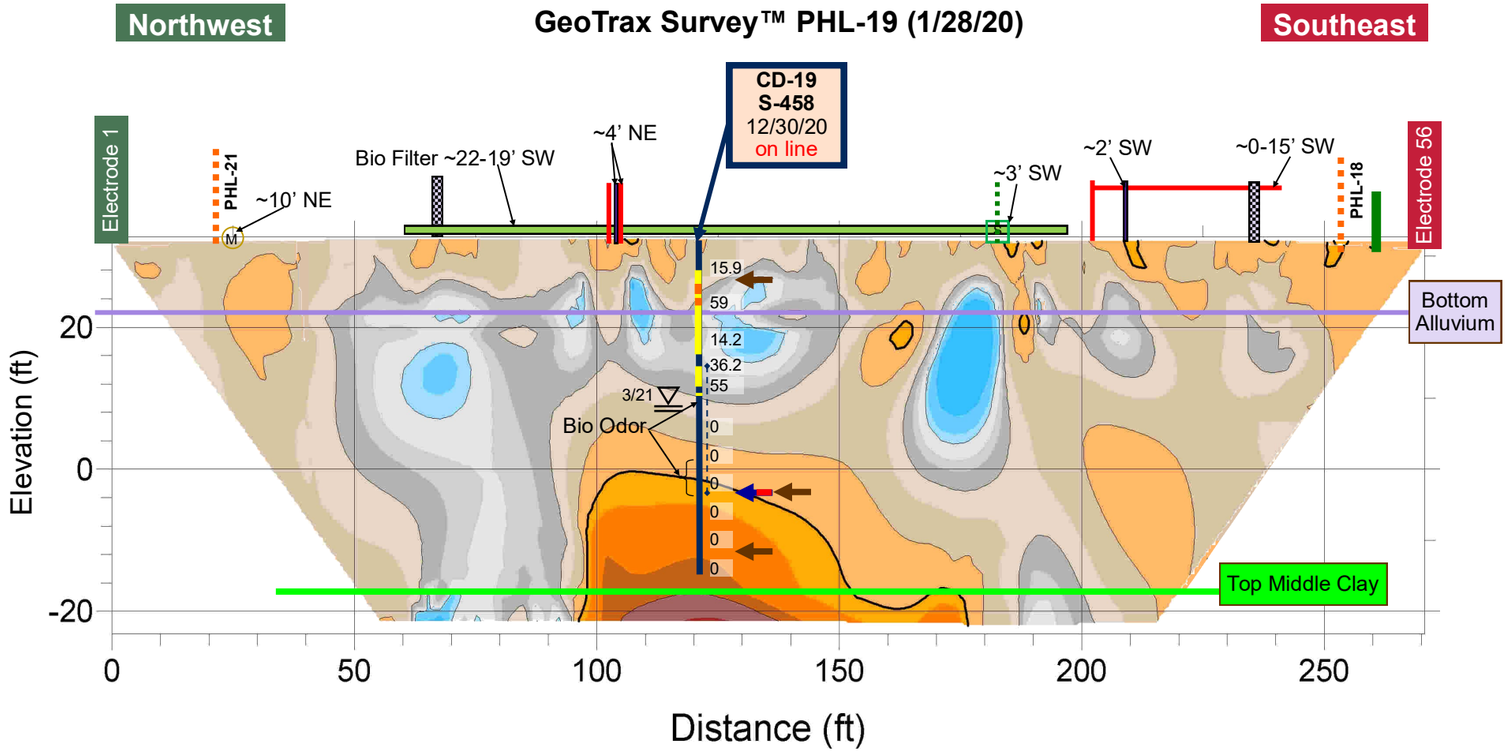

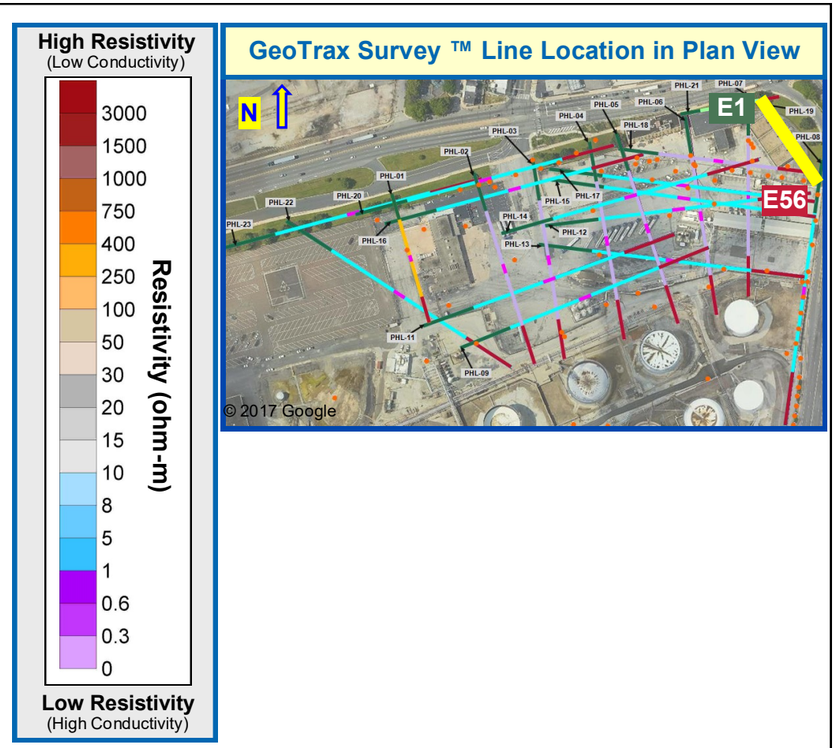

CD Groundwater Grab Results		
Well		CD-19
Boring		S-458
Sample Date		12/30/20
Sample Depth ft. BGS		40
Parameters µg/L	MSCs µg/L	
BENZENE	5	63
TOLUENE	1000	1.9
ETHYLBENZENE	700	4.4
XYLENES, TOTAL	10000	14
MTBE	20	ND
1,2,4-TMB	62	3.1 J
>C12-C22		190
>C22-C44		160
C4-C12-TPH-GRO		270
TOTAL ORG. CARBON		6000
TPH		350

CD Groundwater Grab Results	
Well	CD-19
Boring	S-458
Sample Date	12/30/20
Sample Depth	40
Parameters (µg/L)	
ALKALINITY TO pH 4.5	360,000
CALCIUM	110,000
CHLORIDE (AS CL)	220,000
IRON	3100 B
MAGNESIUM	31,000
METHANE	8
NITROGEN, AMMONIA	ND
NITROGEN, NITRATE	2,200
POTASSIUM	15,000
SODIUM	180,000
SULFATE (AS SO4)	82,000

CD Soil Sample Results				
Well /Boring		CD-19	S-458	
Sample Date		12/29/20	12/29/20	12/30/20
Sample Depth ft BGS		15	40	50
Parameters mg/kg	MCLs mg/kg			
BENZENE	330	ND	0.0032 J	0.0047 J
TOLUENE	10000	ND	ND	ND
ETHYLBENZENE	1000	ND	ND	ND
XYLENES, TOTAL	9100	ND	ND	ND
MTBE	9900	ND	ND	ND
>C12-C22		ND	ND	ND
>C22-C44		8.7 J	ND	ND
C4-C12-TPH-GRO		17	0.05 J	0.13
TPH		8.7 J	ND	ND

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FIGURE
19.1
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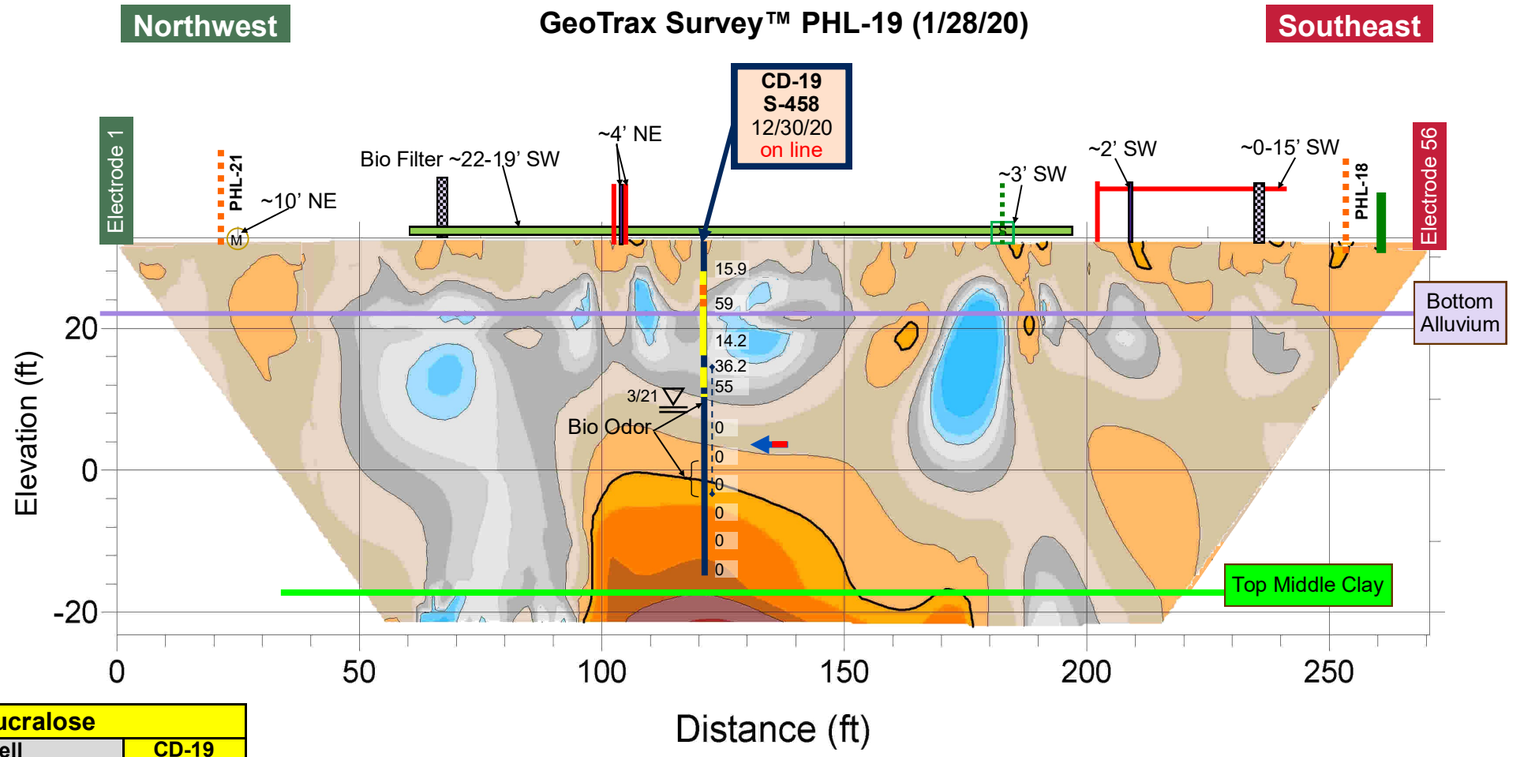

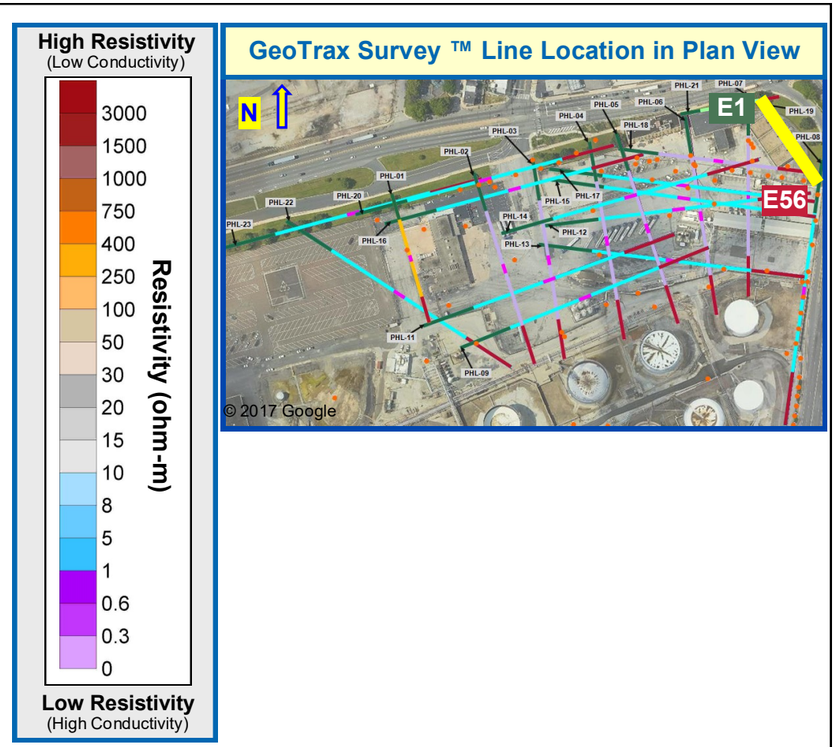

Sucralose	
Well	CD-19
Boring	S-458
Sample Date	5/14/21
Sucralose ng/L	84.1

CD Groundwater Sample Results		
Well		CD-19
Boring		S-458
Sample Date		3/23/21
Parameters µg/L	MCLs µg/L	
BENZENE	5	270
TOLUENE	1000	2.5 J
ETHYLBENZENE	700	ND
XYLENES, TOTAL	10000	ND
MTBE	20	ND
NAPHTHALENE	100	0.67
1,2,4-TMB	62	5.2 J
1,3,5-TMB	1200	2.3 J
ISOPROPYLBENZENE	3500	ND
TERT-BUTYL ALCOHOL		ND

CD Groundwater Sample Results	
Well	CD-19
Boring	S-458
Sample Date	3/23/21
Parameters µg/L	
ALKALINITY TO pH 4.5	370,000
CALCIUM	110,000
IRON	3,300
METHANE	17
SULFATE (AS SO4)	89,000
TOTAL CARBON	81,000
TOTAL INORGANIC CARBON	78,000
TOTAL KJELDAHL NITROGEN	ND
TOTAL ORGANIC CARBON	3,000

CD Groundwater Quality Results		
Well		CD-19
Boring		S-458
Sample Date		3/23/21
Parameters	*Units*	
DO	mg/L	0.15
ORP	mV	23
pH	S.U.	5.87
EC	mS/cm	1.67
Temperature	ºC	19.26
Turbidity	NTU	8.9

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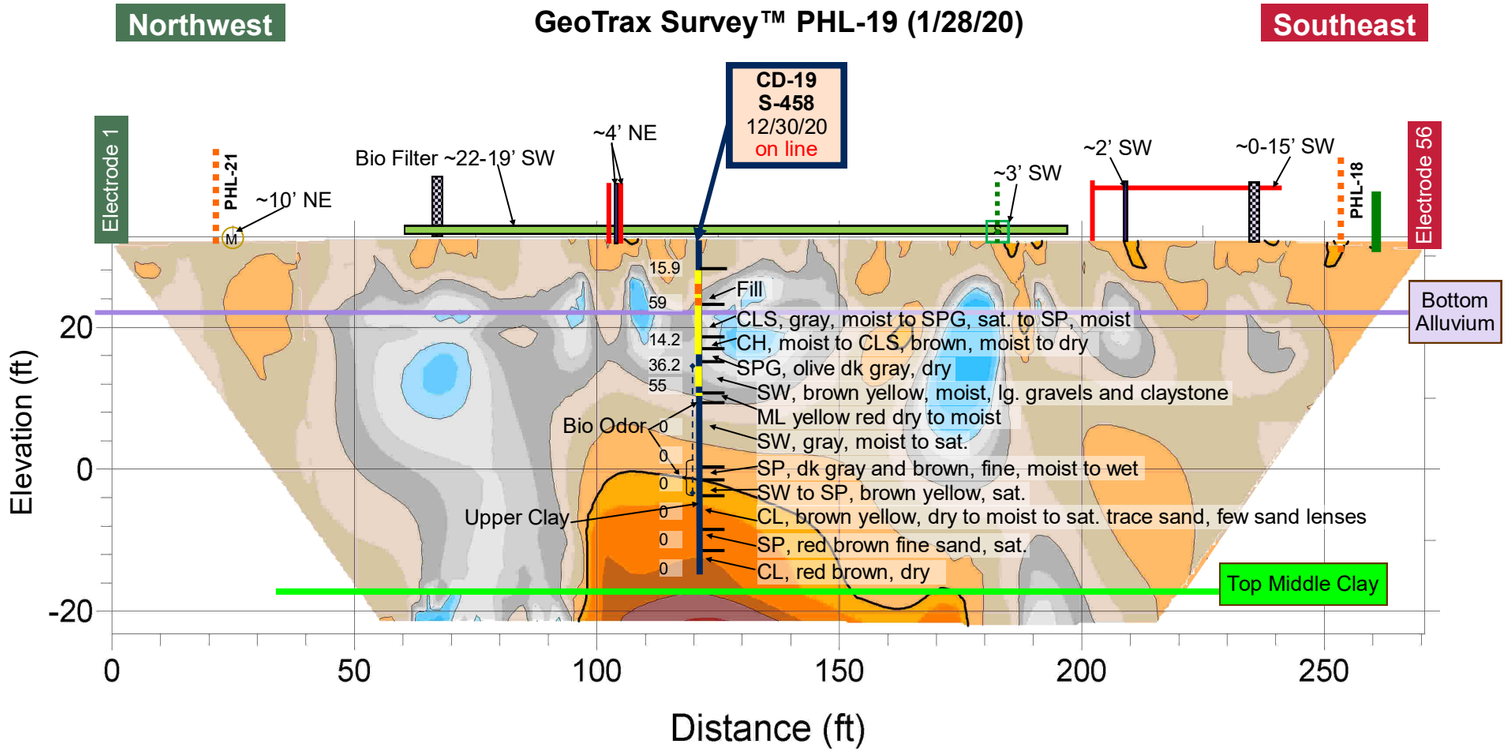
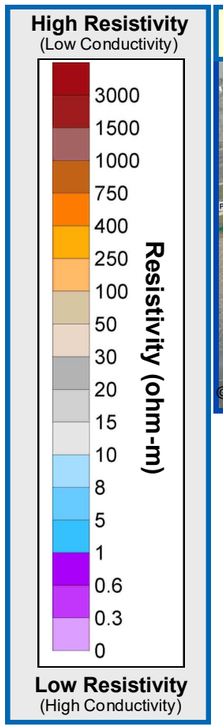
GeoTrax Survey™ PHL-19 (1/28/20)





GeoTrax Survey ™ Line Location in Plan View

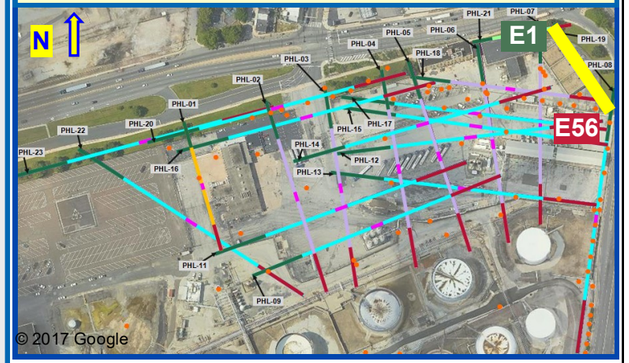


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FIGURE
19.3
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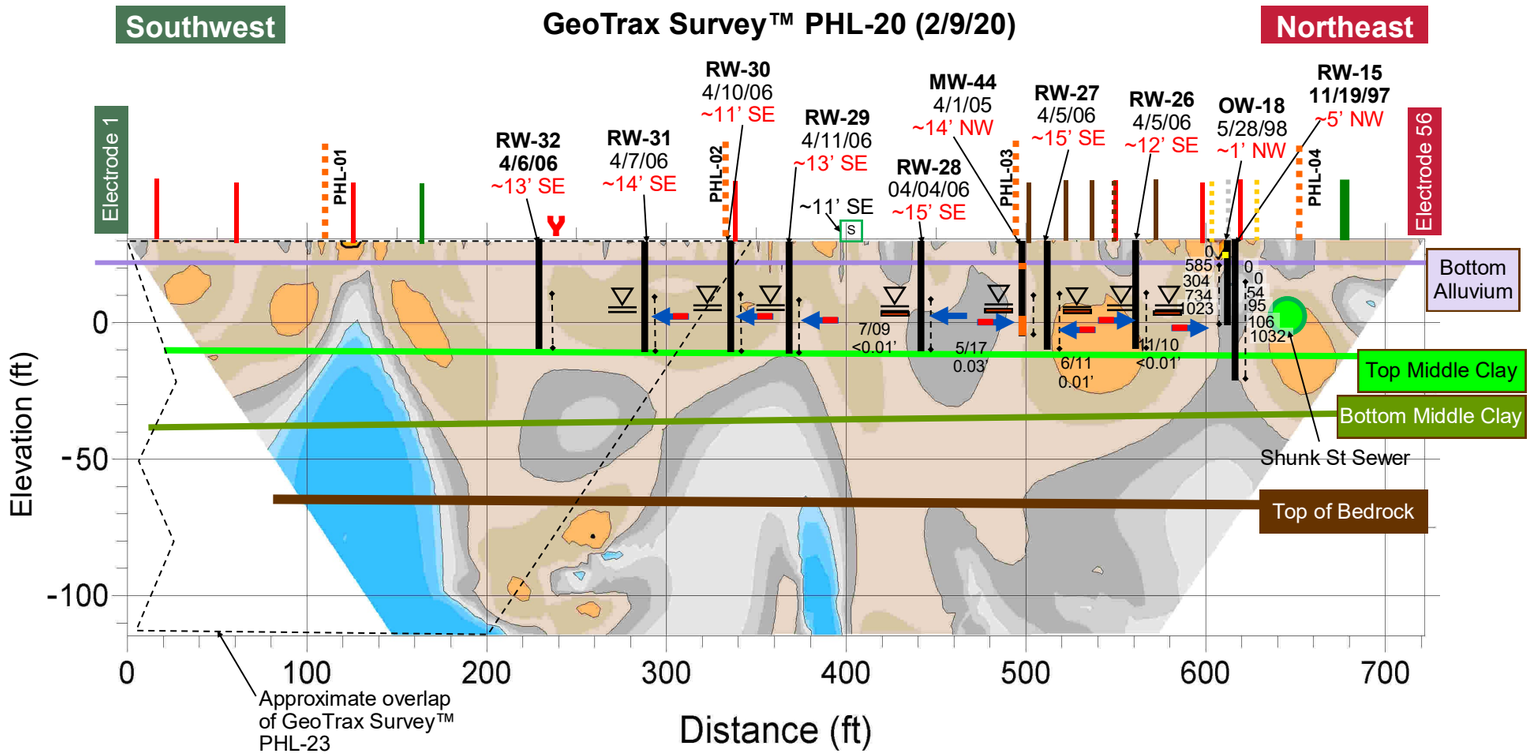

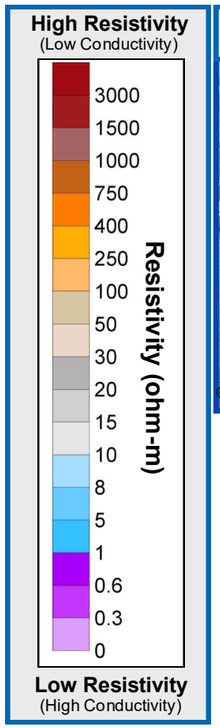

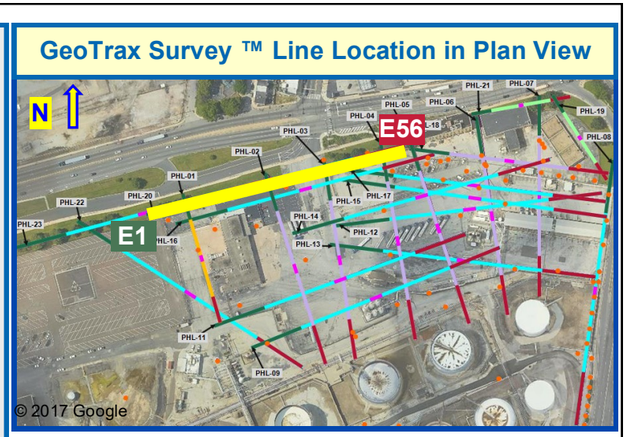

No Confirmation Borings on PHL-20

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FIGURE
20.1
INITIAL CD DATA INTEGRATION

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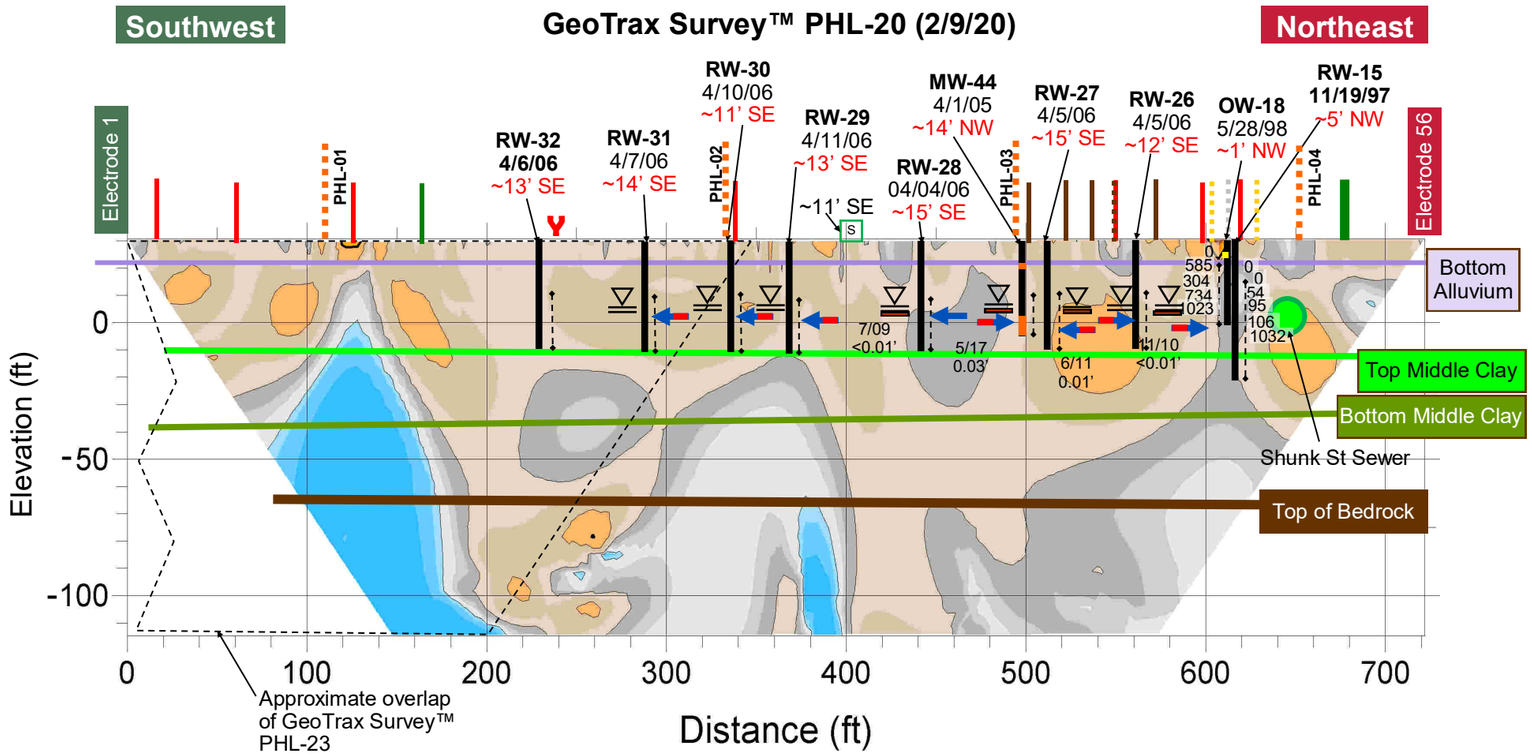

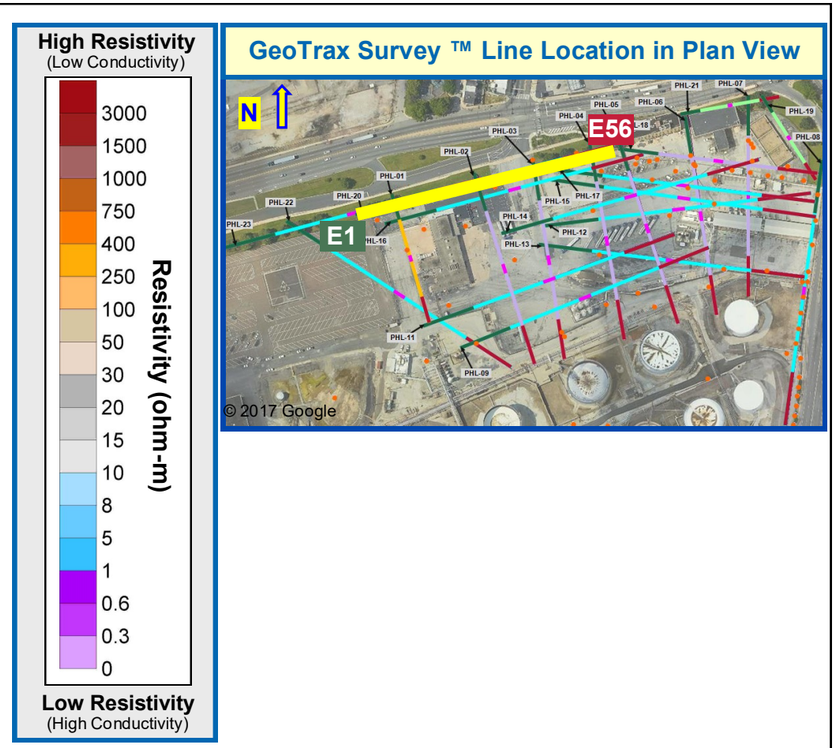

Well Product Data

Well	RW-28	MW-44	RW-27	OW-18
Sample Date	7/1/09	5/8/17	6/6/11	11/1/10
Product Description	70% GASOLINE, 30% MIDDLE DISTILLATE	70% GASOLINE, 30% MIDDLE DISTILLATE	70% GASOLINE, 30% MIDDLE DISTILLATE	90% GASOLINE, 10% MIDDLE DISTILLATE

Groundwater Quality Sample Results

Well		RW-31	RW-30	RW-29	RW-28	MW-44	RW-27	RW-26	OW-18
Sample Date		7/31/18	7/31/18	7/31/18	8/1/18	7/1/19	8/1/18	7/3/19	8/1/18
Parameters	*Units*								
DO	mg/L	0	1.92	0.43	0.28	0.61	0	2.61	0
ORP	mV	-165	-143	-156	212	-30	-91	-46	-151
pH	S.U.	6.65	6.57	6.49	6.33	5.53	6.66	5.95	6.76
EC	mS/cm	1.36	1.83	1.27	2.49	1.11	2.3	1.81	1.89
Temperature	ºC	18.09	20.07	19.16	21	21.1	19.14	20.78	19.33
Turbidity	NTU	21.8	218	104	20.5	30.7	91.3	318	98

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20.2 A
ANALYTICAL DATA INTEGRATION

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Groundwater Sample Results									
Well		**RW-31**	**RW-30**	**RW-29**	**RW-28**	**MW-44**	**RW-27**	**RW-26**	**OW-18**
Sample Date		**7/31/18**	**7/31/18**	**7/31/18**	**8/1/18**	**11/12/19**	**8/1/18**	**11/12/19**	**8/1/18**
Parameters (µg/L)	**Stds (µg/L)**								
BENZENE	5	**51**	**375**	**226**	ND	**3000**	**3270**	**2800**	**445**
ETHYLBENZENE	1000	ND	11.4	ND	ND	320	43	26	ND
TOLUENE	700	ND	ND	ND	ND	500	568	500	**1010**
XYLENES, TOTAL	10000	ND	ND	ND	ND	3800	1080	620	1170
MTBE	20	17.9	**90.1**	**191**	ND	**50**	**4340**	**1200**	ND
NAPHTHALENE	100	1.67	50.2	17.8	ND	**120**	**2340**	**1600**	**659**
PYRENE	130	0.182	5.92	3.54	ND	9	2.26	1	8.63
ANTHRACENE	66	0.288	6.82	7.82	ND	2	2.85	3	7.45
ISOPROPYLBENZENE	3500	30.4	55.3	107	ND	22 J	77.7	59	ND
FLUORENE	1900	3.52	26	51.8	ND	6	25.2	19	17
CHRYSENE	1.9	ND	1.58	0.469	ND	**7**	0.309	ND	**2.64**
PHENANTHRENE	1100	1.03	31.4	41.4	0.0539	12	23	17	32.6
LEAD	5	ND	ND	ND	ND	7.1	ND	ND	2.52
1,2,4-TMB	62	ND	40.8	ND	ND	**690**	**933**	**310**	**807**
1,2-DIBROMOETHANE	0.05	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-TMB	1200	ND	18.2	ND	ND	220	64.8	84	ND
BENZO(A)ANTHRACENE	4.9	ND	1.57	0.476	ND	3	0.347	ND	2.37
BENZO(A)PYRENE	0.2	ND	**1.16**	**0.248**	ND	**4**	0.187	ND	**1.38**
BENZO(B)FLUORANTHENE	0.55	ND	**1.22**	0.296	ND	**8**	0.244	ND	**1.69**
BENZO(G,H,I)PERYLENE	0.26	ND	**0.536**	0.107	ND	**4**	0.145	ND	**0.657**

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FIGURE
20.2 B
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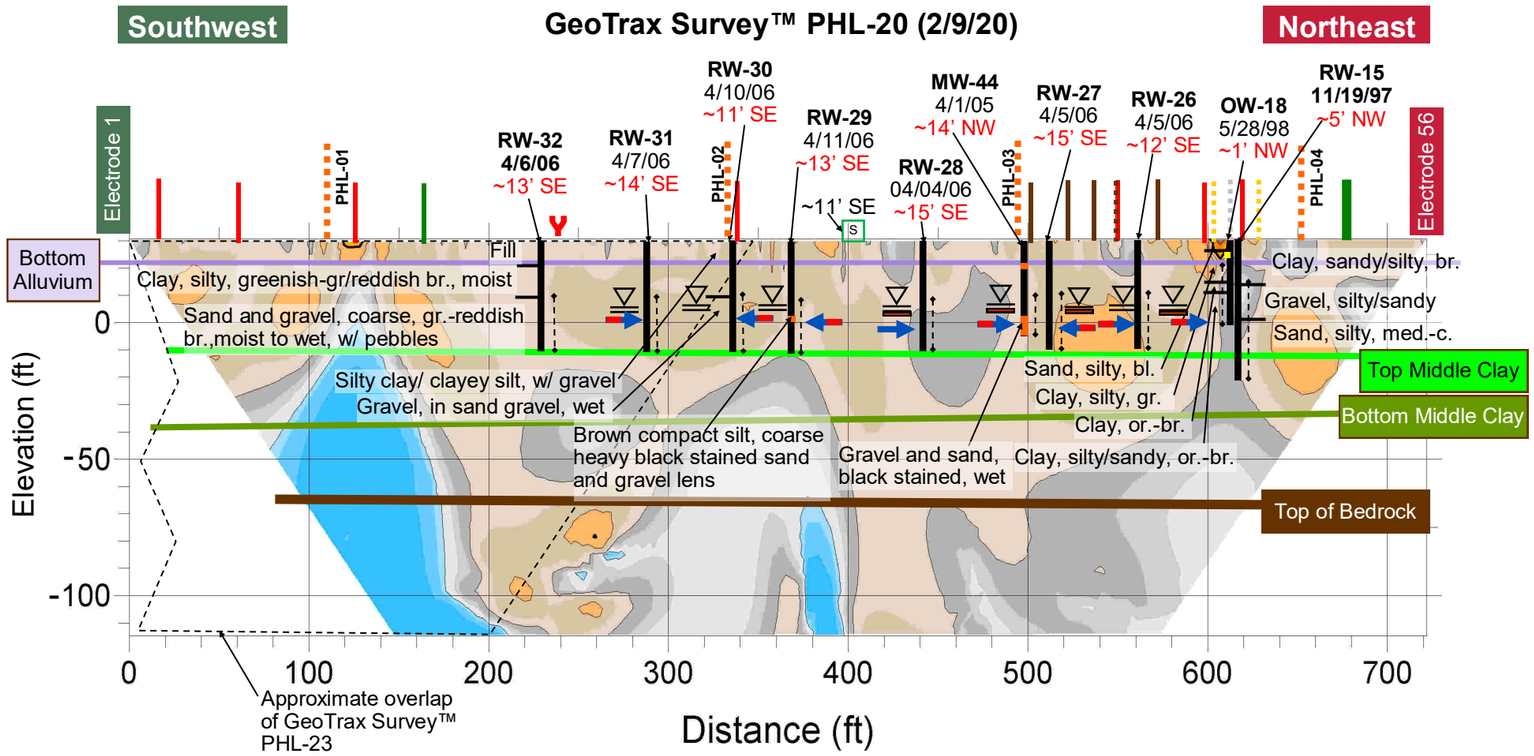

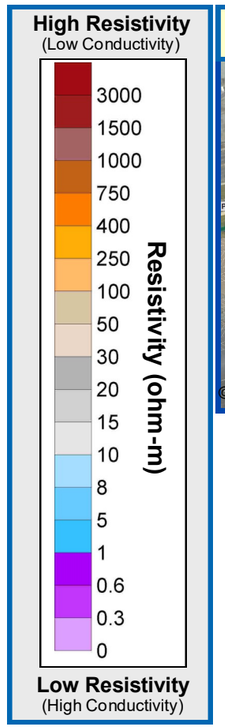

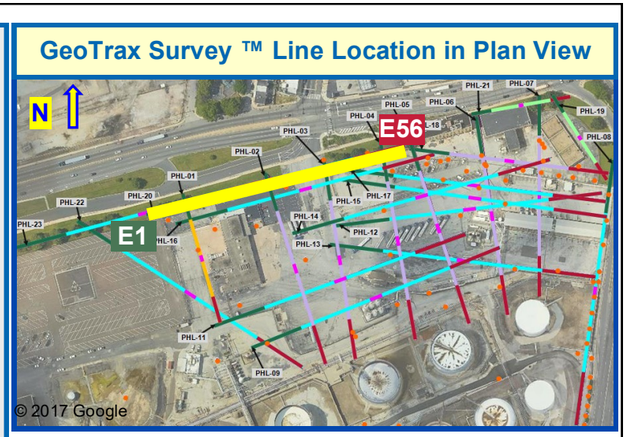

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FIGURE
20.3
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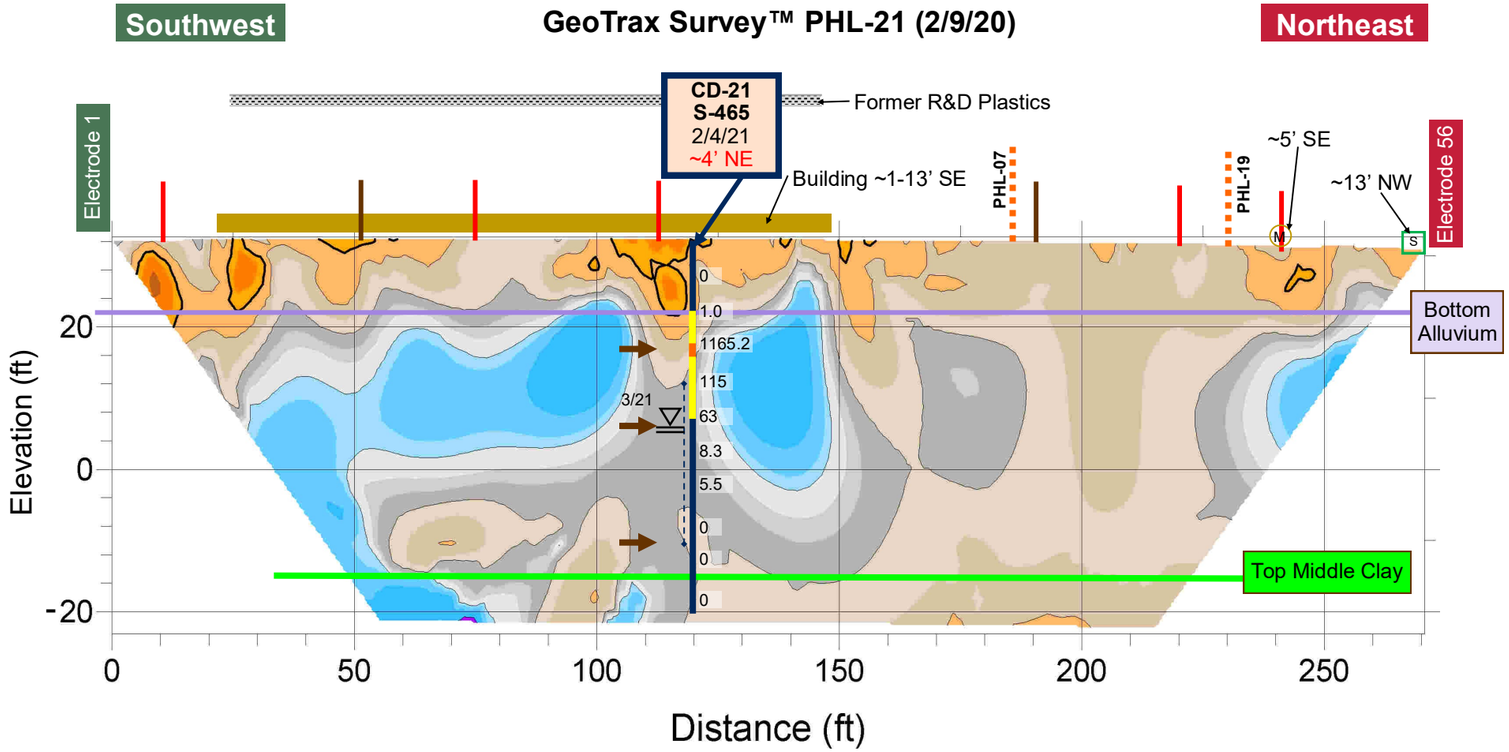

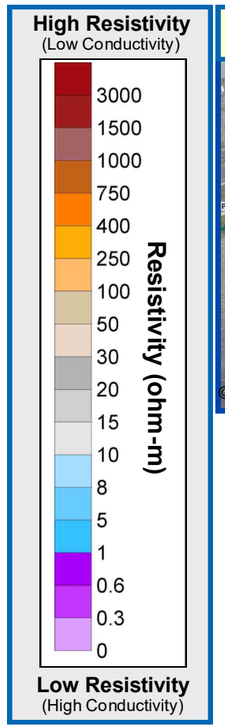

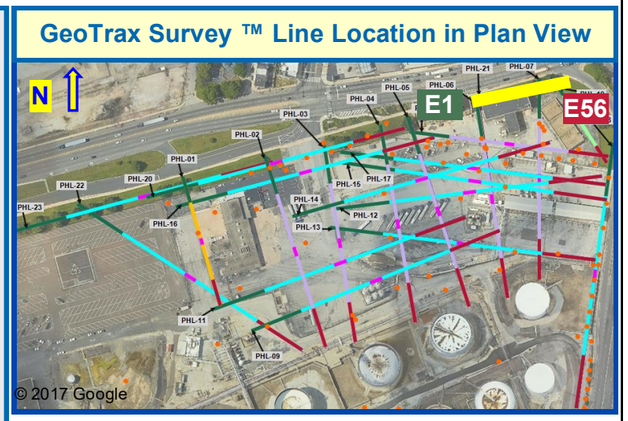

CD Groundwater Grab Results		
Well		CD-21
Boring		S-465
Sample Date		
Sample Depth ft. BGS		
Parameters µg/L	MSCs µg/L	
BENZENE	5	
TOLUENE	1000	
ETHYLBENZENE	700	
XYLENES, TOTAL	10000	
MTBE	20	
1,2,4-TMB	62	NA
>C12-C22		
>C22-C44		
C4-C12-TPH-GRO		
TOTAL ORG. CARBON		
TPH		

CD Groundwater Grab Results	
Well	CD-21
Boring	S-465
Sample Date	
Sample Depth	
Parameters (µg/L)	
ALKALINITY TO pH 4.5	
CALCIUM	
CHLORIDE (AS CL)	
IRON	
MAGNESIUM	
METHANE	NA
NITROGEN, AMMONIA	
NITROGEN, NITRATE	
POTASSIUM	
SODIUM	
SULFATE (AS SO4)	

CD Soil Sample Results				
Well /Boring		CD-21 S-465		
Sample Date		1/21/21	2/4/21	2/4/21
Sample Depth ft BGS		15	26	42
Parameters mg/kg	MCLs mg/kg			
BENZENE	330	87	5.9	0.0017 J
TOLUENE	10000	62	0.08	ND
ETHYLBENZENE	1000	14	0.025	ND
XYLENES, TOTAL	9100	87	0.14	ND
MTBE	9900	ND	ND	ND
>C12-C22		2300	7.5 J	ND
>C22-C44		460	8 J	6.2 J
C4-C12-TPH-GRO		1900	3.8	ND
TPH		2800	16	6.2 J

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FIGURE
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INITIAL CD DATA INTEGRATION

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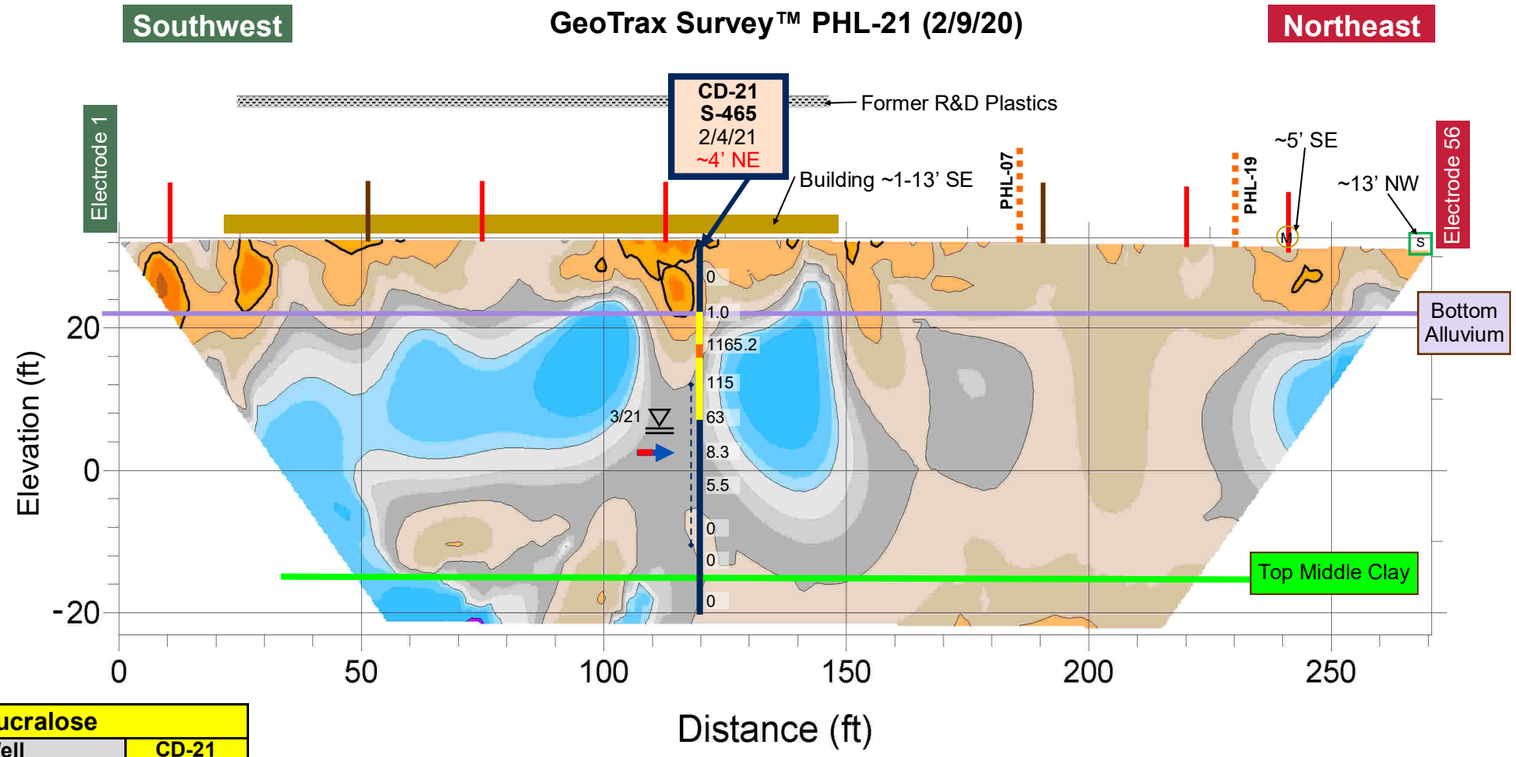

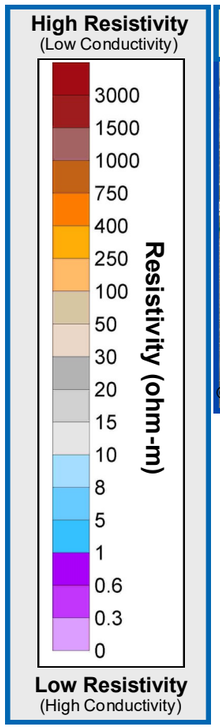

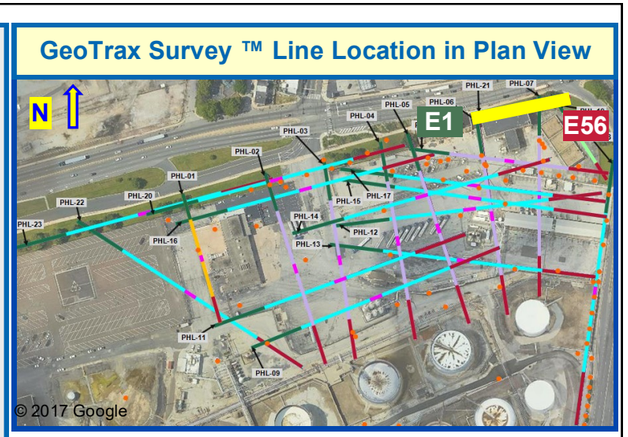

Sucralose	
Well	CD-21
Boring	S-465
Sample Date	5/19/21
Sucralose ng/L	ND

CD Groundwater Sample Results		
Well		CD-21
Boring		S-465
Sample Date		3/25/21
Parameters µg/L	MCLs µg/L	
BENZENE	5	30,000
TOLUENE	1000	1,300
ETHYLBENZENE	700	88
XYLENES, TOTAL	10000	470
MTBE	20	ND
NAPHTHALENE	100	21
1,2,4-TMB	62	36 J
1,3,5-TMB	1200	12 J
ISOPROPYLBENZENE	3500	19 J
TERT-BUTYL ALCOHOL		ND

CD Groundwater Sample Results	
Well	CD-21
Boring	S-465
Sample Date	3/25/21
Parameters µg/L	
ALKALINITY TO pH 4.5	310,000
CALCIUM	110,000
IRON	5,700
METHANE	150
SULFATE (AS SO4)	96,000
TOTAL CARBON	88,000
TOTAL INORGANIC CARBON	70,000
TOTAL KJELDAHL NITROGEN	1,100
TOTAL ORGANIC CARBON	18,000

CD Groundwater Quality Results		
Well		CD-21
Boring		S-465
Sample Date		3/25/21
Parameters	*Units*	
DO	mg/L	0.32
ORP	mV	-42
pH	S.U.	6.56
EC	mS/cm	1.43
Temperature	ºC	17.17
Turbidity	NTU	31.1

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GeoTrax Viz™ 2-D Data Integration
Belmont Terminal Site
Philadelphia, Pennsylvania

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FIGURE
21.2
ANALYTICAL DATA INTEGRATION

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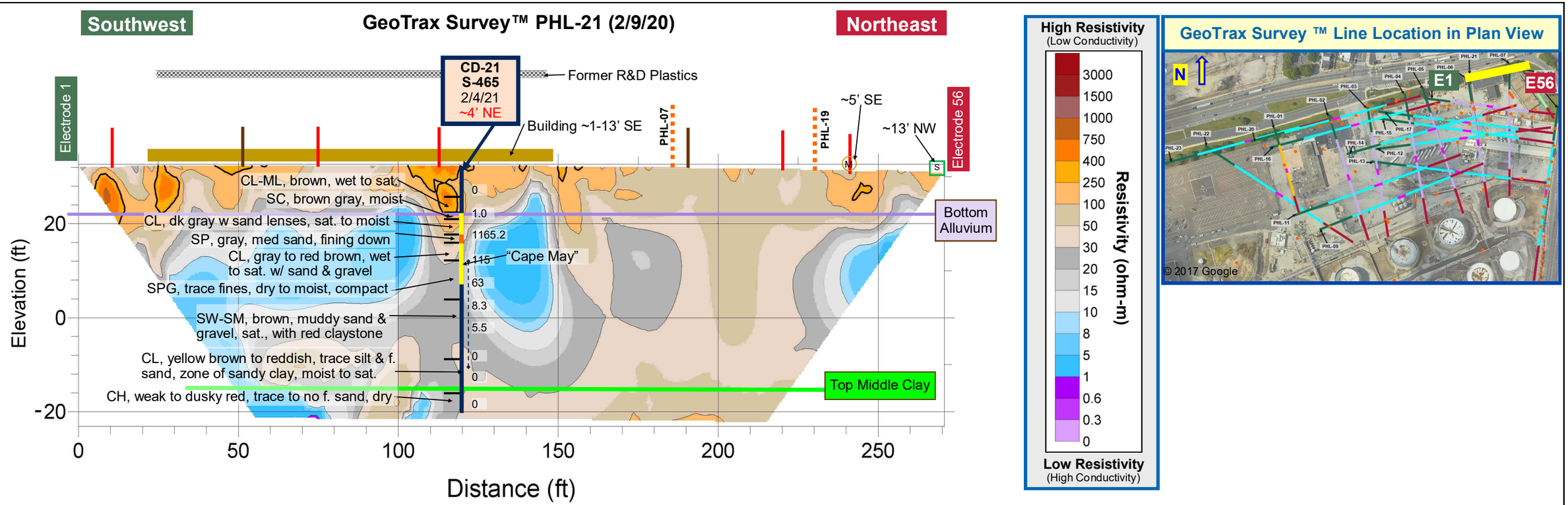

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FIGURE
21.3
GEOLOGY DATA INTEGRATION

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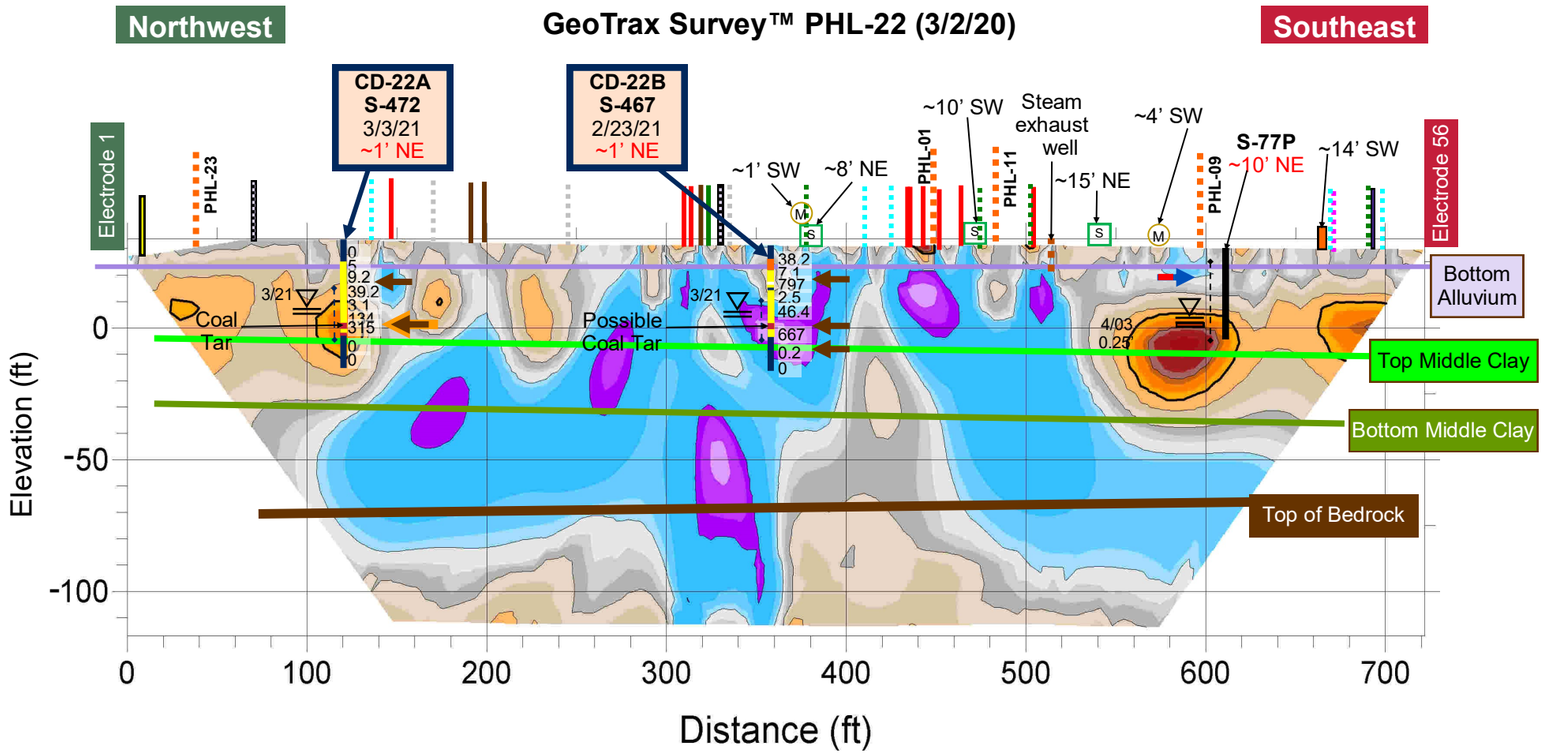

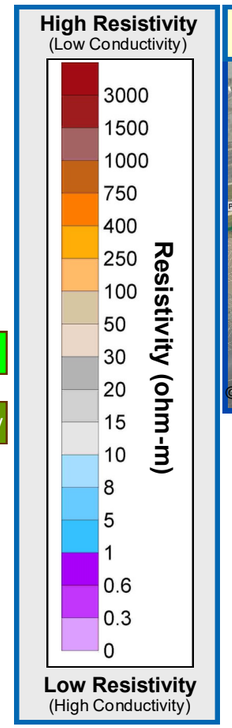

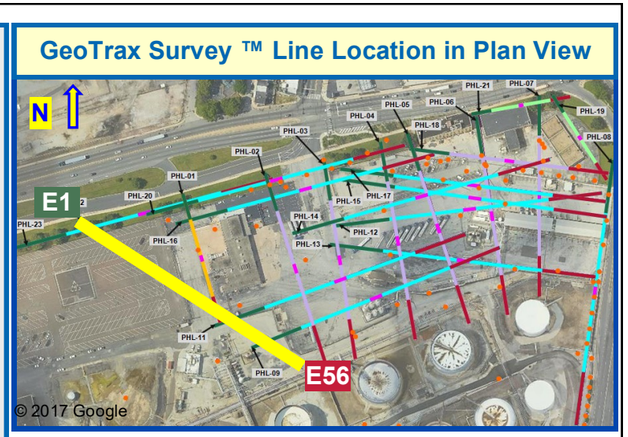

CD Groundwater Grab Results			
Well		CD-22A	CD-22B
Boring		S-472	S-467
Sample Date			
Sample Depth ft. BGS			
Parameters µg/L	MSCs µg/L		
BENZENE	5	NA	NA
TOLUENE	1000		
ETHYLBENZENE	700		
XYLENES, TOTAL	10000		
MTBE	20		
1,2,4-TMB	62		
>C12-C22			
>C22-C44			
C4-C12-TPH-GRO			
TOTAL ORG. CARBON			
TPH			

CD Groundwater Grab Results		
Well	CD-22A	CD-22B
Boring	S-472	S-467
Sample Date		
Sample Depth		
Parameters (µg/L)		
ALKALINITY TO pH 4.5	NA	NA
CALCIUM		
CHLORIDE (AS CL)		
IRON		
MAGNESIUM		
METHANE		
NITROGEN, AMMONIA		
NITROGEN, NITRATE		
POTASSIUM		
SODIUM		
SULFATE (AS SO4)		

CD Soil Sample Results					
Well /Boring		CD-22A	CD-22B		
		S-472	S-467		
Sample Date		3/2/21	2/17/21	2/22/21	2/22/21
Sample Depth ft BGS		16	14	31	40
Parameters mg/kg	MCLs mg/kg				
BENZENE	330	0.0012 J	37	0.14 J	0.25 J
TOLUENE	10000	ND	0.55 J	0.064 J	0.0088
ETHYLBENZENE	1000	ND	38	0.84	0.07
XYLENES, TOTAL	9100	ND	49	0.57	0.1
MTBE	9900	ND	ND	ND	0.62
>C12-C22		ND	50	920	7.4 J
>C22-C44		ND	10 J	120	36
C4-C12-TPH-GRO		0.34	14000	830	22 B
TPH		ND	60	2000	51

CD Soil Forensics	
Well	CD-022A
Boring	S-472
Sample Date	3/5/21
Sample Depth ft BGS	32
See Report for full details	Pyrogenic signature likely related to MGP

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FIGURE
22.1
INITIAL CD DATA INTEGRATION

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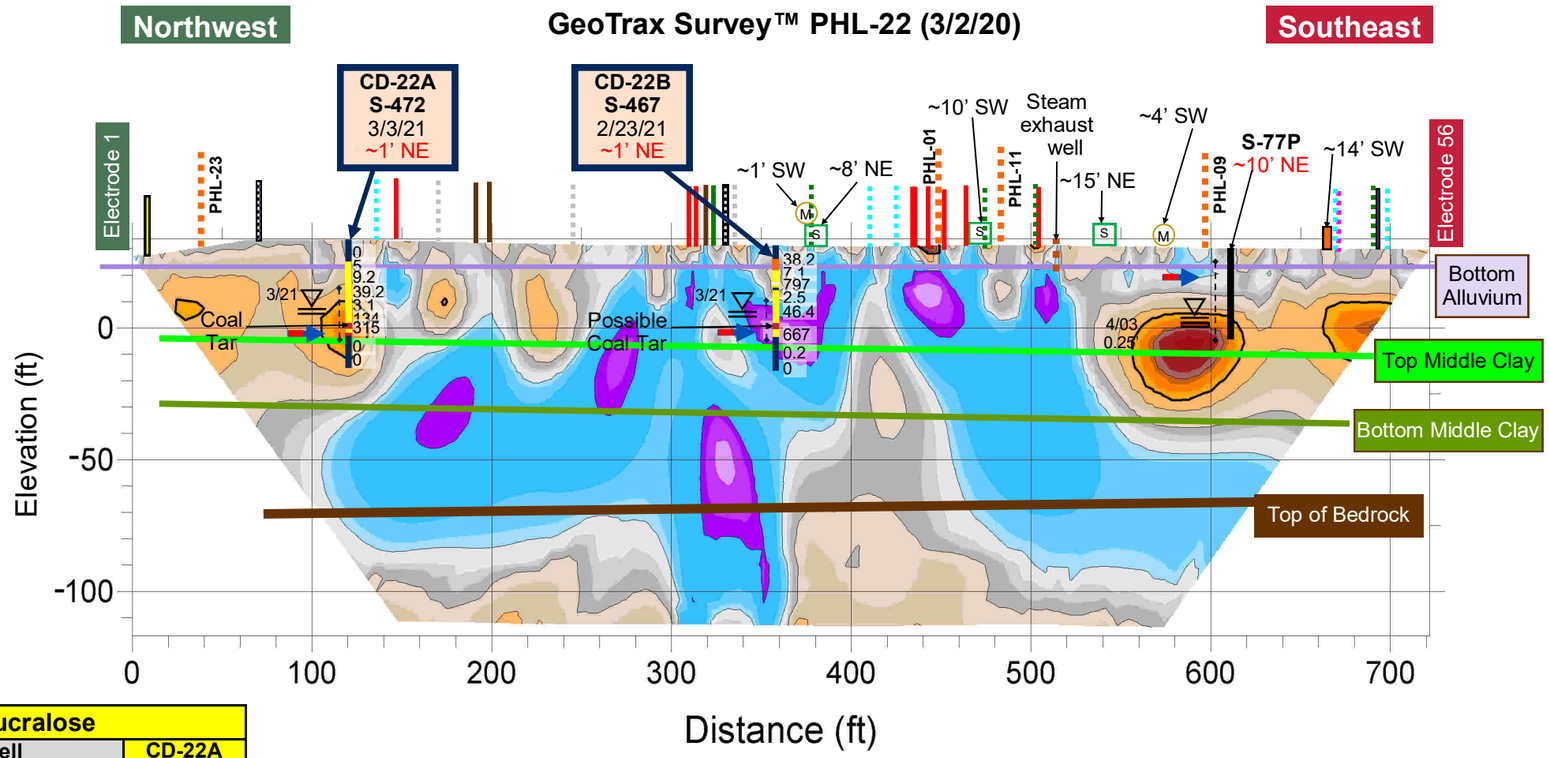

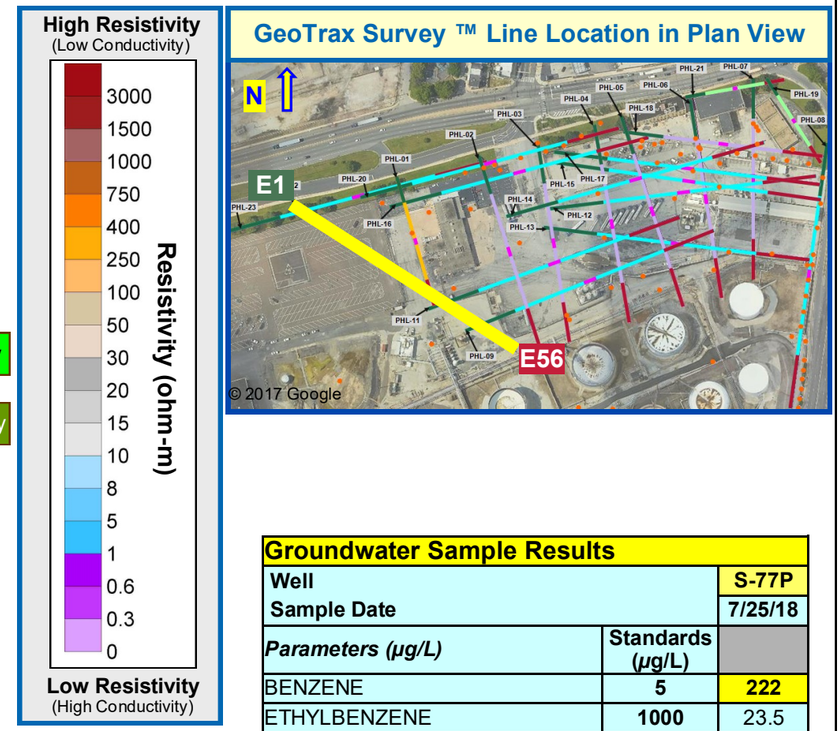

Sucralose	
Well	CD-22A
Boring	S-472
Sample Date	5/14/21
Sucralose ng/L	129

CD Groundwater Sample Results			
Well		CD-22A	CD-22B
Boring		S-472	S-467
Sample Date		3/24/21	3/24/21
Parameters µg/L	MCLs µg/L		
BENZENE	5	180	370
TOLUENE	1000	8.8	20
ETHYLBENZENE	700	970	25
XYLENES, TOTAL	10000	290	55
MTBE	20	0.79 J	78
NAPHTHALENE	100	5800	66
1,2,4-TMB	62	490	64
1,3,5-TMB	1200	130	22
ISOPROPYLBENZENE	3500	110	100
TERT-BUTYL ALCOHOL		25 J	570

CD Groundwater Sample Results			
Well		CD-22A	CD-22B
Boring		S-472	S-467
Sample Date		3/24/21	3/24/21
Parameters µg/L			
ALKALINITY TO pH 4.5		120,000	230,000
CALCIUM		77,000	50,000
IRON		140,000	51,000
METHANE		12,000	18,000
SULFATE (AS SO4)		19,000	6,600
TOTAL CARBON		85,000	89,000
TOTAL INORGANIC CARBON		59,000	64,000
TOTAL KJELDAHL NITROGEN		4,300	8,900
TOTAL ORGANIC CARBON		26,000	25,000

CD Groundwater Quality Results			
Well		CD-22A	CD-22B
Boring		S-472	S-467
Sample Date		3/24/21	3/24/21
Parameters	*Units*		
DO	mg/L	1.92	0.83
ORP	mV	-87	-145
pH	S.U.	6.44	6.83
EC	mS/cm	2.67	2.88
Temperature	ºC	17.89	18.3
Turbidity	NTU	211	7

Well Product Data	
Well	S-77P
Sample Date	4/23/03
Product Description	95% HEAVY VIRGIN NAPHTHA, 5% MIDDLE DISTILLATE

Groundwater Quality Sample Results		
Well		S-77P
Sample Date		7/25/18
Parameters	*Units*	
DO	mg/L	0.11
ORP	mV	-58
pH	S.U.	6.92
EC	mS/cm	0.927
Temperature	ºC	18.99
Turbidity	NTU	13.1

Groundwater Sample Results		
Well		S-77P
Sample Date		7/25/18
Parameters (µg/L)	Standards (µg/L)	
BENZENE	5	222
ETHYLBENZENE	1000	23.5
TOLUENE	700	8.18
XYLENES, TOTAL	10000	57
MTBE	20	2090
NAPHTHALENE	100	8.04
PYRENE	130	0.549
ANTHRACENE	66	1.48
ISOPROPYLBENZENE	3500	128
FLUORENE	1900	14.1
CHRYSENE	1.9	0.112
PHENANTHRENE	1100	6.74
LEAD	5	ND
1,2,4-TMB	62	2.16
1,2-DIBROMOETHANE	0.05	ND
1,2-DICHLOROETHANE	5	ND
1,3,5-TMB	1200	2.98
BENZO(A)ANTHRACENE	4.9	0.0774
BENZO(A)PYRENE	0.2	ND
BENZO(B)FLUORANTHENE	0.55	ND
BENZO(G,H,I)PERYLENE	0.26	ND

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FIGURE
22.2
ANALYTICAL DATA INTEGRATION

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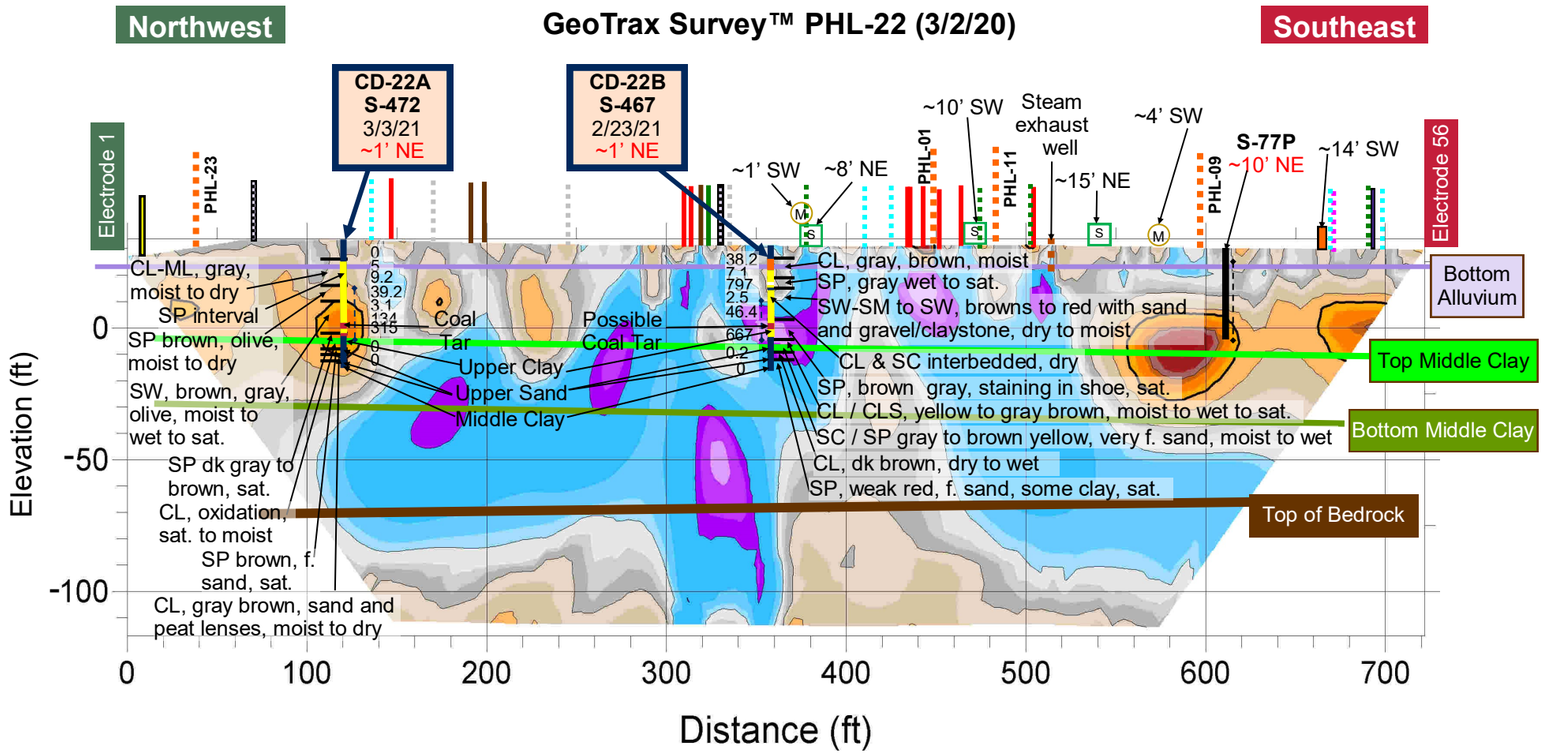

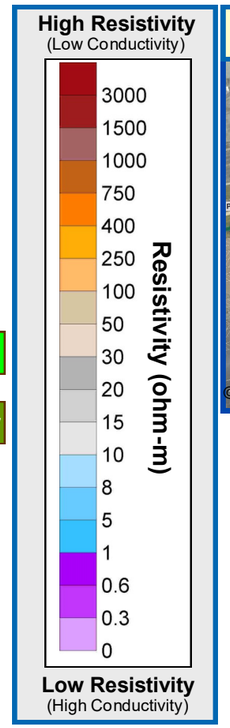

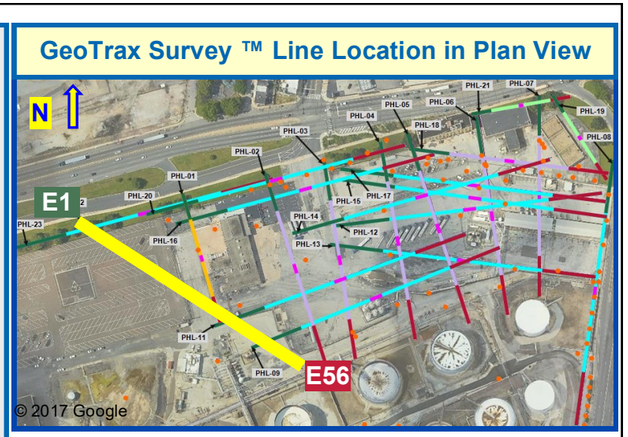

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FIGURE
22.3
GEOLOGY DATA INTEGRATION

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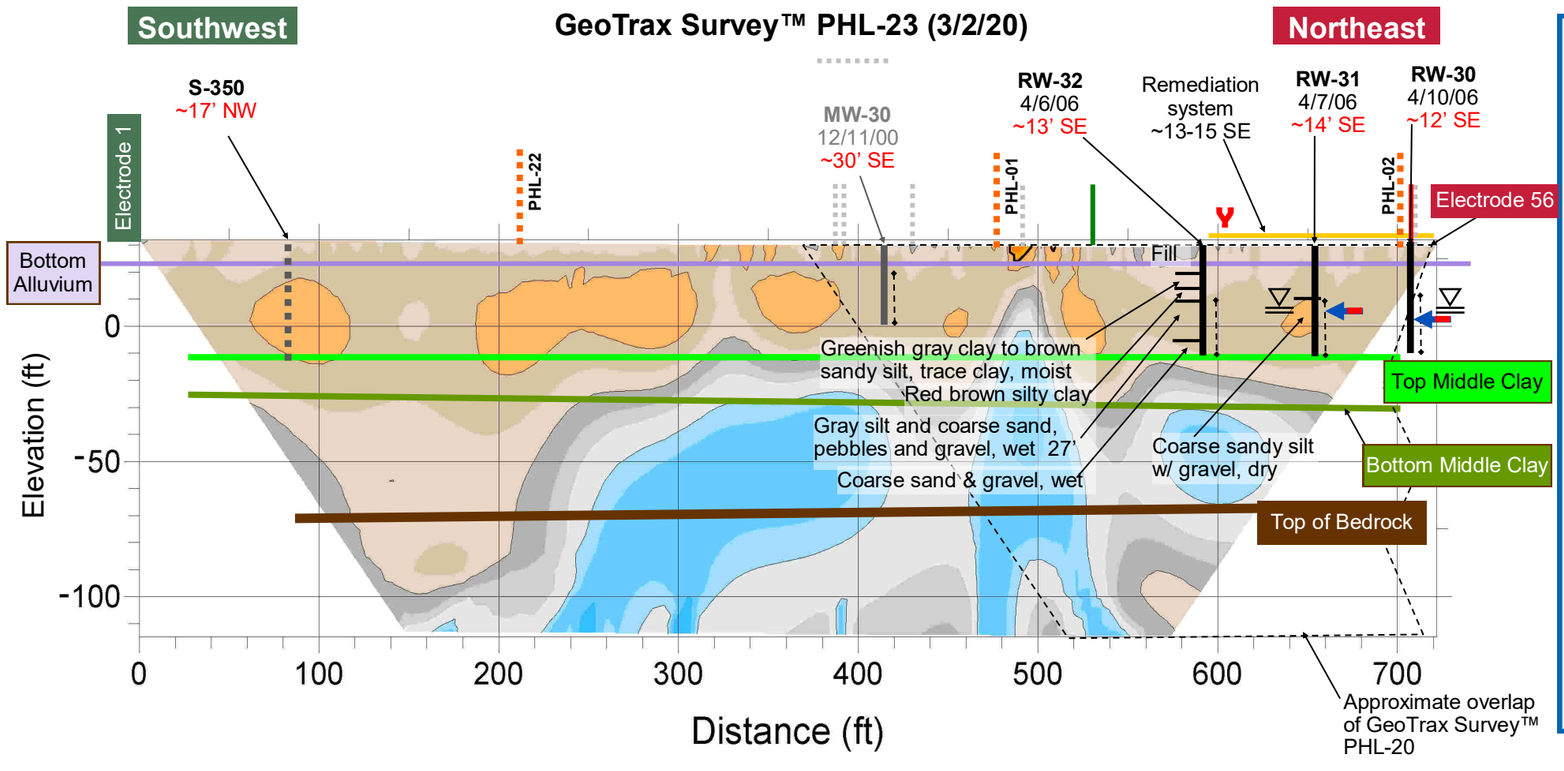

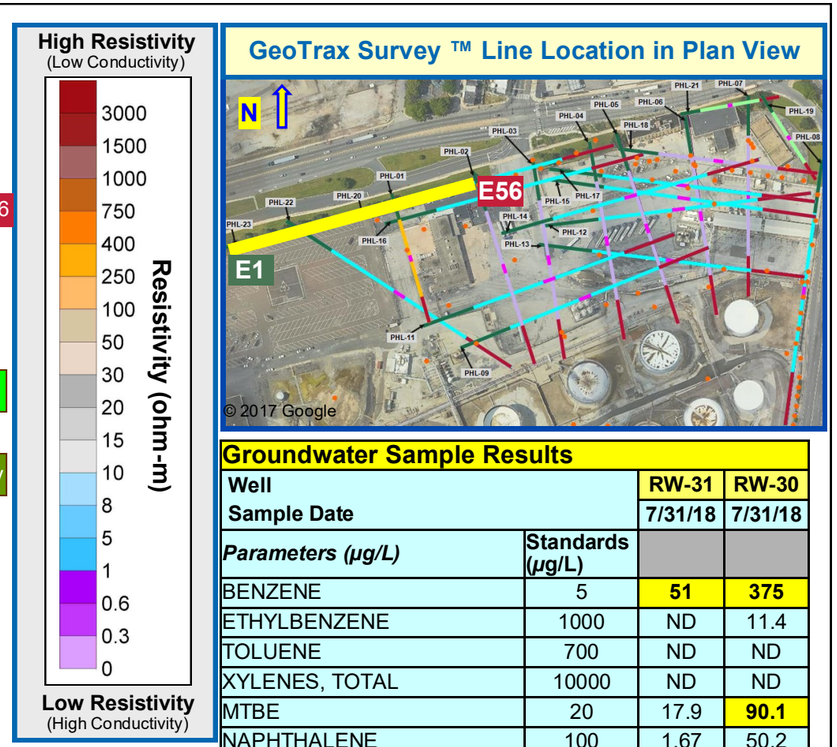

GeoTrax Survey ™ Line Location in Plan View

No Confirmation Borings on PHL-23

Groundwater Quality Sample Results

Well		RW-31	RW-30
Sample Date		7/31/18	7/31/18
Parameters	*Units*		
DO	mg/L	0	1.92
ORP	mV	-165	-143
pH	S.U.	6.65	6.57
EC	mS/cm	1.36	1.83
Temperature	°C	18.09	20.07
Turbidity	NTU	21.8	218

Groundwater Sample Results

Well		RW-31	RW-30
Sample Date		7/31/18	7/31/18
Parameters (µg/L)	Standards (µg/L)		
BENZENE	5	**51**	**375**
ETHYLBENZENE	1000	ND	11.4
TOLUENE	700	ND	ND
XYLENES, TOTAL	10000	ND	ND
MTBE	20	17.9	**90.1**
NAPHTHALENE	100	1.67	50.2
PYRENE	130	0.182	5.92
ANTHRACENE	66	0.288	6.82
ISOPROPYLBENZENE	3500	30.4	55.3
FLUORENE	1900	3.52	26
CHRYSENE	1.9	ND	1.58
PHENANTHRENE	1100	1.03	31.4
LEAD	5	ND	ND
1,2,4-TMB	62	ND	40.8
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TMB	1200	ND	18.2
BENZO(A)ANTHRACENE	4.9	ND	1.57
BENZO(A)PYRENE	0.2	ND	**1.16**
BENZO(B)FLUORANTHENE	0.55	ND	**1.22**
BENZO(G,H,I)PERYLENE	0.26	ND	**0.536**

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FIGURE
23
ALL DATA INTEGRATION

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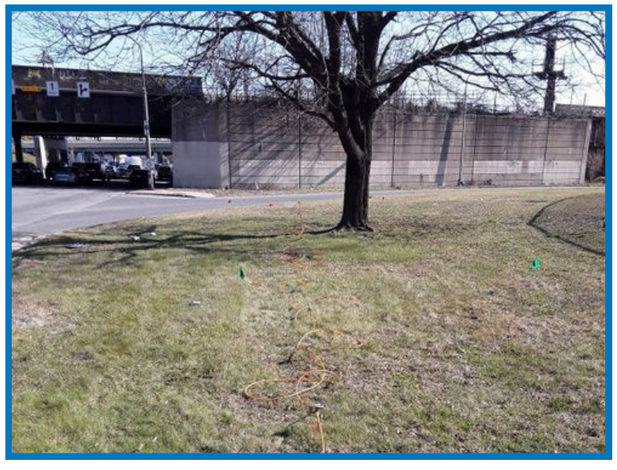
Representative Site Photos*









*** All site photos included as an electronic appendix to this report**

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Appendix A

Detailed Discussion of Aestus' GeoTrax CSM+™ Process

(Sent to Stantec electronically via SharePoint file transfer)

Appendix B

Field Notes
GeoTrax Survey™ Data Acquisition

(Sent to Stantec electronically via SharePoint file transfer)

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Appendix C

GeoTrax Survey™ XYZR Data Output Files

(Sent to Stantec electronically via SharePoint file transfer)

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Appendix D

3D Visualization Model and Viewer Software

(Sent to Stantec electronically via SharePoint file transfer)

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GeoTrax CSM+ ™
Conceptual Site Model Update
Final Report
Belmont Terminal Site
Philadelphia, Pennsylvania, USA

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FIGURE
TP
TITLE PAGE
REPORT FIGURES

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Electrical Contaminant Hydrogeology Mapping & Conceptual Site Model Update Process

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GeoTrax CSM+™ Process

We Are Here

1 Data Transfer to Aestus

- Visualize historic site data using *GeoTrax Viz*™

2 Ultra-High Resolution Scan

- Acquire *GeoTrax Survey*™ 2D Imagery
- Use dynamic work strategy with QA/QC

3 Interim Report (w/Hypotheses)

- Integrate data sets in 2D&3D (*GeoTrax Viz*™)
- Select confirmation drilling locations

4 Confirmation Drilling (by Client)

- Perform targeted drilling/sampling to test CSM

5 Final CSM+ Report

- Integrate confirmation data (*GeoTrax Viz*™)
- Finalize GeoTrax CSM+™

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FIGURE
PS
PROCESS SUMMARY

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Legend and Symbols

(for reference when reviewing all Figures)

Site Features

Indicates various site features which are labeled accordingly on the figures

Former Product Piping *

Demolished building footprint

Light pole

Vapor Recovery Unit

Fence

Above ground pipes

Overhead Pipes with Electric Support

STA-02

Indicates areas where GeoTrax Surveys™ intersect

* *Former Product Piping Includes Piping for: Solvents, Imperial Gasoline, Regular Gasoline, Kerosene, Diesel, Fuel Oil*

Groundwater sample from a specific interval/screen interval

Water sample where one or more constituents are above standards

Groundwater sample from a specific interval/screen interval

Water sample where one or more constituents are above standards

Soil sample from a specific interval

Soil sample where one or more constituents are above standards

Soil Forensics Data available

Groundwater Bio Sample

Analytical Data

Analytical Soil, Water, and Groundwater Quality Parameters and site standards for Wells Near GeoTrax Surveys ™ provided by Stantec.
Standards for groundwater: PADEP Non-Residential (Non Residential) Statewide Health Standard MSCs for aquifers (TDS <= 2500). Standards for soil: PADEP Non Residential Direct-Contact Values

Bold: Constituent concentration exceeds Standards
J: Estimated value
B: Analyte detected in blank as well as in sample
U: Analyzed for but not detected
F: Result suspect
H: Qualified due to holding time violation
L: Qualified due to accuracy issues (LCS recoveries outside control limits)
Q: Problem with associated field QC sample

NA: Not Analyzed
ND: Non Detect from lab

Well Gauging Data		
Well		MW-44
Sample Date		5/8/17
Parameters	*Units*	
Depth to Water	ft btoc	26.14
Depth to LNAPL	ft btoc	26.11
Product Thickness	ft	0.03
Product Density		0.7802

Groundwater Sample Results		
Well		MW-44
Sample Date		11/12/19
Parameters (µg/L)	Standards (µg/L)	
BENZENE	5	3000
TOLUENE	1000	320
ETHYLBENZENE	700	500
XYLENES, TOTAL	10000	3800
METHYL TERTIARY BUTYL ETHER	20	50
NAPHTHALENE	100	120
PYRENE	130	9

Geologic Data

Bottom Alluvium

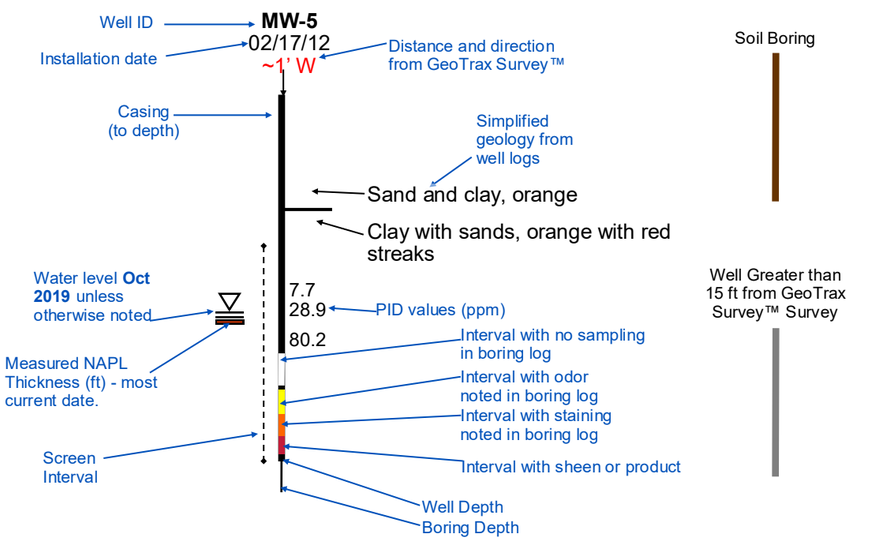
Top Middle Clay

Bottom Middle Clay

Top of Bedrock

Bottom of Alluvium approximated from Cross Section DD' provided by Stantec.
Top of Middle Clay, Bottom of Middle Clay, and Top of Bedrock modeled surfaces provided by Stantec and projected onto GeoTrax Survey™ data.

Monitoring Well Explanation



Utilities

Water

Gas

Electric

Telecommunication Line

Storm Sewer

City Sewer

Sanitary Sewer

Reme-diation

Manhole

Unknown Utility

Process water

Storm Sewer Catch Basin/ Drain/ Grate

Overhead Power Lines

Fire Hydrant

Steam

Fire Line

Dotted utility symbols mark measured feature from historic site maps or a noted "possible" utility from Aestus field notes. Solid utility symbols indicate feature marked in field and added to field notes.

General Notes: *Locations of site features (e.g., utilities, wells, etc.) are approximate*

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FIGURE
LS-1
LEGENDS AND SYMBOLS

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Legend and Symbols

(for reference when reviewing all Figures)

Unified Soil Classification System

Gravels:
GW: Well graded gravels, gravel-sand mixtures, little or no fines
GP: Poorly-graded gravels, gravel-sand mixtures, little or no fines
GM: Silty gravels, gravel-sand-silt mixtures
GC: Clayey gravels, gravel-sand-clay mixtures

Sands:
SW: Well-graded sands, gravelly sands, little or no fines
SP: Poorly graded sands, gravelly sands, little or no fines
SM: Silty sands, sand-silt mixtures
SC: Clayey sands, sand-clay mixtures

Silts and Clays (liquid limit < 50%):
ML: Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
CL: Inorganic clays or low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
OL: Organic silts and organic silty clays or low plasticity

Silts and Clays (liquid limit > 50%):
MH: Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
CH: Inorganic clays of high plasticity, fat clays
OH: Organic clays of medium to high plasticity, organic silts

Highly Organic Soils:
PT: Peat and other highly organic soils

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GeoTrax CSM+™ Development Results
Belmont Terminal Site
Philadelphia, Pennsylvania, USA

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Prepared for Stantec / Evergreen

FIGURE
LS-2
LEGENDS AND SYMBOLS

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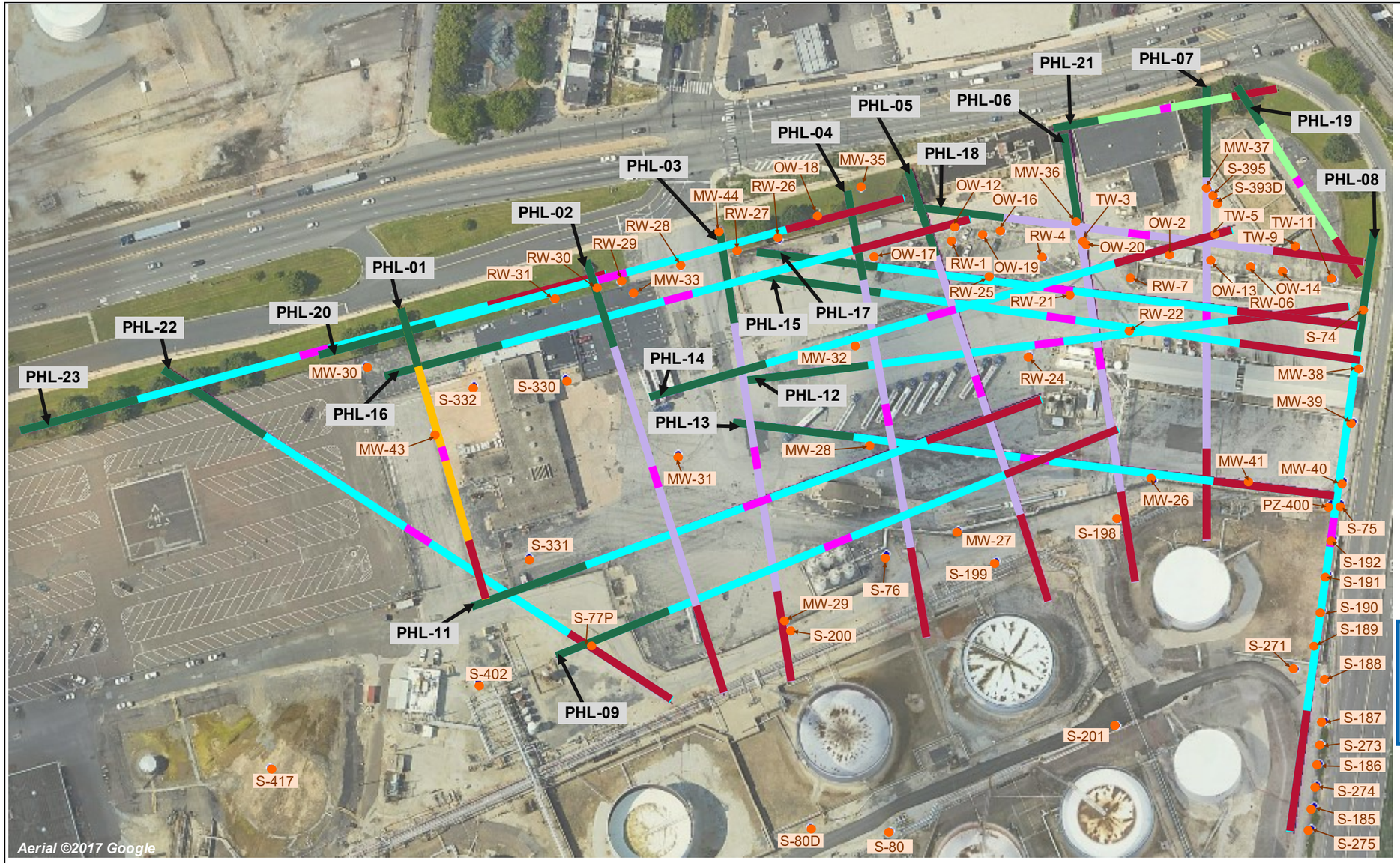

GeoTrax Survey™ Orientation and Designation

Electrode 1

Electrode 56

PHL-19

1.5 Meter Electrode Spacing
Line Length ~271 feet (~82.5 m)
Image Depth ~54 feet (~16.5 m)

PHL-01

2.0 Meter Electrode Spacing
Line Length ~ 361 feet (110 m)
Image Depth ~ 72 feet (22 m)

PHL-02

3.0 Meter Electrode Spacing
Line Length ~541 feet (~165 m)
Image Depth ~108 feet (~33 m)

PHL-08

4.0 Meter Electrode Spacing
Line Length ~722 feet (~220 m)
Image Depth ~144 feet (~44 m)

Instrument Location at Center of Pink Box

Full depth of trapezoidal shaped image exists in center zone; partial depth in green and red zones

LEGEND:

Monitoring Well

N

0 100 200

Feet

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GeoTrax Survey™ and Historical Monitoring Well Locations
Belmont Terminal Site
Philadelphia, Pennsylvania

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FIGURE
PV-1
PLAN VIEW FIGURE

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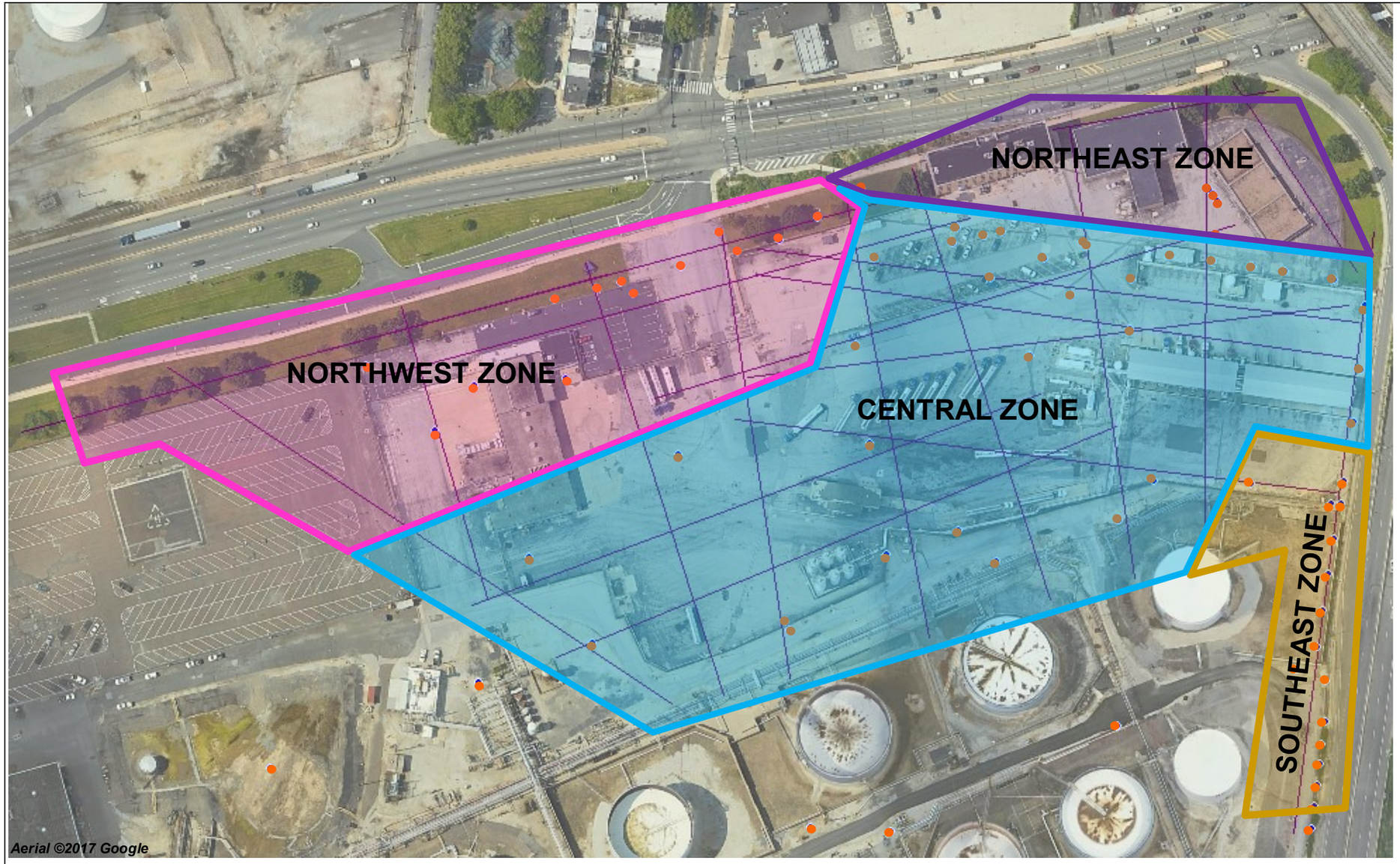

Interpreted Site Zone Designations

LEGEND:

- Monitoring Well

N 0 100 200 Feet

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Potential Site Zones
Belmont Terminal Site
Philadelphia, Pennsylvania

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FIGURE
PV-2
PLAN VIEW FIGURE

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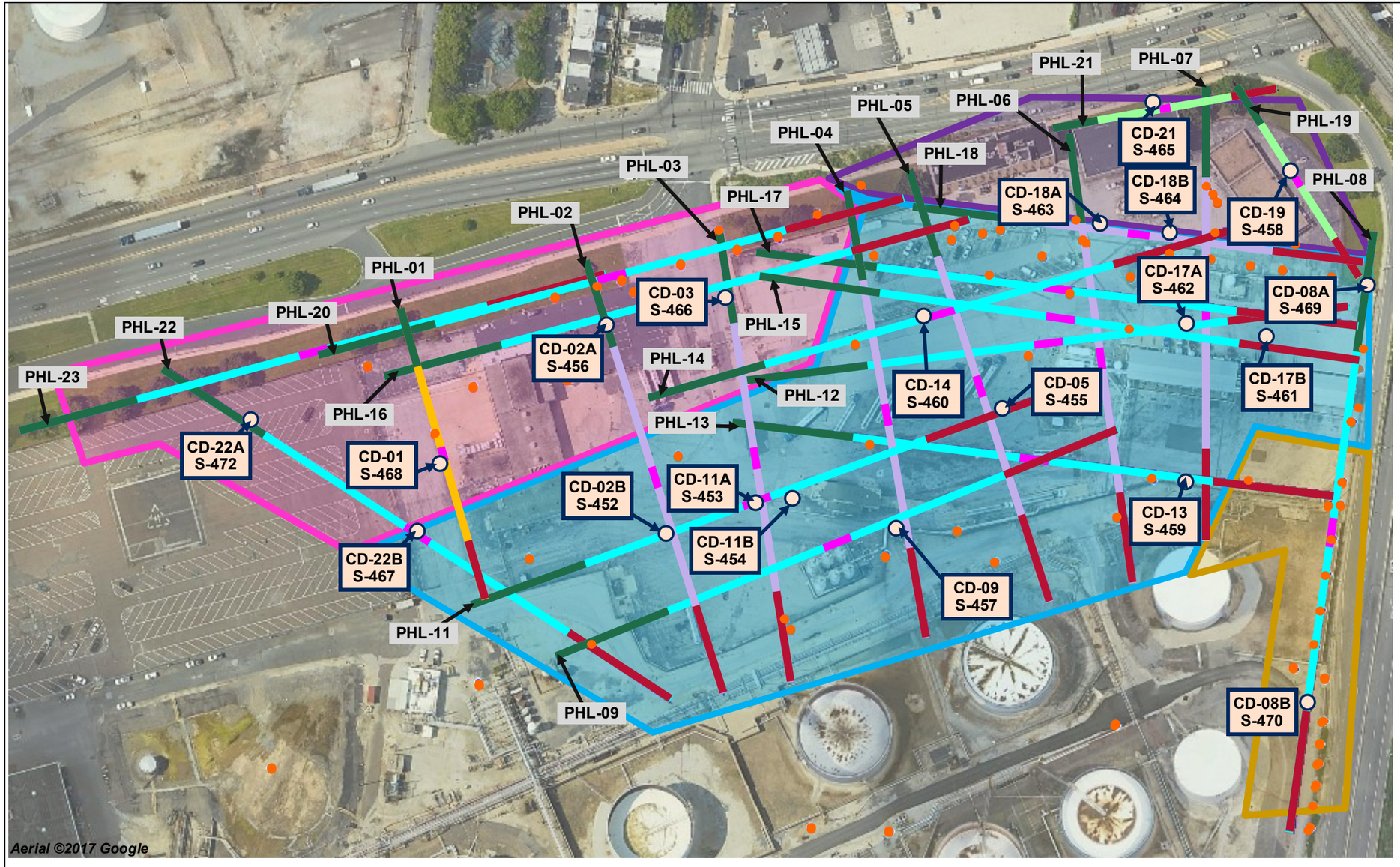

GeoTrax Survey™ Orientation and Designation (see Legend on Figure PV-1)

LEGEND:

- Prior Site Monitoring Well

As Built Confirmation Drilling (CD) Locations (Dec 2020 to March 2021)

- CD-01 S 4-68 — As Built CD Well Location with Soil Boring ID

N 0 100 200 Feet

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As-Built Confirmation Boring Locations
Belmont Terminal Site
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FIGURE
PV-3
PLAN VIEW FIGURE

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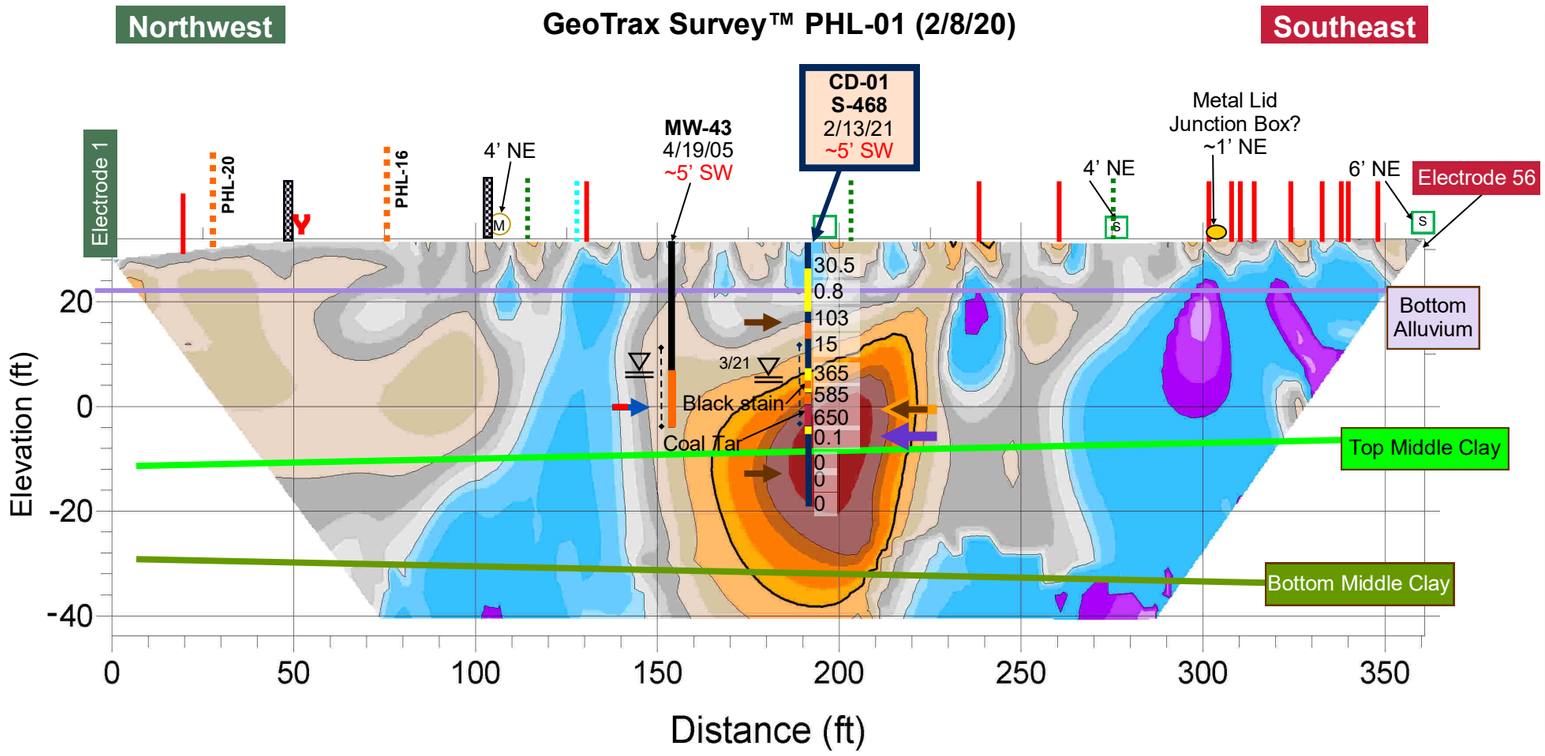
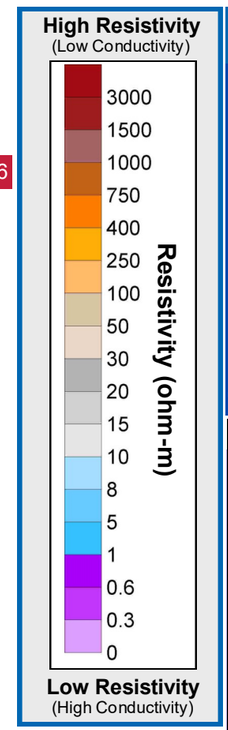
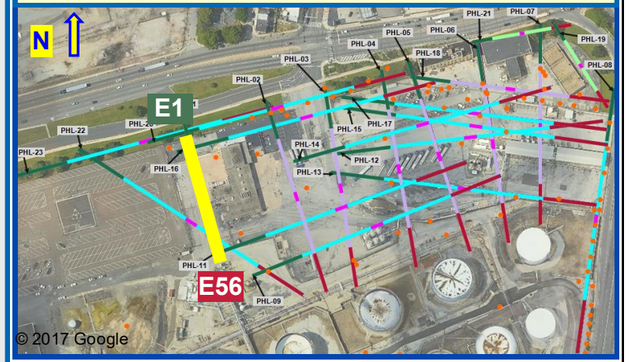




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	**CD-02A**
Boring	**S-456**
Sample Date	2/11/21
Sample Depth ft. BGS	38
Data Set IDs	
# reads for sample (millions)	NA
Bacterial	
Antibiotic resistant	
Fungal	
Protists	
Dark Matter	
Phages	
Virus	
Virulence Factors	
QPCR	
Bacterial Biomass (gene copies / L)	6,200,000

CD Groundwater Grab Results		
Well		**CD-01**
Boring		**S-468**
Sample Date		
Sample Depth ft. BGS		
Parameters µg/L	**MSCs µg/L**	
BENZENE	**5**	NA
TOLUENE	**1000**	
ETHYLBENZENE	**700**	
XYLENES, TOTAL	**10000**	
MTBE	**20**	
1,2,4-TMB	**62**	
>C12-C22		
>C22-C44		
C4-C12-TPH-GRO		
TOTAL ORG. CARBON		
TPH		

CD Groundwater Grab Results		
Well		**CD-01**
Boring		**S-468**
Sample Date		
Sample Depth		
Parameters (µg/L)		
ALKALINITY TO pH 4.5		NA
CALCIUM		
CHLORIDE (AS CL)		
IRON		
MAGNESIUM		
METHANE		
NITROGEN, AMMONIA		
NITROGEN, NITRATE		
POTASSIUM		
SODIUM		
SULFATE (AS SO4)		

CD Soil Sample Results			
Well		**CD-01**	
Boring		**S-468**	
Sample Date		**2/12/21**	**2/16/21**
Sample Depth ft BGS		**15**	**44**
Parameters mg/kg	**MCLs mg/kg**		
BENZENE	330	ND	0.00061 J
TOLUENE	10000	0.047 J	0.00083 J
ETHYLBENZENE	1000	0.053 J	0.00046 J
XYLENES, TOTAL	9100	ND	ND
MTBE	9900	ND	0.048
>C12-C22		85	ND
>C22-C44		12 J	15
C4-C12-TPH-GRO		93	0.19
TPH		97	15

CD Soil Forensics	
Well	**CD-01**
Boring	**S-468**
Sample Date	**3/19/21**
Sample Depth ft BGS	**33**
See Report for full details	Pyrogenic signature likely related to

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GeoTrax Viz™ 2-D Data Integration
Belmont Terminal Site
Philadelphia, Pennsylvania

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FIGURE
1.1
INITIAL CD DATA INTEGRATION

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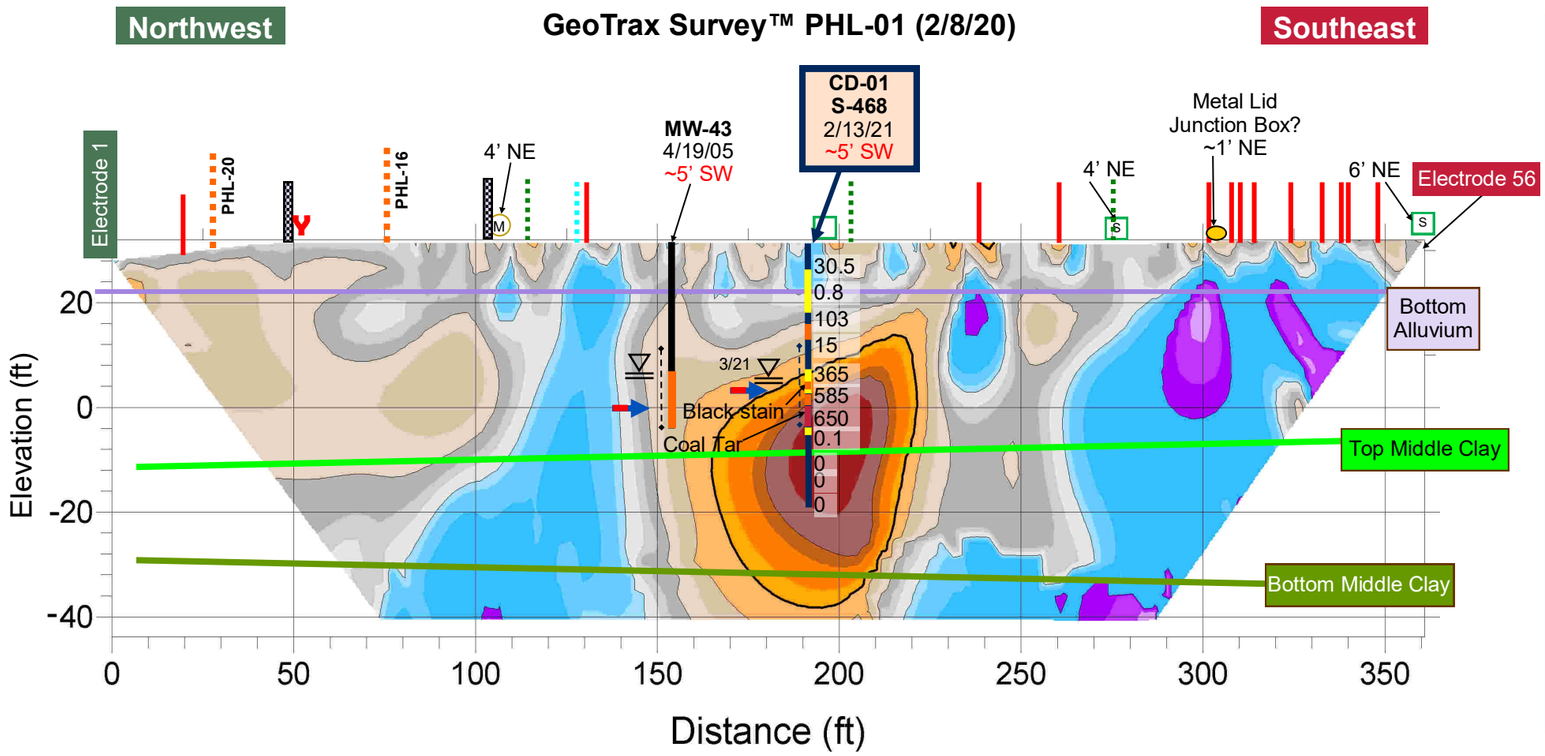
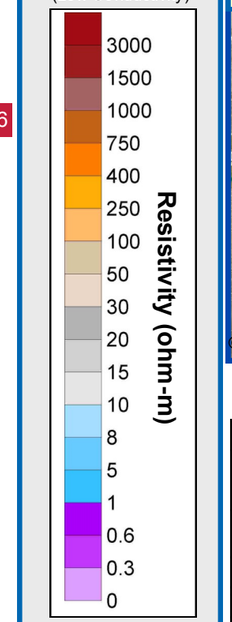
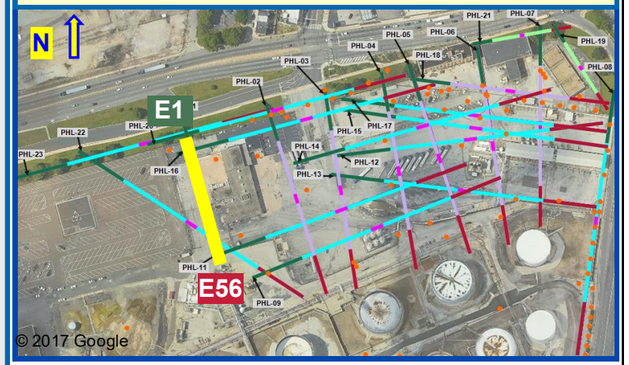




GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results		
Well		MW-43
Sample Date		7/27/18
Parameters (µg/L)	Standards (µg/L)	
BENZENE	**5**	**165**
TOLUENE	**1000**	10.8
ETHYLBENZENE	**700**	191
XYLENES, TOTAL	**10000**	122
MTBE	**20**	1.36
NAPHTHALENE	**100**	**847**
PYRENE	**130**	2.03
ANTHRACENE	**66**	2.28
ISOPROPYLBENZENE	**3500**	46.2
FLUORENE	**1900**	11.4
CHRYSENE	**1.9**	0.941
PHENANTHRENE	**1100**	12.9
LEAD	**5**	ND
1,2,4-TRIMETHYLBENZENE	**62**	51.6
1,2-DIBROMOETHANE	**0.05**	ND
1,2-DICHLOROETHANE (	**5**	ND
1,3,5-TRIMETHYLBENZENE	**1200**	14.6
BENZO(A)ANTHRACENE	**4.9**	0.471
BENZO(A)PYRENE	**0.2**	**0.64**
BENZO(B)FLUORANTHENE	**0.55**	**1.22**
BENZO(G,H,I)PERYLENE	**0.26**	**0.607**

CD Groundwater Sample Results		
Well		CD-01
Boring		S-468
Sample Date		3/24/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**410**
TOLUENE	**1000**	23
ETHYLBENZENE	**700**	400
XYLENES, TOTAL	**10000**	210
MTBE	**20**	13
NAPHTHALENE SW8270D	**100**	**3200**
1,2,4-TMB	**62**	**280**
1,3,5-TMB	**1200**	94
ISOPROPYLBENZENE	**3500**	130
TERT-BUTYL ALCOHOL		360

CD Groundwater Sample Results	
Well	CD-01
Boring	S-468
Sample Date	3/24/21
Parameters µg/L	
ALKALINITY TO pH 4.5	160,000
CALCIUM	33,000
IRON	50,000
METHANE	15,000
SULFATE (AS SO4)	2500 J
TOTAL CARBON	71,000
TOTAL INORGANIC CARBON	55,000
TOTAL KJELDAHL NITROGEN	6,200
TOTAL ORGANIC CARBON	16,000

CD Groundwater Quality Results		
Well		CD-01
Boring		S-468
Sample Date		3/24/21
Parameters	*Units*	
DO	mg/L	1.81
ORP	mV	-178
pH	S.U.	6.99
EC	mS/cm	2.11
Temperature	ºC	18.82
Turbidity	NTU	105

CD-01: Oil globules present on outside of tubing after purge

Groundwater Quality Sample Results		
Well		MW-43
Sample Date		7/27/18
Parameters	*Units*	
DO	mg/L	0
ORP	mV	59
pH	S.U.	6.08
EC	mS/cm	0.803
Temperature	ºC	19.45
Turbidity	NTU	27.1

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FIGURE
1.2
ANALYTICAL DATA INTEGRATION

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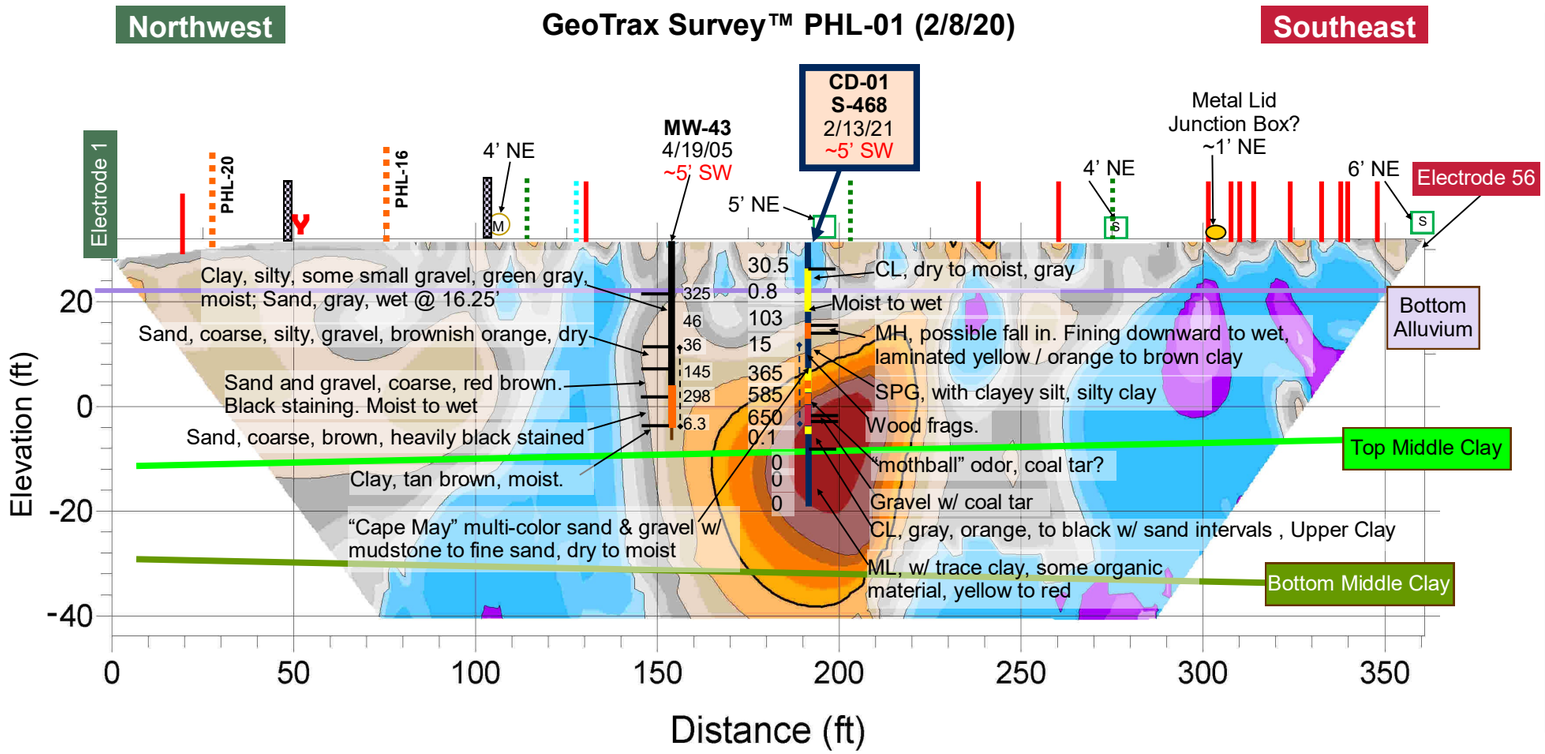

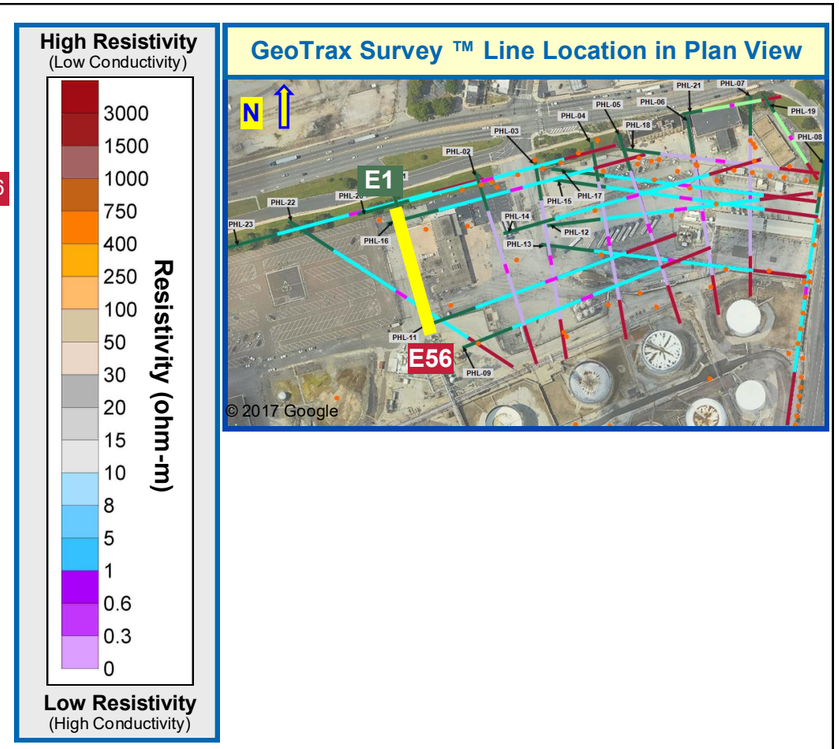

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FIGURE
1.3
GEOLOGY
DATA
INTEGRATION

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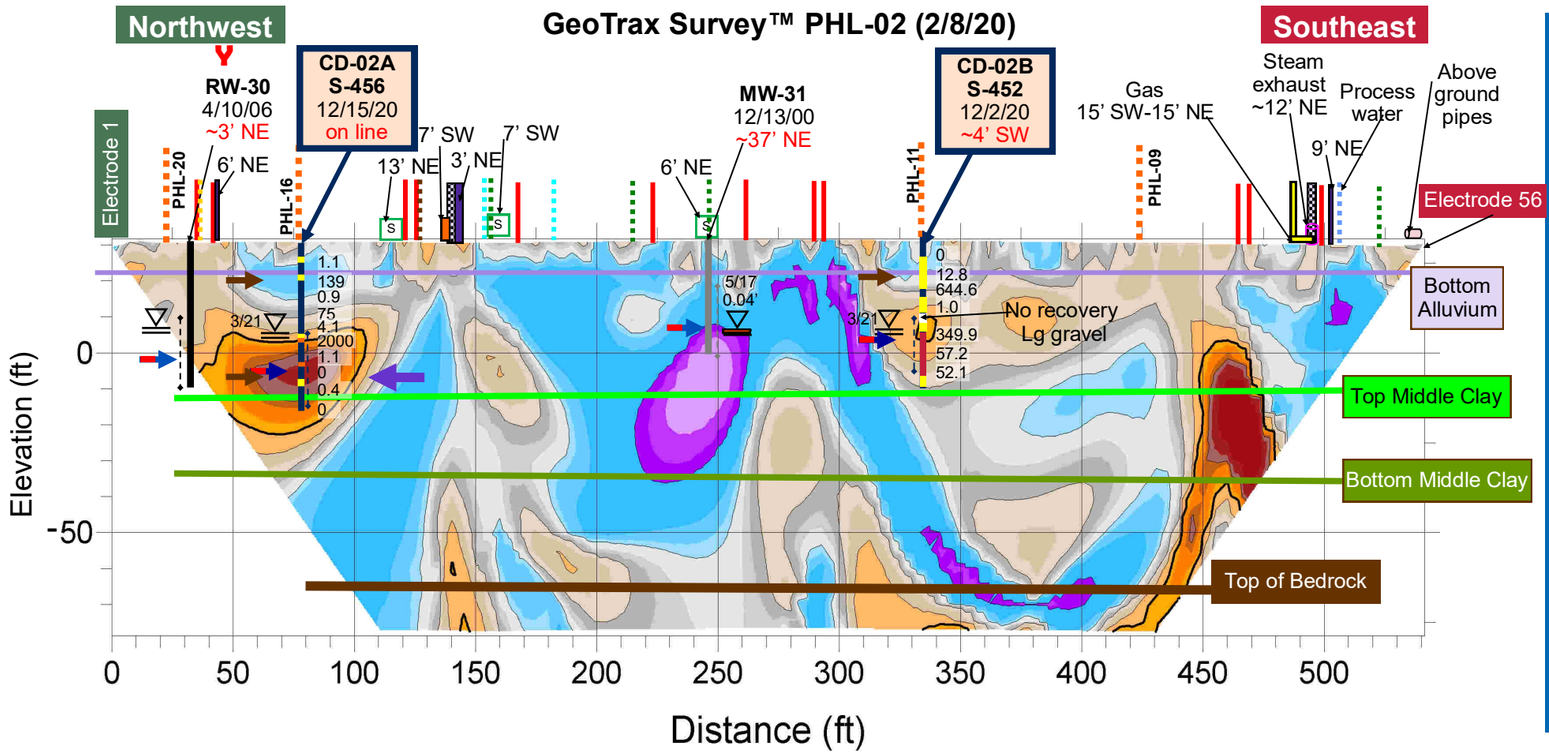
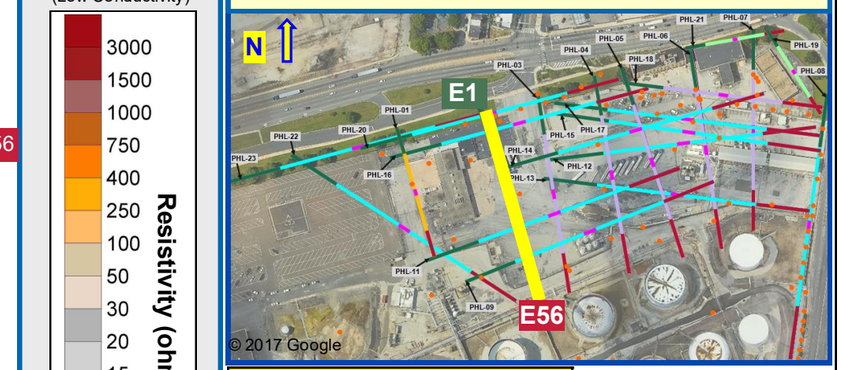
GeoTrax Survey™ PHL-02 (2/8/20)





GeoTrax Survey ™ Line Location in Plan View

CD Groundwater Bio Data	
Well	**CD-02A**
Boring	**S-456**
Sample Date	2/11/21
Sample Depth ft. BGS	38
Data Set IDs	
# reads for sample (millions)	NA
Bacterial	
Antibiotic resistant	
Fungal	
Protists	
Dark Matter	
Phages	
Virus	
Virulence Factors	
QPCR	
Bacterial Biomass (gene copies / L)	6,200,000

CD Groundwater Grab Results

Well		CD-02A	CD-02B
Boring		**S-456**	**S-452**
Sample Date		**12/15/20**	**12/2/20**
Sample Depth ft. BGS		**36**	**28**
Parameters µg/L	**MSCs µg/L**		
BENZENE	**5**	**110**	**20**
TOLUENE	**1000**	9	1.8
ETHYLBENZENE	**700**	6.3	45
XYLENES, TOTAL	**10000**	26 J	120
MTBE	**20**	**98**	ND
1,2,4-TMB	**62**	5.7 J	30
>C12-C22		3300	NA
>C22-C44		970	NA
C4-C12-TPH-GRO		3900	890
TOTAL ORG. CARBON		46000	51000
TPH		4300	NA

CD Groundwater Grab Results

Well	CD-02A	CD-02B
Boring	**S-456**	**S-452**
Sample Date	**12/15/20**	**12/2/20**
Sample Depth	**36**	**28**
Parameters (µg/L)		
ALKALINITY TO pH 4.5	220,000	
CALCIUM	56,000	
CHLORIDE (AS CL)	200,000	NA
IRON	240,000	
MAGNESIUM	48,000	
METHANE	7,900	52
NITROGEN, AMMONIA	4,400	
NITROGEN, NITRATE	300 J H	
POTASSIUM	15,000	NA
SODIUM	150,000	
SULFATE (AS SO4)	24,000	

CD Soil Sample Results

Well /Boring		CD-02A		CD-02B
		S-456		S-452
Sample Date		**12/14/20**	**12/15/20**	**12/1/20**
Sample Depth ft BGS		**10**	**37**	**10**
Parameters mg/kg	**MCLs mg/kg**			
BENZENE	330	ND	0.021	0.0042 H
TOLUENE	10000	ND	0.0013 J	0.00068 J H
ETHYLBENZENE	1000	ND	0.0016 J	ND H
XYLENES, TOTAL	9100	ND	0.0041 J	ND H
MTBE	9900	ND	0.012	0.0024 J H
>C12-C22		1600	ND	ND
>C22-C44		150	6.3 J	ND
C4-C12-TPH-GRO		3400	1.7	0.68 H
TPH		1800	6.3 J	ND

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GeoTrax Viz™ 2-D Data Integration
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FIGURE
2.1
INITIAL CD DATA INTEGRATION

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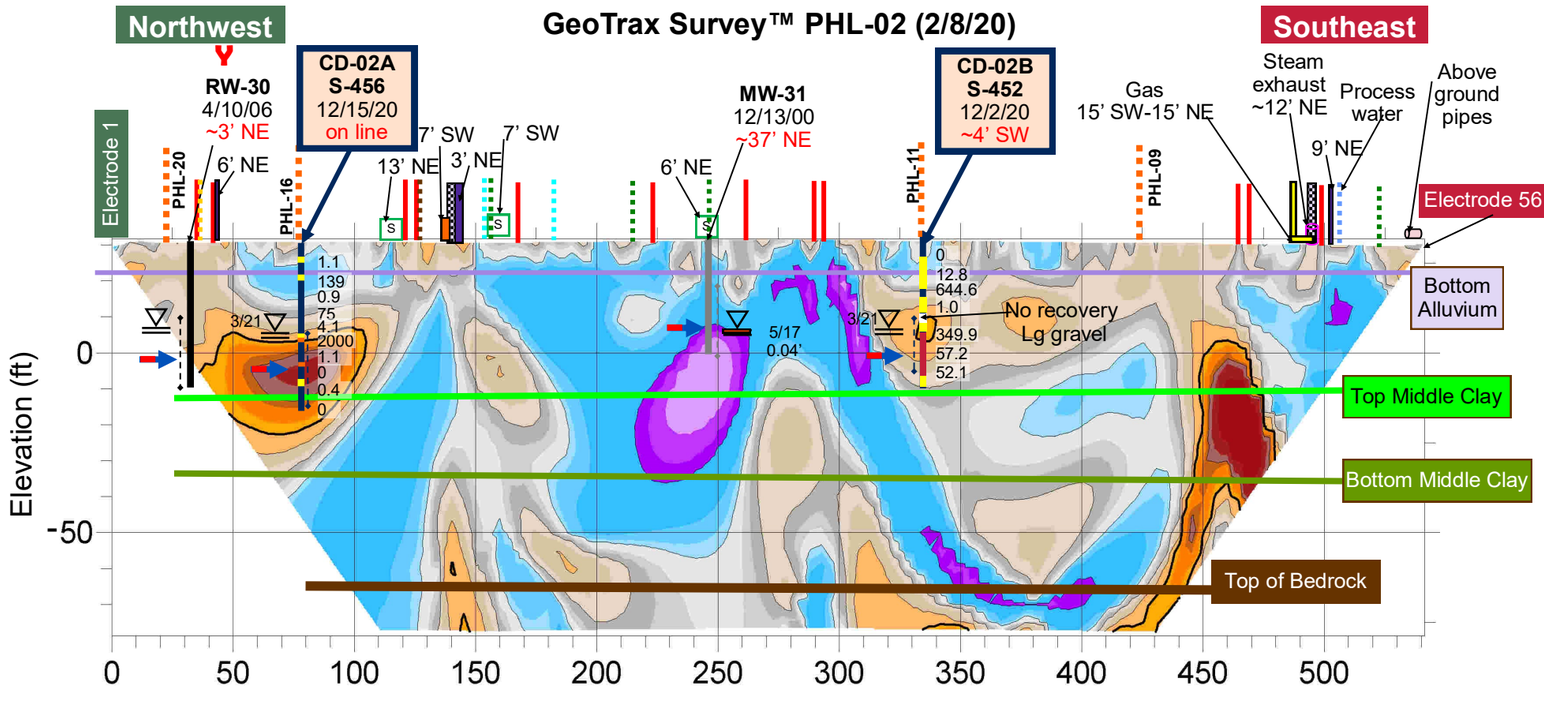
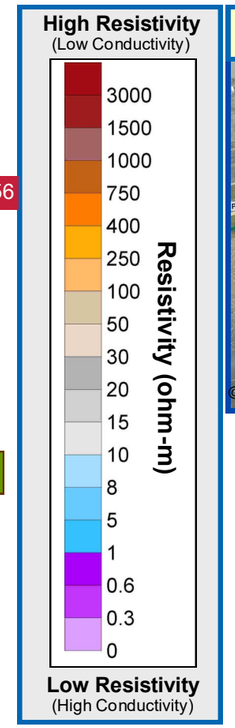
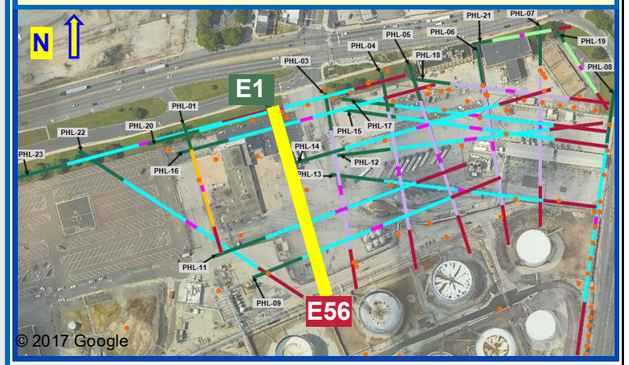




GeoTrax Survey ™ Line Location in Plan View



Sucralose	
Well	CD-02A
Boring	S-456
Sample Date	5/17/21
Sucralose ng/L	833

CD Groundwater Sample Results			
Well		CD-02A	CD-02B
Boring		S-456	S-452
Sample Date		3/24/21	3/26/21
Parameters µg/L	MCLs µg/L		
BENZENE	5	220	3200
TOLUENE	1000	14	57
ETHYLBENZENE	700	9.6	760
XYLENES, TOTAL	10000	10	1600
MTBE	20	33	1000
NAPHTHALENE	100	7.1	1300
1,2,4-TMB	62	6.5	320
1,3,5-TMB	1200	4.6 J	110
ISOPROPYLBENZENE	3500	44	83
TERT-BUTYL ALCOHOL		1200	22000

CD Groundwater Sample Results		
Well	CD-02A	CD-02B
Boring	S-456	S-452
Sample Date	3/24/21	3/26/21
Parameters µg/L		
ALKALINITY TO pH 4.5	150,000	290,000
CALCIUM	41,000	39,000
IRON	29,000	50,000
METHANE	12,000	14,000
SULFATE (AS SO4)	9,000	ND
TOTAL CARBON	48,000	120,000
TOTAL INORGANIC CARBON	38,000	97,000
TOTAL KJELDAHL NITROGEN	2,000	3,400
TOTAL ORGANIC CARBON	9,800	23,000

CD Groundwater Quality Results			
Well		CD-02A	CD-02B
Boring		S-456	S-452
Sample Date		3/24/21	3/26/21
Parameters	*Units*		
DO	mg/L	0.06	0.94
ORP	mV	-37	-125
pH	S.U.	5.89	6.64
EC	mS/cm	1.4	1.32
Temperature	ºC	18.21	21.81
Turbidity	NTU	228	43

Groundwater Quality Sample Results			
Well		RW-30	MW-31
Sample Date		7/31/18	7/25/18
Parameters	*Units*		
DO	mg/L	1.92	0
ORP	mV	-143	0
pH	S.U.	6.57	6.36
EC	mS/cm	1.83	1.4
Temperature	ºC	20.07	24.98
Turbidity	NTU	218	357

Well Product Data	
Well	MW-31
Sample Date	5/17/17
Product Description	65% GASOLINE, 35% MIDDLE DISTILLATE

Groundwater Sample Results			
Well		RW-30	MW-31
Sample Date		7/31/18	7/25/18
Parameters (µg/L)	Standards (µg/L)		
BENZENE	5	375	428
TOLUENE	1000	11.4	37.2
ETHYLBENZENE	700	ND	62.2
XYLENES, TOTAL	10000	ND	96.2
MTBE	20	90.1	ND
NAPHTHALENE	100	50.2	25.4
PYRENE	130	5.92	12.8
ANTHRACENE	66	6.82	6.75
ISOPROPYLBENZENE	3500	55.3	221
FLUORENE	1900	26	47.6
CHRYSENE	1.9	1.58	2.75
PHENANTHRENE	1100	31.4	48.4
LEAD	5	ND	ND
1,2,4-TMB	62	40.8	366
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TMB	1200	18.2	485
BENZO(A)ANTHRACENE	4.9	1.57	3.23
BENZO(A)PYRENE	0.2	1.16	3.51
BENZO(B)FLUORANTHENE	0.55	1.22	6.05
BENZO(G,H,I)PERYLENE	0.26	0.536	3.43

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FIGURE
2.2
ANALYTICAL DATA INTEGRATION

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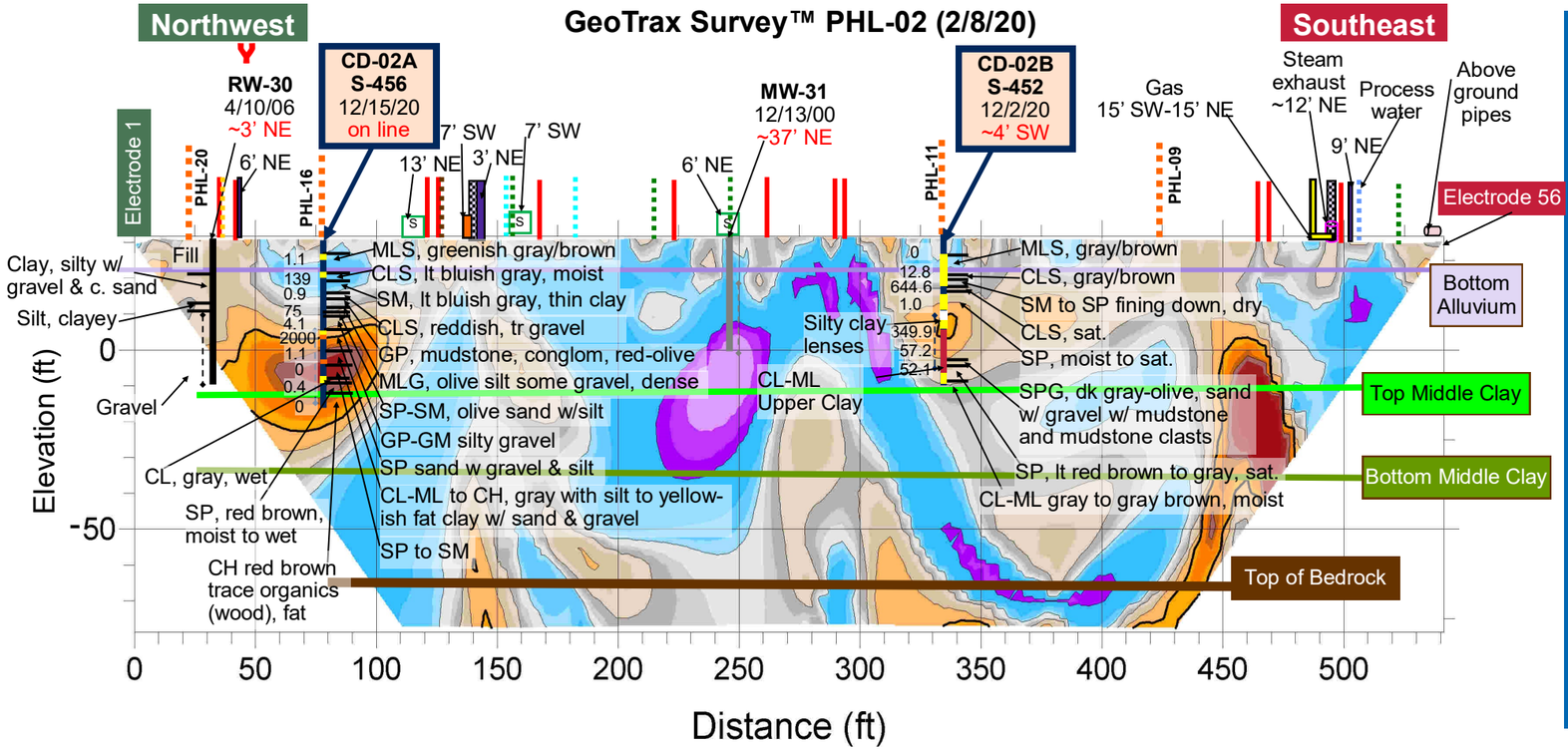
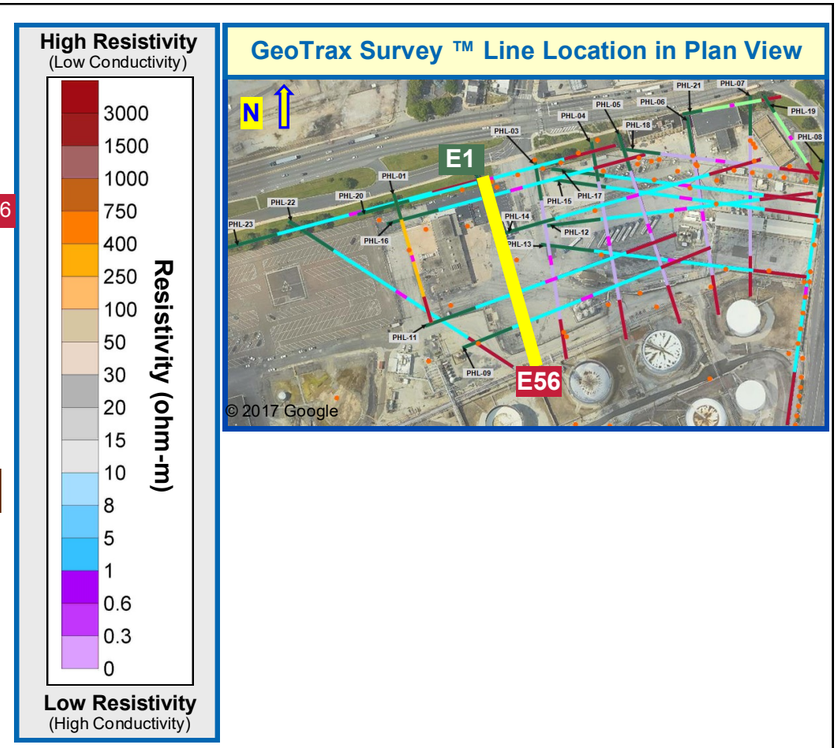
GeoTrax Survey™ PHL-02 (2/8/20)





GeoTrax Survey ™ Line Location in Plan View

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FIGURE
2.3
GEOLOGY
DATA
INTEGRATION

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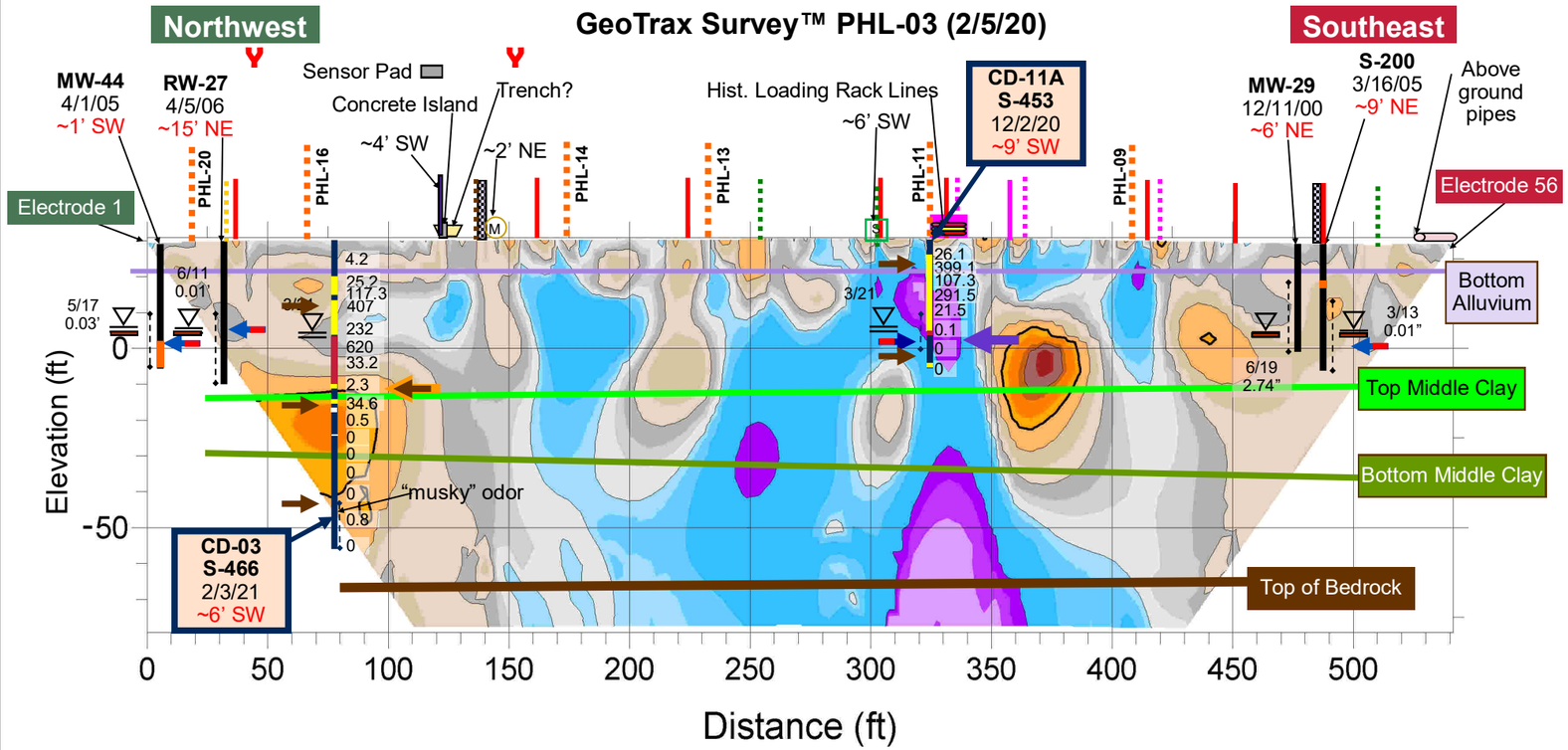

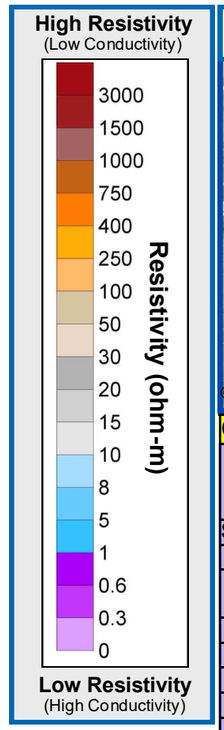

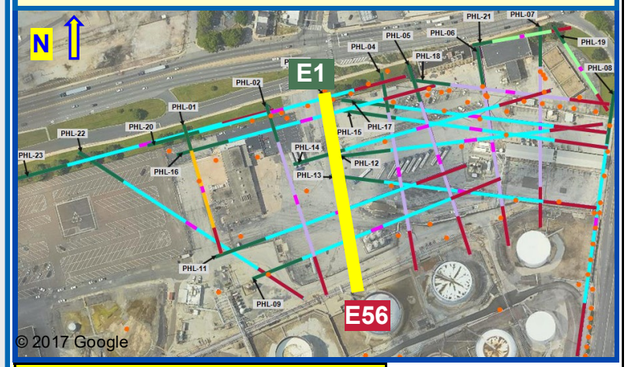

CD Groundwater Bio Data		
Well		**CD-11A**
Boring		**S-453**
Sample Date		2/11/21
Sample Depth ft. BGS		29
Data Set IDs		
# reads for sample (millions)		5.812
Bacterial		73
Antibiotic resistant		1
Fungal		6
Protists		2
Dark Matter		174
Phages		1
Virus		1
Virulence Factors		4
QPCR		
Bacterial Biomass (gene copies / L)		2,500,000,000

CD Groundwater Grab Results			
Well		**CD-03**	**CD-11A**
Boring		**S-466**	**S-453**
Sample Date			**12/3/20**
Sample Depth ft. BGS			**29**
Parameters µg/L	**MSCs µg/L**		
BENZENE	**5**	NA	**26**
TOLUENE	**1000**		ND
ETHYLBENZENE	**700**		89
XYLENES, TOTAL	**10000**		140
MTBE	**20**		1.7 J
1,2,4-TMB	**62**		130
>C12-C22			7500 B
>C22-C44			ND
C4-C12-TPH-GRO			2900
TOTAL ORG. CARBON			53000
TPH			7500

CD Groundwater Grab Results		
Well	**CD-03**	**CD-11A**
Boring	**S-466**	**S-453**
Sample Date		**12/3/20**
Sample Depth		**29**
Parameters (µg/L)		
ALKALINITY TO pH 4.5	NA	260,000
CALCIUM		62,000
CHLORIDE (AS CL)		94,000
IRON		440,000
MAGNESIUM		48,000
METHANE		140
NITROGEN, AMMONIA		660 J
NITROGEN, NITRATE		2,700
POTASSIUM		16,000
SODIUM		170,000
SULFATE (AS SO4)		65,000

CD Soil Sample Results						
Well /Boring		**CD-03 S-466**			**CD-11A S-453**	
Sample Date		**1/28/21**	**1/28/21**	**1/29/21**	**12/2/20**	**12/3/20**
Sample Depth ft BGS		**18**	**46**	**72**	**8**	**32**
Parameters mg/kg	**MCLs mg/kg**					
BENZENE	330	0.93	1.8	ND	0.29 J	0.66 H
TOLUENE	10000	0.18 J	0.097 J	ND	ND	ND
ETHYLBENZENE	1000	3.3	ND	ND	0.029 J	0.0075
XYLENES, TOTAL	9100	11	ND	ND	ND	0.0016 J
MTBE	9900	ND	0.23 J	ND	ND	0.24
>C12-C22		120	ND	ND	3000	ND
>C22-C44		56	6.4 J	16	ND	ND
C4-C12-TPH-GRO		650	3.9 J	5.6 *	350 H	4
TPH		180	6.4 J	16	3000	ND

CD Soil Forensics	
Well	**CD-03**
Boring	**S-466**
Sample Date	1/29/21
Sample Depth ft BGS	41
See Report for full details	Petroleum that spans light distillate range to

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FIGURE
3.1
INITIAL CD DATA INTEGRATION

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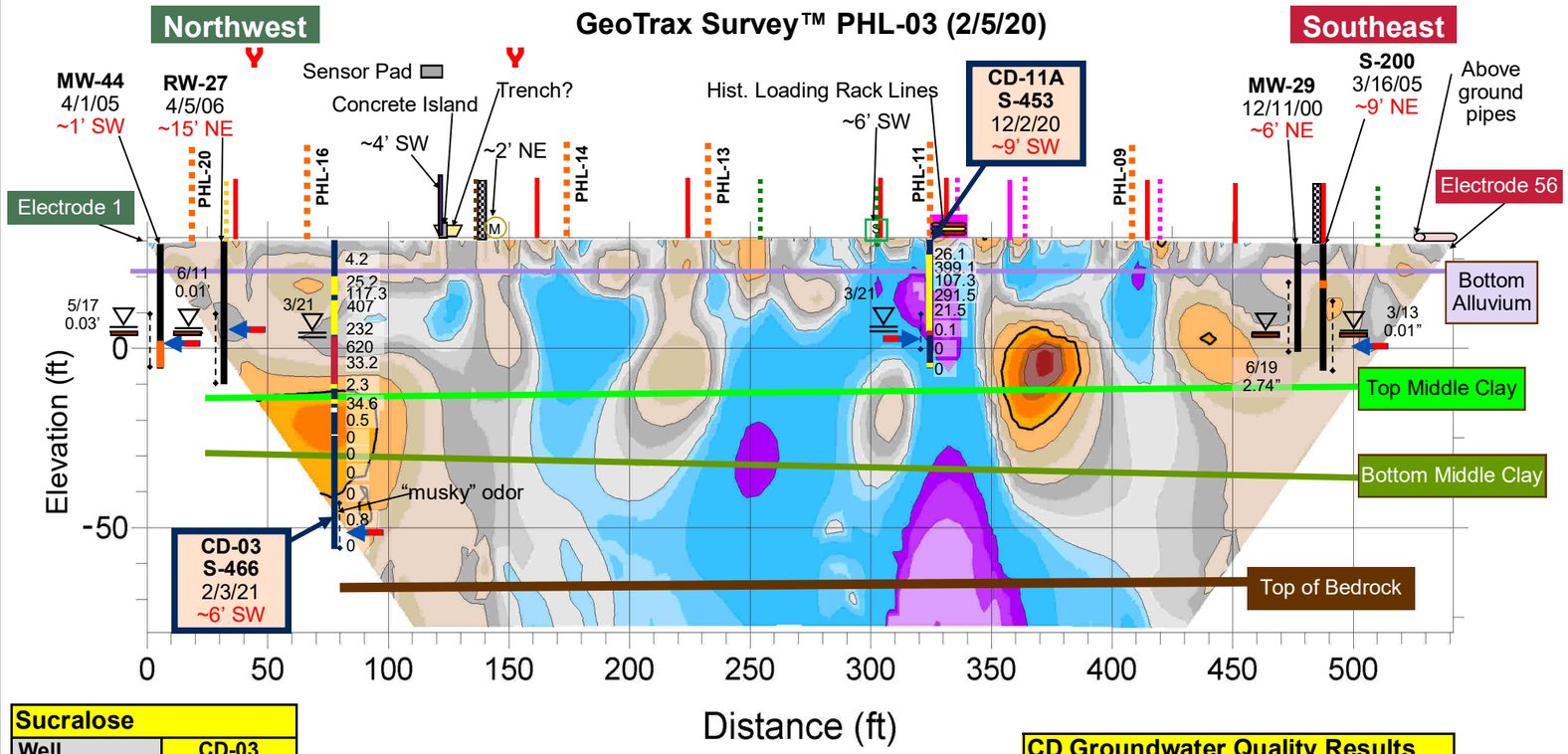

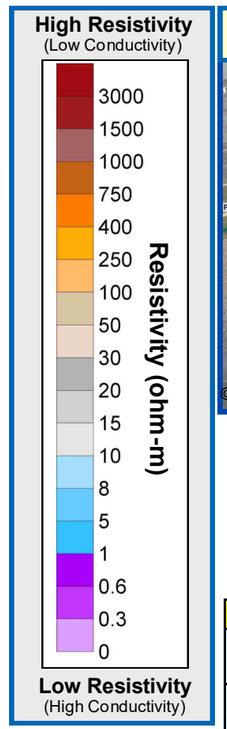

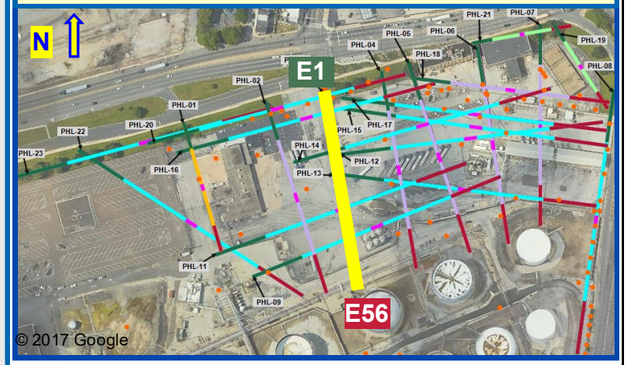

Well Product Data

Well	MW-44	RW-27	S-200
Sample Date	5/8/17	6/6/11	3/25/13
Product Description	70% GASOLINE, 30% MIDDLE DISTILLATE	70% GASOLINE, 30% MIDDLE DISTILLATE	60% GASOLINE, 40% MIDDLE DISTILLATE

Groundwater Sample Results

Well		MW-44	RW-27	S-200
Sample Date		11/12/19	8/1/18	7/25/18
Parameters (µg/L)	Stds (µg/L)			
BENZENE	**5**	**3000**	**3270**	**7600**
TOLUENE	**1000**	320	43	108
ETHYLBENZENE	**700**	500	568	585
XYLENES, TOTAL	**10000**	3800	1080	1300
MTBE	**20**	**50**	**4340**	**1360**
NAPHTHALENE	**100**	**120**	**2340**	**1380**
PYRENE	**130**	9	2.26	10.6
ANTHRACENE	**66**	2	2.85	9.24
ISOPROPYLBENZENE	**3500**	22 J	77.7	35.2
FLUORENE	**1900**	6	25.2	36.5
CHRYSENE	**1.9**	**7**	0.309	**3.32**
PHENANTHRENE	**1100**	12	23	47.2
LEAD	**5**	7.1	ND	ND
1,2,4-TMB	**62**	**690**	**933**	**831**
1,2-DIBROMOETHANE	**0.05**	ND	ND	ND
1,2-DICHLOROETHANE	**5**	ND	ND	ND
1,3,5-TMB	**1200**	220	64.8	344
BENZO(A)ANTHRACENE	**4.9**	3	0.347	3.11
BENZO(A)PYRENE	**0.2**	**4**	0.187	**1.85**
BENZO(B)FLUORANTHENE	**0.55**	**8**	0.244	**2.54**
BENZO(G,H,I)PERYLENE	**0.26**	**4**	0.145	**0.719**

Sucralose

Well	CD-03
Boring	S-466
Sample Date	5/18/21
Sucralose ng/L	ND

CD Groundwater Quality Results

Well		CD-03	CD-11A
Boring		S-466	S-453
Sample Date		3/24/21	3/26/21
Parameters	*Units*		
DO	mg/L	0.15	0.52
ORP	mV	-12	-118
pH	S.U.	5.62	6.52
EC	mS/cm	0.979	1.34
Temperature	°C	18.09	21.26
Turbidity	NTU	12	7.5

CD Groundwater Sample Results

Well		CD-03	CD-11A
Boring		S-466	S-453
Sample Date		3/24/21	3/26/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	18	3800
TOLUENE	**1000**	1.4	50
ETHYLBENZENE	**700**	10	1300
XYLENES, TOTAL	**10000**	35	1800
MTBE	**20**	0.64 J	50
NAPHTHALENE	**100**	57	300
1,2,4-TMB	**62**	26	690
1,3,5-TMB	**1200**	8	220
ISOPROPYLBENZENE	**3500**	2 J	66
TERT-BUTYL ALCOHOL		ND	ND

CD Groundwater Sample Results

Well	CD-03	CD-11A
Boring	S-466	S-453
Sample Date	3/24/21	3/26/21
Parameters µg/L		
ALKALINITY TO pH 4.5	140,000	150,000
CALCIUM	56,000	43,000
IRON	31,000	74,000
METHANE	14	17,000
SULFATE (AS SO4)	230,000	7000 FH
TOTAL CARBON	44,000	75,000
TOTAL INORGANIC CARBON	41,000	56,000
TOTAL KJELDAHL NITROGEN	ND	580 J
TOTAL ORGANIC CARBON	3,200	19,000

Groundwater Quality Sample Results

Well		MW-44	RW-27	S-200
Sample Date		7/1/19	8/1/18	7/25/18
Parameters	*Units*			
DO	mg/L	0.61	0	0
ORP	mV	-30	-91	-35
pH	S.U.	5.53	6.66	6.62
EC	mS/cm	1.11	2.3	2.82
Temperature	°C	21.1	19.14	20.79
Turbidity	NTU	30.7	91.3	10.5

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FIGURE
3.2
ANALYTICAL DATA INTEGRATION

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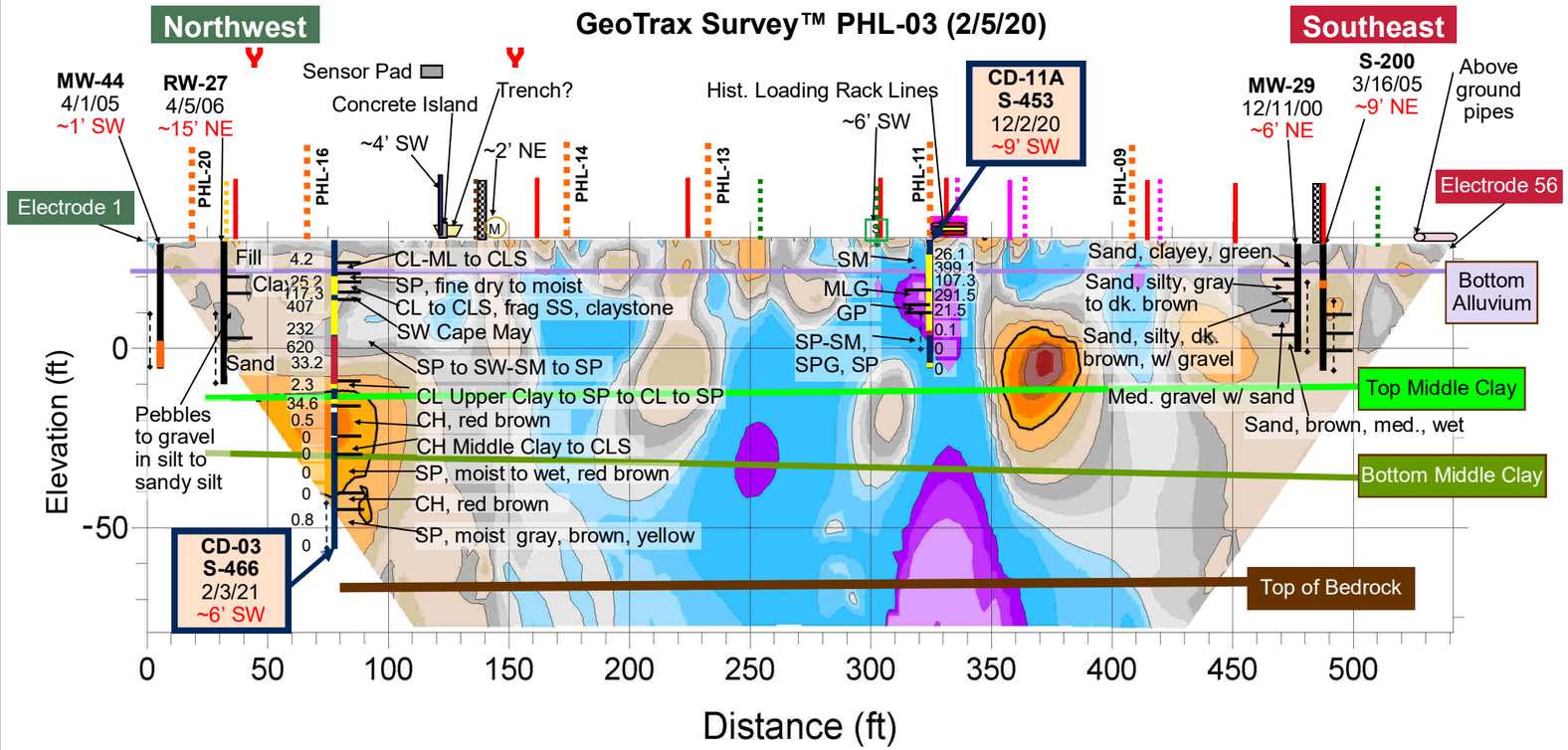

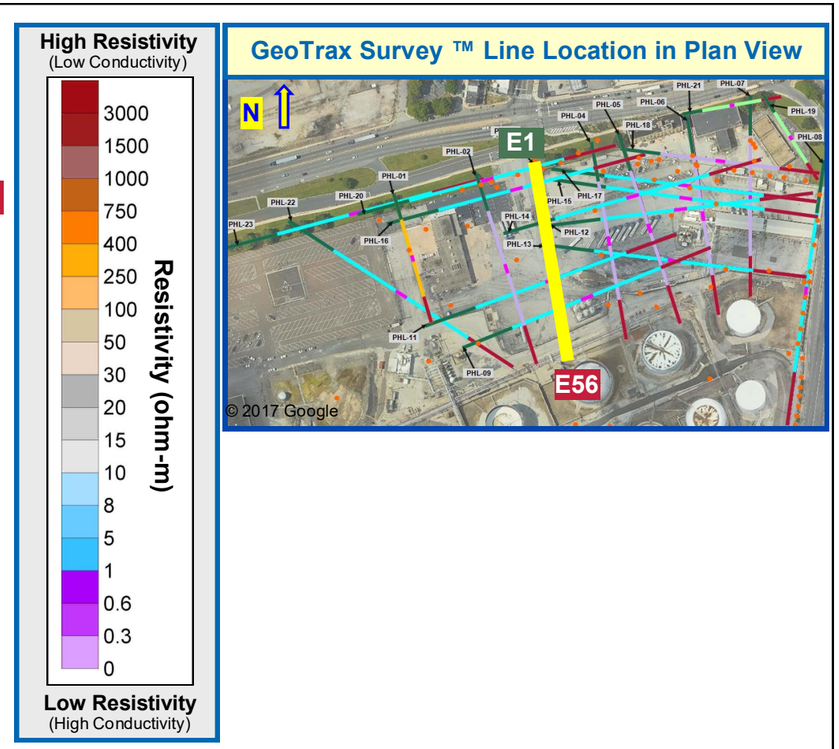

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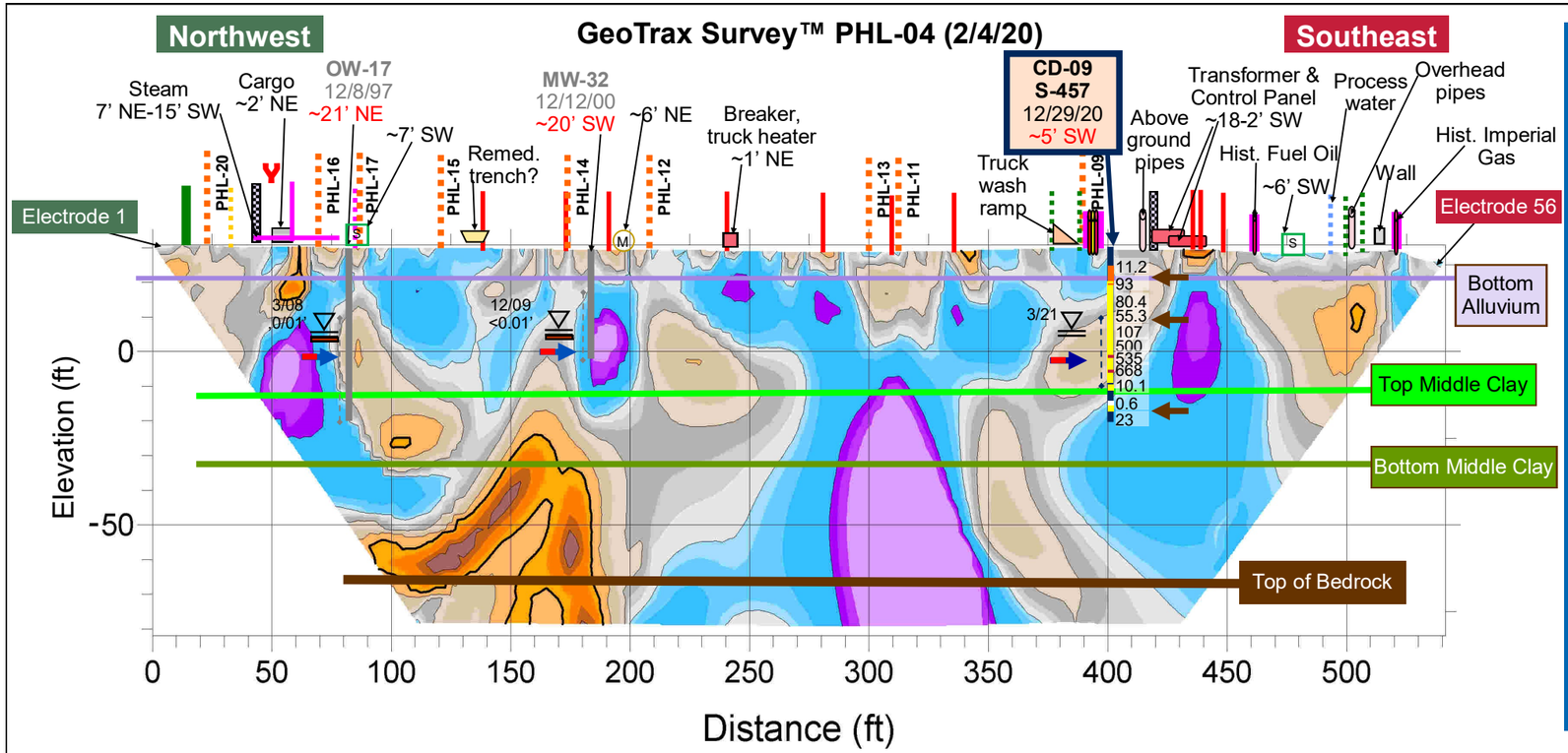

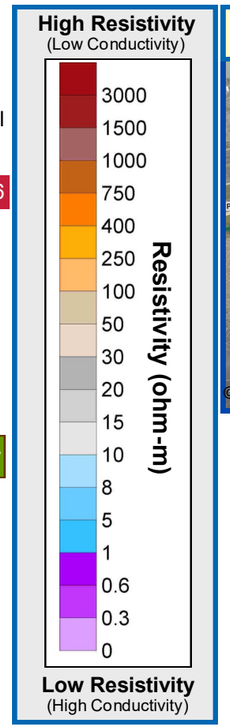

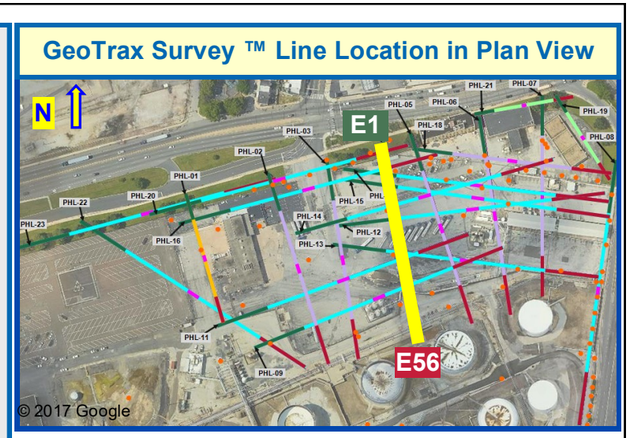

CD Groundwater Grab Results		
Well		CD-09
Boring		S-457
Sample Date		12/2/20
Sample Depth ft. BGS		32
Parameters µg/L	MSCs µg/L	
BENZENE	**5**	**560**
TOLUENE	**1000**	80
ETHYLBENZENE	**700**	130
XYLENES, TOTAL	**10000**	470
MTBE	**20**	6.7
1,2,4-TMB	**62**	**82**
>C12-C22		NA
>C22-C44		NA
C4-C12-TPH-GRO		2900
TOTAL ORG. CARBON		210000
TPH		NA

CD Groundwater Grab Results	
Well	CD-09
Boring	S-457
Sample Date	12/2/20
Sample Depth	32
Parameters (µg/L)	
ALKALINITY TO pH 4.5	NA
CALCIUM	38,000
CHLORIDE (AS CL)	110,000
IRON	10,000
MAGNESIUM	9,400
METHANE	81
NITROGEN, AMMONIA	NA
NITROGEN, NITRATE	5,600
POTASSIUM	3,900
SODIUM	76,000
SULFATE (AS SO4)	150,000

CD Soil Sample Results				
Well /Boring		CD-09 S-457		
Sample Date		12/28/20	12/16/20	12/29/20
Sample Depth ft BGS		8	22	47
Parameters mg/kg	MCLs mg/kg			
BENZENE	330	ND	0.23 J	6.6
TOLUENE	10000	ND	0.094 J	ND
ETHYLBENZENE	1000	ND	0.56	ND
XYLENES, TOTAL	9100	ND	0.45 J	ND
MTBE	9900	ND	ND	2.9
>C12-C22		1100	390	ND
>C22-C44		53 J	7.3 J	9.2 J
C4-C12-TPH-GRO		320	680	16
TPH		1200	400	9.2 J

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FIGURE
4.1
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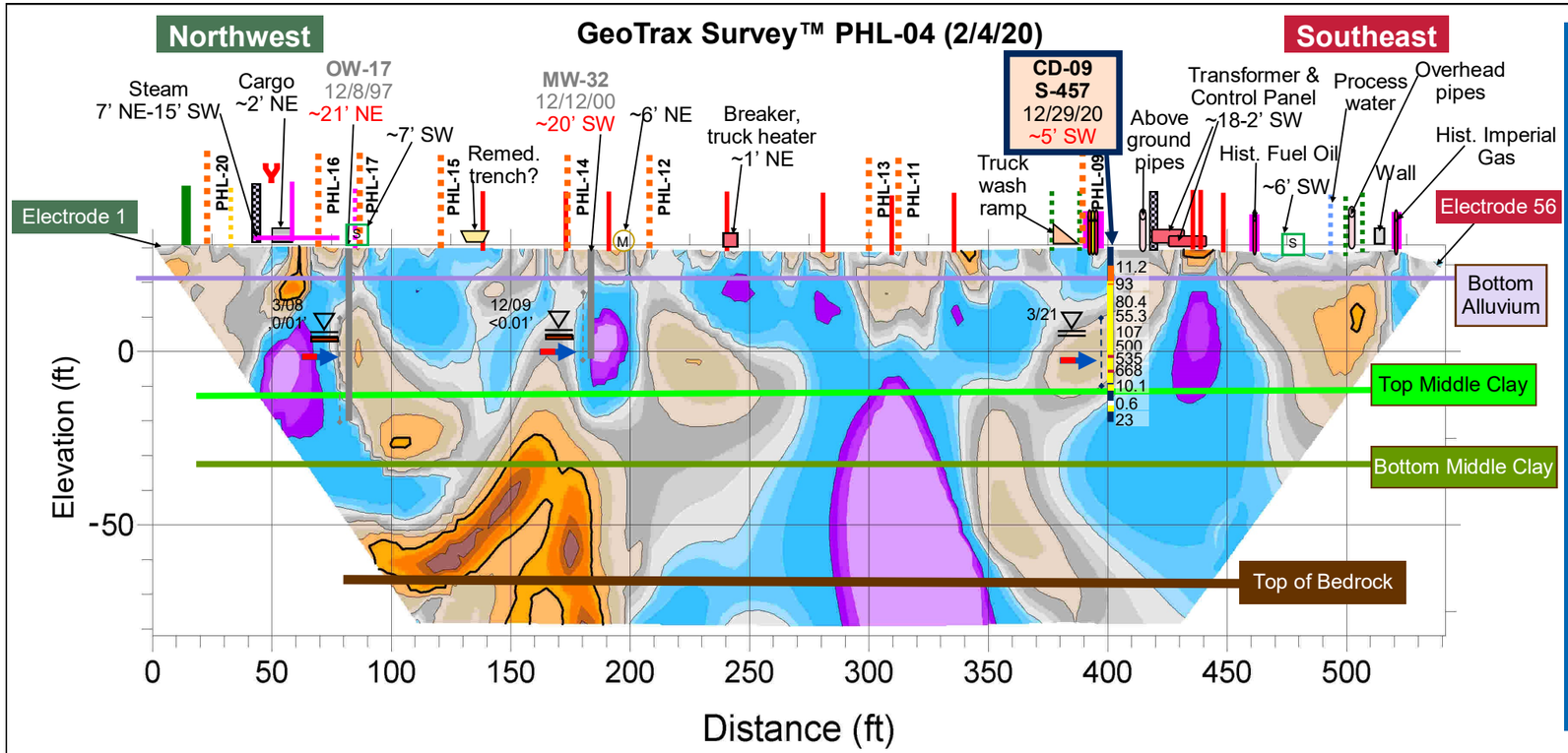
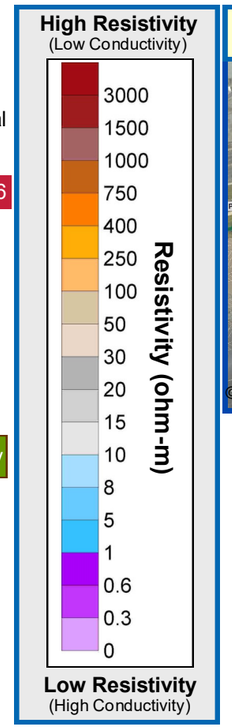
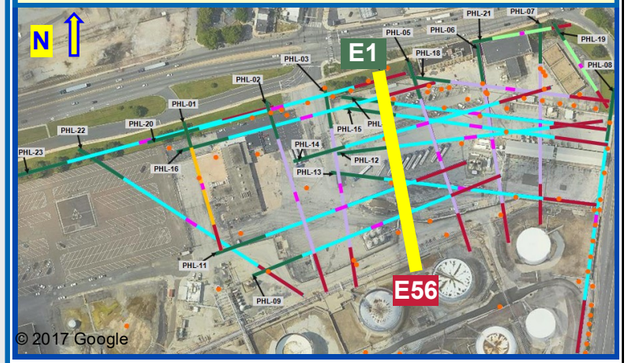




GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results

Well		OW-17	MW-32
Sample Date		7/30/18	7/30/18
Parameters (µg/L)	Stds (µg/L)		
BENZENE	5	ND	**19.2**
TOLUENE	1000	ND	3.37
ETHYLBENZENE	700	ND	196
XYLENES, TOTAL	10000	ND	351
MTBE	20	**54.8**	**114**
NAPHTHALENE	100	82.2	29
PYRENE	130	7.81	3.34
ANTHRACENE	66	8.25	0.306
ISOPROPYLBENZENE	3500	81	20.9
FLUORENE	1900	28.1	0.367
CHRYSENE	1.9	1.51	**2.66**
PHENANTHRENE	1100	36.8	1.71
LEAD	5	2.31	ND
1,2,4-TRIMETHYLBENZENE	62	ND	**372**
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TRIMETHYLBENZENE	1200	ND	133
BENZO(A)ANTHRACENE	4.9	1.42	1.1
BENZO(A)PYRENE	0.2	**1.1**	**1.98**
BENZO(B)FLUORANTHENE	0.55	**1.51**	**4.29**
BENZO(G,H,I)PERYLENE	0.26	**0.571**	**2.4**

CD Groundwater Sample Results

Well		CD-09
Boring		S-457
Sample Date		3/26/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**18000**
TOLUENE	**1000**	770
ETHYLBENZENE	**700**	**1400**
XYLENES, TOTAL	**10000**	3500
MTBE	**20**	**3700**
NAPHTHALENE	**100**	**3100**
1,2,4-TMB	**62**	**550**
1,3,5-TMB	**1200**	150
ISOPROPYLBENZENE	**3500**	53
TERT-BUTYL ALCOHOL		23000

CD Groundwater Sample Results

Well	CD-09
Boring	S-457
Sample Date	3/26/21
Parameters µg/L	
ALKALINITY TO pH 4.5	240,000
CALCIUM	77,000
IRON	36,000
METHANE	14,000
SULFATE (AS SO4)	2200 J
TOTAL CARBON	140,000
TOTAL INORGANIC CARBON	96,000
TOTAL KJELDAHL NITROGEN	970 J
TOTAL ORGANIC CARBON	44,000

CD Groundwater Quality Results

Well		CD-09
Boring		S-457
Sample Date		3/26/21
Parameters	*Units*	
DO	mg/L	0.88
ORP	mV	-144
pH	S.U.	6.82
EC	mS/cm	1.91
Temperature	ºC	18.38
Turbidity	NTU	37.1

Well Product Data

Well	OW-17	MW-32
Sample Date	3/20/08	12/31/09
Product Description	90% GASOLINE, 10% MIDDLE DISTILLATE	Not Available

Groundwater Quality Sample Results

Well		OW-17	MW-32
Sample Date		7/30/18	7/30/18
Parameters	*Units*		
DO	mg/L	0	0
ORP	mV	-2	-21
pH	S.U.	6.46	6.58
EC	mS/cm	2.66	0.246
Temperature	ºC	21.43	22.24
Turbidity	NTU	15.8	0

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FIGURE
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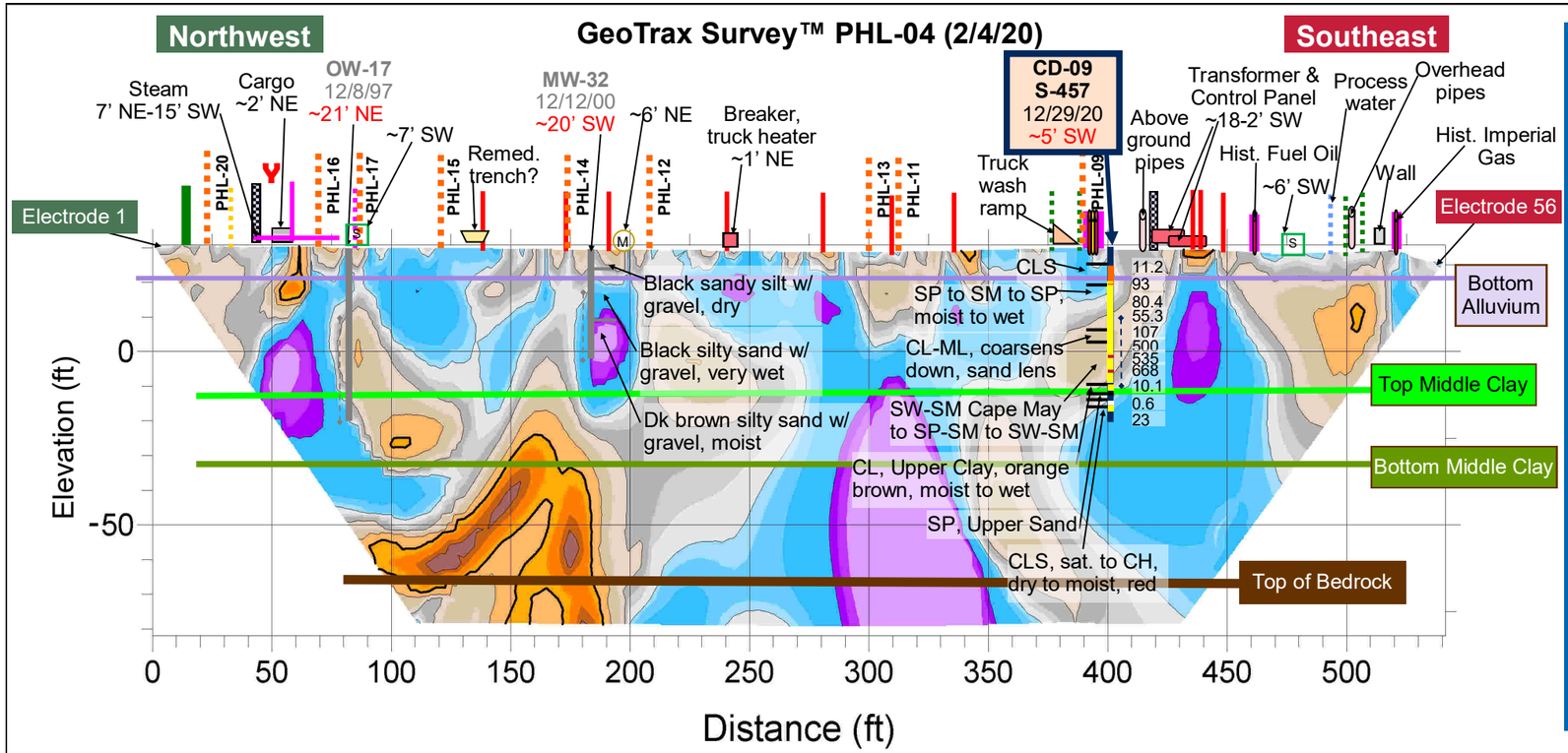
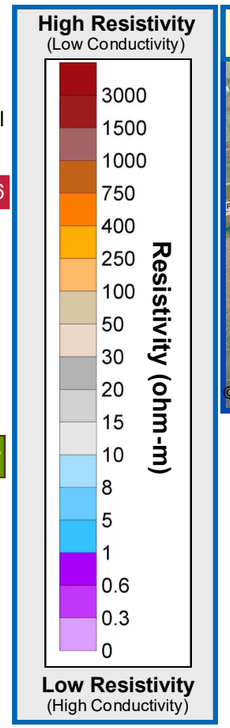
GeoTrax Survey™ PHL-04 (2/4/20)





GeoTrax Survey ™ Line Location in Plan View

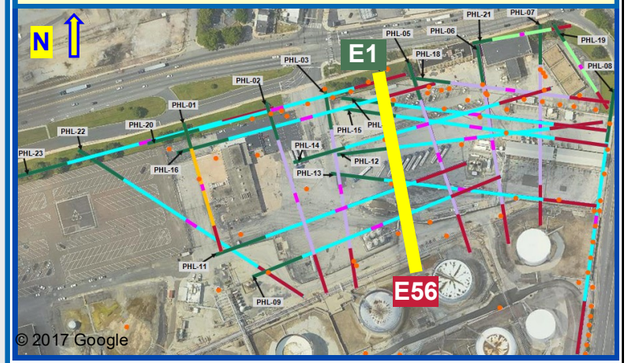


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FIGURE
4.3
GEOLOGY
DATA
INTEGRATION

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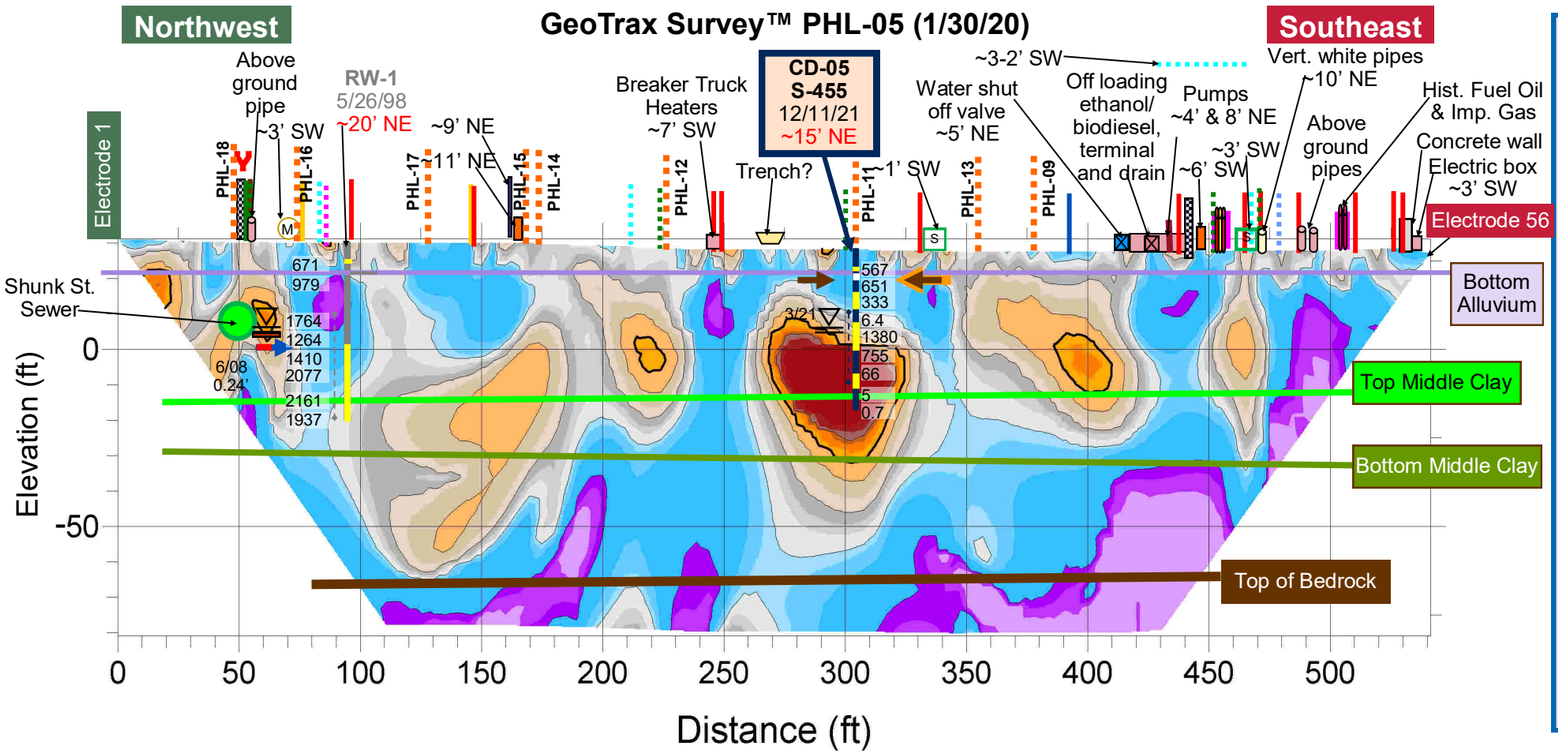

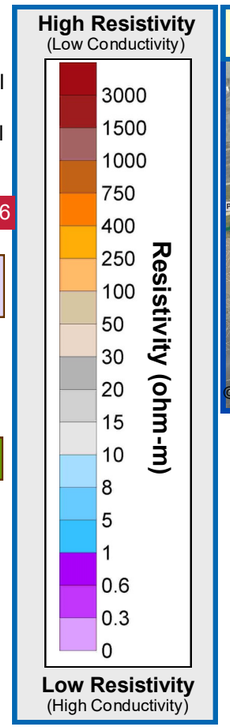

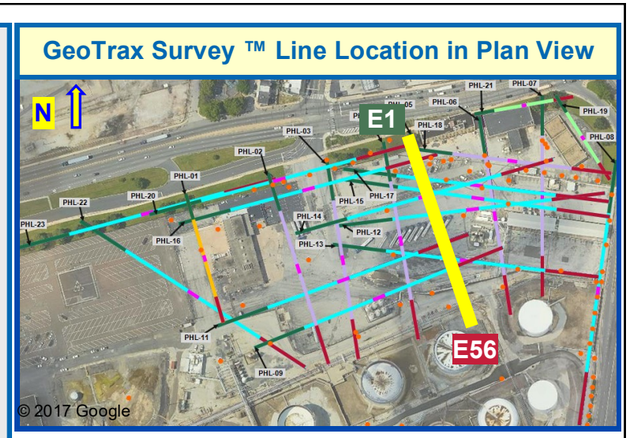

CD Groundwater Grab Results		
Well		CD-05
Boring		S-455
Sample Date		
Sample Depth ft. BGS		
Parameters µg/L	MSCs µg/L	
BENZENE	5	
TOLUENE	1000	
ETHYLBENZENE	700	
XYLENES, TOTAL	10000	
MTBE	20	
1,2,4-TMB	62	NA
>C12-C22		
>C22-C44		
C4-C12-TPH-GRO		
TOTAL ORG. CARBON		
TPH		

CD Groundwater Grab Results	
Well	CD-05
Boring	S-457
Sample Date	
Sample Depth	
Parameters (µg/L)	
ALKALINITY TO pH 4.5	
CALCIUM	
CHLORIDE (AS CL)	
IRON	
MAGNESIUM	
METHANE	NA
NITROGEN, AMMONIA	
NITROGEN, NITRATE	
POTASSIUM	
SODIUM	
SULFATE (AS SO4)	

CD Soil Sample Results		
Well /Boring		CD-05 / S-455
Sample Date		12/10/20
Sample Depth ft BGS		9
Parameters mg/kg	MCLs mg/kg	
BENZENE	330	1.2
TOLUENE	10000	0.61
ETHYLBENZENE	1000	6.6
XYLENES, TOTAL	9100	6.4
MTBE	9900	ND
>C12-C22		110
>C22-C44		9.3 J
C4-C12-TPH-GRO		2400
TPH		120

CD Soil Forensics	
Well	CD-05
Boring	S-455
Sample Date	12/10/20
Sample Depth ft BGS	9
See Report for full details	Dominant Gasoline range. Gasoline or a mixture of gasoline and light

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FIGURE
5.1
INITIAL CD DATA INTEGRATION

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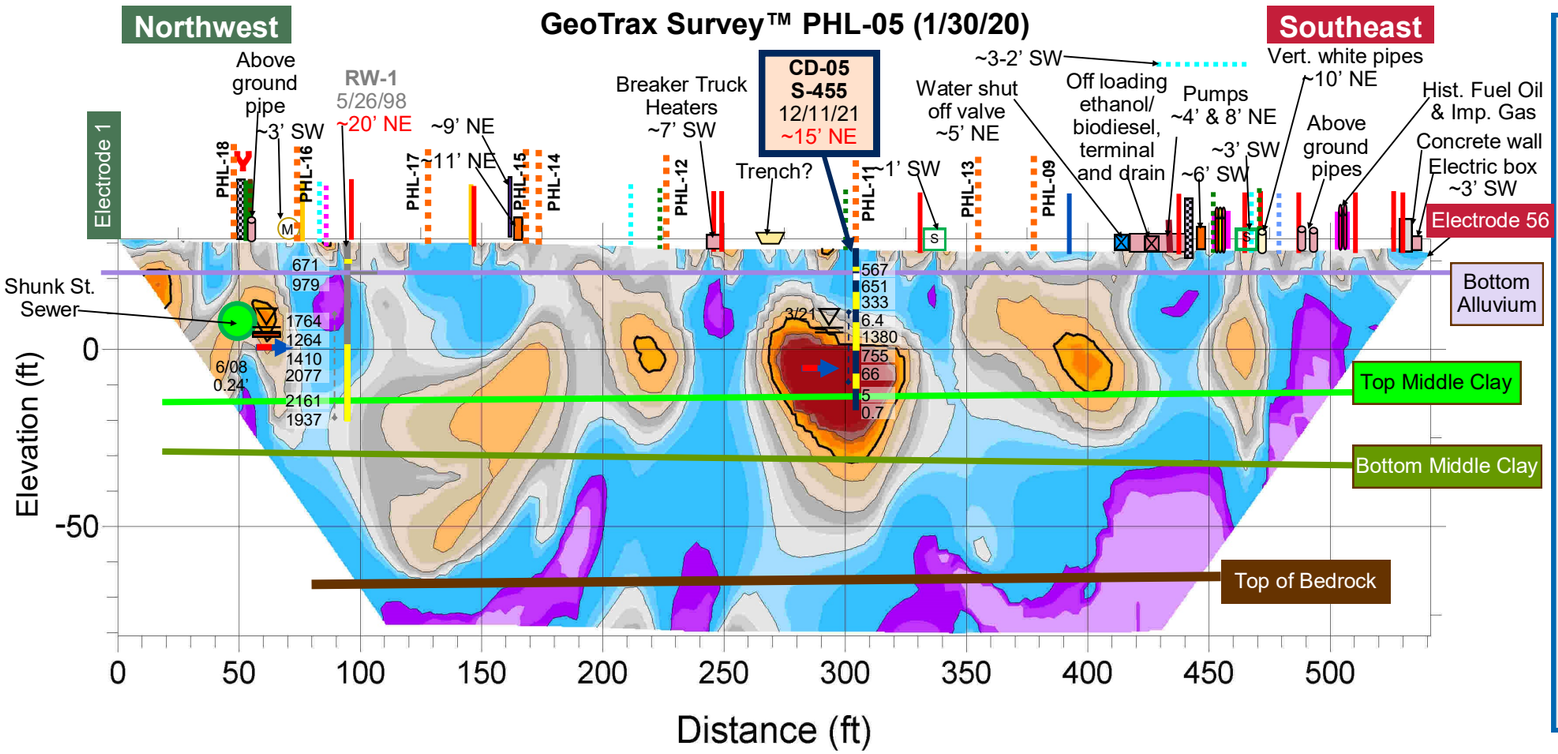
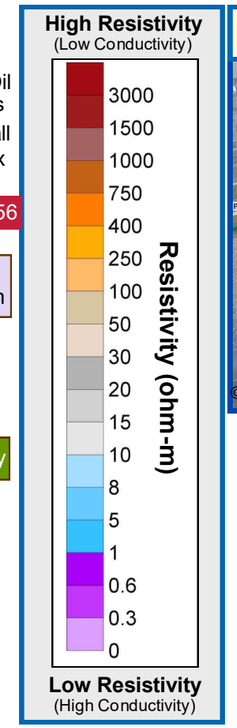
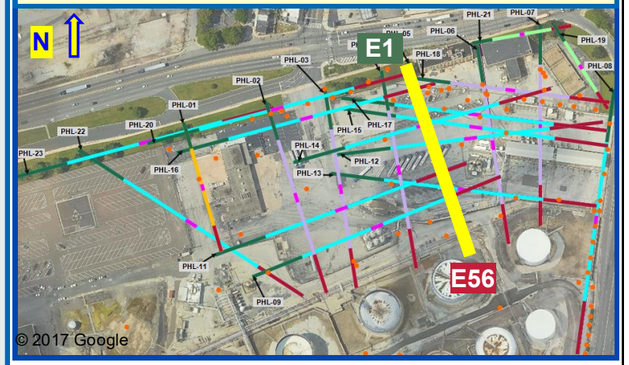




GeoTrax Survey ™ Line Location in Plan View



Well Product Data	
Well	RW-1
Sample Date	6/3/08
Product Description	UNKNOWN% GASOLINE

Groundwater Sample Results		
Well		RW-1
Sample Date		8/14/18
Parameters (µg/L)	Standards (µg/L)	
BENZENE	5	543
TOLUENE	1000	260
ETHYLBENZENE	700	121
XYLENES, TOTAL	10000	3990
MTBE	20	11200
NAPHTHALENE	100	303
PYRENE	130	2.44
ANTHRACENE	66	3.34
ISOPROPYLBENZENE	3500	ND
FLUORENE	1900	21.5
CHRYSENE	1.9	0.232
PHENANTHRENE	1100	15.7
LEAD	5	ND
1,2,4-TMB	62	1480
1,2-DIBROMOETHANE	0.05	ND
1,2-DICHLOROETHANE	5	ND
1,3,5-TMB	1200	357
BENZO(A)ANTHRACENE	4.9	0.279
BENZO(A)PYRENE	0.2	0.128
BENZO(B)FLUORANTHENE	0.55	0.155
BENZO(G,H,I)PERYLENE	0.26	ND

CD Groundwater Sample Results		
Well		CD-05
Boring		S-455
Sample Date		3/26/21
Parameters µg/L	MCLs µg/L	
BENZENE	5	6300
TOLUENE	1000	410
ETHYLBENZENE	700	530
XYLENES, TOTAL	10000	580
MTBE	20	400
NAPHTHALENE	100	4400
1,2,4-TMB	62	280
1,3,5-TMB	1200	170
ISOPROPYLBENZENE	3500	120
TERT-BUTYL ALCOHOL		2200

CD Groundwater Sample Results		
Well		CD-05
Boring		S-455
Sample Date		3/26/21
Parameters µg/L		
ALKALINITY TO pH 4.5		400,000
CALCIUM		76,000
IRON		41,000
METHANE		19,000
SULFATE (AS SO4)		ND
TOTAL CARBON		120,000
TOTAL INORGANIC CARBON		110,000
TOTAL KJELDAHL NITROGEN		7,200
TOTAL ORGANIC CARBON		13,000

CD Groundwater Quality Results		
Well		CD-05
Boring		S-455
Sample Date		3/26/21
Parameters	*Units*	
DO	mg/L	0.42
ORP	mV	-110
pH	S.U.	6.03
EC	mS/cm	2.67
Temperature	ºC	21.17
Turbidity	NTU	0

Groundwater Quality Sample Results		
Well		RW-1
Sample Date		8/14/18
Parameters	*Units*	
DO	mg/L	1.79
ORP	mV	-32
pH	S.U.	6.66
EC	mS/cm	3.65
Temperature	ºC	20.69
Turbidity	NTU	32.1

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FIGURE
5.2
ANALYTICAL DATA INTEGRATION

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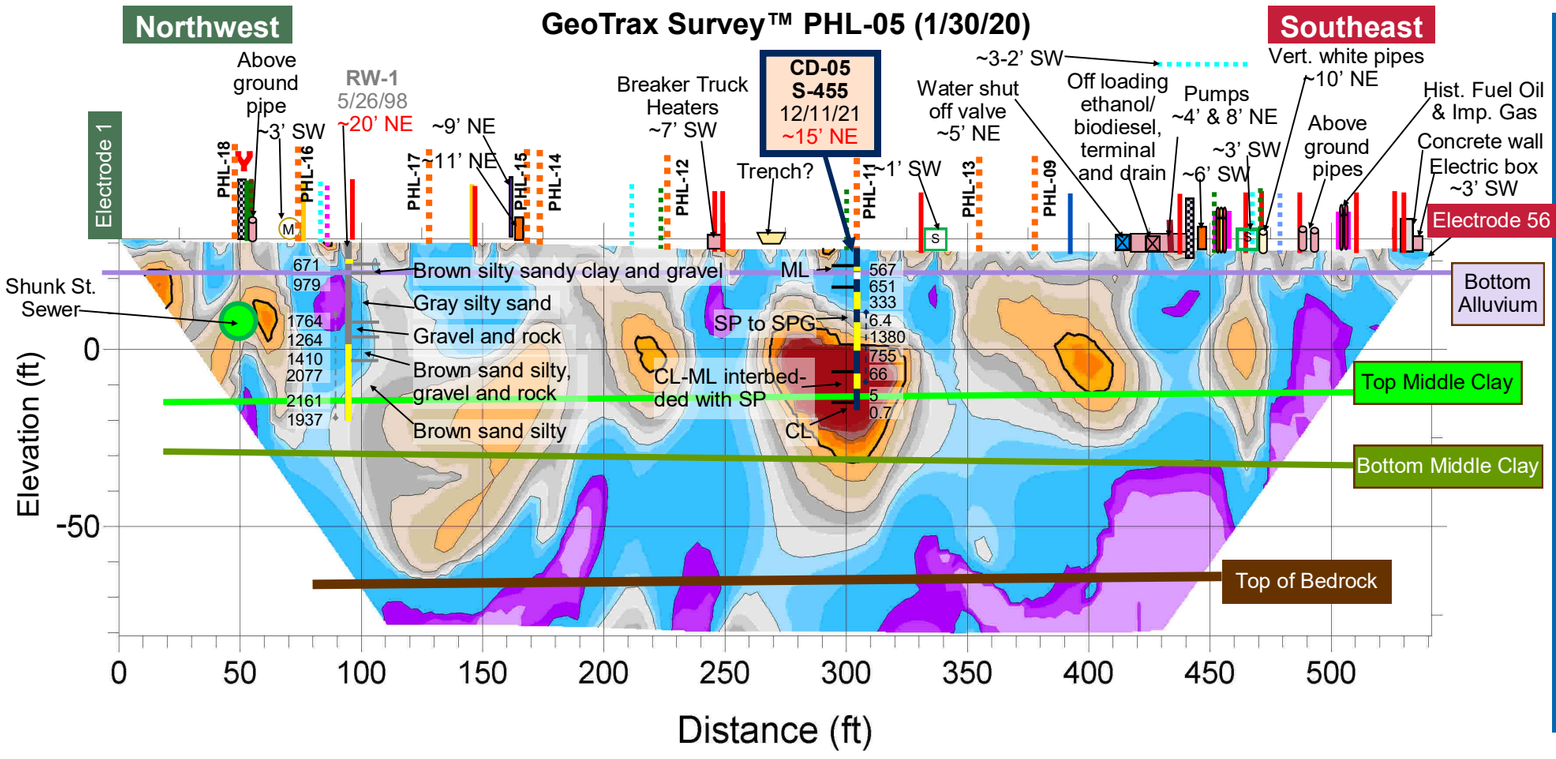

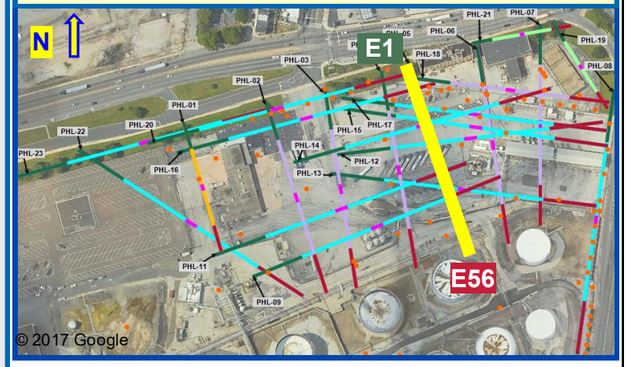

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FIGURE
5.3
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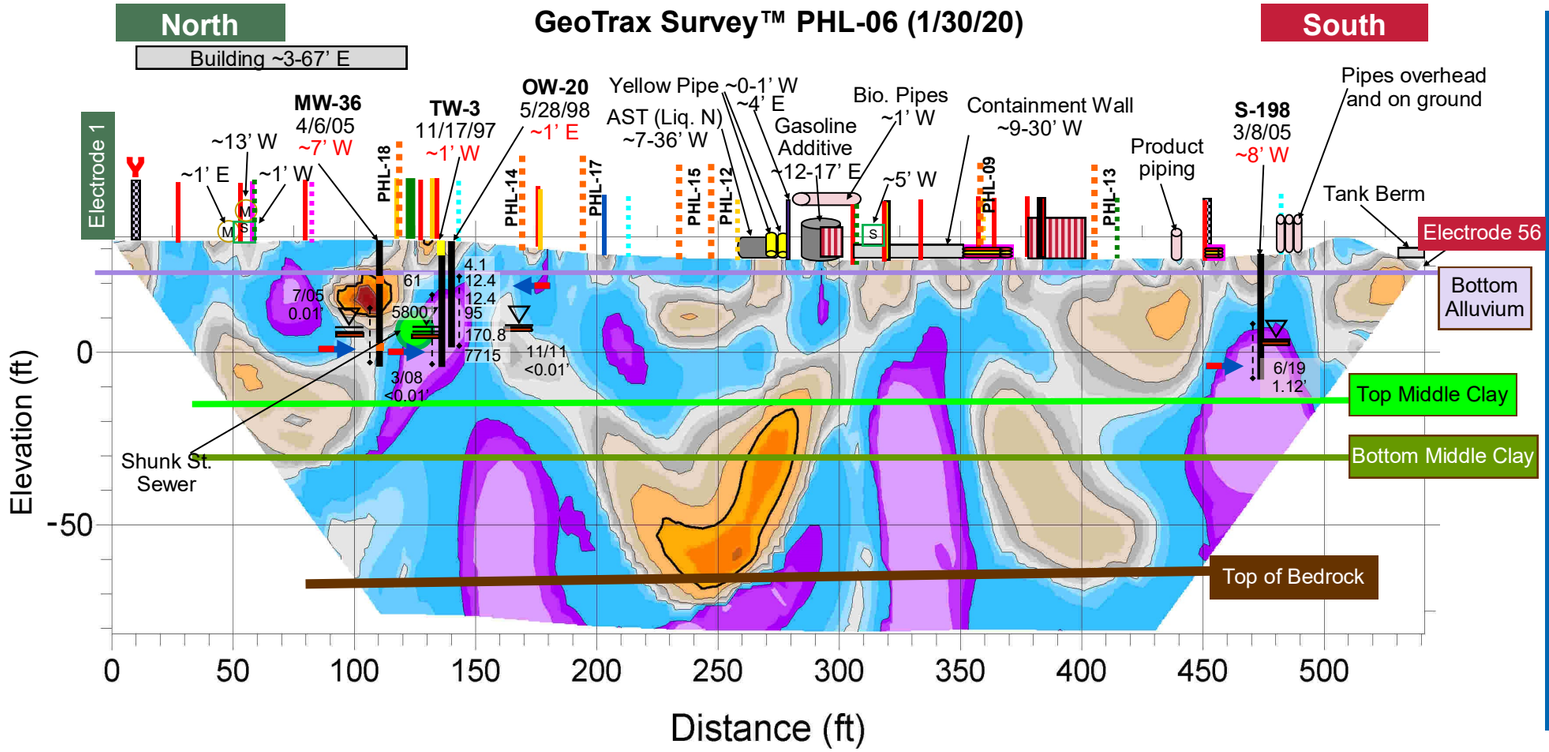
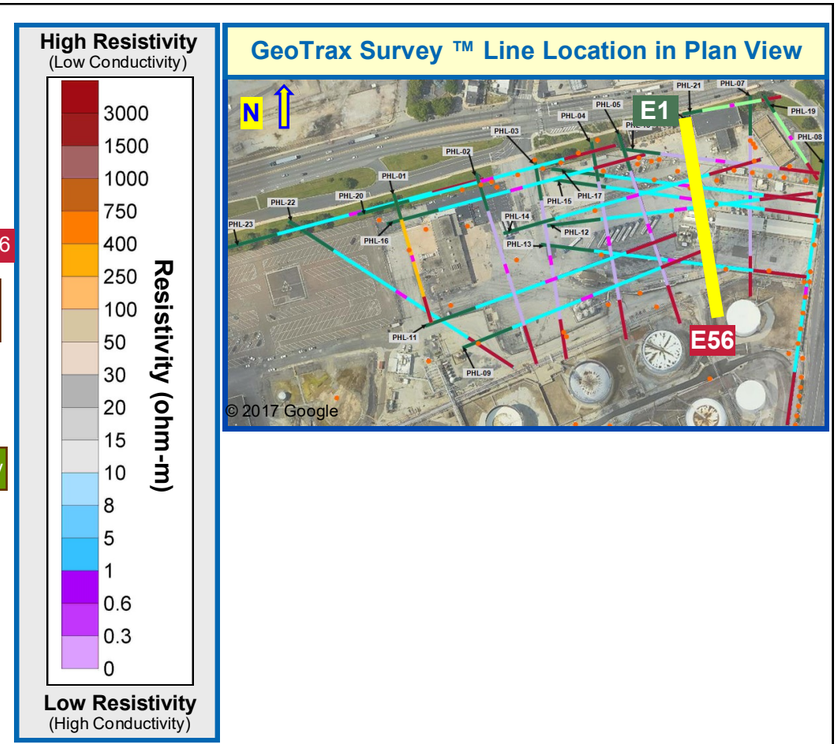
GeoTrax Survey™ PHL-06 (1/30/20)





GeoTrax Survey ™ Line Location in Plan View

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FIGURE
6.1
INITIAL CD DATA INTEGRATION

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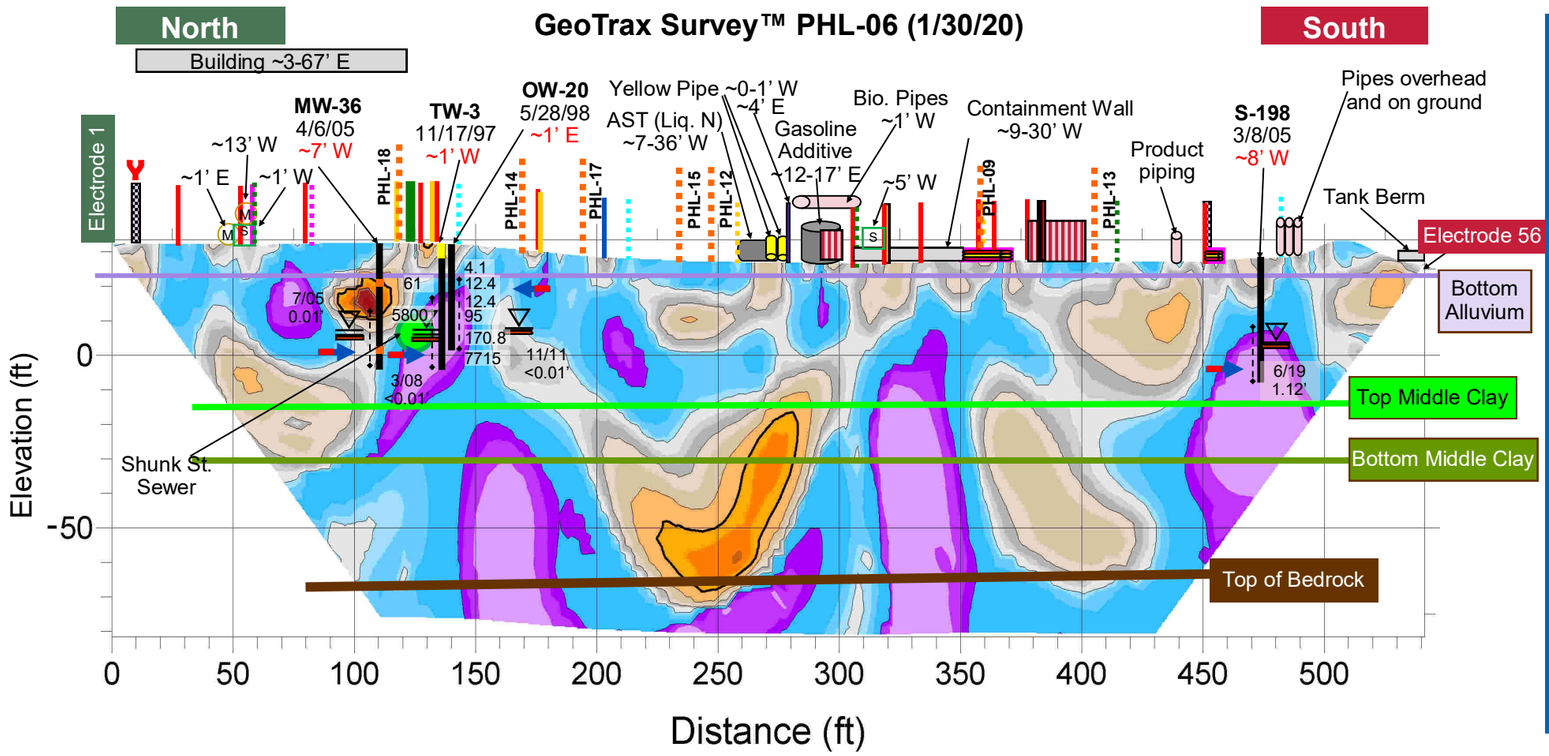

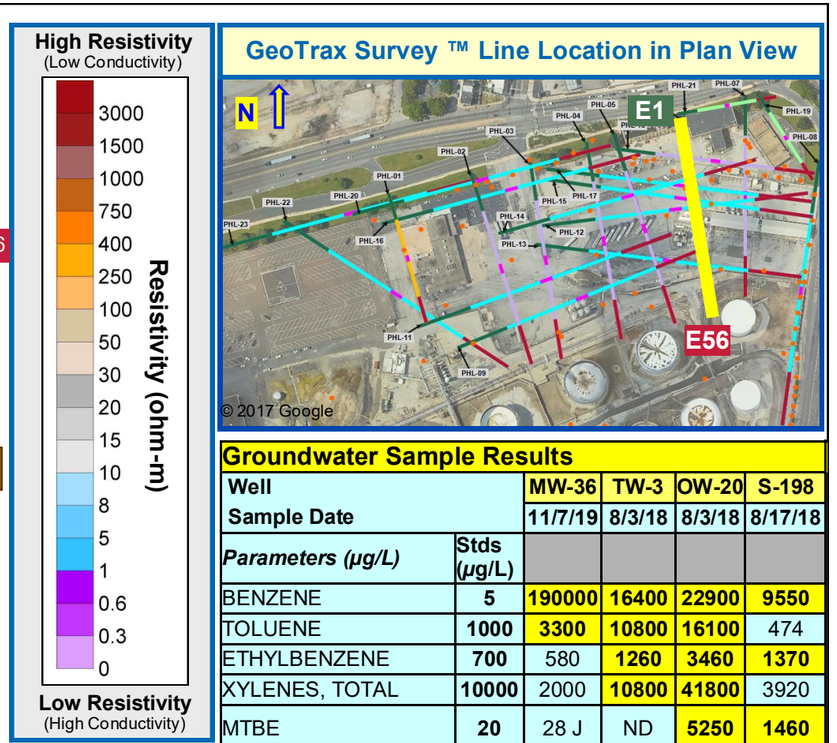

Groundwater Sample Results

Well		MW-36	TW-3	OW-20	S-198
Sample Date		11/7/19	8/3/18	8/3/18	8/17/18
Parameters (µg/L)	Stds (µg/L)				
BENZENE	**5**	**190000**	**16400**	**22900**	**9550**
TOLUENE	**1000**	**3300**	**10800**	**16100**	474
ETHYLBENZENE	**700**	580	**1260**	**3460**	**1370**
XYLENES, TOTAL	**10000**	2000	**10800**	**41800**	3920
MTBE	**20**	28 J	ND	**5250**	**1460**
NAPHTHALENE	**100**	**1800**	**740**	**549**	**9930**
PYRENE	**130**	0.9	17.4	52.1	**247**
ANTHRACENE	**66**	1	11.8	28	**194**
ISOPROPYLBENZENE	**3500**	41 J	ND	548	136
FLUORENE	**1900**	9	31	38.6	356
CHRYSENE	**1.9**	0.3 J	**5.24**	**16.2**	**92.1**
PHENANTHRENE	**1100**	8	43.2	109	826
LEAD	**5**	0.8	4.43 B	4.46	ND
1,2,4-TMB	**62**	240 J	**1670**	**12500**	**1360**
1,2-DIBROMOETHANE	**0.05**	ND	ND	ND	ND
1,2-DCE	**5**	470 J	ND	ND	ND
1,3,5-TMB	**1200**	81 J	536	**4260**	468
BENZO(A) ANTHRACENE	**4.9**	0.2 J	**5.2**	**16.3**	**91.2**
BENZO(A)PYRENE	**0.2**	0.3 J	**3.27**	**9.62**	**56.4**
BENZO(B) FLUORANTHENE	**0.55**	0.4 J	**4.04**	**11.6**	**73.9**
BENZO(G,H,I) PERYLENE	**0.26**	ND	**1.84**	**5.53**	**24.8**

Groundwater Quality Sample Results

Well		MW-36	TW-3	OW-20	S-198
Sample Date		7/16/19	8/3/18	8/3/18	8/17/18
Parameters	*Units*				
DO	mg/L	0	0	0	5.81
ORP	mV	-130	-49	-54	-31
pH	S.U.	6.84	6.6	6.81	7.03
EC	mS/cm	1.22	1.94	4.07	1.46
Temperature	ºC	19.99	21.03	20.98	20.38
Turbidity	NTU	76.6	0	1000	251

Well Gauging Data

Well		MW-36	TW-3	OW-2	S-198
Sample Date		7/1/05	3/20/08	5/8/06	6/3/19
Parameters	*Units*				
Depth to Water	ft btoc	28.5	28.12	27.93	25.31
Depth to LNAPL	ft btoc	28.49	28.12	27.93	24.19
Product Thickness	ft	**0.01**	**<0.01**	**<0.01**	**1.12**
Product Density		0.78	0.7593	0.8084	0.7923
Product Description		UNKNOWN % GASOLINE	GASOLINE	90% GASOLINE, 10% MIDDLE DISTILLATE	55% GASOLINE, 45% MIDDLE DISTILLATE

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FIGURE
6.2
ANALYTICAL DATA INTEGRATION

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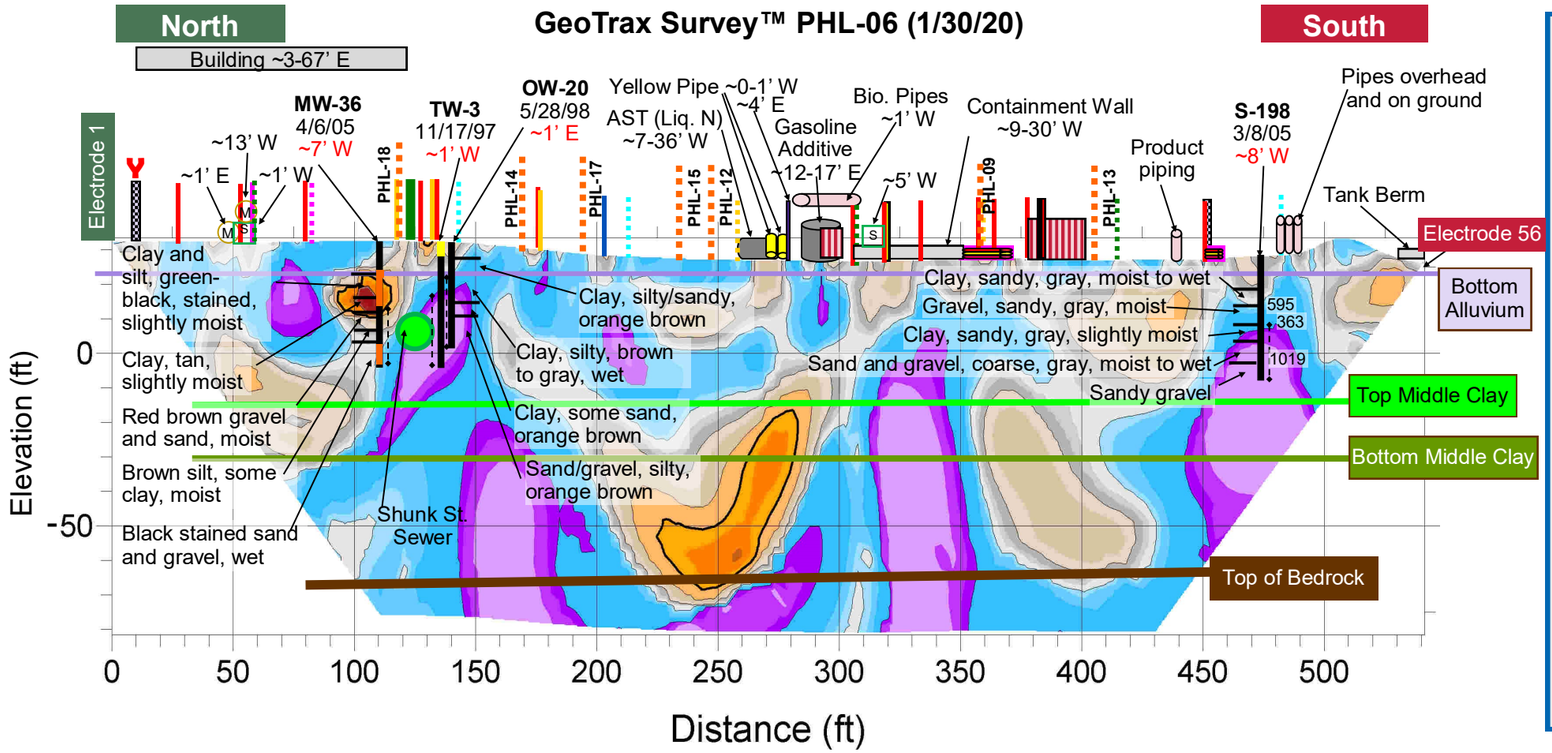

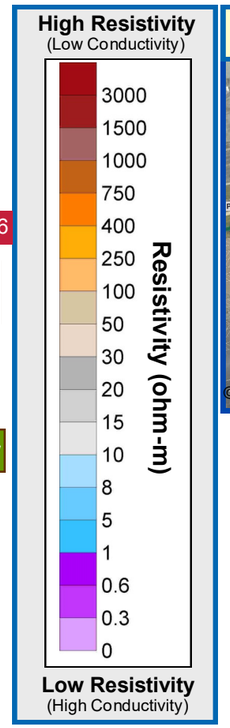

GeoTrax Survey ™ Line Location in Plan View

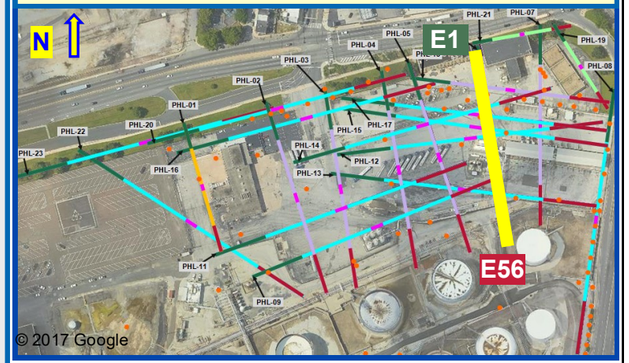

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FIGURE
6.3
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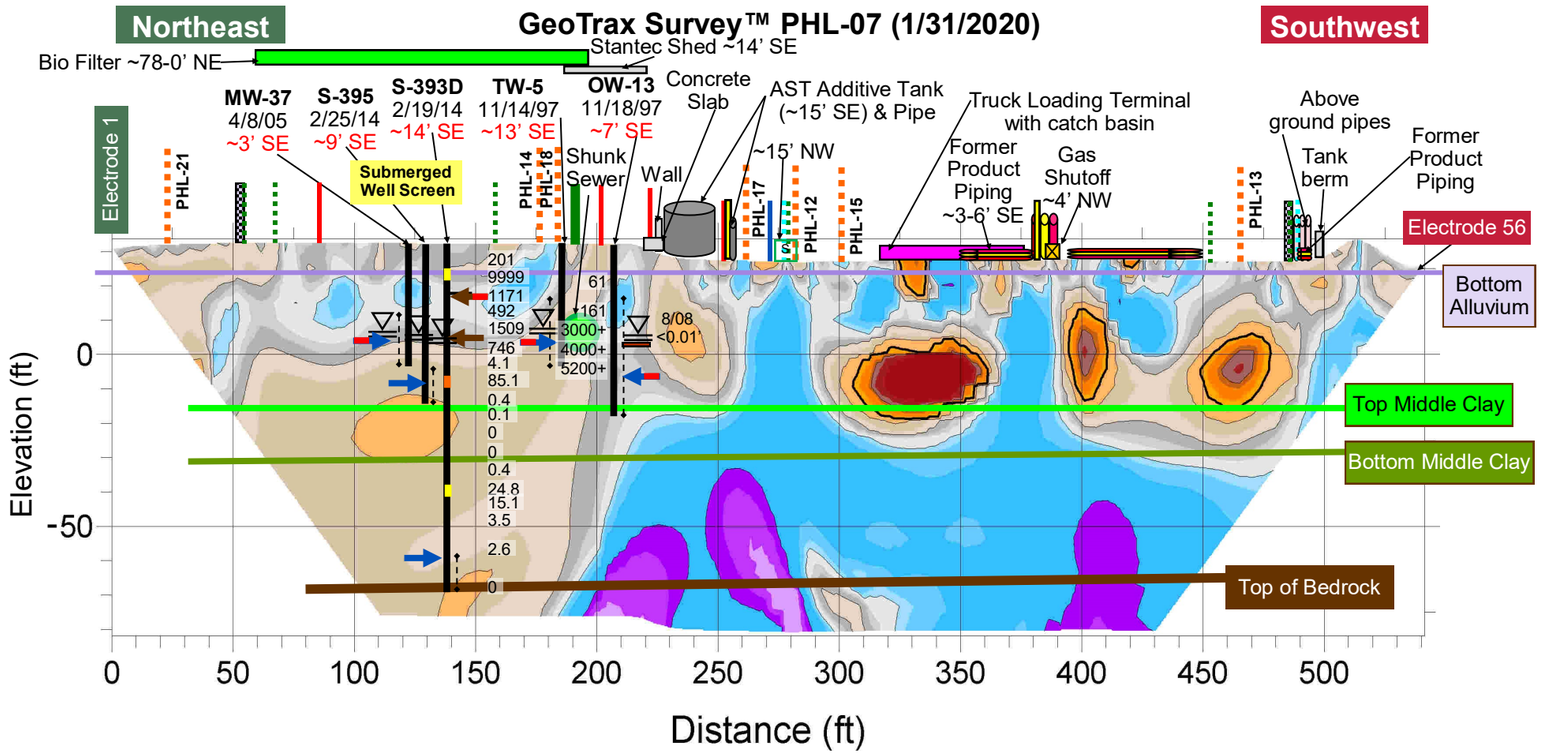

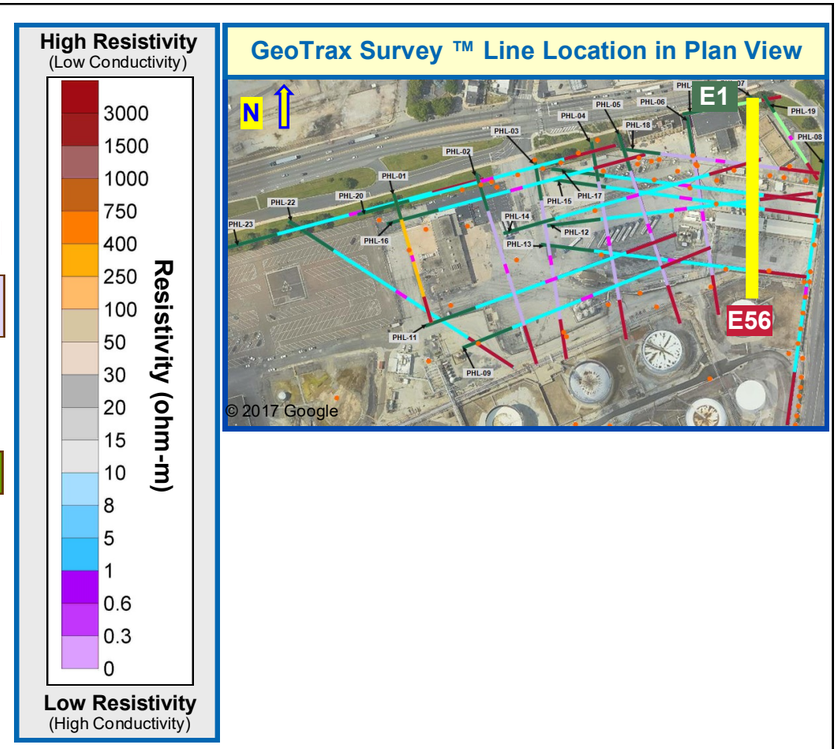

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FIGURE
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INITIAL CD DATA INTEGRATION

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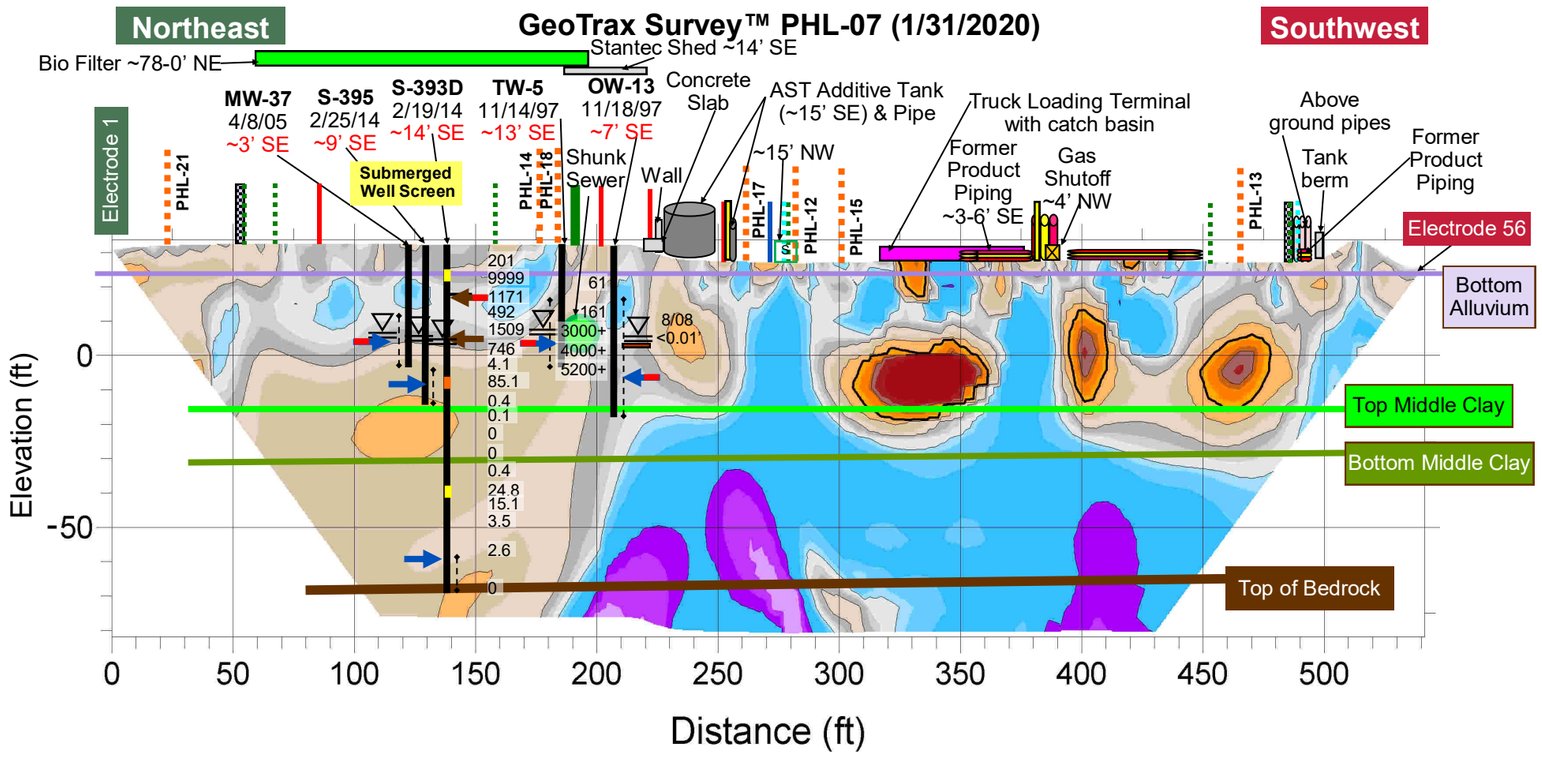
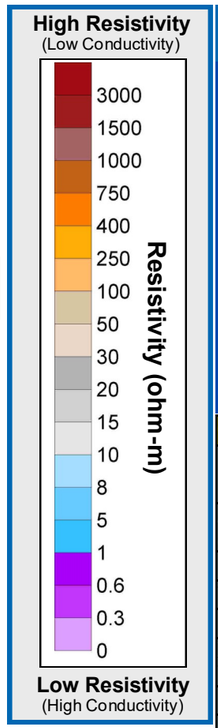
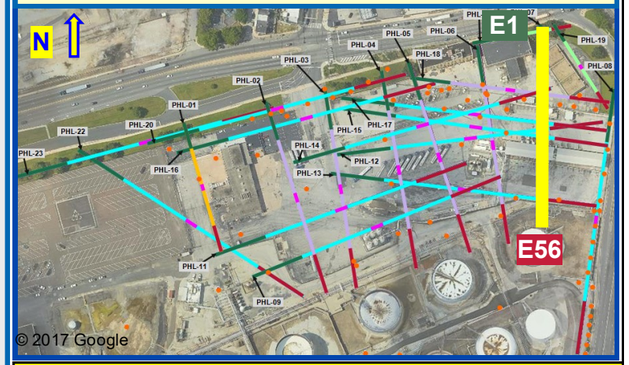




GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results

Well		MW-37	S-395	S-393D	TW-5	OW-13
Sample Date		11/7/19	11/6/19	8/1/18	11/7/19	8/14/18
Parameters (µg/L)	Stds (µg/L)					
BENZENE	**5**	**170000**	ND	ND	**610000**	**39600**
TOLUENE	**1000**	680	ND	ND	**7500**	**8280**
ETHYLBENZENE	**700**	28 J	ND	ND	420	**709**
XYLENES, TOTAL	**10000**	170 J	ND	ND	1800	7970
MTBE	**20**	ND	ND	ND	ND	ND
NAPHTHALENE	**100**	4	ND	ND	14	**165**
PYRENE	**130**	0.3 J	ND	0.118	ND	0.16
ANTHRACENE	**66**	ND	ND	ND	ND	0.112
ISOPROPYLBENZENE	**3500**	33 J	ND	ND	110 J	ND
FLUORENE	**1900**	0.4 J	ND	ND	0.5	0.724
CHRYSENE	**1.9**	ND	ND	0.0735	ND	ND
PHENANTHRENE	**1100**	0.6	ND	0.0706	1	0.641
LEAD	**5**	1.4	0.12 J	ND	1.2	2.16
1,2,4-TMB	**62**	ND	ND	ND	ND	**913**
1,2-DI-BROMOETHANE	**0.05**	ND	ND	ND	ND	ND
1,2-DCE	**5**	ND	ND	ND	ND	ND
1,3,5-TMB	**1200**	ND	ND	ND	ND	295
BENZO(A) ANTHRACENE	**4.9**	0.1 J	ND	ND	ND	ND
BENZO(A) PYRENE	**0.2**	0.2 J	ND	0.0667	ND	ND
BENZO(B) FLUORANTHENE	**0.55**	0.4 J	ND	0.114	ND	ND
BENZO(G,H,I) PERYLENE	**0.26**	0.2 J	ND	0.0901	ND	ND

Groundwater Quality Sample Results

Well		MW-37	S-395	S-393D	TW-5	OW-13
Sample Date		7/2/19	7/8/19	8/1/18	7/3/19	8/14/18
Parameters	*Units*					
DO	mg/L	0	0	0	0	0.39
ORP	mV	-163	-97	140	-151	-56
pH	S.U.	6.43	6.5	5.82	6.45	6.67
EC	mS/cm	3.97	1.93	0.848	5.16	1.88
Temperature	ºC	18.52	18.7	18.68	18.69	20.62
Turbidity	NTU	66.2	2.7	23.7	68.4	47.1

Well Gauging Data

Well		OW-13
Sample Date		8/18/08
Parameters	*Units*	
Depth to Water	ft btoc	28.35
Depth to LNAPL	ft btoc	28.35
Product Thickness	ft	**<0.01**
Product Density		0.8084
Product Description		90% GASOLINE, 10% MIDDLE

Soil Sample Results

Well		S-393D	S-393D
Sample Date		2/4/14	2/4/14
Sample Depth ft BGS		14-15	27-28
Parameters (mg/kg)	Standards (mg/kg)		
BENZENE	330	**11200**	98.8
TOLUENE	10000	1010	10.4
ETHYLBENZENE	1000	31.6	0.583
XYLENES, TOTAL	9100	138	2.47
METHYL TERTIARY BUTYL ETHER	9900	ND	ND
NAPHTHALENE	190000	3.67 J	0.0744
PYRENE	190000	2.45 J	0.0495
ANTHRACENE	190000	1.03 J	0.0194
ISOPROPYLBENZENE (CUMENE)	10000	88.7	1.56
FLUORENE	130000	1.07J	0.0272
CHRYSENE	190000	1.04 J	0.0184
PHENANTHRENE	190000	4.79	0.0936
LEAD	190000	23.2	5.5

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FIGURE
7.2
ANALYTICAL DATA INTEGRATION

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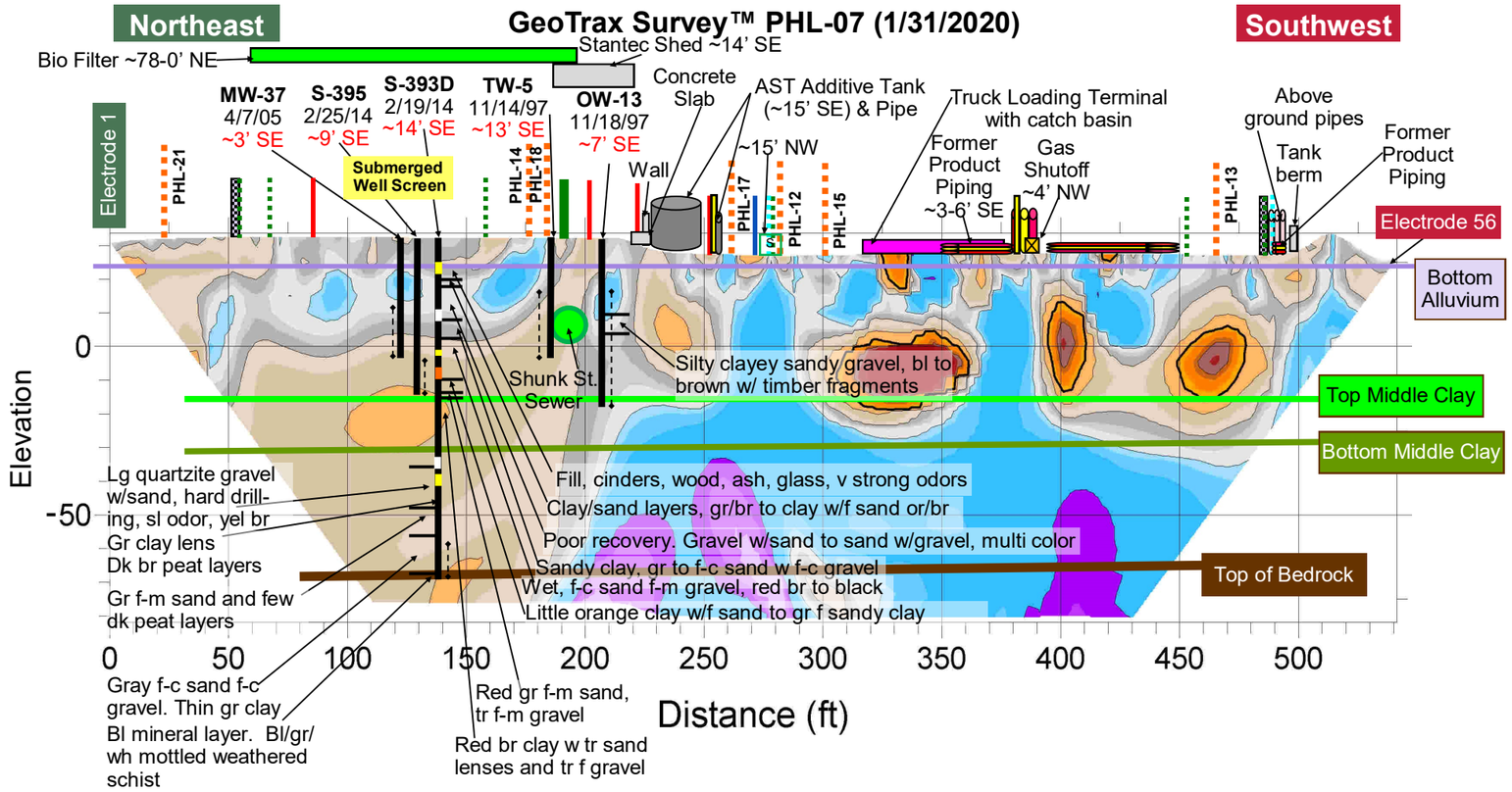

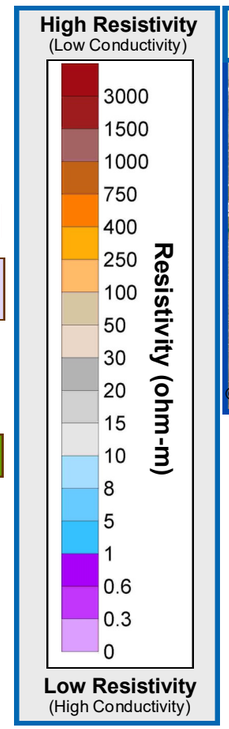

GeoTrax Survey ™ Line Location in Plan View

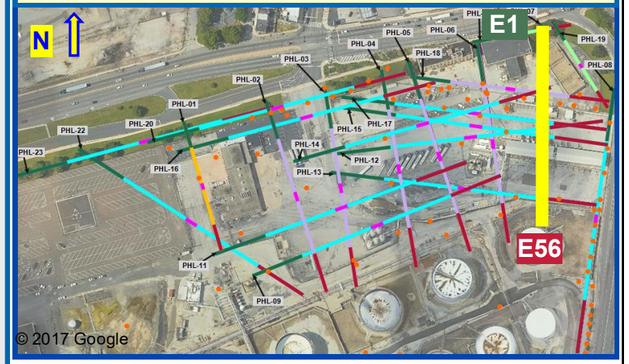

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FIGURE
7.3
GEOLOGY
DATA
INTEGRATION

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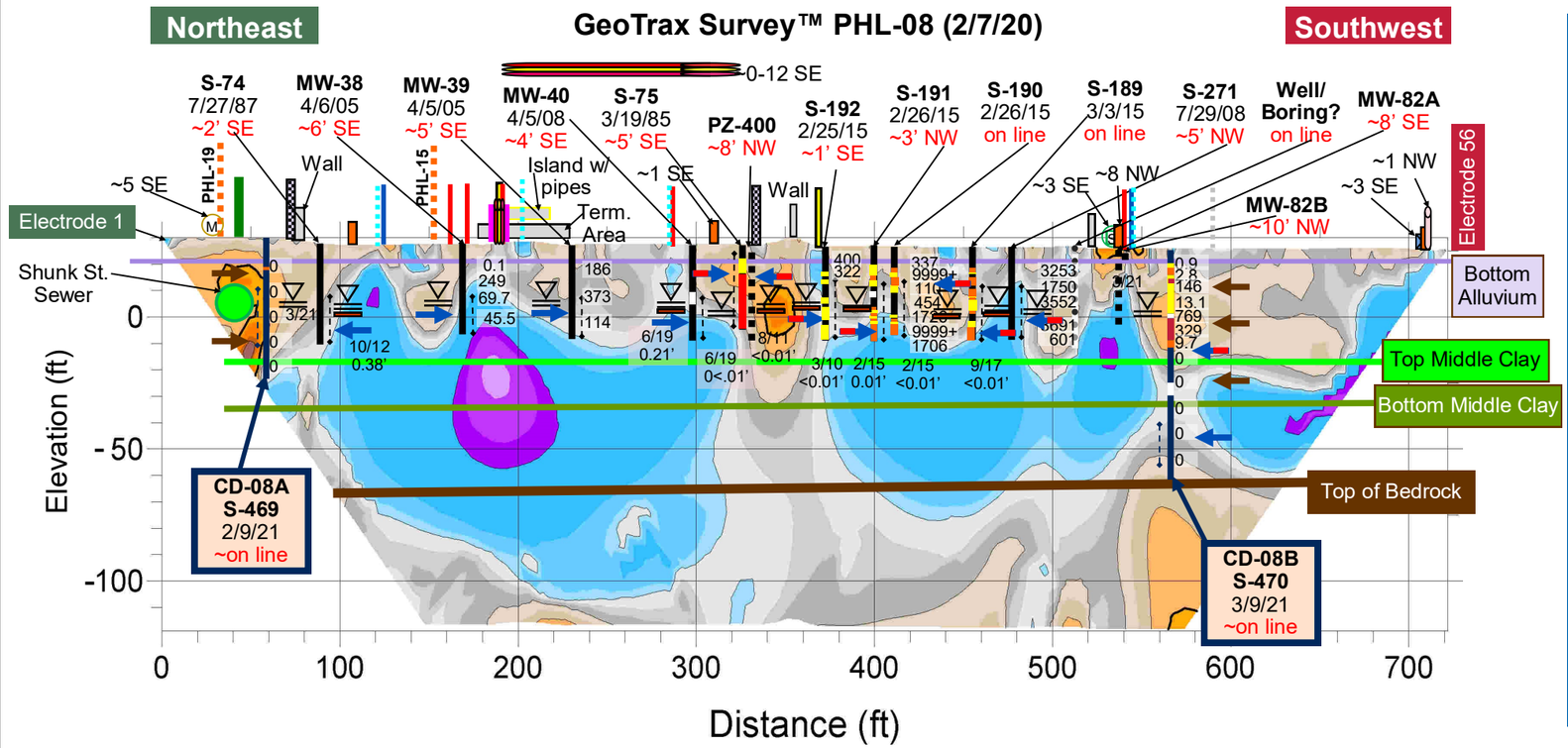

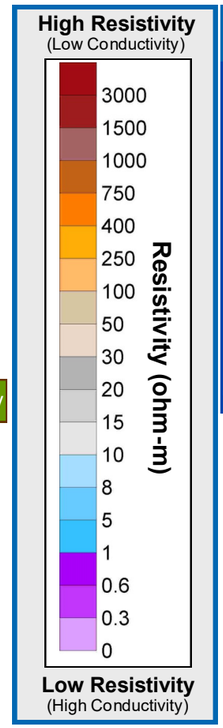

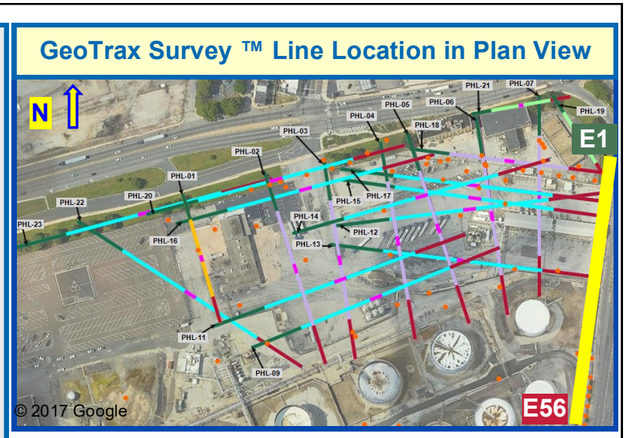

CD Groundwater Grab Results				
Well		CD-08A	CD-08B	
Boring		S-469	S-470	
Sample Date			2/25/21	3/8/21
Sample Depth ft. BGS			37	71
Parameters µg/L	MSCs µg/L			
BENZENE	5		75	0.35 J
TOLUENE	1000		160	0.47 J
ETHYLBENZENE	700		31	ND
XYLENES, TOTAL	10000		180	ND
MTBE	20		140	2.3
1,2,4-TMB	62	NA	39	ND
>C12-C22			1300	10000
>C22-C44			170	ND B
C4-C12-TPH-GRO			6900	82
TOTAL ORG. CARBON			15000	16000
TPH			1500	10000

CD Groundwater Grab Results			
Well	CD-08A	CD-08B	
Boring	S-469	S-470	
Sample Date		2/25/21	3/8/21
Sample Depth		37	71
Parameters (µg/L)			
ALKALINITY TO pH 4.5		370,000	130,000
CALCIUM		78,000	51,000
CHLORIDE (AS CL)		400,000	77,000
IRON		31,000	46,000
MAGNESIUM		43,000	44,000
METHANE	NA	14,000	31
NITROGEN, AMMONIA		940	2,300
NITROGEN, NITRATE		530	550
POTASSIUM		15,000	3,500
SODIUM		250,000	72,000
SULFATE (AS SO4)		18,000	280,000

CD Soil Sample Results							
Well /Boring		CD-08A S-469		CD-08B S-470			
Sample Date		2/9/21	2/9/21	2/23/21	2/25/21	2/26/21	3/8/21
Sample Depth ft BGS		11	38	12	28	48	71
Parameters mg/kg	MCLs mg/kg						
BENZENE	330	ND	0.00086 J	0.035 J	0.06 J	0.0053	ND
TOLUENE	10000	ND	ND	0.076 J	0.065 J	0.0014 J	ND
ETHYLBENZENE	1000	ND	ND	0.13 J	0.045 J	0.0006 J	ND
XYLENES, TOTAL	9100	ND	ND	0.27 J	0.11 J	0.0015 J	ND
MTBE	9900	ND	ND	ND	0.09 J	0.05	ND
>C12-C22		ND	ND	1700	80	ND	ND
>C22-C44		9.5 J	ND	150 J	7.5 J	14	ND
C4-C12-TPH-GRO		ND	ND	1200 B	440	0.31	ND
TPH		9.5 J	ND	3600	88	14	ND

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FIGURE
8.1
INITIAL CD DATA INTEGRATION

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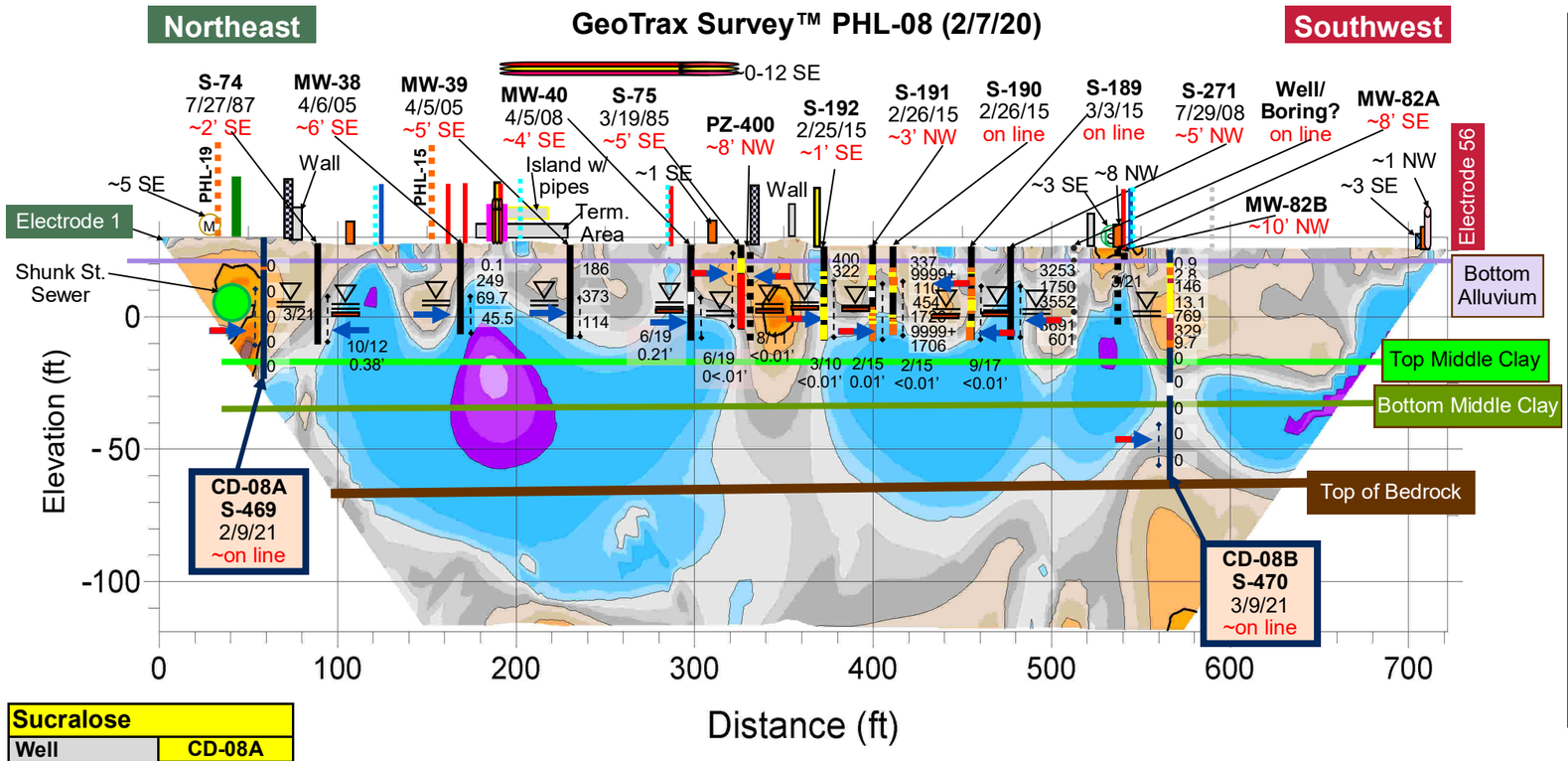

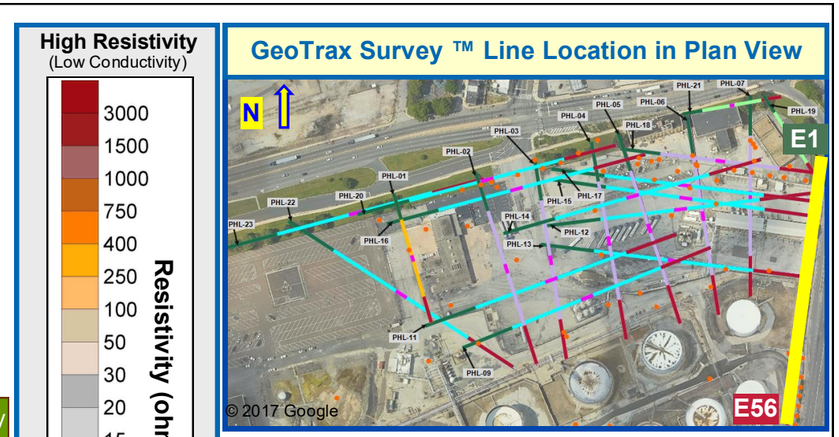

GeoTrax Survey ™ Line Location in Plan View

Sucralose	
Well	CD-08A
Boring	S-469
Sample Date	5/19/21
Sucralose ng/L	150

CD Groundwater Sample Results			
Well		CD-08A	CD-08B
Boring		S-469	S-470
Sample Date		3/25/21	3/25/21
Parameters µg/L	MCLs µg/L		
BENZENE	5	28	7
TOLUENE	1000	1.1	0.38 J
ETHYLBENZENE	700	ND	ND
XYLENES, TOTAL	10000	ND	ND
MTBE	20	ND	1.9
NAPHTHALENE	100	ND	1.5
1,2,4-TMB	62	ND	ND
1,3,5-TMB	1200	ND	ND
ISOPROPYLBENZENE	3500	ND	ND
TERT-BUTYL ALCOHOL		ND	16 J

CD Groundwater Sample Results		
Well	CD-08A	CD-08B
Boring	S-469	S-470
Sample Date	3/25/21	3/25/21
Parameters µg/L		
ALKALINITY TO pH 4.5	310,000	160,000
CALCIUM	78,000	56,000
IRON	260	64,000
METHANE	ND	32
SULFATE (AS SO4)	81,000	300,000
TOTAL CARBON	75,000	69,000
TOTAL INORGANIC CARBON	73,000	54,000
TOTAL KJELDAHL NITROGEN	ND	650 J
TOTAL ORGANIC CARBON	2,000	15,000

CD Groundwater Quality Results			
Well		CD-08A	CD-08B
Boring		S-469	S-470
Sample Date		3/25/21	3/25/21
Parameters	*Units*		
DO	mg/L	0.35	1.94
ORP	mV	59	-22
pH	S.U.	6.54	6.13
EC	mS/cm	1.74	1.2
Temperature	ºC	16.54	15.19
Turbidity	NTU	11.8	23.9

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FIGURE
8.2 A
ANALYTICAL DATA INTEGRATION

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Groundwater Sample Results

Well		S-74	MW-38	MW-39	MW-40	S-75	PZ-400	S-192	S-191	S-190	S-189	S-271
Sample Date		7/26/18	11/6/19	7/26/18	8/2/18	11/13/19	12/8/14	12/11/14	12/12/14	12/12/14	5/27/14	10/30/19
Parameters (µg/L)	Standards (µg/L)											
BENZENE	**5**	ND	ND	ND	1.76	**39**	2.7	0.49 J	**202**	**138**	**154**	**110**
TOLUENE	**1000**	ND	ND	ND	ND	2	1.1	0.34 J	6	24.5	155	24
ETHYLBENZENE	**700**	ND	ND	ND	ND	0.6 J	0.84 J	ND	160	30.4	41.2	8
	10000	ND	ND	ND	ND	1 J	2.5	0.76 J	248	49.7	191	50
MTBE	**20**	ND	2	6.79	1.64	4	**27.1**	15.8	**41.5**	**358**	**296**	**450**
NAPHTHALENE	**100**	ND	ND	ND	6.28	ND	ND	ND	24.2	20.5	ND	5
PYRENE	**130**	0.162	0.3 J	0.223	0.998	ND	2.02	0.5	4.54	1.06	4	0.7 Q
ANTHRACENE	**66**	ND	ND	ND	ND	0.6	1.11	0.28	ND	1.01	ND	2
ISOPROPYLBENZENE	**3500**	ND	ND	ND	9.75	14	19.9	6.2	53.4	104	12.5	81
FLUORENE	**1900**	ND	ND	0.161	10.4	2	2.39	0.838	12.4	5.08	ND	12
CHRYSENE	**1.9**	ND	ND	ND	ND	ND	0.644	ND	0.941	0.36	1.18	ND
PHENANTHRENE	**1100**	ND	ND	ND	11.8	1	1.23	0.324	13.4	4.05	3.77	13
LEAD	**5**	ND	0.083 J	ND	ND	0.97	**13**	2.3 B	12.9	**12**	**6.8**	**7.8**
1,2,4-TRIMETHYLBENZENE	**62**	ND	ND	ND	ND	ND	2	0.72 J	**396**	**152**	**120**	ND
1,2-DIBROMOETHANE	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-TRIMETHYLBENZENE	**1200**	ND	ND	ND	ND	0.6 J	6.5	0.45 J	216	57.4	44.2	13 J
BENZO(A)ANTHRACENE	**4.9**	ND	ND	ND	ND	ND	0.748	ND	1.26	0.355	0.739	ND
BENZO(A)PYRENE	**0.2**	ND	ND	ND	ND	ND	**0.238**	ND	**0.523**	0.164	**0.772**	ND
BENZO(B)FLUORANTHENE	**0.55**	ND	ND	ND	ND	ND	0.336	ND	**0.653**	0.234	**0.872**	ND
BENZO(G,H,I)PERYLENE	0.26	ND	ND	ND	ND	ND	0.159	ND	**0.346**	ND	**0.648**	ND

Well Product Data

Well	S-74	MW-40	S-75	PZ-400	S-192	S-191	S-190	S-189
Sample Date	10/18/12	6/3/19	6/3/19	8/3/11	3/24/10	2/10/15	2/18/15	9/5/17
Parameters								
Product Description	UNKNOWN% GASOLINE Unknown% Distillate	65% MIDDLE DISTILLATE 35% GASOLINE	UNKNOWN% GASOLINE Unknown% Distillate	65% MIDDLE DISTILLATE 35% GASOLINE	90% GASOLINE, 10% MIDDLE DISTILLATE	90% GASOLINE, 10% MIDDLE DISTILLATE	90% GASOLINE, 10% MIDDLE DISTILLATE	90% GASOLINE, 10% MIDDLE DISTILLATE

Groundwater Quality Sample Results

Well		S-74	MW-38	MW-39	MW-40	S-75	PZ-400	S-192	S-191	S-190	S-189	S-271
Sample Date		7/26/2018	7/2/2019	7/26/2018	8/2/2018	7/2/2019	12/8/2014	12/11/2014	12/12/2014	12/12/2014	5/27/2014	6/18/2019
Parameters	*Units*											
DO	mg/L	0	0	0	0	0	1.6	1.52	1.55	4.27	2.13	1.7
ORP	mV	47	-125	17	41	-172	-84	-105	-93	-103	-10	-58
pH	S.U.	6.49	6.57	6.58	6.28	6.67	6.88	7.57	6.85	7.19	6.85	6.11
EC	mS/cm	1.89	2.26	2.18	1.6	2.09	1.8	2.05	2.35	1.92	1.27	1.6
Temperature	ºC	17.92	26.41	19.63	21.1	18.15	15.63	16.23	17.63	15.45	19.55	21.73
Turbidity	NTU	0	56.9	0	263	63.4	229	23.9	212	404	376	13.3

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FIGURE
8.2 B
ANALYTICAL DATA INTEGRATION

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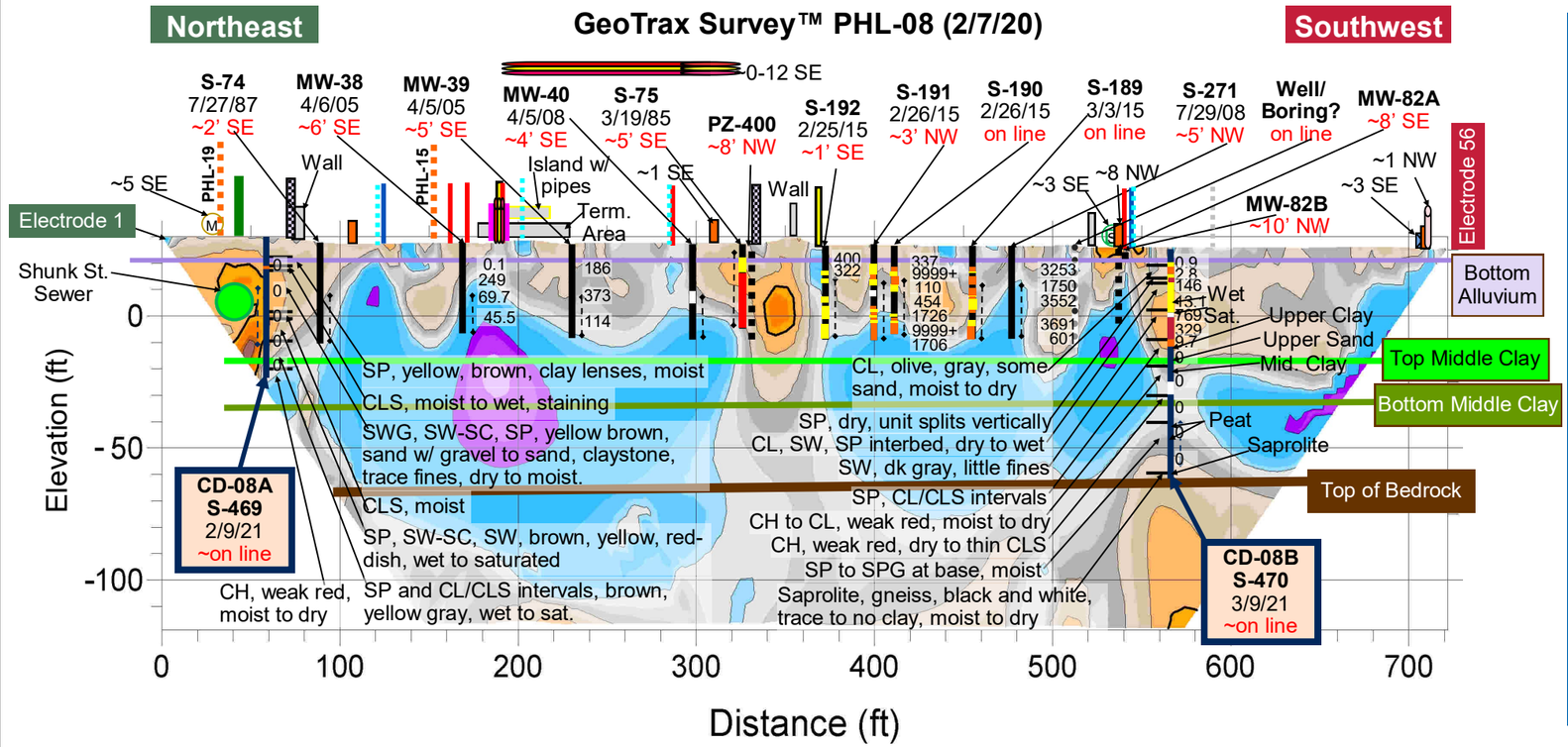

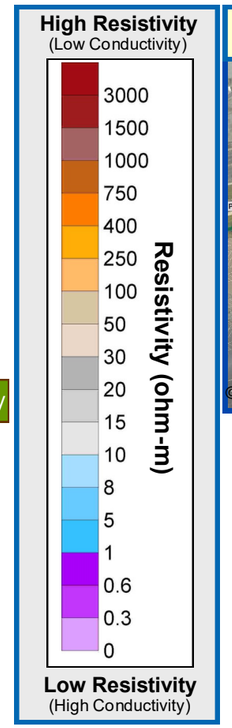

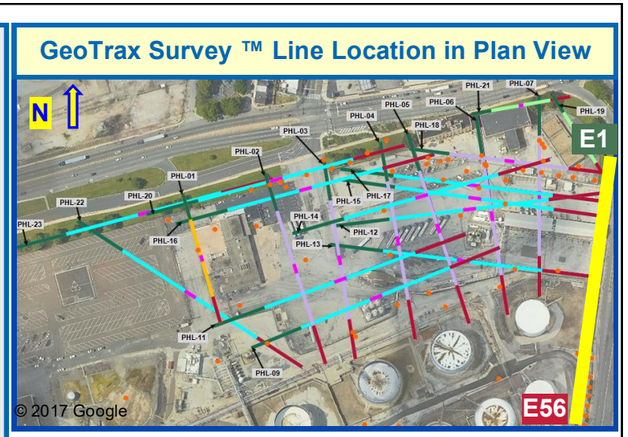

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FIGURE
8.3 A
GEOLOGY
DATA
INTEGRATION

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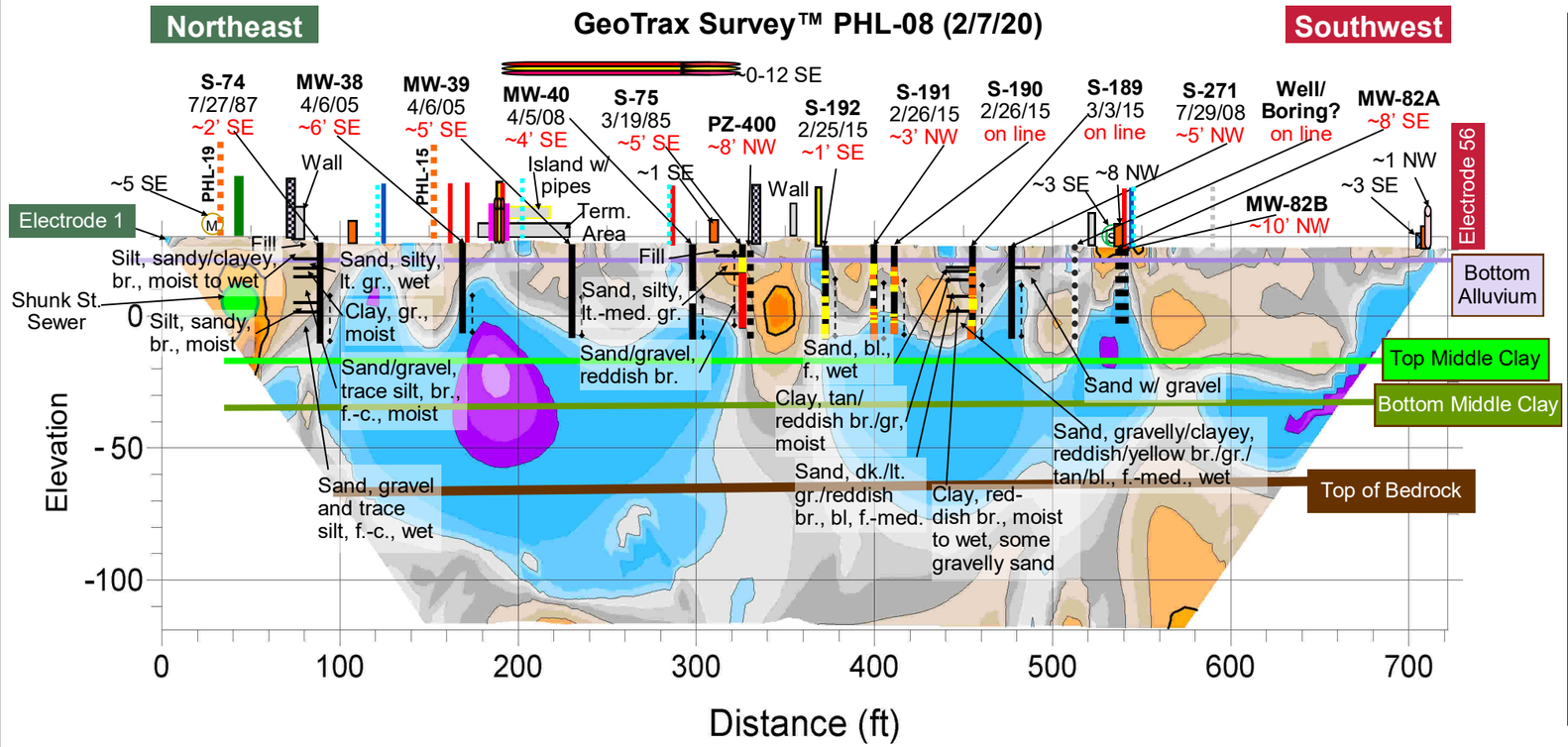

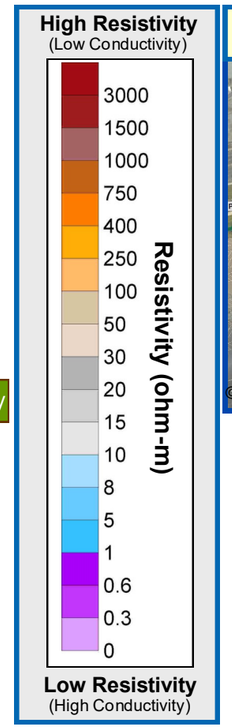

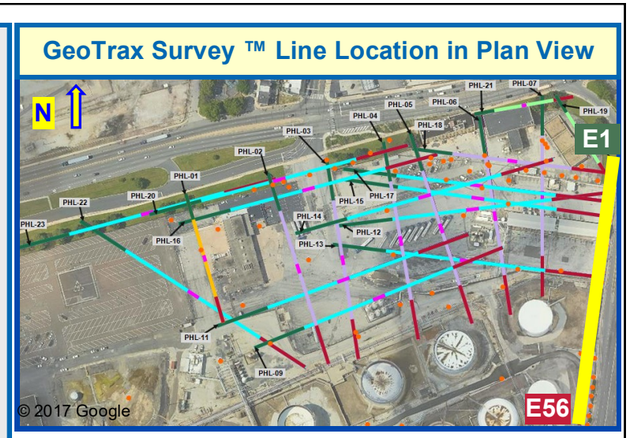

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FIGURE
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GEOLOGY
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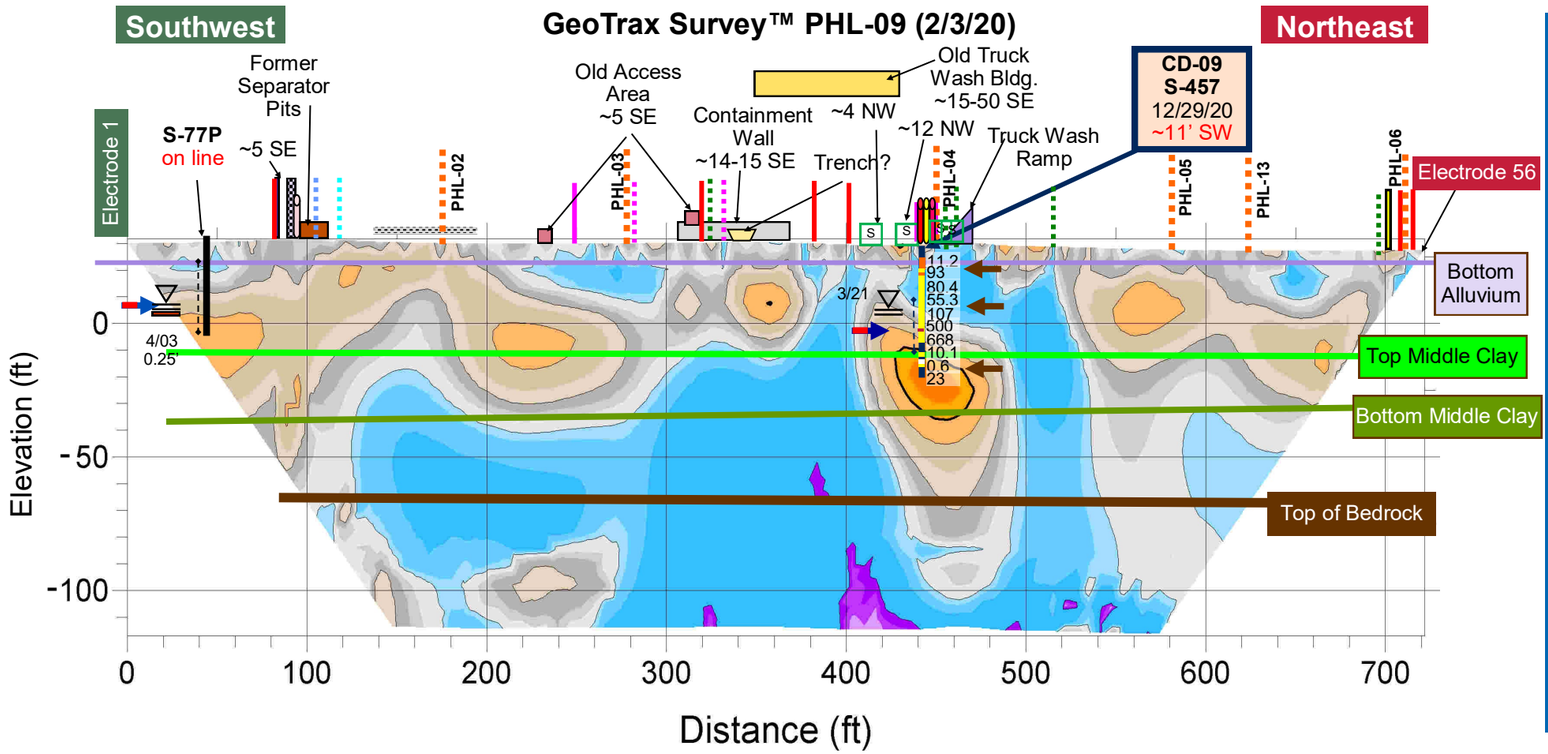
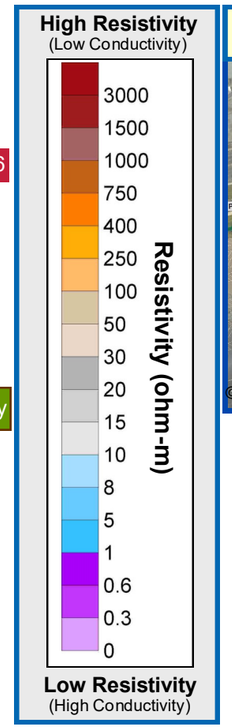
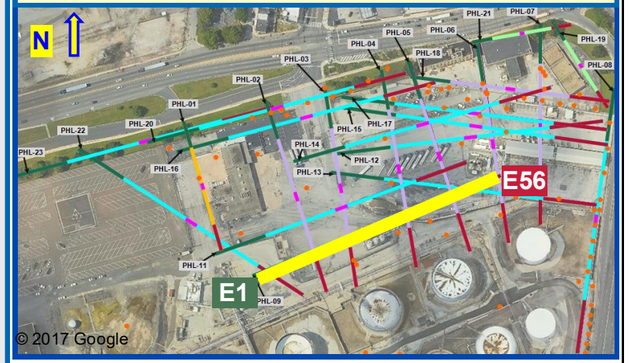




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Grab Results		
Well		**CD-09**
Boring		**S-457**
Sample Date		**12/2/20**
Sample Depth ft. BGS		**32**
Parameters µg/L	**MSCs µg/L**	
BENZENE	**5**	**560**
TOLUENE	**1000**	80
ETHYLBENZENE	**700**	130
XYLENES, TOTAL	**10000**	470
MTBE	**20**	6.7
1,2,4-TMB	**62**	**82**
>C12-C22		NA
>C22-C44		NA
C4-C12-TPH-GRO		2900
TOTAL ORG. CARBON		210000
TPH		NA

CD Groundwater Grab Results	
Well	**CD-09**
Boring	**S-457**
Sample Date	**12/2/20**
Sample Depth	**32**
Parameters (µg/L)	
ALKALINITY TO pH 4.5	NA
CALCIUM	38,000
CHLORIDE (AS CL)	110,000
IRON	10,000
MAGNESIUM	9,400
METHANE	81
NITROGEN, AMMONIA	NA
NITROGEN, NITRATE	5,600
POTASSIUM	3,900
SODIUM	76,000
SULFATE (AS SO4)	150,000

CD Soil Sample Results				
Well /Boring		**CD-09 S-457**		
Sample Date		**12/28/20**	**12/16/20**	**12/29/20**
Sample Depth ft BGS		**8**	**22**	**47**
Parameters mg/kg	**MCLs mg/kg**			
BENZENE	330	ND	0.23 J	6.6
TOLUENE	10000	ND	0.094 J	ND
ETHYLBENZENE	1000	ND	0.56	ND
XYLENES, TOTAL	9100	ND	0.45 J	ND
MTBE	9900	ND	ND	2.9
>C12-C22		1100	390	ND
>C22-C44		53 J	7.3 J	9.2 J
C4-C12-TPH-GRO		320	680	16
TPH		1200	400	9.2 J

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Project No.: 19-113-50

GeoTrax Viz™ 2-D Data Integration
Belmont Terminal Site
Philadelphia, Pennsylvania

FINAL REPORT

Prepared for Stantec / EVERGREEN

FIGURE
9.1
INITIAL CD DATA INTEGRATION

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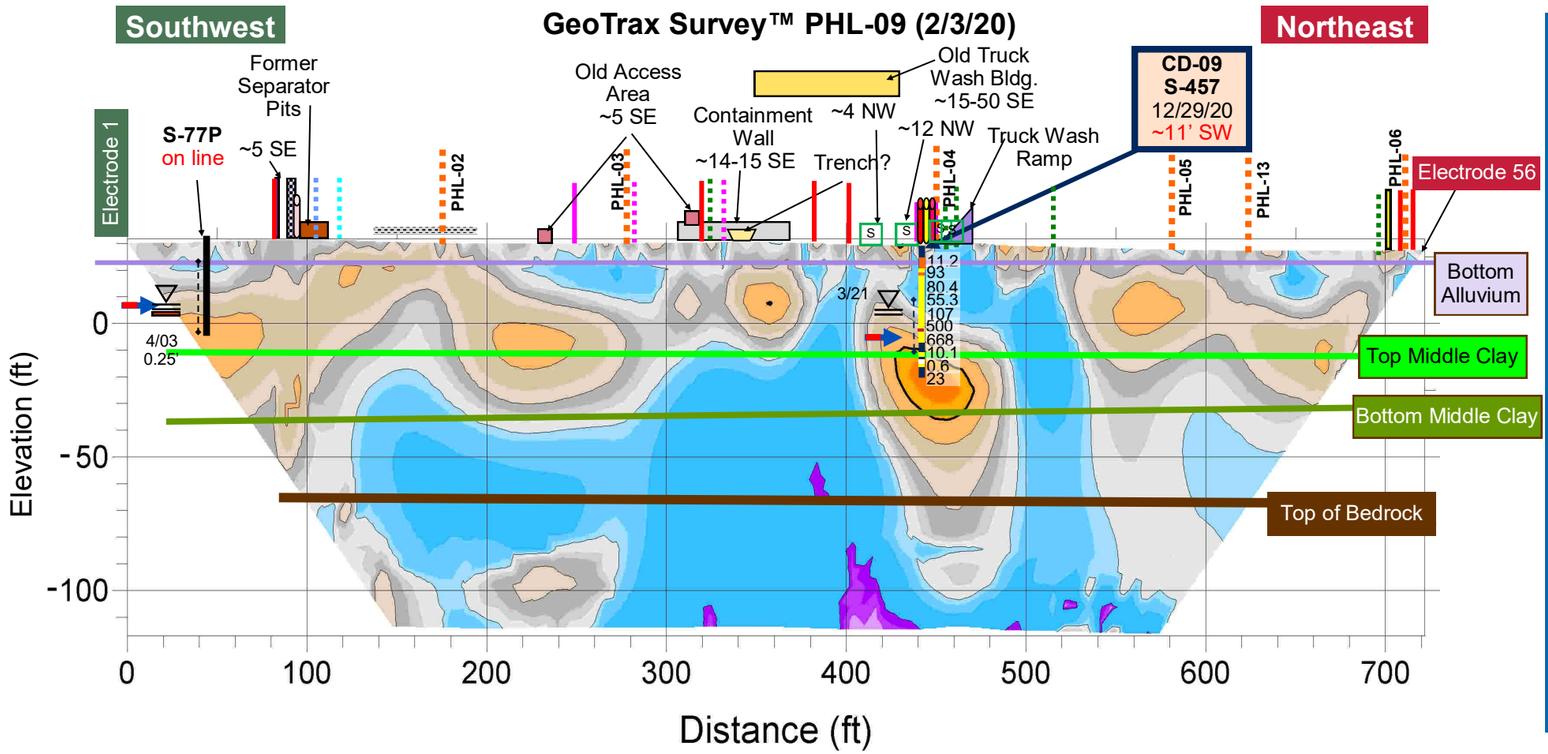

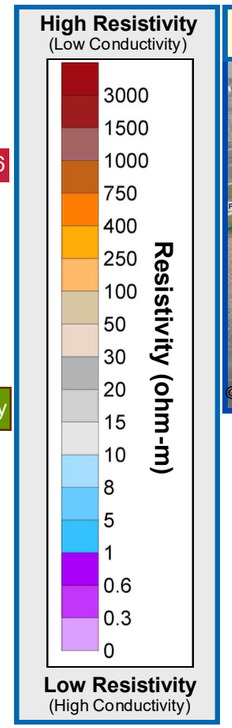

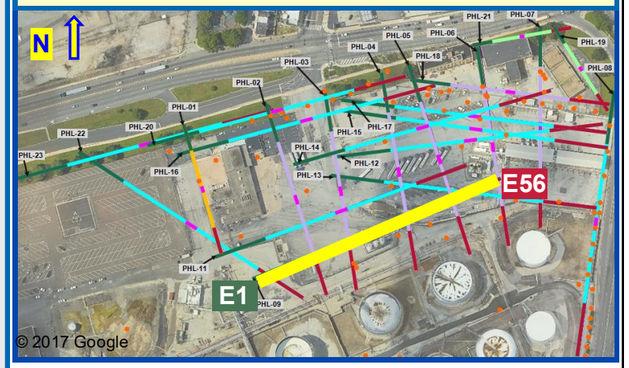

Groundwater Sample Results		
Well		S-77P
Sample Date		7/25/18
Parameters (µg/L)	Standards (µg/L)	
BENZENE	**5**	**222**
TOLUENE	**1000**	23.5
ETHYLBENZENE	**700**	8.18
XYLENES, TOTAL	**10000**	57
MTBE	**20**	**2090**
NAPHTHALENE	**100**	8.04
PYRENE	**130**	0.549
ANTHRACENE	**66**	1.48
ISOPROPYLBENZENE	**3500**	128
FLUORENE	**1900**	14.1
CHRYSENE	**1.9**	0.112
PHENANTHRENE	**1100**	6.74
LEAD	**5**	ND
1,2,4-TRIMETHYLBENZENE	**62**	2.16
1,2-DIBROMOETHANE	**0.05**	ND
1,2-DICHLOROETHANE	**5**	ND
1,3,5-TRIMETHYLBENZENE	**1200**	2.98
BENZO(A)ANTHRACENE	**4.9**	0.0774
BENZO(A)PYRENE	**0.2**	ND
BENZO(B)FLUORANTHENE	**0.55**	ND
BENZO(G,H,I)PERYLENE	0.26	ND

CD Groundwater Sample Results		
Well		CD-09
Boring		S-457
Sample Date		3/26/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**18000**
TOLUENE	**1000**	770
ETHYLBENZENE	**700**	**1400**
XYLENES, TOTAL	**10000**	3500
MTBE	**20**	**3700**
NAPHTHALENE	**100**	**3100**
1,2,4-TMB	**62**	**550**
1,3,5-TMB	**1200**	150
ISOPROPYLBENZENE	**3500**	53
TERT-BUTYL ALCOHOL		23000

CD Groundwater Sample Results	
Well	CD-09
Boring	S-457
Sample Date	3/26/21
Parameters µg/L	
ALKALINITY TO pH 4.5	240,000
CALCIUM	77,000
IRON	36,000
METHANE	14,000
SULFATE (AS SO4)	2200 J
TOTAL CARBON	140,000
TOTAL INORGANIC CARBON	96,000
TOTAL KJELDAHL NITROGEN	970 J
TOTAL ORGANIC CARBON	44,000

CD Groundwater Quality Results		
Well		CD-09
Boring		S-457
Sample Date		3/26/21
Parameters	*Units*	
DO	mg/L	0.88
ORP	mV	-144
pH	S.U.	6.82
EC	mS/cm	1.91
Temperature	ºC	18.38
Turbidity	NTU	37.1

Groundwater Quality Sample Results		
Well		S-77P
Sample Date		7/25/18
Parameters	*Units*	
DO	mg/L	0.11
ORP	mV	-58
pH	S.U.	6.92
EC	mS/cm	0.927
Temperature	ºC	18.99
Turbidity	NTU	13.1

Well Product Data	
Well	S-77P
Sample Date	4/23/03
Product Description	95% HEAVY VIRGIN NAPHTHA, 5% MIDDLE DISTILLATE

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GeoTrax Viz™ 2-D Data Integration
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FIGURE
9.2
ANALYTICAL DATA INTEGRATION

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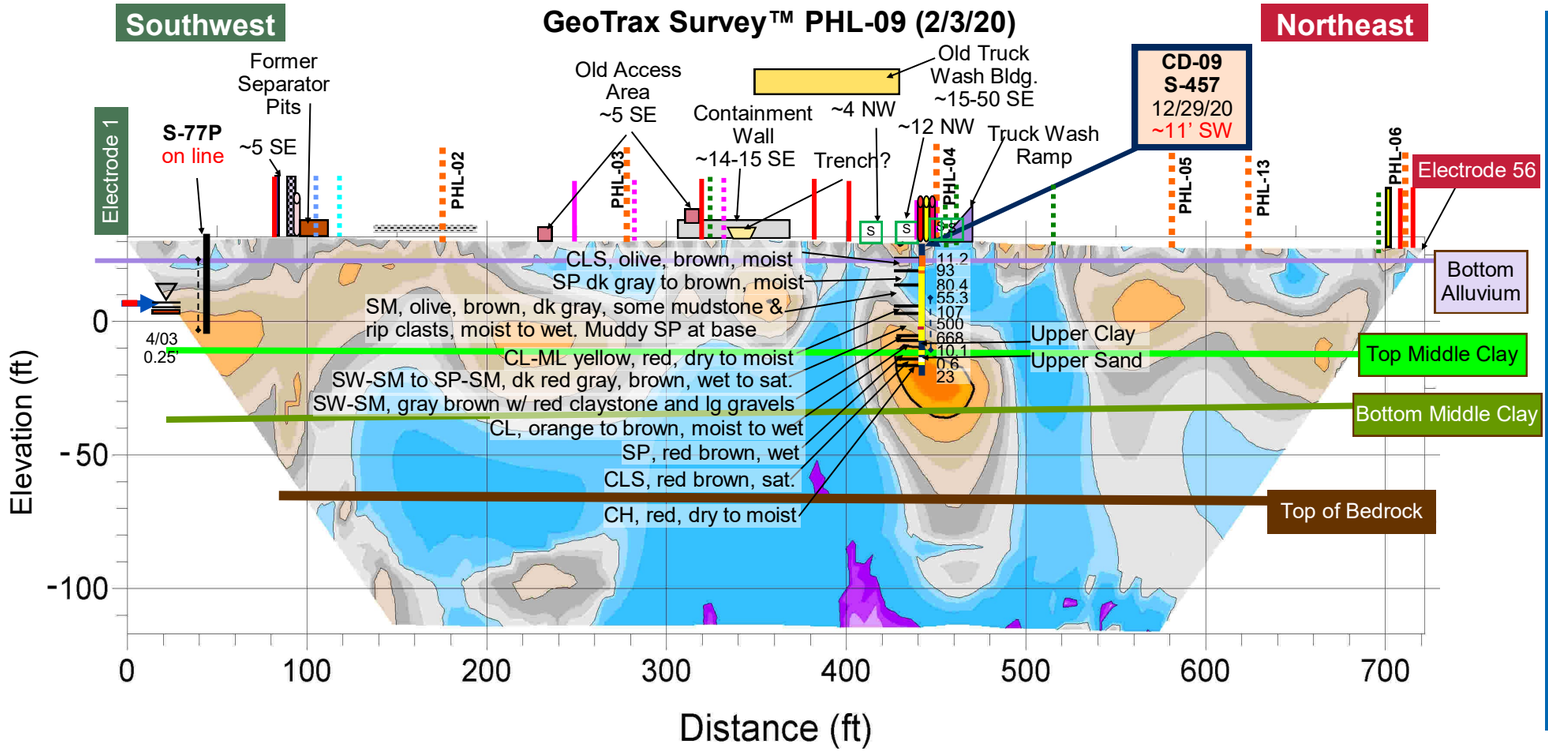
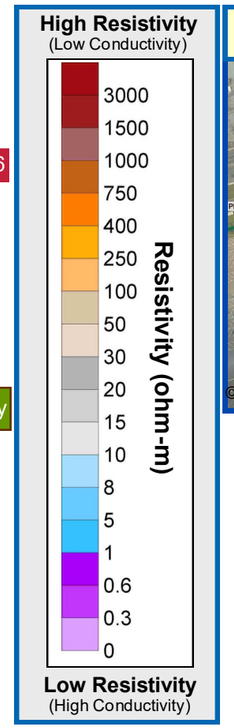
GeoTrax Survey™ PHL-09 (2/3/20)





GeoTrax Survey ™ Line Location in Plan View

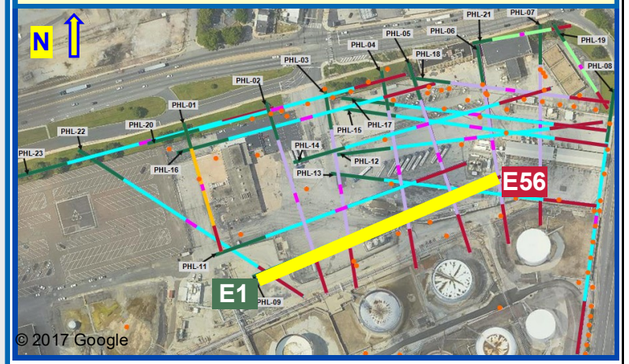


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FIGURE
9.3
GEOLOGY
DATA
INTEGRATION

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No PHL-10 in Integrated Data Set for Belmont Terminal Site

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FIGURE
10

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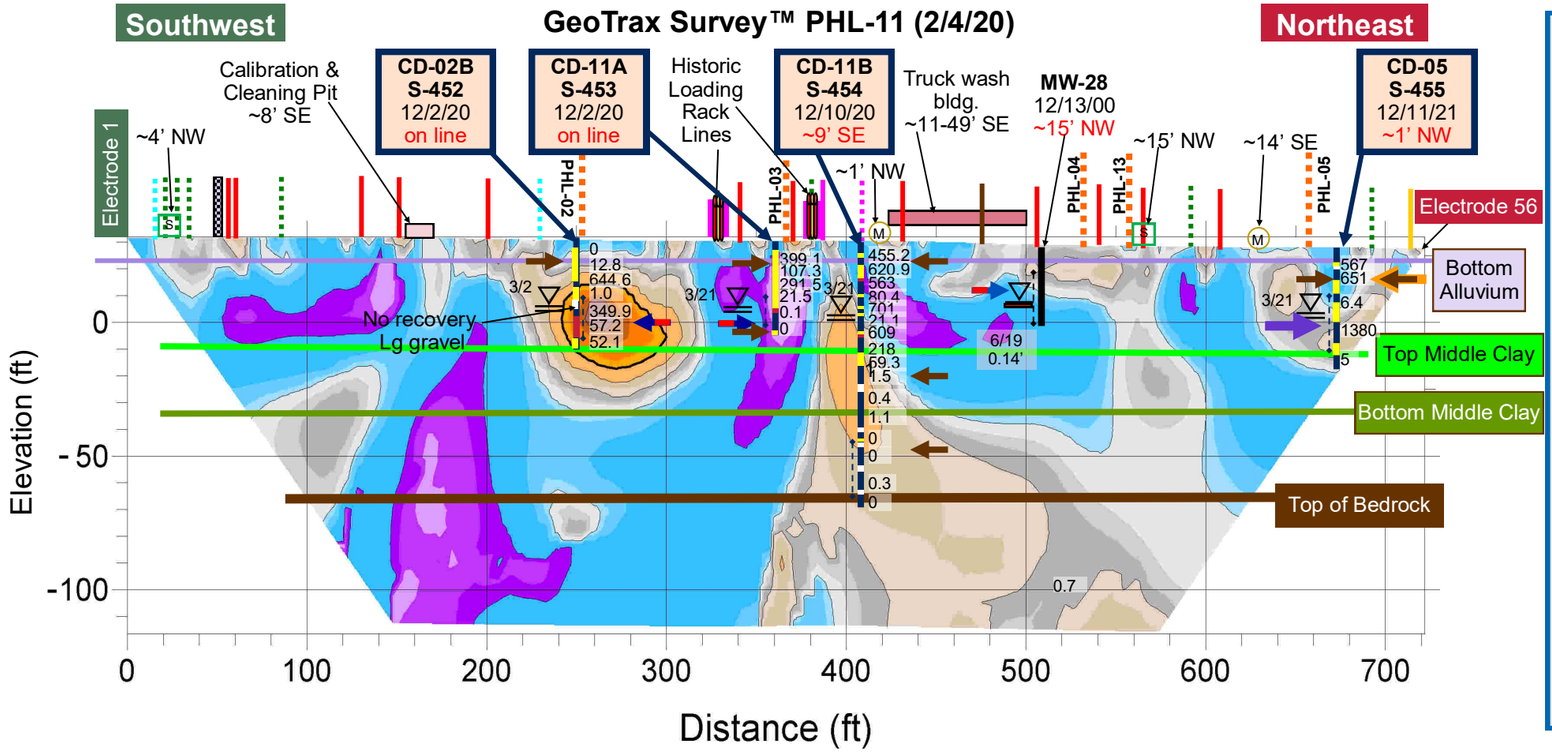
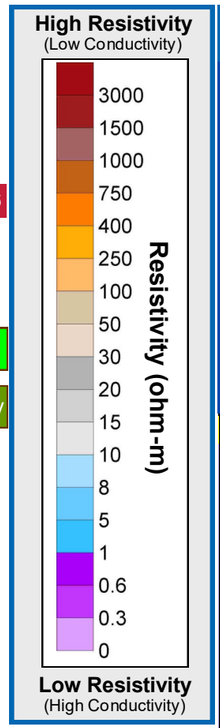
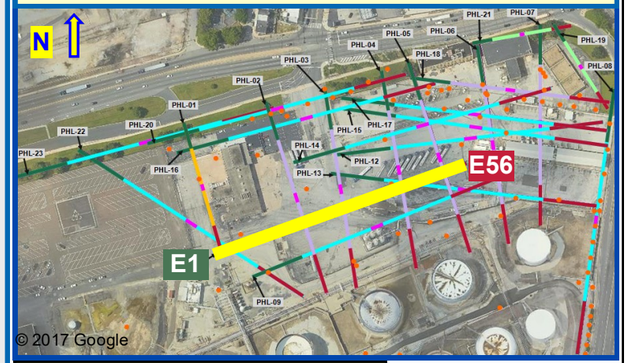




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	CD-11A
Boring	S-453
Sample Date	2/11/21
Sample Depth ft. BGS	29
Data Set IDs	
# reads for sample (millions)	5.812
Bacterial	73
Antibiotic resistant	1
Fungal	6
Protists	2
Dark Matter	174
Phages	1
Virus	1
Virulence Factors	4
QPCR	
Bacterial Biomass (gene copies / L)	2,500,000,000

CD Groundwater Grab Results

Well		CD-02B	CD-11A	CD-11B	CD-05
Boring		S-452	S-453	S-454	S-455
Sample Date		12/2/20	12/3/20	12/7/20	
Sample Depth ft. BGS		28	29	37	
Parameters µg/L	MSCs µg/L				
BENZENE	5	20	26		
TOLUENE	1000	1.8	ND		
ETHYLBENZENE	700	45	89		
XYLENES, TOTAL	10000	120	140		
MTBE	20	ND	1.7 J	NA	NA
1,2,4-TMB	62	30	130		
>C12-C22		NA	7500 B		
>C22-C44		NA	ND		
C4-C12-TPH-GRO		890	2900		
TOTAL ORG. CARBON		51000	53000	21000	
TPH		NA	7500	NA	

CD Groundwater Grab Results

Well	CD-02B	CD-11A	CD-11B	CD-05
Boring	S-452	S-453	S-454	S-455
Sample Date	12/2/20	12/3/20	12/7/20	
Sample Depth	28	29	37	
Parameters (µg/L)				
ALKALINITY TO pH 4.5		260,000		
CALCIUM		62,000		
CHLORIDE (AS CL)	NA	94,000	NA	NA
IRON		440,000		
MAGNESIUM		48,000		
METHANE	52	140		
NITROGEN, AMMONIA		660 J		
NITROGEN, NITRATE		2,700		
POTASSIUM	NA	16,000		
SODIUM		170,000		
SULFATE (AS SO4)		65,000		

CD Soil Sample Results

Well /Boring		CD-02B	CD-11A	CD-11B				CD-05
		S-452	S-453	S-454				S-455
Sample Date		12/1/20	12/2/20	12/3/20	12/3/20	12/8/20	12/8/20	12/10/20
Sample Depth ft BGS		10	8	32	8	50	78	9
Parameters mg/kg	MCLs mg/kg							
BENZENE	330	0.0042 H	0.29 J	0.66 H	ND	4.5 H	0.0024 J	1.2
TOLUENE	10000	0.00068 JH	ND	ND	ND	0.027	ND	0.61
ETHYLBENZENE	1000	ND	0.029 J	0.0075	0.055 J	1.3 H	0.0028 J	6.6
XYLENES, TOTAL	9100	ND	ND	0.0016 J	0.14 J	0.52	0.0034 J	6.4
MTBE	9900	0.0024 JH	ND	0.24	ND	0.11	0.00091 J	ND
>C12-C22		ND	3000	ND	1100	ND	ND	110
>C22-C44		ND	ND	ND	60 J	ND	ND	9.3 J
C4-C12-TPH-GRO		0.68 H	350 H	4 ^c	1800	14 H	0.99	2400
TPH		ND	3000	ND	1200	ND	ND	120

CD Soil Forensics

Well	CD-05
Boring	S-455
Date	12/10/20
Depth ft BGS	9
See Report for full details	Dominant Gasoline range. Gasoline or a mixture of gasoline and light straight run Naphtha

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FIGURE
11.1
INITIAL CD DATA INTEGRATION

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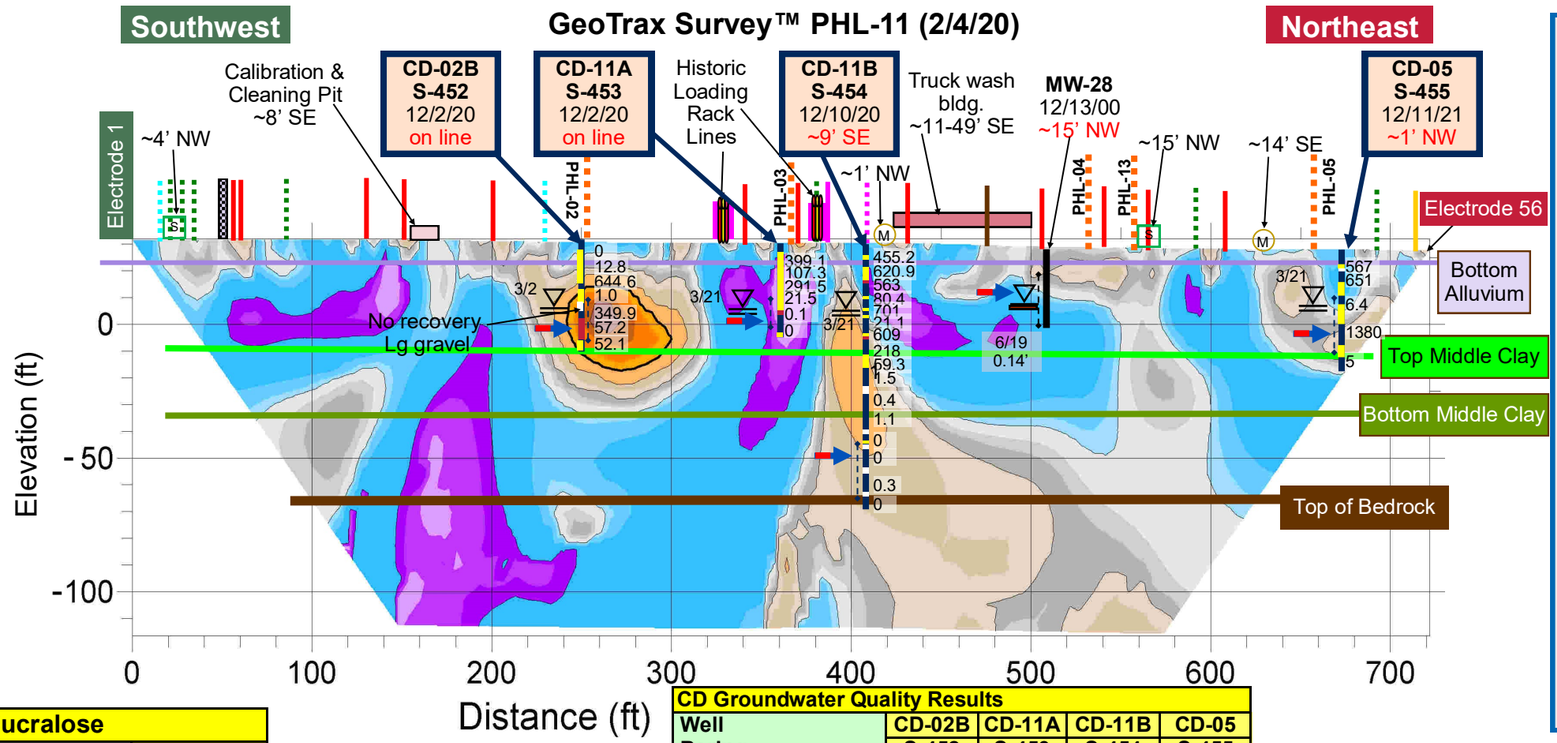

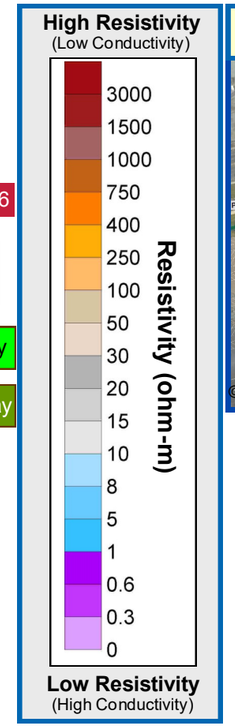

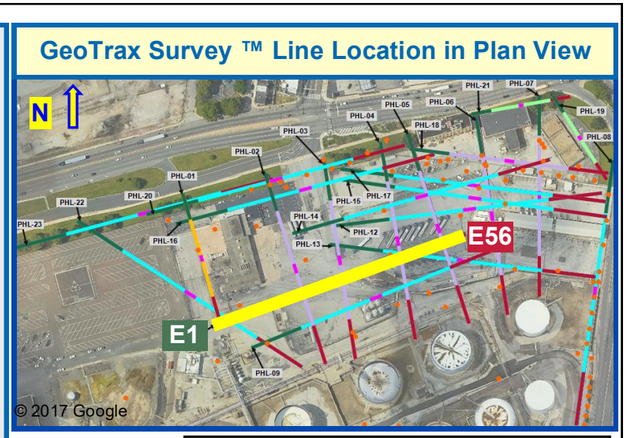

Well Product Data	
Well	MW-28
Sample Date	6/3/19
Product Description	65% GASOLINE, 35% MIDDLE DISTILLATE

Sucralose	
Well	CD-02B
Boring	S-452
Sample Date	5/18/21
Sucralose ng/L	ND

CD Groundwater Quality Results					
Well		CD-02B	CD-11A	CD-11B	CD-05
Boring		S-452	S-453	S-454	S-455
Sample Date		3/26/21	3/26/21	3/26/21	3/26/21
Parameters	*Units*				
DO	mg/L	0.94	0.88	0.52	0.42
ORP	mV	-125	-144	-118	-110
pH	S.U.	6.64	6.82	6.52	6.03
EC	mS/cm	1.32	1.91	1.34	2.67
Temperature	ºC	21.81	18.38	21.26	21.17
Turbidity	NTU	43	37.1	7.5	0

Groundwater Sample Results			
Well		MW-28	
Sample Date		12/19/14	
Parameters (µg/L)	Standards (µg/L)		
BENZENE	**5**	**2960**	
TOLUENE	**1000**	125	
ETHYLBENZENE	**700**	158	
XYLENES, TOTAL	**10000**	1000	
MTBE	**20**	**377**	
NAPHTHALENE	**100**	45.3	
PYRENE	**130**	2.09	
ANTHRACENE	**66**	0.275	
ISOPROPYLBENZENE	**3500**	17 J	
FLUORENE	**1900**	1.39	
CHRYSENE	**1.9**	1.48	
PHENANTHRENE	**1100**	2.6	
LEAD	**5**	ND	
1,2,4-TMB	**62**	**449**	
1,2-DIBROMOETHANE	**0.05**	ND	
1,2-DICHLOROETHANE	**5**	ND	
1,3,5-TMB	**1200**	162	
BENZO(A)ANTHRACENE	**4.9**	0.529	
BENZO(A)PYRENE	**0.2**	**0.451**	
BENZO(B)FLUORANTHENE	**0.55**	**1.36**	
BENZO(G,H,I)PERYLENE	**0.26**	**0.607**	

CD Groundwater Sample Results					
Well		CD-02B	CD-11A	CD-11B	CD-05
Boring		S-452	S-453	S-454	S-455
Sample Date		3/26/21	3/26/21	3/26/21	3/26/21
Parameters µg/L	MCLs µg/L				
BENZENE	**5**	**3200**	**3800**	**12**	**6300**
TOLUENE	**1000**	57	50	0.57 J	410
ETHYLBENZENE	**700**	**760**	**1300**	0.65 J	530
XYLENES, TOTAL	**10000**	1600	1800	1.7 J	580
MTBE	**20**	**1000**	**50**	0.88 J	**400**
NAPHTHALENE	**100**	**1300**	**300**	1.4	**4400**
1,2,4-TMB	**62**	**320**	**690**	ND	**280**
1,3,5-TMB	**1200**	110	220	ND	170
ISOPROPYLBENZENE	**3500**	83	66	ND	120
TERT-BUTYL ALCOHOL		22000	ND	ND	2200

CD Groundwater Sample Results				
Well	CD-02B	CD-11A	CD-11B	CD-05
Boring	S-452	S-453	S-454	S-455
Sample Date	3/26/21	3/26/21	3/26/21	3/26/21
Parameters µg/L				
ALKALINITY TO pH 4.5	290,000	150,000	130,000	400,000
CALCIUM	39,000	43,000	53,000	76,000
IRON	50,000	74,000	22,000	41,000
METHANE	14,000	17,000	3.8 J	19,000
SULFATE (AS SO4)	ND	7000 FH	200,000	ND
TOTAL CARBON	120,000	75,000	40,000	120,000
TOTAL INORGANIC CARBON	97,000	56,000	38,000	110,000
TOTAL KJELDAHL NITROGEN	3,400	580 J	ND	7,200
TOTAL ORGANIC CARBON	23,000	19,000	2,000	13,000

Groundwater Quality Sample Results		
Well		MW-28
Sample Date		12/19/14
Parameters	*Units*	
DO	mg/L	0.47
ORP	mV	-33
pH	S.U.	6.75
EC	mS/cm	1.83
Temperature	ºC	18.34
Turbidity	NTU	770

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FIGURE
11.2
ANALYTICAL DATA INTEGRATION

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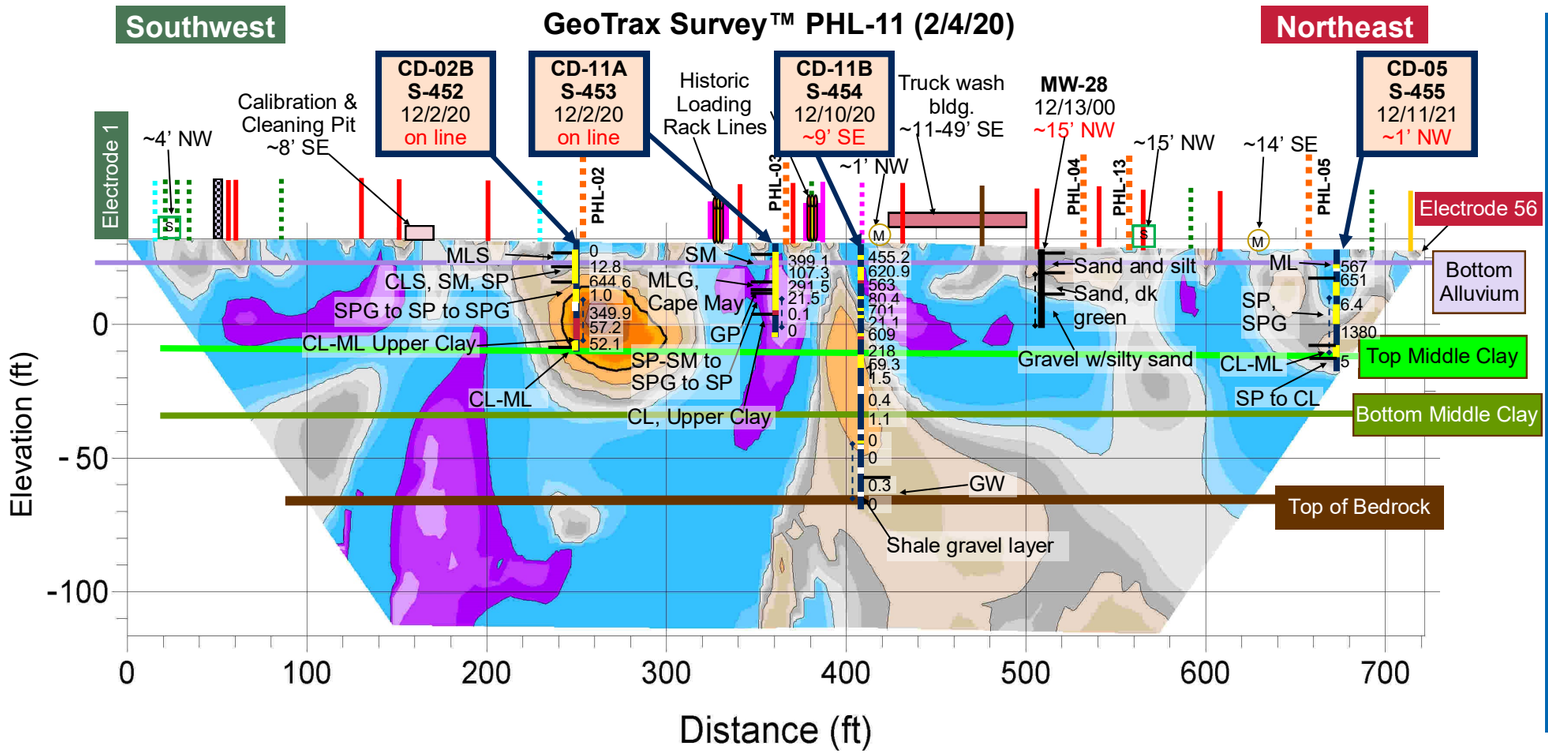

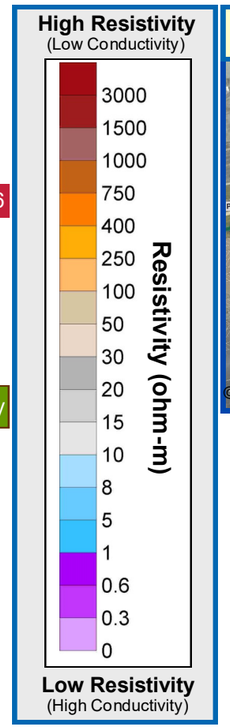

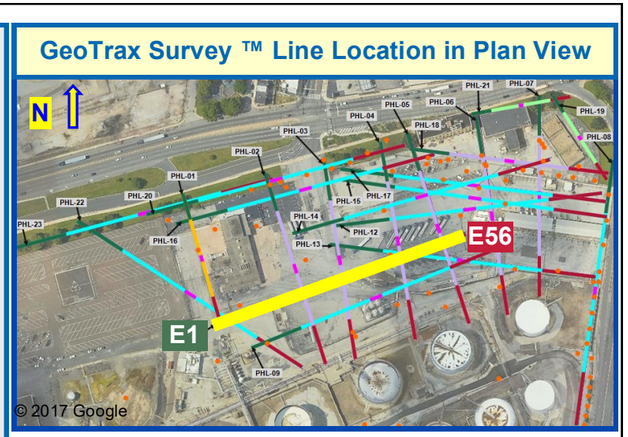

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FIGURE
11.3
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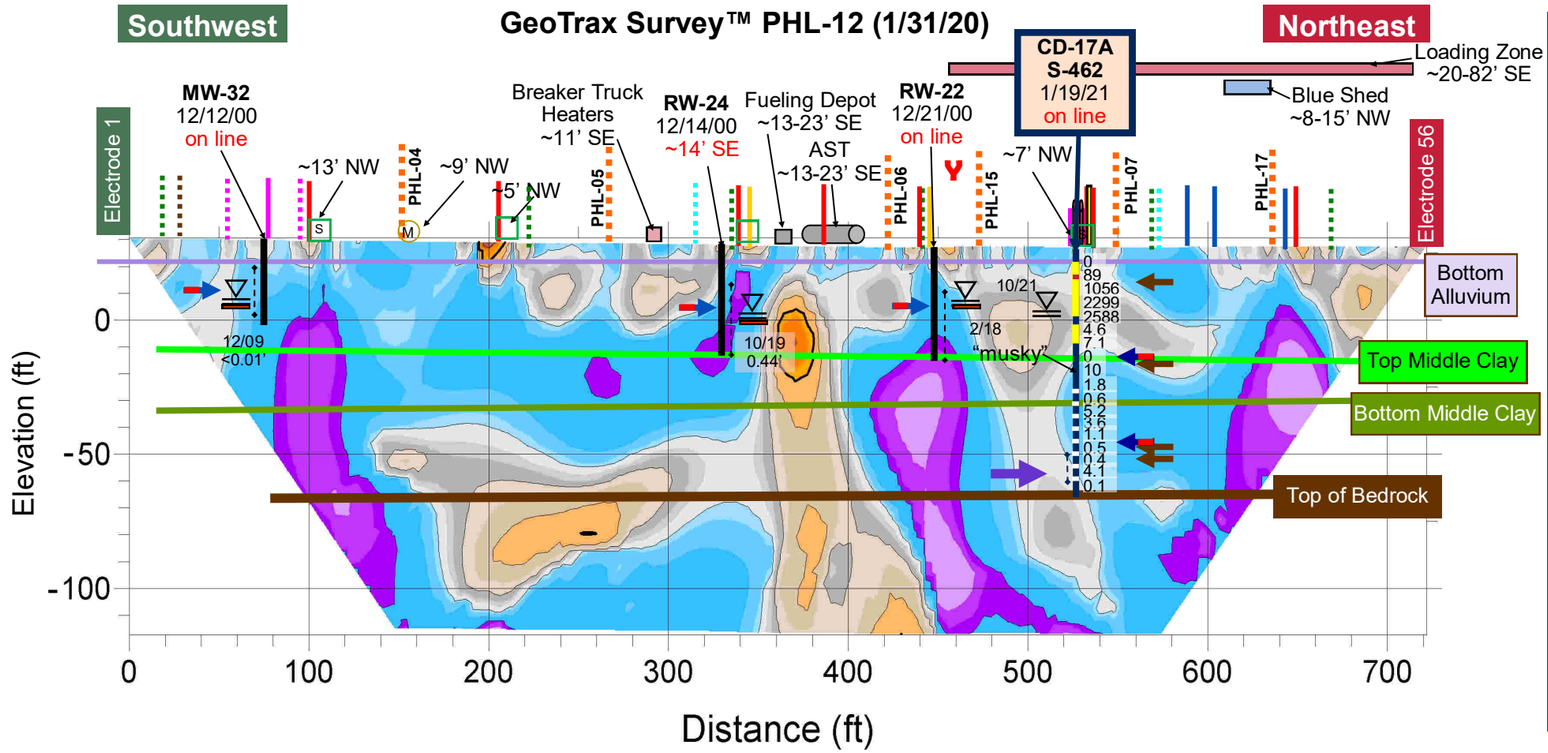
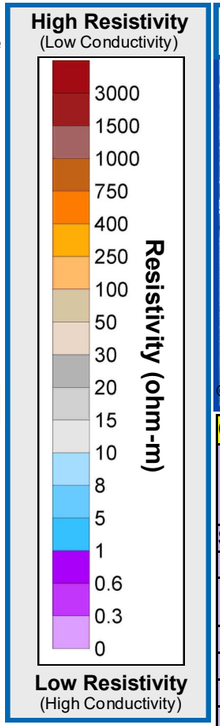
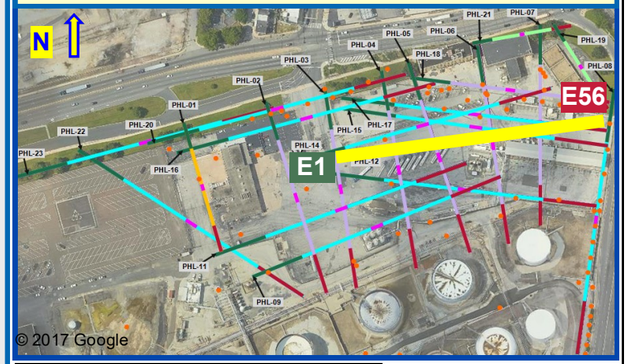




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	CD-17A
Boring	S-462
Sample Date	2/11/21
Sample Depth ft. BGS	83
Data Set IDs	
# reads for sample (millions)	3.84
Bacterial	120
Antibiotic resistant	1
Fungal	8
Protists	2
Dark Matter	75
Phages	4
Virus	0
Virulence Factors	14
QPCR	
Bacterial Biomass (gene copies / L)	3,400,000,000

CD Groundwater Grab Results			
Well		CD-17A	
Boring		S-462	
Sample Date		1/14/21	1/19/21
Sample Depth ft. BGS		40	73
Parameters µg/L	MSCs µg/L		
BENZENE	5	240	400
TOLUENE	1000	2200	1900
ETHYLBENZENE	700	350	290
XYLENES, TOTAL	10000	2000	1600
MTBE	20	130	47
1,2,4-TMB	62	330	260
>C12-C22		3000	3000
>C22-C44		120 J	190
C4-C12-TPH-GRO		12000	9400
TOTAL ORG. CARBON		60000	58000
TPH		3100	3200

CD Groundwater Grab Results			
Well		CD-17A	
Boring		S-462	
Sample Date		1/14/21	1/19/21
Sample Depth		40	73
Parameters (µg/L)			
ALKALINITY TO pH 4.5		190,000	170,000 FL
CALCIUM		33,000	53,000
CHLORIDE (AS CL)		82,000	81,000
IRON		3,000	42,000
MAGNESIUM		8,400	45,000
METHANE		44	86
NITROGEN, AMMONIA		3,200	1500 J
NITROGEN, NITRATE		2800 FL	840
POTASSIUM		3,800	7,200
SODIUM		67,000	110,000
SULFATE (AS SO4)		57,000	260,000

CD Soil Sample Results					
Well /Boring		CD-17A S-462			
Sample Date		1/13/21	1/14/21	1/15/21	1/19/21
Sample Depth ft BGS		13	43	76	79
Parameters mg/kg	MCLs mg/kg				
BENZENE	330	1.6	1.9	0.043	ND
TOLUENE	10000	32	0.037	0.2	0.0023 J
ETHYLBENZENE	1000	22	0.01	0.054	0.00065 J
XYLENES, TOTAL	9100	130	0.044	0.33	0.0035 J
MTBE	9900	0.89	0.002 J	0.0037 J	ND
>C12-C22		30	8.5 J	ND	ND
>C22-C44		ND	31	ND	130
C4-C12-TPH-GRO		1200 B	0.39 B	3.3 B	ND
TPH		30	40	ND	130

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FIGURE
12.1
INITIAL CD DATA INTEGRATION

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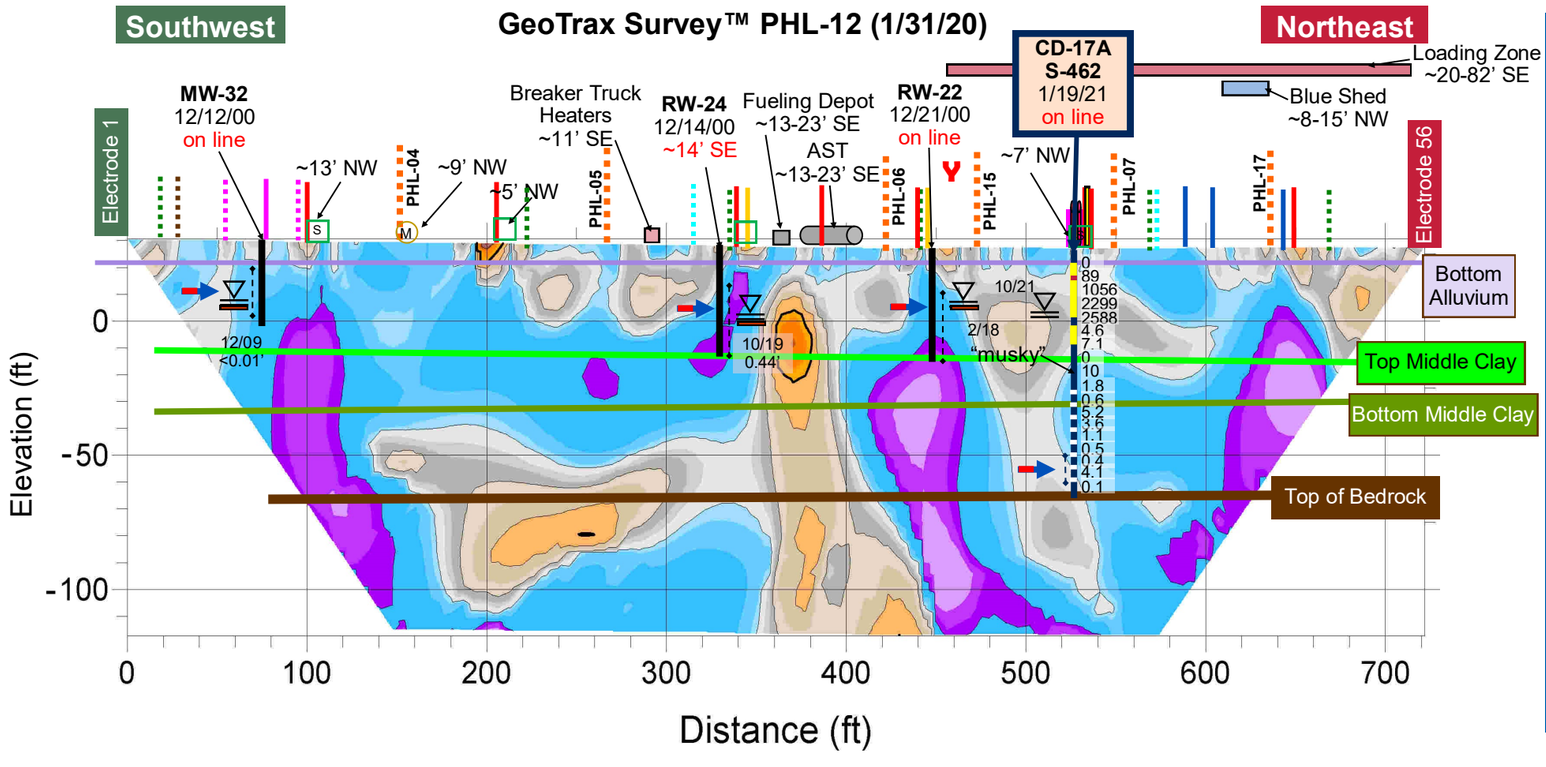
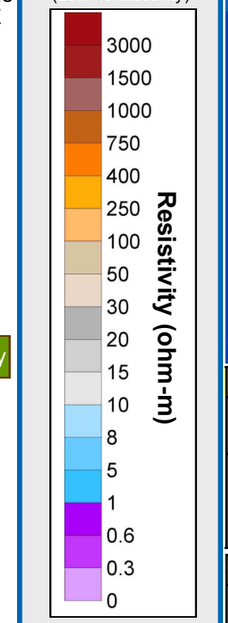
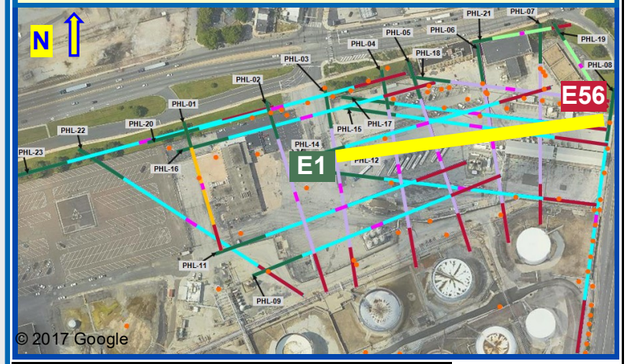




GeoTrax Survey ™ Line Location in Plan View



Well Product Data

Well	MW-32	RW-24	RW-22
Sample Date	12/31/09	10/11/19	2/15/18
Product Description	Not Available	UN-KNOWN	95% GASOLINE, 5% MIDDLE DISTILLATE

Groundwater Sample Results

Well		MW-32	RW-24	RW-22
Sample Date		7/30/18	12/19/14	5/30/14
Parameters (µg/L)	Stds (µg/L)			
BENZENE	5	**19.2**	**7020**	**1670**
ETHYLBENZENE	1000	3.37	**4150**	683
TOLUENE	700	196	**1360**	168
XYLENES, TOTAL	10000	351	8260	1370
MTBE	20	**114**	**12900**	**2830**
NAPHTHALENE	100	29	**751**	59.6
PYRENE	130	3.34	9.64	1.98
ANTHRACENE	66	0.306	6.62	0.834
ISOPROPYLBENZENE	3500	20.9	173	27.8
FLUORENE	1900	0.367	29.6	3.85
CHRYSENE	1.9	**2.66**	1.44	0.2
PHENANTHRENE	1100	1.71	34.1	2.26
LEAD	5	ND	4.2	3.8
1,2,4-TMB	62	**372**	**1780**	**606**
1,2-DIBROMOETHANE	0.05	ND	ND	ND
1,2-DICHLOROETHANE	5	ND	ND	ND
1,3,5-TMB	1200	133	566	151
BENZO(A)ANTHRACENE	4.9	1.1	1.48	0.229
BENZO(A)PYRENE	0.2	**1.98**	**0.5**	ND
BENZO(B)FLUORANTHENE	0.55	**4.29**	**0.718**	0.157
BENZO(G,H,I)PERYLENE	0.26	**2.4**	**0.328**	0.105

CD Groundwater Sample Results

Well		CD-17A
Boring		S-462
Sample Date		3/23/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**39**
TOLUENE	**1000**	1.8
ETHYLBENZENE	**700**	17
XYLENES, TOTAL	**10000**	100
MTBE	**20**	9.5
NAPHTHALENE	**100**	2.2
1,2,4-TMB	**62**	47
1,3,5-TMB	**1200**	18
ISOPROPYLBENZENE	**3500**	2.2 J
TERT-BUTYL ALCOHOL		20 J

CD Groundwater Sample Results

Well	CD-17A
Boring	S-462
Sample Date	3/23/21
Parameters µg/L	
ALKALINITY TO pH 4.5	160,000
CALCIUM	72,000
IRON	20,000
METHANE	8
SULFATE (AS SO4)	190,000
TOTAL CARBON	46,000
TOTAL INORGANIC CARBON	43,000
TOTAL KJELDAHL NITROGEN	ND
TOTAL ORGANIC CARBON	3,500

CD Groundwater Quality Results

Well		CD-17A
Boring		S-462
Sample Date		
Parameters	*Units*	
DO	mg/L	NA
ORP	mV	
pH	S.U.	
EC	mS/cm	
Temperature	ºC	
Turbidity	NTU	

Groundwater Quality Sample Results

Well		MW-32	RW-24	RW-22
Sample Date		7/30/18	12/19/14	5/30/14
Parameters	*Units*			
DO	mg/L	0	0.36	0.8
ORP	mV	-21	-103	146
pH	S.U.	6.58	7.3	6.35
EC	mS/cm	0.246	3.87	1.74
Temperature	ºC	22.24	18.01	18.68
Turbidity	NTU	0	36.7	48

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FIGURE
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ANALYTICAL DATA INTEGRATION

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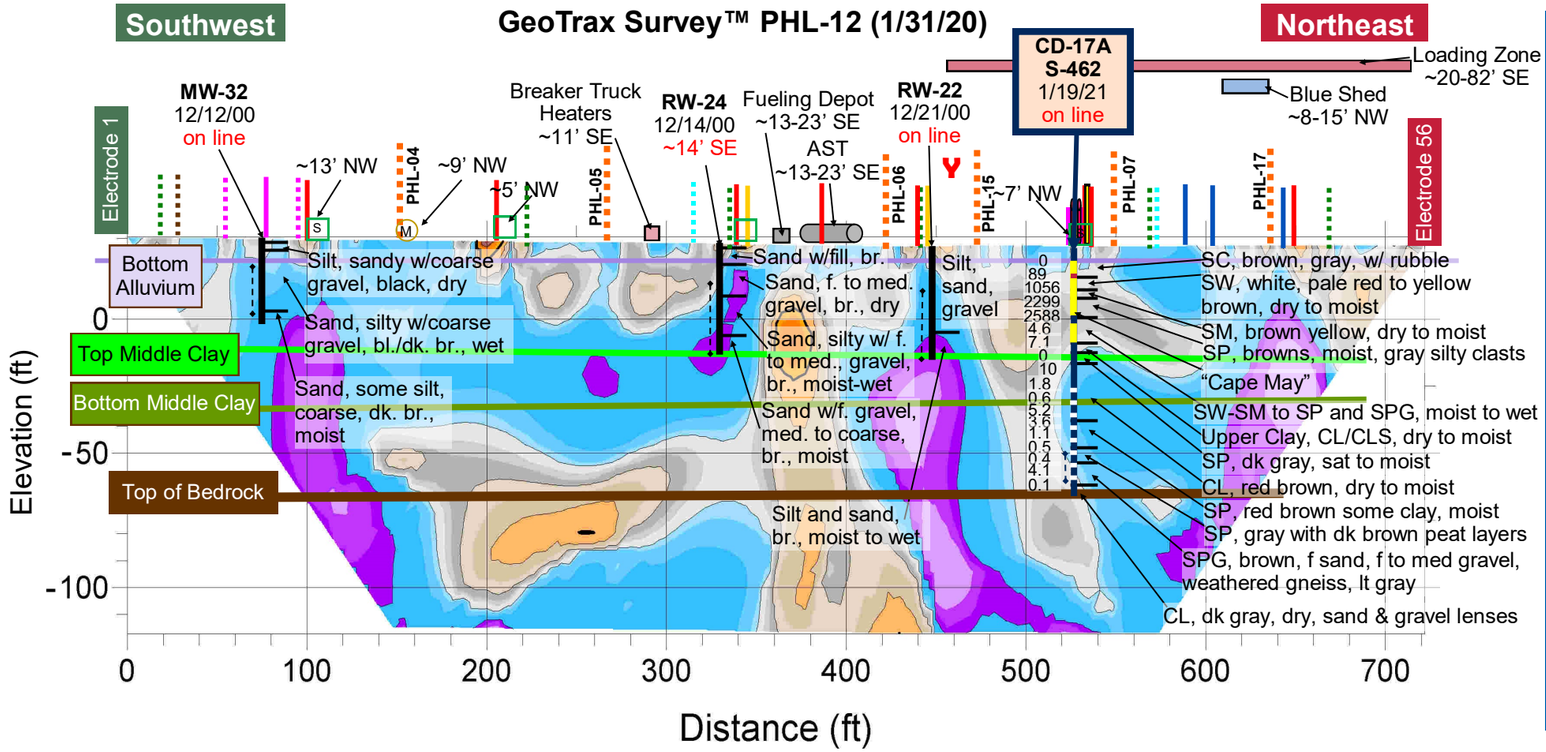
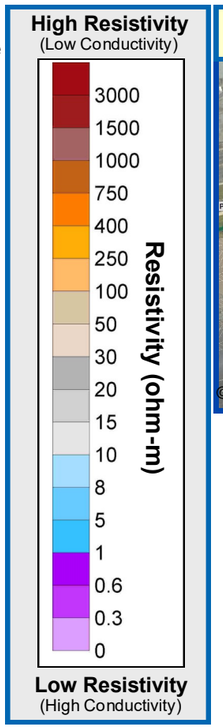
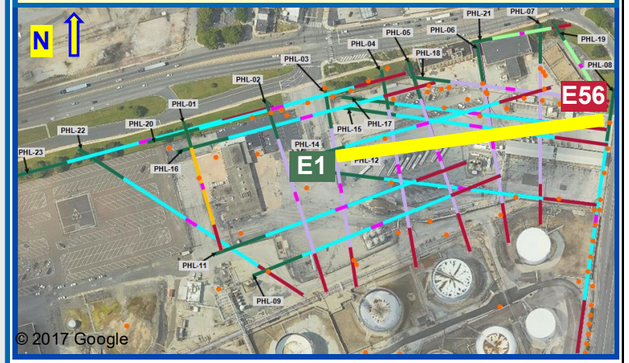




GeoTrax Survey ™ Line Location in Plan View



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12.3
GEOLOGY
DATA
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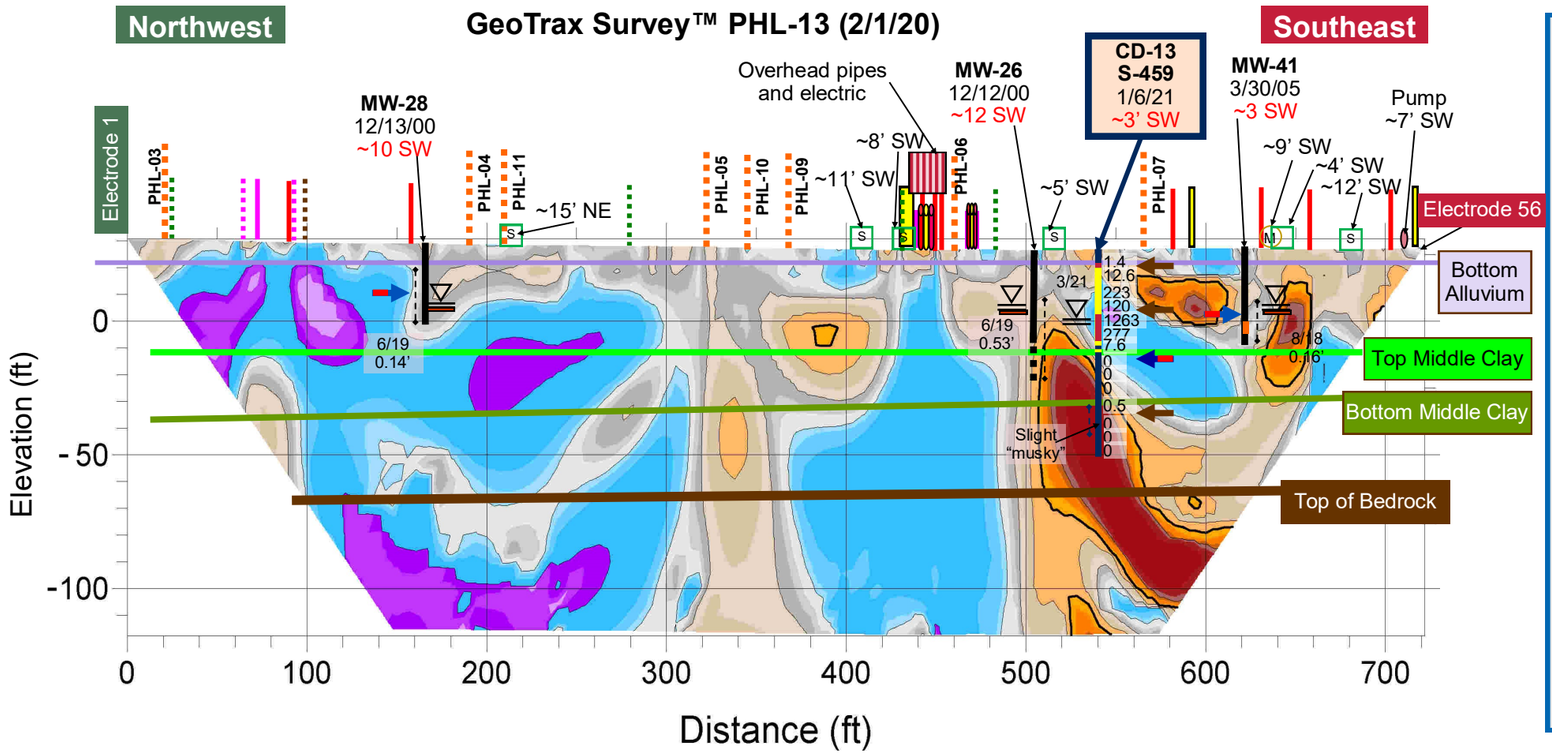

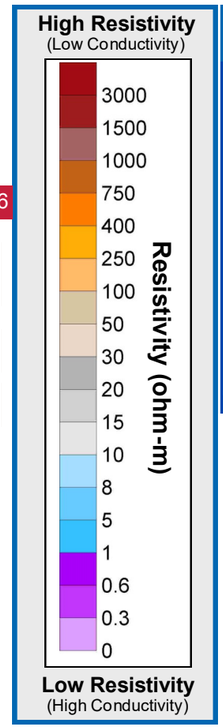

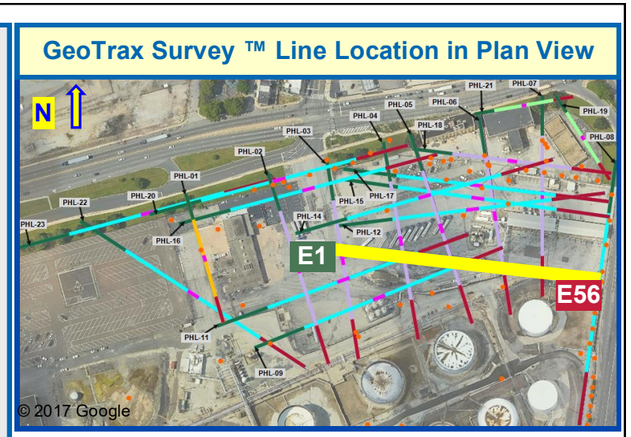

CD Groundwater Grab Results		
Well		CD-13
Boring		S-459
Sample Date		1/5/21
Sample Depth ft. BGS		40
Parameters µg/L	MSCs µg/L	
BENZENE	5	130
TOLUENE	1000	7.3
ETHYLBENZENE	700	97
XYLENES, TOTAL	10000	360
MTBE	20	43
1,2,4-TMB	62	110
>C12-C22		3100
>C22-C44		440
C4-C12-TPH-GRO		2600
TOTAL ORG. CARBON		33000
TPH		3500

CD Groundwater Grab Results	
Well	CD-13
Boring	S-459
Sample Date	1/5/21
Sample Depth	40
Parameters (µg/L)	
ALKALINITY TO pH 4.5	73,000
CALCIUM	46,000
CHLORIDE (AS CL)	150,000
IRON	5,400
MAGNESIUM	15,000
METHANE	150
NITROGEN, AMMONIA	900 J
NITROGEN, NITRATE	2,200
POTASSIUM	5,200
SODIUM	77,000
SULFATE (AS SO4)	41,000 FH

CD Soil Sample Results				
Well /Boring		CD-13 S-459		
Sample Date		1/4/21	1/4/21	1/6/21
Sample Depth ft BGS		5	22	60
Parameters mg/kg	MCLs mg/kg			
BENZENE	330	ND	1	ND
TOLUENE	10000	ND	ND	ND
ETHYLBENZENE	1000	ND	0.4	ND
XYLENES, TOTAL	9100	ND	0.48 J	ND
MTBE	9900	ND	ND	ND
>C12-C22		690	40	ND
>C22-C44		150	5.9 J	ND
C4-C12-TPH-GRO		600	25	0.067 J
TPH		840	46	ND

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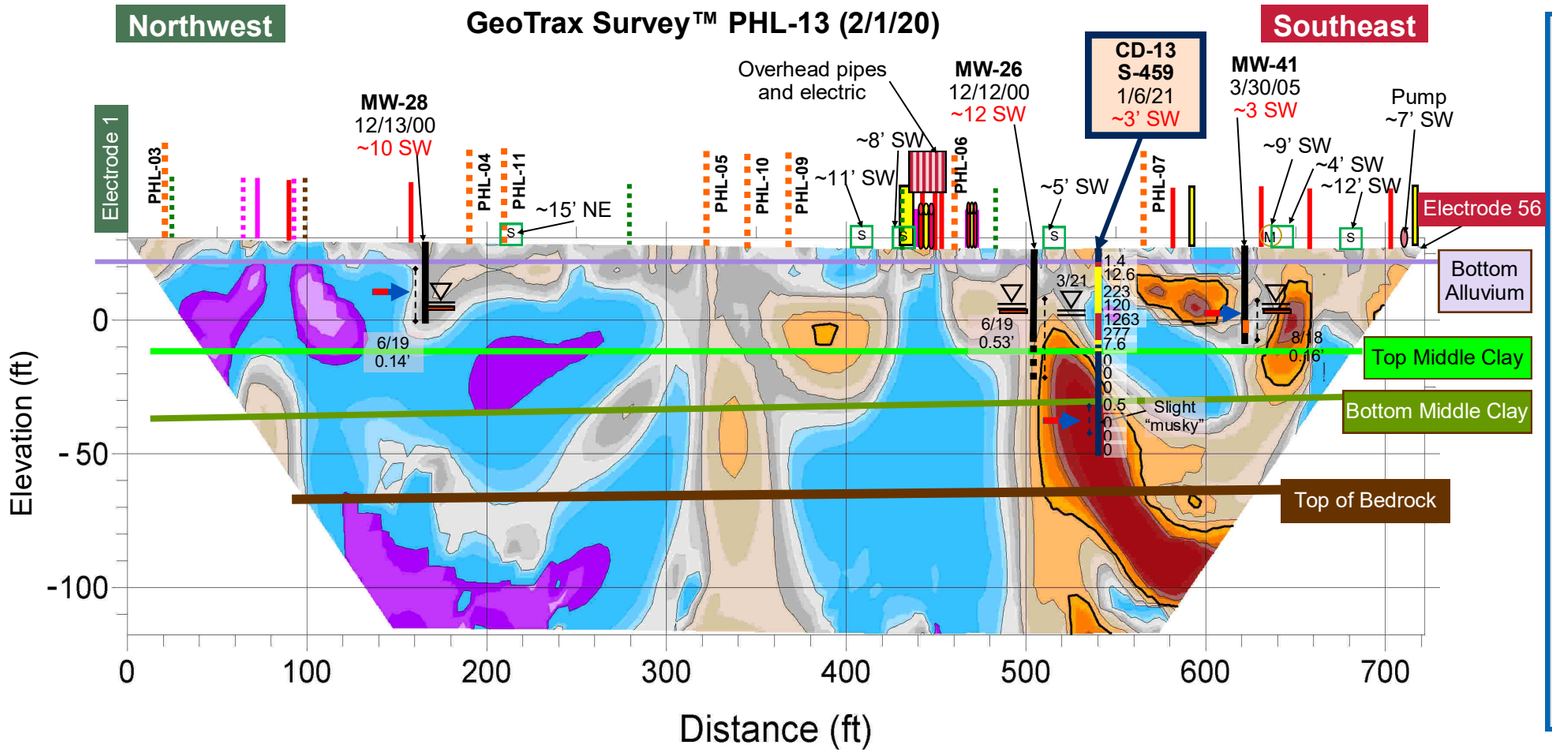

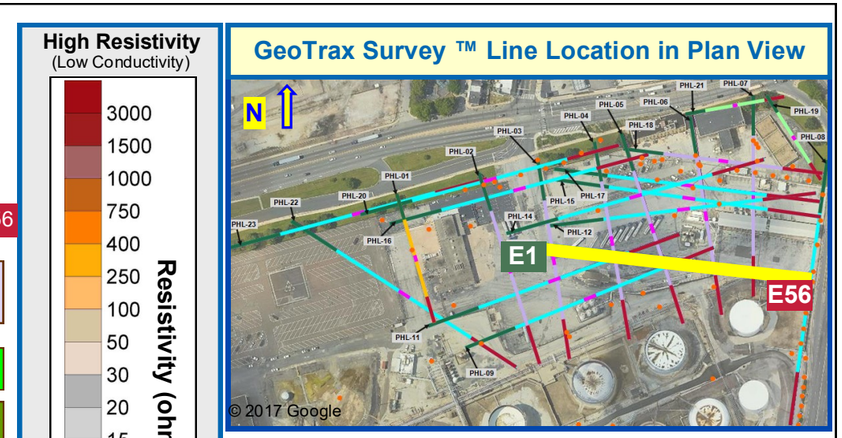

GeoTrax Survey ™ Line Location in Plan View

Groundwater Sample Results

Well		MW-28	MW-41
Sample Date		12/19/14	12/11/14
Parameters (µg/L)	Standards (µg/L)		
BENZENE	5	**2960**	**169**
ETHYLBENZENE	1000	125	0.531
TOLUENE	700	158	5.3
XYLENES, TOTAL	10000	1000	7.2
MTBE	20	**377**	15.1
NAPHTHALENE	100	45.3	3.03
PYRENE	130	2.09	14.9
ANTHRACENE	66	0.275	3.03
ISOPROPYLBENZENE	3500	17 J	6.1
FLUORENE	1900	1.39	8.03
CHRYSENE	1.9	1.48	**11.6**
PHENANTHRENE	1100	2.6	19.4
LEAD	5	ND	2.4 B
1,2,4-TMB	62	**449**	12.5
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TMB	1200	162	27.1
BENZO(A)ANTHRACENE	4.9	0.529	4.21
BENZO(A)PYRENE	0.2	**0.451**	**6.75**
BENZO(B)FLUORANTHENE	0.55	**1.36**	**10.7**
BENZO(G,H,I)PERYLENE	0.26	**0.607**	**7.09**

Well Product Data

Well	MW-28	MW-26	MW-41
Sample Date	6/3/19	6/3/19	8/2/18
Product Description	65% GASOLINE, 35% MIDDLE DISTILLATE	Not Available	65% MIDDLE DISTILLATE 35% GASOLINE

CD Groundwater Sample Results

Well		CD-13
Boring		S-459
Sample Date		3/24/21
Parameters µg/L	MCLs µg/L	
BENZENE	**5**	**13**
TOLUENE	**1000**	0.63 J
ETHYLBENZENE	**700**	14
XYLENES, TOTAL	**10000**	49
MTBE	**20**	ND
NAPHTHALENE	**100**	28
1,2,4-TMB	**62**	40
1,3,5-TMB	**1200**	14
ISOPROPYLBENZENE	**3500**	3.3 J
TERT-BUTYL ALCOHOL		ND

CD Groundwater Sample Results

Well	CD-13
Boring	S-459
Sample Date	3/24/21
Parameters µg/L	
ALKALINITY TO pH 4.5	150,000
CALCIUM	58,000
IRON	27,000
METHANE	14
SULFATE (AS SO4)	320,000
TOTAL CARBON	50,000
TOTAL INORGANIC CARBON	46,000
TOTAL KJELDAHL NITROGEN	570 J
TOTAL ORGANIC CARBON	4,000

CD Groundwater Quality Results

Well		CD-13
Boring		S-459
Sample Date		3/24/21
Parameters	*Units*	
DO	mg/L	0.27
ORP	mV	-19
pH	S.U.	5.75
EC	mS/cm	1
Temperature	ºC	16.75
Turbidity	NTU	25.5

Groundwater Quality Sample Results

Well		MW-28	MW-41
Sample Date		12/19/14	8/2/18
Parameters	*Units*		
DO	mg/L	0.47	5.63
ORP	mV	-33	118
pH	S.U.	6.75	7.07
EC	mS/cm	1.83	0.142
Temperature	ºC	18.34	23.54
Turbidity	NTU	770	0

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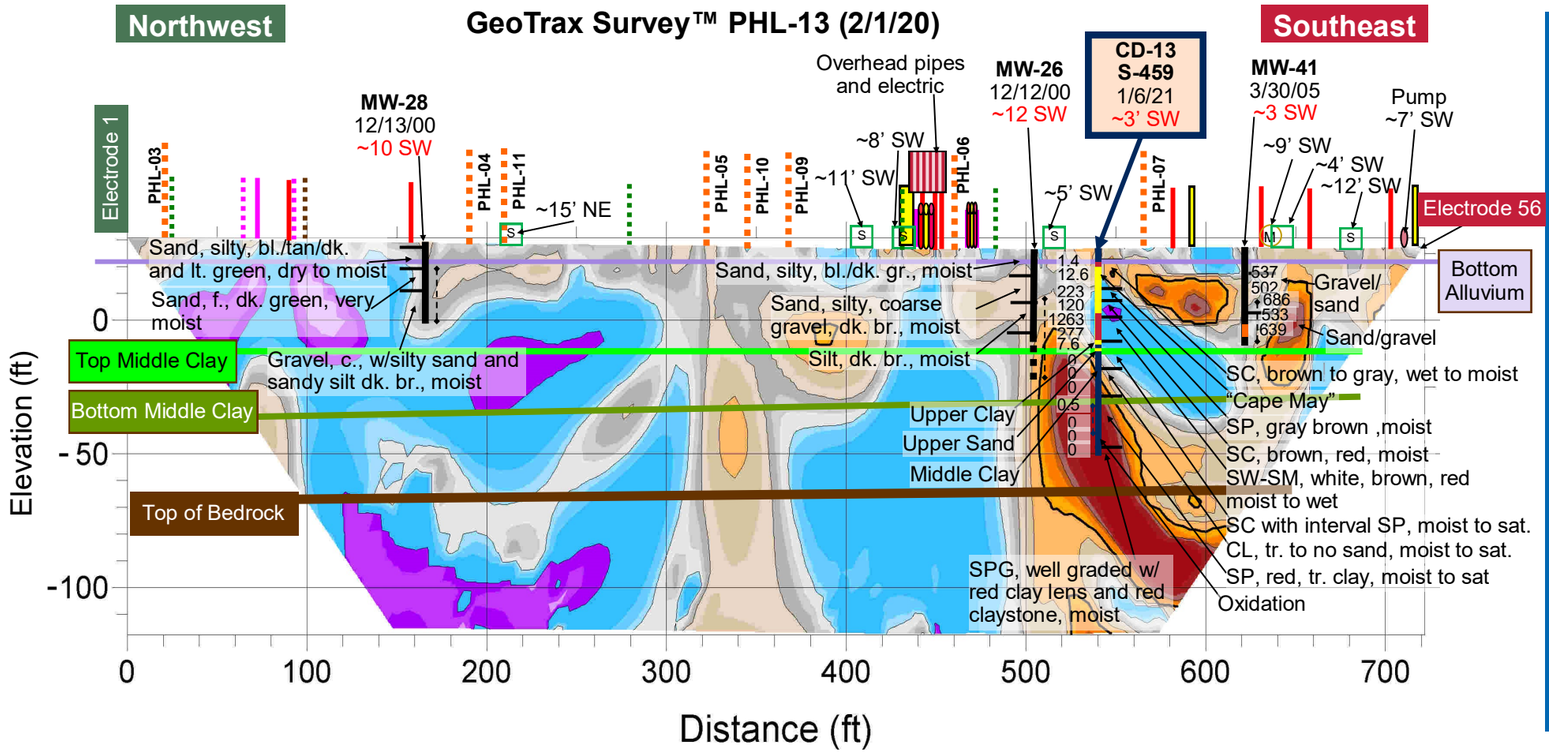
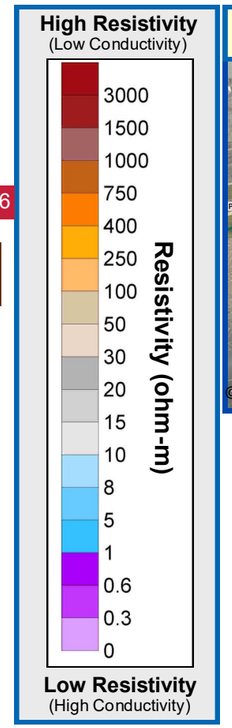
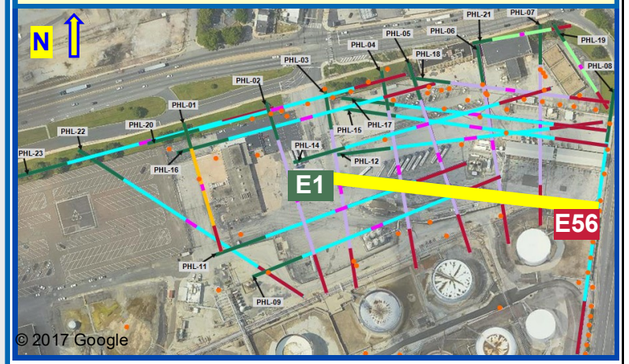




GeoTrax Survey ™ Line Location in Plan View



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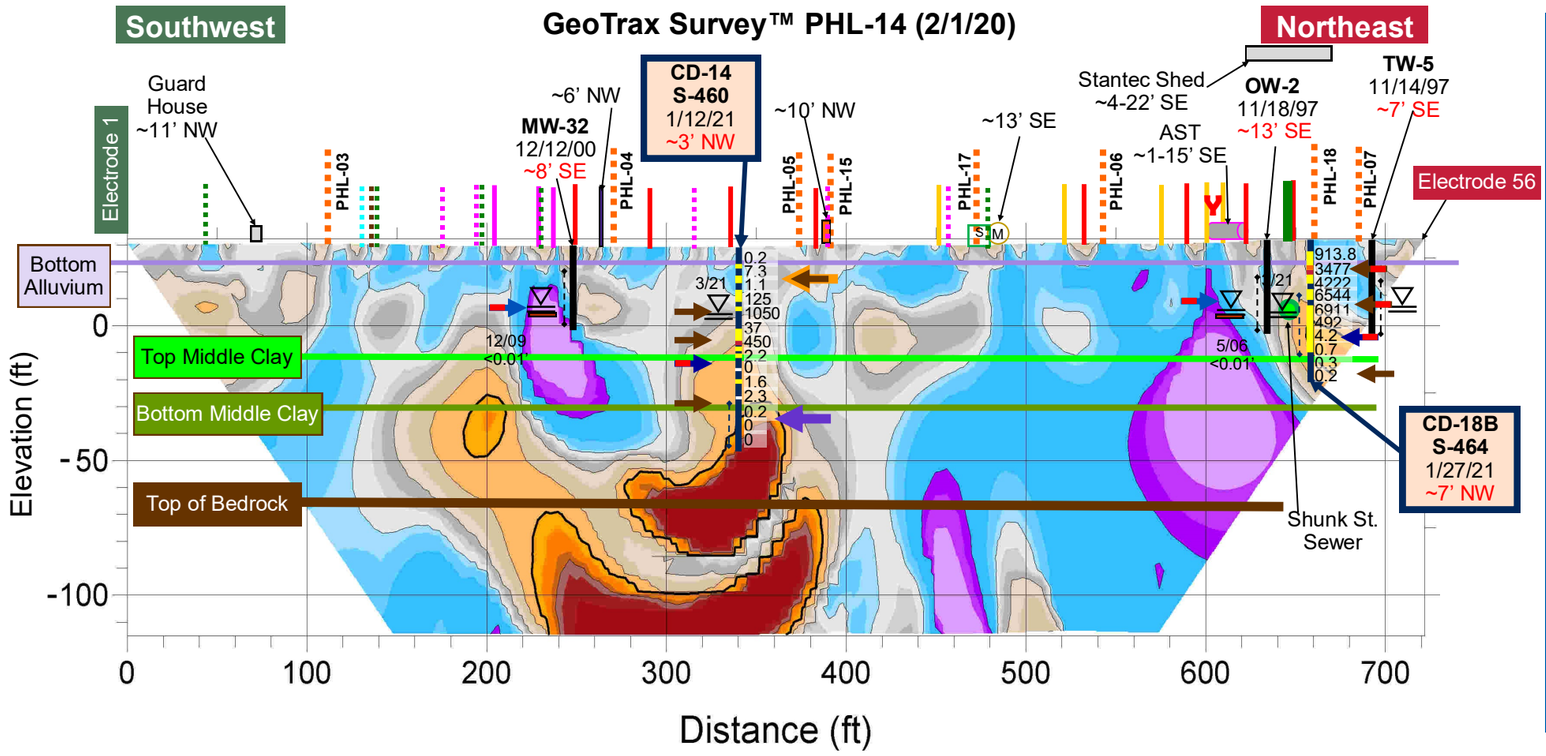

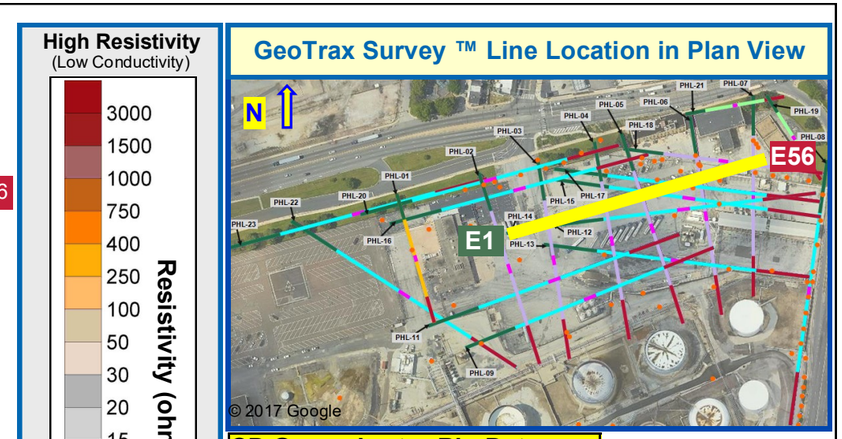

GeoTrax Survey ™ Line Location in Plan View

CD Groundwater Bio Data	
Well	**CD-14**
Boring	**S-460**
Sample Date	2/11/21
Sample Depth ft. BGS	65
Data Set IDs	
# reads for sample (millions)	5.476
Bacterial	169
Antibiotic resistant	4
Fungal	14
Protists	8
Dark Matter	84
Phages	4
Virus	0
Virulence Factors	18
QPCR	
Bacterial Biomass (gene copies / L)	6,700,000,000

CD Groundwater Grab Results

Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		1/8/21	1/27/21
Sample Depth ft. BGS		44	38
Parameters µg/L	MSCs µg/L		
BENZENE	5	690	100,000
TOLUENE	1000	800	3,300
ETHYLBENZENE	700	920	160
XYLENES, TOTAL	10000	1100	590 J
MTBE	20	7,000	ND
1,2,4-TMB	62	250	ND
>C12-C22		NA	3900
>C22-C44			380
C4-C12-TPH-GRO			160000
TOTAL ORG. CARBON			30000
TPH			4300

CD Groundwater Grab Results

Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		1/8/21	1/27/21
Sample Depth		44	38
Parameters (µg/L)			
ALKALINITY TO pH 4.5			310,000
CALCIUM			61,000
CHLORIDE (AS CL)		NA	160,000
IRON			14,000
MAGNESIUM			21,000
METHANE		410	170
NITROGEN, AMMONIA			600 J
NITROGEN, NITRATE			1,200
POTASSIUM		NA	10,000
SODIUM			190,000
SULFATE (AS SO4)			120,000

CD Soil Sample Results

Well /Boring		CD-14			CD-18B		
		S-460			S-464		
Sample Date		1/7/21	1/7/21	1/11/21	1/26/21	1/26/21	1/27/21
Sample Depth ft BGS		25	34	60	11	26	49
Parameters mg/kg	MCLs mg/kg						
BENZENE	330	4.7	ND	0.0014 J	**880 H**	**640**	12
TOLUENE	10000	26	0.054 J	0.0076	150	62	0.046 J
ETHYLBENZENE	1000	9.8	ND	0.0016 J	7.4	7.6 J	ND
XYLENES, TOTAL	9100	57	0.13 J	0.0076 J	33	37	ND
MTBE	9900	5.1	ND	0.00092 J	ND	ND	ND
>C12-C22		820	450	ND	940	830	ND
>C22-C44		120	22	ND	330	150	32
C4-C12-TPH-GRO		500	42	1.8	1300	1100	2.9 J
TPH		940	470	ND	1300	980	32

CD Soil Forensics

Well	CD-018B
Boring	S-464
Sample Date	1/26/21
Sample Depth ft BGS	11

See Report for full details

Spans the gasoline range to the residual range

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FIGURE
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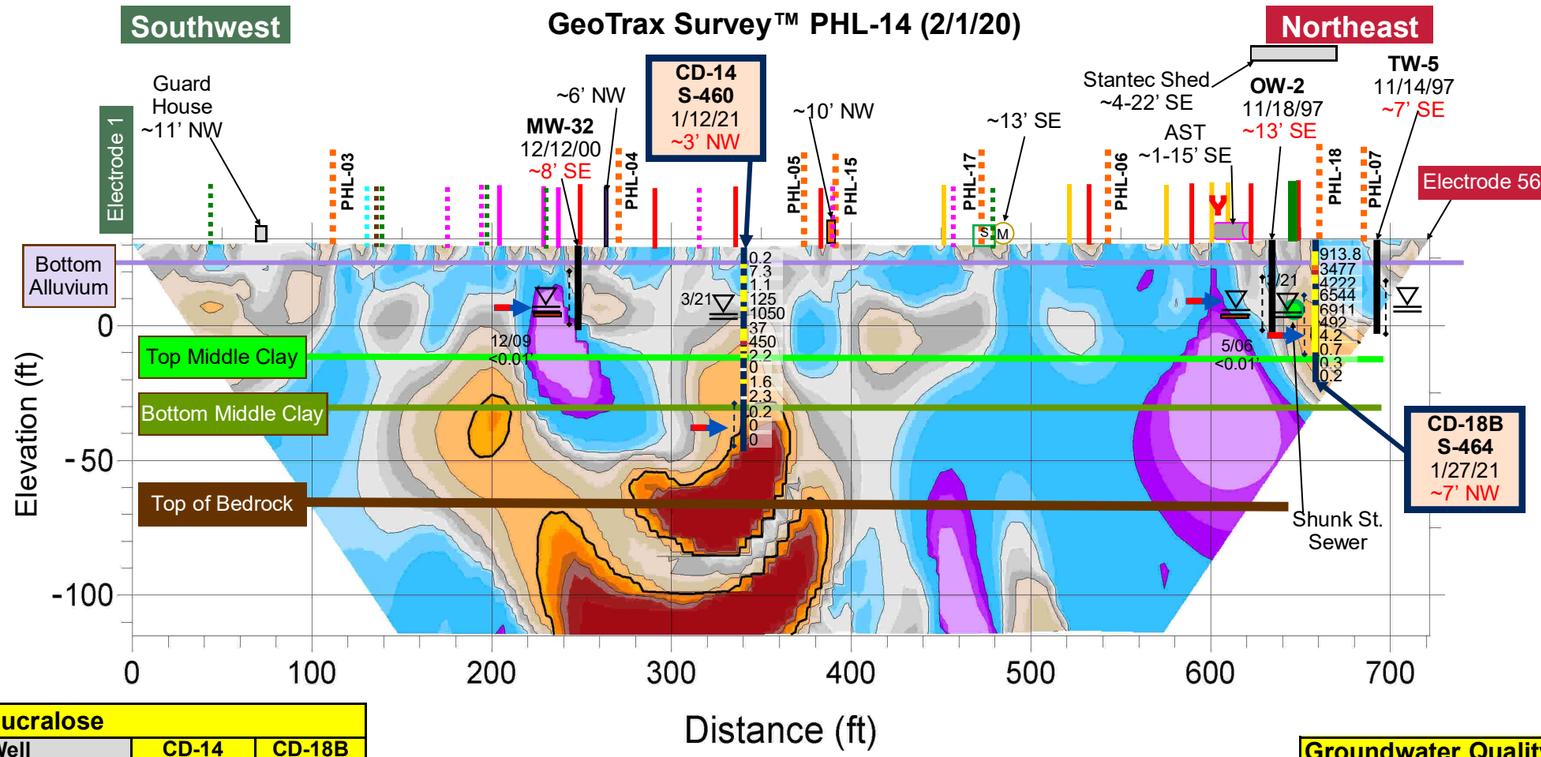

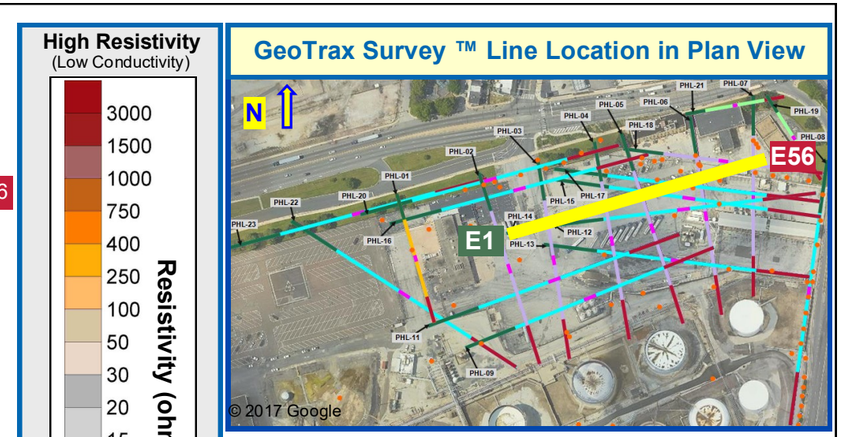

GeoTrax Survey ™ Line Location in Plan View

Well Product Data		
Well	MW-32	OW-2
Sample Date	12/31/09	5/8/06
Product Description	Not Available	90% GASOLINE, 10% MIDDLE DISTILLATE

Groundwater Sample Results				
Well		MW-32	OW-2	TW-5
Sample Date		7/30/18	8/13/18	11/7/19
Parameters (µg/L)	Stds (µg/L)			
BENZENE	5	**19.2**	**333**	**610000**
ETHYLBENZENE	1000	3.37	3.16	**7500**
TOLUENE	700	196	10.3	420
XYLENES, TOTAL	10000	351	22.9	1800
MTBE	20	**114**	2.34	ND
NAPHTHALENE	100	29	0.87	14
PYRENE	130	3.34	0.331	ND
ANTHRACENE	66	0.306	0.213	ND
ISOPROPYLBENZENE	3500	20.9	20.7	110 J
FLUORENE	1900	0.367	0.437	0.5
CHRYSENE	1.9	**2.66**	ND	ND
PHENANTHRENE	1100	1.71	0.0714	1
LEAD	5	ND	ND	1.2
1,2,4-TMB	62	**372**	9.95	ND
1,2-DIBROMOETHANE	0.05	ND	ND	ND
1,2-DICHLOROETHANE	5	ND	ND	ND
1,3,5-TMB	1200	133	ND	ND
BENZO(A)ANTHRACENE	4.9	1.1	ND	ND
BENZO(A)PYRENE	0.2	**1.98**	ND	ND
BENZO(B)FLUORANTHENE	0.55	**4.29**	ND	ND
BENZO(G,H,I)PERYLENE	0.26	**2.4**	ND	ND

Sucralose		
Well	CD-14	CD-18B
Boring	S-460	S-464
Sample Date	5/17/21	5/18/21
Sucralose ng/L	43.2 J	ND

CD Groundwater Sample Results			
Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		3/23/21	3/22/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	**22**	**120,000**
TOLUENE	**1000**	0.68 J	750
ETHYLBENZENE	**700**	4.7	70 J
XYLENES, TOTAL	**10000**	12	320 J
MTBE	**20**	2.3	ND
NAPHTHALENE	**100**	1.8	9.6
1,2,4-TMB	**62**	12	ND
1,3,5-TMB	**1200**	3.9 J	ND
ISOPROPYLBENZENE	**3500**	1.3 J	92 J
TERT-BUTYL ALCOHOL		ND	ND

CD Groundwater Sample Results			
Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		3/23/21	3/22/21
Parameters µg/L			
ALKALINITY TO pH 4.5		110,000	310,000
CALCIUM		50,000	97,000
IRON		26,000	20,000
METHANE		28	2,700
SULFATE (AS SO4)		250,000	100,000
TOTAL CARBON		42,000	110,000
TOTAL INORGANIC CARBON		40,000	91,000
TOTAL KJELDAHL NITROGEN		ND	1,100
TOTAL ORGANIC CARBON		2,500	19,000

Groundwater Quality Sample Results				
Well		MW-32	OW-2	TW-5
Sample Date		7/30/18	8/13/18	7/3/19
Parameters	*Units*			
DO	mg/L	0	0.31	0
ORP	mV	-21	-98	-151
pH	S.U.	6.58	6.93	6.45
EC	mS/cm	0.246	2.83	5.16
Temperature	ºC	22.24	21.58	18.69
Turbidity	NTU	0	21.3	68.4

CD Groundwater Quality Results			
Well		CD-14	CD-18B
Boring		S-460	S-464
Sample Date		3/23/21	3/22/21
Parameters	*Units*		
DO	mg/L	0.94	0.56
ORP	mV	39	-103
pH	S.U.	5.95	6.32
EC	mS/cm	1.01	1.62
Temperature	ºC	17.76	18.73
Turbidity	NTU	6.9	2

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FIGURE
14.2
ANALYTICAL DATA INTEGRATION

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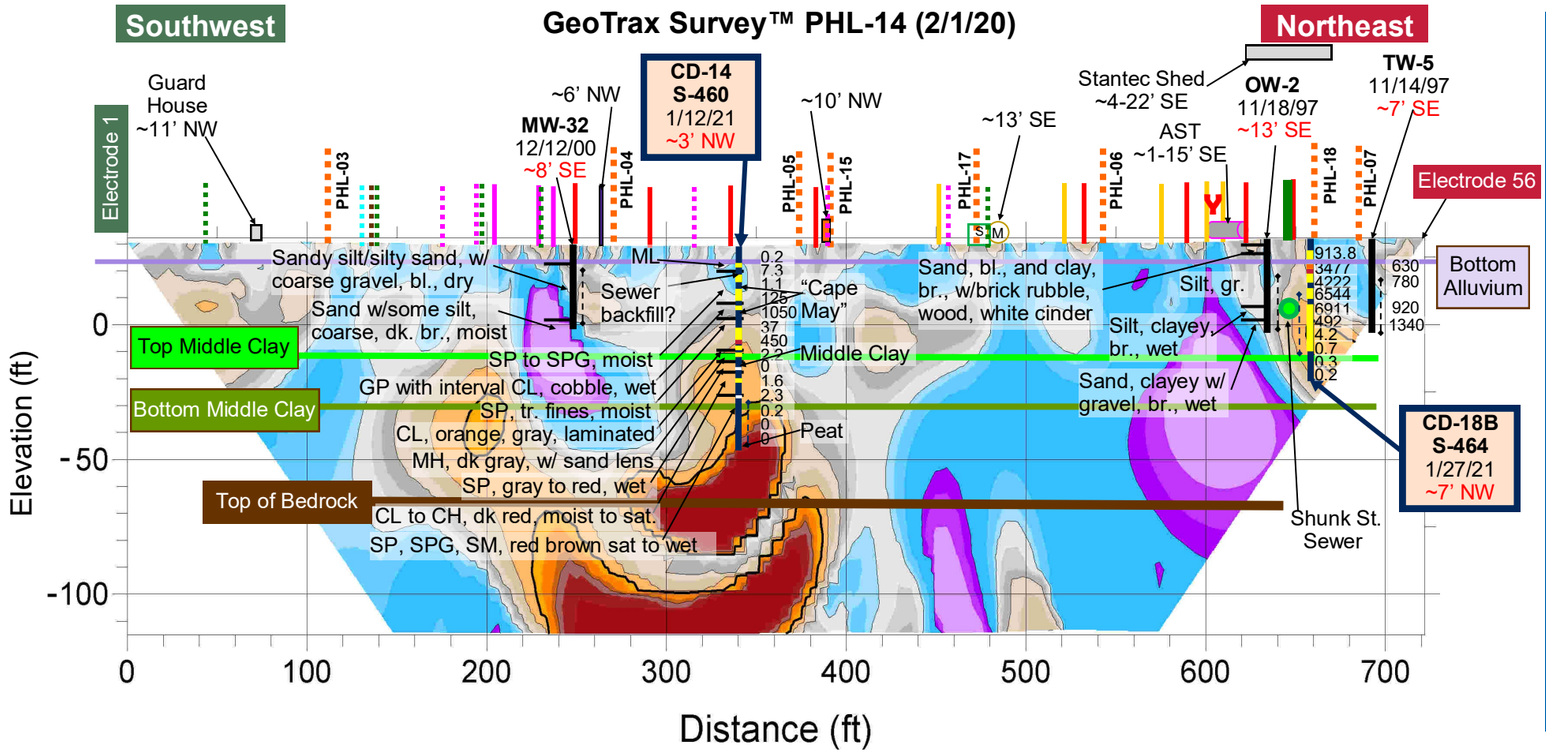

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FIGURE
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GEOLOGY DATA INTEGRATION

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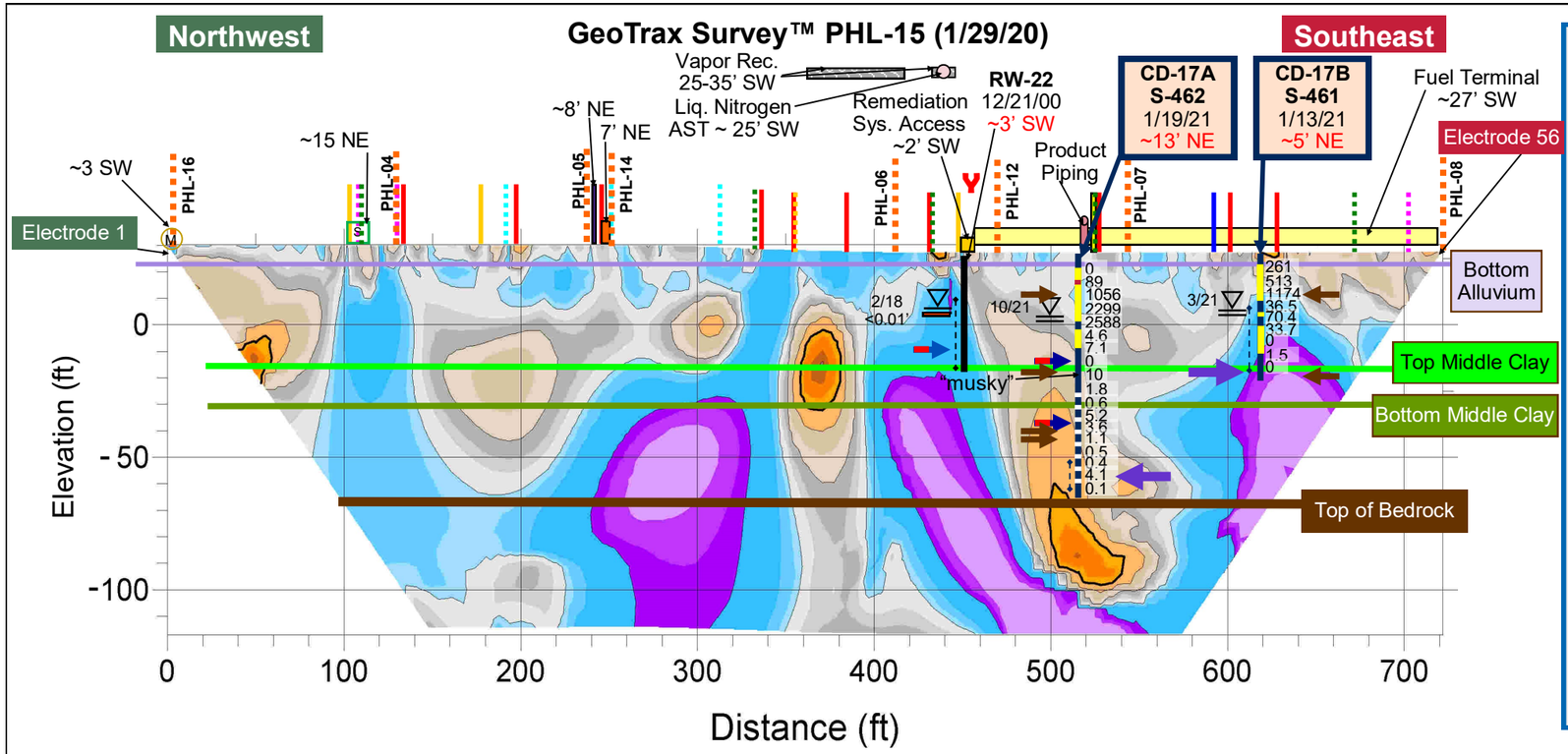
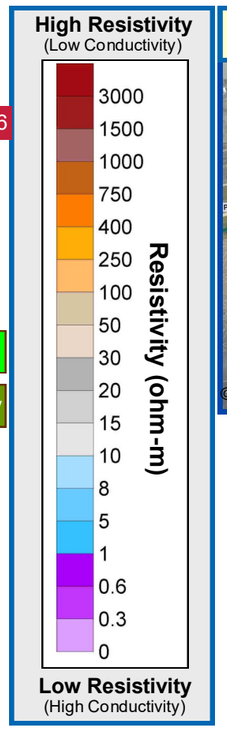
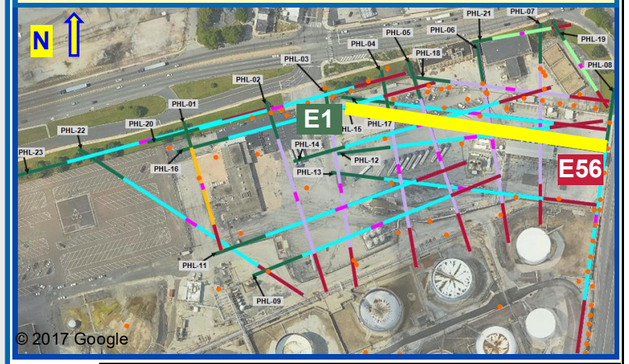




GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data		
Well	**CD-17A**	**CD-17B**
Boring	**S-462**	**S-461**
Sample Date	2/11/21	2/11/21
Sample Depth ft. BGS	83	43
Data Set IDs		
# reads for sample (millions)	3.84	4.102
Bacterial	120	167
Antibiotic resistant	1	2
Fungal	8	8
Protists	2	4
Dark Matter	75	201
Phages	4	4
Virus	0	0
Virulence Factors	14	21
QPCR		
Bacterial Biomass (gene copies / L)	3,400,000,000	4,700,000,000

CD Groundwater Grab Results

Well		CD-17A		CD-17B
Boring		S-462		S-461
Sample Date		1/14/21	1/19/21	
Sample Depth ft. BGS		40	73	
Parameters µg/L	**MSCs µg/L**			
BENZENE	**5**	**240**	**400**	NA
TOLUENE	**1000**	**2200**	**1900**	
ETHYLBENZENE	**700**	350	290	
XYLENES, TOTAL	**10000**	2000	1600	
MTBE	**20**	**130**	**47**	
1,2,4-TMB	**62**	**330**	**260**	
>C12-C22		3000	3000	
>C22-C44		120 J	190	
C4-C12-TPH-GRO		12000	9400	
TOTAL ORG. CARBON		60000	58000	
TPH		3100	3200	

CD Groundwater Grab Results

Well	CD-17A		CD-17B
Boring	S-462		S-461
Sample Date	1/14/21	1/19/21	
Sample Depth	40	73	
Parameters (µg/L)			
ALKALINITY TO pH 4.5	190,000	170,000 FL	NA
CALCIUM	33,000	53,000	
CHLORIDE (AS CL)	82,000	81,000	
IRON	3,000	42,000	
MAGNESIUM	8,400	45,000	
METHANE	44	86	
NITROGEN, AMMONIA	3,200	1500 J	
NITROGEN, NITRATE	2800 FL	840	
POTASSIUM	3,800	7,200	
SODIUM	67,000	110,000	
SULFATE (AS SO4)	57,000	260,000	

CD Soil Sample Results

Well /Boring		CD-17A S-462				CD-17B S-461	
Sample Date		1/13/21	1/14/21	1/15/21	1/19/21	1/12/21	1/13/21
Sample Depth ft BGS		13	43	76	79	15	45
Parameters mg/kg	**MCLs mg/kg**						
BENZENE	330	1.6	1.9	0.043	ND	0.12 J	0.014
TOLUENE	10000	32	0.037	0.2	0.0023 J	ND	ND
ETHYLBENZENE	1000	22	0.01	0.054	0.00065 J	0.23 J	ND
XYLENES, TOTAL	9100	130	0.044	0.33	0.0035 J	0.93	ND
MTBE	9900	0.89	0.002 J	0.0037 J	ND	ND	ND
>C12-C22		30	8.5 J	ND	ND	2100	ND
>C22-C44		ND	31	ND	130	95 J	24
C4-C12-TPH-GRO		1200 B	0.39 B	3.3 B	ND	390 B	0.059 J
TPH		30	40	ND	130	2200	24

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FIGURE
15.1
INITIAL CD DATA INTEGRATION

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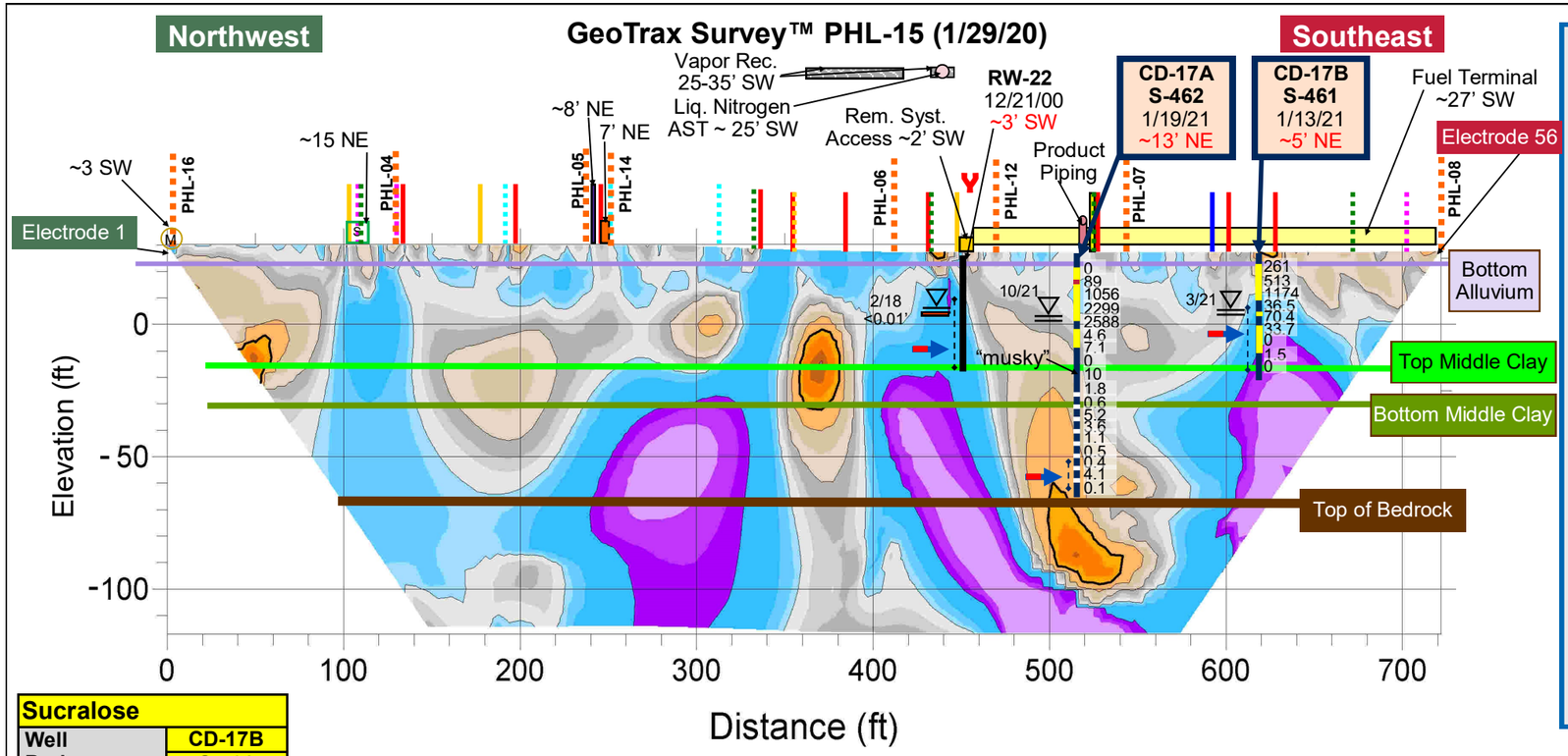
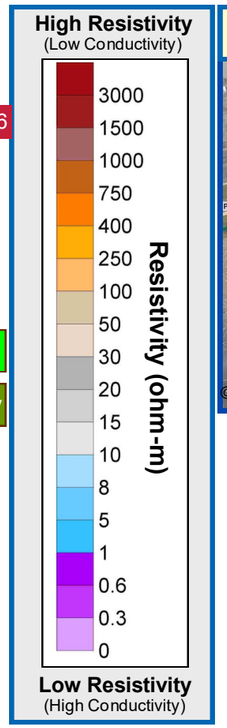
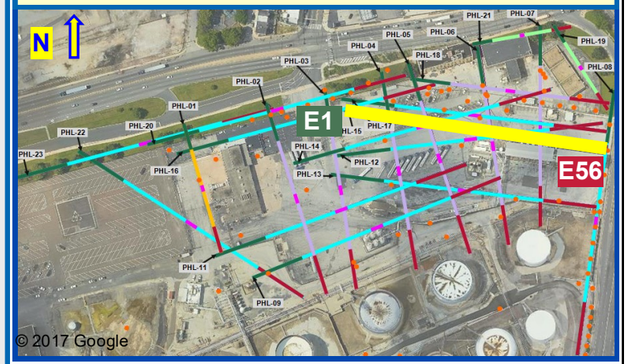




GeoTrax Survey ™ Line Location in Plan View



Well Product Data	
Well	RW-22
Sample Date	2/15/18
Product Description	95% GASOLINE, 5% MIDDLE DISTILLATE

Groundwater Sample Results		
Well		RW-22
Sample Date		5/30/14
Parameters (µg/L)	Standards (µg/L)	
BENZENE	5	**1670**
ETHYLBENZENE	1000	683
TOLUENE	700	168
XYLENES, TOTAL	10000	1370
MTBE	20	**2830**
NAPHTHALENE	100	59.6
PYRENE	130	1.98
ANTHRACENE	66	0.834
ISOPROPYLBENZENE	3500	27.8
FLUORENE	1900	3.85
CHRYSENE	1.9	0.2
PHENANTHRENE	1100	2.26
LEAD	5	3.8
1,2,4-TMB	62	**606**
1,2-DIBROMOETHANE	0.05	ND
1,2-DICHLOROETHANE	5	ND
1,3,5-TMB	1200	151
BENZO(A)ANTHRACENE	4.9	0.229
BENZO(A)PYRENE	0.2	ND
BENZO(B)FLUORANTHENE	0.55	0.157
BENZO(G,H,I)PERYLENE	0.26	0.105

Sucralose	
Well	CD-17B
Boring	S-461
Sample Date	5/17/21
Sucralose ng/L	ND

CD Groundwater Sample Results			
Well		CD-17A	CD-17B
Boring		S-462	S-461
Sample Date		3/23/21	3/22/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	**39**	**1000**
TOLUENE	**1000**	1.8	470
ETHYLBENZENE	**700**	17	21
XYLENES, TOTAL	**10000**	100	200
MTBE	**20**	9.5	**28**
NAPHTHALENE	**100**	2.2	0.94
1,2,4-TMB	**62**	47	18 J
1,3,5-TMB	**1200**	18	1.8 J
ISOPROPYLBENZENE	**3500**	2.2 J	25
TERT-BUTYL ALCOHOL		20 J	1100

CD Groundwater Sample Results		
Well	CD-17A	CD-17B
Boring	S-462	S-461
Sample Date	3/23/21	3/22/21
Parameters µg/L		
ALKALINITY TO pH 4.5	160,000	400,000
CALCIUM	72,000	130,000
IRON	20,000	31,000
METHANE	8	7,800
SULFATE (AS SO4)	190,000	30,000
TOTAL CARBON	46,000	100,000
TOTAL INORGANIC CARBON	43,000	88,000
TOTAL KJELDAHL NITROGEN	ND	1,200
TOTAL ORGANIC CARBON	3,500	12,000

CD Groundwater Quality Results			
Well		CD-17A	CD-17B
Boring		S-462	S-461
Sample Date			3/22/21
Parameters	*Units*		
DO	mg/L	NA	0.75
ORP	mV		-98
pH	S.U.		6.32
EC	mS/cm		2.17
Temperature	ºC		19.62
Turbidity	NTU		40.7

Groundwater Quality Sample Results		
Well		RW-22
Sample Date		5/30/14
Parameters	*Units*	
DO	mg/L	0.8
ORP	mV	146
pH	S.U.	6.35
EC	mS/cm	1.74
Temperature	ºC	18.68
Turbidity	NTU	48

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FIGURE
15.2
ANALYTICAL DATA INTEGRATION

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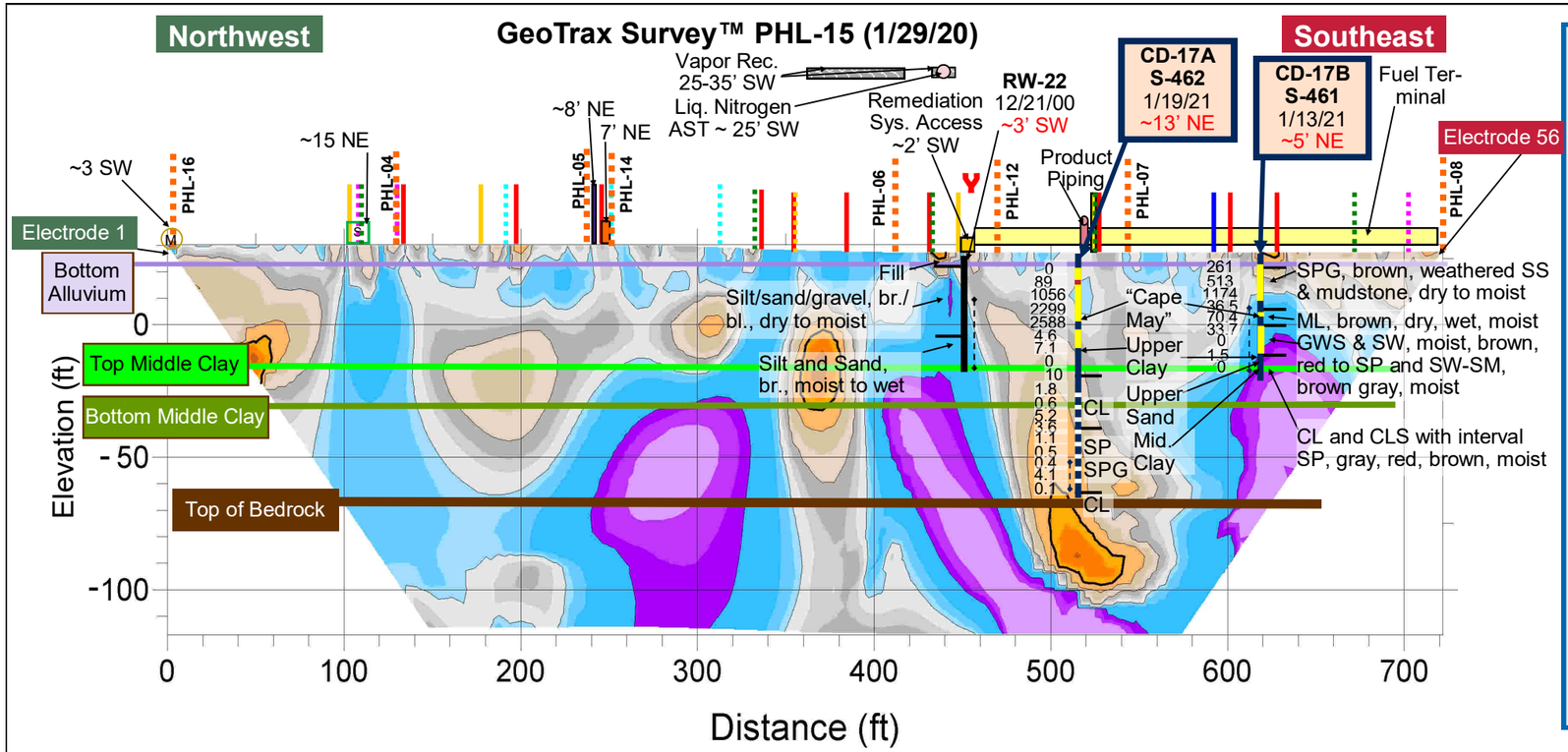

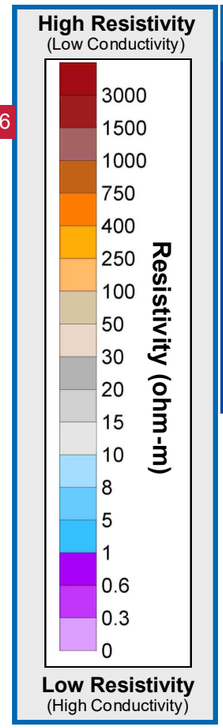

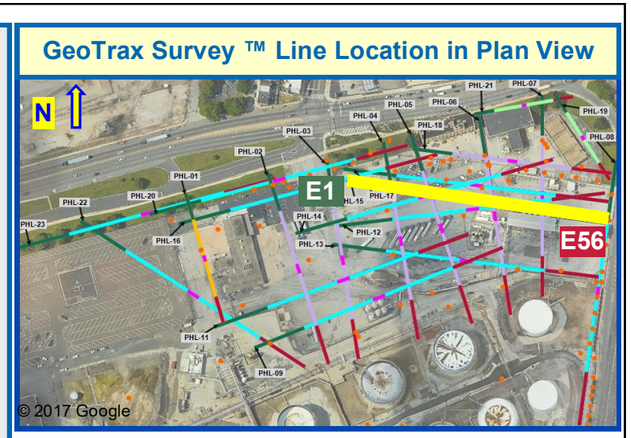

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FIGURE
15.3
GEOLOGY
DATA
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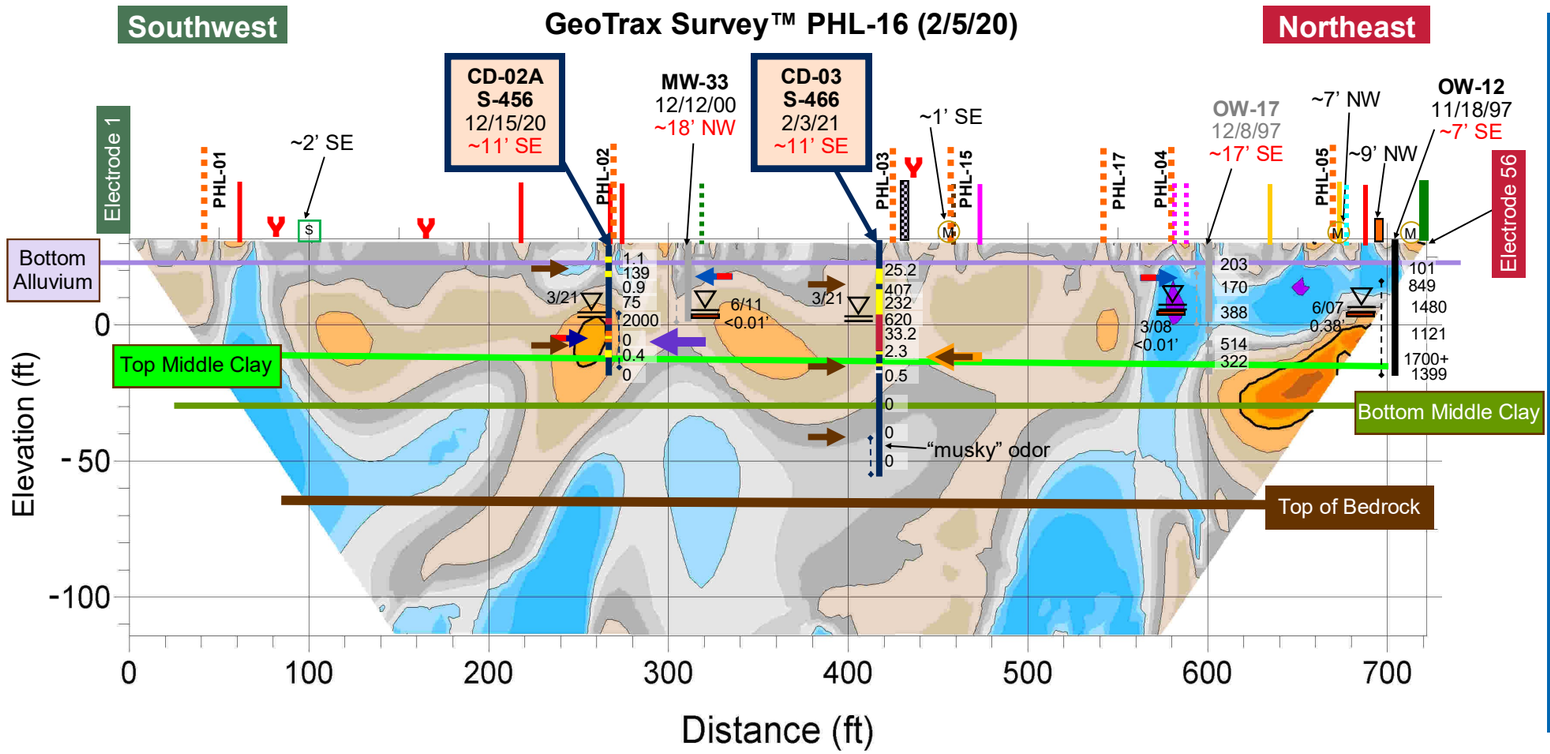

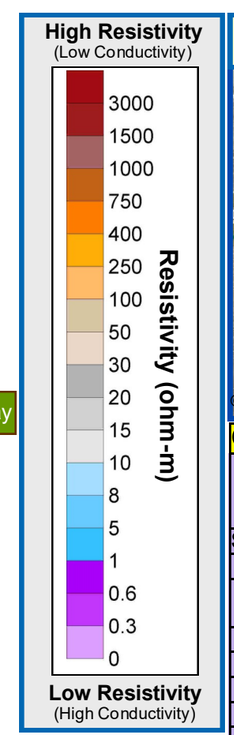

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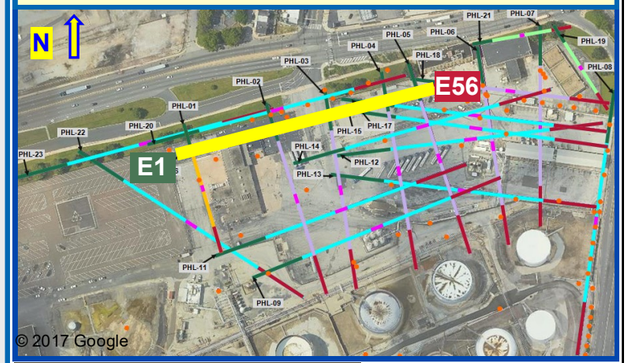

CD Groundwater Bio Data	
Well	**CD-02A**
Boring	**S-456**
Sample Date	2/11/21
Sample Depth ft. BGS	38
Data Set IDs	
# reads for sample (millions)	NA
Bacterial	
Antibiotic resistant	
Fungal	
Protists	
Dark Matter	
Phages	
Virus	
Virulence Factors	
QPCR	
Bacterial Biomass (gene copies / L)	6,200,000

CD Groundwater Grab Results

Well		CD-02A	CD-03
Boring		**S-456**	**S-466**
Sample Date		**12/15/20**	
Sample Depth ft. BGS		**36**	
Parameters µg/L	**MSCs µg/L**		
BENZENE	**5**	**110**	NA
TOLUENE	**1000**	9	
ETHYLBENZENE	**700**	6.3	
XYLENES, TOTAL	**10000**	26 J	
MTBE	**20**	**98**	
1,2,4-TMB	**62**	5.7 J	
>C12-C22		3300	
>C22-C44		970	
C4-C12-TPH-GRO		3900	
TOTAL ORG. CARBON		46000	
TPH		4300	

CD Groundwater Grab Results

Well	CD-02A	CD-03
Boring	**S-456**	**S-466**
Sample Date	**12/15/20**	
Sample Depth	**36**	
Parameters (µg/L)		
ALKALINITY TO pH 4.5	220,000	NA
CALCIUM	56,000	
CHLORIDE (AS CL)	200,000	
IRON	240,000	
MAGNESIUM	48,000	
METHANE	7,900	
NITROGEN, AMMONIA	4,400	
NITROGEN, NITRATE	300 J H	
POTASSIUM	15,000	
SODIUM	150,000	
SULFATE (AS SO4)	24,000	

CD Soil Sample Results

Well /Boring		CD-02A S-456		CD-03 S-466		
Sample Date		**12/14/20**	**12/15/20**	**1/28/21**	**1/28/21**	**1/29/21**
Sample Depth ft BGS		**10**	**37**	**18**	**46**	**72**
Parameters mg/kg	**MCLs mg/kg**					
BENZENE	330	ND	0.021	0.93	1.8	ND
TOLUENE	10000	ND	0.0013 J	0.18 J	0.097 J	ND
ETHYLBENZENE	1000	ND	0.0016 J	3.3	ND	ND
XYLENES, TOTAL	9100	ND	0.0041 J	11	ND	ND
MTBE	9900	ND	0.012	ND	0.23 J	ND
>C12-C22		1600	ND	120	ND	ND
>C22-C44		150	6.3 J	56	6.4 J	16
C4-C12-TPH-GRO		3400	1.7	650	3.9 J	5.6*
TPH		1800	6.3 J	180	6.4 J	16

CD Soil Forensics	
Well	**CD-03**
Boring	**S-466**
Sample Date	1/29/21
Sample Depth ft BGS	41
See Report for full details	Petroleum that spans light distillate range to

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FIGURE
16.1
INITIAL CD DATA INTEGRATION

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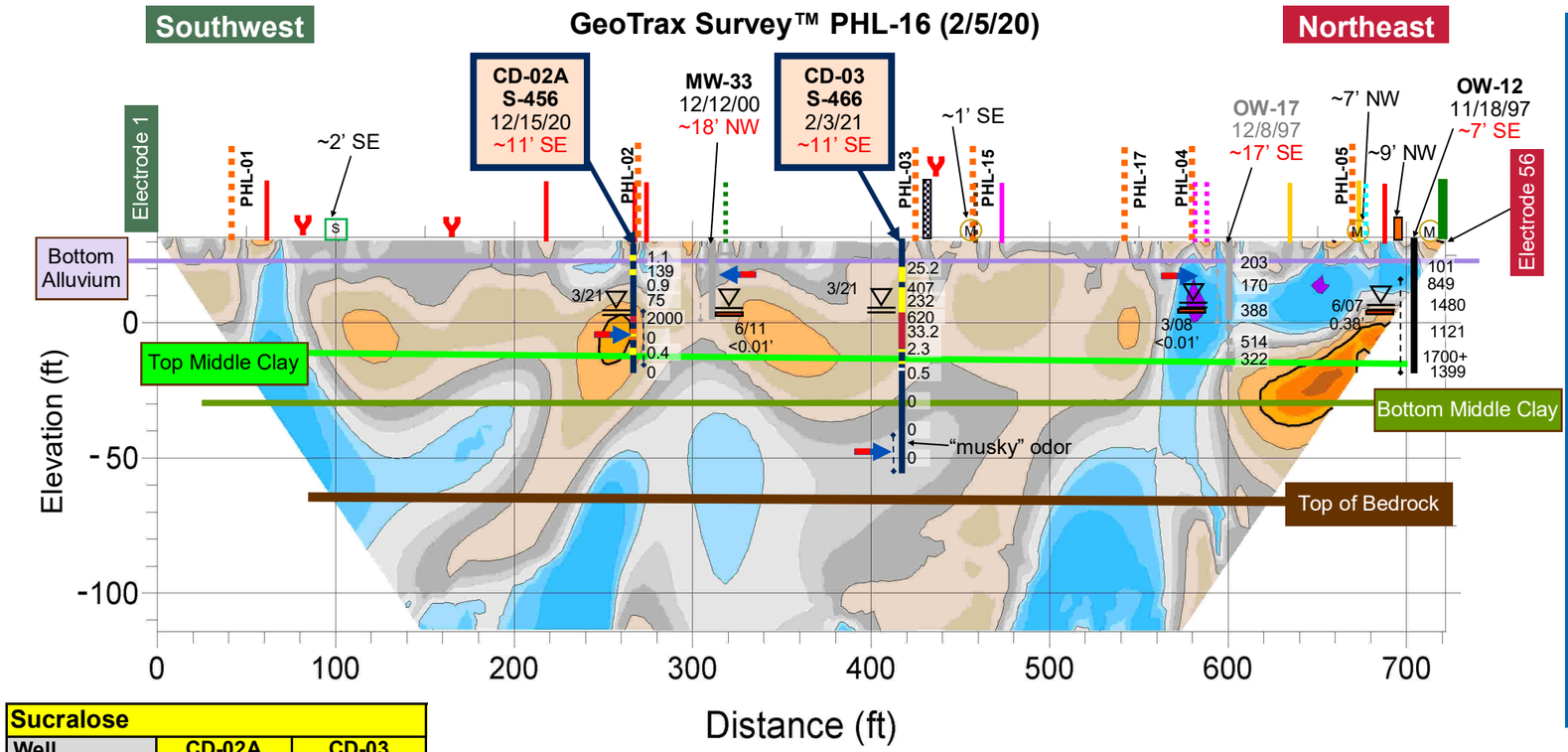

High Resistivity
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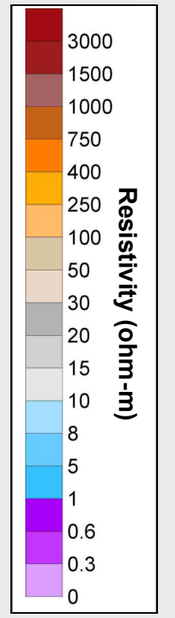

Low Resistivity
(High Conductivity)

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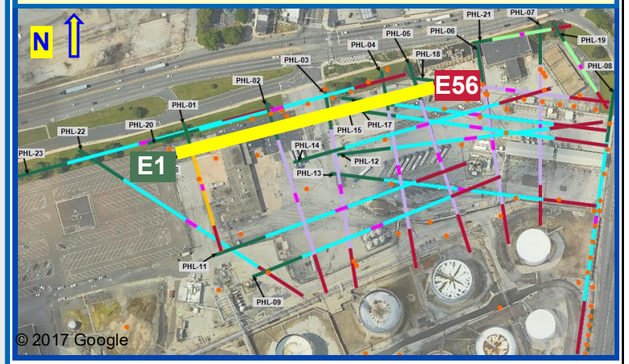

Well Product Data

Well	MW-33	OW-17	OW-12
Date	6/6/11	3/20/08	6/4/07
Product Description	*GASOLINE	90% GASOLINE, 10% MID. DISTIL.	75% GASOLINE, 25% MID. DISTIL.

Groundwater Sample Results

Well		MW-33	OW-17
Sample Date		7/31/18	7/30/18
Parameters (µg/L)	Stds (µg/L)		
BENZENE	5	97.2	ND
ETHYLBENZENE	1000	ND	ND
TOLUENE	700	ND	ND
XYLENES, TOTAL	10000	ND	ND
MTBE	20	ND	54.8
NAPHTHALENE	100	ND	82.2
PYRENE	130	45.1	7.81
ANTHRACENE	66	2.21	8.25
ISOPROPYLBENZENE	3500	ND	81
FLUORENE	1900	ND	28.1
CHRYSENE	1.9	41.9	1.51
PHENANTHRENE	1100	12.5	36.8
LEAD	5	ND	2.31
1,2,4-TMB	62	ND	ND
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TMB	1200	ND	ND
BENZO(A)ANTHRACENE	4.9	23.8	1.42
BENZO(A)PYRENE	0.2	34.8	1.1
BENZO(B)FLUORANTHENE	0.55	58.4	1.51
BENZO(G,H,I)PERYLENE	0.26	36.7	0.571

Sucralose

Well	CD-02A	CD-03
Boring	S-456	S-466
Sample Date	5/17/21	5/18/21
Sucralose ng/L	833	ND

CD Groundwater Sample Results

Well		CD-02A	CD-03
Boring		S-456	S-466
Sample Date		3/24/21	3/24/21
Parameters µg/L	MCLs µg/L		
BENZENE	5	220	18
TOLUENE	1000	14	1.4
ETHYLBENZENE	700	9.6	10
XYLENES, TOTAL	10000	10	35
MTBE	20	33	0.64 J
NAPHTHALENE	100	7.1	57
1,2,4-TMB	62	6.5	26
1,3,5-TMB	1200	4.6 J	8
ISOPROPYLBENZENE	3500	44	2 J
TERT-BUTYL ALCOHOL		1200	ND

CD Groundwater Sample Results

Well	CD-02A	CD-03
Boring	S-456	S-466
Sample Date	3/24/21	3/24/21
Parameters µg/L		
ALKALINITY TO pH 4.5	150,000	140,000
CALCIUM	41,000	56,000
IRON	29,000	31,000
METHANE	12,000	14
SULFATE (AS SO4)	9,000	230,000
TOTAL CARBON	48,000	44,000
TOTAL INORGANIC CARBON	38,000	41,000
TOTAL KJELDAHL NITROGEN	2,000	ND
TOTAL ORGANIC CARBON	9,800	3,200

CD Groundwater Quality Results

Well		CD-02A	CD-03
Boring		S-456	S-466
Sample Date		3/24/21	3/24/21
Parameters	*Units*		
DO	mg/L	0.06	0.15
ORP	mV	-37	-12
pH	S.U.	5.89	5.62
EC	mS/cm	1.4	0.979
Temperature	ºC	18.21	18.09
Turbidity	NTU	228	12

Groundwater Quality Sample Results

Well		MW-33	OW-17
Sample Date		7/31/18	7/30/18
Parameters	*Units*		
DO	mg/L	0	0
ORP	mV	105	-2
pH	S.U.	6.35	6.46
EC	mS/cm	1.82	2.66
Temperature	ºC	22.63	21.43
Turbidity	NTU	988	15.8

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FIGURE
16.2
ANALYTICAL DATA INTEGRATION

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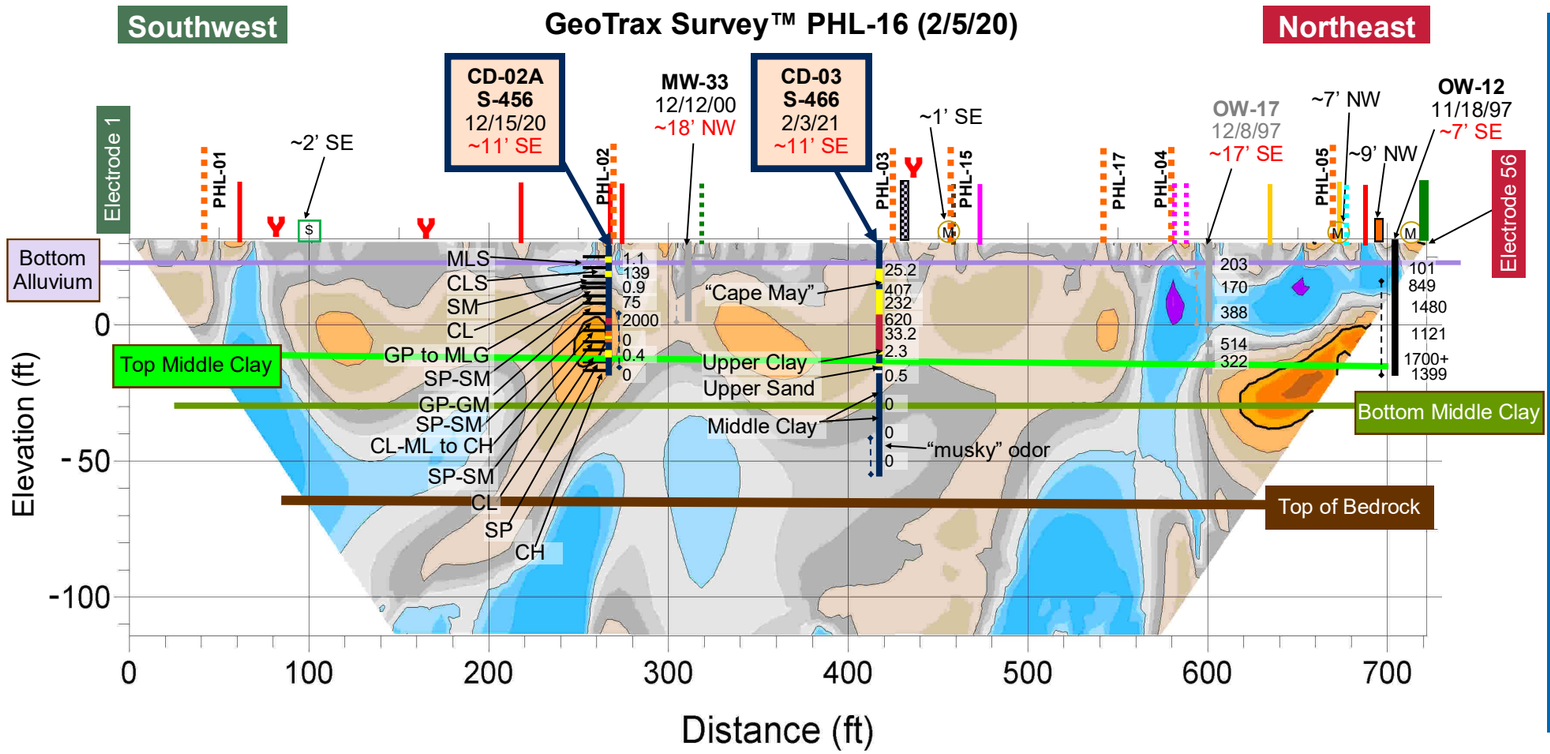

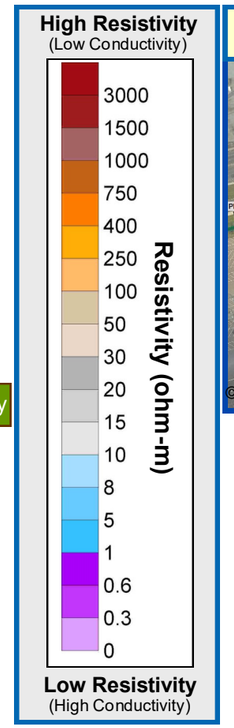

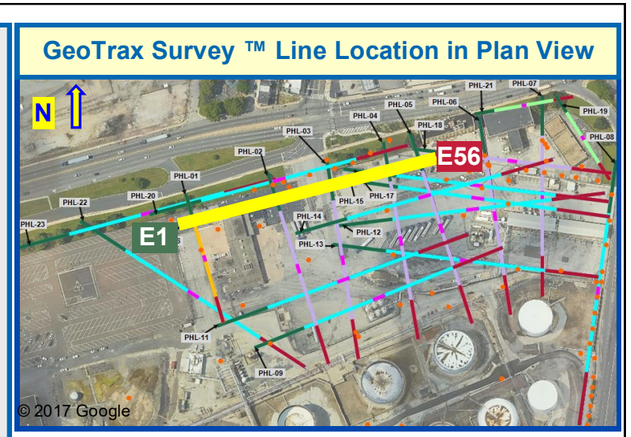

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FIGURE
16.3
GEOLOGY
DATA
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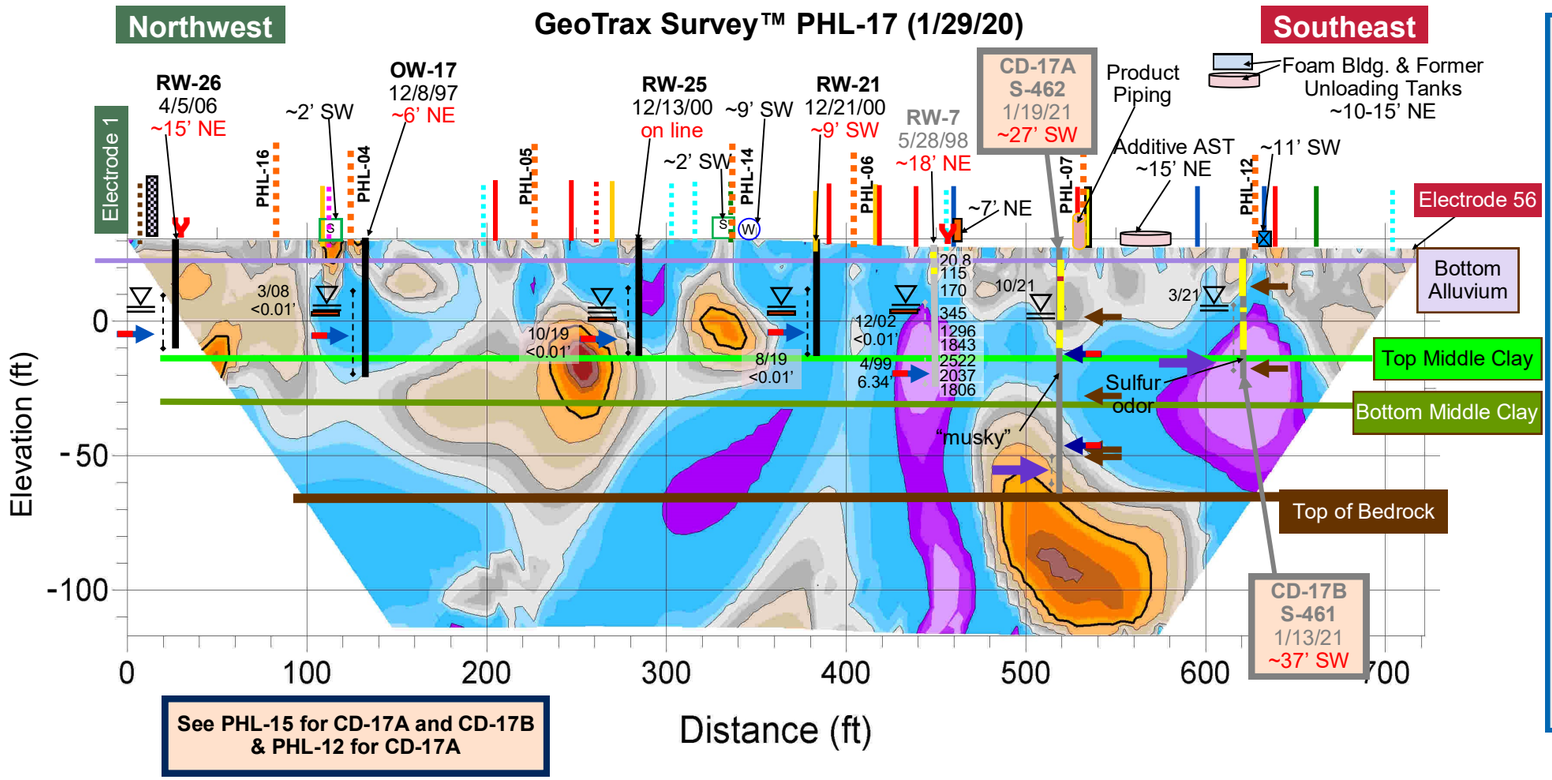
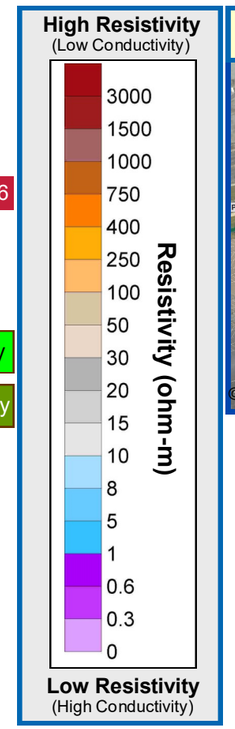
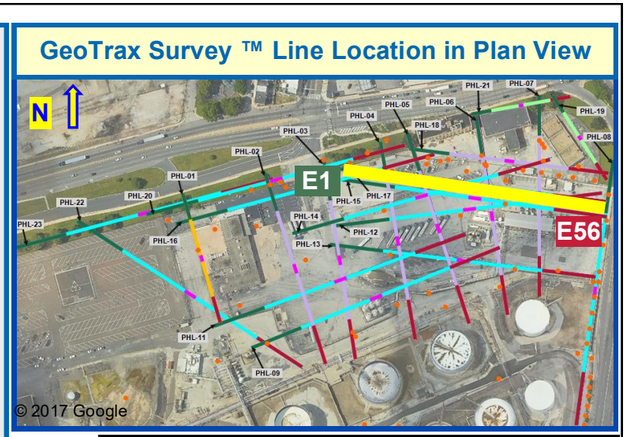


See PHL-15 for CD-17A and CD-17B & PHL-12 for CD-17A





CD Groundwater Bio Data

Well	CD-17A	CD-17B
Boring	S-462	S-461
Sample Date	2/11/21	2/11/21
Sample Depth ft. BGS	83	43
Data Set IDs		
# reads for sample (millions)	3.84	4.102
Bacterial	120	167
Antibiotic resistant	1	2
Fungal	8	8
Protists	2	4
Dark Matter	75	201
Phages	4	4
Virus	0	0
Virulence Factors	14	21
QPCR		
Bacterial Biomass (gene copies / L)	3,400,000,000	4,700,000,000

CD Groundwater Grab Results

Well		CD-17A		CD-17B
Boring		S-462		S-461
Sample Date		1/14/21	1/19/21	
Sample Depth ft. BGS		40	73	
Parameters µg/L	**MSCs µg/L**			
BENZENE	**5**	**240**	**400**	
TOLUENE	**1000**	**2200**	**1900**	
ETHYLBENZENE	**700**	350	290	
XYLENES, TOTAL	**10000**	2000	1600	
MTBE	**20**	**130**	**47**	
1,2,4-TMB	**62**	**330**	**260**	NA
>C12-C22		3000	3000	
>C22-C44		120 J	190	
C4-C12-TPH-GRO		12000	9400	
TOTAL ORG. CARBON		60000	58000	
TPH		3100	3200	

CD Groundwater Grab Results

Well	CD-17A		CD-17B
Boring	S-462		S-461
Sample Date	1/14/21	1/19/21	
Sample Depth	40	73	
Parameters (µg/L)			
ALKALINITY TO pH 4.5	190,000	170000 FL	
CALCIUM	33,000	53,000	
CHLORIDE (AS CL)	82,000	81,000	
IRON	3,000	42,000	
MAGNESIUM	8,400	45,000	
METHANE	44	86	NA
NITROGEN, AMMONIA	3,200	1500 J	
NITROGEN, NITRATE	2800 FL	840	
POTASSIUM	3,800	7,200	
SODIUM	67,000	110,000	
SULFATE (AS SO4)	57,000	260,000	

CD Soil Sample Results

Well /Boring		CD-17A				CD-17B	
		S-462				S-461	
Sample Date		1/13/21	1/14/21	1/15/21	1/19/21	1/12/21	1/13/21
Sample Depth ft BGS		13	43	76	79	15	45
Parameters mg/kg	**MCLs mg/kg**						
BENZENE	330	1.6	1.9	0.043	ND	0.12 J	0.014
TOLUENE	10000	32	0.037	0.2	0.0023 J	ND	ND
ETHYLBENZENE	1000	22	0.01	0.054	0.00065 J	0.23 J	ND
XYLENES, TOTAL	9100	130	0.044	0.33	0.0035 J	0.93	ND
MTBE	9900	0.89	0.002 J	0.0037 J	ND	ND	ND
>C12-C22		30	8.5 J	ND	ND	2100	ND
>C22-C44		ND	31	ND	130	95 J	24
C4-C12-TPH-GRO		1200 B	0.39 B	3.3 B	ND	390 B	0.059 J
TPH		30	40	ND	130	2200	24

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FIGURE
17.1
INITIAL CD DATA INTEGRATION

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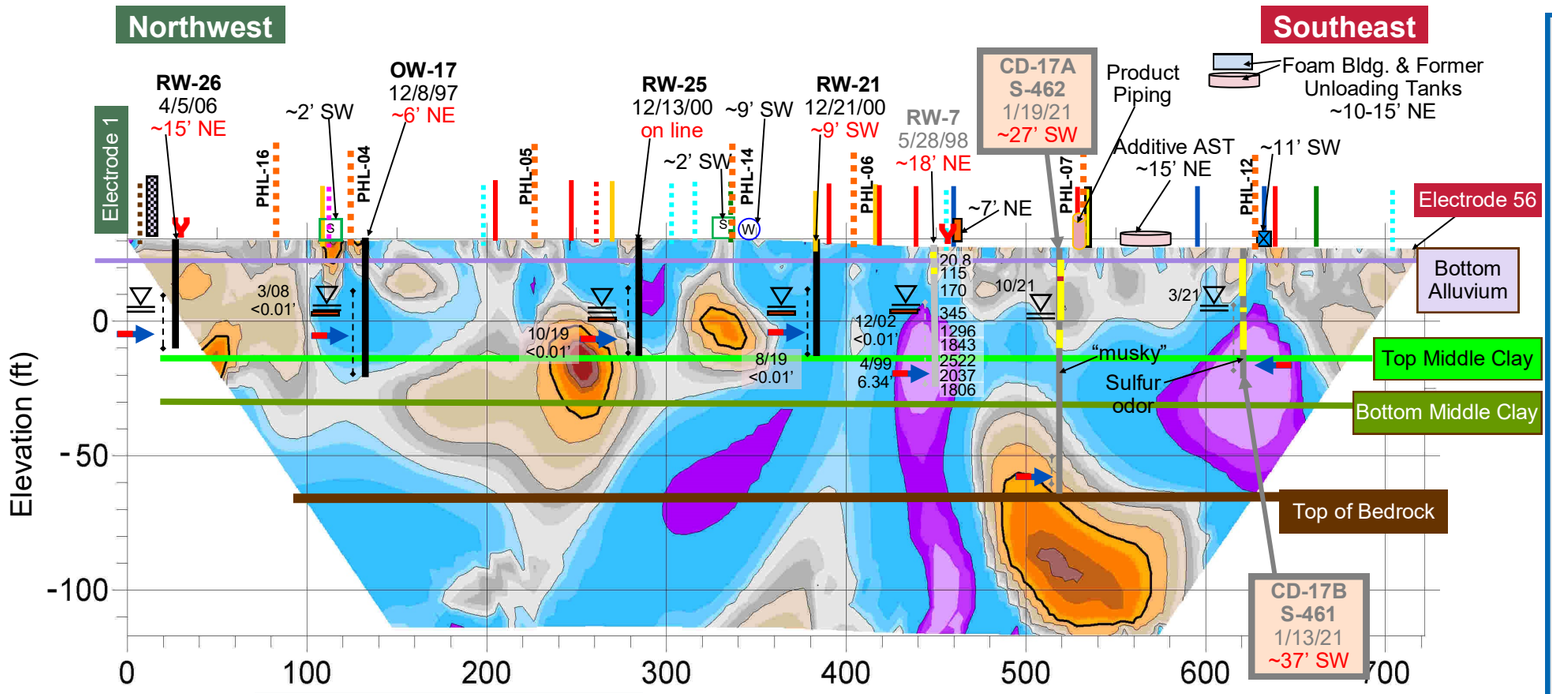
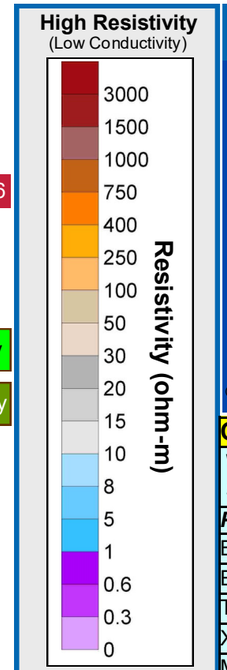
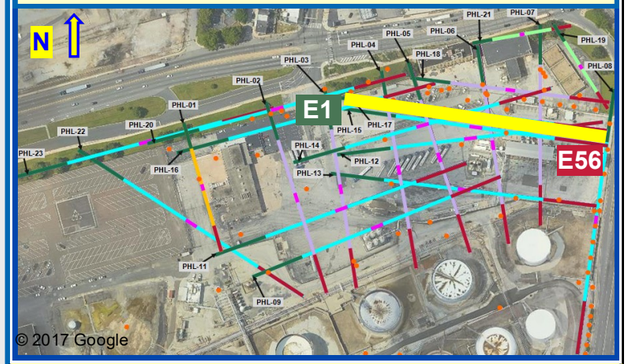




GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results

Well	RW-26	OW-17	RW-25	RW-21	RW-7
Sample Date	11/12/19	7/30/18	7/26/18	8/17/18	8/14/18
Parameters (µg/L)					
BENZENE	**2800**	ND	**583**	**454**	**1180**
ETHYLBENZENE	26	ND	329	47.2	**3050**
TOLUENE	500	ND	145	16.1	89.9
XYLENES, TOTAL	620	ND	444	152	2160
MTBE	**1200**	**54.8**	**2770**	**481**	ND
NAPHTHALENE	**1600**	82.2	**385**	19.4	56.9
PYRENE	1	7.81	10.1	3.65	0.891
ANTHRACENE	3	8.25	2.49	2.17	0.718
ISOPROPYLBENZENE	59	81	40.8	29.5	54.4
FLUORENE	19	28.1	14.3	8.23	5.05
CHRYSENE	ND	1.51	0.459	0.192	0.0771
PHENANTHRENE	17	36.8	7.04	7.57	1.77
LEAD	ND	2.31	ND	ND	ND
1,2,4-TMB	**310**	ND	**99.5**	35.5	**229**
1,2-DIBROMOETHANE	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	3.72	ND	ND
1,3,5-TMB	84	ND	30.1	15.6	52.4
BENZO(A)ANTHRACENE	ND	1.42	0.479	0.268	0.0873
BENZO(A)PYRENE	ND	**1.1**	ND	0.0706	ND
BENZO(B)FLUORANTHENE	ND	**1.51**	ND	0.0981	0.0875
BENZO(G,H,I)PERYLENE	ND	**0.571**	ND	ND	ND

Sucralose

Well / Boring	CD-17B S-461
Sample Date	5/17/21
Sucralose ng/L	ND

See PHL-15 for CD-17A and CD-17B & PHL-12 for CD-17A

Groundwater Quality Sample Results

Well		RW-26	OW-17	RW-21	RW-7
Sample Date		7/3/19	7/30/18	8/17/18	8/14/18
Parameters	*Units*				
DO	mg/L	2.61	0	3.21	0
ORP	mV	-46	-2	20	-65
pH	S.U.	5.95	6.46	6	6.65
EC	mS/cm	1.81	2.66	1.78	2.81
Temperature	ºC	20.78	21.43	18.86	19.35
Turbidity	NTU	318	15.8	74.3	150

CD Groundwater Sample Results

Well / Boring / Sample Date		CD-17A S-462 3/23/21	CD-17B S-461 3/22/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	**39**	**1000**
TOLUENE	**1000**	1.8	470
ETHYLBENZENE	**700**	17	21
XYLENES, TOTAL	**10000**	100	200
MTBE	**20**	9.5	**28**
NAPHTHALENE	**100**	2.2	0.94
1,2,4-TMB	**62**	47	18 J
1,3,5-TMB	**1200**	18	1.8 J
ISOPROPYLBENZENE	**3500**	2.2 J	25
TERT-BUTYL ALCOHOL		20 J	1100

CD Groundwater Sample Results

Well / Boring / Sample Date	CD-17A S-462 3/23/21	CD-17B S-461 3/22/21
Parameters µg/L		
ALKALINITY TO pH 4.5	160,000	400,000
CALCIUM	72,000	130,000
IRON	20,000	31,000
METHANE	8	7,800
SULFATE (AS SO4)	190,000	30,000
TOTAL CARBON	46,000	100,000
TOTAL INORGANIC CARBON	43,000	88,000
TOTAL KJELDAHL NITROGEN	ND	1,200
TOTAL ORGANIC CARBON	3,500	12,000

CD Groundwater Quality Results

Well / Boring / Sample Date		CD-17A S-462	CD-17B S-461 3/22/21
Parameters	*Units*		
DO	mg/L	NA	0.75
ORP	mV		-98
pH	S.U.		6.32
EC	mS/cm		2.17
Temperature	ºC		19.62
Turbidity	NTU		40.7

Well Product Data

Well	OW-17
Date	3/20/08
Product Descrip.	90% GASOLINE, 10% MID. DIST.

Well Product Data

Well	RW-21	RW-7
Date	8/13/19	12/2/02
Product Descrip.	95% GASOLINE, 5% MID. DIST.	GASOLINE

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FIGURE
17.2
ANALYTICAL DATA INTEGRATION

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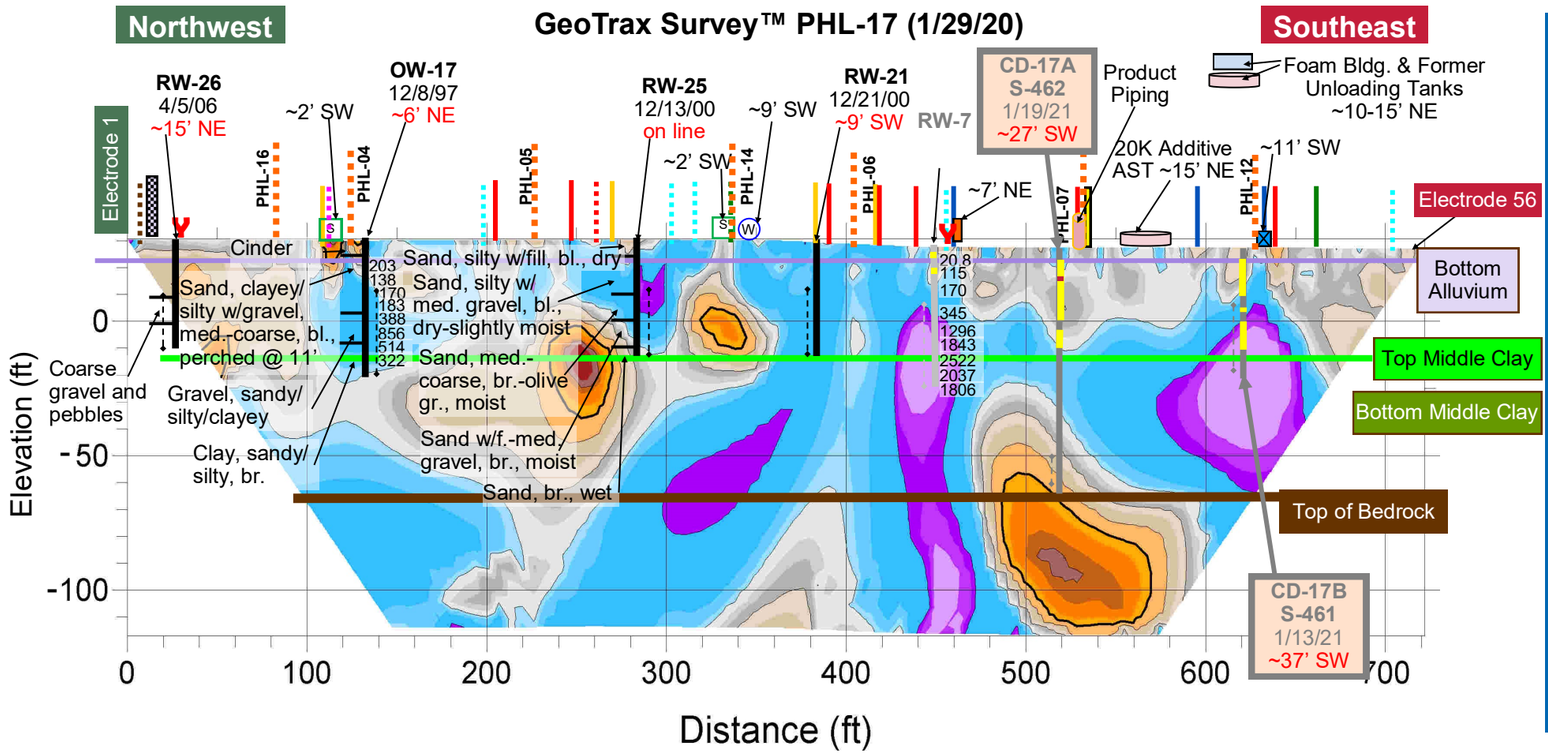

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FIGURE
17.3
GEOLOGY
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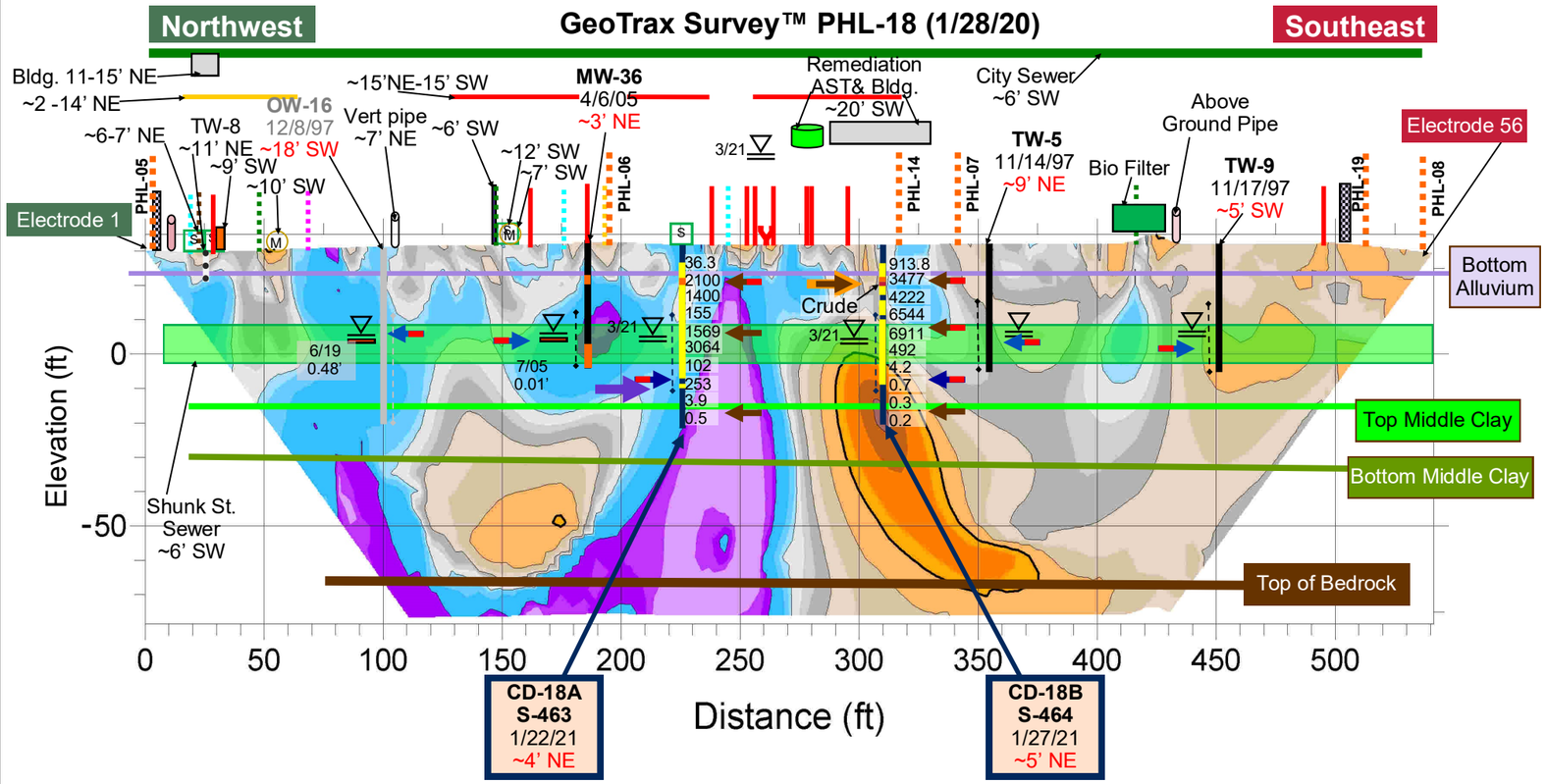
GeoTrax Survey™ PHL-18 (1/28/20)



High Resistivity
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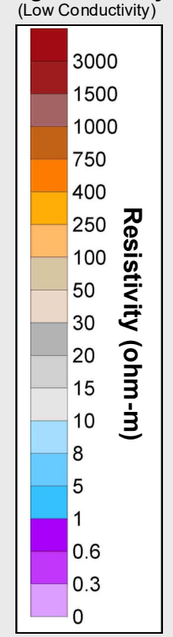
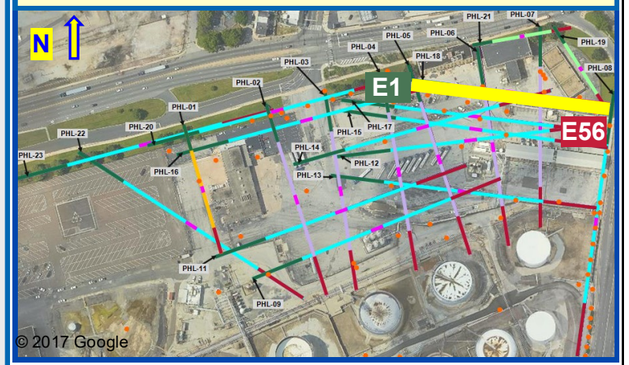


Low Resistivity
(High Conductivity)

GeoTrax Survey ™ Line Location in Plan View



CD Groundwater Bio Data	
Well	**CD-18A**
Boring	**S-463**
Sample Date	2/11/21
Sample Depth ft. BGS	41
Data Set IDs	
# reads for sample (millions)	4.191
Bacterial	185
Antibiotic resistant	3
Fungal	12
Protists	4
Dark Matter	147
Phages	21
Virus	0
Virulence Factors	18
QPCR	
Bacterial Biomass (gene copies / L)	1,500,000,000

CD Groundwater Grab Results

Well		CD-18A	CD-18B
Boring		**S-463**	**S-464**
Sample Date		**1/21/21**	**1/27/21**
Sample Depth ft. BGS		**38**	**38**
Parameters µg/L	**MSCs µg/L**		
BENZENE	**5**	**12,000**	**100,000**
TOLUENE	**1000**	910	**3,300**
ETHYLBENZENE	**700**	62	160
XYLENES, TOTAL	**10000**	280	590 J
MTBE	**20**	ND	ND
1,2,4-TMB	**62**	37	ND
>C12-C22		2900	3900
>C22-C44		210	380
C4-C12-TPH-GRO		21000	160000
TOTAL ORG. CARBON		30000	30000
TPH		3100	4300

CD Groundwater Grab Results

Well	CD-18A	CD-18B
Boring	**S-463**	**S-464**
Sample Date	**1/21/21**	**1/27/21**
Sample Depth	**38**	**38**
Parameters (µg/L)		
ALKALINITY TO pH 4.5	270,000	310,000
CALCIUM	91,000	61,000
CHLORIDE (AS CL)	140,000	160,000
IRON	5,900	14,000
MAGNESIUM	30,000	21,000
METHANE	82	170
NITROGEN, AMMONIA	600 J	600 J
NITROGEN, NITRATE	390 J FH	1,200
POTASSIUM	10,000	10,000
SODIUM	100,000	190,000
SULFATE (AS SO4)	150,000	120,000

CD Soil Sample Results

Well /Boring		CD-18A S-463			CD-18B S-464		
Sample Date		**1/20/21**	**1/21/21**	**1/22/21**	**1/26/21**	**1/26/21**	**1/27/21**
Sample Depth ft BGS		**10**	**26**	**49**	**11**	**26**	**49**
Parameters mg/kg	**MCLs mg/kg**						
BENZENE	330	**1000 H**	210 H	0.056 J	**880 H**	**640**	12
TOLUENE	10000	320 H	8	ND	150	62	0.046 J
ETHYLBENZENE	1000	13 H	1.7	0.16 J	7.4	7.6 J	ND
XYLENES, TOTAL	9100	51 H	5.9	ND	33	37	ND
MTBE	9900	ND H	ND	ND	ND	ND	ND
>C12-C22		3100	1800	ND	940	830	ND
>C22-C44		820	520	28	330	150	32
C4-C12-TPH-GRO		3700 H	600	7.6 J	1300	1100	2.9 J
TPH		3900	2300	28	1300	980	32

CD Soil Forensics	
Well	**CD-018B**
Boring	**S-464**
Sample Date	1/26/21
Sample Depth ft BGS	11
See Report for full details	Spans the gasoline range to the residual range

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FIGURE
18.1
INITIAL CD DATA INTEGRATION

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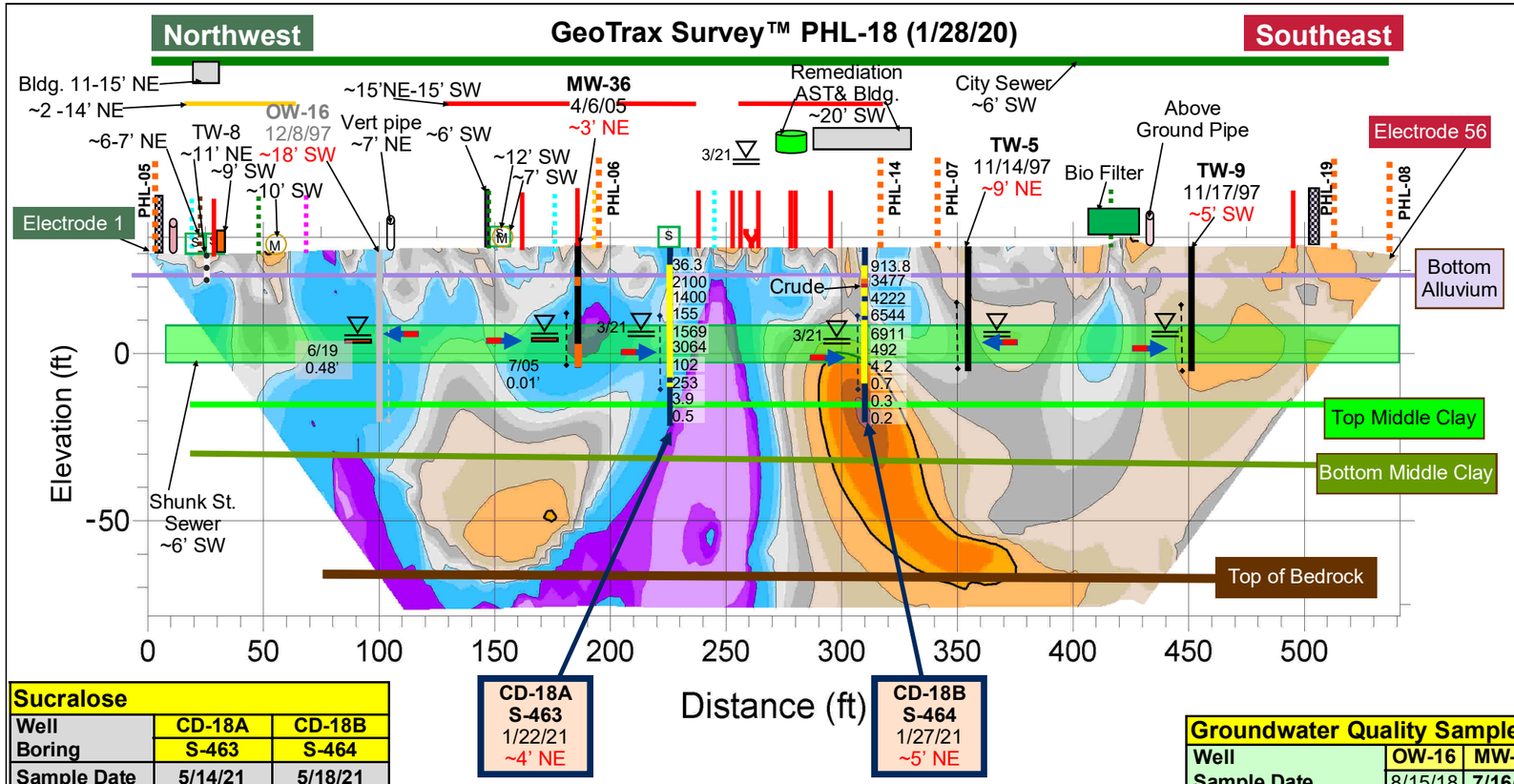


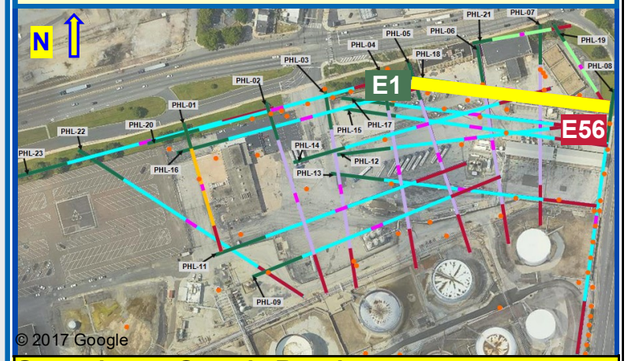
High Resistivity
(Low Conductivity)

3000
1500
1000
750
400
250
100
50
30
20
15
10
8
5
1
0.6
0.3
0

Resistivity (ohm-m)

Low Resistivity
(High Conductivity)

GeoTrax Survey ™ Line Location in Plan View



Groundwater Sample Results

Well		OW-16	MW-36	TW-5	TW-9
Sample Date		8/15/18	11/7/19	11/7/19	12/8/14
Parameters (µg/L)	Stds (µg/L)				
BENZENE	5	**14600**	**190000**	**610000**	0.22 J
ETHYLBENZENE	1000	**37000**	**3300**	**7500**	ND
TOLUENE	700	**3340**	580	420	ND
XYLENES, TOTAL	10000	**36600**	2000	1800	0.2 J
MTBE	20	**156000**	28 J	ND	0.96 J
NAPHTHALENE	100	**816**	**1800**	14	ND
PYRENE	130	10.5	0.9	ND	0.746
ANTHRACENE	66	6.54	1	ND	ND
ISOPROPYLBENZENE	3500	ND	41 J	110 J	3.1
FLUORENE	1900	21.5	9	0.5	0.146
CHRYSENE	1.9	1.47	0.3 J	ND	0.454
PHENANTHRENE	1100	19.8	8	1	0.488
LEAD	5	ND	0.8	1.2	2.1 B
1,2,4-TMB	62	**8400**	240 J	ND	ND
1,2-DIBROMOETHANE	0.05	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ND	470 J	ND	ND
1,3,5-TMB	1200	**3010**	81 J	ND	ND
BENZO(A) ANTHRACENE	4.9	1.72	0.2 J	ND	0.292
BENZO(A)PYRENE	0.2	**0.942**	0.3 J	ND	**0.337**
BENZO(B) FLUORANTHENE	0.55	**1.23**	0.4 J	ND	**0.703**
BENZO(G,H,I) PERYLENE	0.26	**0.772**	ND	ND	**0.343**

Sucralose

Well	CD-18A	CD-18B
Boring	S-463	S-464
Sample Date	5/14/21	5/18/21
Sucralose ng/L	ND	ND

CD Groundwater Sample Results

Well		CD-18A	CD-18B
Boring		S-463	S-464
Sample Date		3/22/21	3/22/21
Parameters µg/L	MCLs µg/L		
BENZENE	**5**	**8,400**	**120,000**
TOLUENE	**1000**	16	750
ETHYLBENZENE	**700**	3.8 J	70 J
XYLENES, TOTAL	**10000**	17 J	320 J
MTBE	**20**	ND	ND
NAPHTHALENE	**100**	3.4	9.6
1,2,4-TMB	**62**	ND	ND
1,3,5-TMB	**1200**	ND	ND
ISOPROPYLBENZENE	**3500**	4.4 J	92 J
TERT-BUTYL ALCOHOL		ND	ND

CD Groundwater Sample Results

Well	CD-18A	CD-18B
Boring	S-463	S-464
Sample Date	3/22/21	3/22/21
Parameters µg/L		
ALKALINITY TO pH 4.5	250,000	310,000
CALCIUM	95,000	97,000
IRON	7,100	20,000
METHANE	120	2,700
SULFATE (AS SO4)	150,000	100,000
TOTAL CARBON	61,000	110,000
TOTAL INORGANIC CARBON	56,000	91,000
TOTAL KJELDAHL NITROGEN	ND	1,100
TOTAL ORGANIC CARBON	5,000	19,000

Groundwater Quality Sample Results

Well		OW-16	MW-36	TW-5	TW-9
Sample Date		8/15/18	7/16/19	7/3/19	12/8/14
Parameters	*Units*				
DO	mg/L	0	0	0	1.78
ORP	mV	-17	-130	-151	-13
pH	S.U.	6.62	6.84	6.45	6.98
EC	mS/cm	3.99	1.22	5.16	0.301
Temperature	ºC	19.84	19.99	18.69	13.68
Turbidity	NTU	399	76.6	68.4	246

CD Groundwater Quality Results

Well		CD-18A	CD-18B
Boring		S-463	S-464
Sample Date		3/22/21	3/22/21
Parameters	*Units*		
DO	mg/L	0.27	0.56
ORP	mV	-44	-103
pH	S.U.	6.22	6.32
EC	mS/cm	1.14	1.62
Temperature	ºC	19.92	18.73
Turbidity	NTU	0.5	2

Well Gauging Data

Well	OW-16	MW-36
Date	6/3/19	7/1/05
Prod. Descr.	75% GASOLINE, 25% MID. DIST.	UNKNOWN% GASOLINE

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FIGURE
18.2
ANALYTICAL DATA INTEGRATION

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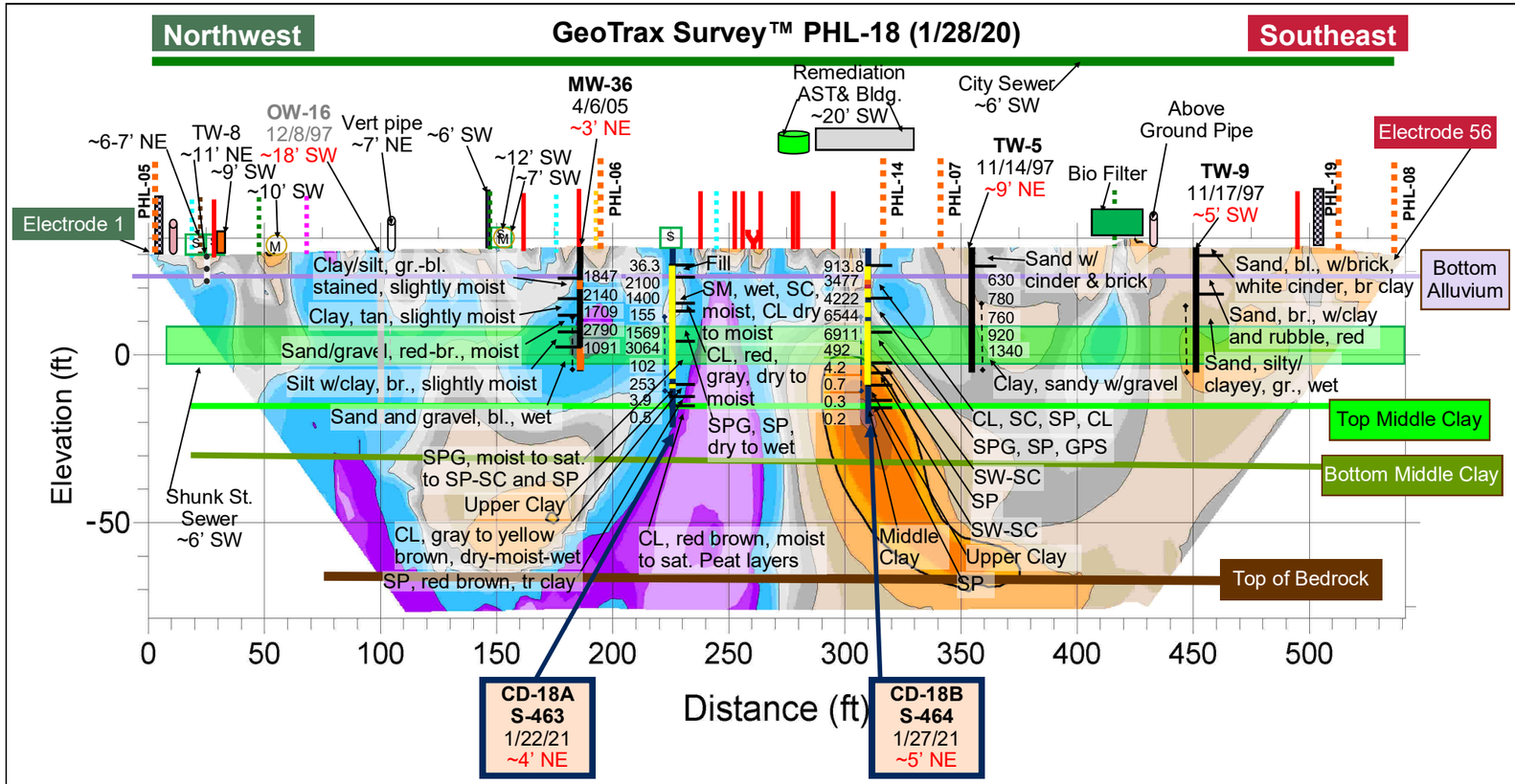

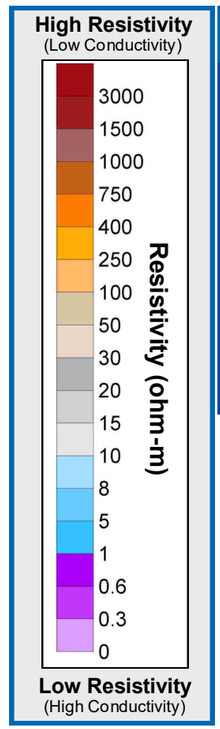

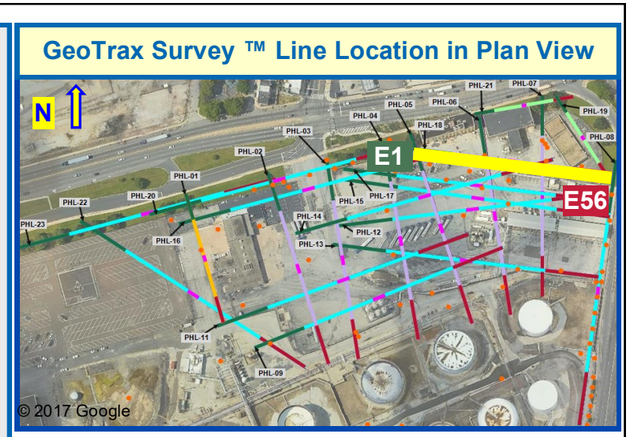

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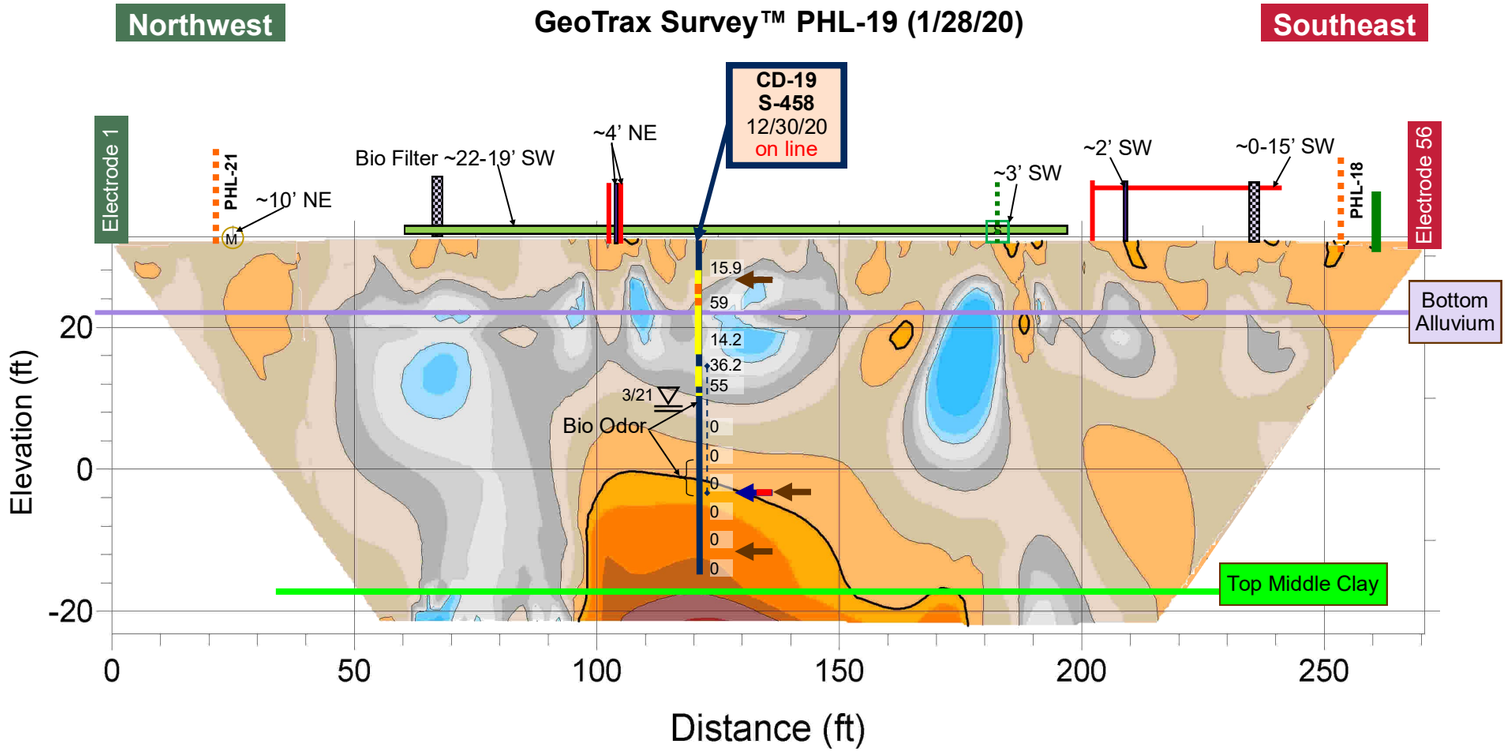

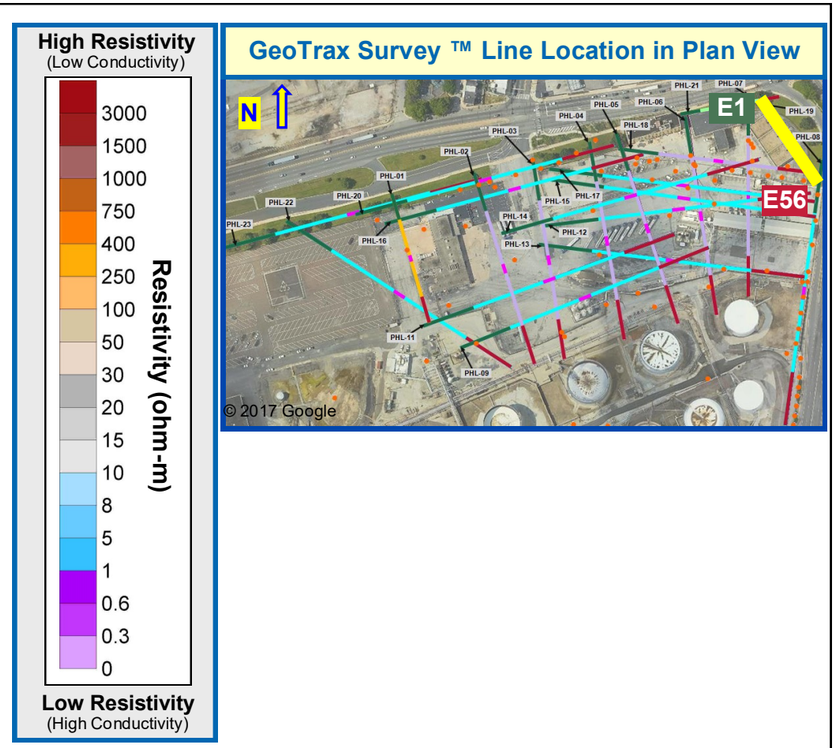

CD Groundwater Grab Results		
Well		CD-19
Boring		S-458
Sample Date		12/30/20
Sample Depth ft. BGS		40
Parameters µg/L	MSCs µg/L	
BENZENE	5	63
TOLUENE	1000	1.9
ETHYLBENZENE	700	4.4
XYLENES, TOTAL	10000	14
MTBE	20	ND
1,2,4-TMB	62	3.1 J
>C12-C22		190
>C22-C44		160
C4-C12-TPH-GRO		270
TOTAL ORG. CARBON		6000
TPH		350

CD Groundwater Grab Results	
Well	CD-19
Boring	S-458
Sample Date	12/30/20
Sample Depth	40
Parameters (µg/L)	
ALKALINITY TO pH 4.5	360,000
CALCIUM	110,000
CHLORIDE (AS CL)	220,000
IRON	3100 B
MAGNESIUM	31,000
METHANE	8
NITROGEN, AMMONIA	ND
NITROGEN, NITRATE	2,200
POTASSIUM	15,000
SODIUM	180,000
SULFATE (AS SO4)	82,000

CD Soil Sample Results				
Well /Boring		CD-19	S-458	
Sample Date		12/29/20	12/29/20	12/30/20
Sample Depth ft BGS		15	40	50
Parameters mg/kg	MCLs mg/kg			
BENZENE	330	ND	0.0032 J	0.0047 J
TOLUENE	10000	ND	ND	ND
ETHYLBENZENE	1000	ND	ND	ND
XYLENES, TOTAL	9100	ND	ND	ND
MTBE	9900	ND	ND	ND
>C12-C22		ND	ND	ND
>C22-C44		8.7 J	ND	ND
C4-C12-TPH-GRO		17	0.05 J	0.13
TPH		8.7 J	ND	ND

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FIGURE
19.1
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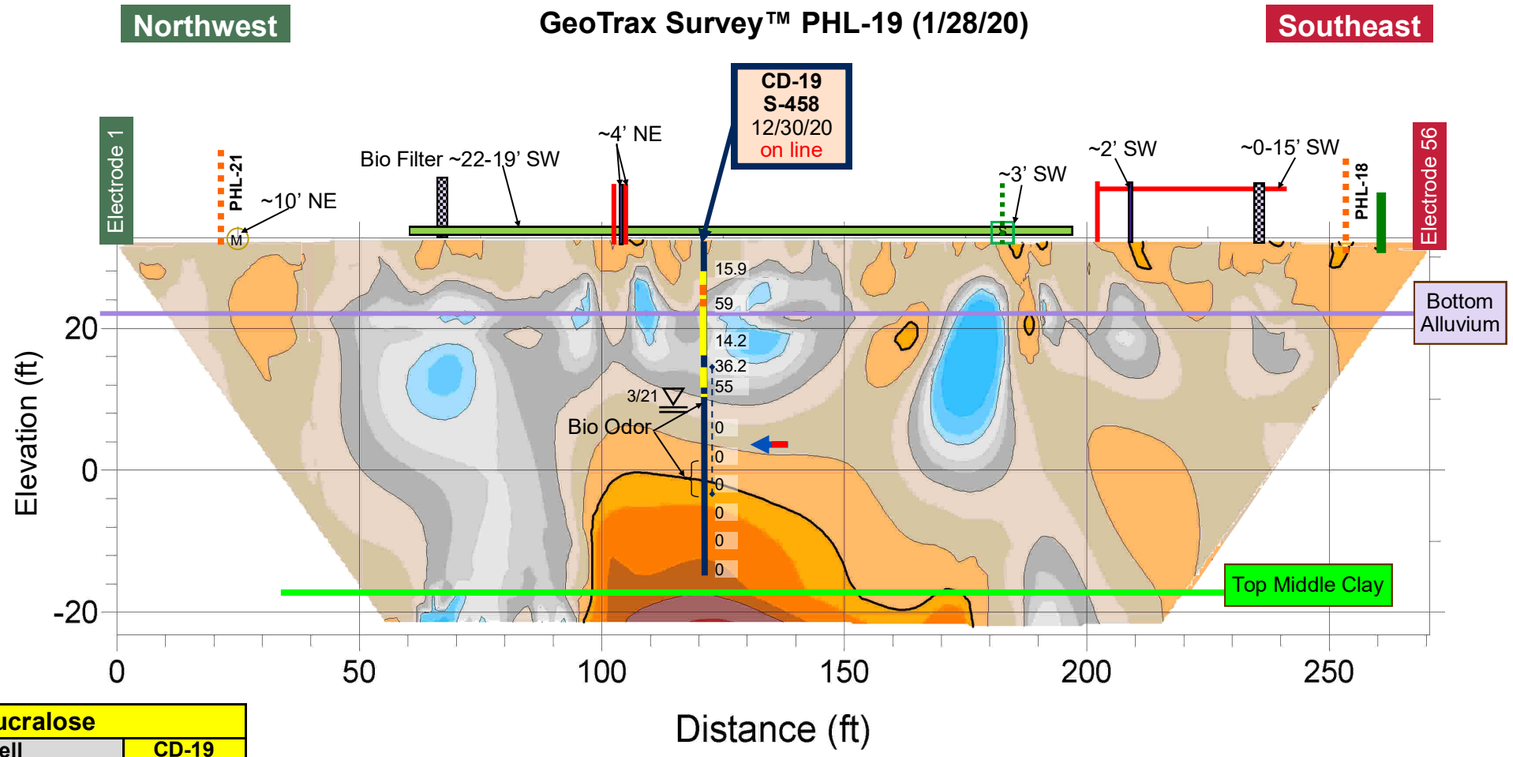

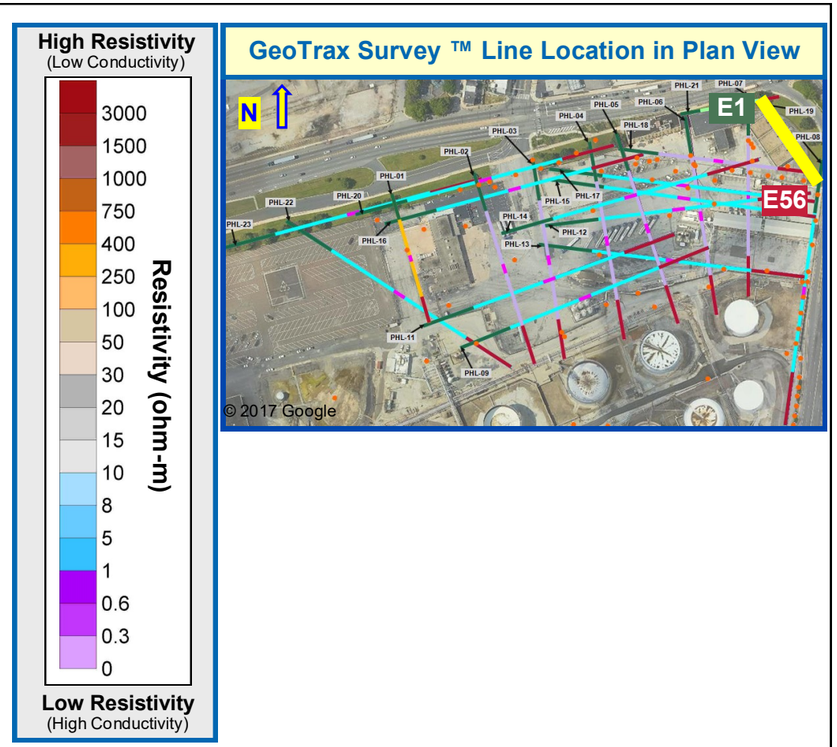

Sucralose	
Well	CD-19
Boring	S-458
Sample Date	5/14/21
Sucralose ng/L	84.1

CD Groundwater Sample Results		
Well		CD-19
Boring		S-458
Sample Date		3/23/21
Parameters µg/L	MCLs µg/L	
BENZENE	5	270
TOLUENE	1000	2.5 J
ETHYLBENZENE	700	ND
XYLENES, TOTAL	10000	ND
MTBE	20	ND
NAPHTHALENE	100	0.67
1,2,4-TMB	62	5.2 J
1,3,5-TMB	1200	2.3 J
ISOPROPYLBENZENE	3500	ND
TERT-BUTYL ALCOHOL		ND

CD Groundwater Sample Results	
Well	CD-19
Boring	S-458
Sample Date	3/23/21
Parameters µg/L	
ALKALINITY TO pH 4.5	370,000
CALCIUM	110,000
IRON	3,300
METHANE	17
SULFATE (AS SO4)	89,000
TOTAL CARBON	81,000
TOTAL INORGANIC CARBON	78,000
TOTAL KJELDAHL NITROGEN	ND
TOTAL ORGANIC CARBON	3,000

CD Groundwater Quality Results		
Well		CD-19
Boring		S-458
Sample Date		3/23/21
Parameters	*Units*	
DO	mg/L	0.15
ORP	mV	23
pH	S.U.	5.87
EC	mS/cm	1.67
Temperature	ºC	19.26
Turbidity	NTU	8.9

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FIGURE
19.2
ANALYTICAL DATA INTEGRATION

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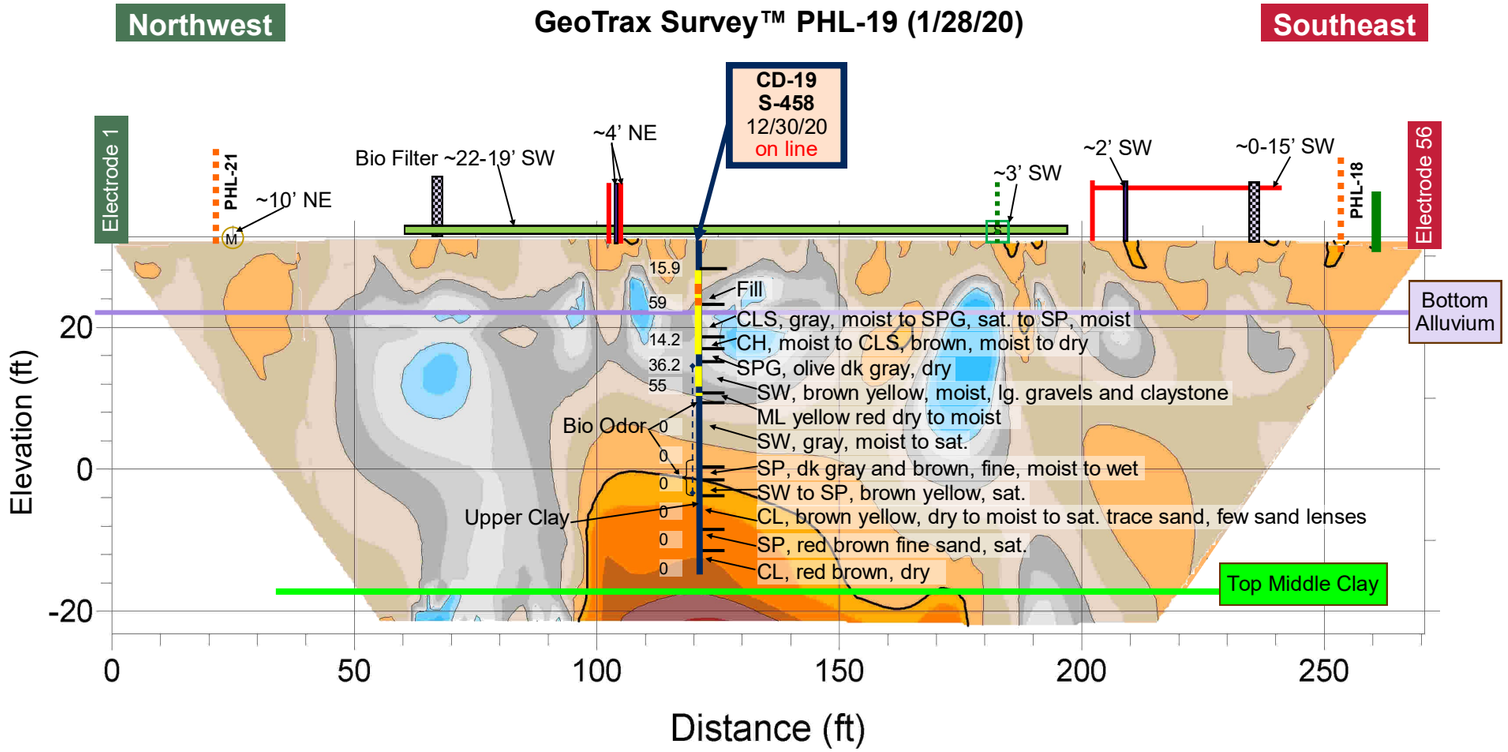
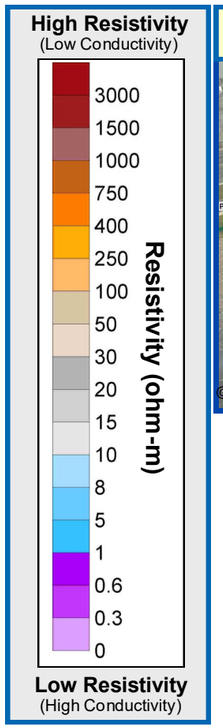
GeoTrax Survey™ PHL-19 (1/28/20)





GeoTrax Survey ™ Line Location in Plan View

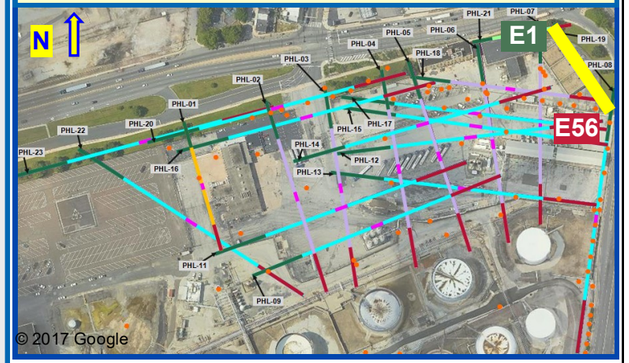


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FIGURE
19.3
GEOLOGY
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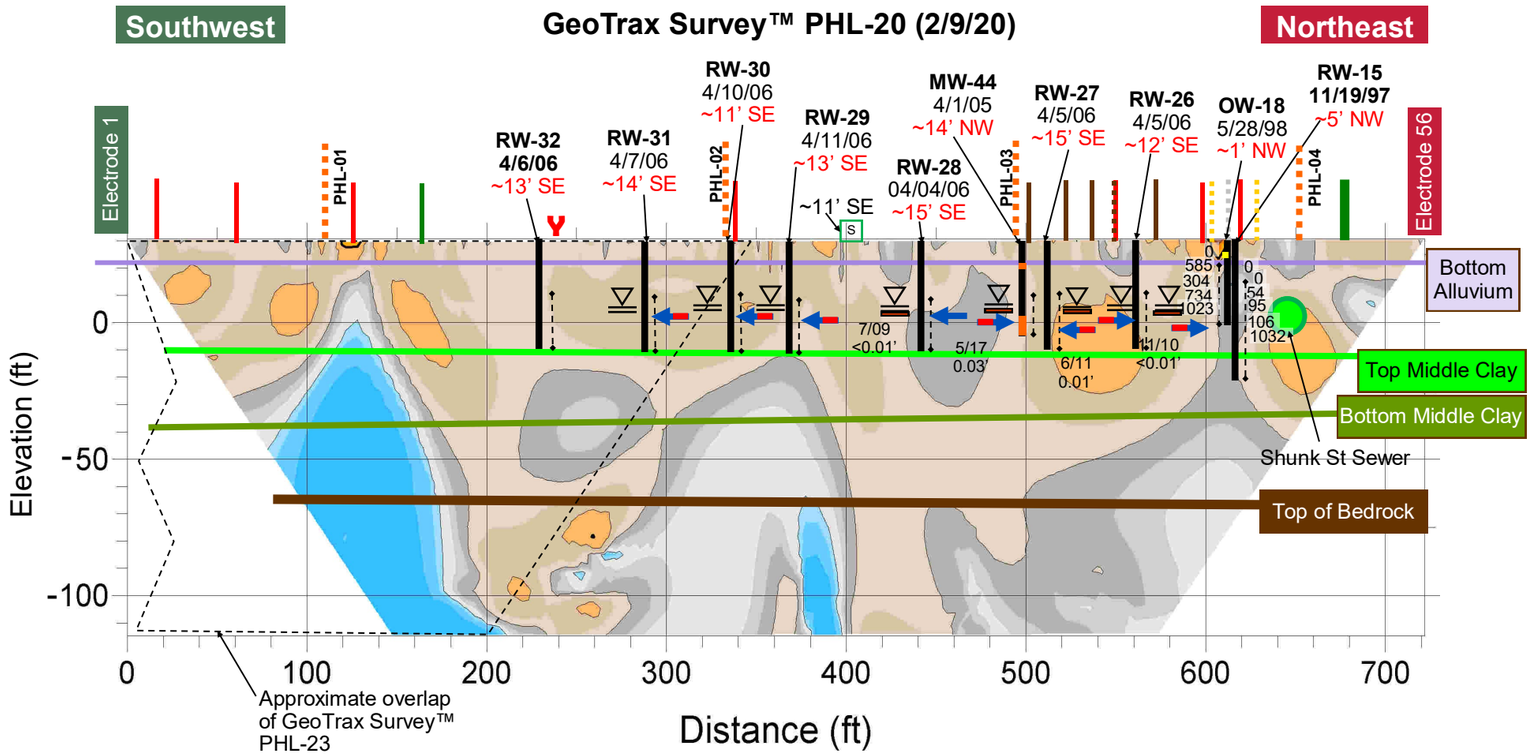

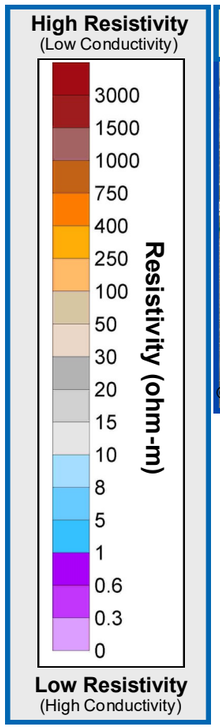

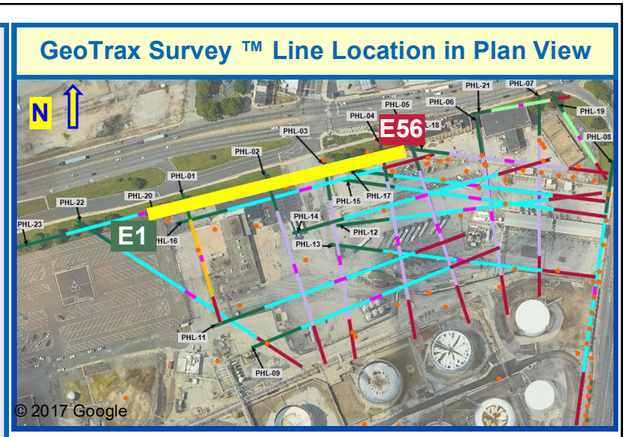

No Confirmation Borings on PHL-20

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FIGURE
20.1
INITIAL CD DATA INTEGRATION

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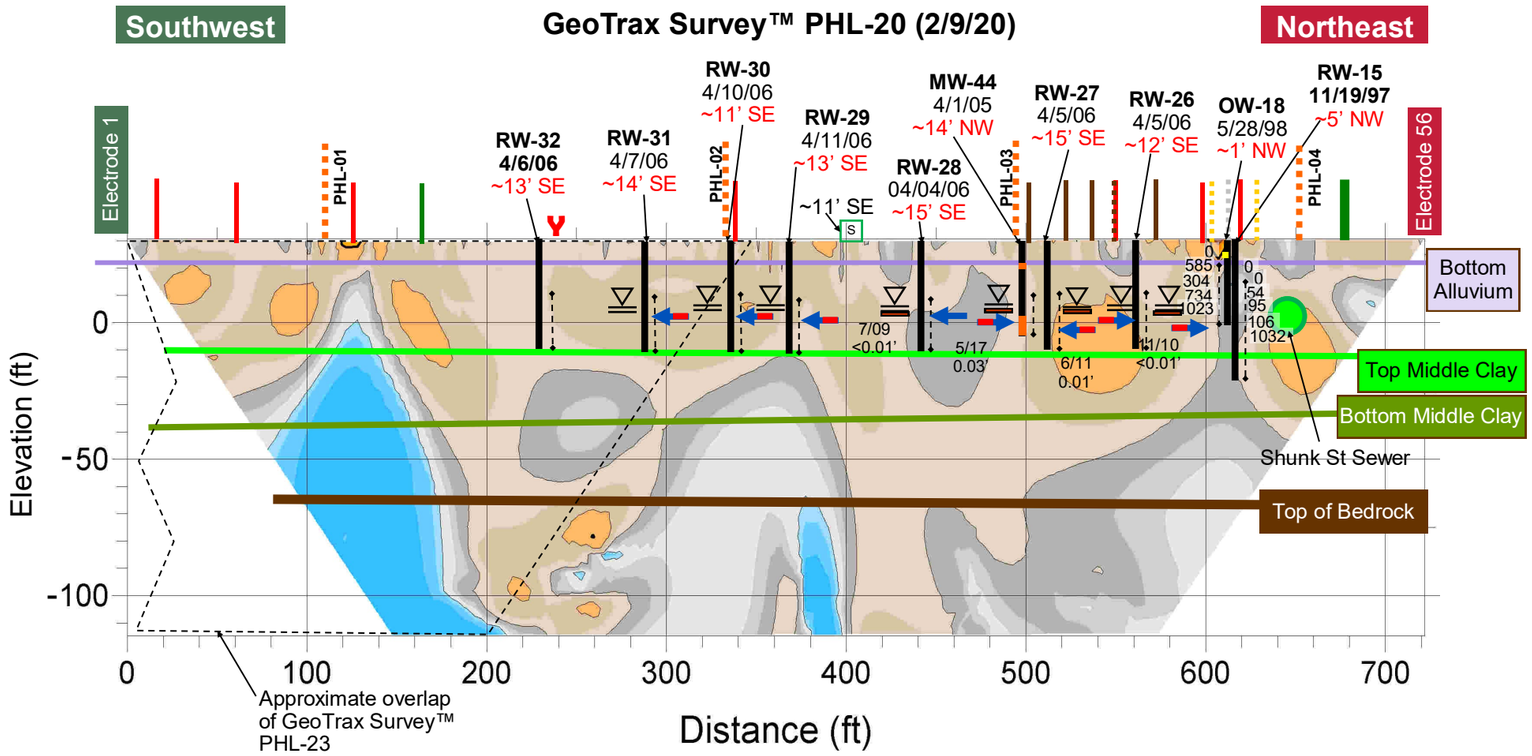

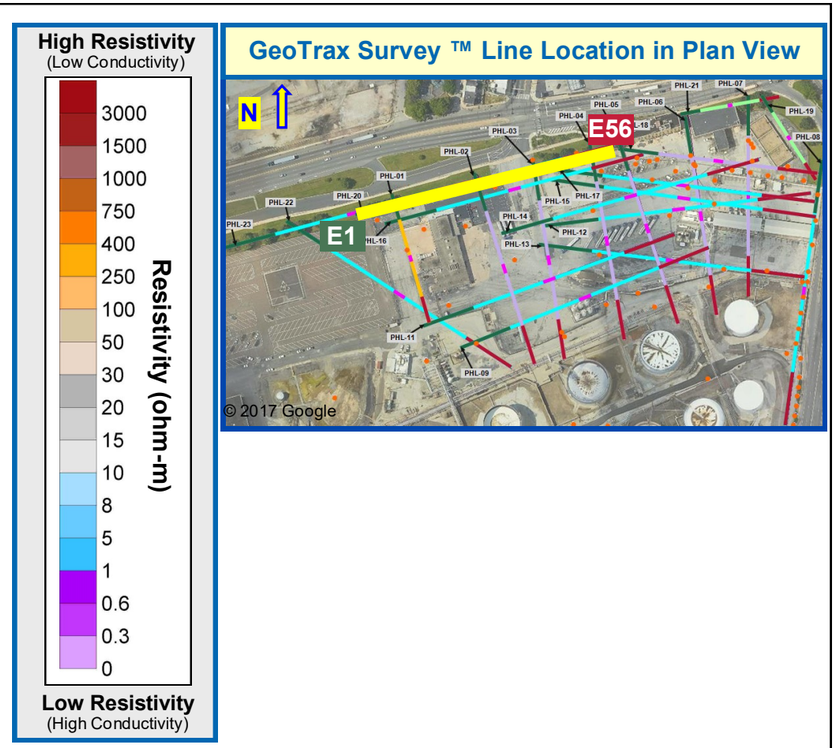

Well Product Data

Well	RW-28	MW-44	RW-27	OW-18
Sample Date	7/1/09	5/8/17	6/6/11	11/1/10
Product Description	70% GASOLINE, 30% MIDDLE DISTILLATE	70% GASOLINE, 30% MIDDLE DISTILLATE	70% GASOLINE, 30% MIDDLE DISTILLATE	90% GASOLINE, 10% MIDDLE DISTILLATE

Groundwater Quality Sample Results

Well		RW-31	RW-30	RW-29	RW-28	MW-44	RW-27	RW-26	OW-18
Sample Date		7/31/18	7/31/18	7/31/18	8/1/18	7/1/19	8/1/18	7/3/19	8/1/18
Parameters	*Units*								
DO	mg/L	0	1.92	0.43	0.28	0.61	0	2.61	0
ORP	mV	-165	-143	-156	212	-30	-91	-46	-151
pH	S.U.	6.65	6.57	6.49	6.33	5.53	6.66	5.95	6.76
EC	mS/cm	1.36	1.83	1.27	2.49	1.11	2.3	1.81	1.89
Temperature	ºC	18.09	20.07	19.16	21	21.1	19.14	20.78	19.33
Turbidity	NTU	21.8	218	104	20.5	30.7	91.3	318	98

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FIGURE
20.2 A
ANALYTICAL DATA INTEGRATION

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Groundwater Sample Results									
Well		**RW-31**	**RW-30**	**RW-29**	**RW-28**	**MW-44**	**RW-27**	**RW-26**	**OW-18**
Sample Date		**7/31/18**	**7/31/18**	**7/31/18**	**8/1/18**	**11/12/19**	**8/1/18**	**11/12/19**	**8/1/18**
Parameters (µg/L)	**Stds (µg/L)**								
BENZENE	5	**51**	**375**	**226**	ND	**3000**	**3270**	**2800**	**445**
ETHYLBENZENE	1000	ND	11.4	ND	ND	320	43	26	ND
TOLUENE	700	ND	ND	ND	ND	500	568	500	**1010**
XYLENES, TOTAL	10000	ND	ND	ND	ND	3800	1080	620	1170
MTBE	20	17.9	**90.1**	**191**	ND	**50**	**4340**	**1200**	ND
NAPHTHALENE	100	1.67	50.2	17.8	ND	**120**	**2340**	**1600**	**659**
PYRENE	130	0.182	5.92	3.54	ND	9	2.26	1	8.63
ANTHRACENE	66	0.288	6.82	7.82	ND	2	2.85	3	7.45
ISOPROPYLBENZENE	3500	30.4	55.3	107	ND	22 J	77.7	59	ND
FLUORENE	1900	3.52	26	51.8	ND	6	25.2	19	17
CHRYSENE	1.9	ND	1.58	0.469	ND	**7**	0.309	ND	**2.64**
PHENANTHRENE	1100	1.03	31.4	41.4	0.0539	12	23	17	32.6
LEAD	5	ND	ND	ND	ND	7.1	ND	ND	2.52
1,2,4-TMB	62	ND	40.8	ND	ND	**690**	**933**	**310**	**807**
1,2-DIBROMOETHANE	0.05	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-TMB	1200	ND	18.2	ND	ND	220	64.8	84	ND
BENZO(A)ANTHRACENE	4.9	ND	1.57	0.476	ND	3	0.347	ND	2.37
BENZO(A)PYRENE	0.2	ND	**1.16**	**0.248**	ND	**4**	0.187	ND	**1.38**
BENZO(B)FLUORANTHENE	0.55	ND	**1.22**	0.296	ND	**8**	0.244	ND	**1.69**
BENZO(G,H,I)PERYLENE	0.26	ND	**0.536**	0.107	ND	**4**	0.145	ND	**0.657**

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FIGURE
20.2 B
ANALYTICAL DATA INTEGRATION

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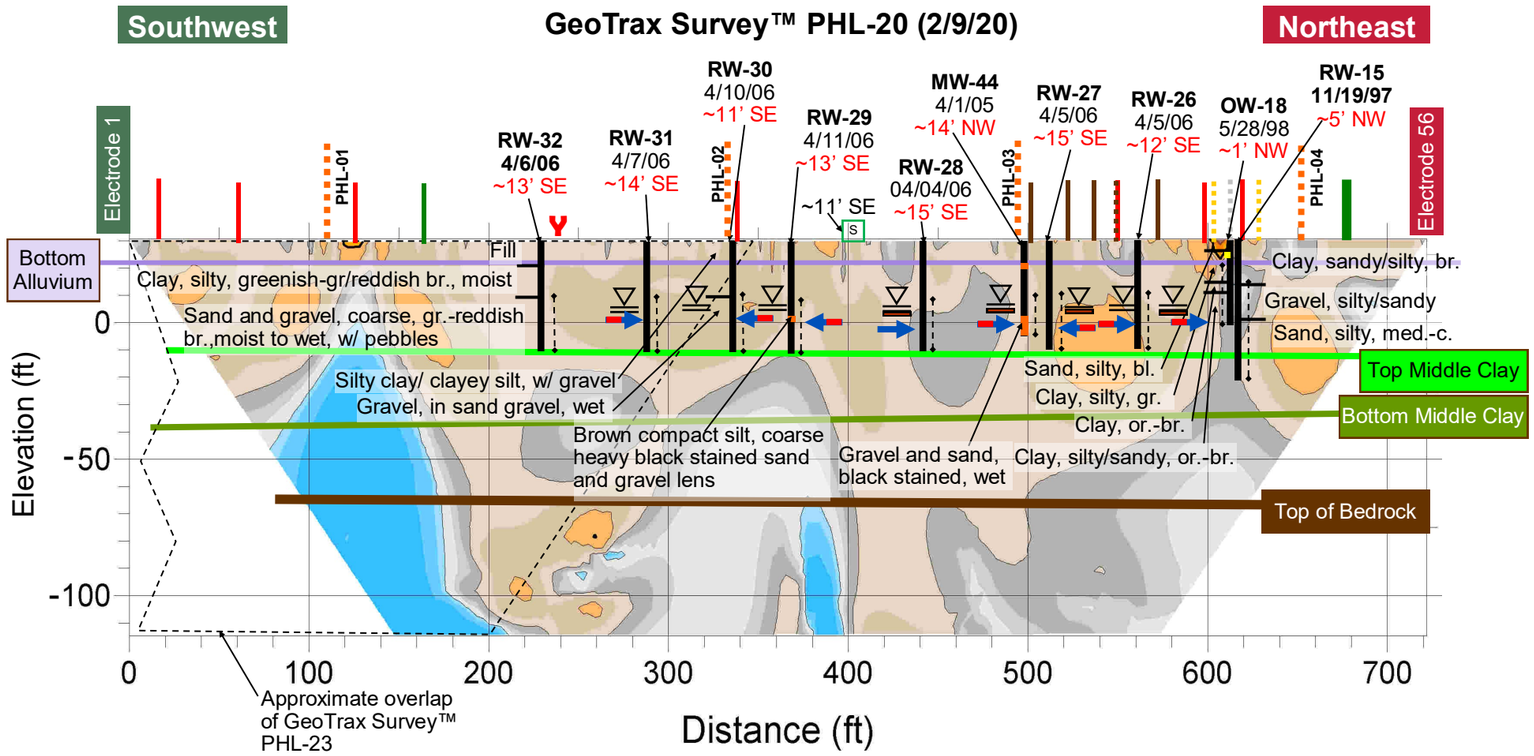

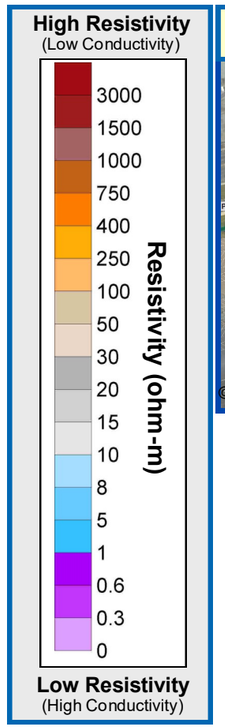

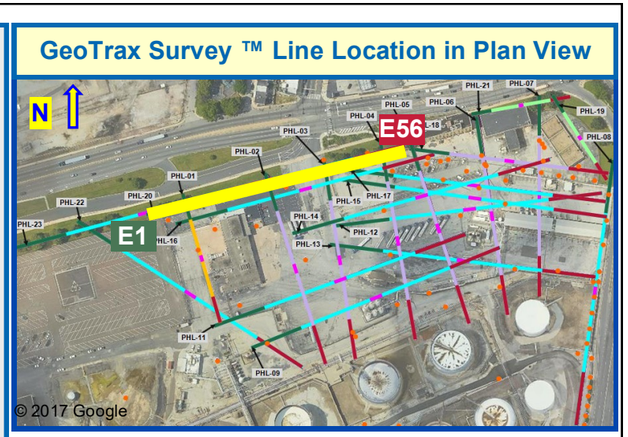

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FIGURE
20.3
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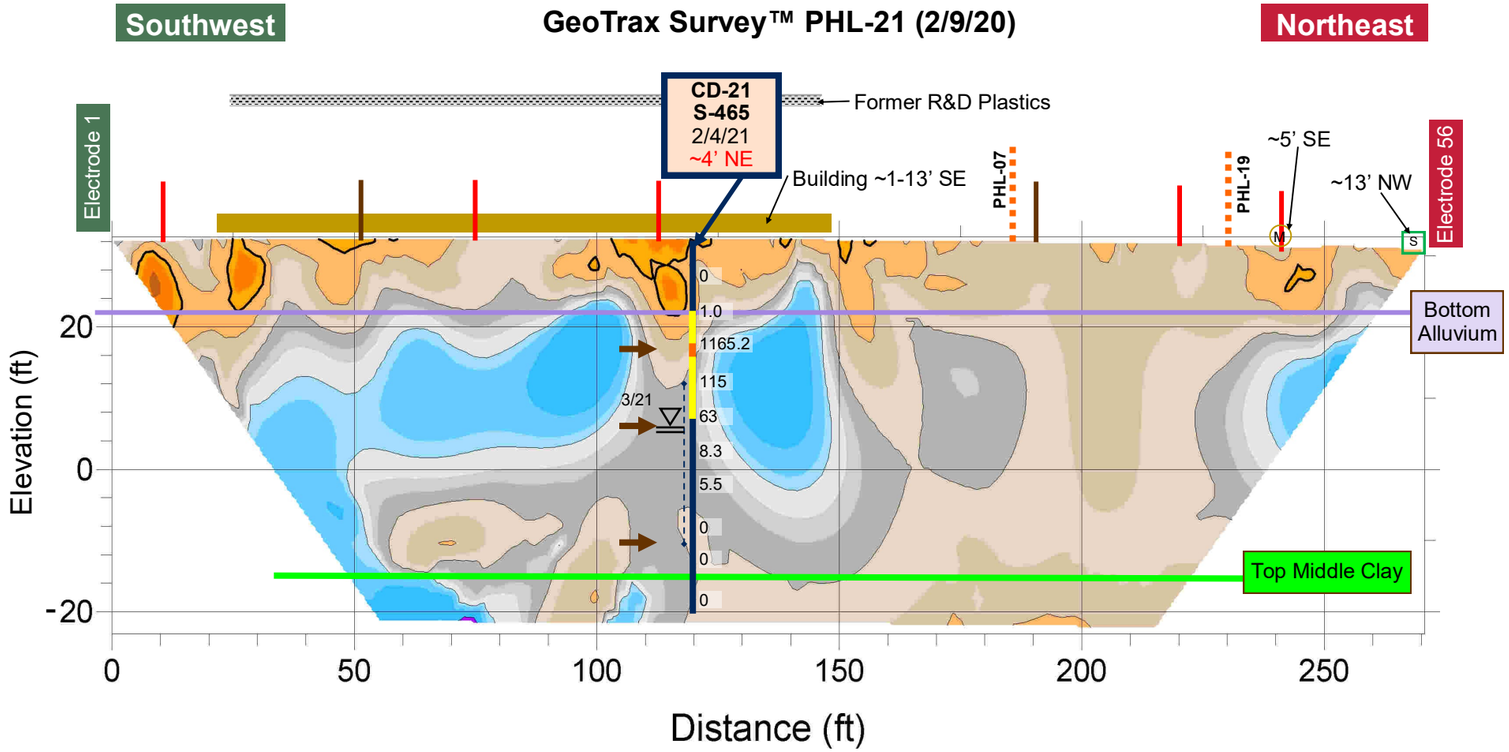

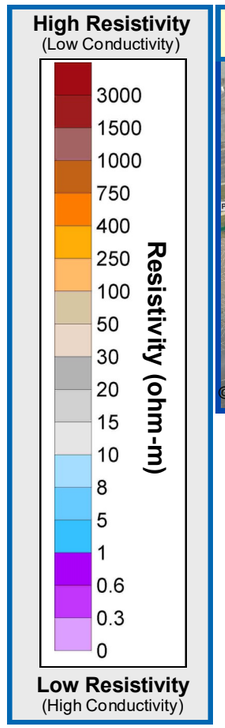

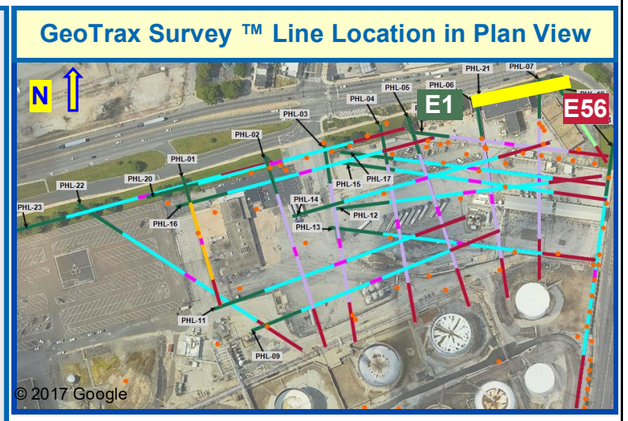

CD Groundwater Grab Results		
Well		CD-21
Boring		S-465
Sample Date		
Sample Depth ft. BGS		
Parameters µg/L	MSCs µg/L	
BENZENE	5	
TOLUENE	1000	
ETHYLBENZENE	700	
XYLENES, TOTAL	10000	
MTBE	20	
1,2,4-TMB	62	NA
>C12-C22		
>C22-C44		
C4-C12-TPH-GRO		
TOTAL ORG. CARBON		
TPH		

CD Groundwater Grab Results	
Well	CD-21
Boring	S-465
Sample Date	
Sample Depth	
Parameters (µg/L)	
ALKALINITY TO pH 4.5	
CALCIUM	
CHLORIDE (AS CL)	
IRON	
MAGNESIUM	
METHANE	NA
NITROGEN, AMMONIA	
NITROGEN, NITRATE	
POTASSIUM	
SODIUM	
SULFATE (AS SO4)	

CD Soil Sample Results				
Well /Boring		CD-21 S-465		
Sample Date		1/21/21	2/4/21	2/4/21
Sample Depth ft BGS		15	26	42
Parameters mg/kg	MCLs mg/kg			
BENZENE	330	87	5.9	0.0017 J
TOLUENE	10000	62	0.08	ND
ETHYLBENZENE	1000	14	0.025	ND
XYLENES, TOTAL	9100	87	0.14	ND
MTBE	9900	ND	ND	ND
>C12-C22		2300	7.5 J	ND
>C22-C44		460	8 J	6.2 J
C4-C12-TPH-GRO		1900	3.8	ND
TPH		2800	16	6.2 J

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GeoTrax Viz™ 2-D Data Integration
Belmont Terminal Site
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FIGURE
21.1
INITIAL CD DATA INTEGRATION

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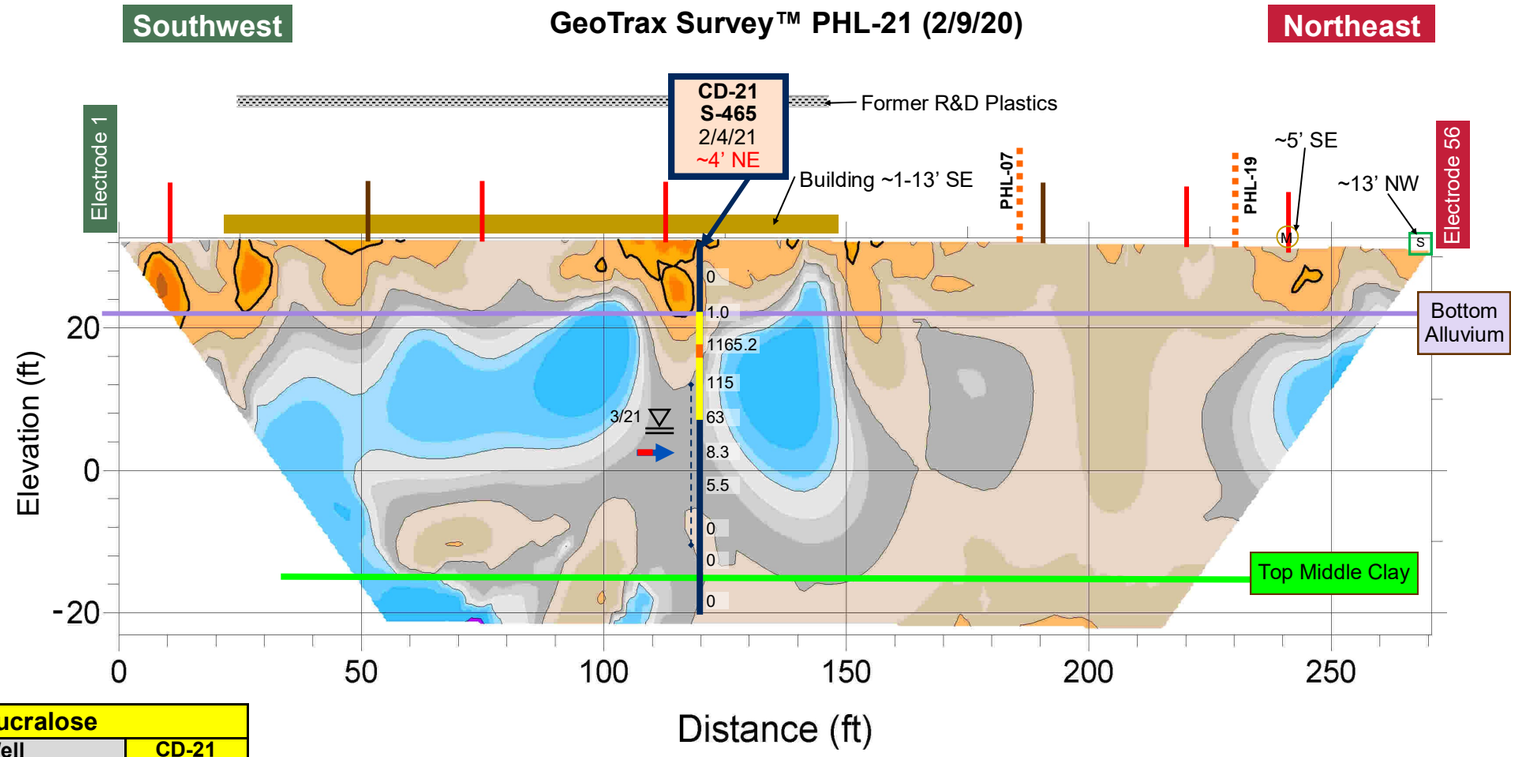

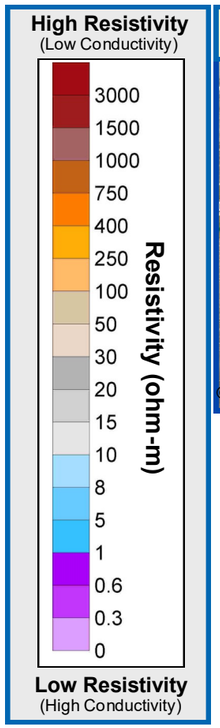

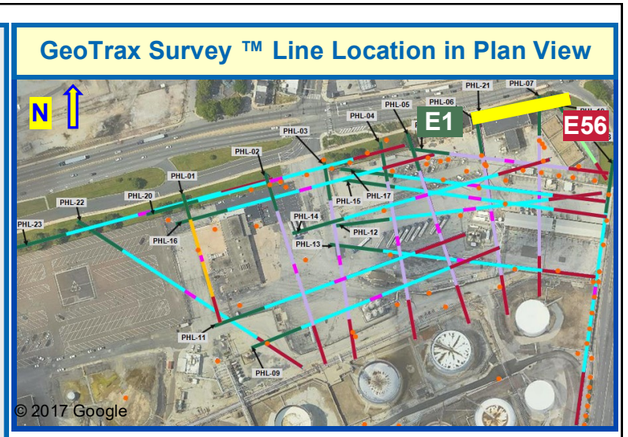

Sucralose	
Well	CD-21
Boring	S-465
Sample Date	5/19/21
Sucralose ng/L	ND

CD Groundwater Sample Results		
Well		CD-21
Boring		S-465
Sample Date		3/25/21
Parameters µg/L	MCLs µg/L	
BENZENE	5	30,000
TOLUENE	1000	1,300
ETHYLBENZENE	700	88
XYLENES, TOTAL	10000	470
MTBE	20	ND
NAPHTHALENE	100	21
1,2,4-TMB	62	36 J
1,3,5-TMB	1200	12 J
ISOPROPYLBENZENE	3500	19 J
TERT-BUTYL ALCOHOL		ND

CD Groundwater Sample Results	
Well	CD-21
Boring	S-465
Sample Date	3/25/21
Parameters µg/L	
ALKALINITY TO pH 4.5	310,000
CALCIUM	110,000
IRON	5,700
METHANE	150
SULFATE (AS SO4)	96,000
TOTAL CARBON	88,000
TOTAL INORGANIC CARBON	70,000
TOTAL KJELDAHL NITROGEN	1,100
TOTAL ORGANIC CARBON	18,000

CD Groundwater Quality Results		
Well		CD-21
Boring		S-465
Sample Date		3/25/21
Parameters	*Units*	
DO	mg/L	0.32
ORP	mV	-42
pH	S.U.	6.56
EC	mS/cm	1.43
Temperature	ºC	17.17
Turbidity	NTU	31.1

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FIGURE
21.2
ANALYTICAL DATA INTEGRATION

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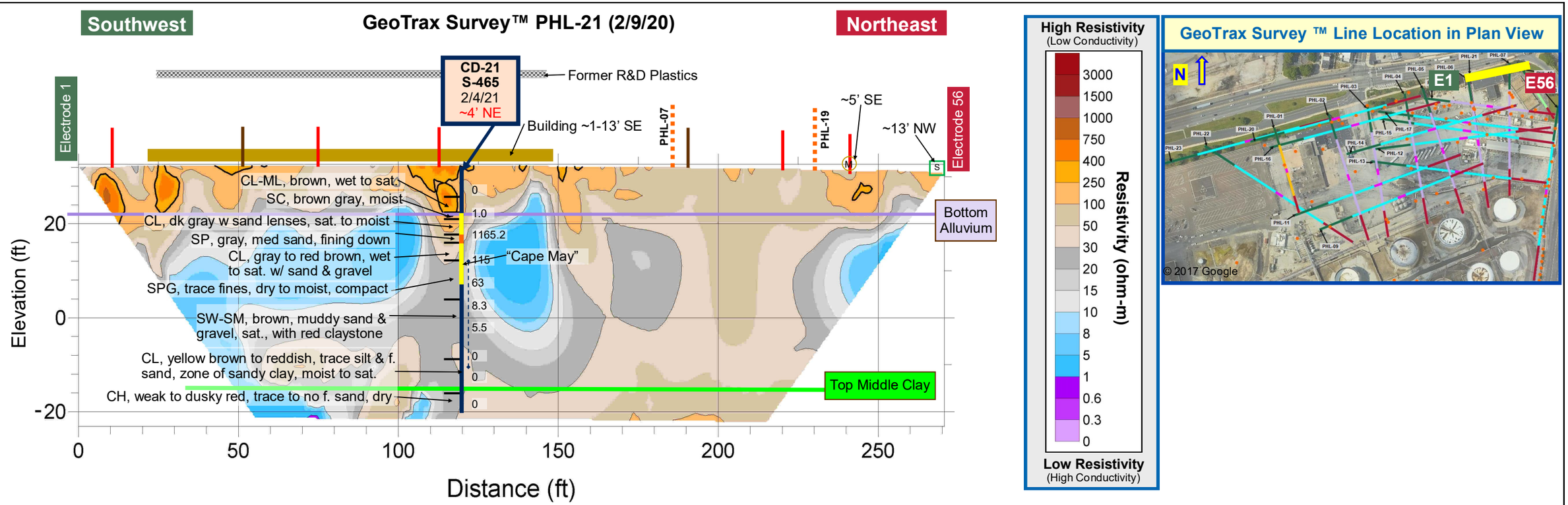

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FIGURE
21.3
GEOLOGY DATA INTEGRATION

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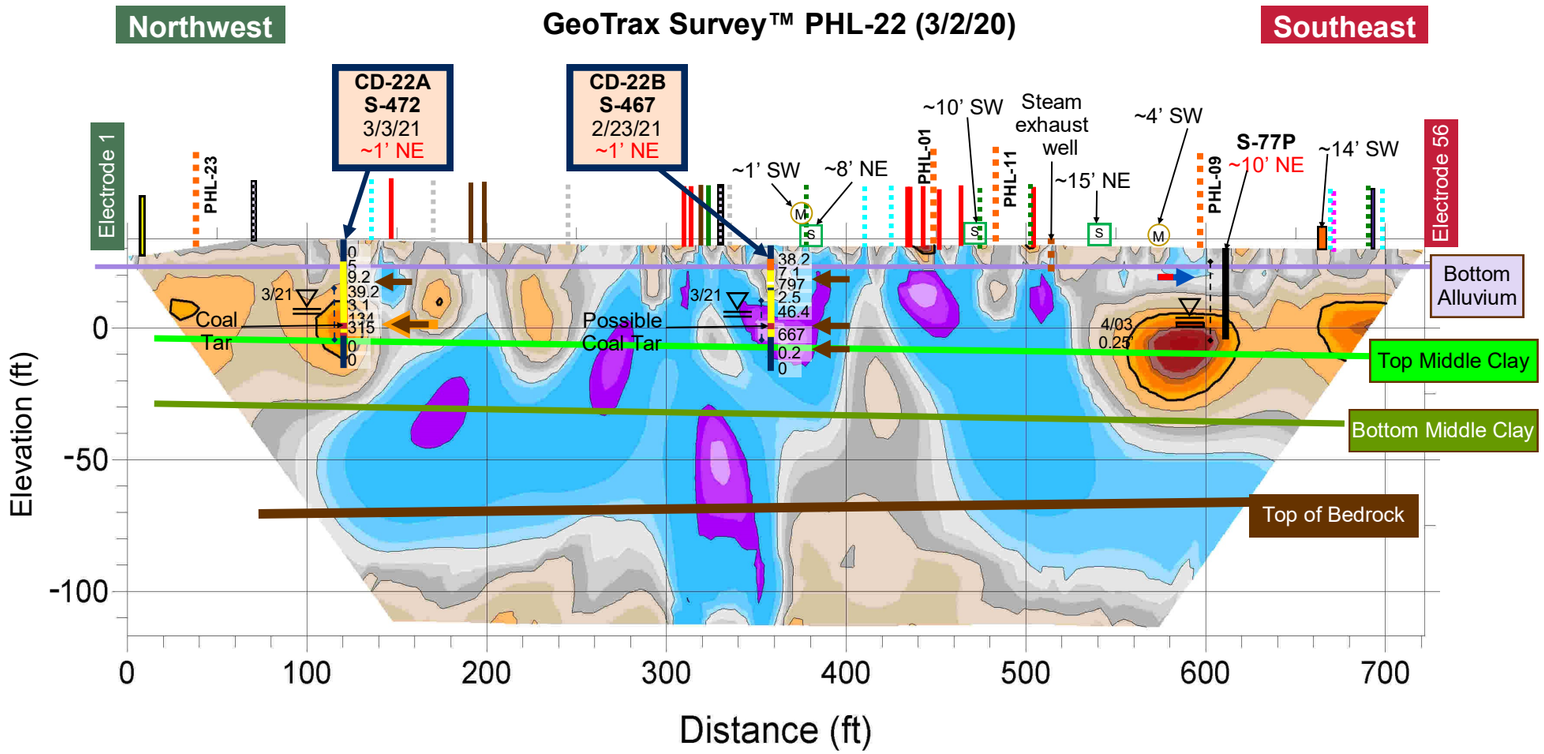

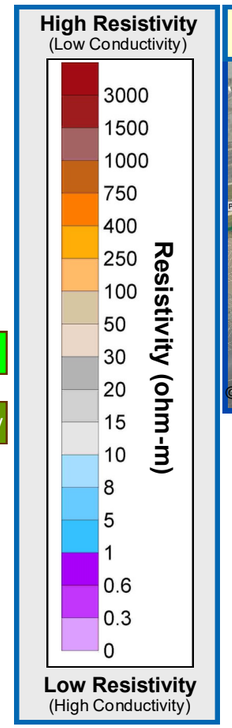

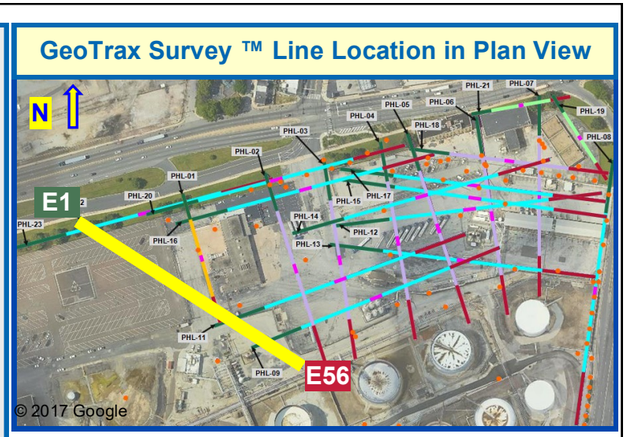

CD Groundwater Grab Results			
Well		CD-22A	CD-22B
Boring		S-472	S-467
Sample Date			
Sample Depth ft. BGS			
Parameters µg/L	MSCs µg/L		
BENZENE	5	NA	NA
TOLUENE	1000		
ETHYLBENZENE	700		
XYLENES, TOTAL	10000		
MTBE	20		
1,2,4-TMB	62		
>C12-C22			
>C22-C44			
C4-C12-TPH-GRO			
TOTAL ORG. CARBON			
TPH			

CD Groundwater Grab Results		
Well	CD-22A	CD-22B
Boring	S-472	S-467
Sample Date		
Sample Depth		
Parameters (µg/L)		
ALKALINITY TO pH 4.5	NA	NA
CALCIUM		
CHLORIDE (AS CL)		
IRON		
MAGNESIUM		
METHANE		
NITROGEN, AMMONIA		
NITROGEN, NITRATE		
POTASSIUM		
SODIUM		
SULFATE (AS SO4)		

CD Soil Sample Results					
Well /Boring		CD-22A	CD-22B		
		S-472	S-467		
Sample Date		3/2/21	2/17/21	2/22/21	2/22/21
Sample Depth ft BGS		16	14	31	40
Parameters mg/kg	MCLs mg/kg				
BENZENE	330	0.0012 J	37	0.14 J	0.25 J
TOLUENE	10000	ND	0.55 J	0.064 J	0.0088
ETHYLBENZENE	1000	ND	38	0.84	0.07
XYLENES, TOTAL	9100	ND	49	0.57	0.1
MTBE	9900	ND	ND	ND	0.62
>C12-C22		ND	50	920	7.4 J
>C22-C44		ND	10 J	120	36
C4-C12-TPH-GRO		0.34	14000	830	22 B
TPH		ND	60	2000	51

CD Soil Forensics	
Well	CD-022A
Boring	S-472
Sample Date	3/5/21
Sample Depth ft BGS	32
See Report for full details	Pyrogenic signature likely related to MGP

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FIGURE
22.1
INITIAL CD DATA INTEGRATION

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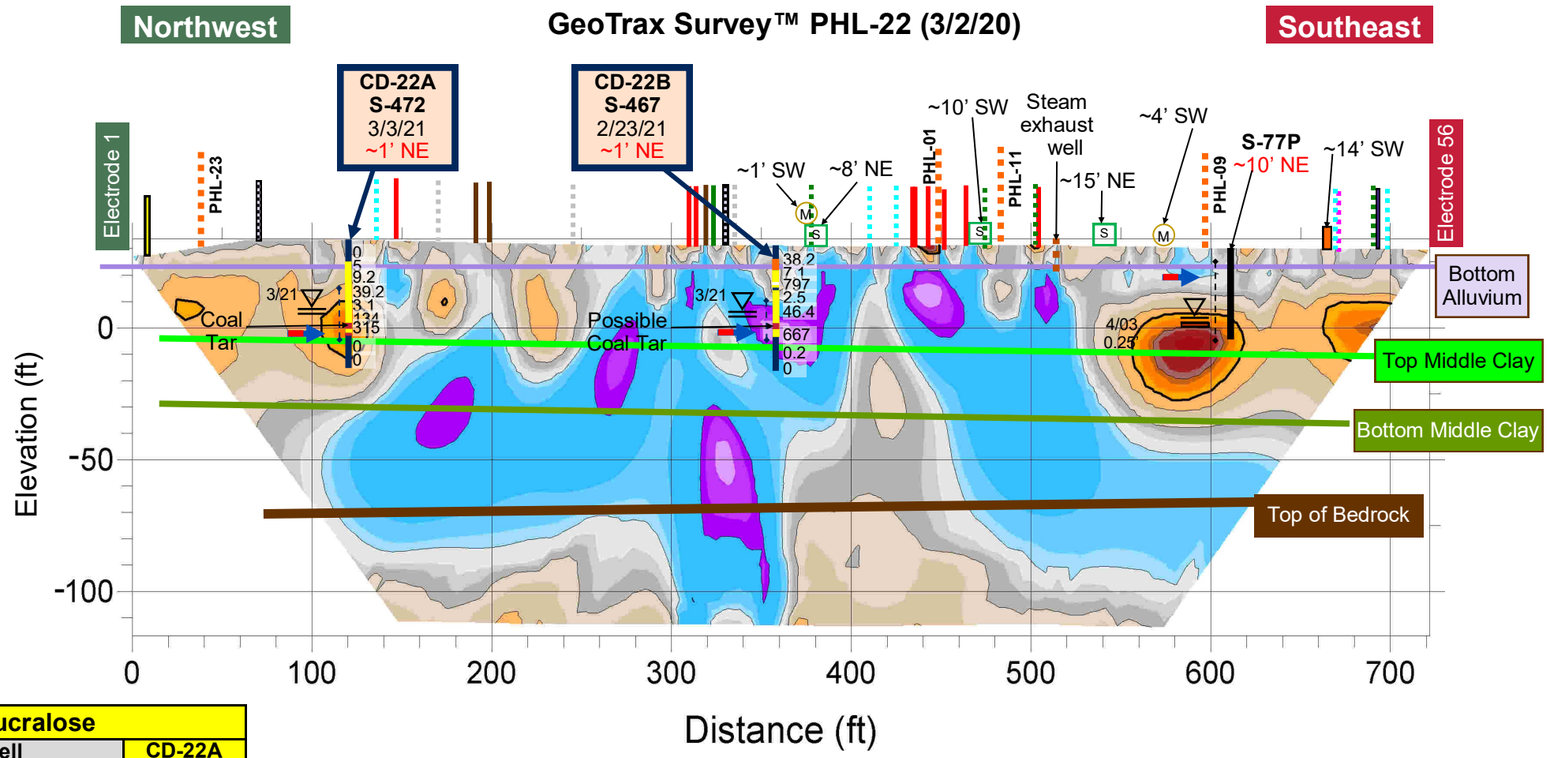

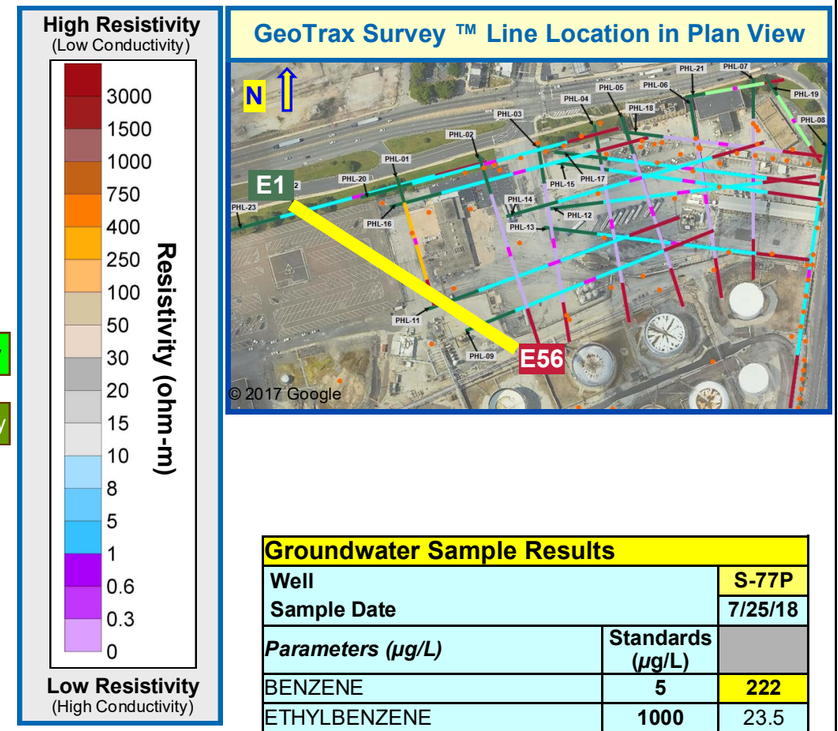

Sucralose	
Well	CD-22A
Boring	S-472
Sample Date	5/14/21
Sucralose ng/L	129

CD Groundwater Sample Results			
Well		CD-22A	CD-22B
Boring		S-472	S-467
Sample Date		3/24/21	3/24/21
Parameters µg/L	MCLs µg/L		
BENZENE	5	180	370
TOLUENE	1000	8.8	20
ETHYLBENZENE	700	970	25
XYLENES, TOTAL	10000	290	55
MTBE	20	0.79 J	78
NAPHTHALENE	100	5800	66
1,2,4-TMB	62	490	64
1,3,5-TMB	1200	130	22
ISOPROPYLBENZENE	3500	110	100
TERT-BUTYL ALCOHOL		25 J	570

CD Groundwater Sample Results			
Well		CD-22A	CD-22B
Boring		S-472	S-467
Sample Date		3/24/21	3/24/21
Parameters µg/L			
ALKALINITY TO pH 4.5		120,000	230,000
CALCIUM		77,000	50,000
IRON		140,000	51,000
METHANE		12,000	18,000
SULFATE (AS SO4)		19,000	6,600
TOTAL CARBON		85,000	89,000
TOTAL INORGANIC CARBON		59,000	64,000
TOTAL KJELDAHL NITROGEN		4,300	8,900
TOTAL ORGANIC CARBON		26,000	25,000

CD Groundwater Quality Results			
Well		CD-22A	CD-22B
Boring		S-472	S-467
Sample Date		3/24/21	3/24/21
Parameters	*Units*		
DO	mg/L	1.92	0.83
ORP	mV	-87	-145
pH	S.U.	6.44	6.83
EC	mS/cm	2.67	2.88
Temperature	ºC	17.89	18.3
Turbidity	NTU	211	7

Well Product Data	
Well	S-77P
Sample Date	4/23/03
Product Description	95% HEAVY VIRGIN NAPHTHA, 5% MIDDLE DISTILLATE

Groundwater Quality Sample Results		
Well		S-77P
Sample Date		7/25/18
Parameters	*Units*	
DO	mg/L	0.11
ORP	mV	-58
pH	S.U.	6.92
EC	mS/cm	0.927
Temperature	ºC	18.99
Turbidity	NTU	13.1

Groundwater Sample Results		
Well		S-77P
Sample Date		7/25/18
Parameters (µg/L)	Standards (µg/L)	
BENZENE	5	222
ETHYLBENZENE	1000	23.5
TOLUENE	700	8.18
XYLENES, TOTAL	10000	57
MTBE	20	2090
NAPHTHALENE	100	8.04
PYRENE	130	0.549
ANTHRACENE	66	1.48
ISOPROPYLBENZENE	3500	128
FLUORENE	1900	14.1
CHRYSENE	1.9	0.112
PHENANTHRENE	1100	6.74
LEAD	5	ND
1,2,4-TMB	62	2.16
1,2-DIBROMOETHANE	0.05	ND
1,2-DICHLOROETHANE	5	ND
1,3,5-TMB	1200	2.98
BENZO(A)ANTHRACENE	4.9	0.0774
BENZO(A)PYRENE	0.2	ND
BENZO(B)FLUORANTHENE	0.55	ND
BENZO(G,H,I)PERYLENE	0.26	ND

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FIGURE
22.2
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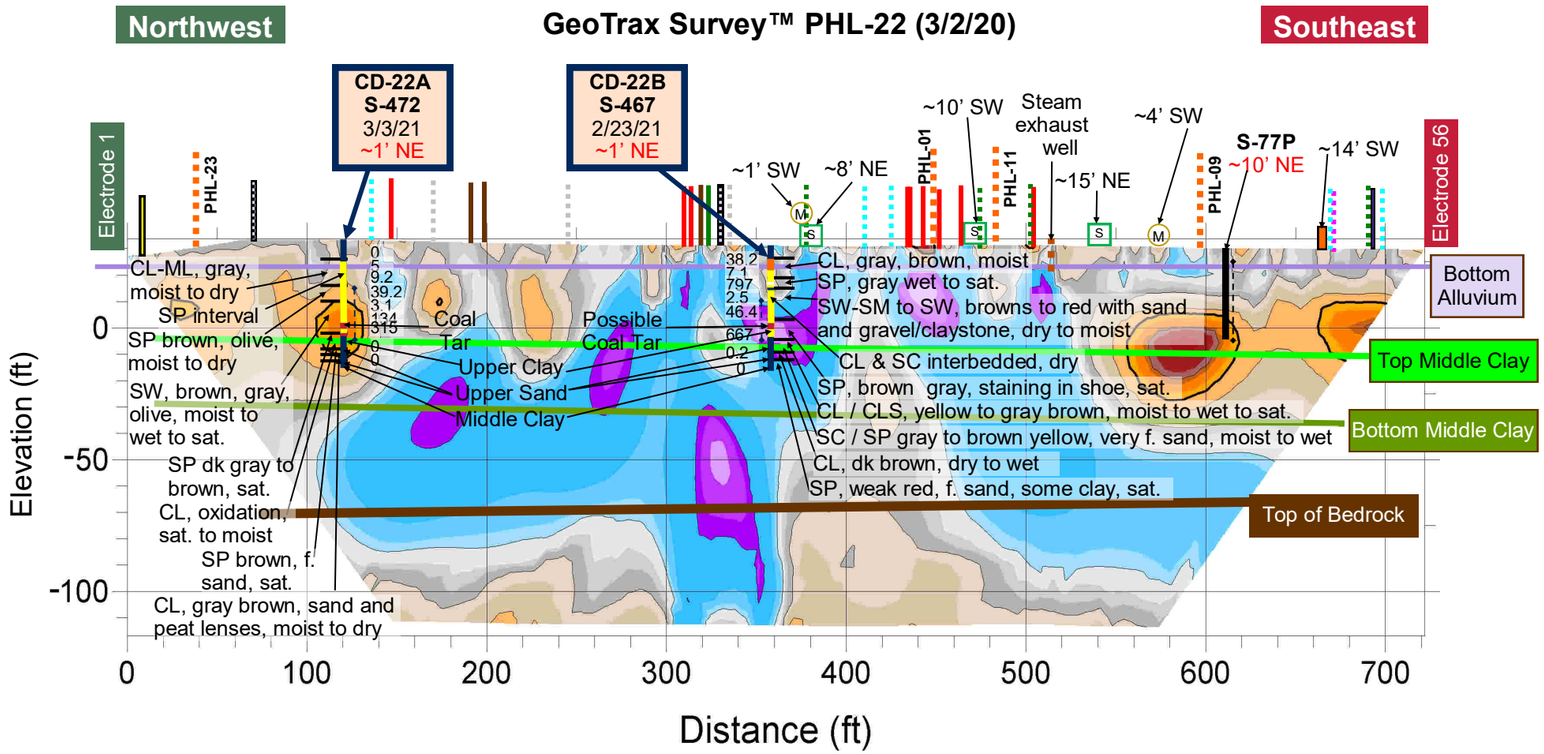

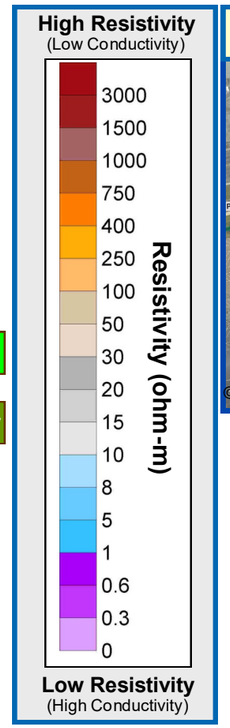

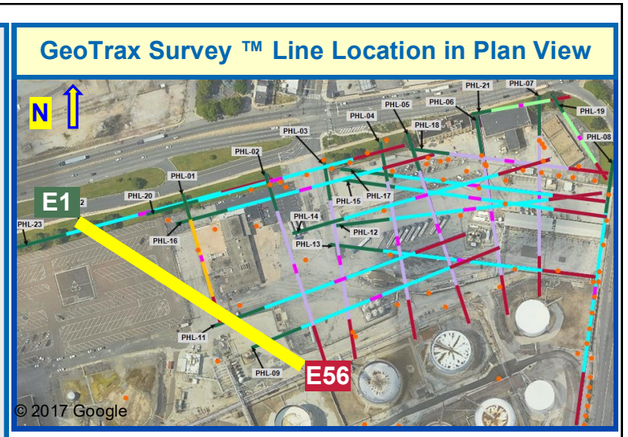

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FIGURE
22.3
GEOLOGY DATA INTEGRATION

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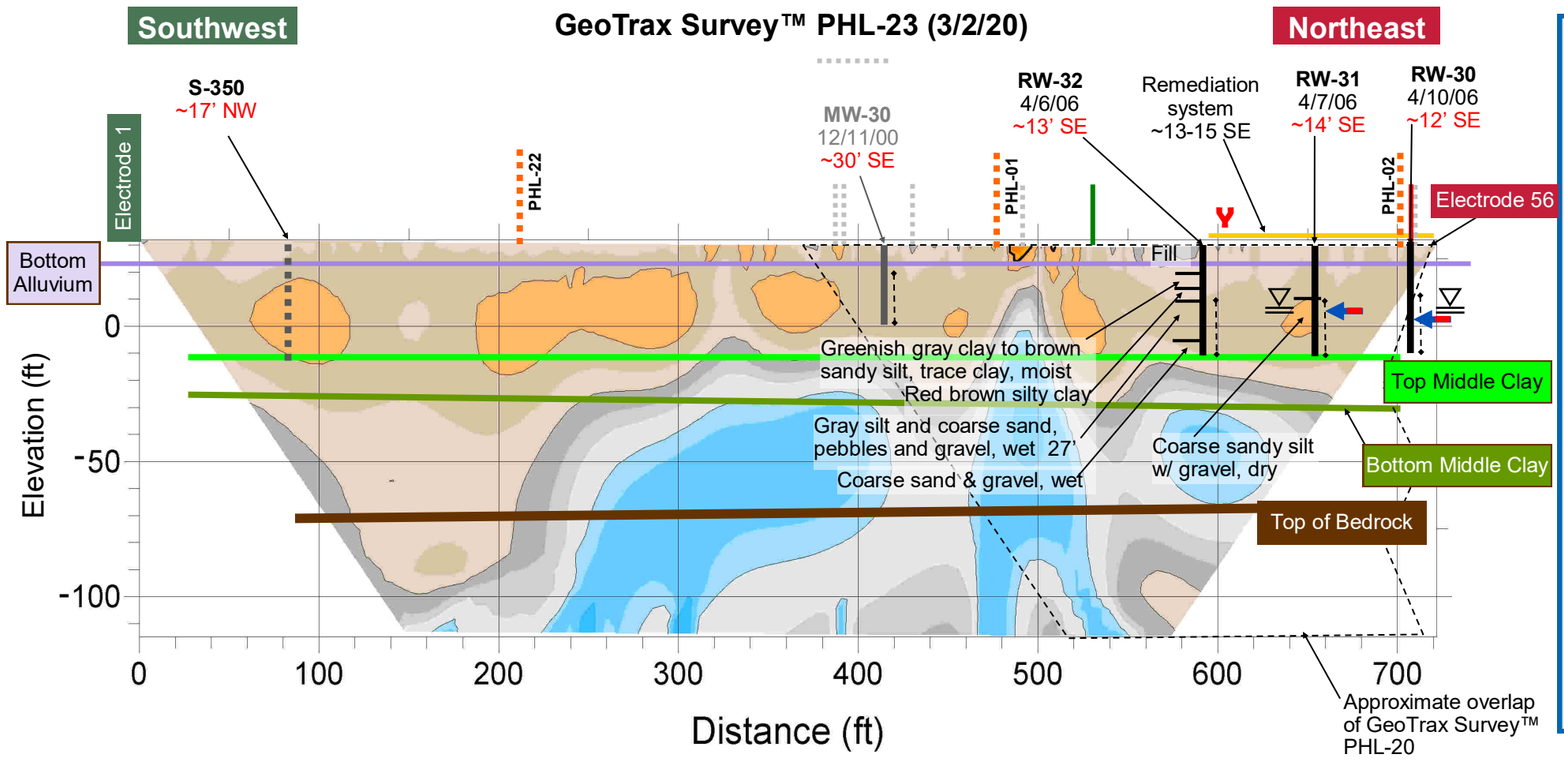

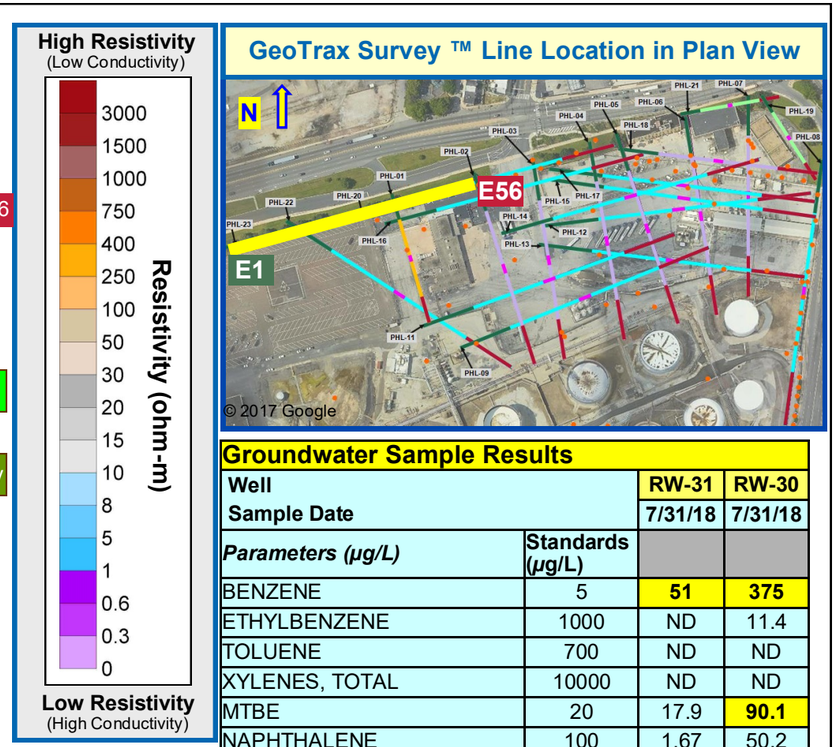

GeoTrax Survey ™ Line Location in Plan View

No Confirmation Borings on PHL-23

Groundwater Quality Sample Results

Well		RW-31	RW-30
Sample Date		7/31/18	7/31/18
Parameters	*Units*		
DO	mg/L	0	1.92
ORP	mV	-165	-143
pH	S.U.	6.65	6.57
EC	mS/cm	1.36	1.83
Temperature	°C	18.09	20.07
Turbidity	NTU	21.8	218

Groundwater Sample Results

Well		RW-31	RW-30
Sample Date		7/31/18	7/31/18
Parameters (µg/L)	Standards (µg/L)		
BENZENE	5	**51**	**375**
ETHYLBENZENE	1000	ND	11.4
TOLUENE	700	ND	ND
XYLENES, TOTAL	10000	ND	ND
MTBE	20	17.9	**90.1**
NAPHTHALENE	100	1.67	50.2
PYRENE	130	0.182	5.92
ANTHRACENE	66	0.288	6.82
ISOPROPYLBENZENE	3500	30.4	55.3
FLUORENE	1900	3.52	26
CHRYSENE	1.9	ND	1.58
PHENANTHRENE	1100	1.03	31.4
LEAD	5	ND	ND
1,2,4-TMB	62	ND	40.8
1,2-DIBROMOETHANE	0.05	ND	ND
1,2-DICHLOROETHANE	5	ND	ND
1,3,5-TMB	1200	ND	18.2
BENZO(A)ANTHRACENE	4.9	ND	1.57
BENZO(A)PYRENE	0.2	ND	**1.16**
BENZO(B)FLUORANTHENE	0.55	ND	**1.22**
BENZO(G,H,I)PERYLENE	0.26	ND	**0.536**

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FIGURE
23
ALL DATA INTEGRATION

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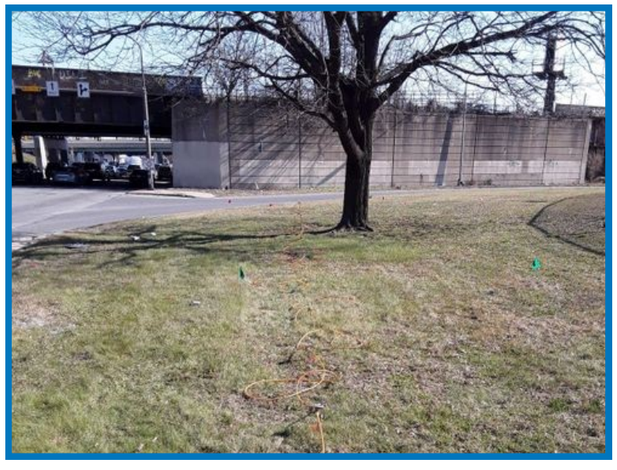
Representative Site Photos*









*** All site photos included as an electronic appendix to this report**

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Table 1
GeoTrax Survey™ Line Properties and Endpoint Electrode Land Survey Coordinates
Belmont Terminal
Philadelphia, PA, USA

Survey ID	Electrode Spacing	Line Length (ft)	Image Depth (ft)	Survey Date	Coordinate System and Datum	Electrode 1				Electrode 56			
						Easting (ft)	Northing (ft)	Elevation (ft)	Endpoint Marker Type[1]	Easting (ft)	Northing (ft)	Elevation (ft)	Endpoint Marker Type[1]
PHL-01	2.00	361	72	2/8/2020	PA South Zone SPCS, NAD83, Feet	2,685,023.67	224,330.99	28.03	Brass	2,685,125.28	223,984.03	31.99	Brass
PHL-02	3.00	541	108	2/8/2020		2,685,242.20	224,383.43	29.45	Plastic	2,685,407.20	223,868.51	30.44	Brass
PHL-03	3.00	541	108	2/5/2020		2,685,403.98	224,424.56	29.44	Brass	2,685,485.87	223,889.25	29.33	Brass
PHL-04	3.00	541	108	2/4/2020		2,685,550.98	224,468.75	30.73	Plastic	2,685,652.77	223,937.03	26.13	Brass
PHL-05	3.00	541	108	1/30/2020		2,685,631.49	224,495.54	31.22	Plastic	2,685,796.20	223,981.63	27.14	Brass
PHL-06	3.00	541	108	1/30/2020		2,685,819.41	224,543.29	32.47	Plastic	2,685,896.56	224,007.51	26.36	Brass
PHL-07	3.00	541	108	1/31/2020		2,685,982.27	224,594.92	30.94	Brass	2,685,980.84	224,053.54	25.98	Brass
PHL-08	4.00	722	144	2/7/2020		2,686,181.80	224,420.23	30.03	Plastic	2,686,086.45	223,704.72	25.66	Brass
PHL-09	4.00	722	144	2/3/2020		2,685,208.32	223,913.48	30.42	Brass	2,685,875.28	224,189.36	27.68	Brass
PHL-11	4.00	722	144	2/4/2020		2,685,107.40	223,976.11	31.44	Brass	2,685,784.10	224,227.16	27.83	Brass
PHL-12	4.00	722	144	1/31/2020		2,685,435.55	224,246.94	30.59	Brass	2,686,152.22	224,333.48	27.55	Brass
PHL-13	4.00	722	144	2/1/2020		2,685,420.20	224,196.30	30.76	Brass	2,686,136.70	224,109.71	27.77	Brass
PHL-14	4.00	722	144	2/1/2020		2,685,324.34	224,221.48	30.48	Brass	2,686,015.69	224,428.91	32.18	Brass
PHL-15	4.00	722	144	1/29/2020		2,685,446.03	224,369.33	30.09	Brass	2,686,160.79	224,268.41	27.82	Brass
PHL-16	4.00	722	144	2/5/2020		2,685,003.59	224,248.32	31.62	Brass	2,685,700.46	224,436.46	30.57	Brass
PHL-17	4.00	722	144	1/29/2020		2,685,446.63	224,399.80	30.40	Plastic	2,686,163.02	224,312.08	27.29	Brass
PHL-18	3.00	541	108	1/28/2020		2,685,643.12	224,449.88	30.14	Plastic	2,686,180.40	224,384.31	29.56	Plastic
PHL-19	1.50	271	54	1/28/2020		2,686,014.16	224,599.18	31.53	Plastic	2,686,161.55	224,372.44	30.89	Plastic
PHL-20	4.00	722	144	2/9/2020		2,684,925.85	224,277.40	30.17	Plastic	2,685,623.07	224,463.94	30.66	Plastic
PHL-21	1.50	271	54	2/9/2020		2,685,798.69	224,541.49	32.18	Plastic	2,686,068.52	224,589.37	30.97	Plastic
PHL-22	4.00	722	144	3/2/2020		2,684,745.04	224,258.99	27.29	Plastic	2,685,345.53	223,858.53	29.75	Brass
PHL-23	4.00	722	144	3/2/2020		2,684,570.65	224,182.57	31.96	Plastic	2,685,268.21	224,369.20	29.75	Plastic

Notes:

1. GeoTrax Survey™ Endpoint Types (for Electrodes 1 and 56):

Brass Marker



Plastic Marker



2. GeoTrax Survey™ PHL-10 not included in integrated data set due to failing QA/QC tests from substantial amounts of buried metallic materials.

Aestus
Aestus, LLC

APPENDIX TO AESTUS REPORT

DETAILED DISCUSSION OF AESTUS GEOTRAX CSM+™ ULTRA-HIGH RESOLUTION SITE CHARACTERIZATION AND CONCEPTUAL SITE MODEL UPDATE PROCESS

Prepared by:

Aestus, LLC
2605 Dotsero Court
Loveland, CO 80538
(888) GEO-TRAX

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Revised 02-09-18

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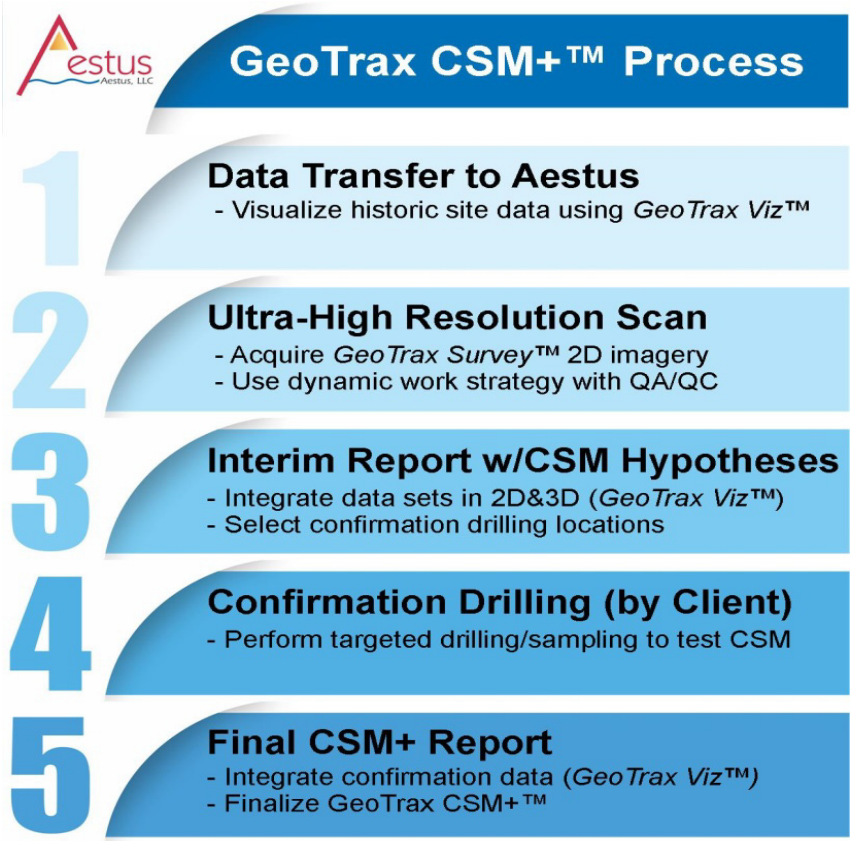
A. INTRODUCTION

This Appendix provides Aestus' clients and other readers of this report (hereby referred to as "client") more detailed discussion regarding Aestus' GeoTrax CSM+™ ultra-high resolution site characterization and conceptual site model (CSM) development process shown graphically below in 5 major steps:



This process involves the following three services provided by Aestus:

1. Aestus' specialty GeoTrax Survey™ subsurface imaging technology designed specifically for the environmental cleanup industry to be able to locate contaminants and preferential flow pathways in the subsurface.
2. Aestus' GeoTrax Viz™ process involves robust integration of both our imaging data and historical and confirmation drilling data into 2D report figures and a 3D visualization model (using Rockworks™ software)
3. Aestus' GeoTrax CSM+™ process involves iterative interpretation of electrical image signatures relative to chemistry, hydrogeology, and biology of the subsurface with the intent of generating and updated 3D site CSM based on the combined drilling and imaging data. Conclusions are generated collaboratively with our client relative to project objectives moving forward and to provide input for remedial design in anticipation of remedial action ultimately.

For site specific discussions and conclusions, please refer to the main body text section and other primary sections of this report.

A.1 GeoTrax Survey™ Subsurface Imaging Technology Overview

Electrical resistivity measurements have been used since the 1830's to interpret the earth. Electrical resistivity imaging (ERI) works by imparting an electrical current into the ground, and then measuring voltage at one or more other locations along a straight survey line/transect. Based on these data, the apparent resistivity of subsurface materials is calculated using Ohm's Law. These measurements are then inverted to provide measurements of model resistivity or true resistivity at regular points. For this report, these data will be referred to as resistivity data or electrical resistivity data.

Similar to a single pixel in a digital photo, a single resistivity measurement does not yield significant information. However, modern ERI acquisition instruments combined with modern computer processing speeds facilitate hundreds or thousands of resistivity measurements in a short timeframe. These measurements are performed along a survey alignment and are subsequently used to produce a two-dimensional (2D) electrical image (analogous to a CAT-scan in the medical industry) of the subsurface that graphically illustrates the presence or absence of subsurface anomalies and provides quantitative measurements of the subsurface resistivity. The 2D continuous images help minimize or eliminate interpolation between 1-D data points such as soil borings or wells, and assists in confirming or redefining the conceptual site model.

Our GeoTrax Survey™ technology is based on conventional ERI equipment. However, we have worked with Oklahoma State University (OSU) to vastly improve this technology and make it useful for the environmental industry. Aestus is currently the sole worldwide licensee of trade secret intellectual property from OSU that provides proprietary data collection algorithms and processing software to achieve Quality Assurance/Quality Control (QA/QC) data collection, higher data quality, and ultimately increased image quality, relative to standard ERI technology. In addition, we are able to successfully image subsurface anomalies at sites on which competing technologies such as ground penetrating radar and electromagnetic surveys either fail to perform or simply do not have sufficient resolution to achieve the project objective.

Because GeoTrax Survey™ is not a quantitative analytical chemical sampling tool and most environmental sites on which we acquire data have regulatory drivers that are chemical concentration based, Aestus employs our GeoTrax Viz™ process (see Section E.1) to integrate historical and follow-up confirmation drilling data with our 2D images and 3D visualization model. This process allows us to effectively "convert" or calibrate our electrical resistivity data back to chemical, physical and biological site parameters of interest to our clients. Aestus is often successful at developing a semi-quantitative relationship between subsurface resistivity values and concentrations of contaminants. As the site complexity increases, Aestus ability to develop these semi-quantitative relationships sometimes decreases.

The following sections of this report summarize the Aestus' field work, data collection, and data processing activities. Please refer to the primary sections of this report which provide our interpretations, conclusions, and recommendations based on the results of our work.

B. GEOTRAX SURVEY™ SUBSURFACE IMAGING FIELD WORK

This section describes Aestus GeoTrax Survey™ data acquisition field work.

B.1 Equipment Layout, Land Surveying, Documentation

Each survey is conducted by installing 56 specialized electrodes into the ground along a straight line and at a specific interval as indicated below. The spacing used on each line is determined based on the site plan and adjusted on-site, if needed, to provide the appropriate depth of imaging and/or to conform to lateral space constraints due to buildings, busy streets, property lines, etc.

The electrode stakes are connected via geophysical cables and the cables are connected to Aestus' data acquisition field instruments. Electrical resistivity data from the subsurface is then collected as described below in the Data Collection Section B.2.

Topography data for Aestus survey line locations are collected by Aestus personnel using professional land survey equipment (i.e., typically Topcon RTK GPS and/or robotic total station). These data are used to assist Aestus in locating our surveys in plan view on the site base map/aerial photo and performing a topographic correction to our survey images as discussed below in the Data Processing Section C.

To aid Aestus' client in locating the GeoTrax Survey™ locations during any follow-up drilling work that may be performed, Aestus marks the end points of each line with either a yellow disc bearing the inscription "GeoTrax Survey™ ID" (for end points in grassy areas), or steel nails with brass survey markers (for end points in asphalt or concrete). A metal detector may be used to locate each GeoTrax Survey™ line should additional confirmation borings be advanced along one or more survey lines in the future. A picture of the different types of survey markers are shown below:



Brass Survey End Point Marker



GeoTrax Survey™ Endpoint Marker

Tables included with this report contain the following geospatial information:

- Coordinates for the endpoints (i.e., Electrode Nos. 1 and 56) of each survey line at the site were collected by Aestus personnel using land survey techniques (i.e., total station)
- Distance along each survey line to each electrode location (relative to Electrode No. 1)

Aestus also records detailed field notes that show a sketch of each survey and surrounding site features (e.g., utility locations, buildings, monitoring wells, etc.) and the distance of these site features from our survey lines. A copy of Aestus' field notes is provided for reference in

Appendix C to this report and for assistance with locating survey lines in the field during any follow-up confirmation drilling work that may be conducted.

Finally, as part of Aestus field work documentation, each survey location is photographed along the survey alignment from different vantage points during data collection. Select photographs are included as Figure 8 in the main report, while a full set is included as Electronic Appendix E-1. These photographs can also be used to field locate GeoTrax Survey™ lines.

B.2 Data Collection

Once each survey line is laid out in the field, Aestus' specialized field instruments collect a significant amount of data related to the electrical properties of the subsurface. Aestus uses our proprietary techniques to collect significantly more and better quality data than other firms using similar looking equipment and we have a focus on quality control measures not commonly employed in geophysical approaches.

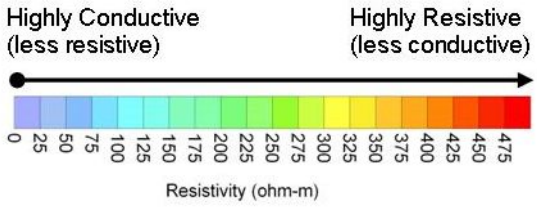
These data are partially processed in the field to evaluate data quality. Full data processing, and visualization work is performed in Aestus' offices as discussed in the following section.

C. DATA PROCESSING

Following field data collection, Aestus uses our proprietary data processing techniques to develop a final electrical resistivity image of the subsurface for each survey. This section describes the data processing work that is performed.

The raw data files collected in the field are fully processed, including a review of data quality from the data set to promote generation of high quality subsurface images and an additional QA/QC check of the acquired field data. A final image for each survey is developed, which contains a model of the electrical resistivity of the subsurface in units of Ohm-meters. Changes in topography along the survey lines are accounted for during this data processing work.

The final images are developed by contouring and plotting the resistivity data for each survey line using consistent color contouring schemes for Subject Site survey data to allow for evaluation of the results of all surveys on a comparative basis. In the case of the generic color contouring scheme example below (i.e., not specific to a particular site), the electrically conductive areas of the subsurface are illustrated by purple and blue colors and the electrically resistive areas of the subsurface are illustrated by yellow, orange, and red colors.



As part of our overall data quality control process, Aestus compiles resistivity data for an entire site and then normalizes the color contouring scheme (i.e., during our proprietary data post-processing phase) for all the images across the site. This allows consistency in the color contouring scheme, so a reviewer can correlate the results from one survey to the results from another survey performed on the same site during the same timeframe. The survey data are then output in six of our standard color schemes for preliminary internal (Aestus) review. These standard color schemes are evaluated during the data interpretation phase of each project and often times a more appropriate site-specific color contouring scheme is developed based on calibration to historical and/or confirmation drilling site data (see Section E.4).

The results of Aestus' survey work are discussed in the following sections of this report.

D. RESULTS (GEOTRAX SURVEY™ 2D SUBSURFACE IMAGES)

Aestus' geophysical survey work yields high quality/high resolution two-dimensional (2D) electrical resistivity images of the subsurface at a project site in select locations, as shown in the Figures section of this report.

The XYZR data files containing geo-referenced (i.e., X, Y, and Z coordinate data) resistivity (R) data sets that were used to color contour the abovementioned survey images are provided for Aestus' client as Electronic Appendix E-2 to this report.

These XYZR data were also used to generate a select few horizontal elevation slices (a.k.a., horizon maps) through the domain surveyed by Aestus (see 3D visualization model provided in Electronic Appendix E-3).

For a select few sites, either the GeoTrax Survey™ 2D images or data from a site monitoring well network will provide the data required to fulfill the project objectives and develop a solid conceptual site model. However, for most sites, Aestus' experience indicates that data integration of the geophysical images and conventional site investigation data (i.e., from monitoring wells, soil borings, etc.) into a 3D visualization model is necessary to interpret the collective data sets, develop a useful conceptual site model, and fulfill the project objectives. The following section of this report discusses data integration and data interpretation for a typical project.

E. GEOTRAX VIZ™ DATA INTEGRATION

This section discusses Aestus' GeoTrax Viz™ data integration work in preparation for GeoTrax CSM+™ data interpretation of GeoTrax Survey™ subsurface imagery and other site characterization data relative to developing a better understanding of subsurface site issues and updating the existing conceptual site model.

E.1 Data Integration Using Evidence-Based Concepts

From Aestus' perspective, the end goal of any environmental site characterization is to use all available data collected at a site to visualize the Earth's subsurface in 3D and understand where sources of contamination may exist and the distribution and mechanisms for contamination that may be migrating. This process is most useful if the end result provides a conceptual site model that is more quantitative with less extrapolation of data gaps, based on multiple data sets, and relatively easy to understand by different project stakeholders. To this end, Aestus has adapted an approach developed by both the medical and environmental industries called "Evidence-Based" evaluation. This approach uses all the available data to obtain a consistent quantitative site model that is tested by confirmation drilling and supported by the available evidence.

Our adaptation of this approach for use in the environmental industry is to get all available and geospatially relevant data into one place so that it can be viewed together rather than in separate pieces. For the typical site this includes using our GeoTrax Viz™ process to assemble geophysical data, monitoring well data, soil boring data (including PID data), indoor air quality data, utility line data, UST location data, etc. and posting these data onto our 2D GeoTrax Survey™ images, and also including as much of this information as practical into our 3D visualization software. Aestus uses Rockworks™ as our standard approach for 3D visualization on most projects.

As a corollary to the above definition of evidenced based evaluations, it is important to note that organizations using this approach have learned not to arbitrarily discard one or more particular data sets when these data do not appear to agree with other data sets. This happens frequently in the environmental industry when multiple consulting firms work on a particular site over a period of years, or decades and were not directly involved in the collection of each data set. However, these apparent mismatches are commonly not data errors, but variations between the ways various data types measure properties of the earth (and/or contaminants in the earth as in the environmental industry). Seasoned evidence based practitioners have learned empirically to investigate further when two or more data sets do not agree at a specific location at a site because the probability is high this will result in gaining useful knowledge about the site.

The first step in Aestus GeoTrax Viz™ process is to generate a framework (discussed below) for site data which facilitates calibration of our GeoTrax Survey™ electrical resistivity data/images against surface features (e.g., buildings or tanks) and known subsurface conditions at discrete points (e.g., monitoring well geochemistry). As discussed previously, this process is necessary to effectively "convert" our electrical resistivity data back to chemical, physical and biological site parameters of interest to our clients. Historical site data are incorporated into this framework in addition to Aestus' electrical resistivity image data and follow-up confirmation drilling/sampling data.

E.2 Data Integration onto GeoTrax Survey™ 2D Images

Aestus reviews site data provided by our client, and uses our GeoTrax Viz™ process to integrate the following historical site characterization data onto our 2D survey images as shown in the Figures section of this report, including but not limited to:

- Site features from field notes (Aestus' field crew)
- Monitoring well construction
- Boring log data
- PID data from soil borings
- Groundwater analytical data
- Groundwater quality parameter data
- Groundwater level data
- NAPL presence (if applicable), odor and staining notations from boring logs
- Historic plume maps
- Bioparameter data

Data from confirmation drilling/sampling work that targets specific anomalous zones detected in Aestus' subsurface imagery, is also integrated when it becomes available during the course of Aestus' engagement on the project.

E.3 Data Integration into 3D Model

GeoTrax Viz™ assists Aestus and our client's personnel with visualizing the GeoTrax Survey™ subsurface images as they relate to one another, Aestus used data collected from our 2D imaging process to generate a 3D representation of these data in the subsurface of a project site. We and our clients typically find that the results of the 3D visualization work are very helpful in providing a more complete and somewhat simplified understanding of the survey data/images, ultimately yielding a better understanding of the subsurface at a given site. The 3D visualizations are also very useful in explaining site conceptual models and features to both technical and non-technical stakeholders.

To allow viewing of our survey images to scale in 3D space, Aestus developed a technique to import and properly position and scale the survey images in 3D drawing space and relative to the site base map using Rockworks™ 3D visualization software. Although the perspective 3D views resulting from these efforts are based on 2D data sets (i.e., the individual electrical resistivity image data was not collected in 3D during the survey work), Aestus has a higher confidence in our approach relative to the conventional approach of using only 1-D monitoring well data points and the resulting interpolations between these discrete points.

For Aestus' 3D visualization work, thousands of field data points (collected in 2D) were used as input to develop the 3D perspective views. Other data imported into Aestus' 3D model for a project site include but are not limited to the following:

- GeoTrax Survey™ transect locations and identification labels

- GeoTrax Survey™ vertical 2D images
- Horizontal elevation slices (though GeoTrax Survey™ data)
- Site monitoring wells
- Aerial photo(s)
- Various site maps (provided by Aestus' client)
- Groundwater level data
- Analytical data from groundwater samples
- Analytical data from soil samples

As mentioned above, for the data integrated into the 2D survey images, it is important to understand that not all of these data sets integrated into 3D are exactly aligned temporally and/or spatially.

A few representative 3D model generated views of the survey images representing the subsurface of sites are provided as shown in the main body of this report. The GeoTrax Survey™ images shown in these 3D perspective views are presented in one or more custom site specific color contouring schemes as discussed below in Section E.4.3 (Discussion of Multiple Color Schemes in 3D).

Because the 3D visualization work performed by Aestus was extensive and many different views of these data can be generated using this tool, it is not practical to provide all of these views as part of the hardcopy report. However, Aestus is providing a copy of our 3D model files for viewing by our client's personnel using a free viewer provided by Rockworks™. This data and instructions on downloading and using the free viewer software are contained in Electronic Appendix E-3 to this report.

F. GEOTRAX CSM+™ DATA INTERPRETATION AND UPDATED CSM

As discussed in Section E, Aestus integrates multiple data sets in 2D report figures and our 3D visualization model to facilitate our GeoTrax CSM+™ robust data interpretation work based on ultra-high data density and multiple lines of evidence. It should be noted that interpretations presented in the accompanying report are based on information available as of the date of this report and applying Aestus' professional judgment based on experience imaging other similar project sites.

The end goal is to develop the most appropriate color contouring scheme(s) for the electrical resistivity data that best highlights zones of interest in the subsurface (e.g., contaminated versus clean conditions). Each site that Aestus images is different electrically due to varying hydrogeology, types and concentrations of contaminants, etc., this is an iterative process that is very site specific. This process is supported by use of the GeoTrax Viz™ approach.

F.1 Color Contouring Electrical Resistivity Imaging Data

Upon completion of the data processing work discussed in Section C of this report, the resistivity data set is fixed and is not modified from that point forward. However, Aestus does modify the color contouring scheme(s) used to effectively contour these data (i.e., show various ranges of resistivity detected at the site using different colors) to allow us and our clients to understand what the data means relative to properties of the subsurface that are of foremost interest to Aestus' clients (i.e., contaminant distribution, geology, presence of biological activity, etc.). The color modification process is similar to re-contouring a topographic map (i.e., the elevation points never change, but the contour interval is altered to produce different maps highlighting various features or ranges of resistivity).

This section provides an overview of the resistivity of common site features and contaminants and discusses the development of a site-specific color contouring scheme for a project site.

F.1.1 Resistivity of Common Site Features and Contaminants

The magnitude of subsurface resistivity values will vary from site to site based on a number of factors and is related to:

- Geological composition (i.e. competent bedrock, sand, etc.)
- Groundwater chemistry (i.e. dissolved phase contaminants biological activity, etc.)
- Contaminants contained/trapped in the pore spaces within the soil matrix (i.e. presence, or absence of NAPL, injectates, etc.)
- Presence or absence and magnitude of bioactivity in the subsurface
- Presence or absence of buried debris and structures (i.e. buried USTs, unknown landfill debris, etc.).

For a typical site, fine materials such as clay and silt are generally less resistive (i.e., more conductive) while coarse sand and gravel are generally more resistive (i.e., less conductive). Should the soil (clay or sand) be dry, it will appear more resistive when dry and less resistive when wet. Should a distinct groundwater table exist in the area being surveyed, the groundwater interface is often not seen as a sharp feature in the survey images because the

water content of the soil matrix above the water table is still near saturation leading to a resistivity gradient at the water table instead of a sharp boundary.

Additionally, the presence of contaminants within the pore matrix can overshadow (electrically) the presence of groundwater or degree of saturation. The presence of fractures in bedrock geology often appear as vertically oriented anomalies and may be either conductive or resistive depending on what type of fluid (e.g., clean groundwater and/or unweathered/weathered contamination) is present within the fracture. Bedrock interfaces are sometimes identifiable depending on the degree of weathering at the transition to bedrock, the degree of saturation, and the presence or absence of contamination.

Should buried tanks or other man-made structures be present coincident with survey line locations, they typically show up in our survey images as either low resistivity/highly conductive (metallic construction) or high resistivity/low conductivity (fiberglass, concrete or other construction). In areas where tanks or sumps have been removed or replaced, these areas may or may not present in our images as an anomaly depending on whether native or non-native fill soils were used as backfill. If contamination is present underneath former tanks and sump areas, it generally presents as described in the following paragraphs.

Subsurface areas impacted with fresh or unweathered light or dense non-aqueous liquids (LNAPLs or DNAPLs, respectively) and related dissolved phase contamination, typically present as more resistive anomalous zones relative to areas that contain only non-impacted soils and pore fluids. Based on our experience, areas containing NAPL impacted soils often present as a roughly spherical or lenticular blob shape (obloid) and will typically be identified in our survey images by more resistive values.

Sometimes, the presence of this type of contamination can cause a much less resistive (i.e., very conductive) anomaly or zone, particularly with weathered hydrocarbon contamination. Aestus believes the reason that weathered hydrocarbon contamination shows as electrically conductive zones in our images is naturally occurring bioactivity in the subsurface in contaminated zones that alters the electrical properties of these materials. This phenomenon is well documented in technical literature related to the study of LNAPLs in particular **(technical paper available upon request from Aestus).** Aestus' clients have drilled and confirmed the presence of hydrocarbon within electrically conductive anomalies at many different project sites.

The mechanism that causes DNAPL-related contamination (e.g., chlorinated solvents) to show as electrically conductive in our survey images is less clear with research conclusions being less definitive at the time of this report. However, technical papers exist that discuss byproducts of in-situ chlorinated solvent biodegradation containing chloride amongst other compounds. Aestus theorizes that the presence of chloride and/or other ions in zones of natural attenuation would likely create a very electrically conductive signature detectable by our GeoTrax Survey™ technology in many cases. Additionally, recent research indicates that active bacteria can generate nanowires between them which create an electrically conductive zone.

GeoTrax Surveys™ can normally identify areas impacted by dissolved concentration impacts to the groundwater from a former or existing source of contamination. Sometimes dissolved phase impacts do not present as anomalies because lower levels of dissolved phase contamination cause relatively small changes in electrical properties of the subsurface; therefore, having the potential to be masked by changes in resistivity signatures of various soil types that may exist across a typical site. Often, with lower dissolved phase concentrations, it is Aestus' experience

that electrically conductive anomalies occur where groundwater is flowing preferentially (and contamination is moving with the groundwater) which creates a condition where Aestus can locate lower level impacted zones.

F.1.2 Development of Site Specific Color Contouring Scheme

Upon posting of all available nearby soil boring and monitoring well data to our survey images and comparing these data to our survey data visualized in multiple preliminary color contouring schemes, Aestus generally develops a custom color contouring scheme that is used to color contour the resistivity data on each of the survey images.

Upon receipt of pending confirmation drilling data, Aestus anticipates that this color scheme will be updated/revised based on those data. Aestus then develops an Interpretive Electrical Resistivity Scale with interpretations of geologic variability and relative levels of contamination for our Final Report. For Interim Reports, a placeholder figure is included such that we can include this interpretive scale during generation of our Final Report.

F.1.3 Discussion of Multiple Color Schemes in 3D

For some sites, Aestus finds that it is helpful to isolate certain resistivity ranges to more easily explain certain interpretations of subsurface features. As discussed in Section E.4, the data is never modified once it is processed; only color contours representing electrical resistivity ranges are changed. Typical color contouring schemes shown in the 3D visualization model are described below (NOTE: not all color contouring schemes are used for all projects/reports and additional custom coloring schemes are also sometimes included as needed on a project specific basis):

- **Statistical Color Scheme:** This color scheme assigns each of 20 ranges of resistivity (i.e., "bins") a unique color; the resistivity ranges are determined statistically and include a 5% of the data points in each "bin". The spectrum of cool (purple) to warm (red) colors is used.
- **Custom Site Specific Color Scheme:** This color scheme highlights both the low end (i.e., highly conductive end) of the resistivity scale (in purple) and uses warm colors to highlight resistive anomalous zones detected.
- **High Resistivity Only Range**: Color contouring scheme highlighting relatively higher resistivity anomalous zones. This color scheme focuses on the high end (i.e., resistive end) of the resistivity scale and uses "warm" colors to highlight resistivity anomalies.
- **Mid-Range Resistivity:** Color contouring scheme highlights a specific range of resistivity that may be of interest relative to interpretation and project objectives (confirmed via confirmation drilling data)
- **Low Resistivity (High Conductivity) Only Range:** Color contouring scheme highlighting low resistivity anomalous zones. This color scheme focuses on the low end of the resistivity scale (i.e., conductive end) and uses "cool" colors to highlight conductive anomalies. If these areas are impacted, often the color will sometimes be converted to a warm color for final reporting to indicate remaining impacts.

F.2 Development of Updated Conceptual Site Model (CSM)

Upon review of integrated data sets in 2D and 3D, Aestus reviews the multiple lines of evidence and applies multiple color schemes to the electrical image data in an iterative manner to develop hypotheses regarding conceptual site model components (e.g., distribution of contaminants, preferential flow pathways and presence/absence of bioactivity, etc.). These hypotheses are submitted as preliminary conclusions at Aestus' Interim Report stage along with specific recommendations on where to perform confirmation drilling and sampling of anomalous zones detected by Aestus.

Once confirmation drilling program data is submitted to Aestus, we integrate and QC it using our GeoTrax Viz™ process. Then we move back into our GeoTrax CSM+™ data interpretation process to re-interpret the multiple lines of evidence along with the targeted confirmation drilling data and develop Final Report conclusions in consultation with our clients.

The GeoTrax CSM+™ Final Report conclusions are intended to inform the next step in the project based on ultra-high data density and multiple lines of evidence. Next steps may include application for technical impracticability waivers, application for monitored natural attenuation, or remedial design in preparation for an active remediation strategy.

ATTACHMENT B

Soil Boring and Well Construction Logs

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-01/S-468**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **2/12/21** COMPLETED: **2/16/21**
INSTALLATION: STARTED **2/16/21** COMPLETED: **2/16/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224146.2** *EASTING (ft): **2685072.7**
*GROUND ELEV (ft): **31.3** *TOC ELEV (ft): **30.87**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **49**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **34**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			Air Knife (no recovery)							
5–6		CL	CL; Gray and brown CLAY with little very fine sand and silt (dry to moist, petroluem odor) (heterogenerous)			1.15	1 2 3 5	30.5	5	
7–8		CL	CL; Gray to brown lamined CLAY with little very fine sand and silt, (dry to moist, petoleum odor)			1.0	3 4 5 5	21.4		Portland Cement Grout
9–10		CL	CL; SAME gray, brown and pale gray laminated CLAY with little very fine sand and silt, (dry to moist, petroleum odor)			1.5	2 3 4 4	0.8	10	2" PVC Casing
11–12		CL	CL; Gray to pale gray (with thin brown laminations) CLAY with little fine sand (moist to dry, petroleum odor)			1.4	4 5 5 7	3.7		
13–14		CL	CL; Gray to pale gray to yellow brown CLAY laminated with little very fine sand (micaceous), increasing sand content with depth to very fine sandy clay (moist, petroleum odor, staining at 14.3 ft)			1.9	2 8 7 7	103		
15–16		CL	CL; Dark gray to gray to yellowish red very fine SAND, trace to no clay, oxidized (moist to wet, petroleum odor adn staining) Switch to mud rotary			1.2	3 3 2 2	4.2	15	Bentonite Seal
17–18		MH	CL; Friable, reddish brown, soft CLAY, little silt (moist) MH; SAME few coarse quartz gravels, wood fragments near bottom, clayey SILT to silty CLAY			1.0	3 3 4 6	2		Sand Pack
19–20		SPG	SPG; Multi-colored SAND and GRAVEL, well graded, coarse to fine sand, little clay (dry to moist, no odor) light gray at top grading to grayish brown			1.0	7 16 21 28	15	20	
21–22		SPG	SPG; SAME fewer coarse gravels, red mudstone clasts and quartz gravels, brownish gray with yellowish orange bands (moist)			1.1	18 13 13 15	2.0		
23–24		SPG	SPG; SAME more gravel, several 0.1 bands, brown, light gray, black (no odor) and yellowish brown			1.1	13 13 20 18	2.1		
25–26		SPG	SPG; SAME higher sand percentage, stained band at 26' (wet, strong hydrocarbon odor at 26')			0.9	7 8 9 15	365	25	2" PVC 0.020" Screen
27–28		SPG	SPG; SAME first 0.8', bottom 0.6' fine SAND, little medium sand, trace fines (wet, strong petroleum-like odor) (stained black)			1.4	13 14 14 18	585		
29		SPG	SPG; SAME upper 1.1' reddish, grayish brown (no staining) bottom SAME black stained				8 10			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-01/S-468**

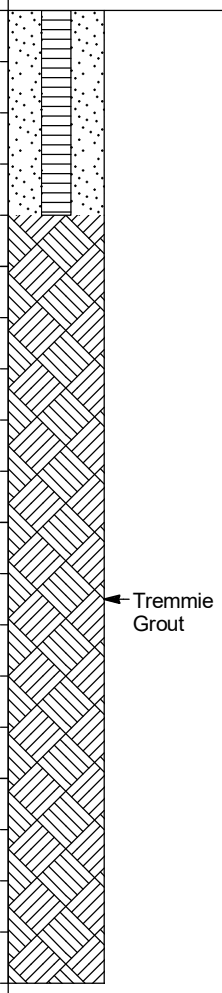
Stantec

DRILLING: STARTED **2/12/21** COMPLETED: **2/16/21**
INSTALLATION: STARTED **2/16/21** COMPLETED: **2/16/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224146.2** *EASTING (ft): **2685072.7**
*GROUND ELEV (ft): **31.3** *TOC ELEV (ft): **30.87**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **49**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **34**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
31	SPG	bands, more coarse sand to fine gravel (strong petroluem odor)	320	1.7	10 11	79
32	SPG	SPG; SAME yellowish brown to brown, fine GRAVEL to fine SAND, 0.1" bands finer or coarser, bottom 0.5' is medium SAND, little silt in shoe - stained medium gravel to fine sand, mothball odor, NAPL, stains gloves and looks like coal tar		1.9	13 18 20 20	650
33	CL	GRAVEL with COAL TAR			10	
34		CL; Gray and orange laminated SILT, some clay, trace fine sand, (soft) (slight odor)		1.7	3 5 3	1.2
35	CL	CL; SAME			1 2 2 2	
36	CL	CL; SAME but black (minimal odor)		1.6		0.1
37	SP	SP; Light gray, fine SAND, few fines			2 2 2	
38	CL	CL; Brownish orange, SILT, some clay, trace fine sand, (soft) (slight odor)		0.5	2 2 4 5	2.4
39	SP	SP; Gray to yellowish brown, fine SAND, trace fines			4	
40	ML	ML; Yellowish (0.5-1'), orangish brown (1-1.5'), dark gray (1.5-2') SILT with trace to some clay		2	5 2 5	0.0
41	ML	ML; SAME			4	
42				1.3	6 8 8	0.7
43	ML	ML; Organic material, possibly wood, fine SAND, red			6	
44	ML	ML; Red, some silt (moist)	BT-01-S-44-45-20210216	2	9 10 10	0.0
45	ML	ML; SAME			9	
46	ML	ML; Red, medium plasticity CLAY, little silt		1.1	11 10 13	0.0
47	ML	ML; SAME			5	
48					8 8 7	0.0
49		End of boring at 49'				
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						



PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-02A/S-456**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **12/14/20** COMPLETED: **12/15/20**
INSTALLATION: STARTED **12/15/20** COMPLETED: **12/15/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224308.9** *EASTING (ft): **2685266.4**
*GROUND ELEV (ft): **30.4** *TOC ELEV (ft): **30.13**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **47**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **45**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hoblitzall** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			Air Knife (no recovery)							
5–6		MLS	MLS; Very dark greenish gray SILT with fine SAND and little clay (moist, slight degraded petroleum odor)			0.5	3 3 4 10	1.1	5	
7–8		MLS	MLS; SAME with greenish brown silt laminations and fine sand			0.6	4 4 4 12	3.2		
9–10		MLS / CLS	MLS; SAME / CLS; Light bluish gray CLAY with fine SAND (moist, faint petroleum odor)			1.9	5 8 3 10	139	10	Portland Cement Grout
11–12		SM / SM	SM; Light bluish gray, silty SAND with thin clay layers (slight petroleum odor) / SM; SAME		BT-02A-S-10-20201214	1.1	7 7 8 7	136		2" PVC Casing
13–14		SM / CL	SM; SAME / CL; Reddish brown CLAY with trace fine sand and trace rounded gravel			1.3	5 7 7 8	0.9		
15–16		CL / GP	CL; SAME / GP; Weak red and olive GRAVEL (dense) (mudstone, conglomerate) trace silt			0.9	8 8 32 22	0.4	15	
17–18		GP / MLG	GP; SAME / MLG; Olive SILT with some gravel (dense)			1.8	23 22 46 48	42		
19–20		SP-SM	SP-SM; Olive, medium to coarse SAND with SILT			1.0	9 13 12 10	75.0	20	
21–22		GP-GM	GP-GM; Weak red, olive, dark reddish brown silty GRAVEL (dense) (mudstone, conglomerate quartz)			1.3	30 36 32 36	6.5		Bentonite Seal
23–24		GP-GM	GP-GM; SAME (moist)			0.9	25 26 30 39	9.9		Sand Pack
25–26		GP-GM / SP	GP-GM; SAME (moist) / SP; Weak red, fine to medium SAND with some subrounded gravel and trace silt (moist to wet)			0.9	36 33 38 40	4.1 / 8.6	25	
27–28		SP / SP	SP; SAME / SP; SAME, reddish yellow			1.0	10 24 26 18	2000 2000 2000		
29		SP / SP	SP; Stained dark gray, fine to medium SAND, (strong petroleum odor, sheen) / SP; SAME, tight (strong petroleum odor, sheen)				24 24			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-02A/S-456**

Stantec

DRILLING: STARTED **12/14/20** COMPLETED: **12/15/20**
INSTALLATION: STARTED **12/15/20** COMPLETED: **12/15/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224308.9** *EASTING (ft): **2685266.4**
*GROUND ELEV (ft): **30.4** *TOC ELEV (ft): **30.13**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **47**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **45**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hoblitzall** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
		SP	(continued) SAME, tight (strong petroleum odor, sheen)		131	0.8	28 32	49
31		CL-ML	CL-ML; Light gray, silty CLAY with trace fine SAND (dry to moist)				7	1.1
32		CH	CH; Yellowish red, fat CLAY with trace fine to medium sand, trace rounded gravel (moist)			1.7	6 9 9	0.0
33		CH	CH; SAME				7	
34		CH	CH; Reddish yellow CLAY with layers of light gray clay with fine to medium sand (staining)			1.5	7 8	0.0
35		SP	SP; Brown, fine to medium SAND (wet, slight petroleum odor)				12	0.0
36		SP	SP; SAME (wet to saturated, staining at bottom)			1.3	3 3 6	0.0
37		SM	SM; Light gray, fine to medium, silty SAND with trace mica and some clay (wet)		BT-02A-S-37-20201214		6	
38		SM	SM; SAME with tan, light gray layers at bottom			1.3	6 6 8	15.9
39		CL	CL; Gray CLAY with trace fine sand and trace mica (medium plasticity) (moist, faint degraded petroleum odor)		BT-02A-S-38-20201214		7 8	
40						1.8	9 9 7	0.4
41		CL	CL; SAME (wet)				3	0.6
42		SP	SP; Reddish brown, medium to coarse SAND with some silt and trace clay, trace mica (moist to wet, no odor)			1.4	8 10 7	0.7
43		SP	SP; SAME				2	
44						1.8	2 3	1.2
45		CH	CH; Reddish brown, fat CLAY with trace organics (wood) (moist, no odor)				2 3	
46		CH	CH; SAME (moist, no odor)				10 11 11	0.0
47			End of boring at 47'					
48								
49								
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								

Depth (feet)	Well Construction
35	2" PVC 0.020" Screen
40	
45	
50	
55	

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-02B/S-452**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **12/1/20** COMPLETED: **12/2/20**
INSTALLATION: STARTED **12/2/20** COMPLETED: **12/2/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224062.8** *EASTING (ft): **2685341.1**
*GROUND ELEV (ft): **30.9** *TOC ELEV (ft): **30.54**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **41**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **28**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Air Knife (no recovery)							
5		MLS	MLS; Light gray to pale brown, fine sandy SILT with little clay (dry, very slight degraded petroleum odor)			1.2	2 4 5 5	0.0	5	
7		MLS	MLS; SAME (dry, degraded petroleum odor)			2.0	6 4 5 9	35.2		
9		MLS	MLS; SAME (dry, degraded petroleum odor)			1.7	7 8 6 7	12.8	10	Portland Cement Grout
11		CLS	CLS; Light gray to pale brown, sandy CLAY (low plasticity) (moist, degraded petroleum odor) clayey fine sand lens (11.8-12') (moist, degraded petroleum odor)		BT-02B-S-10-20201201	1.7	5 7 9 10	41.2		2" PVC Casing
13		SM	SM; Light gray to dark gray, silty fine to medium SAND (dry, sweet gasoline odor)			0.9	10 11 11 8	644.6	15	
15		CLS	CLS; Pale brown to gray, fine sandy CLAY (saturated, no odor) Switch to mud rotary			0.8	7 7 19 25	0.0		
17		SPG	SPG; Dark reddish brown to dark gray, well graded SAND and GRAVEL (large quartz gravels) (moist, very slight petroleum odor)			0.9	18 21 23 26	3.3		
19		SP	SP; Dark gray to olive, fine to medium SAND (fining downward) (moist to saturated, very slight petroleum odor)			1.6	18 8 9 9	1.0	20	Bentonite Seal
21		SP	SP; Olive to olive yellow, fine SAND, large quartz gravel in shoe (moist to saturated, slight petroleum odor)			1.0	11 15 27 24	4.4		Sand Pack
23			No Recovery (large quartz gravel in shoe)			0.0	7 11 11 7	N/A		
25		SP	SP; Olive and reddish gray, fine SAND (moist, very strong petroleum odor)			1.2	13 17 21 50	349.9	25	2" PVC 0.020" Screen
27		SP-SC	SP-SC; Olive, gray, reddish gray, well graded SAND with little silty clay lenses (gray, olive) (saturated, strong petroleum odor)		BT-02B-S-28-20201201	1.2	8 8 10 11	118.4		
29		SP	SP; Dark reddish gray, fine to medium SAND (saturated, strong petroleum odor)				5 5			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-02B/S-452**
PAGE 2 OF 2

DRILLING: STARTED **12/1/20** COMPLETED: **12/2/20**
INSTALLATION: STARTED **12/2/20** COMPLETED: **12/2/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224062.8** *EASTING (ft): **2685341.1**
*GROUND ELEV (ft): **30.9** *TOC ELEV (ft): **30.54**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **41**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **28**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
30		SP			NR	1.4	7 8	57.2		
31		SP	SP; SAME (saturated, very strong petroleum odor) (dark staining, sheen)				11			
32						1.3	7 11	122.2		
33		SPG	SPG; Dark gray to olive, well graded SAND with GRAVEL (foliated mudstone) (dusky red) (saturated, strong petroleum odor) (dark staining, sheen)				15 20			
34						0.9	17 22	7.7		
35		SPG	SPG; SAME (introduction of gray clay rip up clasts) (saturated, strong petroleum odor) (dark staining, sheen)				14 17		35	Tremmie Grout
36						1.1	22 18	69.2		
37		SPG	SPG; SAME (dark reddish brown, well graded sand and gravels) (subangular to rounded) (saturated, very strong petroleum odor) (staining, heavy sheen)				14 17	52.1		
38		CL-ML				1.3	16 23	7.0 11.1		
39		SP	CL-ML; Olive yellow, silty CLAY with fine SAND (low plasticity) (moist, slight petroleum odor)				10 11	0.7		
40		SP	SP; Light reddish brown, fine SAND (saturated, slight petroleum odor)			1.7	7 2		40	
41		CL-ML	SP; SAME (light reddish brown to gray to orange brown, fine SAND) (saturated, slight petroleum odor)				1			
42			CL-ML; Gray to gray brown, silty CLAY (low plasticity) (micaceous) (moist, slight petroleum odor)							
43										
44										
45									45	
46										
47										
48										
49										
50									50	
51										
52										
53										
54										
55									55	
56										
57										
58										
59										

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-03/S-466**
PAGE 1 OF 3

Stantec

DRILLING: STARTED **1/28/21** COMPLETED: **2/3/21**
INSTALLATION: STARTED **2/3/21** COMPLETED: **2/3/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224346.5** *EASTING (ft): **2685409.7**
*GROUND ELEV (ft): **30.2** *TOC ELEV (ft): **29.91**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **86**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **86**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			Air Knife (no recovery)							
5–6			CONCRETE (grinded through with HSA)						5	
7–8		CL-ML	CL-ML; Brown and gray, silty CLAY, trace fine sand (dry, no impacts) mottled clay			0.8	2 3 3 5	4.2		
9–10		CLS	CLS; Brown and gray, fine sandy CLAY (sand content increases with depth) (dry)			1.2	2 3 3 6	25.2	10	
10–11		SP	SP; Gray, very fine SAND (dry, slight petroleum odor)							
11–12		SP	SP; Gray, fine fine SAND, trace clay to clayey, very fine sand (dry to moist, slight petroleum odor)			1.4	9 10 10 10	4.7		
13–14		CL	CL; Red and white CLAY and fragments of gray SANDSTONE (dry, slight petroleum odor) strong brown clayey sand in shoe			1.0	5 3 3 7	6.9		
15–16		CLS	CLS; Strong brown and reddish brown, sandy CLAY to clay SAND with claystone and coarse quartz gravel			2.0	7 6 11 13	117.3	15	
17		SW	SW; Yellowish brown SAND (well graded sand and gravel, gravel is coarse quartz and claystone) to some fines (dry, light petroleum odor)				17			
17–18		SW				2.0	19 13 14	407		
19		SP	SW; Yellowish brown, brown, olive, gray SAND (well graded sand and gravel, claystone quarts), trace fine (dry, light petroleum odor)		BT-03 S-18-20210128		10			
20–21		SP	SP; Brown, fine SAND, little coarse gravel (moist to saturated, petroleum odor)			1.3	10 15 25	111.4	20	
21–22		SP	SP; Brown, fine SAND, little gravel, white, very fine sand (moist, petroleum odor)			1.0	15 18 30 30	12.1		
23–24		SW-SM	SW-SM; Compacted white, olive, brown, red SAND WITH SILT (well graded sand and fine gravel, little silt and clay) (moist to dry, strong petroleum odor)			0.8	11 17 23 32	232		Steeel Outer Casing
25–26		SP	SP; Brown, fine to medium SAND (wet to saturated, strong petroleum odor)			0.6	17 17 15 13	511	25	
27–28		SP	SP; Brown to grayish brown, compacted, fine SAND with trace fine gravel (wet to saturated, strong petroleum odor)			1.5	12 17 18 24	604		
29		SP	SP; Dark gray, fine SAND with trace fine gravel (saturated, very strong petroleum odor) (sheen)				10 9			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-03/S-466**

DRILLING: STARTED **1/28/21** COMPLETED: **2/3/21**
INSTALLATION: STARTED **2/3/21** COMPLETED: **2/3/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224346.5** *EASTING (ft): **2685409.7**
*GROUND ELEV (ft): **30.2** *TOC ELEV (ft): **29.91**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **86**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **86**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
31	SP	(continued) Dark gray, fine SAND with trace fine gravel (saturated, very strong petroleum odor) (sheen)	N/A	1.0	6 6	620
	SP	SP; Dark gray, fine SAND with trace fine gravel (saturated, very strong petroleum odor) (sheen)			6 4 4 7	
32				0.9		360
33	SP	SP; Brownish gray to dark brown, fine SAND (medium to fine grain) trace fine gravel (saturated, petroleum odor) (sheen)			10 12 14 12	
34				0.7		33.2
35	SP	SP; SAME (saturated, petroleum odor) (heavy sheen)			6 4 9 14	
36				1.1		10.8
37	SP	SP; Brown ot brownish gray, fine SAND, trace coarse gravel (saturated, petroluem odor) (heavy sheen)			7 9 11 14	
38				0.9		7.1
39	SP	SP; Brown to grayish brown, very fine SAND (saturated, petroleum odor) (staining, sheen)			10 4 4 3	
40	CL	CL; Brownish yellow to gray CLAY (low plasticity) trace fine sand (dry to moist, petroleum odor)		1.3		2.3
41	CL	CL; Gray to grayish brown CLAY (low plasticity) trace fine sand (moist to wet, dark amber product present)			3 3 3 3	
42				1.0		40.6
43	CL	CL; Gray to dark gray CLAY (low plasticity) little fine sand (moist to dry petroleum odor)			2 2 2 3	
44				0.9		34.6
45	SP	SP; Reddish brown, fine SAND with little clay (clay lens) (moist to dry, no impacts)			3 4 4 5	
46	CH	(micaceous)		1.9		2.1
47	CH	CH; Reddish brown CLAY (medium to high plasticity) (dry, no impacts) CH; SAME (dry, no impacts)	BT-03-S-46-20210128		3 3 3 3	
48				0.3		0.5
49						
50	CH	CH; Reddish brown CLAY (medium to high plasticity) (dry, no impacts)				
51						
52					2 2 2 2	
53				1.6		0.0
54						
55	CH	CH; Reddish brown CLAY (dense, medium to high plasticity) (dry, no impacts)				
	CLS	CLS; Reddish brown, fine sandy CLAY (little to some sand in matrix, micaceous) (dry to moist, no impacts)				
56						
57						
58				1.5	1 for 2"	0.0
59						

Well Construction: Portland Cement Grout; 2" PVC Casing

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 3 OF 3 **BT-03/S-466**

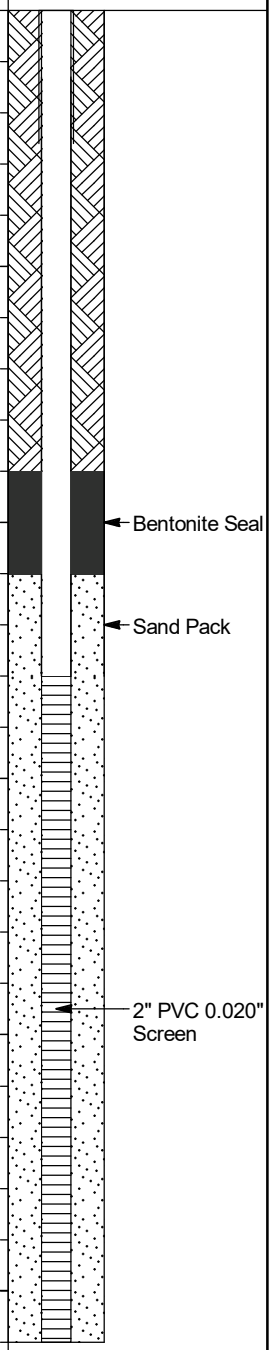
Stantec

DRILLING: STARTED **1/28/21** COMPLETED: **2/3/21**
INSTALLATION: STARTED **2/3/21** COMPLETED: **2/3/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224346.5** *EASTING (ft): **2685409.7**
*GROUND ELEV (ft): **30.2** *TOC ELEV (ft): **29.91**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **86**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **86**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **Kachel/Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
30	CLS	CLS; Reddish brown, sandy CLAY (micaceous, low plasticity) (moist, no impacts)				
31	SP	SP; Reddish brown, fine SAND (quartz, micaceous) (moist to wet, no impacts) trace fines		1.4	2 8 9 11	0.0
32						
33						
34						
35	SP	SP; SAME (moist to wet, no impacts)		1.3	8 10 12 12	0.0
36						
37						
38						
39						
40	CH	CH; Reddish brown CLAY (medium to high plasticity) trace little sand (micaceous)	BT-03-S-72-20210129	2.0	2 2 8 8	0.0
41						
42						
43						
44						
45	SP	SP; Gray to grayish brown, fine to medium SAND (micaceous) clay lenses at 75-75.3' bgs, 76.2-76.4' bgs, peat present at 76.5' bgs (moist, musky odor)		1.5	7 9 9 10	0.8
46	SP	SP; Gray to dark gray, fine SAND (micacous, muscovite) thin peat, clay and ignite lenses, trace fine gravel (moist, no impacts)		1.1	8 8 12 14	0.0
47						
48						
49	SP	SP; Gray, fine SAND, thin clay lens (moist, no impacts)				
50	SP	SP; Brown to grayish brown to yellowish brown, fine SAND with gravel to gravelly fine sand (oxygenated) (micaceous) (wet, no impacts) (quartz gravel)		1.2	9 7 6 7	0.0
51	SP	SP; Grayish brown and yellowish brown, gravelly fine to medium SAND (quartz gravel) to well graded sand with some fine gravel (wet, no impacts)		1.5	9 11 12 13	0.0
52	SW	SW; Grayish brown to yellowish brown, well graded SAND with some gravel (oxygenated where gravel content is higher) (wet, no impacts) (micaceous, weathered claystone)		1.7	8 11 13 16	0.0
53		End of Boring at 86'				
54						
55						
56						
57						
58						
59						



Well Construction

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-05/S-455**
PAGE 1 OF 2

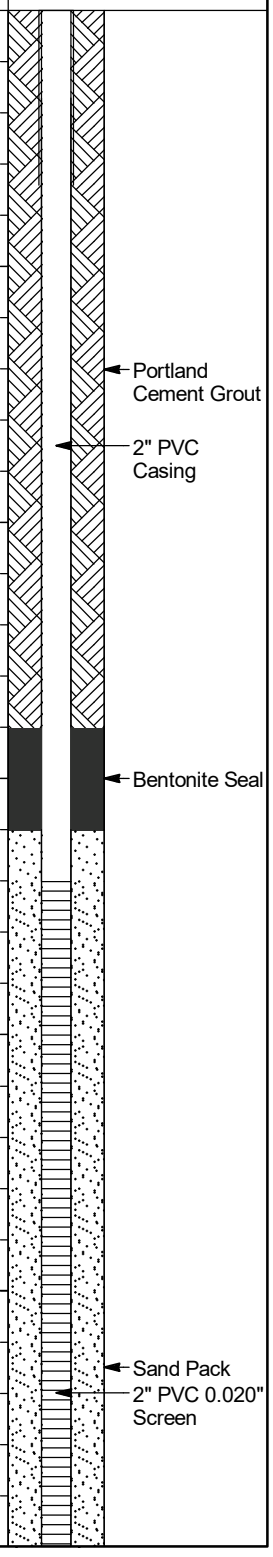
Stantec

DRILLING: STARTED **12/10/21** COMPLETED: **12/11/21**
INSTALLATION: STARTED **12/11/21** COMPLETED: **12/11/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224211.5** *EASTING (ft): **2685738.7**
*GROUND ELEV (ft): **28.2** *TOC ELEV (ft): **27.94**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **45**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **37**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **J. Kachel** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
1–4		Air Knife (no recovery)				
5–6	ML	ML; Dark gray SILT, some clay (low plasticity) (dry, petroleum odor)		0.5	1 1 1 3	567
7–8		No Recovery		0.0	4 3 3 4	N/A
9–10	SP	SP; Medium gray, fine SAND, little silt, light brown laminae, 1" quartz cobble near bottom of spoon (moist)	BT-05-S-9-20201210	1.0	5 5 8 8	651
11	SP	SP; SAME but reddish brown, yellowish brown mottling (little muscovite mica) (moist)			6 8 10 25	525
12–13	SPG	SPG; Medium SAND and fine GRAVEL (friable) (dry) multi-colored light green, red mudstone fragments, quartz coarse gravel (strong petroleum odor)			16 15 17 17	
14	SPG	SPG; SAME (strong odor)		1.0		333
15–16	SPG	SPG; SAME some medium gravel (moist) (red mudstone) well graded medium sand to medium gravel (moderate odor)		1.0	20 22 13 20	183
17	SPG	SPG; SAME dark greenish gray, fine SAND, little silt with red angular 1" red mudstone gravels , some medium rounded quartz gravels			24 24 17 16	
18	SP	SP; Yellowish brown, tight, fine to medium SAND, mudstone clast at bottom (dry)		1.2		615
19–20	SP	SP; SAME variable colors in 1" layers, coarse at bottom of spoon (moist, slight odor)		0.8	17 16 17 14	6.4
21	SPG	SPG; Loose, medium GRAVEL and fine SAND (wet, petroleum odor) (stained) to medium to fine) yellowish brown SAND, little clay (petroleum odor)			17 17 14 16	
22				0.3		555/45
23–24	SPG	SPG; Multi-colored, medium SAND to medium GRAVEL, little silt, some large cobbles (moist, strong gasoline odor) (stiff)		1.3	17 23 20 28	1380
25	SPG	SPG; SAME			22 24 20 26	
26				0.9		724
27	SPG	SPG; SAME coarser at top, cobble in spoon at 0.2'; to brown, fine to coarse SAND, little medium to coarse gravel (moderate odor) at bottom			24 22 23 45	
28				1.1		331
29	SPG	SPG; SAME tight some gravel (moist, moderate to strong odor)			22 45	



PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:

BT-05/S-455

Stantec

DRILLING: STARTED **12/10/21** COMPLETED: **12/11/21**
INSTALLATION: STARTED **12/11/21** COMPLETED: **12/11/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224211.5** *EASTING (ft): **2685738.7**
*GROUND ELEV (ft): **28.2** *TOC ELEV (ft): **27.94**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **45**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **37**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **J. Kachel** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
31		SPG	(continued) SAME tight some gravel (moist, moderate to strong odor)			1.4	20 22	755
32		SPG	SPG; SAME 2" red mudstone cobble at 0.3', layer of medium sand 1.1-1.2', 1.2-1.3' yellow, fine SAND with medium gravel, some silt at bottom			1.2	23 45 22 24	680
33		SPG	SPG; SAME				22 25	
34							35 44	N/A
35		SPG	SPG; SAME very tight gravel				35	
36						0.7	44 50/4	66
37		CL-ML	CL-ML; Laminated orange and light gray, medium soft, silty CLAY (very slight odor)				5 7	
38						1.3	10 7	5.1
39		CL-ML	CL-ML; SAME				7	
40		SP	SP; Dark gray, fine SAND some silt (moist, slight odor)			1.3	5 22 20	N/A
41		SP	SP; SAME fining with depth and grading to reddish brown SILT with little fine sand, little clay (no odor)				2 5	
42						1.1	5 4	5
43		CL	CL; Reddish brown CLAY, little silt (medium plasticity) (medium stiff) (moist, no odor)				4 8	
44						1.0	9 9	0.7
45			End of boring at 45'					
46								
47								
48								
49								
50								
51								
52								
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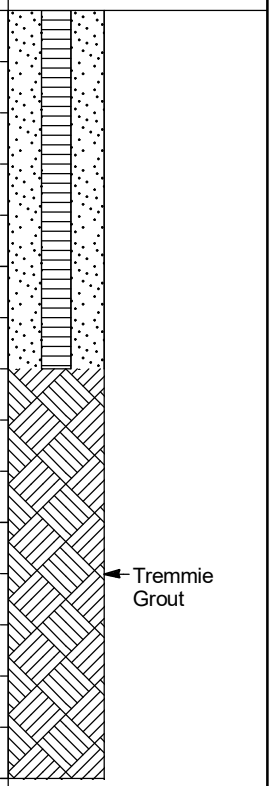
58								
59								



Well Construction

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-08A/S-469**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **2/9/21** COMPLETED: **2/9/21**
INSTALLATION: STARTED **2/9/21** COMPLETED: **2/9/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Hand Auger, Direct Push**
SAMPLING EQUIPMENT: **Geoprobe**

*NORTHING (ft): **224362** *EASTING (ft): **2686173.8**
*GROUND ELEV (ft): **30.1** *TOC ELEV (ft): **29.74**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **53**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **41**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4		OH	OH; Hand Cleared. Red and dark brown, silty ORGANIC soil and SAND (brown to yellowish brown clayey silt with some sand and gravel) (dry to moist, no impacts)			5.0	N/A	0.0		
5		CLS	CLS; Yellowish brown, sandy CLAY (moist, no impacts)					0.0	5	
6		SP	SP; Yellowish brown, fine SAND, trace clay lenses throughout (micaceous) (moist, no impacts)			2.2	N/A	0.0		
7–8										Portland Cement Grout
9		SP	SP; Yellowish brown, fine SAND, trace fines (micaceous) (moist, no impacts)					0.0		
10		CLS	CLS; Yellowish brown to gray to dark gray, fine sandy CLAY (moist to wet, no impacts, staining)					0.0	10	2" PVC Casing
11		SWG	SWG; Yellowish brown to dark yellowish brown, well graded SAND with fine GRAVEL (moist, no impacts)		BT-08A-S-11-20210209	3.2	N/A	0.0		
12										
13		SW	SW; Yellowish brown to dark yellow to reddish brown to olive to yellow, well graded SAND, some gravel, claystone, trace fines (dry to moist, no impacts)					0.0		
14–15						2.2	N/A		15	
16										
17		SW-SC	SW-SC; SAME (multi-color SAND with CLAY with little claystone) (moist, no impacts)							Bentonite Seal
18								0.0		
19						2.3	N/A			Sand Pack
20									20	
21		SW-SC	SW-SC; Brown to yellowish brown to dark yellowish brown SAND with CLAY (fine gravel) little claystone (moist, no impacts)					0.0		
22										
23		SP	SP; Yellowish brown SAND, trace fine gravel (moist, no impacts)			2.7	N/A	0.0		
24										
25		SW	SW; Yellowish brown (red hue) well graded SAND, trace fines (moist, no impacts)					0.0	25	
26		CLS	CLS; Yellowish brown to dark yellowish brown to reddish brown laminated, fine sandy CLAY (micaceous) (moist, no impacts) , fine gravel in shoe			3.5	N/A	0.0		
27–28										
29		SP	SP; Brown to dark brown, dark gray, fine SAND, little clay (moist to wet, no impacts)					0.0		

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-08A/S-469**

Stantec

DRILLING: STARTED **2/9/21** COMPLETED: **2/9/21**
INSTALLATION: STARTED **2/9/21** COMPLETED: **2/9/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Hand Auger, Direct Push**
SAMPLING EQUIPMENT: **Geoprobe**

*NORTHING (ft): **224362** *EASTING (ft): **2686173.8**
*GROUND ELEV (ft): **30.1** *TOC ELEV (ft): **29.74**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **53**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **41**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31	SW-SC	SW-SC; Brown to yellowish brown to reddish brown SAND with CLAY (well graded sand and gravel, little to trace clay) (wet, no impacts)	BT-08A-S-38-20210209	2.6	N/A	0.0		2" PVC 0.020" Screen
32								
33	SW-SC	SW-SC; SAME (saturated, no impacts)						
34								
35				2.7	N/A	0.0	35	
36								
37	SW	SW; Brown to yellowish brown SAND with gravel, trace fines (saturated, no impacts)				0.0		
38	SP	SP; Brown to yellowish brown, fine to medium SAND (micaceous) quartz gravel lens at 39.2' bgs (saturated, no impacts)						
39				2.5	N/A	0.0		
40							40	
41	SP	SP; Brownish yellow, fine to medium SAND, trace fines (saturated, no impacts)				0.0		
42	CL	CL; Brownish yellow to pale gray laminated CLAY (low plasticity) trace little fine sand (dry, no impacts)						
43				1.6	N/A	0.0		
44								
45	CLS	CLS; Brownish yellow to gray, fine sandy CLAY (low plasticity) (wet to saturated, no impacts)				0.0	45	
46	SP	SP; Dark grayish brown to weak red, fine SAND (micaceous) trace to little clay (saturated, no impacts)						
47				4.0	N/A	0.0		
48								
49	SC	SC; Weak red, very fine to fine clayey SAND (wet to saturated, no impacts)				0.0		
50	CH	CH; Weak red CLAY (high plasticity) (moist to dry, no impacts)					50	
51				4.0	N/A	0.0		
52								
53		End of boring at 53'						
54								
55							55	
56								
57								
58								
59								

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-08B/S-470**
PAGE 1 OF 3

Stantec

DRILLING: STARTED **2/23/21** COMPLETED: **3/9/21**
INSTALLATION: STARTED **3/9/21** COMPLETED: **3/9/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **223862.1** *EASTING (ft): **2686108.2**
*GROUND ELEV (ft): **26.0** *TOC ELEV (ft): **25.45**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **87**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **81**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Air Knife (no recovery)							
5		CL	CL; Olive gray CLAY with trace to no silt (dry to moist, very slight petroleum odor)			0.15	WOH-2'	0.9	5	
7		CL	CL; Grayish brown to dark gray laminated CLAY with little silt, no to trace fine sand (moist, degraded petroleum odor, staining)			1.2	2 2 2 6	36.7		
9		SC	SC; Gray, clayey, fine SAND (moist to wet, degraded petroleum odor, staining)				5			
10		CL	CL; Pale yellow CLAY, trace fine sand (dense) (dry, slight petroleum odor) includes yellow brown clay mottles			1.3	5 10 5	2.8	10	Portland Cement Grout
11		SP	SP; Dark gray, fine SAND (sheen and product staining) and pale yellow dense CLAY (dry, degraded petroleum odor), soil units split vertically				5			
12						1.6	10 23 30	76.2		
13		CL	CL; Pale yellow and little yellowish brown CLAY (dense) (dry, slight petroleum odor)		BT-08B-S-12-20210223		5			
14		SW	SW; Weak red to brown to yellowish brown and olive SAND (well graded sand and gravel) (dense) (dry, petroleum odor)			1.5	6 7 11	146		
15		SP	SP; Brown to yellowish brown to olive, medium SAND, trace to little fine gravel (moist, slight petroleum odor)				11		15	
16						1.0	11 12 16	8.3		
17		SW	SW; Yellowish brown to olive to brown SAND (fine to medium sand and fine to medium gravel (quartz and claystone, micaceous) (moist, slight petroleum odor)				12			
18						1.25	12 16 17	33.5		
19		CLS	CLS; Brown to grayish brown, fine, clayey SAND (moist to wet, petroleum odor)				4			
20						0.6	7 8	13.1	20	
21		SP	SP; Brown to grayish brown, fine to medium, clayey SAND with little fine gravel (micaceous) (moist, petroleum odor)				7			
22						1.0	7 10 15	105		
23		SW	SW; Olive to brown to grayish brown SAND (dense, well graded sand and fine gravel) (wet to saturated, strong petroleum odor)				11			
24						1.2	17 16 50/4	769		
25			No Recovery (fractured quartz in shoe)						25	
26						0.0	100/1	N/A		
27		SW	SW; Dark brown to dark gray SAND (well graded, trace to no fines, sand and fine gravel) (saturated, strong petroleum, staining, sheen), medium SAND (28.0-28.4')				10			
28					BT-08B-S-28-20210225	1.4	11 14 15	469		
29		SW	SW; Dark gray, well graded SAND and fine to medium gravel, claystone (weak red) trace				12 10			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 3 **BT-08B/S-470**

DRILLING: STARTED **2/23/21** COMPLETED: **3/9/21**
INSTALLATION: STARTED **3/9/21** COMPLETED: **3/9/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **223862.1** *EASTING (ft): **2686108.2**
*GROUND ELEV (ft): **26.0** *TOC ELEV (ft): **25.45**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **87**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **81**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
		SW	fines) (saturated, strong petroleum odor, staining, sheen)		710	1.0	14 10	329		Portland Cement Grout
31		SW	SW; Dark gray SAND (well graaded sand and fine gravel) trace clay (saturated, strong petroleum odor, staining, sheen)			0.7	12 13 18 16	146		
33		SW	SW; Dark gray SAND (well graded sand and medium to fine quartz gravel (rounded)) (saturated, degraded petroluem odor, staining)			0.5	13 11 7 8	9.7		2" PVC Casing
35		SP	SP; Brown to grayish brown, fine SAND, trace gravel (saturated, degraded petroleum odor, staining)			0.6	10 11 6 5	1.0	35	
37		SP	SP; Dark gray, very fine SAND (saturated, degraded petroleum odor, staining)		BT-08B-S-37-20210225			1.0		
38		CL	CL; Pale grayish brown to yellowish brown, low plasticity CLAY, trace very fine sand (dry, no impacts)			2.0		0.0		
39		CLS	CLS; Gray to grayish brown, fine, sandy CLAY to clayey fine SAND (wet to saturated, no impacts)				3 3 3 9			
40		SP	SP; Dark gray to gray to brown, weak red hue, fine SAND (micaceous) trace to little fines (saturated, no impacts)			1.6		0.0	40	
41		SP	SP; Weak red, very fine SAND (micaceous) little fines (sturated, no impacts)				3 5 4 5			
42						1.55		0.0		
43		CLS	CLS; Weak red CLAY, fine to very fine SAND (micaceous) (saturated, no impacts)				3 4 4 4			
44		CH	CH; Weak red CLAY (medium to high plasticity, laminated in shallow zone), trace to no very fine sand (moist to dry, no impacts)			1.7		0.0		
45		CH	CH; Weak red CLAY (high plasticity), trace to no very fine sand (moist, no impacts)				3 3 3 3		45	
46						1.2		0.0		
47		CL	CL; Weak red CLAY (medium plasticity), trace to little very fine sand (micaceous) (laminated ~48' bgs) (moist to dry, no impacts)				3 4 5 7			
48					BT-08B-S-48-202010226	2.0		0.0		
49										
50									50	
51										
52										
53										
54										
55		CH	CH; Weak red CLAY (medium to high plasticity), trace to no very fine sand (micaceous) (dry, no impacts)						55	
56										
57							4 4 8 8			
58						2.0		0.0		
59										

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 3 OF 3 **BT-08B/S-470**

Stantec

DRILLING: STARTED **2/23/21** COMPLETED: **3/9/21**
INSTALLATION: STARTED **3/9/21** COMPLETED: **3/9/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **223862.1** *EASTING (ft): **2686108.2**
*GROUND ELEV (ft): **26.0** *TOC ELEV (ft): **25.45**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **87**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **81**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
61		CH	CH; Weak red CLAY (medium to high plasticity), trace very fine sand (few very fine sand lenses) (micaceous) (dry, no impacts)			2.0	6 3 6 8	0.0		Bentonite Seal
62										
63										
64										
65		CLS	CLS; Weak red and brownish red CLAY with trace very fine sand (micaceous) (dry, no impacts)						65	Sand Pack
66		PT	PT; Dark brown and dark gray PEAT (layered) with little gray, very fine SAND (micaceous) (dry, no impacts)			0.8	4 8 8 17	0.0		
67		SP	SP; Gray to grayish brown, very fine SAND (micaceous) (dry to moist, no impacts)							
68										
69										
70		SP	SP; Dark gray and reddish brown, fine SAND, trace fine gravel (saturated, no impacts) (quartz)		BT-08B-S-71-20210225/ BT-08B-W-71-20210308				70	
71		PT	PT; Dark brown and gray PEAT (moist)							
72		SP	SP; Gray to pale gray, very fine SAND and quartz gravel fragments (dense) (saturated, no impacts)							
73										
74										2" PVC 0.020" Screen
75						1.05	33 38 50/4	0.0	75	
76										
77										
78										
79										
80		SP	SP; Brown to grayish brown, very fine SAND (micaceous) (moist, no impacts) peat separates layers below						80	
81		SPG	SPG; Gray to pale gray, well graded SAND with fine GRAVEL (quartz), quartz cobble fragments in show, milky sands in shoe (moist, no impacts) highly compacted			1.4	18 20 31 50/3	0.0		
82										
83										
84										Tremmie Grout
85			"Peppery" black and white (saprolite and quatz) gneissic saprolite (micaceeous), trace to no pale gray clay in matrix (moist to dry, no impacts)			1.75	30 35 49 50/3	0.0	85	
86										
87			End of boring at 87'							
88										
89										

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-09/S-457**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **12/16/20** COMPLETED: **12/29/20**
INSTALLATION: STARTED **12/29/20** COMPLETED: **12/29/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224072.5** *EASTING (ft): **2685621.4**
*GROUND ELEV (ft): **29.7** *TOC ELEV (ft): **29.32**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **49**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **40**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Air Knife (no recovery)							
5		CLS	CLS; Olive to dark brown, fine sandy CLAY (reddish brown clayey fine sand 5.4-5.5' bgs) (moist, petroleum odor) (staining)			1.4	3 1 2 1	2.5	5	
7		CLS	CLS; SAME (olive to brown, fine sandy clay) (moist, petroleum odor) (staining) transition to clayey sand		BT-09-S-8-20201228	1.4	3 5 5 5	6.5		Portland Cement Grout
9		CLS	CLS; Olive and brown, fine clayey SAND (moist, petroleum odor)				5			
10		SP	SP; Dark gray, fine to medium gravelly SAND (moist, petroleum odor) (staining)			1.1	10 12 10	28	10	2" PVC Casing
11		SP	SP; Dark gray, fine SAND with little gravel, fining downward, color transition to brown (moist, petroleum odor)			0.9	5 7 10 5	62		
13		SW	SW; Dark gray, gravelly SAND, coarsening downward (color transition to yellow and white laminated) (moist, petroleum odor)			0.9	7 10 12 14	15.8		
15		SM	SM; Olive, brown, dark gray, medium silty SAND with some gravel (rounded to subangular) mudstone (reddish brown) (moist, petroleum odor)			1.3	14 17 26 22	19.1	15	
17		SM	SM; SAME (introduction of clay rip up clasts, gray) (moist, petroleum odor)			1.3	26 30 32 20	17.1		Bentonite Seal
19		SM	SM; SAME (moist to wet, petroleum odor)			1.4	17 11 22 26	55.3		Sand Pack
21		SW	SW; Olive to yellowish brown, muddy, well graded SAND, fining downward, clayey fine sand (red brown) (moist, petroleum odor)		BT-09-S-22-20201216	1.4	26 30 28 42	118	20	
23		CL-ML	CL-ML; Yellowish red, silty CLAY (low plasticity) (micaceous) with trace fine sand (dry, petroleum odor)			0.6	12 8 8 18	107		
25		CL-ML	CL-ML; SAME (coarsening downward) light brown, fine to medium sand lense 25.2-25.4' (moist, petroleum odor)			0.7	13 14 9 12	37.2	25	
27		SW-SM	SW-SM; Dark reddish gray SAND and SILT (muddy sand and gravel) (angular to rounded) (wet, strong petroleum odor)			1.3	10 12 14 16	500		
29		SP-SM	SP-SM; Dark reddish gray SAND and SILT (fine sand and gravel) (some claystone) (wet to				20 26			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-09/S-457**

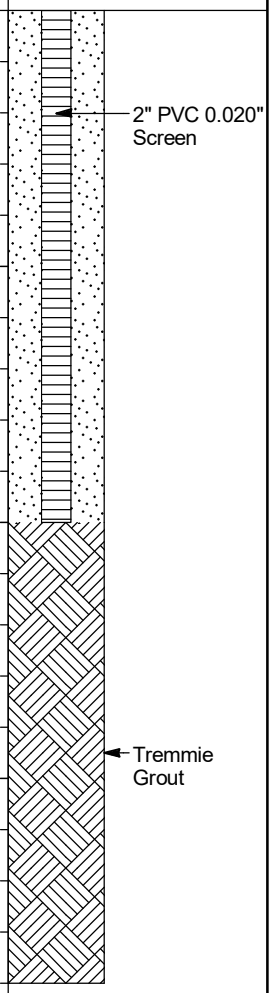
Stantec

DRILLING: STARTED **12/16/20** COMPLETED: **12/29/20**
INSTALLATION: STARTED **12/29/20** COMPLETED: **12/29/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224072.5** *EASTING (ft): **2685621.4**
*GROUND ELEV (ft): **29.7** *TOC ELEV (ft): **29.32**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **49**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **40**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
31	SP-SM	saturated, strong petroleum odor)		1.1	25 25	323
32	SP-SM	SP-SM; SAME (saturated, strong petroleum odor) (sheen)	BT-09-S-32-20201228	1.2	16 22 21 17	535
33	SP-SM	SP-SM; Dark gray to reddish brown SAND with SILT (saturated, very strong degraded gasoline odor)			16 13 15 20	
34				1.2		468
35	SP-SM	SP-SM; Gray and olive SAND with SILT (sorting, fining downward) (saturated, very strong degraded gasoline odor) (sheen)			13 16 18 21	
36	SW-SM	SW-SM; Grayish brown SAND with SILT (red claystone and large gravels) (saturated, petroleum odor)		1.6		668
37					12 14 16 10	
38	CL	CL; Orange CLAY (foliated) (low plasticity) (dry)		1.4		21.8
39	CL	CL; Orange to very pale brown CLAY (low to medium plasticity) (moist, slight petroleum odor)			5 6 10 12	
40				1.4		10.1
41	CL	CL; SAME (moist to wet)			3 4 4 5	
42	SP	SP; Red to reddish brown SAND (micaceous) (wet)		2.0		4.6
43		No Recovery			4 4 5 4	
44				0.0		N/A
45	CLS	CLS; Red to reddish brown to pale brown, fine sandy CLAY (low plasticity) trace silt (micaceous) (saturated, very slight petroleum odor)			4 5 4 4	
46	CH			2.0		0.6
47	CH	CH; Red CLAY, trace silt (medium to high plasticity) (micaceous) (dry to moist, no odor)	BT-09-S-47-20201229		5 4 4 4	
48		CH; SAME (dry to moist, no odor)		2.0		2.3
49		End of boring at 49'				
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						

Well Construction



PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-11A/S-453**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **12/2/20** COMPLETED: **12/2/20**
INSTALLATION: STARTED **12/2/20** COMPLETED: **12/2/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224100.8** *EASTING (ft): **2685445**
*GROUND ELEV (ft): **30.7** *TOC ELEV (ft): **30.35**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **30**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **30**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			Air Knife (no recovery)							
5–7		SM	SM; Light gray, light brown, fine silty SAND with little clay (dry, degraded petroleum odor)			1.5	3 5 5 7	26.1	5	
7–9		SM	SM; SAME (dry, slight petroleum odor)		BT-11A-S-8-201201202	1.5	5 5 8 8	399.1		Portland Cement Grout
9–10		SM	SM; SAME			1.75	3 7 10 9	129.6	10	2" PVC Casing
11–12		SM	SM; Light gray, fine to medium silty SAND with little clay (moist, degraded petroleum odor)			1	7 10 10 9	107.3		
13–14		SM	SM; SAME (light gray, brown, olive silt with little clay and quartz subrounded to rounded gravel and mudstone) (strong petroluem odor)			1.5	7 10 7 5	291.5		
15–16		MLG	MLG; Dark reddish brown, olive weathered GRAVEL, SILT wth quartz gravel and mudstone (faint degraded petroleum odor)				9 10 12 12	131.2	15	
17–18		MLG	MLG; SAME weathered gravel				12 21 23 20	34.9		Bentonite Seal
19–20		GP	GP; Dark reddish brown GRAVEL (well graded gravel with silty sand matrix) (moist, degraded petroleum odor)			0.6	23 17 39 50	21.5	20	Sand Pack
21–22		SP-SM	SP-SM; Yellowish red SAND with SILT (poorly graded, fine sand and gravel, little silt) (moist, slight degraded petroleum odor) quartz fragments and mica in shoe			0.5	39 45 49 49	7.1		
23–24		SP-SM	SP-SM; SAME (yellowish red sand and silt) white clay rip up clasts, fining downward to brown dark brown, fine sand (moist, degraded petroleum odor)			1.2	26 28 30 22	72.6		
25–26		SPG	SPG; Dark red, brown, gray well graded SAND with little quartz gravel and white clay rip up clasts (moist, degraded petroleum odor)			1.0	22 32 40 42	122.6	25	2" PVC 0.020" Screen
27–28		SP	SP; Dark brown to dark gray, fine to medium SAND (fining downward) (saturated) (staining, sheening) (clay in shoe)			1.2	15 10 16 5	550.6		
29		CL	CL; Brown to yellow laminated CLAY (low plasticity) (dry, no odor)		BT-11A-W-29-20120210		12 14			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-11A/SB-453**

Stantec

DRILLING: STARTED **12/2/20** COMPLETED: **12/2/20**
INSTALLATION: STARTED **12/2/20** COMPLETED: **12/2/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224100.8** *EASTING (ft): **2685445**
*GROUND ELEV (ft): **30.7** *TOC ELEV (ft): **30.35**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **30**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **30**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		CL	(continued) Brown to yellow laminated CLAY (low plasticity) (dry, no odor)			1.1	17 10	2.7		
32		CL	CL; SAME (dark reddish brown clay) (low plasticity) (dry, no odor)		BT-11A-S-32-20201203	2.0	5 7 7 5	5.4		Tremmie Grout
33		CL	CL; SAME (moist to slight petroleum odor)				4			
34						1.1	3 7 2	17.3		
35			End of boring at 35'						35	
36										
37										
38										
39										
40									40	
41										
42										
43										
44										
45									45	
46										
47										
48										
49										
50									50	
51										
52										
53										
54										
55									55	
56										
57										
58										
59										

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-11B/S-454**
PAGE 1 OF 4

Stantec

DRILLING: STARTED **12/3/20** COMPLETED: **12/10/20**
INSTALLATION: STARTED **12/10/20** COMPLETED: **12/10/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224109.1** *EASTING (ft): **2685491.7**
*GROUND ELEV (ft): **31.0** *TOC ELEV (ft): **30.65**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **100**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **95**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hoblitzall** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			Air Knife (no recovery)							
5–7		ML	ML; Light brown and light gray SILT with fine silt and little clay (dry, slight petroleum odor)		BT-11B-S-8-20201203	1.1	2 4 4 4	455.2	5	
7–9		ML	ML; SAME light brown and light gray			1.1	4 5 5 7	114.7		
9–11		ML	ML; Light gray SILT with little fine sand, trace mica (dry, slight petroleum odor)			1.7	5 7 5 7	620.9	10	Portland Cement Grout
11–13		ML	ML; SAME with trace amber mudstone (slight petroleum odor)			1.6	7 13 12 9	260.4		
13–15		ML	ML; SAME (dry, degraded petroleum odor)			1.7	8 10 12 10	273		
15–16		SP	SP; Light gray, medium to coarse SAND (sheen)			1.2	4 2 3 5	563	15	
16–17		CL	CL; Gray and light amber brown CLAY with little to no silt and fine sand (low plasticity) (moist) bottom with olive SAME with some coarse sand							
17–19		CL	CL; SAME (mudstone to weathered rock) (wet)			1.2	22 37 42 45	66		
19–21		CL	CL; SAME (wet, very slight petroleum odor)			1.15	40 40 42 37	80.4	20	
21–22		CL	CL; SAME (light brown to reddish yellow silt with medium to coarse sand and mudstone)			0.5	42 37 47 50/5	2.4		
23–24		CL	CL; SAME (slight to moderate petroleum odor)			1.3	17 22 23 25	701		
25–26		CL	CL; SAME light amber brown CLAY (low plasticity) with little to no silts with medium to coarse sand and gravel (well graded, subangular) (saturated)			1.6	22 23 22 28	12.7	25	
27		CL	CL; SAME (slight petroleum odor) (sheen)				8	698		
28		CL	CL; Reddish yellow CLAY with little to no fine laminated sand (low plasticity) (moist)			1.2	8 13 21	18.7		
29		CL	CL; SAME				13 8			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 4 **BT-11B/S-454**

Stantec

DRILLING: STARTED **12/3/20** COMPLETED: **12/10/20**
INSTALLATION: STARTED **12/10/20** COMPLETED: **12/10/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224109.1** *EASTING (ft): **2685491.7**
*GROUND ELEV (ft): **31.0** *TOC ELEV (ft): **30.65**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **100**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **95**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hoblitzall** CHECKED BY: **D. Hopkins**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
31	CL	CL; Pinkish white CLAY with little fine sand and mica (low plasticity) (moist)	0.0	1.1	12 12	21.1
	CL	CL; SAME			12	
32				1.8	8 12	0.0
33	MLS	MLS; Bluish gray to light brown SILT with medium to coarse SAND (moist)			8	372
	MLS	MLS; SAME with some rounded gravel (slight degraded petroleum odor)			22	
34				1.1	31 21	609
35	MLS	MLS; Light brown and amber SILT with medium to coarse sand with angular gravel (weathered rock (wet) (sheen on weathered rock)			26 50	
36				1.0	25 25	268
37	SM	SM; Greenish gray, fine to medium silty SAND (with some mica)			20	
	SM	SM; SAME			50	
38				1.6	25 25	315
39	SM	SM; SAME			20	
	CL	CL; Reddish yellow CLAY with trace fine sand (medium plasticity)			3	
40				1.8	4 4	218
41	CL	CL; SAME			4	
42	CL	CL; Dark gray CLAY with trace fine sand (low plasticity) (1" sandstone fine layer) (slight degraded petroleum odor)		1.9	5 4 5 10	71.7
43	CL	CL; Dark gray CLAY and fine sand, trace mica (slight degraded petroleum odor)			4 9	46.5
44	CL	CL; Weak red CLAY and fine SAND (slight degraded odor)		0.7	12 14	59.3
45	SP-SC	SP-SC; Reddish gray to weak red, fine sand with clay and mica rock (low plasticity) (very faint petroleum odor)			4	
46				1.25	4 10	171
47	MH	MH; Weak red, fat CLAY with trace silt and fine sand (mica) (medum plasticity) (solvent odor)			5 4	
48				1.3	6 10	3.6
49	MH	MH; SAME			10 7	
50				1.8	8 8	1.5
51	MH	MH; SAME (thin sand lenses) (moist to dry)	BT-11B-S-5-20201208		11 2	
52				1.9	4 1	21.8
53					5	
54						
55						
56						
57						
58	MH	MH; SAME (trace fine sand) (wet)			2	
59				1.5	2 5 8	0.4

Depth (feet)	Well Construction
35	Portland Cement Grout
40	2" PVC Casing
45	
50	
55	

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-11B/S-454**
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Stantec

DRILLING: STARTED **12/3/20** COMPLETED: **12/10/20**
INSTALLATION: STARTED **12/10/20** COMPLETED: **12/10/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224109.1** *EASTING (ft): **2685491.7**
*GROUND ELEV (ft): **31.0** *TOC ELEV (ft): **30.65**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **100**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **95**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hoblitzall** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
63–65		MH	MH; Weak red, fat CLAY with some fine sand and trace mica (wet)			1.05	10 15 14 12	1.1	65	
67–69		SP-SC	SP-SC; Weak red, medium to coarse SAND with CLAY and trace rounded gravel			1.3	16 15 16 20	0.9		
70									70	Bentonite Seal
73–75		CL	CL; Dark reddish gray CLAY with trace fine sand (loose)			1.8	14 22 13 25	0.0 0.3	75	Sand Pack
		SP	SP; Reddish gray, coarse to medum SAND with some subrounded gravel (moist to wet, very faint degraded petroleum odor)							
78–84		SPG	SPG; Coarse congolmerate GRAVEL with greenish gray and reddish gray SAND (moist)		BT-11B-S-78-20201208	1.4	48 38 42 26	0.0	80	
		SPG	SPG; SAME (wet)				28 46 32 50	0.0		
		SP	SP; Light gray, fine to medium SAND, trace to no silt, little coarse to very coarse (micaceous) (trace little quartz) (interbedded with lignite) and silty clay laminated) (sand saturated) (no to some dry and friable)			1.9	17 22 20 26	0.0	85	2" PVC 0.020" Screen
88–89		GW	GW; Greenish gray, very coarse SAND and fine GRAVEL, some coarse to medium gravel, trace to no silt (slightly micaceous) (saturated) (heterogeneous gravel, red sandstone, gray			1.6	17 22 24 20	0.3		

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 4 OF 4 **BT-11B/S-454**

Stantec

DRILLING: STARTED **12/3/20** COMPLETED: **12/10/20**
INSTALLATION: STARTED **12/10/20** COMPLETED: **12/10/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224109.1** *EASTING (ft): **2685491.7**
*GROUND ELEV (ft): **31.0** *TOC ELEV (ft): **30.65**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **100**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **95**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hoblitzall** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
			sandstone, quartz)							
93–95		GW	GW; SAME (saturated) color reddish gray multicolored gravels, shale gravel layer at 94' bgs			1.7	17 50 45 45	0.5	95	Tremmie Grout
98–100			WEATHERED BEDROCK (white to black gneiss) (moist)			0.8	50 90/2"	0.0	100	
			End of boring at 100'							

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-13/S-459**
PAGE 1 OF 3

Stantec

DRILLING: STARTED **1/4/21** COMPLETED: **1/6/21**
INSTALLATION: STARTED **1/6/21** COMPLETED: **1/6/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224128.2** *EASTING (ft): **2685957**
*GROUND ELEV (ft): **27.1** *TOC ELEV (ft): **26.58**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **77**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **69**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Air Knife (no recovery)							
5		SC	SC; Brown to dark gray clayey SAND (wet, strong petroleum odor) (staining, sheen)		BT-13-S-5-20210104	1.4	2 2 5 6	10.6	5	
7		SC	SC; SAME dark gray fine sand (moist, strong petroleum odor)			1.2	5 6 5 6	8.6		
9		SC	SC; SAME brown to white to red muddy sand and gravel (rounded quartz) (moist, strong petroleum odor) claystone and feldspar gravel			1.3	5 6 7 6	12.6	10	
11		SC	SC; SAME (introducton of gray clay rip up clasts) sand coarsening downward (dry to moist, strong petroluem odor)			1.3	8 10 10 10	112		
13		SC	SC; SAME (white, brown, red, well graded sand with little quartz gravel) (brownish yellow fines 13.8-13.9' bgs) (moist, petroleum odor)			1.0	14 12 13 15	9.6		
15		SP	SP; Dark grayish brown, fine SAND (fine sand, micaceous muskovite) (moist, strong petroleum odor)			1.0	5 6 7 7	223	15	
17		SP	SP; SAME some quartz gravel (moist, petroleum odor)			1.5	8 12 13 12	17.1		
19		SP	SP; SAME (olive to dark gray) (dry to moist, strong petroleum odor)				10			
20		SPG				1.0	11 15 11	120	20	2" PVC Casing
		SC	SPG; Brown, gravelly fine SAND, little silt (dry to moist, petroleum odor)							
21		SC	SC; Reddish brown, fine clayey SAND (dry, petroleum odor)				9 11 15 15			
22			SC; SAME (reddish brown, clayey fine sand, silty with depth) (micaceous) (dry, petroleum odor)		BT-13-S-22-20210104	0.8		37.3		
23		SC					10 11 11 12			
24			SC; SAME (sand lenses, gravel in shoe) (moist, strong petroluem odor)			1.5		1263		
25		SC	SC; SAME (moist, strong petroleum odor)				9 11 14 21		25	
26		SW-SM	SW-SM; White, brown, yellowish brown SAND with SILT (feldspar gravels) (moist, strong petroleum odor)			1.9		285		
27		SW-SM					26 27 28 28			Portland Cement Grout
28			SW-SM; SAME (well graded sand and gravel) (wet, very strong petroleum odor) (sheen)			1.1		704		
29		SW-SM	SW-SM; SAME (wet, strond petroleum odor) (sheen)				24 27			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-13/S-459**
PAGE 2 OF 3

Stantec

DRILLING: STARTED **1/4/21** COMPLETED: **1/6/21**
INSTALLATION: STARTED **1/6/21** COMPLETED: **1/6/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224128.2** *EASTING (ft): **2685957**
*GROUND ELEV (ft): **27.1** *TOC ELEV (ft): **26.58**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **77**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **69**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
		SW-SM	(continued) SAME (wet, strond petroleum odor) (sheen)		1026	1.5	28 28	277		
31		SW-SM	SW-SM; SAME (gray, white, brownish yellow sand with silt) (tight, dense) (dry to moist, very strong petroleum odor) (sheen)			0.5	18 29 27 34	429		
33		SW-SM	SW-SM; SAME (gray, red, white sandy quartz gravel) (wet to saturated) (staining, sheen)			1.0	10 13 11 13	2.7		
35		SW-SM	SW-SM; SAME (wet, degraded petroleum odor) (sheen)				11 7		35	Portland Cement Grout
36		SC	SC; Yellowish brown to gray, fine clayey SAND (foliated) (moist, very slight degraded petroleum odor)			1.6	7 8	7.6		
37		SC	SC; Gray to pale brown, fine sandy CLAY (low plasticity, low density) (moist to wet, no impacts)			2.0	1 1 3 7	0.0		
39		SP	SP; Dark gray, fine SAND, little to trace clay (micaceous) (moist, very slight degraded petroleum odor)				5 6			
40		SP	SP; Gray to red, fine SAND, trace silt (saturated, no impacts)		BT-13-S-40-20210105	1.6	6 8	0.0	40	
41		SC	SC; Red, fine sandy CLAY (micaceous) (moist, no impacts)				2 2			
42						1.3	6 3	0.0		
43		SC	SC; Brownish yellow to reddish brown, fine clayey SAND (micaceous) (wet, no impacts)				2 3			
44						1.3	3 5	0.0		
45		SC	SC; SAME (moist, no impacts)				2 3		45	
46						2.0	2 2	0.0		
47		CL	CL; Red CLAY with little to trace fine sand (micaceous) (low plasticty) (moist, no impacts)				4			
48		CL	CL; SAME (moist, no impacts)			2.0	2 2 4	0.0		
49		CL	CL; SAME (trace to no sand) (moist, no impacts)				5 5			
50						2.0	5 5	0.0	50	
51		CL	CL; SAME (trace micas) (wet to moist, no impacts)				2 5			
52						2.0	6 8	0.0		
53		CL	CL; SAME (moist to saturated, no impacts)				2 3			
54						1.5	3 3	0.0		
55		CL	CL; SAME (moist to saturated, no impacts)				5 7		55	
56						2.0	9 11	0.0		Bentonite Seal
57		SP	SP; Red, muddy, fine to medium SAND (clay lens) (saturated, no impacts)				5			
58		SP	SP; Red, fine SAND (quartz) with little gravel, trace fines, clay lens (moist to saturated, little to no odor) (very slightly musky)			1.1	6 7 11	0.5		Sand Pack
59		SP	SP; SAME (red, fine sand with trace quartz gravel and clay) (staurated, no impacts)				9 11			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 3 OF 3 **BT-13/S-459**

Stantec

DRILLING: STARTED **1/4/21** COMPLETED: **1/6/21**
INSTALLATION: STARTED **1/6/21** COMPLETED: **1/6/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224128.2** *EASTING (ft): **2685957**
*GROUND ELEV (ft): **27.1** *TOC ELEV (ft): **26.58**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **77**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **69**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
61		SP	(continued) SAME (red, fine sand with trace quartz gravel and clay) (staurated, no impacts)		2.0 BT-13-S-60-20210106	1.1	14 13	0.1
		SC	SC; Red sandy CLAY (dry, no impacts)				12	
62		SP	SP; Red fine SAND with trace clay (moist to saturated, no impacts)			0.8	11 8 6	0.0
63		SP	SP; SAME (moist to saturated, no impacts)				4	
64						1.4	4 12	0.0
65		SP	SP; Red, fine SAND with some small gravel, trace to little fines (moist, no impacts)				13 4	
66						2.0	4 11	0.0
67		SW	SW; Red, gray, yellow SAND (well graded sand and gravel) (quartz)				13 5	
68						0.7	11 13	0.0
69		SP	SP; Red, fine SAND and quartz gravel fragments (saturated, no impacts)				28 23	
70						0.5	8 14	0.0
71		SP	SP; Red to gray, fine SAND with some to little gravel (micaceous) (oxidation at 71'-71.5') (moist to saturated, no impacts)				16 10	
72						1.0	9 10	0.0
73		SP	SP; SAME (dark gray possible organics) (saturated, no impacts)				10 10	
74						0.3	10 16	0.0
75		SPG	SPG; Well graded SAND and quartz GRAVEL, red clay lens, red claystone, white sand in shoe (moist, no impacts)				28 23	
76						0.8		
77			End of boring at 77'					
78								
79								
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								

Depth (feet)	Well Construction
65	2" PVC 0.020" Screen
70	Tremmie Grout
75	
80	
85	

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-14/S-460**
PAGE 1 OF 3

Stantec

DRILLING: STARTED **1/7/21** COMPLETED: **1/12/21**
INSTALLATION: STARTED **1/12/21** COMPLETED: **1/12/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224322.8** *EASTING (ft): **2685650**
*GROUND ELEV (ft): **29.6** *TOC ELEV (ft): **29.35**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **75**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **73**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **J. Kachel** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0–4			Air Knife (no recovery)							
5–6		ML	ML; Gray SILT to fine SAND, little gravel (dry, no odor)			1.0	WOH WOH	0.2	5	
7–8		ML	ML; SAME with trace CLAY (moist, slight petroleum odor)			0.5	1 1 1 1	6.0		
9–10		SPG	SPG; White to gray to ??? SAND and GRAVEL (friable shale fragments) may be sewer trench backfill			1.0	2 1 1 1	7.3	10	
11–12		SPG / SP	SPG; WOOD fragments (slight to medium petroleum odor) top 0.2' SAME SP; Gray fine SAND, little silt (moist, moderate petroleum odor) mottled reddish clay in shoe			1.7	4 4 1 3	30		
13–14		SP	SP; SAME orangish brown and gray, stiff CLAY, rounded 1" coarse gravel at bottom (moist)			1.2	3 3 4 8	1.1		
15–16		SPG	SPG; Multicolored SAND and GRAVEL (stiff) red, gray, green, brown, rounded quartz GRAVELS (moist)			0.7	14 9 8 8	1.2	15	
17–18		SPG	SPG; SAME stiff (strong petroleum odor)			1.2	14 16 27 27	60		
19–20		SPG	SPG; SAME			1.3	22 35 29 21	125	20	2" PVC Casing
21–22		SPG / GP	SPG; SAME reddish gray and yellowish brown, little sand, trace fines, coarser with very coarse, rounded gravels GP; Medium to fine GRAVEL, trace fines, broken quartz, cobble at bottom (no odor)			2.0	16 23 29 32	2.2		
23–24		GP / CL	GP; SAME dark gray (strong petroleum odor) CL; Reddish brown, stiff CLAY to 24.5' bgs then softer, trace gravel (moderate plasticity) (moist)			1.4	11 12 12 11	250 1.1		
25–26		GP	GP; Dark gray medium to fine GRAVEL, trace fines, broken quartz, cobble at bottom (wet, no odor)		BT-14-S-25-20210107	1.0	9 18 22 19	1050	25	
27–28		GP	GP; SAME multicolored fine to medium GRAVEL, stiff (top wet, bottom moist)			1.1	14 32 44 33	12		Portland Cement Grout
29		GP	GP; SAME				16 21			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-14/S-460**
PAGE 2 OF 3

Stantec

DRILLING: STARTED **1/7/21** COMPLETED: **1/12/21**
INSTALLATION: STARTED **1/12/21** COMPLETED: **1/12/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224322.8** *EASTING (ft): **2685650**
*GROUND ELEV (ft): **29.6** *TOC ELEV (ft): **29.35**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **75**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **73**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **J. Kachel** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
		GP	(continued) SAME		85		26 28	37
31		GP	GP; SAME trace fines (moist, moderate odor)				15 24	
32						1.1	39 38	250
33		GP	GP; SAME tight, some silt, little clay (moist, moderate odor)				18 28	
34						1.0	43 42	450
35		GP	GP; SAME (moderate petroleum odor) (sheen)		BT-14 S-34-20210107		21 35	
36						1.3	25 18	80
37		SP	SP; Brown, fine SAND, some clay				27	
38		GP	GP; Multicolored, fine to medium GRAVEL, stiff (top moist, moderate petroleum odor)			0.5	32 27 16	5
39		CL	CL; Orangish brown and light gray laminated CLAY				5	0.1
40		MH	MH; Dark gray, clayey SILT (slightly plastic) (moderate petroleum odor) 40.1-40.2' bgs 0.1' light gray, fine sand lens, clean sand			2.0	6 8 8	2.2
41		MH	MH; SAME				7	
42		SP	SP; Gray fine SAND, trace silt (wet)			1.1	8 7 8	0.0
43		SP	SP; SAME gray grading to red				4	10
44		CL	CL; Dark red CLAY some mica, trace silt (moderate plastic) (moist)			1.5	3 3 6	0.0
45								
46								
47		CL	CL; Dark red CLAY, some mica (medium plastic) (moist)				4 4	
48						0.9	3	2.5
49		CL	CL; SAME (very faint odor)				4 3	
50						1.6	3 3 5	0.6
51		CL	CL; SAME (no odor)				2	
52						1.0	3 3 5	0.6
53		CL	CL; SAME some mica (wet, faint odor)				2 1	
54						1.5	2 2	0.7
55		CH	CH; SAME and some fine sand (high plasticity) (moist to saturated)				2 5	
56						0.9	4 7	2.3
57			No Recovery				6	
58						0.0	8 10 12	N/A
59		SP	SP; Reddish brown, fine to medium SAND with some clay layers and mica (no odor)				7 7	

Depth (feet)	Well Construction
35	Portland Cement Grout
40	
45	
50	
55	Bentonite Seal
	Sand Pack

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 3 OF 3 **BT-14/S-460**

Stantec

DRILLING: STARTED **1/7/21** COMPLETED: **1/12/21**
INSTALLATION: STARTED **1/12/21** COMPLETED: **1/12/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224322.8** *EASTING (ft): **2685650**
*GROUND ELEV (ft): **29.6** *TOC ELEV (ft): **29.35**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **75**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **73**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **J. Kachel** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
61		SP	(continued) Reddish brown, fine to medium SAND with some clay layers and mica (no odor)		0.0 BT-14-S-60-20210111	1.4	8 7	0.2		
62		SP	SP; Reddish brown, fine to medium SAND with mica and trace silt/clay (moist, no odor)			1.3	8 10 12 13	0.0		
63		SP	SP; SAME little silt (loose) (saturated to wet)				3			
64						1.3	1 1	0.0		
65		SP	SP; Reddish brown, medium SAND with some mica and pebbles (rounded to subrounded) (no odor)		BT-14-S-65-20210210		2 8		65	2" PVC 0.020" Screen
66						1.3	9 9	0.0		
67		SPG	SPG; Reddish brown, coarse SAND and GRAVEL (gray mudstone, sandstone, quarts) (very slight odor)				8 21			
68						0.55	21 16	0.0		
69		SM	SM; Reddish brown, medium silty SAND with some mica nad pebbles (rounded and subrounded) (wet, slight petroleum odor)				13 14	0.7		
70		SP	SP; Light gray coarse SAND with little to no silt, trace mica (wet to saturated, no odor)			1.3	13 9	0.0	70	
71		SP	SP; SAME tight, coarse SAND (wet to saturated)				15 12			
72						0.8	14 17	0.1		
73		SP	SP; SAME (saturated to wet)				19 8	0.0		
74		PT	PT; Brown PEAT with ~1" thick medium to coarse SAND layers between			1.1	8 13	0.0		Tremmie Grout
75		SP	SP; Light gray, coarse SAND with little to no silt (saturated)				15	0.0	75	
76			End of boring at 75'							
77										
78										
79										
80									80	
81										
82										
83										
84										
85									85	
86										
87										
88										
89										

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-17A/S-462**
PAGE 1 OF 4

Stantec

DRILLING: STARTED **1/13/21** COMPLETED: **1/19/21**
INSTALLATION: STARTED **1/19/21** COMPLETED: **1/19/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224310** *EASTING (ft): **2685957.3**
*GROUND ELEV (ft): **27.2** *TOC ELEV (ft): **26.93**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **91**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **88**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Air Knife (no recovery)							
5		SC	SC; Brown and gray, foliated clayey SAND (moist, degraded petroleum odor) brick and wood at 5' bgs			2.0	5 6 6 8	0.0	5	
7		SC	SC; SAME (moist, degraded petroleum odor)			2.0	9 12 15 14	32		
9		SC	SC; SAME (color transition to reddish brown (quartz gravel in shoe) (moist, strong petroleum odor) (sheen)			2.0	2 3 5 6	89	10	
11		SC	SC; SAME (moist, petroleum odor)				4			
12		SW	SW; White, pale red, brown SAND (well graded sand and gravel quartz) tight (dry, petroleum odor)			1.1	9 10 13	47		
13		SW	SW; SAME (color tansistions to yellowish brown at 13.4' bgs) (dry to moist, strong petroleum odor)		BT-17A-S-13-20210113	0.9	17 19 21 17	1056		
15		SM	SM; Brown to brownish yellow silty SAND, trace fine gravel (dry to moist, strong petroleum odor)			1.8	18 16 23 11	350.8	15	
17		SM	SM; Yellowish brown silty SAND and GRAVEL (siltstone fragments) (dry, strong petroleum odor)			0.5	8 11 14 17	270		
19		SP	SP; Brown to yellowish brown, fine SAND, trace little gravel and fines (moist, strong petroleum odor)			0.8	7 7 12 13	2299	20	2" PVC Casing
21		SP	SP; Reddish brown, fine SAND, trace gray silty clay clasts (moist, strong petroleum odor)			1.0	12 14 16 15	3311		
23		SP	SP; Reddish brown, fine SAND with little gravel and claystone (quartz gravel) gravel content increases downward (moist, strong petroleum odor)			1.7	32 31 33 47	2588		
25		SW-SM	SW-SM; Tight brown and red SAND and SILT (silty sand, fine rounded gravel) (quartz, mudstone)			0.7	33 47 47 49	93.6	25	
27		SW-SM	SW-SM; SAME (silty sand and gravel) (subangular to angular) (moist, petroleum odor)			1.0	13 13 17 19	85		
29		SP	SP; Dark brown to dark gray, fine SAND some gravel (round) and olive silty clay rip up class,				10 13			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-17A/S-462**
PAGE 2 OF 4

DRILLING: STARTED **1/13/21** COMPLETED: **1/19/21**
INSTALLATION: STARTED **1/19/21** COMPLETED: **1/19/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224310** *EASTING (ft): **2685957.3**
*GROUND ELEV (ft): **27.2** *TOC ELEV (ft): **26.93**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **91**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **88**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
		SP	little fines in matrix (moist to wet, degraded petroleum odor)		6.4	1.2	14 16	4.6		
31		SPG	SPG; Dark gray and red muddy SAND and GRAVEL (rounded to subrounded) clay clasts (moist to wet, slight degraded petroleum odor)				27			
32						1.1	23 27 24	0.5		
33		SP	SP; Tight yellow, olive, brown and dark gray, very fine SAND some gravel (increasing with depth) (moist to wet, slight degraded petroleum odor)				13			
34						0.8	14 15 16	4.6		
35		SPG	SPG; Dark gray SAND and GRAVEL (quartz) (subrounded to angular) (wet, slight degraded petroleum odor)						35	
36						0.4	32 50/2	7.1		
37		CL	CL; Light brownish gray to brownish yellow CLAY (low plasticity) (dry to moist, no impacts)				3			Portland Cement Grout
38						2.0	3 7	0.0		
39		CLS	CLS; Dark gray, fine sandy CLAY (muskovite, micaceous) (dry to moist)				13			
		SP	SP; Dark gray, very fine SAND (micaceous) (saturated)				3			
40						0.9	3 2 4	0.0	40	
41		SP	SP; SAME (color transition to dark reddish gray) (moist, no impacts)		BT-17A-W-41-20210114		3			
42						1.0	3 6 13	0.0		
43		CL	CL; Reddish brown CLAY (low plasticity) (micaceous) (moist, no petroleum odor to musky)		BT-17A-S-43-20210114		1			
44						2.0	3 5 7	10		
45		CL	CL; Reddish brown CLAY, trace fine sand (micaceous) (dry, no impacts)				7		45	
46						2.0	6 5 6	10		
47		CL	CL; SAME (dry, no impacts)				7			
48						1.5	8 11 14	97		
49		CL	CL; SAME reddish brown clay, trace fines and with mica (dry to moist, no odor or impacts)				3			
50						2.0	4 5 6	1.8	50	
51										
52										
53										
54		CL	CL; SAME							
55						2.0	3 5 5 8	0.6	55	
56										
57										
58										
59		CL	CL; SAME (moist)				4 5			

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-17A/S-462**
PAGE 3 OF 4

DRILLING: STARTED **1/13/21** COMPLETED: **1/19/21**
INSTALLATION: STARTED **1/19/21** COMPLETED: **1/19/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224310** *EASTING (ft): **2685957.3**
*GROUND ELEV (ft): **27.2** *TOC ELEV (ft): **26.93**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **91**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **88**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
		CL	(continued) SAME (moist)		8.7	0.4	5 4	5.2		
61										
62										
63										
64		SP	SP; Reddish brown, fine to medium SAND with some clay and mica (moist)							
65									65	
66						0.5	7 8 8 11	3.6		
67										
68										
69		SP	SP; SAME (wet)							
70									70	
71						1.3	8 7 9 13	1.1		
72										
73										
74		SPG	SPG; Gray, fine to medium SAND with fine to medium gravel (wet to saturated)		BT-17A-W-74-20210119			1.5		
75									75	Bentonite Seal
76					BT-17A-S-76-20210115	1.0	14 16 23 15	0.5		
77										Sand Pack
78										
79		SP	SP; Tight gray, very fine SAND (micaceous) dark brown peat layers at 79.5' and 80.5' bgs (moist, no impacts)		BT-17A-S-79-20210119					
80						1.6	5 14 16 21	0.4	80	
81										
82										
83										2" PVC 0.020" Screen
84		SPG	SPG; Brown, very fine SAND and fine to medium GRAVEL, light gray and gray weathered gneiss							
85									85	
86						0.7	32 39 50/2	4.1		
87										
88										Tremmie Grout
89		CL	CL; Very dark gray CLAY (dense, tight) sand and gravel lenses at 89.8', 90.4' 90.9' bgs (dry,				5 6			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 4 OF 4 **BT-17A/S-462**

Stantec

DRILLING: STARTED **1/13/21** COMPLETED: **1/19/21**
INSTALLATION: STARTED **1/19/21** COMPLETED: **1/19/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224310** *EASTING (ft): **2685957.3**
*GROUND ELEV (ft): **27.2** *TOC ELEV (ft): **26.93**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **91**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **88**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
		CL	no impacts)		1.2	1.9	7 11	0.1		
91			End of boring at 91'							
92										
93										
94										
95									95	
96										
97										
98										
99										
100									100	
101										
102										
103										
104										
105									105	
106										
107										
108										
109										
110									110	
111										
112										
113										
114										
115									115	
116										
117										
118										
119										

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-17B/S-461**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **1/12/21** COMPLETED: **1/13/21**
INSTALLATION: STARTED **1/13/21** COMPLETED: **1/13/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224287.9** *EASTING (ft): **2686060**
*GROUND ELEV (ft): **27.3** *TOC ELEV (ft): **26.90**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **47**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **44**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hoblitzall** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			Air Knife (no recovery)							
5–6		SP	SP; Light gray, fine SAND with some silt and trace mica (moist, petroleum odor)		BT-17B-S-15-20210112	1.05	3 2 2 2	261	5	
7–8		SPG	SPG; Brown with olive, brick red stains, coarse gravelly SAND, sandstone (petroleum odor)			1.1	4 8 8 10	343		Portland Cement Grout
9–10		SPG	SPG; SAME (dry to moist, odor)			1.25	8 9 10 10	513	10	2" PVC Casing
11–12		SPG	SPG; SAME (dry, odor)			1.75	10 11 10 10	720		
13–14		SPG	SPG; SAME white sandstone (dry, odor)			1.0	5 6 5 7	1174		
15–16		SPG	SPG; SAME brown gravelly sand (dry to moist, odor)			1.7	5 7 7 10	681	15	
17–18		SPG	SPG; SAME fine to silty sand with gravel (olive, brick red) sandstone/mudstone (moist, petroleum odor)				5 5 11 20	559		Bentonite Seal
19–20		SPG	SPG; SAME tight (weathered rock, brick red mudstone at bottom 2")			1.1	9 18 16 24	36.5	20	Sand Pack
21		SPG	SPG; SAME olive, dark brown stone				19	674		
22		ML	ML; Brown SILT with little clay and trace fine sand, tight (dry)			0.55	18 17 24	79		
23–24		ML	ML; Light brown SILT with some clay, trace fine sand and mica (wet, faint degraded petroleum odor)			0.6	6 4 6 4	1.4		
25–26		ML	ML; Light brown, olive, brick red gravel (mudstone, sandstone) (little to no odor)			1.4	22 23 42 40	70.4 12.0	25	
27–28		ML	ML; SAME tight, light brown, fine to coarse SAND, multicolored, fine to medium gravel			0.9	33 36 42 50	10.2		
29		ML	ML; SAME, coarse gravel (moist, slight odor)				6 4			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-17B/S-461**

Stantec

DRILLING: STARTED **1/12/21** COMPLETED: **1/13/21**
INSTALLATION: STARTED **1/13/21** COMPLETED: **1/13/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224287.9** *EASTING (ft): **2686060**
*GROUND ELEV (ft): **27.3** *TOC ELEV (ft): **26.90**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **47**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **44**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hoblitzall** CHECKED BY: **D. Hopkins**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
		ML	(continued) SAME, coarse gravel (moist, slight odor)		19.5	0.9	6 32	33.7		
31		GWS	GWS; Compact red, white and dark gray sandy GRAVEL, white fine sand, foliated claystone fragments (moist, slight odor)			0.8	23 24 26 26	5.6		2" PVC 0.020" Screen
33		SW	SW; Brown, red SAND (fine sand, fine to medium gravel) (moist, very slight petroleum odor)			1.1	12 14 17 20	0.0		
35		SP	SP; Dark brown fine SAND (sorting decreasing with depth, coarsening with depth) (sand gravel) (moist, very slight odor)			1.1	12 14 17 20	0.9	35	
37		SW-SM	SW-SM; Brown to dark gray SAND with SILT (well graded gravel and sand, some fines) (moist, slight odor)			1.2	12 8 9 11	1.3		
38		SP	SP; Brown and olive, foliated, fine SAND, little fines (moist, odor)							
39		CL	CL; Brown and gray CLAY, very fine sand (fining downward) to very fine sandy CLAY (gray and pale brown) (low plasticity) (moist, no odor)			2.0	3 2 2 2	1.5	40	
41		CLS	CLS; Gray to brown, very fine sandy CLAY (coarsening to dark gray clayey, very fine sand) (micaceous) (moist, slight sulfur odor)			1.7	3 3 4 11	0.2		
43		SP	SP; Brick red to brown, fine SAND, little fines (micaceous) (moist)		BT-17B-W-43-20210210					
44		CL	CL; Red to brown, very fine sandy CLAY (tight) (dry, no odor)			1.4	5 6 5 4	0.0		
45		CL	CL; Red to brown CLAY (light to low plasticity) trace to little very fine sand (dry, no odor)		BT-17B-S-45-20210113				45	Tremmie Grout
46						1.2	3 3 6 8	0.0		
47			End of boring at 47'							
50									50	
55									55	

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 1 OF 2 **BT-18A/S-463**

Stantec

DRILLING: STARTED **1/20/21** COMPLETED: **1/22/21**
INSTALLATION: STARTED **1/22/21** COMPLETED: **1/22/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224426.2** *EASTING (ft): **2685867.4**
*GROUND ELEV (ft): **31.9** *TOC ELEV (ft): **31.53**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **53**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **42**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Air Knife (no recovery)							
5			FILL (little sand and gravel with wood fragments) (wet to saturated, petroleum odor)			0.7	1 1 2 3	36.3	5	
7			SAME (low recovery) (wet, slight petroleum odor)			0.2	1 1 1 1	9.6		Portland Cement Grout
9		SM	SM; Gray and brown, fine silty SAND with some gravel (wet, petroleum odor) (staining)				WOH			
10		SC	SC; Yellowish brown and gray, fine clayey SAND (moist, petroleum odor) (staining)		BT-18A-S-10-20210120	2.0	1 1 1	2100	10	2" PVC Casing
11		CL	CL; Very dark gray to gray CLAY to fine sandy CLAY, yellowish brown fine sand lenses (dry, petroleum odor)			2.0	1 3 3 3	101		
13		CL	CL; SAME (moist, petroleum odor)			2.0	1 3 8 6	1400		
15		SPG	SPG; Grayish brown, fine SAND with some gravel, trace clay (dry, petroleum odor)				5		15	
		SP	SP; Grayish brown, fine SAND, trace clay (wet, petroleum odor)			1.2	2 3 4	80		
17		CL	CL; Red and gray CLAY with trace fine sand (dry, slight petroleum odor)				10			Bentonite Seal
18		CL	CL; SAME (red and gray clay, little fine sand) (moist, slight petroleum odor) gravel in shoe			0.5	10 12 15	536		
19		SPG	SPG; Brown to brownish gray, medium to fine SAND and GRAVEL (moist, petroleum odor) cobble in shoe			0.8	13 12 12 20	155	20	Sand Pack
21		SPG	SPG; Brown to dark brown, fine silty SAND with some gravel (rounded) (dry to moist, strong petroleum odor)			1.0	14 16 20 26	3566		
23		SPG	SPG; Brown to dark brown, muddy SAND and GRAVEL (rounded) (moist, strong petroleum odor)			0.7	21 20 18 16	1212		
25		SPG	SPG; Brown and dark gray, muddy SAND and GRAVEL (red and white sands) sandstone fragments (mosit, strong petroleum odor)			0.6	18 33 57 37	1569	25	
27		SPG	SPG; Very dark gray, yellowish brown, red, muddy SAND and GRAVEL (moist, strong petroleum odor)		BT-18A-S-26-20210121	0.7	17 20 20 27	357		
29		SPG	SPG; SAME brown, yellowish brown, reddish brown, muddy sand and gravel, trace clay				10 28			

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-18A/S-463**

Stantec

DRILLING: STARTED **1/20/21** COMPLETED: **1/22/21**
INSTALLATION: STARTED **1/22/21** COMPLETED: **1/22/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224426.2** *EASTING (ft): **2685867.4**
*GROUND ELEV (ft): **31.9** *TOC ELEV (ft): **31.53**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **53**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **42**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		SPG	(moist, strong petroleum odor)		2539	1.2	28 18	3064	35	2" PVC 0.020" Screen
32		SPG	SPG; SAME color transitions to dark gary (moist, strong petroleum odor)			0.8	17 27 29 34	563		
33		SPG	SPG; Dark gray SAND and GRAVEL, red claystone fragmetns (moist, petroleum odor)			0.6	19 21 22 21	102		
35		SPG	SPG; Dark gray SAND and some gravel (well sorted) (saturated, degraded petroleum odor) (sheen)			0.8	7 10 11 14	29.6		
37		SPG	SPG; Dark gray to pale brown, fine to medium SAND with some gravel, nodule of red, dense, fine sand (saturated, degraded petroleum odor)		BT-18A-W-38-20210121	1.1	11 12 14 13	8.7		
39		SPG	SPG; Dark gray clayey SAND and GRAVEL (moist, degraded petroleum odor)			0.5	10 12 15 12	253	40	
41		SP-SC	SP-SC; Dark gray, muddy SAND and CLAY (transition to yellowish brown)		BT-18A-W-41-20210210	2.0	7 9 12 11	18.1		
42		SP	SP; Reddish brown, very fine SAND (saturated, very slight degraded petroleum odor)							
43		CL	CL; Yellow to brownish yellow CLAY with trace fine sand (dry, no impacts)			2.0	2 2 4 3	3.9		
44		CL	CL; Pale to dark gray and brownish yellow laminated CLAY with trace to little fine sand, some brownish yellow very fine sand (low plasticity) (moist to wet, no impacts)							
45		CL	CL; Brownish yellow to yellow CLAY, trace very fine sand sequence (very fine sand 45.3-45.8' bgs) (saturated, no impacts)			2.0	3 6 7 11	0.0	45	
46		CL	CL; Dark grayish brown (reddish tint) CLAY, trace very fine silt and very fine sand sequence (dry to moist, no impacts)			1.0	6 7 9 14	0.0		Tremmie Grout
47		SP	SP; Reddish brown, very fine SAND, trace clay (clay in shoe) (micaceous) (moist, no impacts)		BT-18A-S-49-20210122					
48		CL	CL; Reddish brown CLAY, trace very fine sand, peat layers (moist, no impacts)			2.0	3 3 4 4	0.5	50	
49		CL	CL; SAME (moist to saturated, no impacts)				5 5 5 5	0.1		
50			End of boring at 53'							
51										
52										
53									55	
54										
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58										
59										

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-18B/S-464**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **1/26/21** COMPLETED: **1/27/21**
INSTALLATION: STARTED **1/27/21** COMPLETED: **1/27/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224416.9** *EASTING (ft): **2685951.1**
*GROUND ELEV (ft): **32.0** *TOC ELEV (ft): **31.63**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **51**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **42**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			Air Knife (no recovery)							
5–6		CL	CL; Dark gray, fine sandy CLAY, little silt, wood fragments at 6.0-6.2' bgs (FILL) (moist, strong petroleum odor)			1.2	2 2 2 2	913.8	5	
7–8		SC	SC; Dark gray to pale brown/gray clayey SAND and GRAVEL, soem wood fragments (moist to wet, strong petroleum odor)			0.7	2 2 2 2	817		Portland Cement Grout
9–10		SC	SC; Dark gray, fine sandy CLAY, medium sand (moist, curde very strong petroleum odor) (dark staining)			0.8	2 1 2 4	3477	10	2" PVC Casing
11–12		SC	SC; Dark gray to gray to pale grayish brown, fine sandy CLAY transitions to clayey sand (micaceous) fall back at top of spoon) (very strong petroleum odor) (dark product stain (crude))		BT-18B-S-11-20210126	1.3	2 3 7 7	3211		
13		SP	SP; Brown, fine SAND (micaceous) (moist, petroleum odor)							
14		CL	CL; Yellow, reddish brown, light gray laminated CLAY (low plasticity)			1.2	5 3 3 5	127		
15		CL	CL; Trace fine sand (dry, petroleum odor)						15	
16		SPG	CL; SAME pale gray and yellowish brown CLAY, trace sand (dry)			1.6		4222		
17		SP	SPG; Red, brown, white, olive fine to medium SAND and GRAVEL (quartz) and claystone (dry, strong petroluem odor)							Bentonite Seal
18		GPS	SP; Reddish brown, fine SAND (micaceous) sandy clay lenses (dry to moist, petroleum odor)			1.6		424		
19		SP	GPS; Olive, reddish brown and white sandy GRAVEL (dry, petroleum odor)							Sand Pack
20		SPG	SP; Brown to pale brown, fine SAND (micaceous)			1.1	10 12 12 13	6544	20	
21		SP	SPG; Red, olive, white, brown, yellowish brown SAND with some gravel, trace pale gray clay rip up clasts (dry to moist, strong petroleum odor)				13 17 15 17			
22						0.7		6712		
23		SPG	SP; Yellowish brown fine SAND, trace clay, red claystone fragments at 21.6' bgs (dry to moist, strong petroleum odor)				4 5 9 8			
24			SPG; Yellowish brown, well graded SAND and GRAVEL (moist, strong petroleum odor)			0.5		6612		
25		SW-SC	SW-SC; Brown to reddish brown SAND with CLAY (well graded, compact sand and gravel, some clay) (moist, strong petroleum odor)				7 10 11 10		25	
26						1.0		6911		
27		SW-SC	SW-SC; SAME (moist, strong petroleum odor)		BT-18B-S-26-20210126					
28						0.7		1221		
29		SW-SC	SW-SC; Yellowish brown to dark gray SAND with CLAY, compact (well graded sand and				38 45			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-18B/S-464**

Stantec

DRILLING: STARTED **1/26/21** COMPLETED: **1/27/21**
INSTALLATION: STARTED **1/27/21** COMPLETED: **1/27/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224416.9** *EASTING (ft): **2685951.1**
*GROUND ELEV (ft): **32.0** *TOC ELEV (ft): **31.63**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **51**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **42**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		SW-SC	gravel) (round quartz and claystone) little clay (moist to wet, strong petroleum odor)		N/A	1.1	46 47	492		
32		SW-SC	SW-SC; SAME (compact) (moist, petroleum odor)			1.7	46 56 71 79	59.7		2" PVC 0.020" Screen
33		SW	SW; Dark gray SAND (well graded sand and gravel) (compact) (moist, degraded petroleum odor)			1.1	18 40 63 86	9.9		
35		SP	SP; Dark gray, fine SAND with some gravel (quartz, feldspar rounded) (wet, degraded petroleum odor)			1.3	20 40 18 23	4.2	35	
37		SP	SP; Dark gray, fine SAND with some fine gravel (rounded quartz) (wet to saturated, degraded petroleum odor)			1.1	15 16 15 16	197		
39		SW-SC	SW-SC; Dark gray SAND with CLAY (sand and fine gravel) trace fines, claystone (wet to saturated, petroleum odor)		BT-18B-W-38-20210127	1.1	13 16 18 22	0.7	40	
41		SW-SC	SW-SC; SAME (moist, petroleum odor)				20			
42		CL	CL; APPARENT UPPER CLAY UNIT brownish yellow and pale brown laminated CLAY (low plasticity) trace sand (dry, no impacts)			1.4	7 7 7	0.8		
43		CL	CL; SAME (color transitions to grayish brown) (dry, no impacts)				6			
44						0.6	9 7 5	6.3		
45		SP	SP; Gray to weak red, fine SAND (micaceous) (moist, no impacts)						45	
46						1.5		0.3		Tremmie Grout
47		SP	SP; Reddish gray to weak red, fine SAND (micaceous) preserved wood fragments (saturated to wet, no impacts)				3			
48		CL	CL; Weak red CLAY (medium plasticity) (dry, no impacts)			1.4	4 5 5	0.0		
49		CH	CH; Reddish brown CLAY (medium to high plasticity) trace very fine sand (micaceous) (dry, no impacts)		BT-18B-S-49-20210127					
50						2.0		0.2	50	
51			End of boring at 51'							
52										
53										
54										
55									55	
56										
57										
58										
59										

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-19/S-458**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **12/29/20** COMPLETED: **12/30/20**
INSTALLATION: STARTED **12/30/20** COMPLETED: **12/30/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224497.9** *EASTING (ft): **2686080.2**
*GROUND ELEV (ft): **32.8** *TOC ELEV (ft): **32.31**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **53**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **40**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Air Knife (no recovery)							
5			FILL (gray and pale brown, fine clayey sand with coal, obsidian fragments) (dry, very slight degraded petroleum odor)		BT-19-S-15-20201229	1.4	2 2 3 2	15.9	5	
7			SAME (little gravel) (moist to dry, slight degraded petroleum odor) (dark staining)			0.9	2 2 3 3	9.8		Portland Cement Grout
9		ML	ML; Olive clayey SILT and wood fragments (dry, petroleum odor)			1.3	20 8 6 2	59	10	2" PVC Casing
10			FILL (dark gray clayey and and gravel with brick and asphalt fragments) (moist, petroleum odor) (dark staining)							
11		CLS	SAME (moist, degraded petroleum odor)			2.0	7 4 4 5	2.5		
12			CLS; Gray to dark gray sandy CLAY (coarsening downward to clayey sand) (foliated) (moist, degraded petroleum odor)							
13		SPG	SPG; Dark gray, well graded SAND and GRAVEL (saturated, degraded petroleum odor)			2.0	3 3 5 5	0.1		
14		SP	SP; Dark gray, fine SAND with clay lens (moist, degraded petroleum odor)							
15		CH	CH; Pale brown to brown CLAY (high plasticity) (moist, slight degraded petroleum odor)			1.3	2 2 6 12	14.2	15	
16		CLS	CLS; Brown to pale brown, fine sandy CLAY (micaceous) (dry, very slight degraded petroleum odor)							Bentonite Seal
17		SPG	CLS; Olive and dark gray clayey SAND (micaceous) (dry, slight degraded petroleum odor)			1.0	14 12 14 14	3.7		
18			SPG; Brown to dark gray to white dense SAND and GRAVEL and CLAYSTONE (dry, trace to no odor)							Sand Pack
19		SW	SW; Brown yellow SAND (sand with gravel) (moist, slight degraded petroleum odor)			1.1	7 8 10 12	36.2	20	
20			SW; SAME (with larger quartz gravels and claystone) (moist, degraded petroleum odor)							2" PVC 0.020" Screen
21		SW	SW; SAME (sorting to medium sand) (moist, slight petroleum odor)			0.9	17 20 21 21	136		
22			SW; SAME (with quartz gravel, subangular)							
23		SW	ML; Yellowish red clayey SILT with trace fine sand (micaceous) (dry to moist, very slight petroleum odor)			1.2	21 20 20 22	55		
24		ML	SW; Gray SAND (well graded sand and gravel) (moist, biodegradation odor)							
25		SW	SW; SAME (rounded to angular gravel) (dry to moist, no odor)			0.7	20 22 19 21	23	25	
26										
27		SW				1.4	6 10 16 17	0.0		
28										
29		SW					14 12			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-19/S-458**

Stantec

DRILLING: STARTED **12/29/20** COMPLETED: **12/30/20**
INSTALLATION: STARTED **12/30/20** COMPLETED: **12/30/20**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224497.9** *EASTING (ft): **2686080.2**
*GROUND ELEV (ft): **32.8** *TOC ELEV (ft): **32.31**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **53**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **40**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
31	SW	(continued) SAME (rounded to angular gravel) (dry to moist, no odor)	0	1.0	17 12	0.0
32	SW	SW; SAME (olive with claystone) (saturated, no odor)		1.3	20 22 23 20	0.0
33	SW	SW; SAME (gray to dark gray) (moist to saturated, no odor)		1.3	22 26 34 50	0.1
35	SW	SW; SAME (saturated, biodegradation odor, musky)		1.1	20 19 22 18	0.0
37	SP	SP; Dark gray and brown fine SAND with little gravel (quartz) (micaceous muscovite) (moist to wet, bio odor)		1.1	14 20 20 21	0.0
39	SW	SW; Brown to yellowish brown SAND (sand and gravel quartz) (saturated, biodegradation odor)		1.3	14 16 11 19	0.0
41	SP	SP; Brown SAND with little gravel (saturated, no odor)	BT-19- S-40-20201229/ BT-19-W-40-20201230		19	
42	CL	CL; Brownish yellow CLAY with trace fine sand (medium plasticity) (dry, no odor)		0.9	20 22 25	0.0
43	CL	CL; SAME (brownish yellow clay with little gravel and sand) (moist to saturated, no odor)		0.7	4 5 4 4	0.0
45	CL	CL; Brownish yellow and gray foliated CLAY with trace to little sand (fine sand lenses 45.8-45.9' and 46.1-46.3' bgs)		1.6	3 4 9 3	0.0
47	SP	SP; Yellowish brown to dark brown CLAY with trace sand (micaceous) (moist to no odor) reddish brown, fine sand lens at 48.2-48.4' (saturated)		1.5	3 4 3 7	0.0
49	SP	SP; Reddish brown fine SAND (saturated, no odor) reddish brown clay with trace sand at 50.1-50.4' (micaceous)		1.4	5 4 3 3	0.0
51	CL	CL; Reddish brown CLAY with trace fine sand (low plasticity) (micaceous) (dry, no odor)	BT-19-S-50-20201230		4	
52				0.3	4 10 17	0.0
53		End of boring at 53'				

Well Construction
2" PVC 0.020" Screen
Tremmie Grout

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-21/S-465**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **1/21/21** COMPLETED: **2/4/21**
INSTALLATION: STARTED **2/4/21** COMPLETED: **2/4/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Geoprobe**

*NORTHING (ft): **224570.2** *EASTING (ft): **2685935.8**
*GROUND ELEV (ft): **32.5** *TOC ELEV (ft): **32.20**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **52**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **42**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Hand Cleared to 5' bgs (no ovservations)						0	
5		MLS	MLS; Brown to dark brown sandy SILT with little clay (dry, no impacts)						5	
6		CL-ML	CL-ML; Pale brown silty CLAY with some fine sand (wet to saturated, no impacts)			1.6	N/A	0.0		
8		CL-ML	CL-ML; SAME brown to pale brown, silty CLAY with little fine sand (wet to saturated, no impacts)							Portland Cement Grout
10		SC	SC; Brown to dark gray clayey fine SAND with fine sand lenses (moist, degraded petroleum odor)			3.0	N/A	1.0	10	2" PVC Casing
11		CL	CL; Dark gray CLAY with fine sand (saturated, degraded petroleum odor)					0.9		
12		CL	CL; Gray to dark gray CLAY with yellowish brown, fine SAND lenses (moist, degraded petroleum odor)					0.0		
13								0.1		
14						4.0	N/A			
15		SP	SP; Gray to dark gray medium SAND (fining downward to fine sand) (moist, degraded petroleum odor, staining) (micaceous)		BT-21-S-15-20210121			1165.2	15	
16		CL	CL; Gray to pale brown to reddish brown, fine sandy CLAY with little gravel (rounded) (wet to saturated, degraded petroleum odor)							Bentonite Seal
18						3.5	N/A	116		
19		CL	CL; Reddish brown to brown clayey SAND and GRAVEL (moist, degraded petroleum odor)							Sand Pack
20		SPG	SPG; Brown to yellowish brown to olive to gray gravelly SAND (compact), trace fines (dry to moist, light petroleum odor)					115	20	
22						4.0	N/A	64		
24		SPG	SPG; Brown to yellowish brown to gray to olive, gravelly SAND (trace mica and fines), trace claystone (red) sorting downward into brown to yellowish brown, fine to medium SAND, trace fines and gravel (dry to moist, petroleum odor) (compacted)						25	
26					BT-21-S-26-20210204	2.2	N/A	63		
28		SW-SM	SW-SM; Brown SAND with SILT (muddy sand and gravel) (saturated, no impacts) (red claystone present)							

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-21/S-465**

Stantec

DRILLING: STARTED **1/21/21** COMPLETED: **2/4/21**
INSTALLATION: STARTED **2/4/21** COMPLETED: **2/4/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push**
SAMPLING EQUIPMENT: **Geoprobe**

*NORTHING (ft): **224570.2** *EASTING (ft): **2685935.8**
*GROUND ELEV (ft): **32.5** *TOC ELEV (ft): **32.20**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **52**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **42**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		SW-SM	(continued) Brown SAND with SILT (muddy sand and gravel) (saturated, no impacts) (red claystone present)		10.6	2.1	N/A	8.3		2" PVC 0.020" Screen
32		SW-SM	SW-SM; Reddish brown SAND with SILT (sandy gravel and claystone, some fines) (saturated, no impacts)							
33										
34						1.5	N/A	5.5		
35									35	
36		SW-SM	SW-SM; Brown to grayish brown SAND with SILT (sandy fine gravel, some silt) (saturated, no impacts) fining to fine sand with little gravel							
37										
38						2.5	N/A	0.4		
39										
40		SW-SM	SW-SM; Grayish brown to yellowish brown SAND with SILT (saturated, no impacts)						40	
41		CL	CL; Yellowish brown to brownish yellow CLAY, trace silt (zone of fine sandy CLAY 42-42.5' bgs) (moist, no impacts) (low plasticity)							
42						2.8	N/A	0.0		
43					BT-21-S-42-20210204					
44		CL	CL; Gray and yellowish brown laminated CLAY (low plasticity) trace sitl and very fine sand (moist to wet), increasing sand content, coarsening downward							
45									45	
46			Transitions to yellowish brown and reddish gray, fine clayey SAND and very fine sand (micaceous) trace to little clay (saturated) (no impacts)			4.0	N/A	0.0		
47										Tremmie Grout
48		CH	CH; Weak to dusky red CLAY (medium to high plasticity) trace to no fine sand (dry, no impacts)							
49										
50						4.0	N/A	0.0	50	
51										
52			End of boring at 52'							
53										
54										
55									55	
56										
57										
58										
59										

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-22A/S-472**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **3/2/21** COMPLETED: **3/3/21**
INSTALLATION: STARTED **3/3/21** COMPLETED: **3/3/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224192.8** *EASTING (ft): **2684845.5**
*GROUND ELEV (ft): **33.5** *TOC ELEV (ft): **33.19**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **49**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **37**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0			Air Knife (no recovery)							
5		CL-ML	CL-ML; Brown to yellowish brown, silty CLAY with trace fine sand (moist, no impacts)			0.6	4 4 8 4	0.0	5	Portland Cement Grout
7		CL-ML	CL-ML; Gray and grayish brown laminated, silty CLAY with little fine sand (moist to dry, no impacts)			1.25	4 5 6 6	0.0		2" PVC Casing
9		CL-ML	CL-ML; Gray and dark gray laminated CLAY with some little fine sand (dry to moist, very slight degraded petroleum odor)			1.2	2 2 2 4	5.0	10	
11		CL	CL; Gray, fine sandy CLAY (moist, very slight degraded petroleum odor)				3			
12		SP	SP; Dark gray to very dark gray, very fine SAND, trace fines (micaceous) (moist to dry, very slight degraded petroleum odor)			1.1	4 10 8	5.5		
13		CL	CL; Gray to dark gray, fine, sandy CLAY (increasing sand content with depth) and cobble at 13.7' bgs (moist to dry, very slight petroleum odor)				6			Bentonite Seal
14		CL				1.6	6 7 7	9.2		
15		SP	CL; Brown to dark brown CLAY, fine to medium sand (micaceous) (dry, very slight degraded petroleum odor)				8		15	
16		SP	SP; Olive brown to brown to dark brown, well graded SAND (sorting downward into very fine sand) (dry, very slight petroleum odor)		BT-22A-S-16-20210302	1.5	8 8 8	16.3		Sand Pack
17		SP	SP; Brown to grayish brown, fine SAND, little medium sand (olive) (moist to dry, slight petroleum odor)				11			
18		SP	SP; Grayish brown and olive, very fine SAND (micaceous) (moist to dry, slight petroleum odor)			1.5	10 8 6	16.4		
19		SP					9			
20		SP	SP; Grayish brown (weak red tint) to olive brown, very fine SAND to fine SAND (moist, slight petroleum odor)			1.7	9 9 7	39.2	20	
21		SW	SW; Grayish brown SAND (fine sand with quartz and claystone (red) gravels) (moist, slight petroleum odor)				11			
22		SW				1.5	13 20 27	8		
23		SW	SW; Brown to grayish brown to yellowish brown to olive brown, well graded SAND with some gravel (moist, slight petroleum odor)				17			
24		SW				1.1	16 17 17	3.1		
25		SW	SW; Brown to olive brown, well graded SAND with some quartz and claystone (red) gravel (moist to wet, very slight petroleum odor)				7		25	
26		SW				1.4	15 21 19	0.1		
27		SW	SW; Brown to grayish brown to olive brown, well graded SAND with some fine gravel (moist to wet, petroleum odor)				23			2" PVC 0.020" Screen
28		SW				1.2	22 24 22	110		
29		SW	SW; Dark gray well graded sand with some fine gravel (saturated, dark gray and olive staining,				11 7			

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-22A/S-472**

Stantec

DRILLING: STARTED **3/2/21** COMPLETED: **3/3/21**
INSTALLATION: STARTED **3/3/21** COMPLETED: **3/3/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224192.8** *EASTING (ft): **2684845.5**
*GROUND ELEV (ft): **33.5** *TOC ELEV (ft): **33.19**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **49**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **37**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
		SW	very strong petroleum odor) (sheen)		714	1.4	15 13	134		
31		SW	SW; Pale brown and pale to dark gray well graded very fine SAND (saturated) (moist to dry, staining, very strong petroleum odor) (sheen) (coal tar)			1.4	18 24 24 21	315		
33		SP	SP; Dark gray (sheen, stain) to pale brown, medium to fine SAND, little gravel (saturated) (strong petroleum odor)			1.2	6 5 10 7	25.7		
35		CL	CL; Gray to grayish brown to yellowish brown to pale brown, fine SAND with trace little clay (fining downward to very fine sandy clay) (oxidation, dark orange to yellowish brown at bottom of fine sand) (saturated to moist, petroleum odor)			2.0	5 7 6 10	0.5	35	
37		CL	CL; Brown to dark brown CLAY with trace to little, very fine SAND (low plasticity) very fine sand lenses (moist to dry, no impacts) dark brown, very fine sand in shoe			2.0	4 7 7 7	0.0		
39		SP	SP; Brown to pale brown, very fine SAND (trace to no fines) (micaceous) (saturated, no impacts)			2.0	6 7 6 4	0.0	40	
41		CL	CL; Dark grayish brown CLAY with little very fine SAND (micaceous) (laminated) (moist to dry, no impacts)			1.8	4 3 3 4	0.0		
43		CL	CL; Dark grayish brown CLAY (laminated) very fine sand lenses (micaceous) (moist to dry, no impacts)			1.9	5 4 5 5	0.0		Tremmie Grout
45		CL	CL; Dark brown CLAY (laminated, medium plasticity) fine sand and peat leases (thin) (moist to dry, no impacts) very fine sand (micaceous) at 466.7-47'			2.0	5 3 5 10	0.0	45	
47		SP	SP; Brownish red to weak red fine to very fine SAND, trace to no fines (moist to dry, no impacts) (micaceous)			2.0	6 9 12 12	0.0		
49		CH	CH; Weak red, high plasticity CLAY (dry, no impacts) End of boring at 49'						50	
55									55	

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO: **BT-22B/S-467**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **2/17/21** COMPLETED: **2/23/21**
INSTALLATION: STARTED **2/23/21** COMPLETED: **2/23/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224060.8** *EASTING (ft): **2685043.8**
*GROUND ELEV (ft): **31.6** *TOC ELEV (ft): **31.22**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **47**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **35**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			Air Knife (no recovery)							
5–6		CL	CL; Brown, gray, dark gray CLAY with little fine sand and silt (moist, petroleum odor and staining)			0.9	1 1 2 2	38.2	5	
7–8		CL	CL; Gray, brown, gray, dark gray laminated CLAY with little to trace fine sand and silt (moist, petroluem odor, staining)			1.7	3 4 5 5	22		Portland Cement Grout
9–10		CL	CL; Gray to gray brown, laminated CLAY with little to trace fine sand (moist, petroluem odor)			1.4	2 2 3 3	7.1	10	2" PVC Casing
11–12		CL	CL; Gray laminated (little yellow brown) CLAY with little fine sand (dry to moist, petroleum odor)			1.9	3 3 5 5	329		
13		CL	CL; Gray CLAY with little to trace fine sand (dry to moist, petroleum odor)							
14		SP	SP; Gray, fine SAND, trace clay and thin gray clay lenses (wet to saturated, petroleum odor)		BT-22B-S-14-20210217	1.7		797		
15–16		SP	SP; Gray to gray brown, fine SAND (micaceous), trace clay (saturated, petroleum odor) brown fine gravel			2.0	3 4 4 7	55	15	Bentonite Seal
17		SW-SM	Brown gray CLAY in shoe							
18		SM	SW-SM; Brown to brown gray SAND with SILT, well graded sand and gravel, little trace silt (micaceous) (moist, petroleum odor)			1.3	4 5 7 11	63.6		
19		CL	CL; Pale brown CLAY, trace fine sand (dry)							Sand Pack
20		SC	SC; Gray to brown to yellowish brown, clayey, fine SAND and quartz GRAVEL (caorse) (moist to dry, petroleum odor)			1.0	15 13 8 6	2.5	20	
21–22		SW	SW; Brown to yellow to brownish yellow to red, well graded SAND and GRAVEL/CLAYSTONE (dry, petroleum odor) (compact)			1.0	8 23 25 25	140		
23		SW	SW; Multicolored, compact SAND with red claystone (moist to wet, petroleum odor)							
24		SW	SW; Multicolored, compact SAND with red claystone, gravel content increases with depth (introduce white and olive sands and gravels) (moist, petroleum odor)			1.4	10 11 11 15	34		
25		SW	SW; Brown to yellow SAND, well graded sand and gravel (moist, petroleum odor)						25	
26		SW				0.7	11 15 23 23	46.4		
27–28		SW	SW; Brown to yellowish brown SAND with little red claystone (moist, petroleum odor)			0.4	10 11 23 22	103		2" PVC 0.020" Screen
29		SP	SP; Brownish gray to dark gray SAND (medium) with little to no fine gravel (moist, dark staining				10 10			

GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

PROJECT: **Belmont Terminal**
LOCATION: **Philadelphia, Pennsylvania**
PROJECT NUMBER: **213402797**

WELL / PROBEHOLE / BOREHOLE NO:
PAGE 2 OF 2 **BT-22B/S-467**

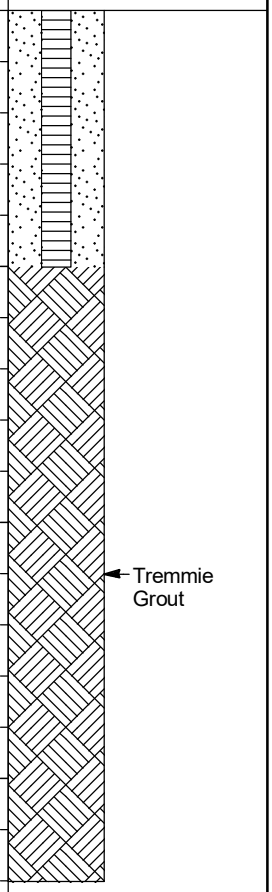
Stantec

DRILLING: STARTED **2/17/21** COMPLETED: **2/23/21**
INSTALLATION: STARTED **2/23/21** COMPLETED: **2/23/21**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **HSA; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **224060.8** *EASTING (ft): **2685043.8**
*GROUND ELEV (ft): **31.6** *TOC ELEV (ft): **31.22**
INITIAL DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **47**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **35**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **10**
LOGGED BY: **D. Hopkins** CHECKED BY: **A. Klingbeil**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)
	SP	in shoe) (coal tar possible)	1152	1.2	11 13	89
31	SP	SP; Gray to brown to dark gray SAND, trace to no fine gravels (moist to wet, dark staining (coal tar) strong petroleum odor)	BT-22B-S-31-20210222		11 14 16 21	
32				0.7		667
33	SP	SP; Brown, fine SAND with little fine gravel (saturated, petroluem odor)			4 8 11 10	
34				0.9		27.3
35	CL	CL; Yellowish brown to gray brown to pale brown CLAY (low plasticity) with trace to little, fine sand (moist to wet, no impacts)			2 2 3 2	
36	CLS	CLS; Gray to dark gray, fine, sandy CLAY (low density) (saturated, slight petroleum odor)		2.0		0.3
37	CL	CL; Brownish yellow CLAY, trace fine sand (moist to wet, no impacts)			2 5 5 6	
38	SC	SC; Pale gray to brownish yellow laminated, clayey, very fine SAND		1.0		0.0
39	SP	SP; Pale gray, vey fine SAND (moist to wet, no impacts)			1 1 2 2	
40	SC	SC; Pale gray to pale brown gray, clayey, very fine SAND (wet to saturated, no impacts)	BT-22B-S-40-20210222	2.0		0.2
41	CL	CL; Dark brown to brown CLAY (dense) (dry to moist, no impacts) (micaceous) with little very fine sand (thin layers laminated)			3 4 3 3	
42				1.5		0.0
43	CL	CL; Dark brown CLAY (dense) trace to very fine sand (micaceous) (dry, no impacts)			1 1 3 2	
44	SP	CL; Dark gray CLAY with trace to no very fine sand (sand content increases with depth) (moist to wet, no impacts) (micaceous)		1.6		0.0
45	SP	SP; Weak red, very fine SAND, some little clay (saturated, no impacts) (micaceous)			2 3 9 7	
46				1.9		0.0
47	CH	SP; Weak red, fine to very fine SAND with little to some clay (saturated, no impacts) (micaceous)				
48		CH; Weak red CLAY (high plasticity) (dry, no impacts)				
49		End of boring at 47'				
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						



GEO FORM 304 213402797_WELL_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/31/22

ATTACHMENT C

Disposal Documentation

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
PAD000797589	1	4848897347	006275364 GBF

5. Generator's Name and Mailing Address: Sunoco Partners Marketing and Terminals, 2700 W Passyunk Ave, PHILADELPHIA, PA 19145
302-477-1305

Generator's Site Address (if different than mailing address): Sunoco Partners Marketing and Terminals, 2700 W Passyunk Ave, PHILADELPHIA, PA 19145

Generator's Phone:

6. Transporter 1 Company Name: Lewis Environmental — U.S. EPA ID Number: PAD987378940

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Clean Earth of North Jersey, Inc, 105 Jacobus Ave, Kearny NJ 07032
9738444004

U.S. EPA ID Number: NJD991291105

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, NA3077, Hazardous waste, solid, n.o.s. (Benzene), 9, PG-III	1	CM		T	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
(1) 213082432 - Investigated derived waste- D018 soil meets UTS

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Tiffani Doerr — Signature: [signature] — Month 1 Day 21 Year 2022

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ignacio E Camillo — Signature: [signature] — Month 1 Day 21 Year 2022

Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
PAD000797689	1	4848697347	006275362 GBF

5. Generator's Name and Mailing Address: Sunoco Partners Marketing and Terminals, 2700 W Passyunk Ave, PHILADELPHIA, PA 19145
302-477-1306

Generator's Site Address (if different than mailing address): Sunoco Partners Marketing and Terminals, 2700 W Passyunk Ave, PHILADELPHIA, PA 19145

Generator's Phone:

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7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Clean Earth of North Jersey, Inc, 105 Jacobus Ave, Kearny NJ 07032
9733444004

U.S. EPA ID Number: NJD991291105

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, NA3077, Hazardous waste, solid, n.o.s. (Benzene), 9, PG III	1	CM	15	T	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
(1) 213082432 - Investigated derived waste D018 soil meets UTS

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Tiffani Doerr — Signature: [signature] — Month 1 Day 14 Year 2022

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ignacio F Carrillo — Signature: [signature] — Month 1 Day 14 Year 2022

Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

ATTACHMENT D

Laboratory Analytical Reports

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-22543-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 2

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/11/2021 5:56:14 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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Amek Carter
Project Manager
3/11/2021 5:56:14 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-22543-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
XH	Surrogate recovery is above control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Stantec Consulting Corp. Job ID: 410-22543-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22543-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-22543-1

Revision
The report being provided is a revision of the original report sent on 12/31/2020.

Revision History
Revision 1 - Update sample ID.
Revision 2 - Correct Total TPH Units.

Receipt
The samples were received on 12/2/2020 4:40 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-77139 recovered above the upper control limit for C4-C12-TPH-GRO. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C: The following sample was analyzed outside of analytical holding time due to laboratory error: BT-02B-S-10-20201201 (410-22543-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: The 1,1,2,2-Tetrachloroethane (Surr) surrogate recovery for the following samples was outside acceptance limits (high biased) on the confirmation column due to matrix interference: BT-02B-W-28-20201202 (410-22543-2). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22543-1

Client Sample ID: BT-02B-S-10-20201201 — Lab Sample ID: 410-22543-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.68	J H	4.2	0.51	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	2.4	J H	4.2	0.42	ug/Kg	1	☼	8260C	Total/NA
Benzene	4.2	H	4.2	0.42	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	680	H ^c	93	37	ug/Kg	1	☼	8260C	Total/NA
t-Butyl alcohol	350	H	85	13	ug/Kg	1	☼	8260C	Total/NA
Lead	8.4		1.6	0.66	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-02B-W-28-20201202 — Lab Sample ID: 410-22543-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	30		5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	9.0		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Benzene	20		1.0	0.20	ug/L	1		8260C/UST	Total/NA
C4-C12-TPH-GRO	890		50	29	ug/L	1		8260C/UST	Total/NA
Ethylbenzene	45		1.0	0.40	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	6.1		5.0	0.20	ug/L	1		8260C/UST	Total/NA
Toluene	1.8		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	120		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methane (1C)	52		5.0	3.0	ug/L	1		RSK-175	Total/NA
Total Organic Carbon	51		1.0	0.50	mg/L	1		5310C-2011	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 410-22543-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-02B-S-10-20201201
Lab Sample ID: 410-22543-1

Date Collected: 12/01/20 13:00
Matrix: Solid

Date Received: 12/02/20 16:40
Percent Solids: 85.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND	H	4.2	0.34	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
1,3,5-Trimethylbenzene	ND	H	4.2	0.42	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
Toluene	**0.68**	**J H**	4.2	0.51	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
Methyl tertiary butyl ether	**2.4**	**J H**	4.2	0.42	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
Benzene	**4.2**	**H**	4.2	0.42	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
1,2,4-Trimethylbenzene	ND	H	4.2	0.42	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
Isopropylbenzene	ND	H	4.2	0.34	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
1,2-Dibromoethane	ND	H	4.2	0.34	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
1,2-Dichloroethane	ND	H	4.2	0.51	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
C4-C12-TPH-GRO	**680**	**H ^c**	93	37	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
Xylenes, Total	ND	H	8.5	1.2	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1
t-Butyl alcohol	**350**	**H**	85	13	ug/Kg	☼	12/03/20 23:18	12/16/20 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*	*12/03/20 23:18*	*12/16/20 00:01*	*1*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*12/03/20 23:18*	*12/16/20 00:01*	*1*
Dibromofluoromethane (Surr)	*104*		*50 - 141*	*12/03/20 23:18*	*12/16/20 00:01*	*1*
Toluene-d8 (Surr)	*96*		*52 - 141*	*12/03/20 23:18*	*12/16/20 00:01*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		19	3.9	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Benzo[a]anthracene	ND		19	7.8	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Benzo[a]pyrene	ND		19	3.9	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Benzo[b]fluoranthene	ND		19	3.9	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Benzo[g,h,i]perylene	ND		19	3.9	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Chrysene	ND		19	3.9	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Fluorene	ND		19	3.9	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Naphthalene	ND		19	7.8	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Phenanthrene	ND		19	3.9	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1
Pyrene	ND		19	3.9	ug/Kg	☼	12/08/20 09:12	12/09/20 19:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*39 - 100*	*12/08/20 09:12*	*12/09/20 19:16*	*1*
Nitrobenzene-d5 (Surr)	*69*		*32 - 97*	*12/08/20 09:12*	*12/09/20 19:16*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*	*12/08/20 09:12*	*12/09/20 19:16*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		14	5.8	mg/Kg	☼	12/07/20 17:10	12/09/20 11:49	1
>C22-C44 (1C)	ND		14	5.8	mg/Kg	☼	12/07/20 17:10	12/09/20 11:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*81*		*54 - 137*	*12/07/20 17:10*	*12/09/20 11:49*	*1*
o- terphenyl (Surr) (1C)	*90*		*52 - 154*	*12/07/20 17:10*	*12/09/20 11:49*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		14	5.9	mg/Kg	☼		12/14/20 11:58	1

Client Sample ID: BT-02B-S-10-20201201 — Lab Sample ID: 410-22543-1

Date Collected: 12/01/20 13:00 — **Matrix: Solid**
Date Received: 12/02/20 16:40 — **Percent Solids: 85.4**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**8.4**		1.6	0.66	mg/Kg	☼	12/08/20 11:45	12/09/20 17:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**14.6**		1.0	1.0	%			12/04/20 08:29	1

Client Sample ID: BT-02B-W-28-20201202 — Lab Sample ID: 410-22543-2

Date Collected: 12/02/20 09:20 — **Matrix: Water**
Date Received: 12/02/20 16:40

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**30**		5.0	1.0	ug/L			12/13/20 16:26	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 16:26	1
1,3,5-Trimethylbenzene	**9.0**		5.0	0.30	ug/L			12/13/20 16:26	1
Benzene	**20**		1.0	0.20	ug/L			12/13/20 16:26	1
C4-C12-TPH-GRO	**890**		50	29	ug/L			12/13/20 16:26	1
Ethylbenzene	**45**		1.0	0.40	ug/L			12/13/20 16:26	1
Isopropylbenzene	**6.1**		5.0	0.20	ug/L			12/13/20 16:26	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 16:26	1
Toluene	**1.8**		1.0	0.20	ug/L			12/13/20 16:26	1
Xylenes, Total	**120**		6.0	1.4	ug/L			12/13/20 16:26	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*12/13/20 16:26*	*1*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*		*12/13/20 16:26*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*12/13/20 16:26*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*12/13/20 16:26*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/04/20 08:02	12/04/20 11:28	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/04/20 08:02	12/04/20 11:28	1
Methane (1C)	**52**		5.0	3.0	ug/L		12/04/20 08:02	12/04/20 11:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*95*		*28 - 140*	*12/04/20 08:02*	*12/04/20 11:28*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		12/05/20 05:56	12/08/20 23:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*111*		*46 - 136*	*12/05/20 05:56*	*12/08/20 23:52*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*271*	*XH*	*46 - 136*	*12/05/20 05:56*	*12/08/20 23:52*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**51**		1.0	0.50	mg/L			12/09/20 02:37	1

Client Sample ID: TRIP BLANK
Lab Sample ID: 410-22543-3

Date Collected: 11/30/20 00:00
Matrix: Water

Date Received: 12/02/20 16:40

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/13/20 14:50	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 14:50	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/13/20 14:50	1
Benzene	ND		1.0	0.20	ug/L			12/13/20 14:50	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/13/20 14:50	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/13/20 14:50	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/13/20 14:50	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 14:50	1
Toluene	ND		1.0	0.20	ug/L			12/13/20 14:50	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/13/20 14:50	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*12/13/20 14:50*	*1*
4-Bromofluorobenzene (Surr)	*83*		*80 - 120*		*12/13/20 14:50*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/13/20 14:50*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*12/13/20 14:50*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		12/05/20 05:56	12/09/20 00:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*97*		*46 - 136*	*12/05/20 05:56*	*12/09/20 00:10*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*103*		*46 - 136*	*12/05/20 05:56*	*12/09/20 00:10*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-22543-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-22543-1	BT-02B-S-10-20201201	110	97	104	96
LCS 410-77139/28	Lab Control Sample	103	98	101	96
LCS 410-77139/3	Lab Control Sample	103	99	102	97
LCSD 410-77139/29	Lab Control Sample Dup	102	99	102	96
LCSD 410-77139/4	Lab Control Sample Dup	102	98	101	97
MB 410-77139/6	Method Blank	106	96	104	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-22543-2	BT-02B-W-28-20201202	89	87	96	104
410-22543-3	TRIP BLANK	89	83	98	103
LCS 410-76155/6	Lab Control Sample	91	87	95	106
LCS 410-76155/7	Lab Control Sample	89	86	98	107
LCSD 410-76155/8	Lab Control Sample Dup	89	85	96	109
MB 410-76155/9	Method Blank	89	82	96	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-22543-1	BT-02B-S-10-20201201	73	69	85
LCS 410-74140/2-A	Lab Control Sample	70	65	84
MB 410-74140/1-A	Method Blank	82	79	93

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-22543-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		Propene1									
Lab Sample ID	Client Sample ID	(28-140)									
410-22543-2	BT-02B-W-28-20201202	95									
LCS 410-73018/2-A	Lab Control Sample	96									
LCSD 410-73018/3-A	Lab Control Sample Dup	98									
MB 410-73018/1-A	Method Blank	98									

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		1122TCA1	1122TCA2								
Lab Sample ID	Client Sample ID	(46-136)	(46-136)								
410-22543-2	BT-02B-W-28-20201202	111	271 XH								
410-22543-3	TRIP BLANK	97	103								
LCS 410-73355/2-A	Lab Control Sample	97	104								
LCSD 410-73355/3-A	Lab Control Sample Dup	98	106								
MB 410-73355/1-A	Method Blank	95	101								

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
410-22543-1	BT-02B-S-10-20201201	81	90								
410-22543-1 DU	BT-02B-S-10-20201201	79	91								
410-22543-1 MS	BT-02B-S-10-20201201	72	104								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-77139/6
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			12/15/20 20:15	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/15/20 20:15	1
Toluene	ND		5.0	0.60	ug/Kg			12/15/20 20:15	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			12/15/20 20:15	1
Benzene	ND		5.0	0.50	ug/Kg			12/15/20 20:15	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/15/20 20:15	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			12/15/20 20:15	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			12/15/20 20:15	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			12/15/20 20:15	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			12/15/20 20:15	1
Xylenes, Total	ND		10	1.4	ug/Kg			12/15/20 20:15	1
t-Butyl alcohol	ND		100	15	ug/Kg			12/15/20 20:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*		*12/15/20 20:15*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*		*12/15/20 20:15*	*1*
Dibromofluoromethane (Surr)	*104*		*50 - 141*		*12/15/20 20:15*	*1*
Toluene-d8 (Surr)	*95*		*52 - 141*		*12/15/20 20:15*	*1*

Lab Sample ID: LCS 410-77139/28
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1120		ug/Kg		112	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCS 410-77139/3
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			20.0	20.4		ug/Kg		102	78 - 120		
1,3,5-Trimethylbenzene			20.0	19.9		ug/Kg		100	73 - 120		
Toluene			20.0	20.0		ug/Kg		100	80 - 120		
Methyl tertiary butyl ether			20.0	18.5		ug/Kg		92	72 - 120		
Benzene			20.0	21.3		ug/Kg		107	80 - 120		
Naphthalene			20.0	20.0		ug/Kg		100	48 - 130		
1,2,4-Trimethylbenzene			20.0	20.1		ug/Kg		100	73 - 120		
Isopropylbenzene			20.0	20.5		ug/Kg		103	77 - 120		
1,2-Dibromoethane			20.0	20.4		ug/Kg		102	76 - 120		
1,2-Dichloroethane			20.0	20.1		ug/Kg		101	71 - 128		
Xylenes, Total			60.0	62.1		ug/Kg		104	75 - 120		

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-77139/3
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
t-Butyl alcohol			200	198		ug/Kg		99	74 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-77139/29
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1060		ug/Kg		106	75 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCSD 410-77139/4
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.1		ug/Kg		101	78 - 120	1	30
1,3,5-Trimethylbenzene			20.0	19.8		ug/Kg		99	73 - 120	1	30
Toluene			20.0	19.7		ug/Kg		98	80 - 120	1	30
Methyl tertiary butyl ether			20.0	18.1		ug/Kg		91	72 - 120	2	30
Benzene			20.0	21.2		ug/Kg		106	80 - 120	1	30
Naphthalene			20.0	19.3		ug/Kg		97	48 - 130	3	30
1,2,4-Trimethylbenzene			20.0	20.0		ug/Kg		100	73 - 120	0	30
Isopropylbenzene			20.0	20.2		ug/Kg		101	77 - 120	1	30
1,2-Dibromoethane			20.0	19.7		ug/Kg		98	76 - 120	3	30
1,2-Dichloroethane			20.0	20.1		ug/Kg		100	71 - 128	0	30
Xylenes, Total			60.0	61.6		ug/Kg		103	75 - 120	1	30
t-Butyl alcohol			200	192		ug/Kg		96	74 - 121	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-76155/9
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/13/20 14:05	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 14:05	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/13/20 14:05	1
Benzene	ND		1.0	0.20	ug/L			12/13/20 14:05	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/13/20 14:05	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/13/20 14:05	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/13/20 14:05	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 14:05	1
Toluene	ND		1.0	0.20	ug/L			12/13/20 14:05	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/13/20 14:05	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 14:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*12/13/20 14:05*	*1*
4-Bromofluorobenzene (Surr)	*82*		*80 - 120*		*12/13/20 14:05*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*12/13/20 14:05*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*12/13/20 14:05*	*1*

Lab Sample ID: LCS 410-76155/6
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	18.4		ug/L		92	75 - 120
1,2-Dichloroethane	20.0	14.5		ug/L		73	73 - 124
1,3,5-Trimethylbenzene	20.0	18.5		ug/L		92	75 - 120
Benzene	20.0	16.7		ug/L		83	80 - 120
Ethylbenzene	20.0	19.5		ug/L		98	80 - 120
Isopropylbenzene	20.0	19.2		ug/L		96	80 - 120
Methyl tertiary butyl ether	20.0	15.5		ug/L		77	69 - 122
Naphthalene	20.0	19.3		ug/L		96	53 - 124
Toluene	20.0	19.7		ug/L		99	80 - 120
Xylenes, Total	60.0	59.1		ug/L		99	80 - 120
t-Butyl alcohol	200	182		ug/L		91	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCS 410-76155/7
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	840		ug/L		84	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-76155/7
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*
4-Bromofluorobenzene (Surr)	*86*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: LCSD 410-76155/8
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	838		ug/L		84	67 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*
4-Bromofluorobenzene (Surr)	*85*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-74140/1-A
Matrix: Solid
Analysis Batch: 74292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74140

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Chrysene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Fluorene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Naphthalene	ND		17	6.7	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Phenanthrene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Pyrene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*	*12/08/20 09:12*	*12/09/20 13:17*	*1*
Nitrobenzene-d5 (Surr)	*79*		*32 - 97*	*12/08/20 09:12*	*12/09/20 13:17*	*1*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*	*12/08/20 09:12*	*12/09/20 13:17*	*1*

Lab Sample ID: LCS 410-74140/2-A
Matrix: Solid
Analysis Batch: 74292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74140

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			1670	1540		ug/Kg		92	75 - 114		
Benzo[a]anthracene			1670	1540		ug/Kg		92	73 - 114		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-74140/2-A
Matrix: Solid
Analysis Batch: 74292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74140

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	1670	1350		ug/Kg		81	76 - 113
Benzo[b]fluoranthene	1670	1450		ug/Kg		87	73 - 117
Benzo[g,h,i]perylene	1670	1700		ug/Kg		102	77 - 114
Chrysene	1670	1520		ug/Kg		91	66 - 111
Fluorene	1670	1350		ug/Kg		81	62 - 110
Naphthalene	1670	1130		ug/Kg		68	60 - 94
Phenanthrene	1670	1500		ug/Kg		90	74 - 112
Pyrene	1670	1590		ug/Kg		96	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*70*		*39 - 100*
Nitrobenzene-d5 (Surr)	*65*		*32 - 97*
p-Terphenyl-d14 (Surr)	*84*		*45 - 108*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-73018/1-A
Matrix: Water
Analysis Batch: 73057

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/04/20 08:02	12/04/20 10:27	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/04/20 08:02	12/04/20 10:27	1
Methane (1C)	ND		5.0	3.0	ug/L		12/04/20 08:02	12/04/20 10:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*12/04/20 08:02*	*12/04/20 10:27*	*1*

Lab Sample ID: LCS 410-73018/2-A
Matrix: Water
Analysis Batch: 73057

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	59.4		ug/L		100	85 - 115
Ethene (1C)	60.4	60.3		ug/L		100	83 - 115
Methane (1C)	59.4	61.5		ug/L		104	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*96*		*28 - 140*

Lab Sample ID: LCSD 410-73018/3-A
Matrix: Water
Analysis Batch: 73057

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 73018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)	59.4	59.1		ug/L		100	85 - 115	0	20
Ethene (1C)	60.4	60.2		ug/L		100	83 - 115	0	20
Methane (1C)	59.4	61.3		ug/L		103	85 - 115	0	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-73018/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 73057 **Prep Batch: 73018**

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Propene (1C)	98		28 - 140

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-73355/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 74459 **Prep Batch: 73355**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		12/05/20 05:56	12/08/20 21:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	95		46 - 136	12/05/20 05:56	12/08/20 21:54	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	101		46 - 136	12/05/20 05:56	12/08/20 21:54	1

Lab Sample ID: LCS 410-73355/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 74459 **Prep Batch: 73355**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.130		ug/L		101	60 - 140		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,1,2,2-Tetrachloroethane (Surr) (1C)	97		46 - 136
1,1,2,2-Tetrachloroethane (Surr) (2C)	104		46 - 136

Lab Sample ID: LCSD 410-73355/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 74459 **Prep Batch: 73355**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.128		ug/L		100	60 - 140	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,1,2,2-Tetrachloroethane (Surr) (1C)	98		46 - 136
1,1,2,2-Tetrachloroethane (Surr) (2C)	106		46 - 136

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: 410-22543-1 MS **Client Sample ID: BT-02B-S-10-20201201**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 74726 **Prep Batch: 73973**

Surrogate	MS %Recovery	MS Qualifier	Limits
Chlorobenzene (Surr) (1C)	72		54 - 137

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 410-22543-1 MS — **Client Sample ID: BT-02B-S-10-20201201**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 74726 — **Prep Batch: 73973**

Surrogate	MS %Recovery	MS Qualifier	Limits
o- terphenyl (Surr) (1C)	104		52 - 154

Lab Sample ID: 410-22543-1 DU — **Client Sample ID: BT-02B-S-10-20201201**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 74726 — **Prep Batch: 73973**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C12-C22 (1C)	ND			ND		mg/Kg	☼			NC	
>C22-C44 (1C)	ND			ND		mg/Kg	☼			NC	

Surrogate	DU %Recovery	DU Qualifier	Limits
Chlorobenzene (Surr) (1C)	79		54 - 137
o- terphenyl (Surr) (1C)	91		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-74313/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 75017 — **Prep Batch: 74313**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.55	mg/Kg		12/08/20 11:45	12/09/20 16:06	1

Lab Sample ID: LCS 410-74313/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 75017 — **Prep Batch: 74313**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.68	2.85		mg/Kg		106	80 - 120		

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-74839/35 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 74839

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			12/09/20 00:32	1

Lab Sample ID: LCS 410-74839/34 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 74839

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	23.8		mg/L		95	91 - 113		

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22543-1

GC/MS VOA

Prep Batch: 72898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	5035	

Analysis Batch: 76155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-2	BT-02B-W-28-20201202	Total/NA	Water	8260C/UST	
410-22543-3	TRIP BLANK	Total/NA	Water	8260C/UST	
MB 410-76155/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-76155/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-76155/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-76155/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 77139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	8260C	72898
MB 410-77139/6	Method Blank	Total/NA	Solid	8260C	
LCS 410-77139/28	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-77139/3	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-77139/29	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-77139/4	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 74140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	3546	
MB 410-74140/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-74140/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 74292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	8270D	74140
MB 410-74140/1-A	Method Blank	Total/NA	Solid	8270D	74140
LCS 410-74140/2-A	Lab Control Sample	Total/NA	Solid	8270D	74140

GC VOA

Prep Batch: 73018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-2	BT-02B-W-28-20201202	Total/NA	Water	RSK-175	
MB 410-73018/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-73018/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-73018/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 73057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-2	BT-02B-W-28-20201202	Total/NA	Water	RSK-175	73018
MB 410-73018/1-A	Method Blank	Total/NA	Water	RSK-175	73018
LCS 410-73018/2-A	Lab Control Sample	Total/NA	Water	RSK-175	73018
LCSD 410-73018/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	73018

GC Semi VOA

Analysis Batch: 31867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	Total TPH	

Prep Batch: 73355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-2	BT-02B-W-28-20201202	Total/NA	Water	8011	
410-22543-3	TRIP BLANK	Total/NA	Water	8011	
MB 410-73355/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-73355/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-73355/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Prep Batch: 73973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	3546	
410-22543-1 MS	BT-02B-S-10-20201201	Total/NA	Solid	3546	
410-22543-1 DU	BT-02B-S-10-20201201	Total/NA	Solid	3546	

Analysis Batch: 74459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-2	BT-02B-W-28-20201202	Total/NA	Water	8011	73355
410-22543-3	TRIP BLANK	Total/NA	Water	8011	73355
MB 410-73355/1-A	Method Blank	Total/NA	Water	8011	73355
LCS 410-73355/2-A	Lab Control Sample	Total/NA	Water	8011	73355
LCSD 410-73355/3-A	Lab Control Sample Dup	Total/NA	Water	8011	73355

Analysis Batch: 74726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	8015C TPH	73973
410-22543-1 MS	BT-02B-S-10-20201201	Total/NA	Solid	8015C TPH	73973
410-22543-1 DU	BT-02B-S-10-20201201	Total/NA	Solid	8015C TPH	73973

Metals

Prep Batch: 74313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	3050B	
MB 410-74313/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-74313/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 75017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	6010C	74313
MB 410-74313/1-A	Method Blank	Total/NA	Solid	6010C	74313
LCS 410-74313/2-A	Lab Control Sample	Total/NA	Solid	6010C	74313

General Chemistry

Analysis Batch: 73030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-1	BT-02B-S-10-20201201	Total/NA	Solid	Moisture	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22543-1

General Chemistry

Analysis Batch: 74839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22543-2	BT-02B-W-28-20201202	Total/NA	Water	5310C-2011	
MB 410-74839/35	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-74839/34	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-22543-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-02B-S-10-20201201
Lab Sample ID: 410-22543-1
Date Collected: 12/01/20 13:00
Matrix: Solid
Date Received: 12/02/20 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	73030	12/04/20 08:29	UVJN	ELLE

Client Sample ID: BT-02B-S-10-20201201
Lab Sample ID: 410-22543-1
Date Collected: 12/01/20 13:00
Matrix: Solid
Date Received: 12/02/20 16:40
Percent Solids: 85.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			72898	12/03/20 23:18	UK3O	ELLE
Total/NA	Analysis	8260C		1	77139	12/16/20 00:01	NSK7	ELLE
Total/NA	Prep	3546			74140	12/08/20 09:12	A2VL	ELLE
Total/NA	Analysis	8270D		1	74292	12/09/20 19:16	SJ89	ELLE
Total/NA	Prep	3546			73973	12/07/20 17:10	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	74726	12/09/20 11:49	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	31867	12/14/20 11:58	KP5X	ELLE
Total/NA	Prep	3050B			74313	12/08/20 11:45	UAMX	ELLE
Total/NA	Analysis	6010C		1	75017	12/09/20 17:07	UCIG	ELLE

Client Sample ID: BT-02B-W-28-20201202
Lab Sample ID: 410-22543-2
Date Collected: 12/02/20 09:20
Matrix: Water
Date Received: 12/02/20 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	76155	12/13/20 16:26	UKAD	ELLE
Total/NA	Prep	RSK-175			73018	12/04/20 08:02	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	73057	12/04/20 11:28	LXF2	ELLE
Total/NA	Prep	8011			73355	12/05/20 05:56	UKQ8	ELLE
Total/NA	Analysis	8011		1	74459	12/08/20 23:52	AC3T	ELLE
Total/NA	Analysis	5310C-2011		1	74839	12/09/20 02:37	KGQ6	ELLE

Client Sample ID: TRIP BLANK
Lab Sample ID: 410-22543-3
Date Collected: 11/30/20 00:00
Matrix: Water
Date Received: 12/02/20 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	76155	12/13/20 14:50	UKAD	ELLE
Total/NA	Prep	8011			73355	12/05/20 05:56	UKQ8	ELLE
Total/NA	Analysis	8011		1	74459	12/09/20 00:10	AC3T	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-22543-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-22543-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-22543-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-22543-1	BT-02B-S-10-20201201	Solid	12/01/20 13:00	12/02/20 16:40	
410-22543-2	BT-02B-W-28-20201202	Water	12/02/20 09:20	12/02/20 16:40	
410-22543-3	TRIP BLANK	Water	11/30/20 00:00	12/02/20 16:40	

Environmental Analysis Re[illegible]ustody

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Acct. # _____

410-22543 Chain of Custody

[illegible]al use only

COC # 616371

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

For Lab Use Only
FSC: _____
SCR#: 264966

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Matrix: Soil ☒ Sediment ☐ Tissue	Matrix: Water Potable ☐ Ground ☒ NPDES ☐ Surface	Matrix: Other: trip blank	Total # of Containers	TPH-DRO	TPH-GRO Moisture +VOC 8260	VOCs 8260 C/D	Metals 6010C	Sulfide	Chloride, Nitrate Nitrogen, Sulfate	EDB 8011 Volatile Headspace Hydrocarbons	Total Alkalinity to pH 4.5	TOC	Ammonia Nitrogen	Remarks
BT-02B-S-10-20201201	12/1/2020	1300	X		X			5	X	X	●								
BT-02B-W-28-20201202	12/2/2020	0920	X			X	9→	●	●	X		●	●	●	X	●	X	●	* no moisture
TRIP BLANK	11/30/2020	—					X	4			X				X				* no volatile head space hydrocarbons

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew-klingbeil@stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/2/20	1250	Pierre	12/2/2	12:50
Pierre	12/2/2	16:31			
			[signature]	12-2-20	1640

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.0 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-22543-1

Login Number: 22543
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-22720-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/11/2021 6:03:48 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/11/2021 6:03:48 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-22720-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
XH	Surrogate recovery is above control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-22720-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-22720-1

Revision
The report being provided is a revision of the original report sent on 12/23/2020. The report (revision 1) is being revised due to: Correct Total TPH units.

Receipt
The samples were received on 12/3/2020 5:29 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

GC/MS VOA
Method 8260C: Reanalysis of the following sample was performed outside of the analytical holding time due to laboratory error : BT-11A-S-8-20201202 (410-22720-1).

Method 8260C: Reanalysis of the following sample was performed outside of the analytical holding time due to laboratory error: BT-11A-S-32-20201203 (410-22720-3).

Method 8260C: The continuing calibration verification (CCV) associated with batch 410-77139 recovered above the upper control limit for C4-C12-TPH-GRO. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C: The concentration reported for C4-C12-TPH-GRO includes a contribution from internal standard t-Butyl Alcohol-d10. Due to the nature of the sample matrix, this area could not be subtracted from the total GRO area for sample BT-11A-S-32-20201203 (410-22720-3) on analytical batch 410-77139.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: Surrogate recovery for the following sample was outside control limits: BT-11A-S-8-20201202 (410-22720-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: The method blank contained the C12-C22 range above the reporting limit (RL). Associated sample was not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank. BT-11A-W-29-20201203 (410-22720-4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: The 1,1,2,2-Tetrachloroethane (Surr) surrogate recovery for the following samples was outside acceptance limits (high biased) on the confirmation column due to matrix interference: BT-11A-W-29-20201203 (410-22720-4). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Job ID: 410-22720-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22720-1

Client Sample ID: BT-11A-S-8-20201202 — Lab Sample ID: 410-22720-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	29	J	300	24	ug/Kg	50	☼	8260C	Total/NA
Benzene	290	J	300	30	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	640		300	24	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	350000	H	66000	26000	ug/Kg	500	☼	8260C	Total/NA
Benzo[a]anthracene	13	J	21	8.3	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	11	J	21	4.1	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	10	J	21	4.1	ug/Kg	1	☼	8270D	Total/NA
Chrysene	20	J	21	4.1	ug/Kg	1	☼	8270D	Total/NA
Fluorene	1800		21	4.1	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	3900		21	4.1	ug/Kg	1	☼	8270D	Total/NA
Pyrene	55		21	4.1	ug/Kg	1	☼	8270D	Total/NA
>C12-C22 (1C)	3000		300	120	mg/Kg	20	☼	8015C TPH	Total/NA
Total Reported TPH	3000		15	6.3	mg/Kg	1	☼	Total TPH	Total/NA
Lead	9.8		1.6	0.65	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 410-22720-2

No Detections.

Client Sample ID: BT-11A-S-32-20201203 — Lab Sample ID: 410-22720-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	7.5		5.3	0.43	ug/Kg	1	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	0.98	J	5.3	0.53	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	240		5.3	0.53	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	2.2	J	5.3	0.53	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	10		5.3	0.43	ug/Kg	1	☼	8260C	Total/NA
1,2-Dichloroethane	4.9	J	5.3	0.64	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	4000	^c	120	47	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	1.6	J	11	1.5	ug/Kg	1	☼	8260C	Total/NA
Benzene - DL	660	H	450	45	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol - DL	61000	H	9100	1400	ug/Kg	50	☼	8260C	Total/NA
Phenanthrene	5.6	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
Lead	22		1.7	0.66	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-11A-W-29-20201203 — Lab Sample ID: 410-22720-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	130		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	44		25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	26		5.0	1.0	ug/L	5		8260C/UST	Total/NA
C4-C12-TPH-GRO	2900		250	150	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	89		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	23	J	25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	1.7	J	5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	140		30	7.0	ug/L	5		8260C/UST	Total/NA
t-Butyl alcohol	79	J	250	60	ug/L	5		8260C/UST	Total/NA
Methane (1C)	140		5.0	3.0	ug/L	1		RSK-175	Total/NA
>C12-C22 (1C)	7.5	B	0.95	0.70	mg/L	10		8015C TPH	Total/NA
Total Reported TPH	7.5		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	2.7		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	65		25	7.5	mg/L	25		EPA 300.0 R2.1	Total/NA
Chloride	94		10	5.0	mg/L	25		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-11A-W-29-20201203 (Continued)
Lab Sample ID: 410-22720-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	62		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	440		1.0	0.20	mg/L	5		6010C	Total Recoverable
Magnesium	48		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	16		2.5	1.0	mg/L	5		6010C	Total Recoverable
Sodium	170		1.0	0.24	mg/L	1		6010C	Total Recoverable
Lead	0.23	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	260		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	0.66	J	0.75	0.25	mg/L	1		4500 NH3 C-2011	Total/NA
Total Organic Carbon	53		5.0	2.5	mg/L	5		5310C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-11A-S-8-20201202
Lab Sample ID: 410-22720-1

Date Collected: 12/02/20 15:25
Matrix: Solid

Date Received: 12/03/20 17:29
Percent Solids: 80.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**29**	**J**	300	24	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
1,3,5-Trimethylbenzene	ND		300	30	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
Toluene	ND		300	36	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
Methyl tertiary butyl ether	ND		300	30	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
Benzene	**290**	**J**	300	30	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
1,2,4-Trimethylbenzene	ND		300	30	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
Isopropylbenzene	**640**		300	24	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
1,2-Dibromoethane	ND		300	24	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
1,2-Dichloroethane	ND		300	36	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
t-Butyl alcohol	ND		6000	900	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50
Xylenes, Total	ND		600	84	ug/Kg	☼	12/03/20 23:19	12/16/20 03:31	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*54 - 135*	*12/03/20 23:19*	*12/16/20 03:31*	*50*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*	*12/03/20 23:19*	*12/16/20 03:31*	*50*
Dibromofluoromethane (Surr)	*90*		*50 - 141*	*12/03/20 23:19*	*12/16/20 03:31*	*50*
Toluene-d8 (Surr)	*102*		*52 - 141*	*12/03/20 23:19*	*12/16/20 03:31*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**350000**	**H**	66000	26000	ug/Kg	☼	12/03/20 23:19	12/20/20 23:18	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*54 - 135*	*12/03/20 23:19*	*12/20/20 23:18*	*500*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*12/03/20 23:19*	*12/20/20 23:18*	*500*
Dibromofluoromethane (Surr)	*87*		*50 - 141*	*12/03/20 23:19*	*12/20/20 23:18*	*500*
Toluene-d8 (Surr)	*92*		*52 - 141*	*12/03/20 23:19*	*12/20/20 23:18*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		21	4.1	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Benzo[a]anthracene	**13**	**J**	21	8.3	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Benzo[a]pyrene	**11**	**J**	21	4.1	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Benzo[b]fluoranthene	**10**	**J**	21	4.1	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Benzo[g,h,i]perylene	ND		21	4.1	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Chrysene	**20**	**J**	21	4.1	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Fluorene	**1800**		21	4.1	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Naphthalene	ND		21	8.3	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Phenanthrene	**3900**		21	4.1	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1
Pyrene	**55**		21	4.1	ug/Kg	☼	12/15/20 10:17	12/15/20 19:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*52*		*39 - 100*	*12/15/20 10:17*	*12/15/20 19:49*	*1*
Nitrobenzene-d5 (Surr)	*124*	*S1+*	*32 - 97*	*12/15/20 10:17*	*12/15/20 19:49*	*1*
p-Terphenyl-d14 (Surr)	*72*		*45 - 108*	*12/15/20 10:17*	*12/15/20 19:49*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	**3000**		300	120	mg/Kg	☼	12/07/20 17:10	12/11/20 16:45	20
>C22-C44 (1C)	ND		300	120	mg/Kg	☼	12/07/20 17:10	12/11/20 16:45	20

Client Sample ID: BT-11A-S-8-20201202 — Lab Sample ID: 410-22720-1

Date Collected: 12/02/20 15:25 — **Matrix: Solid**
Date Received: 12/03/20 17:29 — **Percent Solids: 80.0**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*	*12/07/20 17:10*	*12/11/20 16:45*	*20*
o- terphenyl (Surr) (1C)	*271*	*XH*	*52 - 154*	*12/07/20 17:10*	*12/11/20 16:45*	*20*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**3000**		15	6.3	mg/Kg	☼		12/14/20 11:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**9.8**		1.6	0.65	mg/Kg	☼	12/08/20 11:45	12/09/20 16:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**20.0**		1.0	1.0	%			12/04/20 08:29	1

Client Sample ID: TRIP BLANK — Lab Sample ID: 410-22720-2

Date Collected: 11/30/20 00:00 — **Matrix: Water**
Date Received: 12/03/20 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/13/20 15:14	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 15:14	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/13/20 15:14	1
Benzene	ND		1.0	0.20	ug/L			12/13/20 15:14	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/13/20 15:14	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/13/20 15:14	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/13/20 15:14	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 15:14	1
Toluene	ND		1.0	0.20	ug/L			12/13/20 15:14	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/13/20 15:14	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*12/13/20 15:14*	*1*
4-Bromofluorobenzene (Surr)	*82*		*80 - 120*		*12/13/20 15:14*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/13/20 15:14*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*12/13/20 15:14*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		12/05/20 05:56	12/09/20 04:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*98*		*46 - 136*	*12/05/20 05:56*	*12/09/20 04:08*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*103*		*46 - 136*	*12/05/20 05:56*	*12/09/20 04:08*	*1*

Client Sample ID: BT-11A-S-32-20201203
Lab Sample ID: 410-22720-3
Date Collected: 12/03/20 10:05
Matrix: Solid
Date Received: 12/03/20 17:29
Percent Solids: 78.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**7.5**		5.3	0.43	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
1,3,5-Trimethylbenzene	**0.98**	**J**	5.3	0.53	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
Toluene	ND		5.3	0.64	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
Methyl tertiary butyl ether	**240**		5.3	0.53	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
1,2,4-Trimethylbenzene	**2.2**	**J**	5.3	0.53	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
Isopropylbenzene	**10**		5.3	0.43	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
1,2-Dibromoethane	ND		5.3	0.43	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
1,2-Dichloroethane	**4.9**	**J**	5.3	0.64	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
C4-C12-TPH-GRO	**4000**	**^c**	120	47	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1
Xylenes, Total	**1.6**	**J**	11	1.5	ug/Kg	☼	12/03/20 23:18	12/16/20 05:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*54 - 135*	*12/03/20 23:18*	*12/16/20 05:24*	*1*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*12/03/20 23:18*	*12/16/20 05:24*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*	*12/03/20 23:18*	*12/16/20 05:24*	*1*
Toluene-d8 (Surr)	*98*		*52 - 141*	*12/03/20 23:18*	*12/16/20 05:24*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**660**	**H**	450	45	ug/Kg	☼	12/03/20 23:19	12/23/20 15:41	50
t-Butyl alcohol	**61000**	**H**	9100	1400	ug/Kg	☼	12/03/20 23:19	12/23/20 15:41	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*54 - 135*	*12/03/20 23:19*	*12/23/20 15:41*	*50*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*	*12/03/20 23:19*	*12/23/20 15:41*	*50*
Dibromofluoromethane (Surr)	*82*		*50 - 141*	*12/03/20 23:19*	*12/23/20 15:41*	*50*
Toluene-d8 (Surr)	*83*		*52 - 141*	*12/03/20 23:19*	*12/23/20 15:41*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		21	4.2	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Benzo[a]anthracene	ND		21	8.4	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Benzo[a]pyrene	ND		21	4.2	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Benzo[b]fluoranthene	ND		21	4.2	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Benzo[g,h,i]perylene	ND		21	4.2	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Chrysene	ND		21	4.2	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Fluorene	ND		21	4.2	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Naphthalene	ND		21	8.4	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Phenanthrene	**5.6**	**J**	21	4.2	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1
Pyrene	ND		21	4.2	ug/Kg	☼	12/08/20 09:12	12/14/20 21:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*39 - 100*	*12/08/20 09:12*	*12/14/20 21:28*	*1*
2-Fluorobiphenyl (Surr)	*77*		*39 - 100*	*12/08/20 09:12*	*12/14/20 21:28*	*1*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*	*12/08/20 09:12*	*12/14/20 21:28*	*1*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*	*12/08/20 09:12*	*12/14/20 21:28*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*	*12/08/20 09:12*	*12/14/20 21:28*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*	*12/08/20 09:12*	*12/14/20 21:28*	*1*

Client Sample ID: BT-11A-S-32-20201203 — Lab Sample ID: 410-22720-3

Date Collected: 12/03/20 10:05 — **Matrix: Solid**
Date Received: 12/03/20 17:29 — **Percent Solids: 78.1**

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		15	6.4	mg/Kg	☼	12/07/20 17:10	12/09/20 13:15	1
>C22-C44 (1C)	ND		15	6.4	mg/Kg	☼	12/07/20 17:10	12/09/20 13:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*75*		*54 - 137*	*12/07/20 17:10*	*12/09/20 13:15*	*1*
o- terphenyl (Surr) (1C)	*84*		*52 - 154*	*12/07/20 17:10*	*12/09/20 13:15*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		15	6.4	mg/Kg	☼		12/14/20 11:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**22**		1.7	0.66	mg/Kg	☼	12/08/20 11:45	12/09/20 16:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**21.9**		1.0	1.0	%			12/04/20 08:29	1

Client Sample ID: BT-11A-W-29-20201203 — Lab Sample ID: 410-22720-4

Date Collected: 12/03/20 12:50 — **Matrix: Water**
Date Received: 12/03/20 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**130**		25	5.0	ug/L			12/13/20 16:50	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			12/13/20 16:50	5
1,3,5-Trimethylbenzene	**44**		25	1.5	ug/L			12/13/20 16:50	5
Benzene	**26**		5.0	1.0	ug/L			12/13/20 16:50	5
C4-C12-TPH-GRO	**2900**		250	150	ug/L			12/13/20 16:50	5
Ethylbenzene	**89**		5.0	2.0	ug/L			12/13/20 16:50	5
Isopropylbenzene	**23**	**J**	25	1.0	ug/L			12/13/20 16:50	5
Methyl tertiary butyl ether	**1.7**	**J**	5.0	1.0	ug/L			12/13/20 16:50	5
Toluene	ND		5.0	1.0	ug/L			12/13/20 16:50	5
Xylenes, Total	**140**		30	7.0	ug/L			12/13/20 16:50	5
t-Butyl alcohol	**79**	**J**	250	60	ug/L			12/13/20 16:50	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 120*		*12/13/20 16:50*	*5*
4-Bromofluorobenzene (Surr)	*86*		*80 - 120*		*12/13/20 16:50*	*5*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*12/13/20 16:50*	*5*
Toluene-d8 (Surr)	*105*		*80 - 120*		*12/13/20 16:50*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/04/20 08:02	12/04/20 14:05	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/04/20 08:02	12/04/20 14:05	1
Methane (1C)	**140**		5.0	3.0	ug/L		12/04/20 08:02	12/04/20 14:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 140*	*12/04/20 08:02*	*12/04/20 14:05*	*1*

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22720-1

Client Sample ID: BT-11A-W-29-20201203

Date Collected: 12/03/20 12:50
Date Received: 12/03/20 17:29

Lab Sample ID: 410-22720-4

Matrix: Water

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.021	0.021	ug/L		12/05/20 05:56	12/09/20 04:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*120*		*46 - 136*	*12/05/20 05:56*	*12/09/20 04:25*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*141*	*XH*	*46 - 136*	*12/05/20 05:56*	*12/09/20 04:25*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	**7.5**	**B**	0.95	0.70	mg/L		12/05/20 21:41	12/09/20 14:19	10
>C22-C44 (1C)	ND		0.95	0.70	mg/L		12/05/20 21:41	12/09/20 14:19	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*287*	*XH*	*21 - 116*	*12/05/20 21:41*	*12/09/20 14:19*	*10*
o- terphenyl (Surr) (1C)	*95*		*51 - 126*	*12/05/20 21:41*	*12/09/20 14:19*	*10*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**7.5**		0.20	0.074	mg/L			12/14/20 11:58	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**2.7**		0.50	0.25	mg/L			12/04/20 16:23	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**65**		25	7.5	mg/L			12/09/20 23:33	25
Chloride	**94**		10	5.0	mg/L			12/09/20 23:33	25

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**62**		0.50	0.096	mg/L		12/04/20 05:00	12/06/20 13:45	1
Iron	**440**		1.0	0.20	mg/L		12/04/20 05:00	12/07/20 08:50	5
Magnesium	**48**		0.10	0.040	mg/L		12/04/20 05:00	12/06/20 13:45	1
Potassium	**16**		2.5	1.0	mg/L		12/04/20 05:00	12/07/20 08:50	5
Sodium	**170**		1.0	0.24	mg/L		12/04/20 05:00	12/06/20 13:45	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.23**	**J**	0.52	0.073	ug/L		12/07/20 05:11	12/07/20 11:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**260**		8.0	8.0	mg/L			12/04/20 23:52	1
Ammonia-N	**0.66**	**J**	0.75	0.25	mg/L		12/09/20 12:07	12/09/20 13:26	1
Sulfide	ND		0.30	0.10	mg/L			12/04/20 16:42	1
Total Organic Carbon	**53**		5.0	2.5	mg/L			12/12/20 21:06	5

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22720-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-22720-1	BT-11A-S-8-20201202	90	98	90	102
410-22720-1 - DL	BT-11A-S-8-20201202	91	97	87	92
410-22720-3	BT-11A-S-32-20201203	112	97	103	98
410-22720-3 - DL	BT-11A-S-32-20201203	84	81	82	83
LCS 410-77099/6	Lab Control Sample	101	93	103	101
LCS 410-77099/8	Lab Control Sample	103	96	102	105
LCS 410-77139/28	Lab Control Sample	103	98	101	96
LCS 410-77139/3	Lab Control Sample	103	99	102	97
LCS 410-78593/5	Lab Control Sample	100	94	104	101
LCS 410-78593/7	Lab Control Sample	102	95	103	101
LCS 410-79667/10	Lab Control Sample	106	95	100	102
LCS 410-79667/6	Lab Control Sample	110	93	105	101
LCSD 410-77099/7	Lab Control Sample Dup	102	93	101	101
LCSD 410-77099/9	Lab Control Sample Dup	103	97	102	104
LCSD 410-77139/29	Lab Control Sample Dup	102	99	102	96
LCSD 410-77139/4	Lab Control Sample Dup	102	98	101	97
LCSD 410-78593/6	Lab Control Sample Dup	99	92	103	100
LCSD 410-78593/8	Lab Control Sample Dup	106	96	105	103
LCSD 410-79667/11	Lab Control Sample Dup	107	97	102	103
LCSD 410-79667/7	Lab Control Sample Dup	105	93	105	100
MB 410-77099/12	Method Blank	98	88	96	96
MB 410-77139/6	Method Blank	106	96	104	95
MB 410-78593/12	Method Blank	98	87	96	94
MB 410-79667/12	Method Blank	99	85	93	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-22720-2	TRIP BLANK	94	82	98	103
410-22720-4	BT-11A-W-29-20201203	88	86	97	105
LCS 410-76155/6	Lab Control Sample	91	87	95	106
LCS 410-76155/7	Lab Control Sample	89	86	98	107
LCSD 410-76155/8	Lab Control Sample Dup	89	85	96	109
MB 410-76155/9	Method Blank	89	82	96	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-22720-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	FBP	NBZ	NBZ	TPHd14	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(39-100)	(32-97)	(32-97)	(45-108)	(45-108)
410-22720-1	BT-11A-S-8-20201202	52	52	124 S1+	124 S1+	72	72
410-22720-3	BT-11A-S-32-20201203	77	77	71	71	85	85
LCS 410-74140/2-A	Lab Control Sample	70	70	65	65	84	84
LCS 410-76777/2-A	Lab Control Sample	72	72	73	73	80	80
MB 410-74140/1-A	Method Blank	82	82	79	79	93	93
MB 410-76777/1-A	Method Blank	77	77	76	76	90	90

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-22720-4	BT-11A-W-29-20201203	80
LCS 410-73018/2-A	Lab Control Sample	96
LCSD 410-73018/3-A	Lab Control Sample Dup	98
MB 410-73018/1-A	Method Blank	98

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1122TCA1	1122TCA2
Lab Sample ID	Client Sample ID	(46-136)	(46-136)
410-22720-2	TRIP BLANK	98	103
410-22720-4	BT-11A-W-29-20201203	120	141 XH
LCS 410-73355/2-A	Lab Control Sample	97	104
LCSD 410-73355/3-A	Lab Control Sample Dup	98	106
MB 410-73355/1-A	Method Blank	95	101

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-22720-1	BT-11A-S-8-20201202	72	271 XH
410-22720-3	BT-11A-S-32-20201203	75	84
LCS 410-73973/2-A	Lab Control Sample	79	109
MB 410-73973/1-A	Method Blank	85	103

Surrogate Legend

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-22720-1
Project/Site: PHL Belmont Terminal Drilling Sampling

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(21-116)	(51-126)								
410-22720-4	BT-11A-W-29-20201203	287 XH	95								
LCS 410-73515/2-A	Lab Control Sample	90	110								
LCSD 410-73515/3-A	Lab Control Sample Dup	79	96								
MB 410-73515/1-A	Method Blank	90	100								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-77099/12
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			12/15/20 21:18	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/15/20 21:18	50
Toluene	ND		250	30	ug/Kg			12/15/20 21:18	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/15/20 21:18	50
Benzene	ND		250	25	ug/Kg			12/15/20 21:18	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/15/20 21:18	50
Isopropylbenzene	ND		250	20	ug/Kg			12/15/20 21:18	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/15/20 21:18	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/15/20 21:18	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/15/20 21:18	50
Xylenes, Total	ND		500	70	ug/Kg			12/15/20 21:18	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/15/20 21:18	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*		*12/15/20 21:18*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*12/15/20 21:18*	*50*
Dibromofluoromethane (Surr)	*96*		*50 - 141*		*12/15/20 21:18*	*50*
Toluene-d8 (Surr)	*96*		*52 - 141*		*12/15/20 21:18*	*50*

Lab Sample ID: LCS 410-77099/6
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1000		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	997		ug/Kg		100	73 - 120
Toluene	1000	1030		ug/Kg		103	80 - 120
Methyl tertiary butyl ether	1000	1070		ug/Kg		107	72 - 120
Benzene	1000	1010		ug/Kg		101	80 - 120
Naphthalene	1000	961		ug/Kg		96	48 - 130
1,2,4-Trimethylbenzene	1000	977		ug/Kg		98	73 - 120
Isopropylbenzene	1000	1020		ug/Kg		102	77 - 120
1,2-Dibromoethane	1000	1040		ug/Kg		104	76 - 120
1,2-Dichloroethane	1000	979		ug/Kg		98	71 - 128
Xylenes, Total	3000	3110		ug/Kg		104	75 - 120
t-Butyl alcohol	10000	10800		ug/Kg		108	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-77099/8
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	54000		ug/Kg		108	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*105*		*52 - 141*

Lab Sample ID: LCSD 410-77099/7
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	999		ug/Kg		100	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	979		ug/Kg		98	73 - 120	2	30
Toluene			1000	1020		ug/Kg		102	80 - 120	1	30
Methyl tertiary butyl ether			1000	1070		ug/Kg		107	72 - 120	1	30
Benzene			1000	1000		ug/Kg		100	80 - 120	1	30
Naphthalene			1000	949		ug/Kg		95	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	966		ug/Kg		97	73 - 120	1	30
Isopropylbenzene			1000	1010		ug/Kg		101	77 - 120	1	30
1,2-Dibromoethane			1000	1050		ug/Kg		105	76 - 120	1	30
1,2-Dichloroethane			1000	962		ug/Kg		96	71 - 128	2	30
Xylenes, Total			3000	3060		ug/Kg		102	75 - 120	2	30
t-Butyl alcohol			10000	10600		ug/Kg		106	74 - 121	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-77099/9
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	53200		ug/Kg		106	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-77139/6
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			12/15/20 20:15	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/15/20 20:15	1
Toluene	ND		5.0	0.60	ug/Kg			12/15/20 20:15	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			12/15/20 20:15	1
Benzene	ND		5.0	0.50	ug/Kg			12/15/20 20:15	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/15/20 20:15	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			12/15/20 20:15	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			12/15/20 20:15	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			12/15/20 20:15	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			12/15/20 20:15	1
Xylenes, Total	ND		10	1.4	ug/Kg			12/15/20 20:15	1
t-Butyl alcohol	ND		100	15	ug/Kg			12/15/20 20:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*		*12/15/20 20:15*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*		*12/15/20 20:15*	*1*
Dibromofluoromethane (Surr)	*104*		*50 - 141*		*12/15/20 20:15*	*1*
Toluene-d8 (Surr)	*95*		*52 - 141*		*12/15/20 20:15*	*1*

Lab Sample ID: LCS 410-77139/28
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1120		ug/Kg		112	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCS 410-77139/3
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	20.4		ug/Kg		102	78 - 120
1,3,5-Trimethylbenzene	20.0	19.9		ug/Kg		100	73 - 120
Toluene	20.0	20.0		ug/Kg		100	80 - 120
Methyl tertiary butyl ether	20.0	18.5		ug/Kg		92	72 - 120
Benzene	20.0	21.3		ug/Kg		107	80 - 120
Naphthalene	20.0	20.0		ug/Kg		100	48 - 130
1,2,4-Trimethylbenzene	20.0	20.1		ug/Kg		100	73 - 120
Isopropylbenzene	20.0	20.5		ug/Kg		103	77 - 120
1,2-Dibromoethane	20.0	20.4		ug/Kg		102	76 - 120
1,2-Dichloroethane	20.0	20.1		ug/Kg		101	71 - 128
Xylenes, Total	60.0	62.1		ug/Kg		104	75 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-77139/3
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
t-Butyl alcohol			200	198		ug/Kg		99	74 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-77139/29
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1060		ug/Kg		106	75 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCSD 410-77139/4
Matrix: Solid
Analysis Batch: 77139

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.1		ug/Kg		101	78 - 120	1	30
1,3,5-Trimethylbenzene			20.0	19.8		ug/Kg		99	73 - 120	1	30
Toluene			20.0	19.7		ug/Kg		98	80 - 120	1	30
Methyl tertiary butyl ether			20.0	18.1		ug/Kg		91	72 - 120	2	30
Benzene			20.0	21.2		ug/Kg		106	80 - 120	1	30
Naphthalene			20.0	19.3		ug/Kg		97	48 - 130	3	30
1,2,4-Trimethylbenzene			20.0	20.0		ug/Kg		100	73 - 120	0	30
Isopropylbenzene			20.0	20.2		ug/Kg		101	77 - 120	1	30
1,2-Dibromoethane			20.0	19.7		ug/Kg		98	76 - 120	3	30
1,2-Dichloroethane			20.0	20.1		ug/Kg		100	71 - 128	0	30
Xylenes, Total			60.0	61.6		ug/Kg		103	75 - 120	1	30
t-Butyl alcohol			200	192		ug/Kg		96	74 - 121	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-78593/12
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			12/20/20 21:55	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/20/20 21:55	50
Toluene	ND		250	30	ug/Kg			12/20/20 21:55	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/20/20 21:55	50
Benzene	ND		250	25	ug/Kg			12/20/20 21:55	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/20/20 21:55	50
Isopropylbenzene	ND		250	20	ug/Kg			12/20/20 21:55	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/20/20 21:55	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/20/20 21:55	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/20/20 21:55	50
Xylenes, Total	ND		500	70	ug/Kg			12/20/20 21:55	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/20/20 21:55	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*		*12/20/20 21:55*	*50*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*		*12/20/20 21:55*	*50*
Dibromofluoromethane (Surr)	*96*		*50 - 141*		*12/20/20 21:55*	*50*
Toluene-d8 (Surr)	*94*		*52 - 141*		*12/20/20 21:55*	*50*

Lab Sample ID: LCS 410-78593/5
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	995		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	986		ug/Kg		99	73 - 120
Toluene	1000	1020		ug/Kg		102	80 - 120
Methyl tertiary butyl ether	1000	1080		ug/Kg		108	72 - 120
Benzene	1000	1010		ug/Kg		101	80 - 120
Naphthalene	1000	972		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	1000	973		ug/Kg		97	73 - 120
Isopropylbenzene	1000	1030		ug/Kg		103	77 - 120
1,2-Dibromoethane	1000	1060		ug/Kg		106	76 - 120
1,2-Dichloroethane	1000	994		ug/Kg		99	71 - 128
Xylenes, Total	3000	3090		ug/Kg		103	75 - 120
t-Butyl alcohol	10000	11600		ug/Kg		116	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*
Dibromofluoromethane (Surr)	*104*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-78593/7
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	52300		ug/Kg		105	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-78593/6
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	990		ug/Kg		99	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	983		ug/Kg		98	73 - 120	0	30
Toluene			1000	1000		ug/Kg		100	80 - 120	1	30
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120	1	30
Benzene			1000	1000		ug/Kg		100	80 - 120	1	30
Naphthalene			1000	958		ug/Kg		96	48 - 130	2	30
1,2,4-Trimethylbenzene			1000	967		ug/Kg		97	73 - 120	1	30
Isopropylbenzene			1000	1010		ug/Kg		101	77 - 120	2	30
1,2-Dibromoethane			1000	1040		ug/Kg		104	76 - 120	2	30
1,2-Dichloroethane			1000	968		ug/Kg		97	71 - 128	3	30
Xylenes, Total			3000	3050		ug/Kg		102	75 - 120	1	30
t-Butyl alcohol			10000	11100		ug/Kg		111	74 - 121	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*92*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Lab Sample ID: LCSD 410-78593/8
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	51400		ug/Kg		103	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-79667/12
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			12/23/20 14:02	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Toluene	ND		250	30	ug/Kg			12/23/20 14:02	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/23/20 14:02	50
Benzene	ND		250	25	ug/Kg			12/23/20 14:02	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Isopropylbenzene	ND		250	20	ug/Kg			12/23/20 14:02	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/23/20 14:02	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/23/20 14:02	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/23/20 14:02	50
Xylenes, Total	ND		500	70	ug/Kg			12/23/20 14:02	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/23/20 14:02	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*		*12/23/20 14:02*	*50*
4-Bromofluorobenzene (Surr)	*85*		*50 - 131*		*12/23/20 14:02*	*50*
Dibromofluoromethane (Surr)	*93*		*50 - 141*		*12/23/20 14:02*	*50*
Toluene-d8 (Surr)	*93*		*52 - 141*		*12/23/20 14:02*	*50*

Lab Sample ID: LCS 410-79667/10
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	50000	56400		ug/Kg		113	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*102*		*52 - 141*

Lab Sample ID: LCS 410-79667/6
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1010		ug/Kg		101	78 - 120
1,3,5-Trimethylbenzene	1000	992		ug/Kg		99	73 - 120
Toluene	1000	1030		ug/Kg		103	80 - 120
Methyl tertiary butyl ether	1000	1080		ug/Kg		108	72 - 120
Benzene	1000	1040		ug/Kg		104	80 - 120
Naphthalene	1000	985		ug/Kg		99	48 - 130
1,2,4-Trimethylbenzene	1000	987		ug/Kg		99	73 - 120
Isopropylbenzene	1000	1050		ug/Kg		105	77 - 120
1,2-Dibromoethane	1000	1070		ug/Kg		107	76 - 120
1,2-Dichloroethane	1000	1020		ug/Kg		102	71 - 128
Xylenes, Total	3000	3160		ug/Kg		105	75 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-79667/6
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
t-Butyl alcohol			10000	10000		ug/Kg		100	74 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-79667/11
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	56500		ug/Kg		113	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Lab Sample ID: LCSD 410-79667/7
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	998		ug/Kg		100	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	990		ug/Kg		99	73 - 120	0	30
Toluene			1000	1030		ug/Kg		103	80 - 120	0	30
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120	2	30
Benzene			1000	1020		ug/Kg		102	80 - 120	2	30
Naphthalene			1000	997		ug/Kg		100	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	977		ug/Kg		98	73 - 120	1	30
Isopropylbenzene			1000	1030		ug/Kg		103	77 - 120	1	30
1,2-Dibromoethane			1000	1070		ug/Kg		107	76 - 120	1	30
1,2-Dichloroethane			1000	985		ug/Kg		98	71 - 128	3	30
Xylenes, Total			3000	3120		ug/Kg		104	75 - 120	1	30
t-Butyl alcohol			10000	8840		ug/Kg		88	74 - 121	13	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-76155/9
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/13/20 14:05	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 14:05	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/13/20 14:05	1
Benzene	ND		1.0	0.20	ug/L			12/13/20 14:05	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/13/20 14:05	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/13/20 14:05	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/13/20 14:05	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 14:05	1
Toluene	ND		1.0	0.20	ug/L			12/13/20 14:05	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/13/20 14:05	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 14:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*12/13/20 14:05*	*1*
4-Bromofluorobenzene (Surr)	*82*		*80 - 120*		*12/13/20 14:05*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*12/13/20 14:05*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*12/13/20 14:05*	*1*

Lab Sample ID: LCS 410-76155/6
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	18.4		ug/L		92	75 - 120
1,2-Dichloroethane	20.0	14.5		ug/L		73	73 - 124
1,3,5-Trimethylbenzene	20.0	18.5		ug/L		92	75 - 120
Benzene	20.0	16.7		ug/L		83	80 - 120
Ethylbenzene	20.0	19.5		ug/L		98	80 - 120
Isopropylbenzene	20.0	19.2		ug/L		96	80 - 120
Methyl tertiary butyl ether	20.0	15.5		ug/L		77	69 - 122
Naphthalene	20.0	19.3		ug/L		96	53 - 124
Toluene	20.0	19.7		ug/L		99	80 - 120
Xylenes, Total	60.0	59.1		ug/L		99	80 - 120
t-Butyl alcohol	200	182		ug/L		91	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCS 410-76155/7
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	840		ug/L		84	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-76155/7
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*
4-Bromofluorobenzene (Surr)	*86*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: LCSD 410-76155/8
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	838		ug/L		84	67 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*
4-Bromofluorobenzene (Surr)	*85*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-74140/1-A
Matrix: Solid
Analysis Batch: 74292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74140

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Chrysene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Fluorene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Naphthalene	ND		17	6.7	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Phenanthrene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1
Pyrene	ND		17	3.3	ug/Kg		12/08/20 09:12	12/09/20 13:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*	*12/08/20 09:12*	*12/09/20 13:17*	*1*
Nitrobenzene-d5 (Surr)	*79*		*32 - 97*	*12/08/20 09:12*	*12/09/20 13:17*	*1*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*	*12/08/20 09:12*	*12/09/20 13:17*	*1*

Lab Sample ID: LCS 410-74140/2-A
Matrix: Solid
Analysis Batch: 74292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74140

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			1670	1540		ug/Kg		92	75 - 114		
Benzo[a]anthracene			1670	1540		ug/Kg		92	73 - 114		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-74140/2-A
Matrix: Solid
Analysis Batch: 74292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74140

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	1670	1350		ug/Kg		81	76 - 113
Benzo[b]fluoranthene	1670	1450		ug/Kg		87	73 - 117
Benzo[g,h,i]perylene	1670	1700		ug/Kg		102	77 - 114
Chrysene	1670	1520		ug/Kg		91	66 - 111
Fluorene	1670	1350		ug/Kg		81	62 - 110
Naphthalene	1670	1130		ug/Kg		68	60 - 94
Phenanthrene	1670	1500		ug/Kg		90	74 - 112
Pyrene	1670	1590		ug/Kg		96	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*70*		*39 - 100*
Nitrobenzene-d5 (Surr)	*65*		*32 - 97*
p-Terphenyl-d14 (Surr)	*84*		*45 - 108*

Lab Sample ID: MB 410-76777/1-A
Matrix: Solid
Analysis Batch: 76961

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76777

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Chrysene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Fluorene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Naphthalene	ND		17	6.7	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Phenanthrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Pyrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*39 - 100*	*12/15/20 10:17*	*12/15/20 14:29*	*1*
Nitrobenzene-d5 (Surr)	*76*		*32 - 97*	*12/15/20 10:17*	*12/15/20 14:29*	*1*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*	*12/15/20 10:17*	*12/15/20 14:29*	*1*

Lab Sample ID: LCS 410-76777/2-A
Matrix: Solid
Analysis Batch: 76961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76777

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1360		ug/Kg		82	75 - 114
Benzo[a]anthracene	1670	1360		ug/Kg		82	73 - 114
Benzo[a]pyrene	1670	1330		ug/Kg		80	76 - 113
Benzo[b]fluoranthene	1670	1340		ug/Kg		80	73 - 117
Benzo[g,h,i]perylene	1670	1280		ug/Kg		77	77 - 114
Chrysene	1670	1390		ug/Kg		83	66 - 111
Fluorene	1670	1340		ug/Kg		80	62 - 110
Naphthalene	1670	1190		ug/Kg		71	60 - 94

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-76777/2-A
Matrix: Solid
Analysis Batch: 76961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76777

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenanthrene	1670	1350		ug/Kg		81	74 - 112
Pyrene	1670	1330		ug/Kg		80	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*39 - 100*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*
p-Terphenyl-d14 (Surr)	*80*		*45 - 108*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-73018/1-A
Matrix: Water
Analysis Batch: 73057

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/04/20 08:02	12/04/20 10:27	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/04/20 08:02	12/04/20 10:27	1
Methane (1C)	ND		5.0	3.0	ug/L		12/04/20 08:02	12/04/20 10:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*12/04/20 08:02*	*12/04/20 10:27*	*1*

Lab Sample ID: LCS 410-73018/2-A
Matrix: Water
Analysis Batch: 73057

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	59.4		ug/L		100	85 - 115
Ethene (1C)	60.4	60.3		ug/L		100	83 - 115
Methane (1C)	59.4	61.5		ug/L		104	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*96*		*28 - 140*

Lab Sample ID: LCSD 410-73018/3-A
Matrix: Water
Analysis Batch: 73057

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 73018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)	59.4	59.1		ug/L		100	85 - 115	0	20
Ethene (1C)	60.4	60.2		ug/L		100	83 - 115	0	20
Methane (1C)	59.4	61.3		ug/L		103	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*98*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-73355/1-A
Matrix: Water
Analysis Batch: 74459

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73355

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		12/05/20 05:56	12/08/20 21:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*95*		*46 - 136*	*12/05/20 05:56*	*12/08/20 21:54*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*101*		*46 - 136*	*12/05/20 05:56*	*12/08/20 21:54*	*1*

Lab Sample ID: LCS 410-73355/2-A
Matrix: Water
Analysis Batch: 74459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73355

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.130		ug/L		101	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*97*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*104*		*46 - 136*

Lab Sample ID: LCSD 410-73355/3-A
Matrix: Water
Analysis Batch: 74459

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 73355

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.128		ug/L		100	60 - 140	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*98*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-73515/1-A
Matrix: Water
Analysis Batch: 73891

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73515

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	0.602	B	0.10	0.074	mg/L		12/05/20 21:41	12/07/20 20:20	1
>C22-C44 (1C)	ND		0.10	0.074	mg/L		12/05/20 21:41	12/07/20 20:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*90*		*21 - 116*	*12/05/20 21:41*	*12/07/20 20:20*	*1*
o- terphenyl (Surr) (1C)	*100*		*51 - 126*	*12/05/20 21:41*	*12/07/20 20:20*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 410-73515/2-A
Matrix: Water
Analysis Batch: 73891

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73515

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.805	0.654		mg/L		81	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*90*		*21 - 116*
o- terphenyl (Surr) (1C)	*110*		*51 - 126*

Lab Sample ID: LCSD 410-73515/3-A
Matrix: Water
Analysis Batch: 73891

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 73515

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.805	0.595		mg/L		74	53 - 115	10	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*79*		*21 - 116*
o- terphenyl (Surr) (1C)	*96*		*51 - 126*

Lab Sample ID: MB 410-73973/1-A
Matrix: Solid
Analysis Batch: 74726

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		12	5.0	mg/Kg		12/07/20 17:10	12/09/20 10:23	1
>C22-C44 (1C)	ND		12	5.0	mg/Kg		12/07/20 17:10	12/09/20 10:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*85*		*54 - 137*	*12/07/20 17:10*	*12/09/20 10:23*	*1*
o- terphenyl (Surr) (1C)	*103*		*52 - 154*	*12/07/20 17:10*	*12/09/20 10:23*	*1*

Lab Sample ID: LCS 410-73973/2-A
Matrix: Solid
Analysis Batch: 74726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73973

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	117		mg/Kg		87	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*79*		*54 - 137*
o- terphenyl (Surr) (1C)	*109*		*52 - 154*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-72938/4
Matrix: Water
Analysis Batch: 72938

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			12/04/20 14:06	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: LCS 410-72938/3
Matrix: Water
Analysis Batch: 72938

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	0.750	0.721		mg/L		96	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-74781/4
Matrix: Water
Analysis Batch: 74781

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			12/09/20 15:09	1
Chloride	ND		0.40	0.20	mg/L			12/09/20 15:09	1

Lab Sample ID: LCS 410-74781/3
Matrix: Water
Analysis Batch: 74781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.36		mg/L		98	90 - 110
Chloride	3.00	2.80		mg/L		93	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-74313/1-A
Matrix: Solid
Analysis Batch: 75017

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74313

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.55	mg/Kg		12/08/20 11:45	12/09/20 16:06	1

Lab Sample ID: LCS 410-74313/2-A
Matrix: Solid
Analysis Batch: 75017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74313

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.68	2.85		mg/Kg		106	80 - 120

Lab Sample ID: MB 410-72922/1-A
Matrix: Water
Analysis Batch: 73774

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 72922

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		12/04/20 05:00	12/07/20 08:24	1
Iron	ND		0.20	0.040	mg/L		12/04/20 05:00	12/07/20 08:24	1
Magnesium	ND		0.10	0.040	mg/L		12/04/20 05:00	12/07/20 08:24	1
Potassium	ND		0.50	0.20	mg/L		12/04/20 05:00	12/07/20 08:24	1
Sodium	ND		1.0	0.24	mg/L		12/04/20 05:00	12/07/20 08:24	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-72922/2-A
Matrix: Water
Analysis Batch: 73774

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 72922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.427	J	mg/L		107	80 - 120
Iron	0.400	0.415		mg/L		104	80 - 120
Magnesium	0.200	0.210		mg/L		105	80 - 120
Potassium	6.00	5.98		mg/L		100	80 - 120
Sodium	2.00	2.07		mg/L		104	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-73657/1-A
Matrix: Water
Analysis Batch: 73877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73657

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		12/07/20 05:11	12/07/20 11:14	1

Lab Sample ID: LCS 410-73657/2-A
Matrix: Water
Analysis Batch: 73877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73657

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	30.5		ug/L		102	90 - 115

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-73926/63
Matrix: Water
Analysis Batch: 73926

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			12/04/20 23:27	1

Lab Sample ID: LCS 410-73926/66
Matrix: Water
Analysis Batch: 73926

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	162		mg/L		86	82 - 106

Lab Sample ID: 410-22720-4 MS
Matrix: Water
Analysis Batch: 73926

Client Sample ID: BT-11A-W-29-20201203
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	260		189	418		mg/L		85	82 - 106

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: 410-22720-4 DU
Matrix: Water
Analysis Batch: 73926

Client Sample ID: BT-11A-W-29-20201203
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	260		272		mg/L		5	5

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-74842/1-A
Matrix: Water
Analysis Batch: 74877

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		12/09/20 12:07	12/09/20 13:26	1

Lab Sample ID: LCS 410-74842/2-A
Matrix: Water
Analysis Batch: 74877

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 74842

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	500	476		mg/L		95	93 - 100

Lab Sample ID: LCSD 410-74842/3-A
Matrix: Water
Analysis Batch: 74877

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 74842

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N	500	479		mg/L		96	93 - 100	1	5

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-73234/1
Matrix: Water
Analysis Batch: 73234

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			12/04/20 16:42	1

Lab Sample ID: LCS 410-73234/10
Matrix: Water
Analysis Batch: 73234

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1.00	0.918		mg/L		92	90 - 110

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-77065/5
Matrix: Water
Analysis Batch: 77065

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			12/12/20 17:19	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22720-1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 410-78410/14
Matrix: Water
Analysis Batch: 78410

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	23.1		mg/L		92	91 - 113

GC/MS VOA

Prep Batch: 72898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	5035	

Prep Batch: 72899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1 - DL	BT-11A-S-8-20201202	Total/NA	Solid	5035	
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	5035	
410-22720-3 - DL	BT-11A-S-32-20201203	Total/NA	Solid	5035	

Analysis Batch: 76155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-2	TRIP BLANK	Total/NA	Water	8260C/UST	
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	8260C/UST	
MB 410-76155/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-76155/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-76155/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-76155/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 77099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	8260C	72899
MB 410-77099/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-77099/6	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-77099/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-77099/7	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-77099/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 77139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	8260C	72898
MB 410-77139/6	Method Blank	Total/NA	Solid	8260C	
LCS 410-77139/28	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-77139/3	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-77139/29	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-77139/4	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 78593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1 - DL	BT-11A-S-8-20201202	Total/NA	Solid	8260C	72899
MB 410-78593/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-78593/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-78593/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-78593/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-78593/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 79667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-3 - DL	BT-11A-S-32-20201203	Total/NA	Solid	8260C	72899
MB 410-79667/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-79667/10	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-79667/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-79667/11	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS VOA (Continued)

Analysis Batch: 79667 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 410-79667/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 74140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	3546	
MB 410-74140/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-74140/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 74292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-74140/1-A	Method Blank	Total/NA	Solid	8270D	74140
LCS 410-74140/2-A	Lab Control Sample	Total/NA	Solid	8270D	74140

Analysis Batch: 76604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	8270D	74140

Prep Batch: 76777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	3546	
MB 410-76777/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-76777/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 76961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	8270D	76777
MB 410-76777/1-A	Method Blank	Total/NA	Solid	8270D	76777
LCS 410-76777/2-A	Lab Control Sample	Total/NA	Solid	8270D	76777

GC VOA

Prep Batch: 73018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	RSK-175	
MB 410-73018/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-73018/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-73018/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 73057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	RSK-175	73018
MB 410-73018/1-A	Method Blank	Total/NA	Water	RSK-175	73018
LCS 410-73018/2-A	Lab Control Sample	Total/NA	Water	RSK-175	73018
LCSD 410-73018/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	73018

GC Semi VOA

Analysis Batch: 31867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	Total TPH	

GC Semi VOA (Continued)

Analysis Batch: 31867 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	Total TPH	
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	Total TPH	

Prep Batch: 73355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-2	TRIP BLANK	Total/NA	Water	8011	
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	8011	
MB 410-73355/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-73355/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-73355/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Prep Batch: 73515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	3510C	
MB 410-73515/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-73515/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-73515/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 73891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-73515/1-A	Method Blank	Total/NA	Water	8015C TPH	73515
LCS 410-73515/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	73515
LCSD 410-73515/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	73515

Prep Batch: 73973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	3546	
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	3546	
MB 410-73973/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-73973/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 74459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-2	TRIP BLANK	Total/NA	Water	8011	73355
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	8011	73355
MB 410-73355/1-A	Method Blank	Total/NA	Water	8011	73355
LCS 410-73355/2-A	Lab Control Sample	Total/NA	Water	8011	73355
LCSD 410-73355/3-A	Lab Control Sample Dup	Total/NA	Water	8011	73355

Analysis Batch: 74726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	8015C TPH	73973
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	8015C TPH	73515
MB 410-73973/1-A	Method Blank	Total/NA	Solid	8015C TPH	73973
LCS 410-73973/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	73973

Analysis Batch: 75850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	8015C TPH	73973

HPLC/IC

Analysis Batch: 72938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	EPA 300.0 R2.1	
MB 410-72938/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-72938/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 74781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	EPA 300.0 R2.1	
MB 410-74781/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-74781/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 72922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total Recoverable	Water	3005A	
MB 410-72922/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-72922/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 73529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Dissolved	Water	Filtration	

Analysis Batch: 73582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total Recoverable	Water	6010C	72922

Prep Batch: 73657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Dissolved	Water	Non-Digest Prep	73529
MB 410-73657/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-73657/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 73774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total Recoverable	Water	6010C	72922
MB 410-72922/1-A	Method Blank	Total Recoverable	Water	6010C	72922
LCS 410-72922/2-A	Lab Control Sample	Total Recoverable	Water	6010C	72922

Analysis Batch: 73877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Dissolved	Water	6020A	73657
MB 410-73657/1-A	Method Blank	Total/NA	Water	6020A	73657
LCS 410-73657/2-A	Lab Control Sample	Total/NA	Water	6020A	73657

Prep Batch: 74313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	3050B	
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	3050B	
MB 410-74313/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-74313/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Metals

Analysis Batch: 75017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	6010C	74313
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	6010C	74313
MB 410-74313/1-A	Method Blank	Total/NA	Solid	6010C	74313
LCS 410-74313/2-A	Lab Control Sample	Total/NA	Solid	6010C	74313

General Chemistry

Analysis Batch: 73030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-1	BT-11A-S-8-20201202	Total/NA	Solid	Moisture	
410-22720-3	BT-11A-S-32-20201203	Total/NA	Solid	Moisture	

Analysis Batch: 73234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	4500 S2 D-2011	
MB 410-73234/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-73234/10	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Analysis Batch: 73926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	2320B-2011	
MB 410-73926/63	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-73926/66	Lab Control Sample	Total/NA	Water	2320B-2011	
410-22720-4 MS	BT-11A-W-29-20201203	Total/NA	Water	2320B-2011	
410-22720-4 DU	BT-11A-W-29-20201203	Total/NA	Water	2320B-2011	

Prep Batch: 74842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	4500 NH3 B-2011	
MB 410-74842/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-74842/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-74842/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 74877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	4500 NH3 C-2011	74842
MB 410-74842/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	74842
LCS 410-74842/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	74842
LCSD 410-74842/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	74842

Analysis Batch: 77065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22720-4	BT-11A-W-29-20201203	Total/NA	Water	5310C-2011	
MB 410-77065/5	Method Blank	Total/NA	Water	5310C-2011	

Client: Stantec Consulting Corp.
Job ID: 410-22720-1
Project/Site: PHL Belmont Terminal Drilling Sampling

General Chemistry

Analysis Batch: 78410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-78410/14	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22720-1

Client Sample ID: BT-11A-S-8-20201202
Date Collected: 12/02/20 15:25
Date Received: 12/03/20 17:29

Lab Sample ID: 410-22720-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	73030	12/04/20 08:29	UVJN	ELLE

Client Sample ID: BT-11A-S-8-20201202
Date Collected: 12/02/20 15:25
Date Received: 12/03/20 17:29

Lab Sample ID: 410-22720-1
Matrix: Solid
Percent Solids: 80.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			72899	12/03/20 23:19	UK3O	ELLE
Total/NA	Analysis	8260C		50	77099	12/16/20 03:31	Z6JB	ELLE
Total/NA	Prep	5035	DL		72899	12/03/20 23:19	UK3O	ELLE
Total/NA	Analysis	8260C	DL	500	78593	12/20/20 23:18	Z6JB	ELLE
Total/NA	Prep	3546			76777	12/15/20 10:17	A2VL	ELLE
Total/NA	Analysis	8270D		1	76961	12/15/20 19:49	UWHS	ELLE
Total/NA	Prep	3546			73973	12/07/20 17:10	FTV5	ELLE
Total/NA	Analysis	8015C TPH		20	75850	12/11/20 16:45	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	31867	12/14/20 11:58	KP5X	ELLE
Total/NA	Prep	3050B			74313	12/08/20 11:45	UAMX	ELLE
Total/NA	Analysis	6010C		1	75017	12/09/20 16:50	UCIG	ELLE

Client Sample ID: TRIP BLANK
Date Collected: 11/30/20 00:00
Date Received: 12/03/20 17:29

Lab Sample ID: 410-22720-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	76155	12/13/20 15:14	UKAD	ELLE
Total/NA	Prep	8011			73355	12/05/20 05:56	UKQ8	ELLE
Total/NA	Analysis	8011		1	74459	12/09/20 04:08	AC3T	ELLE

Client Sample ID: BT-11A-S-32-20201203
Date Collected: 12/03/20 10:05
Date Received: 12/03/20 17:29

Lab Sample ID: 410-22720-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	73030	12/04/20 08:29	UVJN	ELLE

Client Sample ID: BT-11A-S-32-20201203
Date Collected: 12/03/20 10:05
Date Received: 12/03/20 17:29

Lab Sample ID: 410-22720-3
Matrix: Solid
Percent Solids: 78.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		72899	12/03/20 23:19	UK3O	ELLE
Total/NA	Analysis	8260C	DL	50	79667	12/23/20 15:41	UKAD	ELLE
Total/NA	Prep	5035			72898	12/03/20 23:18	UK3O	ELLE
Total/NA	Analysis	8260C		1	77139	12/16/20 05:24	NSK7	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22720-1

Client Sample ID: BT-11A-S-32-20201203

Lab Sample ID: 410-22720-3

Date Collected: 12/03/20 10:05
Date Received: 12/03/20 17:29

Matrix: Solid
Percent Solids: 78.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			74140	12/08/20 09:12	A2VL	ELLE
Total/NA	Analysis	8270D		1	76604	12/14/20 21:28	ULM3	ELLE
Total/NA	Prep	3546			73973	12/07/20 17:10	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	74726	12/09/20 13:15	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	31867	12/14/20 11:58	KP5X	ELLE
Total/NA	Prep	3050B			74313	12/08/20 11:45	UAMX	ELLE
Total/NA	Analysis	6010C		1	75017	12/09/20 16:46	UCIG	ELLE

Client Sample ID: BT-11A-W-29-20201203

Lab Sample ID: 410-22720-4

Date Collected: 12/03/20 12:50
Date Received: 12/03/20 17:29

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	76155	12/13/20 16:50	UKAD	ELLE
Total/NA	Prep	RSK-175			73018	12/04/20 08:02	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	73057	12/04/20 14:05	LXF2	ELLE
Total/NA	Prep	8011			73355	12/05/20 05:56	UKQ8	ELLE
Total/NA	Analysis	8011		1	74459	12/09/20 04:25	AC3T	ELLE
Total/NA	Prep	3510C			73515	12/05/20 21:41	UKL2	ELLE
Total/NA	Analysis	8015C TPH		10	74726	12/09/20 14:19	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	31867	12/14/20 11:58	KP5X	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		25	74781	12/09/20 23:33	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	72938	12/04/20 16:23	W5UX	ELLE
Total Recoverable	Prep	3005A			72922	12/04/20 05:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	73582	12/06/20 13:45	MDP5	ELLE
Total Recoverable	Prep	3005A			72922	12/04/20 05:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		5	73774	12/07/20 08:50	ULJC	ELLE
Dissolved	Filtration	Filtration			73529	12/06/20 06:50	UDL9	ELLE
Dissolved	Prep	Non-Digest Prep			73657	12/07/20 05:11	UJL8	ELLE
Dissolved	Analysis	6020A		1	73877	12/07/20 11:48	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	73926	12/04/20 23:52	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			74842	12/09/20 12:07	UYB0	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	74877	12/09/20 13:26	UYB0	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	73234	12/04/20 16:42	P8DZ	ELLE
Total/NA	Analysis	5310C-2011		5	77065	12/12/20 21:06	KGQ6	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-22720-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-22720-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22720-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-22720-1	BT-11A-S-8-20201202	Solid	12/02/20 15:25	12/03/20 17:29	
410-22720-2	TRIP BLANK	Water	11/30/20 00:00	12/03/20 17:29	
410-22720-3	BT-11A-S-32-20201203	Solid	12/03/20 10:05	12/03/20 17:29	
410-22720-4	BT-11A-W-29-20201203	Water	12/03/20 12:50	12/03/20 17:29	

Environmental Analysis Request and Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-22720 Chain of Custody

For lab use only _____

COC #615199

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Termical Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dana Hoblitzell / Dave Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only: FSC: _____ SCR#: _____

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, P=H_3PO_4, F=Field Filtered, O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO Moisture +Vol 8260	VOCs 8260 c/D	Metals 6010C	Sulfide	Chloride, Nitrate Nitrogen, Sulfate	EDB 8011 Volatile Headspace Hydrocarbons	Total Alkalinity to pH 4.5	TOC	Ammonia Nitrogen	Remarks
BT-11A-S-8-20201202	12/2/20	1525	X		X			5	X	X									
TRIP BLANK	11/30/2020	←					X	1			X				X				* no volatile headspace hydrocarbons
BT-11A-S-32-20201203	12/3/2020	1005	X		X			5	X	X									
BT-11A-W-29-20201203	12/3/2020	1250	X			X		16	X	X		X	X	X	X	X	X	X	* no moisture

Turnaround Time (TAT) Requested (please circle)

Standard | Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dave	12/3/20	13 ca	Pierre	12/3/20	1300
Pierre	12/3/20	1706			

EDD Required? Yes / No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.0 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc

The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

ES

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-22720-1

Login Number: 22720 **List Source: Eurofins Lancaster Laboratories Env**
List Number: 1
Creator: Sanchez, Melvin E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-22930-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/11/2021 6:11:26 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/11/2021 6:11:26 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-22930-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
XH	Surrogate recovery is above control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-22930-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22930-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-22930-1

Revision
The report being provided is a revision of the original report sent on 12/23/2020. The report (revision 1) is being revised due to: Correct Total TPH units.

Receipt
The samples were received on 12/4/2020 6:32 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

GC/MS VOA
Method 8260C: Surrogate recovery for the following sample was outside control limits: BT-11B-S-8-20201203 (410-22930-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: Surrogate recovery for the following sample was outside the upper control limits: BT-11B-S-8-20201203 (410-22930-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22930-1

Client Sample ID: BT-11B-S-8-20201203 — Lab Sample ID: 410-22930-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	55	J	330	27	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	35	J	330	33	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	36	J	330	33	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	4200		330	27	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	140	J	670	93	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	1800000		73000	29000	ug/Kg	500	☼	8260C	Total/NA
Anthracene	44		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	12	J	20	7.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	8.2	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	7.4	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	4.6	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	8.9	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	660		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	350		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Pyrene	31		20	4.0	ug/Kg	1	☼	8270D	Total/NA
>C12-C22 (1C)	1100		140	60	mg/Kg	10	☼	8015C TPH	Total/NA
>C22-C44 (1C)	60	J	140	60	mg/Kg	10	☼	8015C TPH	Total/NA
Total Reported TPH	1200		14	6.0	mg/Kg	1	☼	Total TPH	Total/NA
Lead	11		1.4	0.57	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 410-22930-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-11B-S-8-20201203
Lab Sample ID: 410-22930-1

Date Collected: 12/03/20 15:15
Matrix: Solid

Date Received: 12/04/20 18:32
Percent Solids: 82.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**55**	**J**	330	27	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
1,3,5-Trimethylbenzene	**35**	**J**	330	33	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
Toluene	ND		330	40	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
Methyl tertiary butyl ether	ND		330	33	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
Benzene	ND		330	33	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
1,2,4-Trimethylbenzene	**36**	**J**	330	33	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
Isopropylbenzene	**4200**		330	27	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
1,2-Dibromoethane	ND		330	27	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
1,2-Dichloroethane	ND		330	40	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
t-Butyl alcohol	ND		6700	1000	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50
Xylenes, Total	**140**	**J**	670	93	ug/Kg	☼	12/07/20 10:08	12/16/20 04:33	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*54 - 135*	*12/07/20 10:08*	*12/16/20 04:33*	*50*
4-Bromofluorobenzene (Surr)	*191*	*S1+*	*50 - 131*	*12/07/20 10:08*	*12/16/20 04:33*	*50*
Dibromofluoromethane (Surr)	*94*		*50 - 141*	*12/07/20 10:08*	*12/16/20 04:33*	*50*
Toluene-d8 (Surr)	*102*		*52 - 141*	*12/07/20 10:08*	*12/16/20 04:33*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**1800000**		73000	29000	ug/Kg	☼	12/07/20 10:08	12/16/20 04:53	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*54 - 135*	*12/07/20 10:08*	*12/16/20 04:53*	*500*
4-Bromofluorobenzene (Surr)	*162*	*S1+*	*50 - 131*	*12/07/20 10:08*	*12/16/20 04:53*	*500*
Dibromofluoromethane (Surr)	*84*		*50 - 141*	*12/07/20 10:08*	*12/16/20 04:53*	*500*
Toluene-d8 (Surr)	*94*		*52 - 141*	*12/07/20 10:08*	*12/16/20 04:53*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**44**		20	4.0	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Benzo[a]anthracene	**12**	**J**	20	7.9	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Benzo[a]pyrene	**8.2**	**J**	20	4.0	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Benzo[b]fluoranthene	**7.4**	**J**	20	4.0	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Benzo[g,h,i]perylene	**4.6**	**J**	20	4.0	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Chrysene	**8.9**	**J**	20	4.0	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Fluorene	**660**		20	4.0	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Naphthalene	ND		20	7.9	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Phenanthrene	**350**		20	4.0	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1
Pyrene	**31**		20	4.0	ug/Kg	☼	12/09/20 09:00	12/14/20 20:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*39 - 100*	*12/09/20 09:00*	*12/14/20 20:45*	*1*
Nitrobenzene-d5 (Surr)	*114*	*S1+*	*32 - 97*	*12/09/20 09:00*	*12/14/20 20:45*	*1*
p-Terphenyl-d14 (Surr)	*87*		*45 - 108*	*12/09/20 09:00*	*12/14/20 20:45*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	**1100**		140	60	mg/Kg	☼	12/08/20 16:41	12/11/20 16:24	10
>C22-C44 (1C)	**60**	**J**	140	60	mg/Kg	☼	12/08/20 16:41	12/11/20 16:24	10

Client Sample ID: BT-11B-S-8-20201203 — Lab Sample ID: 410-22930-1

Date Collected: 12/03/20 15:15 — **Matrix: Solid**
Date Received: 12/04/20 18:32 — **Percent Solids: 82.9**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*334*	*XH*	*54 - 137*	*12/08/20 16:41*	*12/11/20 16:24*	*10*
o- terphenyl (Surr) (1C)	*98*		*52 - 154*	*12/08/20 16:41*	*12/11/20 16:24*	*10*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**1200**		14	6.0	mg/Kg	☼		12/15/20 11:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**11**		1.4	0.57	mg/Kg	☼	12/08/20 11:45	12/09/20 17:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.1**		1.0	1.0	%			12/05/20 03:16	1

Client Sample ID: Trip Blank — Lab Sample ID: 410-22930-2

Date Collected: 11/30/20 00:00 — **Matrix: Water**
Date Received: 12/04/20 18:32

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/13/20 15:38	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 15:38	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/13/20 15:38	1
Benzene	ND		1.0	0.20	ug/L			12/13/20 15:38	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/13/20 15:38	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/13/20 15:38	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/13/20 15:38	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 15:38	1
Toluene	ND		1.0	0.20	ug/L			12/13/20 15:38	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/13/20 15:38	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 15:38	1
Ethylene Dibromide	ND		1.0	0.20	ug/L			12/13/20 15:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*12/13/20 15:38*	*1*
4-Bromofluorobenzene (Surr)	*82*		*80 - 120*		*12/13/20 15:38*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*12/13/20 15:38*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/13/20 15:38*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22930-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-22930-1	BT-11B-S-8-20201203	94	191 S1+	94	102
410-22930-1 - DL	BT-11B-S-8-20201203	80	162 S1+	84	94
LCS 410-77099/6	Lab Control Sample	101	93	103	101
LCS 410-77099/8	Lab Control Sample	103	96	102	105
LCSD 410-77099/7	Lab Control Sample Dup	102	93	101	101
LCSD 410-77099/9	Lab Control Sample Dup	103	97	102	104
MB 410-77099/12	Method Blank	98	88	96	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-22930-2	Trip Blank	91	82	97	102
LCS 410-76155/6	Lab Control Sample	91	87	95	106
LCS 410-76155/7	Lab Control Sample	89	86	98	107
LCSD 410-76155/8	Lab Control Sample Dup	89	85	96	109
MB 410-76155/9	Method Blank	89	82	96	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-22930-1	BT-11B-S-8-20201203	76	114 S1+	87
LCS 410-74630/2-A	Lab Control Sample	80	74	90
MB 410-74630/1-A	Method Blank	71	65	84

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-22930-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
410-22930-1	BT-11B-S-8-20201203	334 XH	98								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22930-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-77099/12
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			12/15/20 21:18	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/15/20 21:18	50
Toluene	ND		250	30	ug/Kg			12/15/20 21:18	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/15/20 21:18	50
Benzene	ND		250	25	ug/Kg			12/15/20 21:18	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/15/20 21:18	50
Isopropylbenzene	ND		250	20	ug/Kg			12/15/20 21:18	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/15/20 21:18	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/15/20 21:18	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/15/20 21:18	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/15/20 21:18	50
Xylenes, Total	ND		500	70	ug/Kg			12/15/20 21:18	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*		*12/15/20 21:18*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*12/15/20 21:18*	*50*
Dibromofluoromethane (Surr)	*96*		*50 - 141*		*12/15/20 21:18*	*50*
Toluene-d8 (Surr)	*96*		*52 - 141*		*12/15/20 21:18*	*50*

Lab Sample ID: LCS 410-77099/6
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1000		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	997		ug/Kg		100	73 - 120
Toluene	1000	1030		ug/Kg		103	80 - 120
Methyl tertiary butyl ether	1000	1070		ug/Kg		107	72 - 120
Benzene	1000	1010		ug/Kg		101	80 - 120
Naphthalene	1000	961		ug/Kg		96	48 - 130
1,2,4-Trimethylbenzene	1000	977		ug/Kg		98	73 - 120
Isopropylbenzene	1000	1020		ug/Kg		102	77 - 120
1,2-Dibromoethane	1000	1040		ug/Kg		104	76 - 120
1,2-Dichloroethane	1000	979		ug/Kg		98	71 - 128
t-Butyl alcohol	10000	10800		ug/Kg		108	74 - 121
Xylenes, Total	3000	3110		ug/Kg		104	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-77099/8
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	54000		ug/Kg		108	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*105*		*52 - 141*

Lab Sample ID: LCSD 410-77099/7
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	999		ug/Kg		100	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	979		ug/Kg		98	73 - 120	2	30
Toluene			1000	1020		ug/Kg		102	80 - 120	1	30
Methyl tertiary butyl ether			1000	1070		ug/Kg		107	72 - 120	1	30
Benzene			1000	1000		ug/Kg		100	80 - 120	1	30
Naphthalene			1000	949		ug/Kg		95	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	966		ug/Kg		97	73 - 120	1	30
Isopropylbenzene			1000	1010		ug/Kg		101	77 - 120	1	30
1,2-Dibromoethane			1000	1050		ug/Kg		105	76 - 120	1	30
1,2-Dichloroethane			1000	962		ug/Kg		96	71 - 128	2	30
t-Butyl alcohol			10000	10600		ug/Kg		106	74 - 121	2	30
Xylenes, Total			3000	3060		ug/Kg		102	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-77099/9
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	53200		ug/Kg		106	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-76155/9
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/13/20 14:05	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 14:05	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/13/20 14:05	1
Benzene	ND		1.0	0.20	ug/L			12/13/20 14:05	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/13/20 14:05	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/13/20 14:05	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/13/20 14:05	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 14:05	1
Toluene	ND		1.0	0.20	ug/L			12/13/20 14:05	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/13/20 14:05	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 14:05	1
Ethylene Dibromide	ND		1.0	0.20	ug/L			12/13/20 14:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*12/13/20 14:05*	*1*
4-Bromofluorobenzene (Surr)	*82*		*80 - 120*		*12/13/20 14:05*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*12/13/20 14:05*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*12/13/20 14:05*	*1*

Lab Sample ID: LCS 410-76155/6
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	18.4		ug/L		92	75 - 120
1,2-Dichloroethane	20.0	14.5		ug/L		73	73 - 124
1,3,5-Trimethylbenzene	20.0	18.5		ug/L		92	75 - 120
Benzene	20.0	16.7		ug/L		83	80 - 120
Ethylbenzene	20.0	19.5		ug/L		98	80 - 120
Isopropylbenzene	20.0	19.2		ug/L		96	80 - 120
Methyl tertiary butyl ether	20.0	15.5		ug/L		77	69 - 122
Naphthalene	20.0	19.3		ug/L		96	53 - 124
Toluene	20.0	19.7		ug/L		99	80 - 120
Xylenes, Total	60.0	59.1		ug/L		99	80 - 120
t-Butyl alcohol	200	182		ug/L		91	60 - 130
Ethylene Dibromide	20.0	19.2		ug/L		96	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-76155/7
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	840		ug/L		84	67 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*
4-Bromofluorobenzene (Surr)	*86*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: LCSD 410-76155/8
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	838		ug/L		84	67 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*
4-Bromofluorobenzene (Surr)	*85*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-74630/1-A
Matrix: Solid
Analysis Batch: 76355

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Chrysene	ND		17	3.3	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Fluorene	ND		17	3.3	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Naphthalene	ND		17	6.7	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Phenanthrene	ND		17	3.3	ug/Kg		12/09/20 09:00	12/14/20 14:04	1
Pyrene	ND		17	3.3	ug/Kg		12/09/20 09:00	12/14/20 14:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*39 - 100*	*12/09/20 09:00*	*12/14/20 14:04*	*1*
Nitrobenzene-d5 (Surr)	*65*		*32 - 97*	*12/09/20 09:00*	*12/14/20 14:04*	*1*
p-Terphenyl-d14 (Surr)	*84*		*45 - 108*	*12/09/20 09:00*	*12/14/20 14:04*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-74630/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 76355 **Prep Batch: 74630**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1500		ug/Kg		90	75 - 114
Benzo[a]anthracene	1670	1550		ug/Kg		93	73 - 114
Benzo[a]pyrene	1670	1350		ug/Kg		81	76 - 113
Benzo[b]fluoranthene	1670	1400		ug/Kg		84	73 - 117
Benzo[g,h,i]perylene	1670	1460		ug/Kg		88	77 - 114
Chrysene	1670	1430		ug/Kg		86	66 - 111
Fluorene	1670	1360		ug/Kg		82	62 - 110
Naphthalene	1670	1230		ug/Kg		74	60 - 94
Phenanthrene	1670	1410		ug/Kg		85	74 - 112
Pyrene	1670	1380		ug/Kg		83	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*80*		*39 - 100*
Nitrobenzene-d5 (Surr)	*74*		*32 - 97*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-74313/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 75017 **Prep Batch: 74313**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.55	mg/Kg		12/08/20 11:45	12/09/20 16:06	1

Lab Sample ID: LCS 410-74313/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 75017 **Prep Batch: 74313**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.68	2.85		mg/Kg		106	80 - 120

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22930-1

GC/MS VOA

Prep Batch: 73771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1 - DL	BT-11B-S-8-20201203	Total/NA	Solid	5035	
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	5035	

Analysis Batch: 76155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-2	Trip Blank	Total/NA	Water	8260C/UST	
MB 410-76155/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-76155/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-76155/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-76155/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 77099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	8260C	73771
410-22930-1 - DL	BT-11B-S-8-20201203	Total/NA	Solid	8260C	73771
MB 410-77099/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-77099/6	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-77099/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-77099/7	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-77099/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 74630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	3546	
MB 410-74630/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-74630/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 76355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	8270D	74630
MB 410-74630/1-A	Method Blank	Total/NA	Solid	8270D	74630
LCS 410-74630/2-A	Lab Control Sample	Total/NA	Solid	8270D	74630

GC Semi VOA

Analysis Batch: 31867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	Total TPH	

Prep Batch: 74443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	3546	

Analysis Batch: 75850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	8015C TPH	74443

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-22930-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Metals

Prep Batch: 74313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	3050B	
MB 410-74313/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-74313/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 75017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	6010C	74313
MB 410-74313/1-A	Method Blank	Total/NA	Solid	6010C	74313
LCS 410-74313/2-A	Lab Control Sample	Total/NA	Solid	6010C	74313

General Chemistry

Analysis Batch: 73344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-22930-1	BT-11B-S-8-20201203	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-22930-1

Client Sample ID: BT-11B-S-8-20201203
Date Collected: 12/03/20 15:15
Date Received: 12/04/20 18:32

Lab Sample ID: 410-22930-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	73344	12/05/20 03:16	PTG7	ELLE

Client Sample ID: BT-11B-S-8-20201203
Date Collected: 12/03/20 15:15
Date Received: 12/04/20 18:32

Lab Sample ID: 410-22930-1
Matrix: Solid
Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			73771	12/07/20 10:08	Z8FW	ELLE
Total/NA	Analysis	8260C		50	77099	12/16/20 04:33	Z6JB	ELLE
Total/NA	Prep	5035	DL		73771	12/07/20 10:08	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	500	77099	12/16/20 04:53	Z6JB	ELLE
Total/NA	Prep	3546			74630	12/09/20 09:00	A2VL	ELLE
Total/NA	Analysis	8270D		1	76355	12/14/20 20:45	UWHS	ELLE
Total/NA	Prep	3546			74443	12/08/20 16:41	FTV5	ELLE
Total/NA	Analysis	8015C TPH		10	75850	12/11/20 16:24	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	31867	12/15/20 11:58	KP5X	ELLE
Total/NA	Prep	3050B			74313	12/08/20 11:45	UAMX	ELLE
Total/NA	Analysis	6010C		1	75017	12/09/20 17:00	UCIG	ELLE

Client Sample ID: Trip Blank
Date Collected: 11/30/20 00:00
Date Received: 12/04/20 18:32

Lab Sample ID: 410-22930-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	76155	12/13/20 15:38	UKAD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-22930-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-22930-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-22930-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-22930-1	BT-11B-S-8-20201203	Solid	12/03/20 15:15	12/04/20 18:32	
410-22930-2	Trip Blank	Water	11/30/20 00:00	12/04/20 18:32	

Environmental Analysis Request and Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-22930 Chain of Custody

use only

COC # 615200

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 2134027797
Sampler: Dana Hoblitzell	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: Trip Blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO Moisture + VOC 8260	VOCs 8260 c/D	Remarks
BT-11B-S-8-20201203	12/3/20	1515	X		X			5	X	X	X	
Trip Blank	11/30/20	—					X				X	

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)
Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13
NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	12/4/20	1220		12/4/20	1220
	12/4/20	1815			
				12/4/20	1832

EDD Required? (Yes) No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 2.0 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc

KAM The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client. KAM 7044 0919

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-22930-1

Login Number: 22930
List Number: 1
Creator: Metzger, Katherine A

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-23184-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/11/2021 6:14:49 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/11/2021 6:14:49 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-23184-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-23184-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-23184-1

Revision
The report being provided is a revision of the original report sent on 12/28/2020. The report (revision 1) is being revised due to: Correct Total TPH units.

Receipt
The samples were received on 12/8/2020 5:18 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

GC/MS VOA
Method 8260C: Reanalysis (DL and DL2) of the following sample was performed outside of the analytical holding time due to laboratory error: BT-11B-S-50-20201208 (410-23184-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 5310C: The following sample was diluted due to the nature of the sample matrix: BT-11B-W-37-20201207 (410-23184-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-23184-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-11B-W-37-20201207
Lab Sample ID: 410-23184-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	21		5.0	2.5	mg/L	5		5310C-2011	Total/NA

Client Sample ID: BT-11B-S-50-20201208
Lab Sample ID: 410-23184-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3,5-Trimethylbenzene	18		4.4	0.44	ug/Kg	1	☼	8260C	Total/NA
Toluene	27		4.4	0.53	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	110		4.4	0.44	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	59		4.4	0.44	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	23		4.4	0.35	ug/Kg	1	☼	8260C	Total/NA
1,2-Dichloroethane	2.4	J	4.4	0.53	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	520		8.8	1.2	ug/Kg	1	☼	8260C	Total/NA
Ethylbenzene - DL	1300	H	280	23	ug/Kg	50	☼	8260C	Total/NA
Benzene - DL	4500	H	280	28	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	14000	H	6300	2500	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol - DL2	160000	H	57000	8500	ug/Kg	500	☼	8260C	Total/NA
Anthracene	4.3	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	5.8	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	5.4	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	5.4	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	450		20	8.1	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	17	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Pyrene	8.2	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Lead	14		1.4	0.54	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: Trip Blank
Lab Sample ID: 410-23184-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-11B-W-37-20201207 — Lab Sample ID: 410-23184-1

Date Collected: 12/07/20 15:15 — **Matrix: Water**
Date Received: 12/08/20 17:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	21		5.0	2.5	mg/L			12/11/20 23:17	5

Client Sample ID: BT-11B-S-50-20201208 — Lab Sample ID: 410-23184-2

Date Collected: 12/08/20 08:45 — **Matrix: Solid**
Date Received: 12/08/20 17:18 — **Percent Solids: 82.1**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	18		4.4	0.44	ug/Kg	☼	12/09/20 13:41	12/22/20 04:40	1
Toluene	27		4.4	0.53	ug/Kg	☼	12/09/20 13:41	12/22/20 04:40	1
Methyl tertiary butyl ether	110		4.4	0.44	ug/Kg	☼	12/09/20 13:41	12/22/20 04:40	1
1,2,4-Trimethylbenzene	59		4.4	0.44	ug/Kg	☼	12/09/20 13:41	12/22/20 04:40	1
Isopropylbenzene	23		4.4	0.35	ug/Kg	☼	12/09/20 13:41	12/22/20 04:40	1
1,2-Dibromoethane	ND		4.4	0.35	ug/Kg	☼	12/09/20 13:41	12/22/20 04:40	1
1,2-Dichloroethane	2.4	J	4.4	0.53	ug/Kg	☼	12/09/20 13:41	12/22/20 04:40	1
Xylenes, Total	520		8.8	1.2	ug/Kg	☼	12/09/20 13:41	12/22/20 04:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*54 - 135*	*12/09/20 13:41*	*12/22/20 04:40*	*1*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*12/09/20 13:41*	*12/22/20 04:40*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*	*12/09/20 13:41*	*12/22/20 04:40*	*1*
Toluene-d8 (Surr)	*95*		*52 - 141*	*12/09/20 13:41*	*12/22/20 04:40*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	1300	H	280	23	ug/Kg	☼	12/09/20 14:00	12/23/20 16:01	50
Benzene	4500	H	280	28	ug/Kg	☼	12/09/20 14:00	12/23/20 16:01	50
C4-C12-TPH-GRO	14000	H	6300	2500	ug/Kg	☼	12/09/20 14:00	12/23/20 16:01	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*74*		*54 - 135*	*12/09/20 14:00*	*12/23/20 16:01*	*50*
4-Bromofluorobenzene (Surr)	*67*		*50 - 131*	*12/09/20 14:00*	*12/23/20 16:01*	*50*
Dibromofluoromethane (Surr)	*67*		*50 - 141*	*12/09/20 14:00*	*12/23/20 16:01*	*50*
Toluene-d8 (Surr)	*70*		*52 - 141*	*12/09/20 14:00*	*12/23/20 16:01*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butyl alcohol	160000	H	57000	8500	ug/Kg	☼	12/09/20 14:00	12/23/20 17:45	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*74*		*54 - 135*	*12/09/20 14:00*	*12/23/20 17:45*	*500*
4-Bromofluorobenzene (Surr)	*69*		*50 - 131*	*12/09/20 14:00*	*12/23/20 17:45*	*500*
Dibromofluoromethane (Surr)	*68*		*50 - 141*	*12/09/20 14:00*	*12/23/20 17:45*	*500*
Toluene-d8 (Surr)	*72*		*52 - 141*	*12/09/20 14:00*	*12/23/20 17:45*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	4.3	J	20	4.0	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1
Benzo[a]anthracene	ND		20	8.1	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1
Benzo[a]pyrene	ND		20	4.0	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1
Benzo[b]fluoranthene	5.8	J	20	4.0	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1

Client Sample ID: BT-11B-S-50-20201208 — Lab Sample ID: 410-23184-2

Date Collected: 12/08/20 08:45 — **Matrix: Solid**
Date Received: 12/08/20 17:18 — **Percent Solids: 82.1**

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		20	4.0	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1
Chrysene	**5.4**	**J**	20	4.0	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1
Fluorene	**5.4**	**J**	20	4.0	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1
Naphthalene	**450**		20	8.1	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1
Phenanthrene	**17**	**J**	20	4.0	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1
Pyrene	**8.2**	**J**	20	4.0	ug/Kg	☼	12/14/20 16:35	12/16/20 09:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*39 - 100*	*12/14/20 16:35*	*12/16/20 09:35*	*1*
Nitrobenzene-d5 (Surr)	*41*		*32 - 97*	*12/14/20 16:35*	*12/16/20 09:35*	*1*
p-Terphenyl-d14 (Surr)	*56*		*45 - 108*	*12/14/20 16:35*	*12/16/20 09:35*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		15	6.1	mg/Kg	☼	12/10/20 10:48	12/11/20 16:02	1
>C22-C44 (1C)	ND		15	6.1	mg/Kg	☼	12/10/20 10:48	12/11/20 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*70*		*54 - 137*	*12/10/20 10:48*	*12/11/20 16:02*	*1*
o- terphenyl (Surr) (1C)	*88*		*52 - 154*	*12/10/20 10:48*	*12/11/20 16:02*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		15	6.1	mg/Kg	☼		12/18/20 11:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**14**		1.4	0.54	mg/Kg	☼	12/10/20 04:17	12/16/20 06:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.9**		1.0	1.0	%			12/09/20 15:49	1

Client Sample ID: Trip Blank — Lab Sample ID: 410-23184-3

Date Collected: 11/30/20 00:00 — **Matrix: Water**
Date Received: 12/08/20 17:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/13/20 16:02	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 16:02	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/13/20 16:02	1
Benzene	ND		1.0	0.20	ug/L			12/13/20 16:02	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/13/20 16:02	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/13/20 16:02	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/13/20 16:02	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 16:02	1
Toluene	ND		1.0	0.20	ug/L			12/13/20 16:02	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/13/20 16:02	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 16:02	1

Client Sample Results

Client: Stantec Consulting Corp.
Job ID: 410-23184-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: Trip Blank
Lab Sample ID: 410-23184-3
Date Collected: 11/30/20 00:00
Matrix: Water
Date Received: 12/08/20 17:18

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		80 - 120		12/13/20 16:02	1
4-Bromofluorobenzene (Surr)	84		80 - 120		12/13/20 16:02	1
Dibromofluoromethane (Surr)	99		80 - 120		12/13/20 16:02	1
Toluene-d8 (Surr)	105		80 - 120		12/13/20 16:02	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23184-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-23184-2	BT-11B-S-50-20201208	118	97	103	95
410-23184-2 - DL	BT-11B-S-50-20201208	74	67	67	70
410-23184-2 - DL2	BT-11B-S-50-20201208	74	69	68	72
LCS 410-79007/4	Lab Control Sample	103	97	102	98
LCS 410-79007/6	Lab Control Sample	102	97	100	98
LCS 410-79667/10	Lab Control Sample	106	95	100	102
LCS 410-79667/6	Lab Control Sample	110	93	105	101
LCSD 410-79007/5	Lab Control Sample Dup	104	97	100	99
LCSD 410-79007/7	Lab Control Sample Dup	101	96	100	98
LCSD 410-79667/11	Lab Control Sample Dup	107	97	102	103
LCSD 410-79667/7	Lab Control Sample Dup	105	93	105	100
MB 410-79007/9	Method Blank	104	94	103	96
MB 410-79667/12	Method Blank	99	85	93	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-23184-3	Trip Blank	91	84	99	105
LCS 410-76155/6	Lab Control Sample	91	87	95	106
LCS 410-76155/7	Lab Control Sample	89	86	98	107
LCSD 410-76155/8	Lab Control Sample Dup	89	85	96	109
MB 410-76155/9	Method Blank	89	82	96	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-23184-2	BT-11B-S-50-20201208	57	41	56
LCS 410-76551/2-A	Lab Control Sample	72	64	78
MB 410-76551/1-A	Method Blank	91	71	96

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23184-1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)								
410-23184-2	BT-11B-S-50-20201208	70	88								
LCS 410-75170/2-A	Lab Control Sample	75	106								
MB 410-75170/1-A	Method Blank	74	91								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23184-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-79007/9
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Toluene	ND		5.0	0.60	ug/Kg			12/21/20 22:54	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Benzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			12/21/20 22:54	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			12/21/20 22:54	1
Xylenes, Total	ND		10	1.4	ug/Kg			12/21/20 22:54	1
t-Butyl alcohol	ND		100	15	ug/Kg			12/21/20 22:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*		*12/21/20 22:54*	*1*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*		*12/21/20 22:54*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*		*12/21/20 22:54*	*1*
Toluene-d8 (Surr)	*96*		*52 - 141*		*12/21/20 22:54*	*1*

Lab Sample ID: LCS 410-79007/4
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	19.5		ug/Kg		98	78 - 120
1,3,5-Trimethylbenzene	20.0	19.3		ug/Kg		96	73 - 120
Toluene	20.0	19.7		ug/Kg		99	80 - 120
Methyl tertiary butyl ether	20.0	17.6		ug/Kg		88	72 - 120
Benzene	20.0	20.8		ug/Kg		104	80 - 120
Naphthalene	20.0	18.8		ug/Kg		94	48 - 130
1,2,4-Trimethylbenzene	20.0	19.2		ug/Kg		96	73 - 120
Isopropylbenzene	20.0	19.5		ug/Kg		97	77 - 120
1,2-Dibromoethane	20.0	19.5		ug/Kg		97	76 - 120
1,2-Dichloroethane	20.0	19.2		ug/Kg		96	71 - 128
Xylenes, Total	60.0	59.7		ug/Kg		100	75 - 120
t-Butyl alcohol	200	200		ug/Kg		100	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-79007/6
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1040		ug/Kg		104	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-79007/5
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	19.6		ug/Kg		98	78 - 120	0	30
1,3,5-Trimethylbenzene			20.0	19.3		ug/Kg		96	73 - 120	0	30
Toluene			20.0	19.5		ug/Kg		98	80 - 120	1	30
Methyl tertiary butyl ether			20.0	16.6		ug/Kg		83	72 - 120	6	30
Benzene			20.0	20.8		ug/Kg		104	80 - 120	0	30
Naphthalene			20.0	17.8		ug/Kg		89	48 - 130	5	30
1,2,4-Trimethylbenzene			20.0	19.1		ug/Kg		95	73 - 120	0	30
Isopropylbenzene			20.0	19.5		ug/Kg		97	77 - 120	0	30
1,2-Dibromoethane			20.0	18.7		ug/Kg		93	76 - 120	4	30
1,2-Dichloroethane			20.0	19.0		ug/Kg		95	71 - 128	1	30
Xylenes, Total			60.0	59.7		ug/Kg		100	75 - 120	0	30
t-Butyl alcohol			200	203		ug/Kg		101	74 - 121	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Lab Sample ID: LCSD 410-79007/7
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1030		ug/Kg		103	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-79667/12
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			12/23/20 14:02	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Toluene	ND		250	30	ug/Kg			12/23/20 14:02	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/23/20 14:02	50
Benzene	ND		250	25	ug/Kg			12/23/20 14:02	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Isopropylbenzene	ND		250	20	ug/Kg			12/23/20 14:02	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/23/20 14:02	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/23/20 14:02	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/23/20 14:02	50
Xylenes, Total	ND		500	70	ug/Kg			12/23/20 14:02	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/23/20 14:02	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*		*12/23/20 14:02*	*50*
4-Bromofluorobenzene (Surr)	*85*		*50 - 131*		*12/23/20 14:02*	*50*
Dibromofluoromethane (Surr)	*93*		*50 - 141*		*12/23/20 14:02*	*50*
Toluene-d8 (Surr)	*93*		*52 - 141*		*12/23/20 14:02*	*50*

Lab Sample ID: LCS 410-79667/10
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	50000	56400		ug/Kg		113	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*102*		*52 - 141*

Lab Sample ID: LCS 410-79667/6
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1010		ug/Kg		101	78 - 120
1,3,5-Trimethylbenzene	1000	992		ug/Kg		99	73 - 120
Toluene	1000	1030		ug/Kg		103	80 - 120
Methyl tertiary butyl ether	1000	1080		ug/Kg		108	72 - 120
Benzene	1000	1040		ug/Kg		104	80 - 120
Naphthalene	1000	985		ug/Kg		99	48 - 130
1,2,4-Trimethylbenzene	1000	987		ug/Kg		99	73 - 120
Isopropylbenzene	1000	1050		ug/Kg		105	77 - 120
1,2-Dibromoethane	1000	1070		ug/Kg		107	76 - 120
1,2-Dichloroethane	1000	1020		ug/Kg		102	71 - 128
Xylenes, Total	3000	3160		ug/Kg		105	75 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-79667/6
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
t-Butyl alcohol			10000	10000		ug/Kg		100	74 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-79667/11
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	56500		ug/Kg		113	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Lab Sample ID: LCSD 410-79667/7
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	998		ug/Kg		100	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	990		ug/Kg		99	73 - 120	0	30
Toluene			1000	1030		ug/Kg		103	80 - 120	0	30
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120	2	30
Benzene			1000	1020		ug/Kg		102	80 - 120	2	30
Naphthalene			1000	997		ug/Kg		100	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	977		ug/Kg		98	73 - 120	1	30
Isopropylbenzene			1000	1030		ug/Kg		103	77 - 120	1	30
1,2-Dibromoethane			1000	1070		ug/Kg		107	76 - 120	1	30
1,2-Dichloroethane			1000	985		ug/Kg		98	71 - 128	3	30
Xylenes, Total			3000	3120		ug/Kg		104	75 - 120	1	30
t-Butyl alcohol			10000	8840		ug/Kg		88	74 - 121	13	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-76155/9
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/13/20 14:05	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/13/20 14:05	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/13/20 14:05	1
Benzene	ND		1.0	0.20	ug/L			12/13/20 14:05	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/13/20 14:05	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/13/20 14:05	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/13/20 14:05	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/13/20 14:05	1
Toluene	ND		1.0	0.20	ug/L			12/13/20 14:05	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/13/20 14:05	1
t-Butyl alcohol	ND		50	12	ug/L			12/13/20 14:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*12/13/20 14:05*	*1*
4-Bromofluorobenzene (Surr)	*82*		*80 - 120*		*12/13/20 14:05*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*12/13/20 14:05*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*12/13/20 14:05*	*1*

Lab Sample ID: LCS 410-76155/6
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	18.4		ug/L		92	75 - 120
1,2-Dichloroethane	20.0	14.5		ug/L		73	73 - 124
1,3,5-Trimethylbenzene	20.0	18.5		ug/L		92	75 - 120
Benzene	20.0	16.7		ug/L		83	80 - 120
Ethylbenzene	20.0	19.5		ug/L		98	80 - 120
Isopropylbenzene	20.0	19.2		ug/L		96	80 - 120
Methyl tertiary butyl ether	20.0	15.5		ug/L		77	69 - 122
Naphthalene	20.0	19.3		ug/L		96	53 - 124
Toluene	20.0	19.7		ug/L		99	80 - 120
Xylenes, Total	60.0	59.1		ug/L		99	80 - 120
t-Butyl alcohol	200	182		ug/L		91	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCS 410-76155/7
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	840		ug/L		84	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-76155/7
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*
4-Bromofluorobenzene (Surr)	*86*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: LCSD 410-76155/8
Matrix: Water
Analysis Batch: 76155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	838		ug/L		84	67 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*
4-Bromofluorobenzene (Surr)	*85*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-76551/1-A
Matrix: Solid
Analysis Batch: 77239

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76551

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Chrysene	ND		17	3.3	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Fluorene	ND		17	3.3	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Naphthalene	ND		17	6.7	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Phenanthrene	ND		17	3.3	ug/Kg		12/14/20 16:34	12/16/20 03:21	1
Pyrene	ND		17	3.3	ug/Kg		12/14/20 16:34	12/16/20 03:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*91*		*39 - 100*	*12/14/20 16:34*	*12/16/20 03:21*	*1*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*	*12/14/20 16:34*	*12/16/20 03:21*	*1*
p-Terphenyl-d14 (Surr)	*96*		*45 - 108*	*12/14/20 16:34*	*12/16/20 03:21*	*1*

Lab Sample ID: LCS 410-76551/2-A
Matrix: Solid
Analysis Batch: 77239

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76551

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			1670	1360		ug/Kg		82	75 - 114		
Benzo[a]anthracene			1670	1470		ug/Kg		88	73 - 114		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-76551/2-A
Matrix: Solid
Analysis Batch: 77239

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76551

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	1670	1290		ug/Kg		78	76 - 113
Benzo[b]fluoranthene	1670	1560		ug/Kg		93	73 - 117
Benzo[g,h,i]perylene	1670	1470		ug/Kg		88	77 - 114
Chrysene	1670	1320		ug/Kg		79	66 - 111
Fluorene	1670	1300		ug/Kg		78	62 - 110
Naphthalene	1670	1130		ug/Kg		68	60 - 94
Phenanthrene	1670	1330		ug/Kg		80	74 - 112
Pyrene	1670	1270		ug/Kg		76	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*39 - 100*
Nitrobenzene-d5 (Surr)	*64*		*32 - 97*
p-Terphenyl-d14 (Surr)	*78*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-75170/1-A
Matrix: Solid
Analysis Batch: 75850

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 75170

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		12	5.0	mg/Kg		12/10/20 10:48	12/11/20 15:19	1
>C22-C44 (1C)	ND		12	5.0	mg/Kg		12/10/20 10:48	12/11/20 15:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*74*		*54 - 137*	*12/10/20 10:48*	*12/11/20 15:19*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*12/10/20 10:48*	*12/11/20 15:19*	*1*

Lab Sample ID: LCS 410-75170/2-A
Matrix: Solid
Analysis Batch: 75850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 75170

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	112		mg/Kg		83	64 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*75*		*54 - 137*
o- terphenyl (Surr) (1C)	*106*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-75121/1-A
Matrix: Solid
Analysis Batch: 77432

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 75121

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.58	mg/Kg		12/10/20 04:17	12/16/20 06:28	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23184-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-75121/2-A
Matrix: Solid
Analysis Batch: 77432

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 75121

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.86	2.95		mg/Kg		103	80 - 120

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-76093/5
Matrix: Water
Analysis Batch: 76093

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			12/11/20 17:42	1

Lab Sample ID: LCS 410-76093/4
Matrix: Water
Analysis Batch: 76093

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	23.4		mg/L		93	91 - 113

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23184-1

GC/MS VOA

Prep Batch: 74886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	5035	

Prep Batch: 74902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2 - DL2	BT-11B-S-50-20201208	Total/NA	Solid	5035	
410-23184-2 - DL	BT-11B-S-50-20201208	Total/NA	Solid	5035	

Analysis Batch: 76155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-3	Trip Blank	Total/NA	Water	8260C/UST	
MB 410-76155/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-76155/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-76155/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-76155/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 79007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	8260C	74886
MB 410-79007/9	Method Blank	Total/NA	Solid	8260C	
LCS 410-79007/4	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-79007/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-79007/5	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-79007/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 79667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2 - DL	BT-11B-S-50-20201208	Total/NA	Solid	8260C	74902
410-23184-2 - DL2	BT-11B-S-50-20201208	Total/NA	Solid	8260C	74902
MB 410-79667/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-79667/10	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-79667/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-79667/11	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-79667/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 76551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	3546	
MB 410-76551/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-76551/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 77239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	8270D	76551
MB 410-76551/1-A	Method Blank	Total/NA	Solid	8270D	76551
LCS 410-76551/2-A	Lab Control Sample	Total/NA	Solid	8270D	76551

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23184-1

GC Semi VOA

Analysis Batch: 31867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	Total TPH	

Prep Batch: 75170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	3546	
MB 410-75170/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-75170/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 75850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	8015C TPH	75170
MB 410-75170/1-A	Method Blank	Total/NA	Solid	8015C TPH	75170
LCS 410-75170/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	75170

Metals

Prep Batch: 75121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	3050B	
MB 410-75121/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-75121/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 77432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	6010C	75121
MB 410-75121/1-A	Method Blank	Total/NA	Solid	6010C	75121
LCS 410-75121/2-A	Lab Control Sample	Total/NA	Solid	6010C	75121

General Chemistry

Analysis Batch: 74941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-2	BT-11B-S-50-20201208	Total/NA	Solid	Moisture	

Analysis Batch: 76093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23184-1	BT-11B-W-37-20201207	Total/NA	Water	5310C-2011	
MB 410-76093/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-76093/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23184-1

Client Sample ID: BT-11B-W-37-20201207

Lab Sample ID: 410-23184-1
Matrix: Water
Date Collected: 12/07/20 15:15
Date Received: 12/08/20 17:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310C-2011		5	76093	12/11/20 23:17	KGQ6	ELLE

Client Sample ID: BT-11B-S-50-20201208

Lab Sample ID: 410-23184-2
Matrix: Solid
Date Collected: 12/08/20 08:45
Date Received: 12/08/20 17:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	74941	12/09/20 15:49	OEL4	ELLE

Client Sample ID: BT-11B-S-50-20201208

Lab Sample ID: 410-23184-2
Matrix: Solid
Date Collected: 12/08/20 08:45
Percent Solids: 82.1
Date Received: 12/08/20 17:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		74902	12/09/20 14:00	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	50	79667	12/23/20 16:01	UKAD	ELLE
Total/NA	Prep	5035	DL2		74902	12/09/20 14:00	Z8FW	ELLE
Total/NA	Analysis	8260C	DL2	500	79667	12/23/20 17:45	UKAD	ELLE
Total/NA	Prep	5035			74886	12/09/20 13:41	Z8FW	ELLE
Total/NA	Analysis	8260C		1	79007	12/22/20 04:40	UKAD	ELLE
Total/NA	Prep	3546			76551	12/14/20 16:35	FTV5	ELLE
Total/NA	Analysis	8270D		1	77239	12/16/20 09:35	ULM3	ELLE
Total/NA	Prep	3546			75170	12/10/20 10:48	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	75850	12/11/20 16:02	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	31867	12/18/20 11:58	KP5X	ELLE
Total/NA	Prep	3050B			75121	12/10/20 04:17	UAMX	ELLE
Total/NA	Analysis	6010C		1	77432	12/16/20 06:56	ULJC	ELLE

Client Sample ID: Trip Blank

Lab Sample ID: 410-23184-3
Matrix: Water
Date Collected: 11/30/20 00:00
Date Received: 12/08/20 17:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	76155	12/13/20 16:02	UKAD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-23184-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-23184-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-23184-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-23184-1	BT-11B-W-37-20201207	Water	12/07/20 15:15	12/08/20 17:18	
410-23184-2	BT-11B-S-50-20201208	Solid	12/08/20 08:45	12/08/20 17:18	
410-23184-3	Trip Blank	Water	11/30/20 00:00	12/08/20 17:18	

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-23184 Chain of Custody

al use only _____

Client Information

Client: Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 2134027 97
Sampler: Dana Hoblitzell	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC: _____

SCR#: 265066

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Lab filter for dissolved lead

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil ☒ Sediment ☐ Tissue	Water ☐ Potable ☐ Ground ☐ NPDES ☐ Surface	Other:	Total # of Containers	TOC	TPH-DRO	TPH-GRO Moisture + VOC 8260	VOCs 8260 LVD	Lead	PAH 8270D
BT-11B-W-37-20201207	12/7/20	1515	X			X		2	X					
BT-11B-S-50-20201208	12/8/20	0845	X		X			6		X	X	X (MS/MSD)	X	X
Trip Blank	11/30/20	—										X		

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) NJ DKQP TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

	Date	Time		Date	Time
Relinquished by	12/8/20	1140	Received by Pierre	12/8/20	11.4
Relinquished by Pierre	12/8/20	1720	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by Christopher R Barno	12/8/20	1718

EDD Required? Yes No

If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other X

Temperature upon receipt 2.0 °C

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The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-23184-1

Login Number: 23184
List Number: 1
Creator: Colon Martinez, Jessenia C

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-23368-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/11/2021 6:18:07 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/11/2021 6:18:07 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23368-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-23368-1

Revision
The report being provided is a revision of the original report sent on 12/23/2020. The report (revision 1) is being revised due to: Correct Total TPH units.

Receipt
The sample was received on 12/9/2020 5:06 PM; the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-11B-S-78-20201208
Lab Sample ID: 410-23368-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	2.8	J	4.8	0.39	ug/Kg	1	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	0.89	J	4.8	0.48	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	0.91	J	4.8	0.48	ug/Kg	1	☼	8260C	Total/NA
Benzene	2.4	J	4.8	0.48	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	3.7	J	4.8	0.48	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	0.78	J	4.8	0.39	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	990		110	43	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	3.4	J	9.7	1.4	ug/Kg	1	☼	8260C	Total/NA
t-Butyl alcohol	94	J	97	15	ug/Kg	1	☼	8260C	Total/NA
Naphthalene	10	J	20	7.9	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	9.1	J	20	3.9	ug/Kg	1	☼	8270D	Total/NA
Lead	2.7		1.5	0.61	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-11B-S-78-20201208
Lab Sample ID: 410-23368-1

Date Collected: 12/08/20 15:35
Matrix: Solid
Date Received: 12/09/20 17:06
Percent Solids: 83.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**2.8**	**J**	4.8	0.39	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
1,3,5-Trimethylbenzene	**0.89**	**J**	4.8	0.48	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
Toluene	ND		4.8	0.58	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
Methyl tertiary butyl ether	**0.91**	**J**	4.8	0.48	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
Benzene	**2.4**	**J**	4.8	0.48	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
1,2,4-Trimethylbenzene	**3.7**	**J**	4.8	0.48	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
Isopropylbenzene	**0.78**	**J**	4.8	0.39	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
1,2-Dibromoethane	ND		4.8	0.39	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
1,2-Dichloroethane	ND		4.8	0.58	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
C4-C12-TPH-GRO	**990**		110	43	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
Xylenes, Total	**3.4**	**J**	9.7	1.4	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1
t-Butyl alcohol	**94**	**J**	97	15	ug/Kg	☼	12/10/20 11:49	12/22/20 02:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*54 - 135*	*12/10/20 11:49*	*12/22/20 02:21*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*	*12/10/20 11:49*	*12/22/20 02:21*	*1*
Dibromofluoromethane (Surr)	*101*		*50 - 141*	*12/10/20 11:49*	*12/22/20 02:21*	*1*
Toluene-d8 (Surr)	*95*		*52 - 141*	*12/10/20 11:49*	*12/22/20 02:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		20	3.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Benzo[a]anthracene	ND		20	7.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Benzo[a]pyrene	ND		20	3.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Benzo[b]fluoranthene	ND		20	3.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Benzo[g,h,i]perylene	ND		20	3.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Chrysene	ND		20	3.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Fluorene	ND		20	3.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Naphthalene	**10**	**J**	20	7.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Phenanthrene	**9.1**	**J**	20	3.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1
Pyrene	ND		20	3.9	ug/Kg	☼	12/15/20 10:17	12/15/20 22:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*39 - 100*	*12/15/20 10:17*	*12/15/20 22:42*	*1*
Nitrobenzene-d5 (Surr)	*75*		*32 - 97*	*12/15/20 10:17*	*12/15/20 22:42*	*1*
p-Terphenyl-d14 (Surr)	*86*		*45 - 108*	*12/15/20 10:17*	*12/15/20 22:42*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		14	5.9	mg/Kg	☼	12/14/20 16:11	12/15/20 16:15	1
>C22-C44 (1C)	ND		14	5.9	mg/Kg	☼	12/14/20 16:11	12/15/20 16:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*73*		*54 - 137*	*12/14/20 16:11*	*12/15/20 16:15*	*1*
o- terphenyl (Surr) (1C)	*87*		*52 - 154*	*12/14/20 16:11*	*12/15/20 16:15*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		14	6.0	mg/Kg	☼		12/18/20 11:58	1

Client Sample Results

Client: Stantec Consulting Corp. Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-11B-S-78-20201208 **Lab Sample ID: 410-23368-1**
Date Collected: 12/08/20 15:35 **Matrix: Solid**
Date Received: 12/09/20 17:06 **Percent Solids: 83.4**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.7		1.5	0.61	mg/Kg	☼	12/14/20 04:29	12/14/20 15:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.6		1.0	1.0	%			12/10/20 07:46	1

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-23368-1	BT-11B-S-78-20201208	112	98	101	95
LCS 410-79007/4	Lab Control Sample	103	97	102	98
LCS 410-79007/6	Lab Control Sample	102	97	100	98
LCSD 410-79007/5	Lab Control Sample Dup	104	97	100	99
LCSD 410-79007/7	Lab Control Sample Dup	101	96	100	98
MB 410-79007/9	Method Blank	104	94	103	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-23368-1	BT-11B-S-78-20201208	75	75	86
LCS 410-76777/2-A	Lab Control Sample	72	73	80
MB 410-76777/1-A	Method Blank	77	76	90

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-23368-1	BT-11B-S-78-20201208	73	87
LCS 410-76532/2-A	Lab Control Sample	77	108
MB 410-76532/1-A	Method Blank	75	91

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23368-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-79007/9
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Toluene	ND		5.0	0.60	ug/Kg			12/21/20 22:54	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Benzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			12/21/20 22:54	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			12/21/20 22:54	1
Xylenes, Total	ND		10	1.4	ug/Kg			12/21/20 22:54	1
t-Butyl alcohol	ND		100	15	ug/Kg			12/21/20 22:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*		*12/21/20 22:54*	*1*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*		*12/21/20 22:54*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*		*12/21/20 22:54*	*1*
Toluene-d8 (Surr)	*96*		*52 - 141*		*12/21/20 22:54*	*1*

Lab Sample ID: LCS 410-79007/4
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	19.5		ug/Kg		98	78 - 120
1,3,5-Trimethylbenzene	20.0	19.3		ug/Kg		96	73 - 120
Toluene	20.0	19.7		ug/Kg		99	80 - 120
Methyl tertiary butyl ether	20.0	17.6		ug/Kg		88	72 - 120
Benzene	20.0	20.8		ug/Kg		104	80 - 120
Naphthalene	20.0	18.8		ug/Kg		94	48 - 130
1,2,4-Trimethylbenzene	20.0	19.2		ug/Kg		96	73 - 120
Isopropylbenzene	20.0	19.5		ug/Kg		97	77 - 120
1,2-Dibromoethane	20.0	19.5		ug/Kg		97	76 - 120
1,2-Dichloroethane	20.0	19.2		ug/Kg		96	71 - 128
Xylenes, Total	60.0	59.7		ug/Kg		100	75 - 120
t-Butyl alcohol	200	200		ug/Kg		100	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-79007/6
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1040		ug/Kg		104	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-79007/5
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	19.6		ug/Kg		98	78 - 120	0	30
1,3,5-Trimethylbenzene			20.0	19.3		ug/Kg		96	73 - 120	0	30
Toluene			20.0	19.5		ug/Kg		98	80 - 120	1	30
Methyl tertiary butyl ether			20.0	16.6		ug/Kg		83	72 - 120	6	30
Benzene			20.0	20.8		ug/Kg		104	80 - 120	0	30
Naphthalene			20.0	17.8		ug/Kg		89	48 - 130	5	30
1,2,4-Trimethylbenzene			20.0	19.1		ug/Kg		95	73 - 120	0	30
Isopropylbenzene			20.0	19.5		ug/Kg		97	77 - 120	0	30
1,2-Dibromoethane			20.0	18.7		ug/Kg		93	76 - 120	4	30
1,2-Dichloroethane			20.0	19.0		ug/Kg		95	71 - 128	1	30
Xylenes, Total			60.0	59.7		ug/Kg		100	75 - 120	0	30
t-Butyl alcohol			200	203		ug/Kg		101	74 - 121	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Lab Sample ID: LCSD 410-79007/7
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1030		ug/Kg		103	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-76777/1-A
Matrix: Solid
Analysis Batch: 76961

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76777

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Chrysene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Fluorene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Naphthalene	ND		17	6.7	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Phenanthrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Pyrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*39 - 100*	*12/15/20 10:17*	*12/15/20 14:29*	*1*
Nitrobenzene-d5 (Surr)	*76*		*32 - 97*	*12/15/20 10:17*	*12/15/20 14:29*	*1*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*	*12/15/20 10:17*	*12/15/20 14:29*	*1*

Lab Sample ID: LCS 410-76777/2-A
Matrix: Solid
Analysis Batch: 76961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76777

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1360		ug/Kg		82	75 - 114
Benzo[a]anthracene	1670	1360		ug/Kg		82	73 - 114
Benzo[a]pyrene	1670	1330		ug/Kg		80	76 - 113
Benzo[b]fluoranthene	1670	1340		ug/Kg		80	73 - 117
Benzo[g,h,i]perylene	1670	1280		ug/Kg		77	77 - 114
Chrysene	1670	1390		ug/Kg		83	66 - 111
Fluorene	1670	1340		ug/Kg		80	62 - 110
Naphthalene	1670	1190		ug/Kg		71	60 - 94
Phenanthrene	1670	1350		ug/Kg		81	74 - 112
Pyrene	1670	1330		ug/Kg		80	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*39 - 100*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*
p-Terphenyl-d14 (Surr)	*80*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-76532/1-A
Matrix: Solid
Analysis Batch: 77019

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76532

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		12	5.0	mg/Kg		12/14/20 16:11	12/15/20 15:32	1
>C22-C44 (1C)	ND		12	5.0	mg/Kg		12/14/20 16:11	12/15/20 15:32	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-76532/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 77019 **Prep Batch: 76532**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*75*		*54 - 137*	*12/14/20 16:11*	*12/15/20 15:32*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*12/14/20 16:11*	*12/15/20 15:32*	*1*

Lab Sample ID: LCS 410-76532/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 77019 **Prep Batch: 76532**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	118		mg/Kg		88	64 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*77*		*54 - 137*
o- terphenyl (Surr) (1C)	*108*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-76229/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 76591 **Prep Batch: 76229**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		12/14/20 04:29	12/14/20 15:27	1

Lab Sample ID: LCS 410-76229/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 76591 **Prep Batch: 76229**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.94	2.90		mg/Kg		99	80 - 120

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 75383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	5035	

Analysis Batch: 79007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	8260C	75383
MB 410-79007/9	Method Blank	Total/NA	Solid	8260C	
LCS 410-79007/4	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-79007/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-79007/5	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-79007/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 76777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	3546	
MB 410-76777/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-76777/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 76961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	8270D	76777
MB 410-76777/1-A	Method Blank	Total/NA	Solid	8270D	76777
LCS 410-76777/2-A	Lab Control Sample	Total/NA	Solid	8270D	76777

GC Semi VOA

Analysis Batch: 31867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	Total TPH	

Prep Batch: 76532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	3546	
MB 410-76532/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-76532/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 77019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	8015C TPH	76532
MB 410-76532/1-A	Method Blank	Total/NA	Solid	8015C TPH	76532
LCS 410-76532/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	76532

Metals

Prep Batch: 76229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	3050B	
MB 410-76229/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-76229/2-A	Lab Control Sample	Total/NA	Solid	3050B	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23368-1

Metals

Analysis Batch: 76591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	6010C	76229
MB 410-76229/1-A	Method Blank	Total/NA	Solid	6010C	76229
LCS 410-76229/2-A	Lab Control Sample	Total/NA	Solid	6010C	76229

General Chemistry

Analysis Batch: 75198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23368-1	BT-11B-S-78-20201208	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-11B-S-78-20201208
Lab Sample ID: 410-23368-1

Date Collected: 12/08/20 15:35
Matrix: Solid
Date Received: 12/09/20 17:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	75198	12/10/20 07:46	UVJN	ELLE

Client Sample ID: BT-11B-S-78-20201208
Lab Sample ID: 410-23368-1

Date Collected: 12/08/20 15:35
Matrix: Solid
Date Received: 12/09/20 17:06
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			75383	12/10/20 11:49	HDS6	ELLE
Total/NA	Analysis	8260C		1	79007	12/22/20 02:21	UKAD	ELLE
Total/NA	Prep	3546			76777	12/15/20 10:17	A2VL	ELLE
Total/NA	Analysis	8270D		1	76961	12/15/20 22:42	UWHS	ELLE
Total/NA	Prep	3546			76532	12/14/20 16:11	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	77019	12/15/20 16:15	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	31867	12/18/20 11:58	KP5X	ELLE
Total/NA	Prep	3050B			76229	12/14/20 04:29	UAMX	ELLE
Total/NA	Analysis	6010C		1	76591	12/14/20 15:50	UCIG	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-23368-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-23368-1	BT-11B-S-78-20201208	Solid	12/08/20 15:35	12/09/20 17:06	

Environmental Analysis Re[illegible] stody

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Acct. # _____

410-23368 Chain of Custody

[illegible]se only

COC #615259

Client Information

Client: Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dana Hoblitzell	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: _____

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Lab filter for dissolved Lead

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO + VOC 8260 Moisture	Lead	PAH 8270 D
BT-118-S-78-20201208	12/8/20	1535	X		6	X	X	X	X

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)
Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13
NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[illegible]	12/9/20	1235	[illegible]	12/9/20	12:35
[illegible]	12/9/20	1630			
			[illegible]	12/9/20	17:00

EDD Required? Yes No
If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.4 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc

The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

KAM KAM 7044 0919

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-23368-1

Login Number: 23368
List Number: 1
Creator: Metzger, Katherine A

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-23573-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 9:25:02 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 9:25:02 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-23573-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
FL	MS and/or MSD recovery below control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-23573-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23573-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-23573-1

Revision
The report being provided is a revision of the original report sent on 12/29/2020. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The sample was received on 12/10/2020 4:44 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.2º C.

Receipt Exceptions

Analyte List Change - Corrected to >C12-C22

GC/MS VOA
Method 8260C: Surrogate recovery for the following sample was outside control limits: BT-05-S-9-20201210 (410-23573-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-23573-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-05-S-9-20201210
Lab Sample ID: 410-23573-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	6600		310	24	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	5300		310	31	ug/Kg	50	☼	8260C	Total/NA
Toluene	610		310	37	ug/Kg	50	☼	8260C	Total/NA
Benzene	1200		310	31	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	150	J	310	31	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	11000		310	24	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	6400		610	86	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	2400000		670000	270000	ug/Kg	5000	☼	8260C	Total/NA
Benzo[a]anthracene	8.7	J	20	8.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	9.7	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	11	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	27		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	2600		20	8.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	58		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Pyrene	22		20	4.0	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	9.3	J	15	6.1	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	110		15	6.1	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	120		15	6.1	mg/Kg	1	☼	Total TPH	Total/NA
Lead	9.9		1.8	0.73	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-05-S-9-20201210

Date Collected: 12/10/20 12:00
Date Received: 12/10/20 16:44

Lab Sample ID: 410-23573-1

Matrix: Solid
Percent Solids: 82.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**6600**		310	24	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
1,3,5-Trimethylbenzene	**5300**		310	31	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
Toluene	**610**		310	37	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
Methyl tertiary butyl ether	ND		310	31	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
Benzene	**1200**		310	31	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
1,2,4-Trimethylbenzene	**150**	**J**	310	31	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
Isopropylbenzene	**11000**		310	24	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
1,2-Dibromoethane	ND		310	24	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
1,2-Dichloroethane	ND		310	37	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
t-Butyl alcohol	ND		6100	920	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50
Xylenes, Total	**6400**		610	86	ug/Kg	☼	12/11/20 09:59	12/16/20 03:51	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*145*	*S1+*	*54 - 135*	*12/11/20 09:59*	*12/16/20 03:51*	*50*
4-Bromofluorobenzene (Surr)	*206*	*S1+*	*50 - 131*	*12/11/20 09:59*	*12/16/20 03:51*	*50*
Dibromofluoromethane (Surr)	*144*	*S1+*	*50 - 141*	*12/11/20 09:59*	*12/16/20 03:51*	*50*
Toluene-d8 (Surr)	*240*	*S1+*	*52 - 141*	*12/11/20 09:59*	*12/16/20 03:51*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**2400000**		670000	270000	ug/Kg	☼	12/11/20 09:59	12/20/20 23:39	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*141*	*S1+*	*54 - 135*	*12/11/20 09:59*	*12/20/20 23:39*	*5000*
4-Bromofluorobenzene (Surr)	*197*	*S1+*	*50 - 131*	*12/11/20 09:59*	*12/20/20 23:39*	*5000*
Dibromofluoromethane (Surr)	*134*		*50 - 141*	*12/11/20 09:59*	*12/20/20 23:39*	*5000*
Toluene-d8 (Surr)	*193*	*S1+*	*52 - 141*	*12/11/20 09:59*	*12/20/20 23:39*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		20	4.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Benzo[a]anthracene	**8.7**	**J**	20	8.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Benzo[a]pyrene	ND		20	4.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Benzo[b]fluoranthene	**9.7**	**J**	20	4.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Benzo[g,h,i]perylene	ND		20	4.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Chrysene	**11**	**J**	20	4.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Fluorene	**27**		20	4.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Naphthalene	**2600**		20	8.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Phenanthrene	**58**		20	4.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1
Pyrene	**22**		20	4.0	ug/Kg	☼	12/15/20 10:17	12/15/20 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*39 - 100*	*12/15/20 10:17*	*12/15/20 23:07*	*1*
Nitrobenzene-d5 (Surr)	*80*		*32 - 97*	*12/15/20 10:17*	*12/15/20 23:07*	*1*
p-Terphenyl-d14 (Surr)	*79*		*45 - 108*	*12/15/20 10:17*	*12/15/20 23:07*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**9.3**	**J**	15	6.1	mg/Kg	☼	12/17/20 16:31	12/18/20 15:46	1
>C12-C22 (1C)	**110**		15	6.1	mg/Kg	☼	12/17/20 16:31	12/18/20 15:46	1

Client Sample Results

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23573-1

Client Sample ID: BT-05-S-9-20201210

Date Collected: 12/10/20 12:00
Date Received: 12/10/20 16:44

Lab Sample ID: 410-23573-1

Matrix: Solid
Percent Solids: 82.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*69*		*54 - 137*	*12/17/20 16:31*	*12/18/20 15:46*	*1*
o- terphenyl (Surr) (1C)	*82*		*52 - 154*	*12/17/20 16:31*	*12/18/20 15:46*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**120**		15	6.1	mg/Kg	☼		03/09/21 10:46	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**9.9**		1.8	0.73	mg/Kg	☼	12/14/20 04:29	12/14/20 15:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.0**		1.0	1.0	%			12/11/20 10:45	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23573-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-23573-1	BT-05-S-9-20201210	145 S1+	206 S1+	144 S1+	240 S1+
410-23573-1 - DL	BT-05-S-9-20201210	141 S1+	197 S1+	134	193 S1+
LCS 410-77099/6	Lab Control Sample	101	93	103	101
LCS 410-77099/8	Lab Control Sample	103	96	102	105
LCS 410-78593/5	Lab Control Sample	100	94	104	101
LCS 410-78593/7	Lab Control Sample	102	95	103	101
LCSD 410-77099/7	Lab Control Sample Dup	102	93	101	101
LCSD 410-77099/9	Lab Control Sample Dup	103	97	102	104
LCSD 410-78593/6	Lab Control Sample Dup	99	92	103	100
LCSD 410-78593/8	Lab Control Sample Dup	106	96	105	103
MB 410-77099/12	Method Blank	98	88	96	96
MB 410-78593/12	Method Blank	98	87	96	94

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-23573-1	BT-05-S-9-20201210	71	80	79
LCS 410-76777/2-A	Lab Control Sample	72	73	80
MB 410-76777/1-A	Method Blank	77	76	90

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-23573-1	BT-05-S-9-20201210	69	82
410-23573-1 DU	BT-05-S-9-20201210	63	85
410-23573-1 MS	BT-05-S-9-20201210	64	93
LCS 410-77737/2-A	Lab Control Sample	73	100
MB 410-77737/1-A	Method Blank	74	91

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-77099/12
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			12/15/20 21:18	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/15/20 21:18	50
Toluene	ND		250	30	ug/Kg			12/15/20 21:18	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/15/20 21:18	50
Benzene	ND		250	25	ug/Kg			12/15/20 21:18	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/15/20 21:18	50
Isopropylbenzene	ND		250	20	ug/Kg			12/15/20 21:18	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/15/20 21:18	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/15/20 21:18	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/15/20 21:18	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/15/20 21:18	50
Xylenes, Total	ND		500	70	ug/Kg			12/15/20 21:18	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*		*12/15/20 21:18*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*12/15/20 21:18*	*50*
Dibromofluoromethane (Surr)	*96*		*50 - 141*		*12/15/20 21:18*	*50*
Toluene-d8 (Surr)	*96*		*52 - 141*		*12/15/20 21:18*	*50*

Lab Sample ID: LCS 410-77099/6
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1000		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	997		ug/Kg		100	73 - 120
Toluene	1000	1030		ug/Kg		103	80 - 120
Methyl tertiary butyl ether	1000	1070		ug/Kg		107	72 - 120
Benzene	1000	1010		ug/Kg		101	80 - 120
Naphthalene	1000	961		ug/Kg		96	48 - 130
1,2,4-Trimethylbenzene	1000	977		ug/Kg		98	73 - 120
Isopropylbenzene	1000	1020		ug/Kg		102	77 - 120
1,2-Dibromoethane	1000	1040		ug/Kg		104	76 - 120
1,2-Dichloroethane	1000	979		ug/Kg		98	71 - 128
t-Butyl alcohol	10000	10800		ug/Kg		108	74 - 121
Xylenes, Total	3000	3110		ug/Kg		104	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-77099/8
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	54000		ug/Kg		108	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*105*		*52 - 141*

Lab Sample ID: LCSD 410-77099/7
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	999		ug/Kg		100	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	979		ug/Kg		98	73 - 120	2	30
Toluene			1000	1020		ug/Kg		102	80 - 120	1	30
Methyl tertiary butyl ether			1000	1070		ug/Kg		107	72 - 120	1	30
Benzene			1000	1000		ug/Kg		100	80 - 120	1	30
Naphthalene			1000	949		ug/Kg		95	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	966		ug/Kg		97	73 - 120	1	30
Isopropylbenzene			1000	1010		ug/Kg		101	77 - 120	1	30
1,2-Dibromoethane			1000	1050		ug/Kg		105	76 - 120	1	30
1,2-Dichloroethane			1000	962		ug/Kg		96	71 - 128	2	30
t-Butyl alcohol			10000	10600		ug/Kg		106	74 - 121	2	30
Xylenes, Total			3000	3060		ug/Kg		102	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-77099/9
Matrix: Solid
Analysis Batch: 77099

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	53200		ug/Kg		106	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-78593/12
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			12/20/20 21:55	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/20/20 21:55	50
Toluene	ND		250	30	ug/Kg			12/20/20 21:55	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/20/20 21:55	50
Benzene	ND		250	25	ug/Kg			12/20/20 21:55	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/20/20 21:55	50
Isopropylbenzene	ND		250	20	ug/Kg			12/20/20 21:55	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/20/20 21:55	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/20/20 21:55	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/20/20 21:55	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/20/20 21:55	50
Xylenes, Total	ND		500	70	ug/Kg			12/20/20 21:55	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*		*12/20/20 21:55*	*50*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*		*12/20/20 21:55*	*50*
Dibromofluoromethane (Surr)	*96*		*50 - 141*		*12/20/20 21:55*	*50*
Toluene-d8 (Surr)	*94*		*52 - 141*		*12/20/20 21:55*	*50*

Lab Sample ID: LCS 410-78593/5
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	995		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	986		ug/Kg		99	73 - 120
Toluene	1000	1020		ug/Kg		102	80 - 120
Methyl tertiary butyl ether	1000	1080		ug/Kg		108	72 - 120
Benzene	1000	1010		ug/Kg		101	80 - 120
Naphthalene	1000	972		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	1000	973		ug/Kg		97	73 - 120
Isopropylbenzene	1000	1030		ug/Kg		103	77 - 120
1,2-Dibromoethane	1000	1060		ug/Kg		106	76 - 120
1,2-Dichloroethane	1000	994		ug/Kg		99	71 - 128
t-Butyl alcohol	10000	11600		ug/Kg		116	74 - 121
Xylenes, Total	3000	3090		ug/Kg		103	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*
Dibromofluoromethane (Surr)	*104*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-78593/7
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	52300		ug/Kg		105	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-78593/6
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	990		ug/Kg		99	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	983		ug/Kg		98	73 - 120	0	30
Toluene			1000	1000		ug/Kg		100	80 - 120	1	30
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120	1	30
Benzene			1000	1000		ug/Kg		100	80 - 120	1	30
Naphthalene			1000	958		ug/Kg		96	48 - 130	2	30
1,2,4-Trimethylbenzene			1000	967		ug/Kg		97	73 - 120	1	30
Isopropylbenzene			1000	1010		ug/Kg		101	77 - 120	2	30
1,2-Dibromoethane			1000	1040		ug/Kg		104	76 - 120	2	30
1,2-Dichloroethane			1000	968		ug/Kg		97	71 - 128	3	30
t-Butyl alcohol			10000	11100		ug/Kg		111	74 - 121	4	30
Xylenes, Total			3000	3050		ug/Kg		102	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*92*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Lab Sample ID: LCSD 410-78593/8
Matrix: Solid
Analysis Batch: 78593

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	51400		ug/Kg		103	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-76777/1-A
Matrix: Solid
Analysis Batch: 76961

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76777

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Chrysene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Fluorene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Naphthalene	ND		17	6.7	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Phenanthrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1
Pyrene	ND		17	3.3	ug/Kg		12/15/20 10:17	12/15/20 14:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*39 - 100*	*12/15/20 10:17*	*12/15/20 14:29*	*1*
Nitrobenzene-d5 (Surr)	*76*		*32 - 97*	*12/15/20 10:17*	*12/15/20 14:29*	*1*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*	*12/15/20 10:17*	*12/15/20 14:29*	*1*

Lab Sample ID: LCS 410-76777/2-A
Matrix: Solid
Analysis Batch: 76961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76777

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1360		ug/Kg		82	75 - 114
Benzo[a]anthracene	1670	1360		ug/Kg		82	73 - 114
Benzo[a]pyrene	1670	1330		ug/Kg		80	76 - 113
Benzo[b]fluoranthene	1670	1340		ug/Kg		80	73 - 117
Benzo[g,h,i]perylene	1670	1280		ug/Kg		77	77 - 114
Chrysene	1670	1390		ug/Kg		83	66 - 111
Fluorene	1670	1340		ug/Kg		80	62 - 110
Naphthalene	1670	1190		ug/Kg		71	60 - 94
Phenanthrene	1670	1350		ug/Kg		81	74 - 112
Pyrene	1670	1330		ug/Kg		80	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*39 - 100*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*
p-Terphenyl-d14 (Surr)	*80*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-77737/1-A
Matrix: Solid
Analysis Batch: 78138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77737

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		12/17/20 16:30	12/18/20 15:04	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		12/17/20 16:30	12/18/20 15:04	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-77737/1-A
Matrix: Solid
Analysis Batch: 78138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77737

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	74		54 - 137	12/17/20 16:30	12/18/20 15:04	1
o- terphenyl (Surr) (1C)	91		52 - 154	12/17/20 16:30	12/18/20 15:04	1

Lab Sample ID: LCS 410-77737/2-A
Matrix: Solid
Analysis Batch: 78138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77737

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	113		mg/Kg		84	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	73		54 - 137
o- terphenyl (Surr) (1C)	100		52 - 154

Lab Sample ID: 410-23573-1 MS
Matrix: Solid
Analysis Batch: 78138

Client Sample ID: BT-05-S-9-20201210
Prep Type: Total/NA
Prep Batch: 77737

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	380	FL	163	436	FL	mg/Kg	☼	34	64 - 122		

Surrogate	MS %Recovery	MS Qualifier	Limits
Chlorobenzene (Surr) (1C)	64		54 - 137
o- terphenyl (Surr) (1C)	93		52 - 154

Lab Sample ID: 410-23573-1 DU
Matrix: Solid
Analysis Batch: 78138

Client Sample ID: BT-05-S-9-20201210
Prep Type: Total/NA
Prep Batch: 77737

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C22-C44 (1C)	9.3	J		14.3		mg/Kg	☼			42	
>C12-C22 (1C)	110			182		mg/Kg	☼			51	

Surrogate	DU %Recovery	DU Qualifier	Limits
Chlorobenzene (Surr) (1C)	63		54 - 137
o- terphenyl (Surr) (1C)	85		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-76229/1-A
Matrix: Solid
Analysis Batch: 76591

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		12/14/20 04:29	12/14/20 15:27	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23573-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-76229/2-A
Matrix: Solid
Analysis Batch: 76591

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76229

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.94	2.90		mg/Kg		99	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-23573-1

GC/MS VOA

Prep Batch: 75777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	5035	
410-23573-1 - DL	BT-05-S-9-20201210	Total/NA	Solid	5035	

Analysis Batch: 77099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	8260C	75777
MB 410-77099/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-77099/6	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-77099/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-77099/7	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-77099/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 78593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1 - DL	BT-05-S-9-20201210	Total/NA	Solid	8260C	75777
MB 410-78593/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-78593/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-78593/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-78593/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-78593/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 76777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	3546	
MB 410-76777/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-76777/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 76961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	8270D	76777
MB 410-76777/1-A	Method Blank	Total/NA	Solid	8270D	76777
LCS 410-76777/2-A	Lab Control Sample	Total/NA	Solid	8270D	76777

GC Semi VOA

Prep Batch: 77737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	3546	
MB 410-77737/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-77737/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-23573-1 MS	BT-05-S-9-20201210	Total/NA	Solid	3546	
410-23573-1 DU	BT-05-S-9-20201210	Total/NA	Solid	3546	

Analysis Batch: 78138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	8015C TPH	77737
MB 410-77737/1-A	Method Blank	Total/NA	Solid	8015C TPH	77737
LCS 410-77737/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	77737
410-23573-1 MS	BT-05-S-9-20201210	Total/NA	Solid	8015C TPH	77737
410-23573-1 DU	BT-05-S-9-20201210	Total/NA	Solid	8015C TPH	77737

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-23573-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC Semi VOA

Analysis Batch: 101139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 76229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	3050B	
MB 410-76229/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-76229/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 76591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	6010C	76229
MB 410-76229/1-A	Method Blank	Total/NA	Solid	6010C	76229
LCS 410-76229/2-A	Lab Control Sample	Total/NA	Solid	6010C	76229

General Chemistry

Analysis Batch: 75796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-23573-1	BT-05-S-9-20201210	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-23573-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-05-S-9-20201210
Lab Sample ID: 410-23573-1
Date Collected: 12/10/20 12:00
Matrix: Solid
Date Received: 12/10/20 16:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	75796	12/11/20 10:45	UVJN	ELLE

Client Sample ID: BT-05-S-9-20201210
Lab Sample ID: 410-23573-1
Date Collected: 12/10/20 12:00
Matrix: Solid
Date Received: 12/10/20 16:44
Percent Solids: 82.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			75777	12/11/20 09:59	HDS6	ELLE
Total/NA	Analysis	8260C		50	77099	12/16/20 03:51	Z6JB	ELLE
Total/NA	Prep	5035	DL		75777	12/11/20 09:59	HDS6	ELLE
Total/NA	Analysis	8260C	DL	5000	78593	12/20/20 23:39	Z6JB	ELLE
Total/NA	Prep	3546			76777	12/15/20 10:17	A2VL	ELLE
Total/NA	Analysis	8270D		1	76961	12/15/20 23:07	UWHS	ELLE
Total/NA	Prep	3546			77737	12/17/20 16:31	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	78138	12/18/20 15:46	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101139	03/09/21 10:46	YHQ2	ELLE
Total/NA	Prep	3050B			76229	12/14/20 04:29	UAMX	ELLE
Total/NA	Analysis	6010C		1	76591	12/14/20 15:47	UCIG	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-23573-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-23573-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-23573-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-23573-1	BT-05-S-9-20201210	Solid	12/10/20 12:00	12/10/20 16:44	

Environmental Analysis Re[illegible]stody

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Acct. # _____

410-23573 Chain of Custody

[illegible]se only

COC # 610332

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name #: Belmont Terminal	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Jenny Kachel	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other:

Analysis Requested — Preservation and Filtration Codes

For Lab Use Only: FSC: _____ SCR#: _____

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, P=H_3PO_4, F=Field Filtered, O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO	VOC 8260*	Lead	PAH 8270*						Remarks
BT-05-S-9-20201210	12/10/20	1200	X					6	X	X	X	X	X						* Report Evergreen Short List parameters

Turnaround Time (TAT) Requested (please circle): Standard / Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/10/20	1240	Prenne	12/10/20	12:40
Prenne	12/10/20	1630			
			[signature]	12-10-20	16:44

EDD Required? Yes No — If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No (If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 4.2 °C

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KAM

The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

KAM 7044 0919

Environmental Analysis Re[illegible]ustody

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Acct. # _____

410-23574 Chain of Custody

[illegible] use only

COC # 613412

Client Information	
Client: Merck & Co.	Acct. #:
Project Name/#: UGTMA Monthly	PWSID #:
Project Manager: R. McCaughern	P.O. #:
Sampler: E. Luongo	Quote #:
State where samples were collected: PA.	For Compliance: Yes ☒ No ☐

Matrix: Soil ☐ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: Wastewater

Analysis Requested — Preservation and Filtration Codes: S, H

For Lab Use Only: FSC: _____ SCR#: _____

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, P=H_3PO_4, F=Field Filtered, O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Sediment	Tissue	Water	Other	Total # of Containers	Phosphorous at P	HEM (oil & grease)	Remarks
UGTMA Effluent	12.10.20	0920		X					X	1	X		
UGTMA Effluent	12.10.20	1030	X						X	2		X	

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: _____

Relinquished by	Date	Time	Received by	Date	Time
E. Luongo	12.10.20	1050	[illegible]	12/10/20	1155
[illegible]	12/10/20	1532	[illegible]	12/10/20	1620

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)
Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13
NYSDEC Category A or B | MA MCP | CT RCP

EDD Required? Yes No
If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.3 °C

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KAM 7044 0919

3/16/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-23573-1

Login Number: 23573
List Number: 1
Creator: Metzger, Katherine A

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-24132-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 9:37:28 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

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Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
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Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 9:37:28 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-24132-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-24132-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24132-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-24132-1

Revision
The report being provided is a revision of the original report sent on 12/29/2020. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 12/15/2020 5:39 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C

GC/MS VOA
Method 8260C: Surrogate recovery for the following sample was outside control limits: BT-02A-S-10-20201214 (410-24132-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-24132-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-02A-S-10-20201214
Lab Sample ID: 410-24132-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	4100		550	44	ug/Kg	100	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	3400000		120000	48000	ug/Kg	1000	☼	8260C	Total/NA
Anthracene	53		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	26		19	7.6	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	16	J	19	3.8	ug/Kg	1	☼	8270D	Total/NA
Fluorene	220		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	240		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Pyrene	71		19	3.8	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	150		140	57	mg/Kg	10	☼	8015C TPH	Total/NA
>C12-C22 (1C)	1600		140	57	mg/Kg	10	☼	8015C TPH	Total/NA
Total Reported TPH	1800		14	5.7	mg/Kg	1	☼	Total TPH	Total/NA
Lead	12		1.3	0.53	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-02A-S-37-20201215
Lab Sample ID: 410-24132-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	2.0	J	5.0	0.50	ug/Kg	1	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	1.9	J	5.0	0.50	ug/Kg	1	☼	8260C	Total/NA
Benzene	21		5.0	0.50	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	1700		110	44	ug/Kg	1	☼	8260C	Total/NA
Ethylbenzene	1.6	J	5.0	0.40	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	17		5.0	0.40	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	12		5.0	0.50	ug/Kg	1	☼	8260C	Total/NA
t-Butyl alcohol	1400		100	15	ug/Kg	1	☼	8260C	Total/NA
Toluene	1.3	J	5.0	0.60	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	4.1	J	10	1.4	ug/Kg	1	☼	8260C	Total/NA
Anthracene	5.3	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	12	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	15	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Pyrene	16	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	6.3	J	14	6.0	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	6.3	J	14	6.0	mg/Kg	1	☼	Total TPH	Total/NA
Lead	6.5		1.5	0.60	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-02A-S-10-20201214 — Lab Sample ID: 410-24132-1

Date Collected: 12/14/20 13:05 — **Matrix: Solid**
Date Received: 12/15/20 17:39 — **Percent Solids: 87.3**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		550	44	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
1,3,5-Trimethylbenzene	ND		550	55	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
Toluene	ND		550	66	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
Methyl tertiary butyl ether	ND		550	55	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
Benzene	ND		550	55	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
1,2,4-Trimethylbenzene	ND		550	55	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
Isopropylbenzene	**4100**		550	44	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
1,2-Dibromoethane	ND		550	44	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
1,2-Dichloroethane	ND		550	66	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
t-Butyl alcohol	ND		11000	1600	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100
Xylenes, Total	ND		1100	150	ug/Kg	☼	12/16/20 04:24	12/23/20 18:06	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*54 - 135*	*12/16/20 04:24*	*12/23/20 18:06*	*100*
4-Bromofluorobenzene (Surr)	*242*	*S1+*	*50 - 131*	*12/16/20 04:24*	*12/23/20 18:06*	*100*
Dibromofluoromethane (Surr)	*105*		*50 - 141*	*12/16/20 04:24*	*12/23/20 18:06*	*100*
Toluene-d8 (Surr)	*175*	*S1+*	*52 - 141*	*12/16/20 04:24*	*12/23/20 18:06*	*100*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**3400000**		120000	48000	ug/Kg	☼	12/16/20 04:24	12/23/20 18:26	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*54 - 135*	*12/16/20 04:24*	*12/23/20 18:26*	*1000*
4-Bromofluorobenzene (Surr)	*254*	*S1+*	*50 - 131*	*12/16/20 04:24*	*12/23/20 18:26*	*1000*
Dibromofluoromethane (Surr)	*101*		*50 - 141*	*12/16/20 04:24*	*12/23/20 18:26*	*1000*
Toluene-d8 (Surr)	*154*	*S1+*	*52 - 141*	*12/16/20 04:24*	*12/23/20 18:26*	*1000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**53**		19	3.8	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Benzo[a]anthracene	**26**		19	7.6	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Benzo[a]pyrene	ND		19	3.8	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Benzo[b]fluoranthene	**16**	**J**	19	3.8	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Benzo[g,h,i]perylene	ND		19	3.8	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Chrysene	ND		19	3.8	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Fluorene	**220**		19	3.8	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Naphthalene	ND		19	7.6	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Phenanthrene	**240**		19	3.8	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1
Pyrene	**71**		19	3.8	ug/Kg	☼	12/18/20 11:08	12/21/20 20:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*57*		*39 - 100*	*12/18/20 11:08*	*12/21/20 20:33*	*1*
Nitrobenzene-d5 (Surr)	*168*	*S1+*	*32 - 97*	*12/18/20 11:08*	*12/21/20 20:33*	*1*
p-Terphenyl-d14 (Surr)	*80*		*45 - 108*	*12/18/20 11:08*	*12/21/20 20:33*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**150**		140	57	mg/Kg	☼	12/18/20 11:11	12/23/20 17:11	10
>C12-C22 (1C)	**1600**		140	57	mg/Kg	☼	12/18/20 11:11	12/23/20 17:11	10

Client Sample ID: BT-02A-S-10-20201214 — Lab Sample ID: 410-24132-1

Date Collected: 12/14/20 13:05 — **Matrix: Solid**
Date Received: 12/15/20 17:39 — **Percent Solids: 87.3**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*93*		*54 - 137*	*12/18/20 11:11*	*12/23/20 17:11*	*10*
o- terphenyl (Surr) (1C)	*114*		*52 - 154*	*12/18/20 11:11*	*12/23/20 17:11*	*10*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**1800**		14	5.7	mg/Kg	☼		03/10/21 11:19	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**12**		1.3	0.53	mg/Kg	☼	12/16/20 04:10	12/18/20 12:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12.7**		1.0	1.0	%			12/15/20 20:15	1

Client Sample ID: BT-02A-S-37-20201215 — Lab Sample ID: 410-24132-2

Date Collected: 12/15/20 08:50 — **Matrix: Solid**
Date Received: 12/15/20 17:39 — **Percent Solids: 82.9**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**2.0**	**J**	5.0	0.50	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
1,3,5-Trimethylbenzene	**1.9**	**J**	5.0	0.50	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
Benzene	**21**		5.0	0.50	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
C4-C12-TPH-GRO	**1700**		110	44	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
Ethylbenzene	**1.6**	**J**	5.0	0.40	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
Isopropylbenzene	**17**		5.0	0.40	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
Methyl tertiary butyl ether	**12**		5.0	0.50	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
t-Butyl alcohol	**1400**		100	15	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
Toluene	**1.3**	**J**	5.0	0.60	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1
Xylenes, Total	**4.1**	**J**	10	1.4	ug/Kg	☼	12/16/20 05:48	12/22/20 05:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*	*12/16/20 05:48*	*12/22/20 05:03*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*	*12/16/20 05:48*	*12/22/20 05:03*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 141*	*12/16/20 05:48*	*12/22/20 05:03*	*1*
Toluene-d8 (Surr)	*99*		*52 - 141*	*12/16/20 05:48*	*12/22/20 05:03*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**5.3**	**J**	20	4.0	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Benzo[a]anthracene	ND		20	7.9	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Benzo[a]pyrene	ND		20	4.0	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Benzo[b]fluoranthene	ND		20	4.0	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Benzo[g,h,i]perylene	ND		20	4.0	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Chrysene	ND		20	4.0	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Fluorene	**12**	**J**	20	4.0	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Naphthalene	ND		20	7.9	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Phenanthrene	**15**	**J**	20	4.0	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1
Pyrene	**16**	**J**	20	4.0	ug/Kg	☼	12/18/20 11:08	12/21/20 20:57	1

Client Sample ID: BT-02A-S-37-20201215 Lab Sample ID: 410-24132-2

Date Collected: 12/15/20 08:50 **Matrix: Solid**
Date Received: 12/15/20 17:39 **Percent Solids: 82.9**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*39 - 100*	*12/18/20 11:08*	*12/21/20 20:57*	*1*
Nitrobenzene-d5 (Surr)	*64*		*32 - 97*	*12/18/20 11:08*	*12/21/20 20:57*	*1*
p-Terphenyl-d14 (Surr)	*72*		*45 - 108*	*12/18/20 11:08*	*12/21/20 20:57*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**6.3**	**J**	14	6.0	mg/Kg	☼	12/18/20 11:11	12/21/20 14:26	1
>C12-C22 (1C)	ND		14	6.0	mg/Kg	☼	12/18/20 11:11	12/21/20 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*70*		*54 - 137*	*12/18/20 11:11*	*12/21/20 14:26*	*1*
o- terphenyl (Surr) (1C)	*81*		*52 - 154*	*12/18/20 11:11*	*12/21/20 14:26*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**6.3**	**J**	14	6.0	mg/Kg	☼		03/10/21 11:19	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**6.5**		1.5	0.60	mg/Kg	☼	12/16/20 04:10	12/18/20 12:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.1**		1.0	1.0	%			12/15/20 20:15	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24132-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-24132-1	BT-02A-S-10-20201214	113	242 S1+	105	175 S1+
410-24132-1 - DL	BT-02A-S-10-20201214	115	254 S1+	101	154 S1+
410-24132-2	BT-02A-S-37-20201215	108	98	102	99
LCS 410-79007/4	Lab Control Sample	103	97	102	98
LCS 410-79007/6	Lab Control Sample	102	97	100	98
LCS 410-79667/10	Lab Control Sample	106	95	100	102
LCS 410-79667/6	Lab Control Sample	110	93	105	101
LCSD 410-79007/5	Lab Control Sample Dup	104	97	100	99
LCSD 410-79007/7	Lab Control Sample Dup	101	96	100	98
LCSD 410-79667/11	Lab Control Sample Dup	107	97	102	103
LCSD 410-79667/7	Lab Control Sample Dup	105	93	105	100
MB 410-79007/9	Method Blank	104	94	103	96
MB 410-79667/12	Method Blank	99	85	93	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-24132-1	BT-02A-S-10-20201214	57	168 S1+	80
410-24132-2	BT-02A-S-37-20201215	63	64	72
LCS 410-77935/2-A	Lab Control Sample	75	72	85
MB 410-77935/1-A	Method Blank	74	72	91

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-24132-1	BT-02A-S-10-20201214	93	114
410-24132-2	BT-02A-S-37-20201215	70	81
LCS 410-77936/2-A	Lab Control Sample	73	104
MB 410-77936/1-A	Method Blank	76	91

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-79007/9
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Ethylbenzene	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
Benzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			12/21/20 22:54	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
Toluene	ND		5.0	0.60	ug/Kg			12/21/20 22:54	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			12/21/20 22:54	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			12/21/20 22:54	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			12/21/20 22:54	1
t-Butyl alcohol	ND		100	15	ug/Kg			12/21/20 22:54	1
Xylenes, Total	ND		10	1.4	ug/Kg			12/21/20 22:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*		*12/21/20 22:54*	*1*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*		*12/21/20 22:54*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*		*12/21/20 22:54*	*1*
Toluene-d8 (Surr)	*96*		*52 - 141*		*12/21/20 22:54*	*1*

Lab Sample ID: LCS 410-79007/4
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,3,5-Trimethylbenzene			20.0	19.3		ug/Kg		96	73 - 120		
Ethylbenzene			20.0	19.5		ug/Kg		98	78 - 120		
Benzene			20.0	20.8		ug/Kg		104	80 - 120		
Methyl tertiary butyl ether			20.0	17.6		ug/Kg		88	72 - 120		
Naphthalene			20.0	18.8		ug/Kg		94	48 - 130		
1,2,4-Trimethylbenzene			20.0	19.2		ug/Kg		96	73 - 120		
Isopropylbenzene			20.0	19.5		ug/Kg		97	77 - 120		
Toluene			20.0	19.7		ug/Kg		99	80 - 120		
1,2-Dibromoethane			20.0	19.5		ug/Kg		97	76 - 120		
1,2-Dichloroethane			20.0	19.2		ug/Kg		96	71 - 128		
t-Butyl alcohol			200	200		ug/Kg		100	74 - 121		
Xylenes, Total			60.0	59.7		ug/Kg		100	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-79007/6
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1040		ug/Kg		104	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-79007/5
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene			20.0	19.3		ug/Kg		96	73 - 120	0	30
Ethylbenzene			20.0	19.6		ug/Kg		98	78 - 120	0	30
Benzene			20.0	20.8		ug/Kg		104	80 - 120	0	30
Methyl tertiary butyl ether			20.0	16.6		ug/Kg		83	72 - 120	6	30
Naphthalene			20.0	17.8		ug/Kg		89	48 - 130	5	30
1,2,4-Trimethylbenzene			20.0	19.1		ug/Kg		95	73 - 120	0	30
Isopropylbenzene			20.0	19.5		ug/Kg		97	77 - 120	0	30
Toluene			20.0	19.5		ug/Kg		98	80 - 120	1	30
1,2-Dibromoethane			20.0	18.7		ug/Kg		93	76 - 120	4	30
1,2-Dichloroethane			20.0	19.0		ug/Kg		95	71 - 128	1	30
t-Butyl alcohol			200	203		ug/Kg		101	74 - 121	1	30
Xylenes, Total			60.0	59.7		ug/Kg		100	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Lab Sample ID: LCSD 410-79007/7
Matrix: Solid
Analysis Batch: 79007

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1030		ug/Kg		103	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-79667/12
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Ethylbenzene	ND		250	20	ug/Kg			12/23/20 14:02	50
Benzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/23/20 14:02	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Isopropylbenzene	ND		250	20	ug/Kg			12/23/20 14:02	50
Toluene	ND		250	30	ug/Kg			12/23/20 14:02	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/23/20 14:02	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/23/20 14:02	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/23/20 14:02	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/23/20 14:02	50
Xylenes, Total	ND		500	70	ug/Kg			12/23/20 14:02	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*		*12/23/20 14:02*	*50*
4-Bromofluorobenzene (Surr)	*85*		*50 - 131*		*12/23/20 14:02*	*50*
Dibromofluoromethane (Surr)	*93*		*50 - 141*		*12/23/20 14:02*	*50*
Toluene-d8 (Surr)	*93*		*52 - 141*		*12/23/20 14:02*	*50*

Lab Sample ID: LCS 410-79667/10
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	50000	56400		ug/Kg		113	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*102*		*52 - 141*

Lab Sample ID: LCS 410-79667/6
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	1000	992		ug/Kg		99	73 - 120
Ethylbenzene	1000	1010		ug/Kg		101	78 - 120
Benzene	1000	1040		ug/Kg		104	80 - 120
Methyl tertiary butyl ether	1000	1080		ug/Kg		108	72 - 120
Naphthalene	1000	985		ug/Kg		99	48 - 130
1,2,4-Trimethylbenzene	1000	987		ug/Kg		99	73 - 120
Isopropylbenzene	1000	1050		ug/Kg		105	77 - 120
Toluene	1000	1030		ug/Kg		103	80 - 120
1,2-Dibromoethane	1000	1070		ug/Kg		107	76 - 120
1,2-Dichloroethane	1000	1020		ug/Kg		102	71 - 128
t-Butyl alcohol	10000	10000		ug/Kg		100	74 - 121

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-79667/6
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			3000	3160		ug/Kg		105	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-79667/11
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	56500		ug/Kg		113	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Lab Sample ID: LCSD 410-79667/7
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene			1000	990		ug/Kg		99	73 - 120	0	30
Ethylbenzene			1000	998		ug/Kg		100	78 - 120	2	30
Benzene			1000	1020		ug/Kg		102	80 - 120	2	30
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120	2	30
Naphthalene			1000	997		ug/Kg		100	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	977		ug/Kg		98	73 - 120	1	30
Isopropylbenzene			1000	1030		ug/Kg		103	77 - 120	1	30
Toluene			1000	1030		ug/Kg		103	80 - 120	0	30
1,2-Dibromoethane			1000	1070		ug/Kg		107	76 - 120	1	30
1,2-Dichloroethane			1000	985		ug/Kg		98	71 - 128	3	30
t-Butyl alcohol			10000	8840		ug/Kg		88	74 - 121	13	30
Xylenes, Total			3000	3120		ug/Kg		104	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24132-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-77935/1-A
Matrix: Solid
Analysis Batch: 78727

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77935

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Chrysene	ND		17	3.3	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Fluorene	ND		17	3.3	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Naphthalene	ND		17	6.7	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Phenanthrene	ND		17	3.3	ug/Kg		12/18/20 11:08	12/21/20 12:16	1
Pyrene	ND		17	3.3	ug/Kg		12/18/20 11:08	12/21/20 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*39 - 100*	*12/18/20 11:08*	*12/21/20 12:16*	*1*
Nitrobenzene-d5 (Surr)	*72*		*32 - 97*	*12/18/20 11:08*	*12/21/20 12:16*	*1*
p-Terphenyl-d14 (Surr)	*91*		*45 - 108*	*12/18/20 11:08*	*12/21/20 12:16*	*1*

Lab Sample ID: LCS 410-77935/2-A
Matrix: Solid
Analysis Batch: 78727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77935

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1580		ug/Kg		95	75 - 114
Benzo[a]anthracene	1670	1550		ug/Kg		93	73 - 114
Benzo[a]pyrene	1670	1310		ug/Kg		79	76 - 113
Benzo[b]fluoranthene	1670	1310		ug/Kg		79	73 - 117
Benzo[g,h,i]perylene	1670	1450		ug/Kg		87	77 - 114
Chrysene	1670	1550		ug/Kg		93	66 - 111
Fluorene	1670	1440		ug/Kg		87	62 - 110
Naphthalene	1670	1250		ug/Kg		75	60 - 94
Phenanthrene	1670	1550		ug/Kg		93	74 - 112
Pyrene	1670	1540		ug/Kg		92	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*75*		*39 - 100*
Nitrobenzene-d5 (Surr)	*72*		*32 - 97*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-77936/1-A
Matrix: Solid
Analysis Batch: 78819

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77936

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		12/18/20 11:11	12/21/20 13:22	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		12/18/20 11:11	12/21/20 13:22	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-77936/1-A
Matrix: Solid
Analysis Batch: 78819

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77936

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*76*		*54 - 137*	*12/18/20 11:11*	*12/21/20 13:22*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*12/18/20 11:11*	*12/21/20 13:22*	*1*

Lab Sample ID: LCS 410-77936/2-A
Matrix: Solid
Analysis Batch: 78819

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77936

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	117		mg/Kg		87	64 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*73*		*54 - 137*
o- terphenyl (Surr) (1C)	*104*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-76740/1-A
Matrix: Solid
Analysis Batch: 78172

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76740

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.60	mg/Kg		12/15/20 06:06	12/18/20 12:10	1

Lab Sample ID: LCS 410-76740/2-A
Matrix: Solid
Analysis Batch: 78172

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76740

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.94	3.08		mg/Kg		105	80 - 120

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-24132-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 77265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	5035	
410-24132-1 - DL	BT-02A-S-10-20201214	Total/NA	Solid	5035	

Prep Batch: 77279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	5030C	

Analysis Batch: 79007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	8260C	77279
MB 410-79007/9	Method Blank	Total/NA	Solid	8260C	
LCS 410-79007/4	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-79007/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-79007/5	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-79007/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 79667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	8260C	77265
410-24132-1 - DL	BT-02A-S-10-20201214	Total/NA	Solid	8260C	77265
MB 410-79667/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-79667/10	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-79667/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-79667/11	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-79667/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 77935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	3546	
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	3546	
MB 410-77935/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-77935/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 78727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	8270D	77935
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	8270D	77935
MB 410-77935/1-A	Method Blank	Total/NA	Solid	8270D	77935
LCS 410-77935/2-A	Lab Control Sample	Total/NA	Solid	8270D	77935

GC Semi VOA

Prep Batch: 77936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	3546	
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	3546	
MB 410-77936/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-77936/2-A	Lab Control Sample	Total/NA	Solid	3546	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24132-1

GC Semi VOA

Analysis Batch: 78819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	8015C TPH	77936
MB 410-77936/1-A	Method Blank	Total/NA	Solid	8015C TPH	77936
LCS 410-77936/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	77936

Analysis Batch: 79710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	8015C TPH	77936

Analysis Batch: 101637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	Total TPH	
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 76740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	3050B	
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	3050B	
MB 410-76740/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-76740/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 78172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	6010C	76740
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	6010C	76740
MB 410-76740/1-A	Method Blank	Total/NA	Solid	6010C	76740
LCS 410-76740/2-A	Lab Control Sample	Total/NA	Solid	6010C	76740

General Chemistry

Analysis Batch: 77185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24132-1	BT-02A-S-10-20201214	Total/NA	Solid	Moisture	
410-24132-2	BT-02A-S-37-20201215	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24132-1

Client Sample ID: BT-02A-S-10-20201214

Lab Sample ID: 410-24132-1
Date Collected: 12/14/20 13:05
Matrix: Solid
Date Received: 12/15/20 17:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	77185	12/15/20 20:15	OEL4	ELLE

Client Sample ID: BT-02A-S-10-20201214

Lab Sample ID: 410-24132-1
Date Collected: 12/14/20 13:05
Matrix: Solid
Date Received: 12/15/20 17:39
Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			77265	12/16/20 04:24	Z8FW	ELLE
Total/NA	Analysis	8260C		100	79667	12/23/20 18:06	UKAD	ELLE
Total/NA	Prep	5035	DL		77265	12/16/20 04:24	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	1000	79667	12/23/20 18:26	UKAD	ELLE
Total/NA	Prep	3546			77935	12/18/20 11:08	A2VL	ELLE
Total/NA	Analysis	8270D		1	78727	12/21/20 20:33	WKV3	ELLE
Total/NA	Prep	3546			77936	12/18/20 11:11	A2VL	ELLE
Total/NA	Analysis	8015C TPH		10	79710	12/23/20 17:11	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101637	03/10/21 11:19	YHQ2	ELLE
Total/NA	Prep	3050B			76740	12/16/20 04:10	UAMX	ELLE
Total/NA	Analysis	6010C		1	78172	12/18/20 12:51	MDP5	ELLE

Client Sample ID: BT-02A-S-37-20201215

Lab Sample ID: 410-24132-2
Date Collected: 12/15/20 08:50
Matrix: Solid
Date Received: 12/15/20 17:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	77185	12/15/20 20:15	OEL4	ELLE

Client Sample ID: BT-02A-S-37-20201215

Lab Sample ID: 410-24132-2
Date Collected: 12/15/20 08:50
Matrix: Solid
Date Received: 12/15/20 17:39
Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			77279	12/16/20 05:48	Z8FW	ELLE
Total/NA	Analysis	8260C		1	79007	12/22/20 05:03	UKAD	ELLE
Total/NA	Prep	3546			77935	12/18/20 11:08	A2VL	ELLE
Total/NA	Analysis	8270D		1	78727	12/21/20 20:57	WKV3	ELLE
Total/NA	Prep	3546			77936	12/18/20 11:11	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	78819	12/21/20 14:26	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101637	03/10/21 11:19	YHQ2	ELLE
Total/NA	Prep	3050B			76740	12/16/20 04:10	UAMX	ELLE
Total/NA	Analysis	6010C		1	78172	12/18/20 12:54	MDP5	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-24132-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-24132-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-24132-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-24132-1	BT-02A-S-10-20201214	Solid	12/14/20 13:05	12/15/20 17:39	
410-24132-2	BT-02A-S-37-20201215	Solid	12/15/20 08:50	12/15/20 17:39	

Environmental Analysis Requ[illegible]ody

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For Eu[illegible]y

Acct. # _____ Gr[illegible]

410-24132 Chain of Custody

COC # 615260

Client Information	
Client: Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dana Hoblitzell	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: ☐ Tissue ☐ Sediment ☒ Soil ☐ Ground ☐ Surface ☐ Potable ☐ NPDES Water Other: _____

Analysis Requested — Preservation and Filtration Codes

For Lab Use Only: FSC: _____ SCR#: _____

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, P=H_3PO_4, F=Field Filtered, O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO + VOC 8260 (Moisture)	Lead	PAH 8270D	Remarks
BT-02A-S-10-20201214	12/4/20	1305	X		X			6	X	X	X	X	*Lab filter for dissolved lead*
BT-02A-S-37-20201215	12/5/20	0850	X		X			6	X	X	X	X	

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	12/15/20	1255	Pierre	12/15/1	12:55
			[signature]	12-15-20	1739

EDD Required? Yes No
If yes, format: EQuis

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.8 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc

KAM The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client. KAM 7044 0919

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-24132-1

Login Number: 24132
List Number: 1
Creator: Metzger, Katherine A

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-24240-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 9:40:59 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 9:40:59 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-24240-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-24240-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-24240-1

Revision
The report being provided is a revision of the original report sent on 1/11/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 12/16/2020 4:20 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -0.2°C

GC/MS VOA
Method 8260C: Surrogate recovery for the following sample was outside control limits: BT-09-S-22-20201216 (410-24240-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: Surrogate recovery for the following sample was outside the upper control limit: BT-02A-w-36-20201215 (410-24240-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8011: The following sample was analyzed outside of analytical holding time due to a trip blank sampling error. TB-20201216 (410-24240-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFMS: The following sample was analyzed outside of analytical holding time for Nitrogen, Nitrate due to laboratory error: BT-02A-w-36-20201215 (410-24240-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method SM4500_S2_D: The following sample was diluted due to the nature of the sample matrix: BT-02A-w-36-20201215 (410-24240-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24240-1

Client Sample ID: BT-02A-w-36-20201215 — Lab Sample ID: 410-24240-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	5.7	J	25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	3.1	J	25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	110		5.0	1.0	ug/L	5		8260C/UST	Total/NA
C4-C12-TPH-GRO	3900		250	150	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	6.3		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	72		25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	98		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Toluene	9.0		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	26	J	30	7.0	ug/L	5		8260C/UST	Total/NA
t-Butyl alcohol	8200		2500	600	ug/L	50		8260C/UST	Total/NA
Ethane (1C)	1.1	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	7900		250	150	ug/L	50		RSK-175	Total/NA
>C22-C44 (1C)	0.97		0.11	0.084	mg/L	1		8015C TPH	Total/NA
>C12-C22 (1C)	3.3		0.11	0.084	mg/L	1		8015C TPH	Total/NA
Total Reported TPH	4.3		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	0.30	J H	0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	24		5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	200		80	40	mg/L	200		EPA 300.0 R2.1	Total/NA
Calcium	56		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	240		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	48		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	15		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	150		1.0	0.24	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	220		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	4.4		1.5	0.50	mg/L	1		4500 NH3 C-2011	Total/NA
Total Organic Carbon	46		5.0	2.5	mg/L	5		5310C-2011	Total/NA

Client Sample ID: BT-09-S-22-20201216 — Lab Sample ID: 410-24240-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	560		330	26	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	2400		330	33	ug/Kg	50	☼	8260C	Total/NA
Toluene	94	J	330	39	ug/Kg	50	☼	8260C	Total/NA
Benzene	230	J	330	33	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	6900		330	33	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	940		330	26	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	450	J	650	91	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	680000		72000	29000	ug/Kg	500	☼	8260C	Total/NA
Anthracene	26		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	32		19	7.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	11	J	19	3.8	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	16	J	19	3.8	ug/Kg	1	☼	8270D	Total/NA
Chrysene	28		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Fluorene	110		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	1200		19	7.7	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	67		19	3.8	ug/Kg	1	☼	8270D	Total/NA
Pyrene	63		19	3.8	ug/Kg	1	☼	8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-24240-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-09-S-22-20201216 (Continued)
Lab Sample ID: 410-24240-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
>C22-C44 (1C)	7.3	J	14	5.7	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	390		14	5.7	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	400		14	5.8	mg/Kg	1	☼	Total TPH	Total/NA
Lead	13		1.2	0.50	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20201216
Lab Sample ID: 410-24240-3

No Detections.

Client Sample ID: FB-20201216
Lab Sample ID: 410-24240-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.19	J	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	0.27		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	0.11		0.10	0.040	mg/L	1		6010C	Total Recoverable
Sodium	0.71	J	1.0	0.24	mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-02A-w-36-20201215

Date Collected: 12/15/20 13:30
Date Received: 12/16/20 16:20

Lab Sample ID: 410-24240-1

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	5.7	J	25	5.0	ug/L			12/29/20 17:23	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			12/29/20 17:23	5
1,3,5-Trimethylbenzene	3.1	J	25	1.5	ug/L			12/29/20 17:23	5
Benzene	110		5.0	1.0	ug/L			12/29/20 17:23	5
C4-C12-TPH-GRO	3900		250	150	ug/L			12/29/20 17:23	5
Ethylbenzene	6.3		5.0	2.0	ug/L			12/29/20 17:23	5
Isopropylbenzene	72		25	1.0	ug/L			12/29/20 17:23	5
Methyl tertiary butyl ether	98		5.0	1.0	ug/L			12/29/20 17:23	5
Toluene	9.0		5.0	1.0	ug/L			12/29/20 17:23	5
Xylenes, Total	26	J	30	7.0	ug/L			12/29/20 17:23	5
t-Butyl alcohol	8200		2500	600	ug/L			12/29/20 17:47	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*12/29/20 17:23*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*12/29/20 17:47*	*50*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*12/29/20 17:23*	*5*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*12/29/20 17:47*	*50*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*12/29/20 17:23*	*5*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*12/29/20 17:47*	*50*
Toluene-d8 (Surr)	*106*		*80 - 120*		*12/29/20 17:23*	*5*
Toluene-d8 (Surr)	*107*		*80 - 120*		*12/29/20 17:47*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	1.1	J	5.0	1.0	ug/L		12/18/20 08:07	12/19/20 03:52	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/18/20 08:07	12/19/20 03:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*111*		*28 - 140*	*12/18/20 08:07*	*12/19/20 03:52*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	7900		250	150	ug/L		12/21/20 08:29	12/21/20 12:54	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*92*		*28 - 140*	*12/21/20 08:29*	*12/21/20 12:54*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0098	ug/L		12/19/20 10:09	12/22/20 01:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*142*	*S1+*	*46 - 136*	*12/19/20 10:09*	*12/22/20 01:30*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*142*	*S1+*	*46 - 136*	*12/19/20 10:09*	*12/22/20 01:30*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	0.97		0.11	0.084	mg/L		12/22/20 20:41	12/23/20 15:24	1
>C12-C22 (1C)	3.3		0.11	0.084	mg/L		12/22/20 20:41	12/23/20 15:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*90*		*21 - 116*	*12/22/20 20:41*	*12/23/20 15:24*	*1*

Client Sample ID: BT-02A-w-36-20201215 — Lab Sample ID: 410-24240-1

Date Collected: 12/15/20 13:30 — **Matrix: Water**
Date Received: 12/16/20 16:20

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr) (1C)	*67*		*51 - 126*	*12/22/20 20:41*	*12/23/20 15:24*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**4.3**		0.20	0.074	mg/L			03/15/21 08:37	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.30**	**J H**	0.50	0.25	mg/L			12/18/20 08:20	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**24**		5.0	1.5	mg/L			12/18/20 08:20	5
Chloride	**200**		80	40	mg/L			12/19/20 10:31	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**56**		0.50	0.096	mg/L		12/20/20 15:39	12/23/20 16:23	1
Iron	**240**		0.20	0.040	mg/L		12/20/20 15:39	12/22/20 12:42	1
Magnesium	**48**		0.10	0.040	mg/L		12/20/20 15:39	12/23/20 16:23	1
Potassium	**15**		0.50	0.20	mg/L		12/20/20 15:39	12/22/20 12:42	1
Sodium	**150**		1.0	0.24	mg/L		12/20/20 15:39	12/22/20 12:42	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		12/20/20 10:16	12/20/20 13:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**220**		8.0	8.0	mg/L			12/17/20 22:10	1
Ammonia-N	**4.4**		1.5	0.50	mg/L		12/23/20 11:09	12/23/20 13:30	1
Sulfide	ND		3.0	1.0	mg/L			12/22/20 11:19	10
Total Organic Carbon	**46**		5.0	2.5	mg/L			12/20/20 17:51	5

Client Sample ID: BT-09-S-22-20201216 — Lab Sample ID: 410-24240-2

Date Collected: 12/16/20 11:15 — **Matrix: Solid**
Date Received: 12/16/20 16:20 — **Percent Solids: 85.8**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**560**		330	26	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
1,3,5-Trimethylbenzene	**2400**		330	33	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
Toluene	**94**	**J**	330	39	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
Methyl tertiary butyl ether	ND		330	33	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
Benzene	**230**	**J**	330	33	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
1,2,4-Trimethylbenzene	**6900**		330	33	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
Isopropylbenzene	**940**		330	26	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
1,2-Dibromoethane	ND		330	26	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
1,2-Dichloroethane	ND		330	39	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
t-Butyl alcohol	ND		6500	980	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50
Xylenes, Total	**450**	**J**	650	91	ug/Kg	☼	12/17/20 21:50	12/23/20 16:22	50

Client Sample ID: BT-09-S-22-20201216
Date Collected: 12/16/20 11:15
Date Received: 12/16/20 16:20

Lab Sample ID: 410-24240-2
Matrix: Solid
Percent Solids: 85.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	133		54 - 135	12/17/20 21:50	12/23/20 16:22	50
4-Bromofluorobenzene (Surr)	134	S1+	50 - 131	12/17/20 21:50	12/23/20 16:22	50
Dibromofluoromethane (Surr)	129		50 - 141	12/17/20 21:50	12/23/20 16:22	50
Toluene-d8 (Surr)	141		52 - 141	12/17/20 21:50	12/23/20 16:22	50

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	680000		72000	29000	ug/Kg	☼	12/17/20 21:50	12/23/20 16:43	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	133		54 - 135	12/17/20 21:50	12/23/20 16:43	500
4-Bromofluorobenzene (Surr)	128		50 - 131	12/17/20 21:50	12/23/20 16:43	500
Dibromofluoromethane (Surr)	119		50 - 141	12/17/20 21:50	12/23/20 16:43	500
Toluene-d8 (Surr)	132		52 - 141	12/17/20 21:50	12/23/20 16:43	500

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	26		19	3.8	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Benzo[a]anthracene	32		19	7.7	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Benzo[a]pyrene	11	J	19	3.8	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Benzo[b]fluoranthene	16	J	19	3.8	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Benzo[g,h,i]perylene	ND		19	3.8	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Chrysene	28		19	3.8	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Fluorene	110		19	3.8	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Naphthalene	1200		19	7.7	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Phenanthrene	67		19	3.8	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1
Pyrene	63		19	3.8	ug/Kg	☼	12/30/20 15:47	01/04/21 19:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	71		39 - 100	12/30/20 15:47	01/04/21 19:57	1
Nitrobenzene-d5 (Surr)	76		32 - 97	12/30/20 15:47	01/04/21 19:57	1
p-Terphenyl-d14 (Surr)	80		45 - 108	12/30/20 15:47	01/04/21 19:57	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	7.3	J	14	5.7	mg/Kg	☼	12/22/20 16:24	12/23/20 16:50	1
>C12-C22 (1C)	390		14	5.7	mg/Kg	☼	12/22/20 16:24	12/23/20 16:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	89		54 - 137	12/22/20 16:24	12/23/20 16:50	1
o- terphenyl (Surr) (1C)	100		52 - 154	12/22/20 16:24	12/23/20 16:50	1

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	400		14	5.8	mg/Kg	☼		03/15/21 08:37	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	13		1.2	0.50	mg/Kg	☼	12/18/20 03:44	12/21/20 09:22	1

Client Sample ID: BT-09-S-22-20201216 — Lab Sample ID: 410-24240-2

Date Collected: 12/16/20 11:15 — **Matrix: Solid**
Date Received: 12/16/20 16:20 — **Percent Solids: 85.8**

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.2		1.0	1.0	%			12/17/20 08:42	1

Client Sample ID: TB-20201216 — Lab Sample ID: 410-24240-3

Date Collected: 12/15/20 00:00 — **Matrix: Water**
Date Received: 12/16/20 16:20

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/29/20 18:11	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/29/20 18:11	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/29/20 18:11	1
Benzene	ND		1.0	0.20	ug/L			12/29/20 18:11	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/29/20 18:11	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/29/20 18:11	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/29/20 18:11	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/29/20 18:11	1
Toluene	ND		1.0	0.20	ug/L			12/29/20 18:11	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/29/20 18:11	1
t-Butyl alcohol	ND		50	12	ug/L			12/29/20 18:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*12/29/20 18:11*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*12/29/20 18:11*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*12/29/20 18:11*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*12/29/20 18:11*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	H H3	0.029	0.0097	ug/L		12/30/20 23:47	01/04/21 18:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*93*		*46 - 136*	*12/30/20 23:47*	*01/04/21 18:50*	*1*

Client Sample ID: FB-20201216 — Lab Sample ID: 410-24240-4

Date Collected: 12/16/20 11:00 — **Matrix: Water**
Date Received: 12/16/20 16:20

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/29/20 18:36	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/29/20 18:36	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/29/20 18:36	1
Benzene	ND		1.0	0.20	ug/L			12/29/20 18:36	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/29/20 18:36	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/29/20 18:36	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/29/20 18:36	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/29/20 18:36	1
Toluene	ND		1.0	0.20	ug/L			12/29/20 18:36	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/29/20 18:36	1
t-Butyl alcohol	ND		50	12	ug/L			12/29/20 18:36	1

Client Sample ID: FB-20201216 — Lab Sample ID: 410-24240-4

Date Collected: 12/16/20 11:00 — **Matrix: Water**
Date Received: 12/16/20 16:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*12/29/20 18:36*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*12/29/20 18:36*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*12/29/20 18:36*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*12/29/20 18:36*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/18/20 08:07	12/19/20 04:10	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/18/20 08:07	12/19/20 04:10	1
Methane (1C)	ND		5.0	3.0	ug/L		12/18/20 08:07	12/19/20 04:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*107*		*28 - 140*	*12/18/20 08:07*	*12/19/20 04:10*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		12/19/20 10:09	12/22/20 01:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*118*		*46 - 136*	*12/19/20 10:09*	*12/22/20 01:47*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*129*		*46 - 136*	*12/19/20 10:09*	*12/22/20 01:47*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.14	0.10	mg/L		12/22/20 20:41	12/23/20 15:03	1
>C12-C22 (1C)	ND		0.14	0.10	mg/L		12/22/20 20:41	12/23/20 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*79*		*21 - 116*	*12/22/20 20:41*	*12/23/20 15:03*	*1*
o- terphenyl (Surr) (1C)	*87*		*51 - 126*	*12/22/20 20:41*	*12/23/20 15:03*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		0.20	0.074	mg/L			03/15/21 08:37	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.50	0.25	mg/L			12/18/20 06:38	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			12/30/20 05:48	1
Chloride	ND		0.40	0.20	mg/L			12/30/20 05:48	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**0.19**	**J**	0.50	0.096	mg/L		12/20/20 15:39	12/23/20 16:26	1
Iron	**0.27**		0.20	0.040	mg/L		12/20/20 15:39	12/22/20 12:45	1
Magnesium	**0.11**		0.10	0.040	mg/L		12/20/20 15:39	12/23/20 16:26	1
Potassium	ND		0.50	0.20	mg/L		12/20/20 15:39	12/22/20 12:45	1
Sodium	**0.71**	**J**	1.0	0.24	mg/L		12/20/20 15:39	12/22/20 12:45	1

Client Sample Results

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24240-1

Client Sample ID: FB-20201216

Date Collected: 12/16/20 11:00
Date Received: 12/16/20 16:20

Lab Sample ID: 410-24240-4

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		12/20/20 10:16	12/20/20 13:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			12/17/20 22:40	1
Ammonia-N	ND		0.75	0.25	mg/L		12/29/20 11:48	12/29/20 15:17	1
Sulfide	ND		0.30	0.10	mg/L			12/22/20 11:19	1
Total Organic Carbon	ND		1.0	0.50	mg/L			12/20/20 18:40	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24240-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-24240-2	BT-09-S-22-20201216	133	134 S1+	129	141
410-24240-2 - DL	BT-09-S-22-20201216	133	128	119	132
LCS 410-79667/10	Lab Control Sample	106	95	100	102
LCS 410-79667/6	Lab Control Sample	110	93	105	101
LCSD 410-79667/11	Lab Control Sample Dup	107	97	102	103
LCSD 410-79667/7	Lab Control Sample Dup	105	93	105	100
MB 410-79667/12	Method Blank	99	85	93	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-24240-1	BT-02A-w-36-20201215	100	94	97	106
410-24240-1	BT-02A-w-36-20201215	100	93	98	107
410-24240-3	TB-20201216	100	92	97	106
410-24240-4	FB-20201216	102	92	99	107
LCS 410-80575/5	Lab Control Sample	103	93	98	107
LCS 410-80575/7	Lab Control Sample	103	94	100	106
LCSD 410-80575/6	Lab Control Sample Dup	104	97	99	108
LCSD 410-80575/8	Lab Control Sample Dup	99	93	98	109
MB 410-80575/9	Method Blank	103	92	99	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-24240-2	BT-09-S-22-20201216	71	76	80
LCS 410-81103/2-A	Lab Control Sample	84	77	96
MB 410-81103/1-A	Method Blank	89	81	109 S1+

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-24240-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)										
		Propene1										
Lab Sample ID	Client Sample ID	(28-140)										
410-24240-1	BT-02A-w-36-20201215	111										
410-24240-1 - DL	BT-02A-w-36-20201215	92										
410-24240-4	FB-20201216	107										
LCS 410-77972/2-A	Lab Control Sample	110										
LCS 410-78739/2-A	Lab Control Sample	98										
LCSD 410-78739/3-A	Lab Control Sample Dup	100										
MB 410-77972/1-A	Method Blank	106										
MB 410-78739/1-A	Method Blank	100										

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)										
		1122TCA1	1122TCA2									
Lab Sample ID	Client Sample ID	(46-136)	(46-136)									
410-24240-1	BT-02A-w-36-20201215	142 S1+	142 S1+									
410-24240-3	TB-20201216		93									
410-24240-4	FB-20201216	118	129									
LCS 410-78382/2-A	Lab Control Sample	100	119									
LCS 410-81226/2-A	Lab Control Sample		95									
LCSD 410-78382/3-A	Lab Control Sample Dup	100	117									
LCSD 410-81226/3-A	Lab Control Sample Dup		96									
MB 410-78382/1-A	Method Blank	102	123									
MB 410-81226/1-A	Method Blank		92									

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)										
		CBNZ1	OTP1									
Lab Sample ID	Client Sample ID	(54-137)	(52-154)									
410-24240-2	BT-09-S-22-20201216	89	100									
LCS 410-79355/2-A	Lab Control Sample	63	101									
MB 410-79355/1-A	Method Blank	71	91									

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)										
		CBNZ1	OTP1									
Lab Sample ID	Client Sample ID	(21-116)	(51-126)									
410-24240-1	BT-02A-w-36-20201215	90	67									
410-24240-4	FB-20201216	79	87									

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-24240-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (21-116)	OTP1 (51-126)								
LCS 410-79473/2-A	Lab Control Sample	72	93								
LCSD 410-79473/3-A	Lab Control Sample Dup	74	93								
MB 410-79473/1-A	Method Blank	70	78								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-79667/12
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			12/23/20 14:02	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Toluene	ND		250	30	ug/Kg			12/23/20 14:02	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			12/23/20 14:02	50
Benzene	ND		250	25	ug/Kg			12/23/20 14:02	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			12/23/20 14:02	50
Isopropylbenzene	ND		250	20	ug/Kg			12/23/20 14:02	50
1,2-Dibromoethane	ND		250	20	ug/Kg			12/23/20 14:02	50
1,2-Dichloroethane	ND		250	30	ug/Kg			12/23/20 14:02	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			12/23/20 14:02	50
t-Butyl alcohol	ND		5000	750	ug/Kg			12/23/20 14:02	50
Xylenes, Total	ND		500	70	ug/Kg			12/23/20 14:02	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*		*12/23/20 14:02*	*50*
4-Bromofluorobenzene (Surr)	*85*		*50 - 131*		*12/23/20 14:02*	*50*
Dibromofluoromethane (Surr)	*93*		*50 - 141*		*12/23/20 14:02*	*50*
Toluene-d8 (Surr)	*93*		*52 - 141*		*12/23/20 14:02*	*50*

Lab Sample ID: LCS 410-79667/10
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	50000	56400		ug/Kg		113	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*102*		*52 - 141*

Lab Sample ID: LCS 410-79667/6
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1010		ug/Kg		101	78 - 120
1,3,5-Trimethylbenzene	1000	992		ug/Kg		99	73 - 120
Toluene	1000	1030		ug/Kg		103	80 - 120
Methyl tertiary butyl ether	1000	1080		ug/Kg		108	72 - 120
Benzene	1000	1040		ug/Kg		104	80 - 120
Naphthalene	1000	985		ug/Kg		99	48 - 130
1,2,4-Trimethylbenzene	1000	987		ug/Kg		99	73 - 120
Isopropylbenzene	1000	1050		ug/Kg		105	77 - 120
1,2-Dibromoethane	1000	1070		ug/Kg		107	76 - 120
1,2-Dichloroethane	1000	1020		ug/Kg		102	71 - 128
t-Butyl alcohol	10000	10000		ug/Kg		100	74 - 121

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-79667/6
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			3000	3160		ug/Kg		105	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-79667/11
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	56500		ug/Kg		113	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Lab Sample ID: LCSD 410-79667/7
Matrix: Solid
Analysis Batch: 79667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	998		ug/Kg		100	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	990		ug/Kg		99	73 - 120	0	30
Toluene			1000	1030		ug/Kg		103	80 - 120	0	30
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120	2	30
Benzene			1000	1020		ug/Kg		102	80 - 120	2	30
Naphthalene			1000	997		ug/Kg		100	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	977		ug/Kg		98	73 - 120	1	30
Isopropylbenzene			1000	1030		ug/Kg		103	77 - 120	1	30
1,2-Dibromoethane			1000	1070		ug/Kg		107	76 - 120	1	30
1,2-Dichloroethane			1000	985		ug/Kg		98	71 - 128	3	30
t-Butyl alcohol			10000	8840		ug/Kg		88	74 - 121	13	30
Xylenes, Total			3000	3120		ug/Kg		104	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-80575/9
Matrix: Water
Analysis Batch: 80575

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			12/29/20 14:35	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			12/29/20 14:35	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			12/29/20 14:35	1
Benzene	ND		1.0	0.20	ug/L			12/29/20 14:35	1
C4-C12-TPH-GRO	ND		50	29	ug/L			12/29/20 14:35	1
Ethylbenzene	ND		1.0	0.40	ug/L			12/29/20 14:35	1
Isopropylbenzene	ND		5.0	0.20	ug/L			12/29/20 14:35	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			12/29/20 14:35	1
Toluene	ND		1.0	0.20	ug/L			12/29/20 14:35	1
Xylenes, Total	ND		6.0	1.4	ug/L			12/29/20 14:35	1
t-Butyl alcohol	ND		50	12	ug/L			12/29/20 14:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/29/20 14:35*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*12/29/20 14:35*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*12/29/20 14:35*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*12/29/20 14:35*	*1*

Lab Sample ID: LCS 410-80575/5
Matrix: Water
Analysis Batch: 80575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
1,2-Dichloroethane	20.0	16.2		ug/L		81	73 - 124
1,3,5-Trimethylbenzene	20.0	19.9		ug/L		99	75 - 120
Benzene	20.0	16.9		ug/L		84	80 - 120
Ethylbenzene	20.0	19.5		ug/L		98	80 - 120
Isopropylbenzene	20.0	19.3		ug/L		96	80 - 120
Methyl tertiary butyl ether	20.0	16.4		ug/L		82	69 - 122
Naphthalene	20.0	19.2		ug/L		96	53 - 124
Toluene	20.0	20.0		ug/L		100	80 - 120
Xylenes, Total	60.0	59.7		ug/L		100	80 - 120
t-Butyl alcohol	200	183		ug/L		92	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: LCS 410-80575/7
Matrix: Water
Analysis Batch: 80575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	917		ug/L		92	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-80575/7
Matrix: Water
Analysis Batch: 80575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCSD 410-80575/6
Matrix: Water
Analysis Batch: 80575

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.1		ug/L		100	75 - 120	4	30
1,2-Dichloroethane			20.0	16.7		ug/L		83	73 - 124	3	30
1,3,5-Trimethylbenzene			20.0	20.2		ug/L		101	75 - 120	2	30
Benzene			20.0	17.5		ug/L		88	80 - 120	4	30
Ethylbenzene			20.0	20.7		ug/L		103	80 - 120	6	30
Isopropylbenzene			20.0	20.1		ug/L		101	80 - 120	4	30
Methyl tertiary butyl ether			20.0	17.3		ug/L		86	69 - 122	5	30
Naphthalene			20.0	20.4		ug/L		102	53 - 124	6	30
Toluene			20.0	20.6		ug/L		103	80 - 120	3	30
Xylenes, Total			60.0	62.5		ug/L		104	80 - 120	5	30
t-Butyl alcohol			200	194		ug/L		97	60 - 130	6	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*108*		*80 - 120*

Lab Sample ID: LCSD 410-80575/8
Matrix: Water
Analysis Batch: 80575

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	840		ug/L		84	67 - 120	9	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-81103/1-A
Matrix: Solid
Analysis Batch: 81702

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Chrysene	ND		17	3.3	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Fluorene	ND		17	3.3	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Naphthalene	ND		17	6.7	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Phenanthrene	ND		17	3.3	ug/Kg		12/30/20 15:47	01/04/21 13:03	1
Pyrene	ND		17	3.3	ug/Kg		12/30/20 15:47	01/04/21 13:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*89*		*39 - 100*	*12/30/20 15:47*	*01/04/21 13:03*	*1*
Nitrobenzene-d5 (Surr)	*81*		*32 - 97*	*12/30/20 15:47*	*01/04/21 13:03*	*1*
p-Terphenyl-d14 (Surr)	*109*	*S1+*	*45 - 108*	*12/30/20 15:47*	*01/04/21 13:03*	*1*

Lab Sample ID: LCS 410-81103/2-A
Matrix: Solid
Analysis Batch: 81702

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1590		ug/Kg		95	75 - 114
Benzo[a]anthracene	1670	1630		ug/Kg		98	73 - 114
Benzo[a]pyrene	1670	1540		ug/Kg		92	76 - 113
Benzo[b]fluoranthene	1670	1550		ug/Kg		93	73 - 117
Benzo[g,h,i]perylene	1670	1600		ug/Kg		96	77 - 114
Chrysene	1670	1480		ug/Kg		89	66 - 111
Fluorene	1670	1460		ug/Kg		88	62 - 110
Naphthalene	1670	1300		ug/Kg		78	60 - 94
Phenanthrene	1670	1490		ug/Kg		90	74 - 112
Pyrene	1670	1460		ug/Kg		87	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*84*		*39 - 100*
Nitrobenzene-d5 (Surr)	*77*		*32 - 97*
p-Terphenyl-d14 (Surr)	*96*		*45 - 108*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-77972/1-A
Matrix: Water
Analysis Batch: 77992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77972

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/18/20 08:07	12/18/20 23:01	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/18/20 08:07	12/18/20 23:01	1
Methane (1C)	ND		5.0	3.0	ug/L		12/18/20 08:07	12/18/20 23:01	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-77972/1-A
Matrix: Water
Analysis Batch: 77992

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77972

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	106		28 - 140	12/18/20 08:07	12/18/20 23:01	1

Lab Sample ID: LCS 410-77972/2-A
Matrix: Water
Analysis Batch: 77992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77972

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	64.0		ug/L		108	85 - 115		
Ethene (1C)			60.4	64.9		ug/L		108	83 - 115		
Methane (1C)			59.4	66.4		ug/L		112	85 - 115		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	110		28 - 140

Lab Sample ID: MB 410-78739/1-A
Matrix: Water
Analysis Batch: 78768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 78739

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/21/20 08:29	12/21/20 10:17	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/21/20 08:29	12/21/20 10:17	1
Methane (1C)	ND		5.0	3.0	ug/L		12/21/20 08:29	12/21/20 10:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	100		28 - 140	12/21/20 08:29	12/21/20 10:17	1

Lab Sample ID: LCS 410-78739/2-A
Matrix: Water
Analysis Batch: 78768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78739

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	61.5		ug/L		103	85 - 115		
Ethene (1C)			60.4	62.3		ug/L		103	83 - 115		
Methane (1C)			59.4	64.9		ug/L		109	85 - 115		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	98		28 - 140

Lab Sample ID: LCSD 410-78739/3-A
Matrix: Water
Analysis Batch: 78768

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 78739

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	62.5		ug/L		105	85 - 115	2	20
Ethene (1C)			60.4	63.6		ug/L		105	83 - 115	2	20
Methane (1C)			59.4	66.4		ug/L		112	85 - 115	2	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-78739/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 78768 **Prep Batch: 78739**

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Propene (1C)	100		28 - 140

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-78382/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 78778 **Prep Batch: 78382**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		12/19/20 08:23	12/21/20 21:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	102		46 - 136	12/19/20 08:23	12/21/20 21:32	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	123		46 - 136	12/19/20 08:23	12/21/20 21:32	1

Lab Sample ID: LCS 410-78382/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 78778 **Prep Batch: 78382**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.131		ug/L		103	60 - 140		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,1,2,2-Tetrachloroethane (Surr) (1C)	100		46 - 136
1,1,2,2-Tetrachloroethane (Surr) (2C)	119		46 - 136

Lab Sample ID: LCSD 410-78382/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 78778 **Prep Batch: 78382**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.137		ug/L		107	60 - 140	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,1,2,2-Tetrachloroethane (Surr) (1C)	100		46 - 136
1,1,2,2-Tetrachloroethane (Surr) (2C)	117		46 - 136

Lab Sample ID: MB 410-81226/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 81838 **Prep Batch: 81226**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		12/30/20 23:47	01/04/21 17:08	1

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: MB 410-81226/1-A
Matrix: Water
Analysis Batch: 81838

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81226

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (2C)	92		46 - 136	12/30/20 23:47	01/04/21 17:08	1

Lab Sample ID: LCS 410-81226/2-A
Matrix: Water
Analysis Batch: 81838

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81226

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.102		ug/L		80	60 - 140		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,1,2,2-Tetrachloroethane (Surr) (2C)	95		46 - 136

Lab Sample ID: LCSD 410-81226/3-A
Matrix: Water
Analysis Batch: 81838

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 81226

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.0970		ug/L		76	60 - 140	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,1,2,2-Tetrachloroethane (Surr) (2C)	96		46 - 136

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-79355/1-A
Matrix: Solid
Analysis Batch: 79710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79355

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		12/22/20 16:24	12/23/20 16:07	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		12/22/20 16:24	12/23/20 16:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	71		54 - 137	12/22/20 16:24	12/23/20 16:07	1
o- terphenyl (Surr) (1C)	91		52 - 154	12/22/20 16:24	12/23/20 16:07	1

Lab Sample ID: LCS 410-79355/2-A
Matrix: Solid
Analysis Batch: 79710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79355

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	106		mg/Kg		79	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	63		54 - 137
o- terphenyl (Surr) (1C)	101		52 - 154

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-79473/1-A
Matrix: Water
Analysis Batch: 79710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79473

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.10	0.074	mg/L		12/22/20 20:41	12/23/20 13:59	1
>C12-C22 (1C)	ND		0.10	0.074	mg/L		12/22/20 20:41	12/23/20 13:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*70*		*21 - 116*	*12/22/20 20:41*	*12/23/20 13:59*	*1*
o- terphenyl (Surr) (1C)	*78*		*51 - 126*	*12/22/20 20:41*	*12/23/20 13:59*	*1*

Lab Sample ID: LCS 410-79473/2-A
Matrix: Water
Analysis Batch: 79710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79473

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.805	0.598		mg/L		74	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*72*		*21 - 116*
o- terphenyl (Surr) (1C)	*93*		*51 - 126*

Lab Sample ID: LCSD 410-79473/3-A
Matrix: Water
Analysis Batch: 79710

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79473

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.805	0.601		mg/L		75	53 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*74*		*21 - 116*
o- terphenyl (Surr) (1C)	*93*		*51 - 126*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-77900/4
Matrix: Water
Analysis Batch: 77900

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			12/18/20 04:56	1

Lab Sample ID: LCS 410-77900/3
Matrix: Water
Analysis Batch: 77900

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.749		mg/L		100	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-77899/4
Matrix: Water
Analysis Batch: 77899

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			12/18/20 04:56	1
Chloride	ND		0.40	0.20	mg/L			12/18/20 04:56	1

Lab Sample ID: LCS 410-77899/3
Matrix: Water
Analysis Batch: 77899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.44		mg/L		99	90 - 110
Chloride	3.00	3.00		mg/L		100	90 - 110

Lab Sample ID: MB 410-78215/4
Matrix: Water
Analysis Batch: 78215

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			12/19/20 06:49	1
Chloride	ND		0.40	0.20	mg/L			12/19/20 06:49	1

Lab Sample ID: LCS 410-78215/3
Matrix: Water
Analysis Batch: 78215

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.44		mg/L		99	90 - 110
Chloride	3.00	2.99		mg/L		100	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-77887/1-A
Matrix: Solid
Analysis Batch: 78792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77887

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.55	mg/Kg		12/18/20 03:44	12/21/20 08:45	1

Lab Sample ID: LCS 410-77887/2-A
Matrix: Solid
Analysis Batch: 78792

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77887

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.91	3.01		mg/Kg		103	80 - 120

Lab Sample ID: MB 410-78569/1-A
Matrix: Water
Analysis Batch: 79308

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 78569

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.20	0.040	mg/L		12/20/20 15:39	12/22/20 11:44	1
Potassium	ND		0.50	0.20	mg/L		12/20/20 15:39	12/22/20 11:44	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 410-78569/1-A
Matrix: Water
Analysis Batch: 79308

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 78569

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		1.0	0.24	mg/L		12/20/20 15:39	12/22/20 11:44	1

Lab Sample ID: MB 410-78569/1-A
Matrix: Water
Analysis Batch: 79840

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 78569

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		12/20/20 15:39	12/23/20 15:28	1
Magnesium	ND		0.10	0.040	mg/L		12/20/20 15:39	12/23/20 15:28	1

Lab Sample ID: LCS 410-78569/2-A
Matrix: Water
Analysis Batch: 79308

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 78569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.400	0.434		mg/L		108	80 - 120
Potassium	6.00	5.82		mg/L		97	80 - 120
Sodium	2.00	2.15		mg/L		107	80 - 120

Lab Sample ID: LCS 410-78569/2-A
Matrix: Water
Analysis Batch: 79840

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 78569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.460	J	mg/L		115	80 - 120
Magnesium	0.200	0.220		mg/L		110	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-78521/1-A
Matrix: Water
Analysis Batch: 78555

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 78521

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		12/20/20 10:16	12/20/20 12:41	1

Lab Sample ID: LCS 410-78521/2-A
Matrix: Water
Analysis Batch: 78555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 78521

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	29.4		ug/L		98	90 - 115

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-78199/28
Matrix: Water
Analysis Batch: 78199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			12/17/20 21:07	1

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: LCS 410-78199/31
Matrix: Water
Analysis Batch: 78199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	159		mg/L		84	82 - 106

Lab Sample ID: LCSD 410-78199/32
Matrix: Water
Analysis Batch: 78199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	189	166		mg/L		88	82 - 106	4	10

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-79708/1-A
Matrix: Water
Analysis Batch: 79781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79708

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		12/23/20 11:09	12/23/20 13:30	1

Lab Sample ID: LCS 410-79708/2-A
Matrix: Water
Analysis Batch: 79781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79708

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	500	470		mg/L		94	93 - 100

Lab Sample ID: LCSD 410-79708/3-A
Matrix: Water
Analysis Batch: 79781

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79708

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N	500	472		mg/L		94	93 - 100	0	5

Lab Sample ID: MB 410-80621/1-A
Matrix: Water
Analysis Batch: 80689

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 80621

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		12/29/20 11:48	12/29/20 15:17	1

Lab Sample ID: LCS 410-80621/2-A
Matrix: Water
Analysis Batch: 80689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 80621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	500	469		mg/L		94	93 - 100

Method: 4500 NH3 C-2011 - Ammonia (Continued)

Lab Sample ID: LCSD 410-80621/3-A
Matrix: Water
Analysis Batch: 80689

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 80621

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N			500	467		mg/L		93	93 - 100	0	5

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-79230/1
Matrix: Water
Analysis Batch: 79230

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			12/22/20 11:19	1

Lab Sample ID: LCS 410-79230/13
Matrix: Water
Analysis Batch: 79230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			1.00	0.921		mg/L		92	90 - 110		

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-78804/67
Matrix: Water
Analysis Batch: 78804

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			12/20/20 16:12	1

Lab Sample ID: LCS 410-78804/66
Matrix: Water
Analysis Batch: 78804

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	23.6		mg/L		94	91 - 113		

GC/MS VOA

Prep Batch: 77868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-2 - DL	BT-09-S-22-20201216	Total/NA	Solid	5035	
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	5035	

Analysis Batch: 79667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	8260C	77868
410-24240-2 - DL	BT-09-S-22-20201216	Total/NA	Solid	8260C	77868
MB 410-79667/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-79667/10	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-79667/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-79667/11	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-79667/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 80575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	8260C/UST	
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	8260C/UST	
410-24240-3	TB-20201216	Total/NA	Water	8260C/UST	
410-24240-4	FB-20201216	Total/NA	Water	8260C/UST	
MB 410-80575/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-80575/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-80575/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-80575/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-80575/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 81103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	3546	
MB 410-81103/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-81103/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 81702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	8270D	81103
MB 410-81103/1-A	Method Blank	Total/NA	Solid	8270D	81103
LCS 410-81103/2-A	Lab Control Sample	Total/NA	Solid	8270D	81103

GC VOA

Prep Batch: 77972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	RSK-175	
410-24240-4	FB-20201216	Total/NA	Water	RSK-175	
MB 410-77972/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-77972/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 77992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	RSK-175	77972
410-24240-4	FB-20201216	Total/NA	Water	RSK-175	77972

GC VOA (Continued)

Analysis Batch: 77992 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-77972/1-A	Method Blank	Total/NA	Water	RSK-175	77972
LCS 410-77972/2-A	Lab Control Sample	Total/NA	Water	RSK-175	77972

Prep Batch: 78739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1 - DL	BT-02A-w-36-20201215	Total/NA	Water	RSK-175	
MB 410-78739/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-78739/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-78739/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 78768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1 - DL	BT-02A-w-36-20201215	Total/NA	Water	RSK-175	78739
MB 410-78739/1-A	Method Blank	Total/NA	Water	RSK-175	78739
LCS 410-78739/2-A	Lab Control Sample	Total/NA	Water	RSK-175	78739
LCSD 410-78739/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	78739

GC Semi VOA

Prep Batch: 78382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	8011	
410-24240-4	FB-20201216	Total/NA	Water	8011	
MB 410-78382/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-78382/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-78382/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 78778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	8011	78382
410-24240-4	FB-20201216	Total/NA	Water	8011	78382
MB 410-78382/1-A	Method Blank	Total/NA	Water	8011	78382
LCS 410-78382/2-A	Lab Control Sample	Total/NA	Water	8011	78382
LCSD 410-78382/3-A	Lab Control Sample Dup	Total/NA	Water	8011	78382

Prep Batch: 79355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	3546	
MB 410-79355/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-79355/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 79473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	3510C	
410-24240-4	FB-20201216	Total/NA	Water	3510C	
MB 410-79473/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-79473/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-79473/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA

Analysis Batch: 79710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	8015C TPH	79473
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	8015C TPH	79355
410-24240-4	FB-20201216	Total/NA	Water	8015C TPH	79473
MB 410-79355/1-A	Method Blank	Total/NA	Solid	8015C TPH	79355
MB 410-79473/1-A	Method Blank	Total/NA	Water	8015C TPH	79473
LCS 410-79355/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	79355
LCS 410-79473/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	79473
LCSD 410-79473/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	79473

Prep Batch: 81226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-3	TB-20201216	Total/NA	Water	8011	
MB 410-81226/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-81226/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-81226/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 81838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-3	TB-20201216	Total/NA	Water	8011	81226
MB 410-81226/1-A	Method Blank	Total/NA	Water	8011	81226
LCS 410-81226/2-A	Lab Control Sample	Total/NA	Water	8011	81226
LCSD 410-81226/3-A	Lab Control Sample Dup	Total/NA	Water	8011	81226

Analysis Batch: 103139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	Total TPH	
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	Total TPH	
410-24240-4	FB-20201216	Total/NA	Water	Total TPH	

HPLC/IC

Analysis Batch: 77899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	EPA 300.0 R2.1	
MB 410-77899/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-77899/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 77900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	EPA 300.0 R2.1	
410-24240-4	FB-20201216	Total/NA	Water	EPA 300.0 R2.1	
MB 410-77900/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-77900/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 78215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	EPA 300.0 R2.1	
MB 410-78215/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-78215/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24240-1

HPLC/IC

Analysis Batch: 80450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-4	FB-20201216	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 77887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	3050B	
MB 410-77887/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-77887/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Filtration Batch: 77988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Dissolved	Water	Filtration	
410-24240-4	FB-20201216	Dissolved	Water	Filtration	

Prep Batch: 78521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Dissolved	Water	Non-Digest Prep	77988
410-24240-4	FB-20201216	Dissolved	Water	Non-Digest Prep	77988
MB 410-78521/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-78521/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 78555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Dissolved	Water	6020A	78521
410-24240-4	FB-20201216	Dissolved	Water	6020A	78521
MB 410-78521/1-A	Method Blank	Total/NA	Water	6020A	78521
LCS 410-78521/2-A	Lab Control Sample	Total/NA	Water	6020A	78521

Prep Batch: 78569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total Recoverable	Water	3005A	
410-24240-4	FB-20201216	Total Recoverable	Water	3005A	
MB 410-78569/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-78569/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 78792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	6010C	77887
MB 410-77887/1-A	Method Blank	Total/NA	Solid	6010C	77887
LCS 410-77887/2-A	Lab Control Sample	Total/NA	Solid	6010C	77887

Analysis Batch: 79308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total Recoverable	Water	6010C	78569
410-24240-4	FB-20201216	Total Recoverable	Water	6010C	78569
MB 410-78569/1-A	Method Blank	Total Recoverable	Water	6010C	78569
LCS 410-78569/2-A	Lab Control Sample	Total Recoverable	Water	6010C	78569

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24240-1

Metals

Analysis Batch: 79840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total Recoverable	Water	6010C	78569
410-24240-4	FB-20201216	Total Recoverable	Water	6010C	78569
MB 410-78569/1-A	Method Blank	Total Recoverable	Water	6010C	78569
LCS 410-78569/2-A	Lab Control Sample	Total Recoverable	Water	6010C	78569

General Chemistry

Analysis Batch: 77631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-2	BT-09-S-22-20201216	Total/NA	Solid	Moisture	

Analysis Batch: 78199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	2320B-2011	
410-24240-4	FB-20201216	Total/NA	Water	2320B-2011	
MB 410-78199/28	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-78199/31	Lab Control Sample	Total/NA	Water	2320B-2011	
LCSD 410-78199/32	Lab Control Sample Dup	Total/NA	Water	2320B-2011	

Analysis Batch: 78804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	5310C-2011	
410-24240-4	FB-20201216	Total/NA	Water	5310C-2011	
MB 410-78804/67	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-78804/66	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 79230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	4500 S2 D-2011	
410-24240-4	FB-20201216	Total/NA	Water	4500 S2 D-2011	
MB 410-79230/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-79230/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Prep Batch: 79708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	4500 NH3 B-2011	
MB 410-79708/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-79708/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-79708/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 79781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-1	BT-02A-w-36-20201215	Total/NA	Water	4500 NH3 C-2011	79708
MB 410-79708/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	79708
LCS 410-79708/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	79708

General Chemistry (Continued)

Analysis Batch: 79781 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 410-79708/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	79708

Prep Batch: 80621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-4	FB-20201216	Total/NA	Water	4500 NH3 B-2011	
MB 410-80621/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-80621/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-80621/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 80689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-24240-4	FB-20201216	Total/NA	Water	4500 NH3 C-2011	80621
MB 410-80621/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	80621
LCS 410-80621/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	80621
LCSD 410-80621/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	80621

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24240-1

Client Sample ID: BT-02A-w-36-20201215

Lab Sample ID: 410-24240-1

Date Collected: 12/15/20 13:30
Matrix: Water
Date Received: 12/16/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	80575	12/29/20 17:23	USEJ	ELLE
Total/NA	Analysis	8260C/UST		50	80575	12/29/20 17:47	USEJ	ELLE
Total/NA	Prep	RSK-175			77972	12/18/20 08:07	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	77992	12/19/20 03:52	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		78739	12/21/20 08:29	YUE6	ELLE
Total/NA	Analysis	RSK-175	DL	50	78768	12/21/20 12:54	LXF2	ELLE
Total/NA	Prep	8011			78382	12/19/20 10:09	UKQ8	ELLE
Total/NA	Analysis	8011		1	78778	12/22/20 01:30	AC3T	ELLE
Total/NA	Prep	3510C			79473	12/22/20 20:41	K2IL	ELLE
Total/NA	Analysis	8015C TPH		1	79710	12/23/20 15:24	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103139	03/15/21 08:37	UJL4	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	77899	12/18/20 08:20	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	77900	12/18/20 08:20	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		200	78215	12/19/20 10:31	W5UX	ELLE
Total Recoverable	Prep	3005A			78569	12/20/20 15:39	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	79308	12/22/20 12:42	MDP5	ELLE
Total Recoverable	Prep	3005A			78569	12/20/20 15:39	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	79840	12/23/20 16:23	MDP5	ELLE
Dissolved	Filtration	Filtration			77988	12/18/20 08:24	UAMX	ELLE
Dissolved	Prep	Non-Digest Prep			78521	12/20/20 10:16	UJLA	ELLE
Dissolved	Analysis	6020A		1	78555	12/20/20 13:32	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	78199	12/17/20 22:10	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			79708	12/23/20 11:09	P8DZ	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	79781	12/23/20 13:30	P8DZ	ELLE
Total/NA	Analysis	4500 S2 D-2011		10	79230	12/22/20 11:19	P8DZ	ELLE
Total/NA	Analysis	5310C-2011		5	78804	12/20/20 17:51	KGQ6	ELLE

Client Sample ID: BT-09-S-22-20201216

Lab Sample ID: 410-24240-2

Date Collected: 12/16/20 11:15
Matrix: Solid
Date Received: 12/16/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	77631	12/17/20 08:42	UVJN	ELLE

Client Sample ID: BT-09-S-22-20201216

Lab Sample ID: 410-24240-2

Date Collected: 12/16/20 11:15
Matrix: Solid
Date Received: 12/16/20 16:20
Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			77868	12/17/20 21:50	UK3O	ELLE
Total/NA	Analysis	8260C		50	79667	12/23/20 16:22	UKAD	ELLE
Total/NA	Prep	5035	DL		77868	12/17/20 21:50	UK3O	ELLE
Total/NA	Analysis	8260C	DL	500	79667	12/23/20 16:43	UKAD	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-24240-1

Client Sample ID: BT-09-S-22-20201216

Lab Sample ID: 410-24240-2
Date Collected: 12/16/20 11:15
Matrix: Solid
Date Received: 12/16/20 16:20
Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			81103	12/30/20 15:47	FTV5	ELLE
Total/NA	Analysis	8270D		1	81702	01/04/21 19:57	ULM3	ELLE
Total/NA	Prep	3546			79355	12/22/20 16:24	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	79710	12/23/20 16:50	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103139	03/15/21 08:37	UJL4	ELLE
Total/NA	Prep	3050B			77887	12/18/20 03:44	UAMX	ELLE
Total/NA	Analysis	6010C		1	78792	12/21/20 09:22	WJM9	ELLE

Client Sample ID: TB-20201216

Lab Sample ID: 410-24240-3
Date Collected: 12/15/20 00:00
Matrix: Water
Date Received: 12/16/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	80575	12/29/20 18:11	USEJ	ELLE
Total/NA	Prep	8011			81226	12/30/20 23:47	UKQ8	ELLE
Total/NA	Analysis	8011		1	81838	01/04/21 18:50	AC3T	ELLE

Client Sample ID: FB-20201216

Lab Sample ID: 410-24240-4
Date Collected: 12/16/20 11:00
Matrix: Water
Date Received: 12/16/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	80575	12/29/20 18:36	USEJ	ELLE
Total/NA	Prep	RSK-175			77972	12/18/20 08:07	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	77992	12/19/20 04:10	LXF2	ELLE
Total/NA	Prep	8011			78382	12/19/20 10:09	UKQ8	ELLE
Total/NA	Analysis	8011		1	78778	12/22/20 01:47	AC3T	ELLE
Total/NA	Prep	3510C			79473	12/22/20 20:41	K2IL	ELLE
Total/NA	Analysis	8015C TPH		1	79710	12/23/20 15:03	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103139	03/15/21 08:37	UJL4	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	80450	12/30/20 05:48	Z7CH	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	77900	12/18/20 06:38	GJ35	ELLE
Total Recoverable	Prep	3005A			78569	12/20/20 15:39	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	79308	12/22/20 12:45	MDP5	ELLE
Total Recoverable	Prep	3005A			78569	12/20/20 15:39	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	79840	12/23/20 16:26	MDP5	ELLE
Dissolved	Filtration	Filtration			77988	12/18/20 08:24	UAMX	ELLE
Dissolved	Prep	Non-Digest Prep			78521	12/20/20 10:16	UJLA	ELLE
Dissolved	Analysis	6020A		1	78555	12/20/20 13:34	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	78199	12/17/20 22:40	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			80621	12/29/20 11:48	P8DZ	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	80689	12/29/20 15:17	P8DZ	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	79230	12/22/20 11:19	P8DZ	ELLE
Total/NA	Analysis	5310C-2011		1	78804	12/20/20 18:40	KGQ6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-24240-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-24240-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-24240-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-24240-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-24240-1	BT-02A-w-36-20201215	Water	12/15/20 13:30	12/16/20 16:20	
410-24240-2	BT-09-S-22-20201216	Solid	12/16/20 11:15	12/16/20 16:20	
410-24240-3	TB-20201216	Water	12/15/20 00:00	12/16/20 16:20	
410-24240-4	FB-20201216	Water	12/16/20 11:00	12/16/20 16:20	

Environmental Analysis Request and Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ 410-24240 Chain of Custody

For laboratory use only _____

COC # 607910

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dana Hobiltzell / Drew Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Tissue ☐ Sediment ☒ Soil ☒ | Ground ☒ Potable ☐ Water ☐ | Surface ☐ NPDES ☐ | Other: blank

Analysis Requested — Preservation and Filtration Codes

For Lab Use Only
FSC: _____
SCR#: 260442

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO +VOC 8260 Moisture	VOCs 8260 C/D	Lead (PHL 8270) Metals (Pb only)	Sulfide	Chloride, Nitrate, Nitrogen, Sulfate	EDB 8011 Volatile Headspace Hydrocarbons	Total Alkalinity to pH 4.5	TOC	Ammonia Nitrogen
BT-02A-W-36-20201215	12/15/20	1330	X		19	X	X	X	●	X	X	X	X	X	X
BT-09-S-22-20201216	12/16/20	1115	X		6	X	X	X	X						
TB-20201216	11/30/20	—			4			X				X			
FB-20201216	12/16/20	1100			19	X	X	X		X	X	X	X	X	X

Remarks: * Lab filter for dissolved Lead *

* no volatile headspace in vials

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	16DEC20	1150	[signature]	16DEC20	1150
[signature]	16DEC20	1600			
			[signature]	12/16/20	1620

EDD Required? Yes No
If yes, format: EQuIS
Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____
Temperature upon receipt -0.2 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client. 7044 0919

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-24240-1

Login Number: 24240
List Number: 1
Creator: Rivera, Tatiana

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-25174-1
Client Project/Site: PHL Belmont Terminal Drilling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 9:12:08 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 9:12:08 AM

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Definitions/Glossary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
E	Result exceeded calibration range.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-25174-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-25174-1

Revision
The report being provided is a revision of the original report sent on 1/11/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 12/29/2020 5:08 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

Receipt Exceptions
The container count for the following sample did not match the information listed on the Chain-of-Custody (COC): BT-09-W-32-20201228 (410-25174-2). The COC listed a container count of 19. Received 11 containers.

GC/MS VOA
Method 8260C: Internal standard (ISTD) response for the following sample was outside control limits: BT-19-S-15-20201229 (410-25174-4). The sample(s) was re-extracted and/or re-analyzed and ISTD response was outside control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: Chlorobenzene (Surr) recovery for the following sample was outside acceptance limits: BT-09-S-47-20201229 (410-25174-3). The results have been reported per client request.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: The 1,1,2,2-Tetrachloroethane (Surr) surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: BT-09-W-32-20201228 (410-25174-2). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Client Sample ID: BT-09-S-8-20201228 — Lab Sample ID: 410-25174-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	270	J	280	22	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	320000		61000	25000	ug/Kg	500	☼	8260C	Total/NA
Anthracene	14	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	4.5	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	5.6	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Chrysene	5.9	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Fluorene	110		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	100		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	10	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	53	J	67	28	mg/Kg	5	☼	8015C TPH	Total/NA
>C12-C22 (1C)	1100		67	28	mg/Kg	5	☼	8015C TPH	Total/NA
Total Reported TPH	1200		13	5.6	mg/Kg	1	☼	Total TPH	Total/NA
Lead	7.7		1.7	0.67	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-09-W-32-20201228 — Lab Sample ID: 410-25174-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	82		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	22	J	25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	560		5.0	1.0	ug/L	5		8260C/UST	Total/NA
C4-C12-TPH-GRO	2900		250	150	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	130		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	6.6	J	25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	6.7		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Toluene	80		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	470		30	7.0	ug/L	5		8260C/UST	Total/NA
Methane (1C)	81		5.0	3.0	ug/L	1		RSK-175	Total/NA
Nitrogen, Nitrate	5.6		1.0	0.50	mg/L	10		EPA 300.0 R2.1	Total/NA
Sulfate	150		10	3.0	mg/L	10		EPA 300.0 R2.1	Total/NA
Chloride	110		40	20	mg/L	100		EPA 300.0 R2.1	Total/NA
Calcium	38		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	10		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	9.4		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	3.9		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	76		1.0	0.24	mg/L	1		6010C	Total Recoverable
Total Organic Carbon	210		10	5.0	mg/L	10		5310C-2011	Total/NA

Client Sample ID: BT-09-S-47-20201229 — Lab Sample ID: 410-25174-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tertiary butyl ether	2900		330	33	ug/Kg	50	☼	8260C	Total/NA
Benzene	6600		330	33	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	28	J	330	26	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO	16000		7300	2900	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol	61000		6600	990	ug/Kg	50	☼	8260C	Total/NA
Anthracene	28		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	24		20	8.1	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	17	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-09-S-47-20201229 (Continued) — Lab Sample ID: 410-25174-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	28		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	13	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	28		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	39		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	370		20	8.1	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	150		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Pyrene	63		20	4.0	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	9.2	J	15	6.1	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	9.2	J	15	6.1	mg/Kg	1	☼	Total TPH	Total/NA
Lead	14		1.3	0.53	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-19-S-15-20201229 — Lab Sample ID: 410-25174-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	320		320	26	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO	17000		7000	2800	ug/Kg	50	☼	8260C	Total/NA
Anthracene	13	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	13	J	20	8.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	9.1	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	12	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	6.2	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	16	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	19	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	58		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Pyrene	35		20	4.0	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	8.7	J	14	6.0	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	8.7	J	14	6.0	mg/Kg	1	☼	Total TPH	Total/NA
Lead	14		1.5	0.62	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20201229 — Lab Sample ID: 410-25174-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-09-S-8-20201228

Date Collected: 12/28/20 13:30
Date Received: 12/29/20 17:08

Lab Sample ID: 410-25174-1

Matrix: Solid
Percent Solids: 89.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		280	22	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
1,3,5-Trimethylbenzene	ND		280	28	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
Toluene	ND		280	34	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
Methyl tertiary butyl ether	ND		280	28	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
Benzene	ND		280	28	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
1,2,4-Trimethylbenzene	ND		280	28	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
Isopropylbenzene	**270**	**J**	280	22	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
1,2-Dibromoethane	ND		280	22	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
1,2-Dichloroethane	ND		280	34	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
t-Butyl alcohol	ND		5600	840	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50
Xylenes, Total	ND		560	78	ug/Kg	☼	12/30/20 18:32	01/07/21 23:57	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*	*12/30/20 18:32*	*01/07/21 23:57*	*50*
4-Bromofluorobenzene (Surr)	*104*		*50 - 131*	*12/30/20 18:32*	*01/07/21 23:57*	*50*
Dibromofluoromethane (Surr)	*96*		*50 - 141*	*12/30/20 18:32*	*01/07/21 23:57*	*50*
Toluene-d8 (Surr)	*99*		*52 - 141*	*12/30/20 18:32*	*01/07/21 23:57*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**320000**		61000	25000	ug/Kg	☼	12/30/20 18:32	01/08/21 14:57	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*54 - 135*	*12/30/20 18:32*	*01/08/21 14:57*	*500*
4-Bromofluorobenzene (Surr)	*93*		*50 - 131*	*12/30/20 18:32*	*01/08/21 14:57*	*500*
Dibromofluoromethane (Surr)	*84*		*50 - 141*	*12/30/20 18:32*	*01/08/21 14:57*	*500*
Toluene-d8 (Surr)	*89*		*52 - 141*	*12/30/20 18:32*	*01/08/21 14:57*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**14**	**J**	19	3.7	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Benzo[a]anthracene	ND		19	7.5	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Benzo[a]pyrene	**4.5**	**J**	19	3.7	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Benzo[b]fluoranthene	**5.6**	**J**	19	3.7	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Benzo[g,h,i]perylene	ND		19	3.7	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Chrysene	**5.9**	**J**	19	3.7	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Fluorene	**110**		19	3.7	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Naphthalene	ND		19	7.5	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Phenanthrene	**100**		19	3.7	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1
Pyrene	**10**	**J**	19	3.7	ug/Kg	☼	12/30/20 09:53	01/05/21 18:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*56*		*39 - 100*	*12/30/20 09:53*	*01/05/21 18:39*	*1*
Nitrobenzene-d5 (Surr)	*54*		*32 - 97*	*12/30/20 09:53*	*01/05/21 18:39*	*1*
p-Terphenyl-d14 (Surr)	*70*		*45 - 108*	*12/30/20 09:53*	*01/05/21 18:39*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**53**	**J**	67	28	mg/Kg	☼	12/30/20 09:35	01/04/21 16:42	5
>C12-C22 (1C)	**1100**		67	28	mg/Kg	☼	12/30/20 09:35	01/04/21 16:42	5

Client Sample ID: BT-09-S-8-20201228

Lab Sample ID: 410-25174-1
Date Collected: 12/28/20 13:30
Matrix: Solid
Date Received: 12/29/20 17:08
Percent Solids: 89.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*64*		*54 - 137*	*12/30/20 09:35*	*01/04/21 16:42*	*5*
o- terphenyl (Surr) (1C)	*208*	*S1+*	*52 - 154*	*12/30/20 09:35*	*01/04/21 16:42*	*5*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**1200**		13	5.6	mg/Kg	☼		03/10/21 19:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**7.7**		1.7	0.67	mg/Kg	☼	12/30/20 16:06	01/07/21 12:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.0**		1.0	1.0	%			12/30/20 08:20	1

Client Sample ID: BT-09-W-32-20201228

Lab Sample ID: 410-25174-2
Date Collected: 12/28/20 15:15
Matrix: Water
Date Received: 12/29/20 17:08

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**82**		25	5.0	ug/L			01/06/21 13:18	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			01/06/21 13:18	5
1,3,5-Trimethylbenzene	**22**	**J**	25	1.5	ug/L			01/06/21 13:18	5
Benzene	**560**		5.0	1.0	ug/L			01/06/21 13:18	5
C4-C12-TPH-GRO	**2900**		250	150	ug/L			01/06/21 13:18	5
Ethylbenzene	**130**		5.0	2.0	ug/L			01/06/21 13:18	5
Isopropylbenzene	**6.6**	**J**	25	1.0	ug/L			01/06/21 13:18	5
Methyl tertiary butyl ether	**6.7**		5.0	1.0	ug/L			01/06/21 13:18	5
Toluene	**80**		5.0	1.0	ug/L			01/06/21 13:18	5
Xylenes, Total	**470**		30	7.0	ug/L			01/06/21 13:18	5
t-Butyl alcohol	ND		250	60	ug/L			01/06/21 13:18	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*01/06/21 13:18*	*5*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*01/06/21 13:18*	*5*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*01/06/21 13:18*	*5*
Toluene-d8 (Surr)	*104*		*80 - 120*		*01/06/21 13:18*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/30/20 08:09	12/30/20 12:26	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/30/20 08:09	12/30/20 12:26	1
Methane (1C)	**81**		5.0	3.0	ug/L		12/30/20 08:09	12/30/20 12:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*81*		*28 - 140*	*12/30/20 08:09*	*12/30/20 12:26*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	^c	0.029	0.0095	ug/L		12/30/20 23:33	01/05/21 05:01	1

Client Sample ID: BT-09-W-32-20201228

Lab Sample ID: 410-25174-2

Date Collected: 12/28/20 15:15
Matrix: Water
Date Received: 12/29/20 17:08

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*177*	*S1+*	*46 - 136*	*12/30/20 23:33*	*01/05/21 05:01*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*133*		*46 - 136*	*12/30/20 23:33*	*01/05/21 05:01*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**5.6**		1.0	0.50	mg/L			12/30/20 06:02	10

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**150**		10	3.0	mg/L			12/30/20 06:02	10
Chloride	**110**		40	20	mg/L			01/07/21 22:13	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**38**		0.50	0.096	mg/L		12/30/20 13:55	01/06/21 12:47	1
Iron	**10**		0.20	0.040	mg/L		12/30/20 13:55	01/06/21 18:31	1
Magnesium	**9.4**		0.10	0.040	mg/L		12/30/20 13:55	01/06/21 12:47	1
Potassium	**3.9**		0.50	0.20	mg/L		12/30/20 13:55	01/07/21 18:21	1
Sodium	**76**		1.0	0.24	mg/L		12/30/20 13:55	01/07/21 18:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**210**		10	5.0	mg/L			01/05/21 13:10	10

Client Sample ID: BT-09-S-47-20201229

Lab Sample ID: 410-25174-3

Date Collected: 12/29/20 08:40
Matrix: Solid
Date Received: 12/29/20 17:08
Percent Solids: 81.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		330	26	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
1,3,5-Trimethylbenzene	ND		330	33	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
Toluene	ND		330	40	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
Methyl tertiary butyl ether	**2900**		330	33	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
Benzene	**6600**		330	33	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
1,2,4-Trimethylbenzene	ND		330	33	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
Isopropylbenzene	**28**	**J**	330	26	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
1,2-Dibromoethane	ND		330	26	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
1,2-Dichloroethane	ND		330	40	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
C4-C12-TPH-GRO	**16000**		7300	2900	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
t-Butyl alcohol	**61000**		6600	990	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50
Xylenes, Total	ND		660	92	ug/Kg	☼	12/30/20 18:32	01/08/21 00:18	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*	*12/30/20 18:32*	*01/08/21 00:18*	*50*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*	*12/30/20 18:32*	*01/08/21 00:18*	*50*
Dibromofluoromethane (Surr)	*104*		*50 - 141*	*12/30/20 18:32*	*01/08/21 00:18*	*50*
Toluene-d8 (Surr)	*102*		*52 - 141*	*12/30/20 18:32*	*01/08/21 00:18*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**28**		20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Client Sample ID: BT-09-S-47-20201229

Lab Sample ID: 410-25174-3
Date Collected: 12/29/20 08:40
Matrix: Solid
Date Received: 12/29/20 17:08
Percent Solids: 81.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	24		20	8.1	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1
Benzo[a]pyrene	17	J	20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1
Benzo[b]fluoranthene	28		20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1
Benzo[g,h,i]perylene	13	J	20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1
Chrysene	28		20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1
Fluorene	39		20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1
Naphthalene	370		20	8.1	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1
Phenanthrene	150		20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1
Pyrene	63		20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*39 - 100*	*12/30/20 09:53*	*01/05/21 19:02*	*1*
Nitrobenzene-d5 (Surr)	*59*		*32 - 97*	*12/30/20 09:53*	*01/05/21 19:02*	*1*
p-Terphenyl-d14 (Surr)	*70*		*45 - 108*	*12/30/20 09:53*	*01/05/21 19:02*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	9.2	J	15	6.1	mg/Kg	☼	12/30/20 09:35	12/31/20 11:28	1
>C12-C22 (1C)	ND		15	6.1	mg/Kg	☼	12/30/20 09:35	12/31/20 11:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*51*	*S1-*	*54 - 137*	*12/30/20 09:35*	*12/31/20 11:28*	*1*
o- terphenyl (Surr) (1C)	*54*		*52 - 154*	*12/30/20 09:35*	*12/31/20 11:28*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	9.2	J	15	6.1	mg/Kg	☼		03/10/21 19:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	14		1.3	0.53	mg/Kg	☼	12/30/20 16:06	01/07/21 12:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.2		1.0	1.0	%			12/30/20 08:20	1

Client Sample ID: BT-19-S-15-20201229

Lab Sample ID: 410-25174-4
Date Collected: 12/29/20 12:40
Matrix: Solid
Date Received: 12/29/20 17:08
Percent Solids: 83.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		320	26	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
1,3,5-Trimethylbenzene	ND		320	32	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
Toluene	ND		320	38	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
Methyl tertiary butyl ether	ND		320	32	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
Benzene	ND		320	32	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
1,2,4-Trimethylbenzene	ND		320	32	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
Isopropylbenzene	320		320	26	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
1,2-Dibromoethane	ND		320	26	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
1,2-Dichloroethane	ND		320	38	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50

Client Sample ID: BT-19-S-15-20201229

Date Collected: 12/29/20 12:40
Date Received: 12/29/20 17:08

Lab Sample ID: 410-25174-4

Matrix: Solid
Percent Solids: 83.1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	17000		7000	2800	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
t-Butyl alcohol	ND	*3	6400	960	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50
Xylenes, Total	ND		640	89	ug/Kg	☼	12/30/20 18:32	01/08/21 00:39	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*62*		*54 - 135*	*12/30/20 18:32*	*01/08/21 00:39*	*50*
4-Bromofluorobenzene (Surr)	*108*		*50 - 131*	*12/30/20 18:32*	*01/08/21 00:39*	*50*
Dibromofluoromethane (Surr)	*98*		*50 - 141*	*12/30/20 18:32*	*01/08/21 00:39*	*50*
Toluene-d8 (Surr)	*104*		*52 - 141*	*12/30/20 18:32*	*01/08/21 00:39*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	13	J	20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Benzo[a]anthracene	13	J	20	8.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Benzo[a]pyrene	9.1	J	20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Benzo[b]fluoranthene	12	J	20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Benzo[g,h,i]perylene	6.2	J	20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Chrysene	16	J	20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Fluorene	19	J	20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Naphthalene	ND		20	8.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Phenanthrene	58		20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1
Pyrene	35		20	4.0	ug/Kg	☼	12/30/20 09:53	01/05/21 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*39 - 100*	*12/30/20 09:53*	*01/05/21 19:25*	*1*
Nitrobenzene-d5 (Surr)	*65*		*32 - 97*	*12/30/20 09:53*	*01/05/21 19:25*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*	*12/30/20 09:53*	*01/05/21 19:25*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	8.7	J	14	6.0	mg/Kg	☼	12/30/20 09:35	12/31/20 11:49	1
>C12-C22 (1C)	ND		14	6.0	mg/Kg	☼	12/30/20 09:35	12/31/20 11:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*58*		*54 - 137*	*12/30/20 09:35*	*12/31/20 11:49*	*1*
o- terphenyl (Surr) (1C)	*71*		*52 - 154*	*12/30/20 09:35*	*12/31/20 11:49*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	8.7	J	14	6.0	mg/Kg	☼		03/10/21 19:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	14		1.5	0.62	mg/Kg	☼	12/30/20 16:06	01/07/21 12:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.9		1.0	1.0	%			12/30/20 08:20	1

Client Sample ID: TB-20201229

Date Collected: 12/29/20 00:00
Date Received: 12/29/20 17:08

Lab Sample ID: 410-25174-5

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/05/21 14:53	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/05/21 14:53	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/05/21 14:53	1
Benzene	ND		1.0	0.20	ug/L			01/05/21 14:53	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/05/21 14:53	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/05/21 14:53	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/05/21 14:53	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/05/21 14:53	1
Toluene	ND		1.0	0.20	ug/L			01/05/21 14:53	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/05/21 14:53	1
t-Butyl alcohol	ND		50	12	ug/L			01/05/21 14:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*01/05/21 14:53*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*01/05/21 14:53*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*01/05/21 14:53*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*01/05/21 14:53*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/30/20 08:09	12/30/20 12:44	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/30/20 08:09	12/30/20 12:44	1
Methane (1C)	ND		5.0	3.0	ug/L		12/30/20 08:09	12/30/20 12:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*61*		*28 - 140*	*12/30/20 08:09*	*12/30/20 12:44*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	^c	0.029	0.0096	ug/L		12/30/20 23:33	01/05/21 05:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*127*		*46 - 136*	*12/30/20 23:33*	*01/05/21 05:18*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*120*		*46 - 136*	*12/30/20 23:33*	*01/05/21 05:18*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-25174-1	BT-09-S-8-20201228	100	104	96	99
410-25174-1 - DL	BT-09-S-8-20201228	90	93	84	89
410-25174-3	BT-09-S-47-20201229	109	95	104	102
410-25174-4	BT-19-S-15-20201229	62	108	98	104
LCS 410-83089/5	Lab Control Sample	104	90	101	96
LCS 410-83089/7	Lab Control Sample	105	91	100	98
LCS 410-83217/5	Lab Control Sample	99	88	97	93
LCS 410-83217/7	Lab Control Sample	101	90	97	97
LCSD 410-83089/6	Lab Control Sample Dup	103	90	103	96
LCSD 410-83089/8	Lab Control Sample Dup	108	94	105	102
LCSD 410-83217/6	Lab Control Sample Dup	100	87	97	93
LCSD 410-83217/8	Lab Control Sample Dup	100	89	96	96
MB 410-83089/12	Method Blank	102	88	99	97
MB 410-83217/10	Method Blank	104	88	98	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-25174-2	BT-09-W-32-20201228	100	93	96	104
410-25174-5	TB-20201229	103	92	98	104
LCS 410-82040/6	Lab Control Sample	100	92	97	100
LCS 410-82040/8	Lab Control Sample	98	91	97	102
LCS 410-82439/5	Lab Control Sample	102	94	98	103
LCS 410-82439/7	Lab Control Sample	101	93	97	103
LCSD 410-82040/7	Lab Control Sample Dup	103	94	99	102
LCSD 410-82040/9	Lab Control Sample Dup	99	94	96	104
LCSD 410-82439/6	Lab Control Sample Dup	103	94	97	102
LCSD 410-82439/8	Lab Control Sample Dup	99	94	98	103
MB 410-82040/10	Method Blank	103	92	99	104
MB 410-82439/9	Method Blank	101	92	99	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-25174-1
Project/Site: PHL Belmont Terminal Drilling

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-25174-1	BT-09-S-8-20201228	56	54	70
410-25174-3	BT-09-S-47-20201229	64	59	70
410-25174-4	BT-19-S-15-20201229	75	65	85
LCS 410-80883/2-A	Lab Control Sample	78	71	87
MB 410-80883/1-A	Method Blank	81	76	93

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-25174-2	BT-09-W-32-20201228	81
410-25174-5	TB-20201229	61
LCS 410-80903/2-A	Lab Control Sample	108
LCSD 410-80903/3-A	Lab Control Sample Dup	102
MB 410-80903/1-A	Method Blank	102

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1122TCA1	1122TCA2
Lab Sample ID	Client Sample ID	(46-136)	(46-136)
410-25174-2	BT-09-W-32-20201228	177 S1+	133
410-25174-5	TB-20201229	127	120
LCS 410-81225/2-A	Lab Control Sample		95
LCSD 410-81225/3-A	Lab Control Sample Dup		97
MB 410-81225/1-A	Method Blank		94

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-25174-1	BT-09-S-8-20201228	64	208 S1+
410-25174-1 DU	BT-09-S-8-20201228	67	335 S1+
410-25174-1 MS	BT-09-S-8-20201228	69	393 S1+
410-25174-3	BT-09-S-47-20201229	51 S1-	54
410-25174-4	BT-19-S-15-20201229	58	71
LCS 410-80880/2-A	Lab Control Sample	68	99

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-25174-1
Project/Site: PHL Belmont Terminal Drilling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)								
MB 410-80880/1-A	Method Blank	74	90								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-83089/12
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			01/07/21 22:12	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			01/07/21 22:12	50
Toluene	ND		250	30	ug/Kg			01/07/21 22:12	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			01/07/21 22:12	50
Benzene	ND		250	25	ug/Kg			01/07/21 22:12	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			01/07/21 22:12	50
Isopropylbenzene	ND		250	20	ug/Kg			01/07/21 22:12	50
1,2-Dibromoethane	ND		250	20	ug/Kg			01/07/21 22:12	50
1,2-Dichloroethane	ND		250	30	ug/Kg			01/07/21 22:12	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			01/07/21 22:12	50
t-Butyl alcohol	ND		5000	750	ug/Kg			01/07/21 22:12	50
Xylenes, Total	ND		500	70	ug/Kg			01/07/21 22:12	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*		*01/07/21 22:12*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*01/07/21 22:12*	*50*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*01/07/21 22:12*	*50*
Toluene-d8 (Surr)	*97*		*52 - 141*		*01/07/21 22:12*	*50*

Lab Sample ID: LCS 410-83089/5
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	994		ug/Kg		99	78 - 120
1,3,5-Trimethylbenzene	1000	964		ug/Kg		96	73 - 120
Toluene	1000	1010		ug/Kg		101	80 - 120
Methyl tertiary butyl ether	1000	1100		ug/Kg		110	72 - 120
Benzene	1000	1040		ug/Kg		104	80 - 120
Naphthalene	1000	986		ug/Kg		99	48 - 130
1,2,4-Trimethylbenzene	1000	956		ug/Kg		96	73 - 120
Isopropylbenzene	1000	1020		ug/Kg		102	77 - 120
1,2-Dibromoethane	1000	1080		ug/Kg		108	76 - 120
1,2-Dichloroethane	1000	988		ug/Kg		99	71 - 128
t-Butyl alcohol	10000	9920		ug/Kg		99	74 - 121
Xylenes, Total	3000	3100		ug/Kg		103	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-83089/7
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	47800		ug/Kg		96	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*
4-Bromofluorobenzene (Surr)	*91*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-83089/6
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	1000		ug/Kg		100	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	963		ug/Kg		96	73 - 120	0	30
Toluene			1000	1020		ug/Kg		102	80 - 120	1	30
Methyl tertiary butyl ether			1000	1120		ug/Kg		112	72 - 120	1	30
Benzene			1000	1040		ug/Kg		104	80 - 120	1	30
Naphthalene			1000	1000		ug/Kg		100	48 - 130	2	30
1,2,4-Trimethylbenzene			1000	955		ug/Kg		96	73 - 120	0	30
Isopropylbenzene			1000	1030		ug/Kg		103	77 - 120	0	30
1,2-Dibromoethane			1000	1090		ug/Kg		109	76 - 120	1	30
1,2-Dichloroethane			1000	1010		ug/Kg		101	71 - 128	2	30
t-Butyl alcohol			10000	11100		ug/Kg		111	74 - 121	11	30
Xylenes, Total			3000	3090		ug/Kg		103	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCSD 410-83089/8
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	52200		ug/Kg		104	75 - 120	9	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*102*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-83217/10
Matrix: Solid
Analysis Batch: 83217

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			01/08/21 13:47	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			01/08/21 13:47	50
Toluene	ND		250	30	ug/Kg			01/08/21 13:47	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			01/08/21 13:47	50
Benzene	ND		250	25	ug/Kg			01/08/21 13:47	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			01/08/21 13:47	50
Isopropylbenzene	ND		250	20	ug/Kg			01/08/21 13:47	50
1,2-Dibromoethane	ND		250	20	ug/Kg			01/08/21 13:47	50
1,2-Dichloroethane	ND		250	30	ug/Kg			01/08/21 13:47	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			01/08/21 13:47	50
t-Butyl alcohol	ND		5000	750	ug/Kg			01/08/21 13:47	50
Xylenes, Total	ND		500	70	ug/Kg			01/08/21 13:47	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*		*01/08/21 13:47*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*01/08/21 13:47*	*50*
Dibromofluoromethane (Surr)	*98*		*50 - 141*		*01/08/21 13:47*	*50*
Toluene-d8 (Surr)	*96*		*52 - 141*		*01/08/21 13:47*	*50*

Lab Sample ID: LCS 410-83217/5
Matrix: Solid
Analysis Batch: 83217

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	970		ug/Kg		97	78 - 120
1,3,5-Trimethylbenzene	1000	940		ug/Kg		94	73 - 120
Toluene	1000	995		ug/Kg		99	80 - 120
Methyl tertiary butyl ether	1000	974		ug/Kg		97	72 - 120
Benzene	1000	1020		ug/Kg		102	80 - 120
Naphthalene	1000	970		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	1000	939		ug/Kg		94	73 - 120
Isopropylbenzene	1000	982		ug/Kg		98	77 - 120
1,2-Dibromoethane	1000	1050		ug/Kg		105	76 - 120
1,2-Dichloroethane	1000	948		ug/Kg		95	71 - 128
t-Butyl alcohol	10000	9120		ug/Kg		91	74 - 121
Xylenes, Total	3000	3000		ug/Kg		100	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*93*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-83217/7
Matrix: Solid
Analysis Batch: 83217

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1000		ug/Kg		100	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-83217/6
Matrix: Solid
Analysis Batch: 83217

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	972		ug/Kg		97	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	945		ug/Kg		95	73 - 120	1	30
Toluene			1000	993		ug/Kg		99	80 - 120	0	30
Methyl tertiary butyl ether			1000	987		ug/Kg		99	72 - 120	1	30
Benzene			1000	1020		ug/Kg		102	80 - 120	0	30
Naphthalene			1000	978		ug/Kg		98	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	940		ug/Kg		94	73 - 120	0	30
Isopropylbenzene			1000	980		ug/Kg		98	77 - 120	0	30
1,2-Dibromoethane			1000	1040		ug/Kg		104	76 - 120	2	30
1,2-Dichloroethane			1000	959		ug/Kg		96	71 - 128	1	30
t-Butyl alcohol			10000	9360		ug/Kg		94	74 - 121	3	30
Xylenes, Total			3000	2990		ug/Kg		100	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*93*		*52 - 141*

Lab Sample ID: LCSD 410-83217/8
Matrix: Solid
Analysis Batch: 83217

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1010		ug/Kg		101	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-82040/10
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/05/21 12:28	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/05/21 12:28	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/05/21 12:28	1
Benzene	ND		1.0	0.20	ug/L			01/05/21 12:28	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/05/21 12:28	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/05/21 12:28	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/05/21 12:28	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/05/21 12:28	1
Toluene	ND		1.0	0.20	ug/L			01/05/21 12:28	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/05/21 12:28	1
t-Butyl alcohol	ND		50	12	ug/L			01/05/21 12:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*01/05/21 12:28*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*01/05/21 12:28*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/05/21 12:28*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*01/05/21 12:28*	*1*

Lab Sample ID: LCS 410-82040/6
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.1		ug/L		96	75 - 120
1,2-Dichloroethane	20.0	16.4		ug/L		82	73 - 124
1,3,5-Trimethylbenzene	20.0	19.8		ug/L		99	75 - 120
Benzene	20.0	16.8		ug/L		84	80 - 120
Ethylbenzene	20.0	19.1		ug/L		96	80 - 120
Isopropylbenzene	20.0	18.7		ug/L		93	80 - 120
Methyl tertiary butyl ether	20.0	16.3		ug/L		81	69 - 122
Naphthalene	20.0	18.7		ug/L		93	53 - 124
Toluene	20.0	19.0		ug/L		95	80 - 120
Xylenes, Total	60.0	58.1		ug/L		97	80 - 120
t-Butyl alcohol	200	190		ug/L		95	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-82040/8
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	963		ug/L		96	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-82040/8
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-82040/7
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.8		ug/L		104	75 - 120	8	30
1,2-Dichloroethane			20.0	17.3		ug/L		87	73 - 124	5	30
1,3,5-Trimethylbenzene			20.0	21.1		ug/L		106	75 - 120	6	30
Benzene			20.0	18.3		ug/L		92	80 - 120	9	30
Ethylbenzene			20.0	21.4		ug/L		107	80 - 120	11	30
Isopropylbenzene			20.0	20.5		ug/L		103	80 - 120	10	30
Methyl tertiary butyl ether			20.0	17.5		ug/L		87	69 - 122	7	30
Naphthalene			20.0	19.7		ug/L		99	53 - 124	5	30
Toluene			20.0	20.9		ug/L		105	80 - 120	9	30
Xylenes, Total			60.0	62.3		ug/L		104	80 - 120	7	30
t-Butyl alcohol			200	213		ug/L		106	60 - 130	11	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-82040/9
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	886		ug/L		89	67 - 120	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 410-82439/9
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/06/21 12:54	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/06/21 12:54	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-82439/9
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/06/21 12:54	1
Benzene	ND		1.0	0.20	ug/L			01/06/21 12:54	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/06/21 12:54	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/06/21 12:54	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/06/21 12:54	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/06/21 12:54	1
Toluene	ND		1.0	0.20	ug/L			01/06/21 12:54	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/06/21 12:54	1
t-Butyl alcohol	ND		50	12	ug/L			01/06/21 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/06/21 12:54*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*01/06/21 12:54*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/06/21 12:54*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*01/06/21 12:54*	*1*

Lab Sample ID: LCS 410-82439/5
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,4-Trimethylbenzene			20.0	18.9		ug/L		95	75 - 120		
1,2-Dichloroethane			20.0	15.8		ug/L		79	73 - 124		
1,3,5-Trimethylbenzene			20.0	18.6		ug/L		93	75 - 120		
Benzene			20.0	16.5		ug/L		83	80 - 120		
Ethylbenzene			20.0	18.8		ug/L		94	80 - 120		
Isopropylbenzene			20.0	18.2		ug/L		91	80 - 120		
Methyl tertiary butyl ether			20.0	15.6		ug/L		78	69 - 122		
Naphthalene			20.0	17.9		ug/L		89	53 - 124		
Toluene			20.0	18.4		ug/L		92	80 - 120		
Xylenes, Total			60.0	56.4		ug/L		94	80 - 120		
t-Butyl alcohol			200	181		ug/L		90	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 410-82439/7
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	990		ug/L		99	67 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-82439/7
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-82439/6
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.4		ug/L		97	75 - 120	3	30
1,2-Dichloroethane			20.0	16.2		ug/L		81	73 - 124	3	30
1,3,5-Trimethylbenzene			20.0	19.3		ug/L		97	75 - 120	4	30
Benzene			20.0	17.2		ug/L		86	80 - 120	4	30
Ethylbenzene			20.0	19.6		ug/L		98	80 - 120	4	30
Isopropylbenzene			20.0	19.2		ug/L		96	80 - 120	6	30
Methyl tertiary butyl ether			20.0	15.8		ug/L		79	69 - 122	1	30
Naphthalene			20.0	17.5		ug/L		88	53 - 124	2	30
Toluene			20.0	19.2		ug/L		96	80 - 120	4	30
Xylenes, Total			60.0	59.1		ug/L		99	80 - 120	5	30
t-Butyl alcohol			200	196		ug/L		98	60 - 130	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-82439/8
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	835		ug/L		84	67 - 120	17	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-80883/1-A
Matrix: Solid
Analysis Batch: 82062

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 80883

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		12/30/20 09:53	01/05/21 12:32	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-80883/1-A
Matrix: Solid
Analysis Batch: 82062

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 80883

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		17	6.7	ug/Kg		12/30/20 09:53	01/05/21 12:32	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		12/30/20 09:53	01/05/21 12:32	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		12/30/20 09:53	01/05/21 12:32	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		12/30/20 09:53	01/05/21 12:32	1
Chrysene	ND		17	3.3	ug/Kg		12/30/20 09:53	01/05/21 12:32	1
Fluorene	ND		17	3.3	ug/Kg		12/30/20 09:53	01/05/21 12:32	1
Naphthalene	ND		17	6.7	ug/Kg		12/30/20 09:53	01/05/21 12:32	1
Phenanthrene	ND		17	3.3	ug/Kg		12/30/20 09:53	01/05/21 12:32	1
Pyrene	ND		17	3.3	ug/Kg		12/30/20 09:53	01/05/21 12:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*39 - 100*	*12/30/20 09:53*	*01/05/21 12:32*	*1*
Nitrobenzene-d5 (Surr)	*76*		*32 - 97*	*12/30/20 09:53*	*01/05/21 12:32*	*1*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*	*12/30/20 09:53*	*01/05/21 12:32*	*1*

Lab Sample ID: LCS 410-80883/2-A
Matrix: Solid
Analysis Batch: 82062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 80883

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1570		ug/Kg		94	75 - 114
Benzo[a]anthracene	1670	1600		ug/Kg		96	73 - 114
Benzo[a]pyrene	1670	1530		ug/Kg		92	76 - 113
Benzo[b]fluoranthene	1670	1600		ug/Kg		96	73 - 117
Benzo[g,h,i]perylene	1670	1580		ug/Kg		95	77 - 114
Chrysene	1670	1450		ug/Kg		87	66 - 111
Fluorene	1670	1410		ug/Kg		85	62 - 110
Naphthalene	1670	1220		ug/Kg		73	60 - 94
Phenanthrene	1670	1500		ug/Kg		90	74 - 112
Pyrene	1670	1430		ug/Kg		86	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*78*		*39 - 100*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*
p-Terphenyl-d14 (Surr)	*87*		*45 - 108*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-80903/1-A
Matrix: Water
Analysis Batch: 80919

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 80903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		12/30/20 08:09	12/30/20 09:48	1
Ethene (1C)	ND		5.0	1.0	ug/L		12/30/20 08:09	12/30/20 09:48	1
Methane (1C)	ND		5.0	3.0	ug/L		12/30/20 08:09	12/30/20 09:48	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-80903/1-A
Matrix: Water
Analysis Batch: 80919

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 80903

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	102		28 - 140	12/30/20 08:09	12/30/20 09:48	1

Lab Sample ID: LCS 410-80903/2-A
Matrix: Water
Analysis Batch: 80919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 80903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	63.2		ug/L		106	85 - 115
Ethene (1C)	60.4	64.3		ug/L		106	83 - 115
Methane (1C)	59.4	66.7		ug/L		112	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	108		28 - 140

Lab Sample ID: LCSD 410-80903/3-A
Matrix: Water
Analysis Batch: 80919

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 80903

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)	59.4	61.0		ug/L		103	85 - 115	4	20
Ethene (1C)	60.4	61.6		ug/L		102	83 - 115	4	20
Methane (1C)	59.4	63.3		ug/L		106	85 - 115	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Propene (1C)	102		28 - 140

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-81225/1-A
Matrix: Water
Analysis Batch: 81838

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81225

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		12/30/20 23:33	01/04/21 17:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (2C)	94		46 - 136	12/30/20 23:33	01/04/21 17:59	1

Lab Sample ID: LCS 410-81225/2-A
Matrix: Water
Analysis Batch: 81838

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81225

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.102		ug/L		79	60 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,1,2,2-Tetrachloroethane (Surr) (2C)	95		46 - 136

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: LCSD 410-81225/3-A
Matrix: Water
Analysis Batch: 81838

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 81225

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.100		ug/L		78	60 - 140	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*97*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-80880/1-A
Matrix: Solid
Analysis Batch: 81678

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 80880

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		12/30/20 09:35	12/31/20 10:45	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		12/30/20 09:35	12/31/20 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*74*		*54 - 137*	*12/30/20 09:35*	*12/31/20 10:45*	*1*
o- terphenyl (Surr) (1C)	*90*		*52 - 154*	*12/30/20 09:35*	*12/31/20 10:45*	*1*

Lab Sample ID: LCS 410-80880/2-A
Matrix: Solid
Analysis Batch: 81678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 80880

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	110		mg/Kg		82	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*68*		*54 - 137*
o- terphenyl (Surr) (1C)	*99*		*52 - 154*

Lab Sample ID: 410-25174-1 MS
Matrix: Solid
Analysis Batch: 81784

Client Sample ID: BT-09-S-8-20201228
Prep Type: Total/NA
Prep Batch: 80880

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	1400		149	3130	4	mg/Kg	☼	1190	64 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*69*		*54 - 137*
o- terphenyl (Surr) (1C)	*393*	*S1+*	*52 - 154*

Lab Sample ID: 410-25174-1 DU
Matrix: Solid
Analysis Batch: 81784

Client Sample ID: BT-09-S-8-20201228
Prep Type: Total/NA
Prep Batch: 80880

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C22-C44 (1C)	53	J		57.4	J	mg/Kg	☼			7	

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 410-25174-1 DU
Matrix: Solid
Analysis Batch: 81784

Client Sample ID: BT-09-S-8-20201228
Prep Type: Total/NA
Prep Batch: 80880

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C12-C22 (1C)	1100			1970		mg/Kg	☼			59	

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*67*		*54 - 137*
o- terphenyl (Surr) (1C)	*335*	*S1+*	*52 - 154*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-80849/4
Matrix: Water
Analysis Batch: 80849

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			12/30/20 05:45	1

Lab Sample ID: LCS 410-80849/3
Matrix: Water
Analysis Batch: 80849

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.728		mg/L		97	90 - 110		

Lab Sample ID: 410-25174-2 MS
Matrix: Water
Analysis Batch: 80849

Client Sample ID: BT-09-W-32-20201228
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate	5.6		5.00	10.3		mg/L		93	90 - 110		

Lab Sample ID: 410-25174-2 DU
Matrix: Water
Analysis Batch: 80849

Client Sample ID: BT-09-W-32-20201228
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrogen, Nitrate	5.6			5.65		mg/L				0.9	15

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-80848/4
Matrix: Water
Analysis Batch: 80848

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			12/30/20 05:45	1
Chloride	ND		0.40	0.20	mg/L			12/30/20 05:45	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 410-80848/3
Matrix: Water
Analysis Batch: 80848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.49		mg/L		100	90 - 110		
Chloride			3.00	3.12		mg/L		104	90 - 110		

Lab Sample ID: 410-25174-2 MS
Matrix: Water
Analysis Batch: 80848

Client Sample ID: BT-09-W-32-20201228
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	150		50.0	198	E	mg/L		105	90 - 110		

Lab Sample ID: 410-25174-2 DU
Matrix: Water
Analysis Batch: 80848

Client Sample ID: BT-09-W-32-20201228
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	150			147		mg/L				0.7	15

Lab Sample ID: MB 410-82843/4
Matrix: Water
Analysis Batch: 82843

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/07/21 20:43	1
Chloride	ND		0.40	0.20	mg/L			01/07/21 20:43	1

Lab Sample ID: LCS 410-82843/3
Matrix: Water
Analysis Batch: 82843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.67		mg/L		102	90 - 110		
Chloride			3.00	2.94		mg/L		98	90 - 110		

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-81111/1-A
Matrix: Solid
Analysis Batch: 82996

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81111

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.3	0.51	mg/Kg		12/30/20 16:06	01/07/21 11:45	1

Lab Sample ID: LCS 410-81111/2-A
Matrix: Solid
Analysis Batch: 82996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81111

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.91	2.88		mg/Kg		99	80 - 120		

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 410-81079/1-A
Matrix: Water
Analysis Batch: 82694

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 81079

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.20	0.040	mg/L		12/30/20 13:55	01/06/21 17:47	1

Lab Sample ID: MB 410-81079/1-A
Matrix: Water
Analysis Batch: 83140

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 81079

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.50	0.20	mg/L		12/30/20 13:55	01/07/21 17:35	1
Sodium	ND		1.0	0.24	mg/L		12/30/20 13:55	01/07/21 17:35	1

Lab Sample ID: LCS 410-81079/2-A
Matrix: Water
Analysis Batch: 82580

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 81079

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.387	J	mg/L		97	80 - 120
Magnesium	0.200	0.190		mg/L		95	80 - 120

Lab Sample ID: LCS 410-81079/2-A
Matrix: Water
Analysis Batch: 82694

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 81079

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.400	0.427		mg/L		107	80 - 120

Lab Sample ID: LCS 410-81079/2-A
Matrix: Water
Analysis Batch: 83140

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 81079

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	6.00	5.81		mg/L		97	80 - 120
Sodium	2.00	2.05		mg/L		102	80 - 120

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-82194/5
Matrix: Water
Analysis Batch: 82194

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			01/05/21 12:14	1

Lab Sample ID: LCS 410-82194/4
Matrix: Water
Analysis Batch: 82194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	25.8		mg/L		103	91 - 113

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

GC/MS VOA

Prep Batch: 81166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1 - DL	BT-09-S-8-20201228	Total/NA	Solid	5035	
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	5035	
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	5035	
410-25174-4 - RA	BT-19-S-15-20201229	Total/NA	Solid	5035	
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	5035	

Analysis Batch: 82040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-5	TB-20201229	Total/NA	Water	8260C/UST	
MB 410-82040/10	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-82040/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-82040/8	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-82040/7	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-82040/9	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 82439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	8260C/UST	
MB 410-82439/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-82439/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-82439/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-82439/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-82439/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 83089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	8260C	81166
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	8260C	81166
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	8260C	81166
MB 410-83089/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-83089/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-83089/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-83089/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-83089/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 83217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1 - DL	BT-09-S-8-20201228	Total/NA	Solid	8260C	81166
410-25174-4 - RA	BT-19-S-15-20201229	Total/NA	Solid	8260C	81166
MB 410-83217/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-83217/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-83217/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-83217/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-83217/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 80883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	3546	
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	3546	

GC/MS Semi VOA (Continued)

Prep Batch: 80883 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	3546	
MB 410-80883/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-80883/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 82062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	8270D	80883
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	8270D	80883
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	8270D	80883
MB 410-80883/1-A	Method Blank	Total/NA	Solid	8270D	80883
LCS 410-80883/2-A	Lab Control Sample	Total/NA	Solid	8270D	80883

GC VOA

Prep Batch: 80903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	RSK-175	
410-25174-5	TB-20201229	Total/NA	Water	RSK-175	
MB 410-80903/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-80903/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-80903/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 80919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	RSK-175	80903
410-25174-5	TB-20201229	Total/NA	Water	RSK-175	80903
MB 410-80903/1-A	Method Blank	Total/NA	Water	RSK-175	80903
LCS 410-80903/2-A	Lab Control Sample	Total/NA	Water	RSK-175	80903
LCSD 410-80903/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	80903

GC Semi VOA

Prep Batch: 80880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	3546	
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	3546	
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	3546	
MB 410-80880/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-80880/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-25174-1 MS	BT-09-S-8-20201228	Total/NA	Solid	3546	
410-25174-1 DU	BT-09-S-8-20201228	Total/NA	Solid	3546	

Prep Batch: 81225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	8011	
410-25174-5	TB-20201229	Total/NA	Water	8011	
MB 410-81225/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-81225/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-81225/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

GC Semi VOA

Analysis Batch: 81678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	8015C TPH	80880
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	8015C TPH	80880
MB 410-80880/1-A	Method Blank	Total/NA	Solid	8015C TPH	80880
LCS 410-80880/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	80880

Analysis Batch: 81784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	8015C TPH	80880
410-25174-1 MS	BT-09-S-8-20201228	Total/NA	Solid	8015C TPH	80880
410-25174-1 DU	BT-09-S-8-20201228	Total/NA	Solid	8015C TPH	80880

Analysis Batch: 81838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	8011	81225
410-25174-5	TB-20201229	Total/NA	Water	8011	81225
MB 410-81225/1-A	Method Blank	Total/NA	Water	8011	81225
LCS 410-81225/2-A	Lab Control Sample	Total/NA	Water	8011	81225
LCSD 410-81225/3-A	Lab Control Sample Dup	Total/NA	Water	8011	81225

Analysis Batch: 101842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	Total TPH	
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	Total TPH	
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	Total TPH	

HPLC/IC

Analysis Batch: 80848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	EPA 300.0 R2.1	
MB 410-80848/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-80848/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-25174-2 MS	BT-09-W-32-20201228	Total/NA	Water	EPA 300.0 R2.1	
410-25174-2 DU	BT-09-W-32-20201228	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 80849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	EPA 300.0 R2.1	
MB 410-80849/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-80849/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-25174-2 MS	BT-09-W-32-20201228	Total/NA	Water	EPA 300.0 R2.1	
410-25174-2 DU	BT-09-W-32-20201228	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 82843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	EPA 300.0 R2.1	
MB 410-82843/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-82843/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Metals

Prep Batch: 81079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total Recoverable	Water	3005A	
MB 410-81079/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-81079/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 81111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	3050B	
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	3050B	
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	3050B	
MB 410-81111/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-81111/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 82580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total Recoverable	Water	6010C	81079
LCS 410-81079/2-A	Lab Control Sample	Total Recoverable	Water	6010C	81079

Analysis Batch: 82694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total Recoverable	Water	6010C	81079
MB 410-81079/1-A	Method Blank	Total Recoverable	Water	6010C	81079
LCS 410-81079/2-A	Lab Control Sample	Total Recoverable	Water	6010C	81079

Analysis Batch: 82996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	6010C	81111
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	6010C	81111
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	6010C	81111
MB 410-81111/1-A	Method Blank	Total/NA	Solid	6010C	81111
LCS 410-81111/2-A	Lab Control Sample	Total/NA	Solid	6010C	81111

Analysis Batch: 83140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total Recoverable	Water	6010C	81079
MB 410-81079/1-A	Method Blank	Total Recoverable	Water	6010C	81079
LCS 410-81079/2-A	Lab Control Sample	Total Recoverable	Water	6010C	81079

General Chemistry

Analysis Batch: 80915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-1	BT-09-S-8-20201228	Total/NA	Solid	Moisture	
410-25174-3	BT-09-S-47-20201229	Total/NA	Solid	Moisture	
410-25174-4	BT-19-S-15-20201229	Total/NA	Solid	Moisture	

Analysis Batch: 82194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25174-2	BT-09-W-32-20201228	Total/NA	Water	5310C-2011	
MB 410-82194/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-82194/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Client Sample ID: BT-09-S-8-20201228
Date Collected: 12/28/20 13:30
Date Received: 12/29/20 17:08

Lab Sample ID: 410-25174-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	80915	12/30/20 08:20	UWC1	ELLE

Client Sample ID: BT-09-S-8-20201228
Date Collected: 12/28/20 13:30
Date Received: 12/29/20 17:08

Lab Sample ID: 410-25174-1
Matrix: Solid
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			81166	12/30/20 18:32	UK3O	ELLE
Total/NA	Analysis	8260C		50	83089	01/07/21 23:57	R64Z	ELLE
Total/NA	Prep	5035	DL		81166	12/30/20 18:32	UK3O	ELLE
Total/NA	Analysis	8260C	DL	500	83217	01/08/21 14:57	R64Z	ELLE
Total/NA	Prep	3546			80883	12/30/20 09:53	A2VL	ELLE
Total/NA	Analysis	8270D		1	82062	01/05/21 18:39	ULM3	ELLE
Total/NA	Prep	3546			80880	12/30/20 09:35	A2VL	ELLE
Total/NA	Analysis	8015C TPH		5	81784	01/04/21 16:42	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101842	03/10/21 19:44	UHEW	ELLE
Total/NA	Prep	3050B			81111	12/30/20 16:06	UJLA	ELLE
Total/NA	Analysis	6010C		1	82996	01/07/21 12:30	UCIG	ELLE

Client Sample ID: BT-09-W-32-20201228
Date Collected: 12/28/20 15:15
Date Received: 12/29/20 17:08

Lab Sample ID: 410-25174-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	82439	01/06/21 13:18	LCW8	ELLE
Total/NA	Prep	RSK-175			80903	12/30/20 08:09	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	80919	12/30/20 12:26	LXF2	ELLE
Total/NA	Prep	8011			81225	12/30/20 23:33	UKQ8	ELLE
Total/NA	Analysis	8011		1	81838	01/05/21 05:01	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		100	82843	01/07/21 22:13	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		10	80848	12/30/20 06:02	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		10	80849	12/30/20 06:02	W5UX	ELLE
Total Recoverable	Prep	3005A			81079	12/30/20 13:55	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	82580	01/06/21 12:47	WJM9	ELLE
Total Recoverable	Prep	3005A			81079	12/30/20 13:55	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	82694	01/06/21 18:31	UCIG	ELLE
Total Recoverable	Prep	3005A			81079	12/30/20 13:55	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	83140	01/07/21 18:21	UCIG	ELLE
Total/NA	Analysis	5310C-2011		10	82194	01/05/21 13:10	KGQ6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Client Sample ID: BT-09-S-47-20201229
Lab Sample ID: 410-25174-3
Date Collected: 12/29/20 08:40
Matrix: Solid
Date Received: 12/29/20 17:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	80915	12/30/20 08:20	UWC1	ELLE

Client Sample ID: BT-09-S-47-20201229
Lab Sample ID: 410-25174-3
Date Collected: 12/29/20 08:40
Matrix: Solid
Date Received: 12/29/20 17:08
Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			81166	12/30/20 18:32	UK3O	ELLE
Total/NA	Analysis	8260C		50	83089	01/08/21 00:18	R64Z	ELLE
Total/NA	Prep	3546			80883	12/30/20 09:53	A2VL	ELLE
Total/NA	Analysis	8270D		1	82062	01/05/21 19:02	ULM3	ELLE
Total/NA	Prep	3546			80880	12/30/20 09:35	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	81678	12/31/20 11:28	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101842	03/10/21 19:44	UHEW	ELLE
Total/NA	Prep	3050B			81111	12/30/20 16:06	UJLA	ELLE
Total/NA	Analysis	6010C		1	82996	01/07/21 12:34	UCIG	ELLE

Client Sample ID: BT-19-S-15-20201229
Lab Sample ID: 410-25174-4
Date Collected: 12/29/20 12:40
Matrix: Solid
Date Received: 12/29/20 17:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	80915	12/30/20 08:20	UWC1	ELLE

Client Sample ID: BT-19-S-15-20201229
Lab Sample ID: 410-25174-4
Date Collected: 12/29/20 12:40
Matrix: Solid
Date Received: 12/29/20 17:08
Percent Solids: 83.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			81166	12/30/20 18:32	UK3O	ELLE
Total/NA	Analysis	8260C		50	83089	01/08/21 00:39	R64Z	ELLE
Total/NA	Prep	5035	RA		81166	12/30/20 18:32	UK3O	ELLE
Total/NA	Analysis	8260C	RA	50	83217	01/08/21 14:36	R64Z	ELLE
Total/NA	Prep	3546			80883	12/30/20 09:53	A2VL	ELLE
Total/NA	Analysis	8270D		1	82062	01/05/21 19:25	ULM3	ELLE
Total/NA	Prep	3546			80880	12/30/20 09:35	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	81678	12/31/20 11:49	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101842	03/10/21 19:44	UHEW	ELLE
Total/NA	Prep	3050B			81111	12/30/20 16:06	UJLA	ELLE
Total/NA	Analysis	6010C		1	82996	01/07/21 12:37	UCIG	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Client Sample ID: TB-20201229

Date Collected: 12/29/20 00:00
Date Received: 12/29/20 17:08

Lab Sample ID: 410-25174-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	82040	01/05/21 14:53	USEJ	ELLE
Total/NA	Prep	RSK-175			80903	12/30/20 08:09	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	80919	12/30/20 12:44	LXF2	ELLE
Total/NA	Prep	8011			81225	12/30/20 23:33	UKQ8	ELLE
Total/NA	Analysis	8011		1	81838	01/05/21 05:18	AC3T	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-25174-1
Project/Site: PHL Belmont Terminal Drilling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25174-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-25174-1	BT-09-S-8-20201228	Solid	12/28/20 13:30	12/29/20 17:08	
410-25174-2	BT-09-W-32-20201228	Water	12/28/20 15:15	12/29/20 17:08	
410-25174-3	BT-09-S-47-20201229	Solid	12/29/20 08:40	12/29/20 17:08	
410-25174-4	BT-19-S-15-20201229	Solid	12/29/20 12:40	12/29/20 17:08	
410-25174-5	TB-20201229	Water	12/29/20 00:00	12/29/20 17:08	

Environmental Analysis Custody

eurofins | Lancaster Laboratories Environmental | Acct. #

410-25174 Chain of Custody

...nmental use only

COC #608591

Client Information	
Client: Evergreen C/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested — Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO+GRO/moisture	VOC 8260(soil)/VOC (water) 8260 C/D	Lead/PAH 8270D	Sulfide/metals 6010C (including dissolved lead)	Chloride/Nitrate Nitrogen Sulfate	EDB 8011/Volatile Headspace Hydrocarbons	Total Alkalinity to pH 4.5	TOC	Ammonia Nitrogen	
BT-09-S-8-20201228	12/28/20	1330	X		X			6	X	X	X							
BT-09-W-32-20201228	12/28/20	1515	X			X		19	X	X		X	X	X	[illegible]	X	[illegible]	
BT-09-S-[illegible]-20201229 C47	12/29/20	0840	X		X			6	X	X	X							
BT-19-S-15-20201229	12/29/20	1240	X		X			6	X	X	X							
TB-20201229	12/29/20	—					X	4		X				X				

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks
*lab filter for dissolved lead

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days:

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)
Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13
NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	12/29/20	1325	Pierre	12/29/20	1325
Pierre	12/29/20	1700			
			[signature]	12-29-20	1708

EDD Required? Yes No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____

Temperature upon receipt 0.8 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental The yellow copy should be retained by the client.

KAM 7044 0919

3/16/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-25174-1

Login Number: 25174
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-25255-1
Client Project/Site: PHL Belmont Terminal Drilling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 9:20:22 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 9:20:22 AM

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Definitions/Glossary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
FL	MS and/or MSD recovery below control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-25255-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-25255-1

Revision
The report being provided is a revision of the original report sent on 1/11/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 12/30/2020 4:35 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.5°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-82845 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020A: The following sample was not filtered within 15 minutes of sample collection as required by the method: BT-19-W-40-20201230 (410-25255-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method SM4500NH3_C_Mod: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: BT-19-W-40-20201230 (410-25255-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

Client Sample ID: BT-19-S-40-20201229 — Lab Sample ID: 410-25255-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.2	J	5.0	0.50	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	50	J	110	44	ug/Kg	1	☼	8260C	Total/NA
Phenanthrene	5.2	J	19	3.8	ug/Kg	1	☼	8270D	Total/NA
Pyrene	5.3	J	19	3.8	ug/Kg	1	☼	8270D	Total/NA
Lead	3.2		1.6	0.65	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20201230 — Lab Sample ID: 410-25255-2

No Detections.

Client Sample ID: BT-19-W-40-20201230 — Lab Sample ID: 410-25255-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	3.1	J	5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	0.96	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
Benzene	63		1.0	0.20	ug/L	1		8260C/UST	Total/NA
C4-C12-TPH-GRO	270		50	29	ug/L	1		8260C/UST	Total/NA
Ethylbenzene	4.4		1.0	0.40	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	5.5		5.0	0.20	ug/L	1		8260C/UST	Total/NA
Toluene	1.9		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	14		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Phenanthrene	0.40	J H	0.50	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	8.0		5.0	3.0	ug/L	1		RSK-175	Total/NA
>C22-C44 (1C)	0.16		0.095	0.070	mg/L	1		8015C TPH	Total/NA
>C12-C22 (1C)	0.19		0.095	0.070	mg/L	1		8015C TPH	Total/NA
Total Reported TPH	0.35		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	2.2		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	82		20	6.0	mg/L	20		EPA 300.0 R2.1	Total/NA
Chloride	220		80	40	mg/L	200		EPA 300.0 R2.1	Total/NA
Calcium	110		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	3.1	B	0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	31		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	15		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	180		1.0	0.24	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	360		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Organic Carbon	6.0		1.0	0.50	mg/L	1		5310C-2011	Total/NA

Client Sample ID: BT-19-S-50-20201230 — Lab Sample ID: 410-25255-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4.7	J	5.7	0.57	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	130		130	50	ug/Kg	1	☼	8260C	Total/NA
Phenanthrene	6.8	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	6.8	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Lead	1.6		1.6	0.64	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-19-S-40-20201229

Date Collected: 12/29/20 16:10
Date Received: 12/30/20 16:35

Lab Sample ID: 410-25255-1

Matrix: Solid
Percent Solids: 87.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
Toluene	ND		5.0	0.60	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
Benzene	**3.2**	**J**	5.0	0.50	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
C4-C12-TPH-GRO	**50**	**J**	110	44	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
t-Butyl alcohol	ND	^c	99	15	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1
Xylenes, Total	ND		9.9	1.4	ug/Kg	☼	12/30/20 22:10	01/07/21 14:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*54 - 135*	*12/30/20 22:10*	*01/07/21 14:04*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*	*12/30/20 22:10*	*01/07/21 14:04*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 141*	*12/30/20 22:10*	*01/07/21 14:04*	*1*
Toluene-d8 (Surr)	*92*		*52 - 141*	*12/30/20 22:10*	*01/07/21 14:04*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		19	3.8	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Benzo[a]anthracene	ND		19	7.6	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Benzo[a]pyrene	ND		19	3.8	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Benzo[b]fluoranthene	ND		19	3.8	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Benzo[g,h,i]perylene	ND		19	3.8	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Chrysene	ND		19	3.8	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Fluorene	ND		19	3.8	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Naphthalene	ND		19	7.6	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Phenanthrene	**5.2**	**J**	19	3.8	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1
Pyrene	**5.3**	**J**	19	3.8	ug/Kg	☼	01/03/21 09:31	01/08/21 02:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*39 - 100*	*01/03/21 09:31*	*01/08/21 02:04*	*1*
Nitrobenzene-d5 (Surr)	*75*		*32 - 97*	*01/03/21 09:31*	*01/08/21 02:04*	*1*
p-Terphenyl-d14 (Surr)	*89*		*45 - 108*	*01/03/21 09:31*	*01/08/21 02:04*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		14	5.7	mg/Kg	☼	12/31/20 13:06	01/04/21 14:12	1
>C12-C22 (1C)	ND		14	5.7	mg/Kg	☼	12/31/20 13:06	01/04/21 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*	*12/31/20 13:06*	*01/04/21 14:12*	*1*
o- terphenyl (Surr) (1C)	*89*		*52 - 154*	*12/31/20 13:06*	*01/04/21 14:12*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		14	5.7	mg/Kg	☼		03/15/21 08:46	1

Client Sample ID: BT-19-S-40-20201229

Lab Sample ID: 410-25255-1
Date Collected: 12/29/20 16:10
Matrix: Solid
Date Received: 12/30/20 16:35
Percent Solids: 87.6

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.2**		1.6	0.65	mg/Kg	☼	01/04/21 05:03	01/05/21 18:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12.4**		1.0	1.0	%			12/31/20 01:19	1

Client Sample ID: TB-20201230

Lab Sample ID: 410-25255-2
Date Collected: 12/30/20 00:00
Matrix: Water
Date Received: 12/30/20 16:35

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/05/21 15:17	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/05/21 15:17	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/05/21 15:17	1
Benzene	ND		1.0	0.20	ug/L			01/05/21 15:17	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/05/21 15:17	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/05/21 15:17	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/05/21 15:17	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/05/21 15:17	1
Toluene	ND		1.0	0.20	ug/L			01/05/21 15:17	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/05/21 15:17	1
t-Butyl alcohol	ND		50	12	ug/L			01/05/21 15:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/05/21 15:17*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*01/05/21 15:17*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*01/05/21 15:17*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*01/05/21 15:17*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		01/05/21 01:24	01/05/21 20:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*78*		*46 - 136*	*01/05/21 01:24*	*01/05/21 20:14*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*102*		*46 - 136*	*01/05/21 01:24*	*01/05/21 20:14*	*1*

Client Sample ID: BT-19-W-40-20201230

Lab Sample ID: 410-25255-3
Date Collected: 12/30/20 09:00
Matrix: Water
Date Received: 12/30/20 16:35

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**3.1**	**J**	5.0	1.0	ug/L			01/06/21 13:42	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/06/21 13:42	1
1,3,5-Trimethylbenzene	**0.96**	**J**	5.0	0.30	ug/L			01/06/21 13:42	1
Benzene	**63**		1.0	0.20	ug/L			01/06/21 13:42	1
C4-C12-TPH-GRO	**270**		50	29	ug/L			01/06/21 13:42	1
Ethylbenzene	**4.4**		1.0	0.40	ug/L			01/06/21 13:42	1
Isopropylbenzene	**5.5**		5.0	0.20	ug/L			01/06/21 13:42	1

Client Sample ID: BT-19-W-40-20201230

Date Collected: 12/30/20 09:00
Date Received: 12/30/20 16:35

Lab Sample ID: 410-25255-3

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/06/21 13:42	1
Toluene	**1.9**		1.0	0.20	ug/L			01/06/21 13:42	1
Xylenes, Total	**14**		6.0	1.4	ug/L			01/06/21 13:42	1
t-Butyl alcohol	ND		50	12	ug/L			01/06/21 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*01/06/21 13:42*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*01/06/21 13:42*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*01/06/21 13:42*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*01/06/21 13:42*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Benzo[a]anthracene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Benzo[a]pyrene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Benzo[b]fluoranthene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Benzo[g,h,i]perylene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Chrysene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Fluorene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Naphthalene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Phenanthrene	**0.40**	**J H**	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1
Pyrene	ND	H	0.50	0.10	ug/L		02/13/21 09:30	02/16/21 08:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*62*		*44 - 102*	*02/13/21 09:30*	*02/16/21 08:51*	*1*
Nitrobenzene-d5 (Surr)	*72*		*23 - 128*	*02/13/21 09:30*	*02/16/21 08:51*	*1*
p-Terphenyl-d14 (Surr)	*87*		*31 - 113*	*02/13/21 09:30*	*02/16/21 08:51*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/04/21 08:24	01/04/21 12:52	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/04/21 08:24	01/04/21 12:52	1
Methane (1C)	**8.0**		5.0	3.0	ug/L		01/04/21 08:24	01/04/21 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*54*		*28 - 140*	*01/04/21 08:24*	*01/04/21 12:52*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0098	ug/L		01/05/21 01:24	01/05/21 20:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*74*		*46 - 136*	*01/05/21 01:24*	*01/05/21 20:30*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*94*		*46 - 136*	*01/05/21 01:24*	*01/05/21 20:30*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**0.16**		0.095	0.070	mg/L		01/05/21 01:03	01/05/21 11:40	1
>C12-C22 (1C)	**0.19**		0.095	0.070	mg/L		01/05/21 01:03	01/05/21 11:40	1

Client Sample ID: BT-19-W-40-20201230

Date Collected: 12/30/20 09:00
Date Received: 12/30/20 16:35

Lab Sample ID: 410-25255-3
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*84*		*21 - 116*	*01/05/21 01:03*	*01/05/21 11:40*	*1*
o- terphenyl (Surr) (1C)	*101*		*51 - 126*	*01/05/21 01:03*	*01/05/21 11:40*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**0.35**		0.20	0.074	mg/L			03/15/21 08:46	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**2.2**		0.50	0.25	mg/L			12/31/20 07:33	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**82**		20	6.0	mg/L			01/05/21 07:49	20
Chloride	**220**		80	40	mg/L			01/05/21 08:40	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**		0.50	0.096	mg/L		12/31/20 02:00	01/04/21 17:25	1
Iron	**3.1**	**B**	0.20	0.040	mg/L		12/31/20 02:00	01/04/21 17:25	1
Magnesium	**31**		0.10	0.040	mg/L		12/31/20 02:00	01/04/21 17:25	1
Potassium	**15**		0.50	0.20	mg/L		12/31/20 02:00	01/04/21 17:25	1
Sodium	**180**		1.0	0.24	mg/L		12/31/20 02:00	01/04/21 17:25	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		12/31/20 12:05	01/06/21 15:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**360**		8.0	8.0	mg/L			01/05/21 02:26	1
Ammonia-N	ND		1.5	0.50	mg/L		01/06/21 08:18	01/06/21 10:02	1
Sulfide	ND	FL	0.30	0.10	mg/L			01/06/21 09:04	1
Total Organic Carbon	**6.0**		1.0	0.50	mg/L			01/05/21 12:28	1

Client Sample ID: BT-19-S-50-20201230

Date Collected: 12/30/20 10:50
Date Received: 12/30/20 16:35

Lab Sample ID: 410-25255-4
Matrix: Solid
Percent Solids: 89.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.7	0.46	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
1,3,5-Trimethylbenzene	ND		5.7	0.57	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
Toluene	ND		5.7	0.69	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
Methyl tertiary butyl ether	ND		5.7	0.57	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
Benzene	**4.7**	**J**	5.7	0.57	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
1,2,4-Trimethylbenzene	ND		5.7	0.57	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
Isopropylbenzene	ND		5.7	0.46	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
1,2-Dibromoethane	ND		5.7	0.46	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
1,2-Dichloroethane	ND		5.7	0.69	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
C4-C12-TPH-GRO	**130**		130	50	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1
t-Butyl alcohol	ND	^c	110	17	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1

Client Sample ID: BT-19-S-50-20201230

Date Collected: 12/30/20 10:50
Date Received: 12/30/20 16:35

Lab Sample ID: 410-25255-4

Matrix: Solid
Percent Solids: 89.0

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		11	1.6	ug/Kg	☼	12/30/20 22:10	01/07/21 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*54 - 135*	*12/30/20 22:10*	*01/07/21 14:27*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*	*12/30/20 22:10*	*01/07/21 14:27*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 141*	*12/30/20 22:10*	*01/07/21 14:27*	*1*
Toluene-d8 (Surr)	*92*		*52 - 141*	*12/30/20 22:10*	*01/07/21 14:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		19	3.7	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Benzo[a]anthracene	ND		19	7.4	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Benzo[a]pyrene	ND		19	3.7	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Benzo[b]fluoranthene	ND		19	3.7	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Benzo[g,h,i]perylene	ND		19	3.7	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Chrysene	ND		19	3.7	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Fluorene	ND		19	3.7	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Naphthalene	ND		19	7.4	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Phenanthrene	**6.8**	**J**	19	3.7	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1
Pyrene	**6.8**	**J**	19	3.7	ug/Kg	☼	01/03/21 09:31	01/08/21 02:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*39 - 100*	*01/03/21 09:31*	*01/08/21 02:27*	*1*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*	*01/03/21 09:31*	*01/08/21 02:27*	*1*
p-Terphenyl-d14 (Surr)	*87*		*45 - 108*	*01/03/21 09:31*	*01/08/21 02:27*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		13	5.6	mg/Kg	☼	12/31/20 13:06	01/04/21 14:34	1
>C12-C22 (1C)	ND		13	5.6	mg/Kg	☼	12/31/20 13:06	01/04/21 14:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*71*		*54 - 137*	*12/31/20 13:06*	*01/04/21 14:34*	*1*
o- terphenyl (Surr) (1C)	*96*		*52 - 154*	*12/31/20 13:06*	*01/04/21 14:34*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		13	5.6	mg/Kg	☼		03/15/21 08:46	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**1.6**		1.6	0.64	mg/Kg	☼	01/04/21 05:03	01/05/21 18:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.0**		1.0	1.0	%			12/31/20 01:19	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-25255-1	BT-19-S-40-20201229	112	96	106	92
410-25255-4	BT-19-S-50-20201230	111	96	106	92
LCS 410-82845/14	Lab Control Sample	104	98	102	96
LCS 410-82845/4	Lab Control Sample	107	100	104	95
LCSD 410-82845/15	Lab Control Sample Dup	106	98	102	95
LCSD 410-82845/5	Lab Control Sample Dup	109	98	103	96
MB 410-82845/7	Method Blank	107	95	106	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-25255-2	TB-20201230	101	91	95	103
410-25255-3	BT-19-W-40-20201230	100	92	96	103
LCS 410-82040/6	Lab Control Sample	100	92	97	100
LCS 410-82040/8	Lab Control Sample	98	91	97	102
LCS 410-82439/5	Lab Control Sample	102	94	98	103
LCS 410-82439/7	Lab Control Sample	101	93	97	103
LCSD 410-82040/7	Lab Control Sample Dup	103	94	99	102
LCSD 410-82040/9	Lab Control Sample Dup	99	94	96	104
LCSD 410-82439/6	Lab Control Sample Dup	103	94	97	102
LCSD 410-82439/8	Lab Control Sample Dup	99	94	98	103
MB 410-82040/10	Method Blank	103	92	99	104
MB 410-82439/9	Method Blank	101	92	99	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-25255-1	BT-19-S-40-20201229	72	75	89
410-25255-4	BT-19-S-50-20201230	76	71	87
LCS 410-81601/2-A	Lab Control Sample	74	73	88
MB 410-81601/1-A	Method Blank	73	74	88

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-25255-1
Project/Site: PHL Belmont Terminal Drilling

NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)
410-25255-3	BT-19-W-40-20201230	62	72	87
LCS 410-93984/2-A	Lab Control Sample	71	78	92
MB 410-93984/1-A	Method Blank	67	76	85

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-25255-3	BT-19-W-40-20201230	54
LCS 410-81691/2-A	Lab Control Sample	101
LCSD 410-81691/3-A	Lab Control Sample Dup	103
MB 410-81691/1-A	Method Blank	101

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1122TCA1	1122TCA2
Lab Sample ID	Client Sample ID	(46-136)	(46-136)
410-25255-2	TB-20201230	78	102
410-25255-3	BT-19-W-40-20201230	74	94
LCS 410-81945/2-A	Lab Control Sample	76	90
LCSD 410-81945/3-A	Lab Control Sample Dup	86	94
MB 410-81945/1-A	Method Blank	100	105

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-25255-1	BT-19-S-40-20201229	72	89
410-25255-4	BT-19-S-50-20201230	71	96
LCS 410-81425/2-A	Lab Control Sample	74	107
MB 410-81425/1-A	Method Blank	75	99

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (21-116)	OTP1 (51-126)								
410-25255-3	BT-19-W-40-20201230	84	101								
LCS 410-81962/2-A	Lab Control Sample	72	105								
LCSD 410-81962/3-A	Lab Control Sample Dup	68	100								
MB 410-81962/1-A	Method Blank	75	93								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-82845/7
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			01/07/21 12:06	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/07/21 12:06	1
Toluene	ND		5.0	0.60	ug/Kg			01/07/21 12:06	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			01/07/21 12:06	1
Benzene	ND		5.0	0.50	ug/Kg			01/07/21 12:06	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/07/21 12:06	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			01/07/21 12:06	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			01/07/21 12:06	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			01/07/21 12:06	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			01/07/21 12:06	1
t-Butyl alcohol	ND		100	15	ug/Kg			01/07/21 12:06	1
Xylenes, Total	ND		10	1.4	ug/Kg			01/07/21 12:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*		*01/07/21 12:06*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*		*01/07/21 12:06*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 141*		*01/07/21 12:06*	*1*
Toluene-d8 (Surr)	*93*		*52 - 141*		*01/07/21 12:06*	*1*

Lab Sample ID: LCS 410-82845/14
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1070		ug/Kg		107	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCS 410-82845/4
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	20.6		ug/Kg		103	78 - 120
1,3,5-Trimethylbenzene	20.0	19.6		ug/Kg		98	73 - 120
Toluene	20.0	20.7		ug/Kg		104	80 - 120
Methyl tertiary butyl ether	20.0	17.4		ug/Kg		87	72 - 120
Benzene	20.0	22.7		ug/Kg		113	80 - 120
Naphthalene	20.0	19.0		ug/Kg		95	48 - 130
1,2,4-Trimethylbenzene	20.0	19.6		ug/Kg		98	73 - 120
Isopropylbenzene	20.0	20.5		ug/Kg		102	77 - 120
1,2-Dibromoethane	20.0	20.2		ug/Kg		101	76 - 120
1,2-Dichloroethane	20.0	20.6		ug/Kg		103	71 - 128
t-Butyl alcohol	200	202		ug/Kg		101	74 - 121

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-82845/4
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			60.0	62.6		ug/Kg		104	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*100*		*50 - 131*
Dibromofluoromethane (Surr)	*104*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Lab Sample ID: LCSD 410-82845/15
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1060		ug/Kg		106	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Lab Sample ID: LCSD 410-82845/5
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	18.1		ug/Kg		91	78 - 120	13	30
1,3,5-Trimethylbenzene			20.0	17.4		ug/Kg		87	73 - 120	12	30
Toluene			20.0	18.0		ug/Kg		90	80 - 120	14	30
Methyl tertiary butyl ether			20.0	14.9		ug/Kg		75	72 - 120	15	30
Benzene			20.0	20.0		ug/Kg		100	80 - 120	12	30
Naphthalene			20.0	15.7		ug/Kg		79	48 - 130	18	30
1,2,4-Trimethylbenzene			20.0	17.2		ug/Kg		86	73 - 120	13	30
Isopropylbenzene			20.0	18.0		ug/Kg		90	77 - 120	13	30
1,2-Dibromoethane			20.0	17.3		ug/Kg		87	76 - 120	15	30
1,2-Dichloroethane			20.0	18.5		ug/Kg		92	71 - 128	11	30
t-Butyl alcohol			200	182		ug/Kg		91	74 - 121	10	30
Xylenes, Total			60.0	54.5		ug/Kg		91	75 - 120	14	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-82040/10
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/05/21 12:28	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/05/21 12:28	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/05/21 12:28	1
Benzene	ND		1.0	0.20	ug/L			01/05/21 12:28	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/05/21 12:28	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/05/21 12:28	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/05/21 12:28	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/05/21 12:28	1
Toluene	ND		1.0	0.20	ug/L			01/05/21 12:28	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/05/21 12:28	1
t-Butyl alcohol	ND		50	12	ug/L			01/05/21 12:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*01/05/21 12:28*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*01/05/21 12:28*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/05/21 12:28*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*01/05/21 12:28*	*1*

Lab Sample ID: LCS 410-82040/6
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.1		ug/L		96	75 - 120
1,2-Dichloroethane	20.0	16.4		ug/L		82	73 - 124
1,3,5-Trimethylbenzene	20.0	19.8		ug/L		99	75 - 120
Benzene	20.0	16.8		ug/L		84	80 - 120
Ethylbenzene	20.0	19.1		ug/L		96	80 - 120
Isopropylbenzene	20.0	18.7		ug/L		93	80 - 120
Methyl tertiary butyl ether	20.0	16.3		ug/L		81	69 - 122
Naphthalene	20.0	18.7		ug/L		93	53 - 124
Toluene	20.0	19.0		ug/L		95	80 - 120
Xylenes, Total	60.0	58.1		ug/L		97	80 - 120
t-Butyl alcohol	200	190		ug/L		95	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-82040/8
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	963		ug/L		96	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-82040/8
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-82040/7
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.8		ug/L		104	75 - 120	8	30
1,2-Dichloroethane			20.0	17.3		ug/L		87	73 - 124	5	30
1,3,5-Trimethylbenzene			20.0	21.1		ug/L		106	75 - 120	6	30
Benzene			20.0	18.3		ug/L		92	80 - 120	9	30
Ethylbenzene			20.0	21.4		ug/L		107	80 - 120	11	30
Isopropylbenzene			20.0	20.5		ug/L		103	80 - 120	10	30
Methyl tertiary butyl ether			20.0	17.5		ug/L		87	69 - 122	7	30
Naphthalene			20.0	19.7		ug/L		99	53 - 124	5	30
Toluene			20.0	20.9		ug/L		105	80 - 120	9	30
Xylenes, Total			60.0	62.3		ug/L		104	80 - 120	7	30
t-Butyl alcohol			200	213		ug/L		106	60 - 130	11	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-82040/9
Matrix: Water
Analysis Batch: 82040

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	886		ug/L		89	67 - 120	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 410-82439/9
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/06/21 12:54	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/06/21 12:54	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-82439/9
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/06/21 12:54	1
Benzene	ND		1.0	0.20	ug/L			01/06/21 12:54	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/06/21 12:54	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/06/21 12:54	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/06/21 12:54	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/06/21 12:54	1
Toluene	ND		1.0	0.20	ug/L			01/06/21 12:54	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/06/21 12:54	1
t-Butyl alcohol	ND		50	12	ug/L			01/06/21 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/06/21 12:54*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*01/06/21 12:54*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/06/21 12:54*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*01/06/21 12:54*	*1*

Lab Sample ID: LCS 410-82439/5
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,4-Trimethylbenzene			20.0	18.9		ug/L		95	75 - 120		
1,2-Dichloroethane			20.0	15.8		ug/L		79	73 - 124		
1,3,5-Trimethylbenzene			20.0	18.6		ug/L		93	75 - 120		
Benzene			20.0	16.5		ug/L		83	80 - 120		
Ethylbenzene			20.0	18.8		ug/L		94	80 - 120		
Isopropylbenzene			20.0	18.2		ug/L		91	80 - 120		
Methyl tertiary butyl ether			20.0	15.6		ug/L		78	69 - 122		
Naphthalene			20.0	17.9		ug/L		89	53 - 124		
Toluene			20.0	18.4		ug/L		92	80 - 120		
Xylenes, Total			60.0	56.4		ug/L		94	80 - 120		
t-Butyl alcohol			200	181		ug/L		90	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 410-82439/7
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	990		ug/L		99	67 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-82439/7
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-82439/6
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.4		ug/L		97	75 - 120	3	30
1,2-Dichloroethane			20.0	16.2		ug/L		81	73 - 124	3	30
1,3,5-Trimethylbenzene			20.0	19.3		ug/L		97	75 - 120	4	30
Benzene			20.0	17.2		ug/L		86	80 - 120	4	30
Ethylbenzene			20.0	19.6		ug/L		98	80 - 120	4	30
Isopropylbenzene			20.0	19.2		ug/L		96	80 - 120	6	30
Methyl tertiary butyl ether			20.0	15.8		ug/L		79	69 - 122	1	30
Naphthalene			20.0	17.5		ug/L		88	53 - 124	2	30
Toluene			20.0	19.2		ug/L		96	80 - 120	4	30
Xylenes, Total			60.0	59.1		ug/L		99	80 - 120	5	30
t-Butyl alcohol			200	196		ug/L		98	60 - 130	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-82439/8
Matrix: Water
Analysis Batch: 82439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	835		ug/L		84	67 - 120	17	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-81601/1-A
Matrix: Solid
Analysis Batch: 82817

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81601

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/03/21 09:31	01/07/21 11:06	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-81601/1-A
Matrix: Solid
Analysis Batch: 82817

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81601

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/03/21 09:31	01/07/21 11:06	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/03/21 09:31	01/07/21 11:06	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/03/21 09:31	01/07/21 11:06	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/03/21 09:31	01/07/21 11:06	1
Chrysene	ND		17	3.3	ug/Kg		01/03/21 09:31	01/07/21 11:06	1
Fluorene	ND		17	3.3	ug/Kg		01/03/21 09:31	01/07/21 11:06	1
Naphthalene	ND		17	6.7	ug/Kg		01/03/21 09:31	01/07/21 11:06	1
Phenanthrene	ND		17	3.3	ug/Kg		01/03/21 09:31	01/07/21 11:06	1
Pyrene	ND		17	3.3	ug/Kg		01/03/21 09:31	01/07/21 11:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*39 - 100*	*01/03/21 09:31*	*01/07/21 11:06*	*1*
Nitrobenzene-d5 (Surr)	*74*		*32 - 97*	*01/03/21 09:31*	*01/07/21 11:06*	*1*
p-Terphenyl-d14 (Surr)	*88*		*45 - 108*	*01/03/21 09:31*	*01/07/21 11:06*	*1*

Lab Sample ID: LCS 410-81601/2-A
Matrix: Solid
Analysis Batch: 82817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81601

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1570		ug/Kg		94	75 - 114
Benzo[a]anthracene	1670	1560		ug/Kg		94	73 - 114
Benzo[a]pyrene	1670	1440		ug/Kg		86	76 - 113
Benzo[b]fluoranthene	1670	1370		ug/Kg		82	73 - 117
Benzo[g,h,i]perylene	1670	1580		ug/Kg		95	77 - 114
Chrysene	1670	1520		ug/Kg		91	66 - 111
Fluorene	1670	1450		ug/Kg		87	62 - 110
Naphthalene	1670	1260		ug/Kg		75	60 - 94
Phenanthrene	1670	1560		ug/Kg		94	74 - 112
Pyrene	1670	1530		ug/Kg		92	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*74*		*39 - 100*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*
p-Terphenyl-d14 (Surr)	*88*		*45 - 108*

Lab Sample ID: MB 410-93984/1-A
Matrix: Water
Analysis Batch: 94186

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93984

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1
Benzo[a]pyrene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1
Chrysene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1
Fluorene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-93984/1-A
Matrix: Water
Analysis Batch: 94186

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93984

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1
Phenanthrene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1
Pyrene	ND		0.50	0.10	ug/L		02/13/21 09:30	02/15/21 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*44 - 102*	*02/13/21 09:30*	*02/15/21 12:16*	*1*
Nitrobenzene-d5 (Surr)	*76*		*23 - 128*	*02/13/21 09:30*	*02/15/21 12:16*	*1*
p-Terphenyl-d14 (Surr)	*85*		*31 - 113*	*02/13/21 09:30*	*02/15/21 12:16*	*1*

Lab Sample ID: LCS 410-93984/2-A
Matrix: Water
Analysis Batch: 94186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93984

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	46.3		ug/L		93	61 - 117
Benzo[a]anthracene	50.0	49.1		ug/L		98	61 - 126
Benzo[a]pyrene	50.0	49.6		ug/L		99	60 - 116
Benzo[b]fluoranthene	50.0	44.9		ug/L		90	61 - 119
Benzo[g,h,i]perylene	50.0	41.7		ug/L		83	54 - 120
Chrysene	50.0	49.2		ug/L		98	65 - 121
Fluorene	50.0	42.3		ug/L		85	56 - 115
Naphthalene	50.0	35.5		ug/L		71	51 - 102
Phenanthrene	50.0	46.6		ug/L		93	65 - 113
Pyrene	50.0	44.5		ug/L		89	65 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*71*		*44 - 102*
Nitrobenzene-d5 (Surr)	*78*		*23 - 128*
p-Terphenyl-d14 (Surr)	*92*		*31 - 113*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-81691/1-A
Matrix: Water
Analysis Batch: 81698

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/04/21 08:24	01/04/21 10:52	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/04/21 08:24	01/04/21 10:52	1
Methane (1C)	ND		5.0	3.0	ug/L		01/04/21 08:24	01/04/21 10:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*101*		*28 - 140*	*01/04/21 08:24*	*01/04/21 10:52*	*1*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-81691/2-A
Matrix: Water
Analysis Batch: 81698

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81691

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	61.8		ug/L		104	85 - 115		
Ethene (1C)			60.4	62.8		ug/L		104	83 - 115		
Methane (1C)			59.4	64.1		ug/L		108	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 140*

Lab Sample ID: LCSD 410-81691/3-A
Matrix: Water
Analysis Batch: 81698

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 81691

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	62.5		ug/L		105	85 - 115	1	20
Ethene (1C)			60.4	63.3		ug/L		105	83 - 115	1	20
Methane (1C)			59.4	65.1		ug/L		110	85 - 115	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*103*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-81945/1-A
Matrix: Water
Analysis Batch: 82249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81945

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/05/21 01:24	01/05/21 18:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*100*		*46 - 136*	*01/05/21 01:24*	*01/05/21 18:00*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*	*01/05/21 01:24*	*01/05/21 18:00*	*1*

Lab Sample ID: LCS 410-81945/2-A
Matrix: Water
Analysis Batch: 82249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81945

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.0971		ug/L		76	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*76*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*90*		*46 - 136*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCSD 410-81945/3-A
Matrix: Water
Analysis Batch: 82249

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 81945

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.116		ug/L		91	60 - 140	18	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*86*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*94*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-81425/1-A
Matrix: Solid
Analysis Batch: 81784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81425

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		12/31/20 13:05	01/04/21 13:30	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		12/31/20 13:05	01/04/21 13:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*75*		*54 - 137*	*12/31/20 13:05*	*01/04/21 13:30*	*1*
o- terphenyl (Surr) (1C)	*99*		*52 - 154*	*12/31/20 13:05*	*01/04/21 13:30*	*1*

Lab Sample ID: LCS 410-81425/2-A
Matrix: Solid
Analysis Batch: 81784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81425

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	117		mg/Kg		87	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*74*		*54 - 137*
o- terphenyl (Surr) (1C)	*107*		*52 - 154*

Lab Sample ID: MB 410-81962/1-A
Matrix: Water
Analysis Batch: 82087

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81962

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.10	0.074	mg/L		01/05/21 01:03	01/05/21 10:36	1
>C12-C22 (1C)	ND		0.10	0.074	mg/L		01/05/21 01:03	01/05/21 10:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*75*		*21 - 116*	*01/05/21 01:03*	*01/05/21 10:36*	*1*
o- terphenyl (Surr) (1C)	*93*		*51 - 126*	*01/05/21 01:03*	*01/05/21 10:36*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 410-81962/2-A
Matrix: Water
Analysis Batch: 82087

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81962

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.805	0.729		mg/L		91	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*72*		*21 - 116*
o- terphenyl (Surr) (1C)	*105*		*51 - 126*

Lab Sample ID: LCSD 410-81962/3-A
Matrix: Water
Analysis Batch: 82087

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 81962

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.805	0.695		mg/L		86	53 - 115	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*68*		*21 - 116*
o- terphenyl (Surr) (1C)	*100*		*51 - 126*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-81262/18
Matrix: Water
Analysis Batch: 81262

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			12/31/20 09:16	1

Lab Sample ID: LCS 410-81262/17
Matrix: Water
Analysis Batch: 81262

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.718		mg/L		96	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-81263/18
Matrix: Water
Analysis Batch: 81263

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			12/31/20 09:16	1
Chloride	0.209	J B	0.40	0.20	mg/L			12/31/20 09:16	1

Lab Sample ID: LCS 410-81263/17
Matrix: Water
Analysis Batch: 81263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.35		mg/L		98	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 410-81263/17
Matrix: Water
Analysis Batch: 81263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			3.00	2.87		mg/L		96	90 - 110		

Lab Sample ID: MB 410-81969/4
Matrix: Water
Analysis Batch: 81969

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/05/21 05:32	1
Chloride	ND		0.40	0.20	mg/L			01/05/21 05:32	1

Lab Sample ID: LCS 410-81969/3
Matrix: Water
Analysis Batch: 81969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	6.82		mg/L		91	90 - 110		
Chloride			3.00	2.83		mg/L		94	90 - 110		

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-81642/1-A
Matrix: Solid
Analysis Batch: 82290

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81642

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.58	mg/Kg		01/04/21 04:39	01/05/21 17:21	1

Lab Sample ID: LCS 410-81642/2-A
Matrix: Solid
Analysis Batch: 82290

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81642

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.97	3.11		mg/Kg		105	80 - 120		

Lab Sample ID: MB 410-81235/1-A
Matrix: Water
Analysis Batch: 81891

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 81235

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		12/31/20 02:00	01/04/21 16:33	1
Iron	0.0732	J B	0.20	0.040	mg/L		12/31/20 02:00	01/04/21 16:33	1
Magnesium	ND		0.10	0.040	mg/L		12/31/20 02:00	01/04/21 16:33	1
Potassium	ND		0.50	0.20	mg/L		12/31/20 02:00	01/04/21 16:33	1
Sodium	ND		1.0	0.24	mg/L		12/31/20 02:00	01/04/21 16:33	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-81235/2-A
Matrix: Water
Analysis Batch: 81891

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 81235

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.434	J	mg/L		108	80 - 120
Iron	0.400	0.426		mg/L		107	80 - 120
Magnesium	0.200	0.194		mg/L		97	80 - 120
Potassium	6.00	5.05		mg/L		84	80 - 120
Sodium	2.00	1.93		mg/L		96	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-81398/1-A
Matrix: Water
Analysis Batch: 82878

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81398

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		12/31/20 12:05	01/06/21 15:37	1

Lab Sample ID: LCS 410-81398/2-A
Matrix: Water
Analysis Batch: 82878

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81398

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	29.6		ug/L		99	90 - 115

Lab Sample ID: 410-25255-3 MS
Matrix: Water
Analysis Batch: 82878

Client Sample ID: BT-19-W-40-20201230
Prep Type: Dissolved
Prep Batch: 81398

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		30.0	31.0		ug/L		103	75 - 125

Lab Sample ID: 410-25255-3 MSD
Matrix: Water
Analysis Batch: 82878

Client Sample ID: BT-19-W-40-20201230
Prep Type: Dissolved
Prep Batch: 81398

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		30.0	30.6		ug/L		102	75 - 125	1	20

Lab Sample ID: 410-25255-3 DU
Matrix: Water
Analysis Batch: 82878

Client Sample ID: BT-19-W-40-20201230
Prep Type: Dissolved
Prep Batch: 81398

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		ug/L		NC	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-82195/72
Matrix: Water
Analysis Batch: 82195

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			01/05/21 01:42	1

Lab Sample ID: LCS 410-82195/73
Matrix: Water
Analysis Batch: 82195

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	180		mg/L		95	82 - 106

Lab Sample ID: 410-25255-3 DU
Matrix: Water
Analysis Batch: 82195

Client Sample ID: BT-19-W-40-20201230
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	360		363		mg/L		0.2	5

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-82423/1-A
Matrix: Water
Analysis Batch: 82498

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82423

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		01/06/21 08:18	01/06/21 10:02	1

Lab Sample ID: LCS 410-82423/2-A
Matrix: Water
Analysis Batch: 82498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82423

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	10.0	9.35		mg/L		93	93 - 100

Lab Sample ID: LCSD 410-82423/3-A
Matrix: Water
Analysis Batch: 82498

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 82423

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N	10.0	9.32		mg/L		93	93 - 100	0	5

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-82459/1
Matrix: Water
Analysis Batch: 82459

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			01/06/21 09:04	1

Method: 4500 S2 D-2011 - Sulfide, Total (Continued)

Lab Sample ID: LCS 410-82459/13
Matrix: Water
Analysis Batch: 82459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			1.01	0.985		mg/L		97	90 - 110		

Lab Sample ID: 410-25255-3 MS
Matrix: Water
Analysis Batch: 82459

Client Sample ID: BT-19-W-40-20201230
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide	ND	FL	0.471	0.398	FL	mg/L		85	90 - 110		

Lab Sample ID: 410-25255-3 MSD
Matrix: Water
Analysis Batch: 82459

Client Sample ID: BT-19-W-40-20201230
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND	FL	0.471	0.437		mg/L		93	90 - 110	9	29

Lab Sample ID: 410-25255-3 DU
Matrix: Water
Analysis Batch: 82459

Client Sample ID: BT-19-W-40-20201230
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	ND	FL	ND		mg/L		NC	5

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-82194/5
Matrix: Water
Analysis Batch: 82194

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			01/05/21 12:14	1

Lab Sample ID: LCS 410-82194/4
Matrix: Water
Analysis Batch: 82194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.8		mg/L		103	91 - 113		

Lab Sample ID: 410-25255-3 MS
Matrix: Water
Analysis Batch: 82194

Client Sample ID: BT-19-W-40-20201230
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	6.0		10.0	15.9		mg/L		99	91 - 113		

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: 410-25255-3 DU
Matrix: Water
Analysis Batch: 82194

Client Sample ID: BT-19-W-40-20201230
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	6.0			6.14		mg/L				3	3

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

GC/MS VOA

Prep Batch: 81164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	5035	
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	5035	

Analysis Batch: 82040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-2	TB-20201230	Total/NA	Water	8260C/UST	
MB 410-82040/10	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-82040/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-82040/8	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-82040/7	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-82040/9	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 82439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	8260C/UST	
MB 410-82439/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-82439/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-82439/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-82439/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-82439/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 82845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	8260C	81164
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	8260C	81164
MB 410-82845/7	Method Blank	Total/NA	Solid	8260C	
LCS 410-82845/14	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-82845/4	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-82845/15	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-82845/5	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 81601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	3546	
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	3546	
MB 410-81601/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-81601/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 82817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-81601/1-A	Method Blank	Total/NA	Solid	8270D	81601
LCS 410-81601/2-A	Lab Control Sample	Total/NA	Solid	8270D	81601

Analysis Batch: 83157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	8270D	81601
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	8270D	81601

GC/MS Semi VOA

Prep Batch: 93984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	3510C	
MB 410-93984/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-93984/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 94186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-93984/1-A	Method Blank	Total/NA	Water	8270D	93984
LCS 410-93984/2-A	Lab Control Sample	Total/NA	Water	8270D	93984

Analysis Batch: 94381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	8270D	93984

GC VOA

Prep Batch: 81691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	RSK-175	
MB 410-81691/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-81691/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-81691/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 81698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	RSK-175	81691
MB 410-81691/1-A	Method Blank	Total/NA	Water	RSK-175	81691
LCS 410-81691/2-A	Lab Control Sample	Total/NA	Water	RSK-175	81691
LCSD 410-81691/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	81691

GC Semi VOA

Prep Batch: 81425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	3546	
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	3546	
MB 410-81425/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-81425/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 81784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	8015C TPH	81425
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	8015C TPH	81425
MB 410-81425/1-A	Method Blank	Total/NA	Solid	8015C TPH	81425
LCS 410-81425/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	81425

Prep Batch: 81945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-2	TB-20201230	Total/NA	Water	8011	
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	8011	
MB 410-81945/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-81945/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-81945/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

GC Semi VOA

Prep Batch: 81962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	3510C	
MB 410-81962/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-81962/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-81962/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 82087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	8015C TPH	81962
MB 410-81962/1-A	Method Blank	Total/NA	Water	8015C TPH	81962
LCS 410-81962/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	81962
LCSD 410-81962/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	81962

Analysis Batch: 82249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-2	TB-20201230	Total/NA	Water	8011	81945
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	8011	81945
MB 410-81945/1-A	Method Blank	Total/NA	Water	8011	81945
LCS 410-81945/2-A	Lab Control Sample	Total/NA	Water	8011	81945
LCSD 410-81945/3-A	Lab Control Sample Dup	Total/NA	Water	8011	81945

Analysis Batch: 103149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	Total TPH	
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	Total TPH	
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	Total TPH	

HPLC/IC

Analysis Batch: 81262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	EPA 300.0 R2.1	
MB 410-81262/18	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-81262/17	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 81263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-81263/18	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-81263/17	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 81969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	EPA 300.0 R2.1	
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	EPA 300.0 R2.1	
MB 410-81969/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-81969/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 81235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total Recoverable	Water	3005A	
MB 410-81235/1-A	Method Blank	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 81235 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-81235/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 81272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Dissolved	Water	Filtration	
410-25255-3 MS	BT-19-W-40-20201230	Dissolved	Water	Filtration	
410-25255-3 MSD	BT-19-W-40-20201230	Dissolved	Water	Filtration	
410-25255-3 DU	BT-19-W-40-20201230	Dissolved	Water	Filtration	

Prep Batch: 81398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Dissolved	Water	Non-Digest Prep	81272
MB 410-81398/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-81398/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-25255-3 MS	BT-19-W-40-20201230	Dissolved	Water	Non-Digest Prep	81272
410-25255-3 MSD	BT-19-W-40-20201230	Dissolved	Water	Non-Digest Prep	81272
410-25255-3 DU	BT-19-W-40-20201230	Dissolved	Water	Non-Digest Prep	81272

Prep Batch: 81642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	3050B	
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	3050B	
MB 410-81642/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-81642/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 81891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total Recoverable	Water	6010C	81235
MB 410-81235/1-A	Method Blank	Total Recoverable	Water	6010C	81235
LCS 410-81235/2-A	Lab Control Sample	Total Recoverable	Water	6010C	81235

Analysis Batch: 82290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	6010C	81642
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	6010C	81642
MB 410-81642/1-A	Method Blank	Total/NA	Solid	6010C	81642
LCS 410-81642/2-A	Lab Control Sample	Total/NA	Solid	6010C	81642

Analysis Batch: 82878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Dissolved	Water	6020A	81398
MB 410-81398/1-A	Method Blank	Total/NA	Water	6020A	81398
LCS 410-81398/2-A	Lab Control Sample	Total/NA	Water	6020A	81398
410-25255-3 MS	BT-19-W-40-20201230	Dissolved	Water	6020A	81398
410-25255-3 MSD	BT-19-W-40-20201230	Dissolved	Water	6020A	81398
410-25255-3 DU	BT-19-W-40-20201230	Dissolved	Water	6020A	81398

General Chemistry

Analysis Batch: 81232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-1	BT-19-S-40-20201229	Total/NA	Solid	Moisture	
410-25255-4	BT-19-S-50-20201230	Total/NA	Solid	Moisture	

Analysis Batch: 82194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	5310C-2011	
MB 410-82194/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-82194/4	Lab Control Sample	Total/NA	Water	5310C-2011	
410-25255-3 MS	BT-19-W-40-20201230	Total/NA	Water	5310C-2011	
410-25255-3 DU	BT-19-W-40-20201230	Total/NA	Water	5310C-2011	

Analysis Batch: 82195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	2320B-2011	
MB 410-82195/72	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-82195/73	Lab Control Sample	Total/NA	Water	2320B-2011	
410-25255-3 DU	BT-19-W-40-20201230	Total/NA	Water	2320B-2011	

Prep Batch: 82423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	4500 NH3 B-2011	
MB 410-82423/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-82423/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-82423/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 82459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	4500 S2 D-2011	
MB 410-82459/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-82459/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	
410-25255-3 MS	BT-19-W-40-20201230	Total/NA	Water	4500 S2 D-2011	
410-25255-3 MSD	BT-19-W-40-20201230	Total/NA	Water	4500 S2 D-2011	
410-25255-3 DU	BT-19-W-40-20201230	Total/NA	Water	4500 S2 D-2011	

Analysis Batch: 82498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25255-3	BT-19-W-40-20201230	Total/NA	Water	4500 NH3 C-2011	82423
MB 410-82423/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	82423
LCS 410-82423/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	82423
LCSD 410-82423/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	82423

Client Sample ID: BT-19-S-40-20201229
Lab Sample ID: 410-25255-1
Date Collected: 12/29/20 16:10
Matrix: Solid
Date Received: 12/30/20 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	81232	12/31/20 01:19	PTG7	ELLE

Client Sample ID: BT-19-S-40-20201229
Lab Sample ID: 410-25255-1
Date Collected: 12/29/20 16:10
Matrix: Solid
Date Received: 12/30/20 16:35
Percent Solids: 87.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			81164	12/30/20 22:10	UK3O	ELLE
Total/NA	Analysis	8260C		1	82845	01/07/21 14:04	R64Z	ELLE
Total/NA	Prep	3546			81601	01/03/21 09:31	DN9W	ELLE
Total/NA	Analysis	8270D		1	83157	01/08/21 02:04	ULM3	ELLE
Total/NA	Prep	3546			81425	12/31/20 13:06	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	81784	01/04/21 14:12	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103149	03/15/21 08:46	UJL4	ELLE
Total/NA	Prep	3050B			81642	01/04/21 05:03	UAMX	ELLE
Total/NA	Analysis	6010C		1	82290	01/05/21 18:11	UCIG	ELLE

Client Sample ID: TB-20201230
Lab Sample ID: 410-25255-2
Date Collected: 12/30/20 00:00
Matrix: Water
Date Received: 12/30/20 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	82040	01/05/21 15:17	USEJ	ELLE
Total/NA	Prep	8011			81945	01/05/21 01:24	UKQ8	ELLE
Total/NA	Analysis	8011		1	82249	01/05/21 20:14	AC3T	ELLE

Client Sample ID: BT-19-W-40-20201230
Lab Sample ID: 410-25255-3
Date Collected: 12/30/20 09:00
Matrix: Water
Date Received: 12/30/20 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	82439	01/06/21 13:42	LCW8	ELLE
Total/NA	Prep	3510C			93984	02/13/21 09:30	U2SJ	ELLE
Total/NA	Analysis	8270D		1	94381	02/16/21 08:51	W6XI	ELLE
Total/NA	Prep	RSK-175			81691	01/04/21 08:24	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	81698	01/04/21 12:52	LXF2	ELLE
Total/NA	Prep	8011			81945	01/05/21 01:24	UKQ8	ELLE
Total/NA	Analysis	8011		1	82249	01/05/21 20:30	AC3T	ELLE
Total/NA	Prep	3510C			81962	01/05/21 01:03	USL7	ELLE
Total/NA	Analysis	8015C TPH		1	82087	01/05/21 11:40	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103149	03/15/21 08:46	UJL4	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	81262	12/31/20 07:33	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	81969	01/05/21 07:49	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		200	81969	01/05/21 08:40	GJ35	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

Client Sample ID: BT-19-W-40-20201230

Lab Sample ID: 410-25255-3

Date Collected: 12/30/20 09:00
Date Received: 12/30/20 16:35

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			81235	12/31/20 02:00	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	81891	01/04/21 17:25	UCIG	ELLE
Dissolved	Filtration	Filtration			81272	12/31/20 05:20	UDL9	ELLE
Dissolved	Prep	Non-Digest Prep			81398	12/31/20 12:05	UJLA	ELLE
Dissolved	Analysis	6020A		1	82878	01/06/21 15:40	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	82195	01/05/21 02:26	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			82423	01/06/21 08:18	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	82498	01/06/21 10:02	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	82459	01/06/21 09:04	USE1	ELLE
Total/NA	Analysis	5310C-2011		1	82194	01/05/21 12:28	KGQ6	ELLE

Client Sample ID: BT-19-S-50-20201230

Lab Sample ID: 410-25255-4

Date Collected: 12/30/20 10:50
Date Received: 12/30/20 16:35

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	81232	12/31/20 01:19	PTG7	ELLE

Client Sample ID: BT-19-S-50-20201230

Lab Sample ID: 410-25255-4

Date Collected: 12/30/20 10:50
Date Received: 12/30/20 16:35

Matrix: Solid
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			81164	12/30/20 22:10	UK3O	ELLE
Total/NA	Analysis	8260C		1	82845	01/07/21 14:27	R64Z	ELLE
Total/NA	Prep	3546			81601	01/03/21 09:31	DN9W	ELLE
Total/NA	Analysis	8270D		1	83157	01/08/21 02:27	ULM3	ELLE
Total/NA	Prep	3546			81425	12/31/20 13:06	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	81784	01/04/21 14:34	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103149	03/15/21 08:46	UJL4	ELLE
Total/NA	Prep	3050B			81642	01/04/21 05:03	UAMX	ELLE
Total/NA	Analysis	6010C		1	82290	01/05/21 18:07	UCIG	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp.
Job ID: 410-25255-1
Project/Site: PHL Belmont Terminal Drilling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling

Job ID: 410-25255-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-25255-1	BT-19-S-40-20201229	Solid	12/29/20 16:10	12/30/20 16:35	
410-25255-2	TB-20201230	Water	12/30/20 00:00	12/30/20 16:35	
410-25255-3	BT-19-W-40-20201230	Water	12/30/20 09:00	12/30/20 16:35	
410-25255-4	BT-19-S-50-20201230	Solid	12/30/20 10:50	12/30/20 16:35	

Environmental Analysis Req[illegible]tody

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Acct. # _____ Fo[illegible] only

410-25255 Chain of Custody

COC # 615410

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHC Belmont Terminal Drilling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested — Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH DRO+GRO/moisture	VOC 8260 (soil)/VOC 8260 c/o (water)	Lead/PAH 8270D	Sulfide/Metals color (including dissolved lead)	Chloride/Nitrate/Nitrogen Sulfate	EDB 8011/volatile headspace hydrocarbon	Total Alkalinity to pH 4.5	TOC	Ammonia Nitrogen		Remarks
BT-19-S-40-20201229	12/29/20	1610	X		X			6	X	X	X								
TB-20201230	12/23/20	—					X	4		X									
BT-19-W-40-20201230	12/30/20	0900	X			X		19	X	X		X	X	X	X	X	X		
BT-19-S-50-20201230	12/30/20	1050	X		X			6	X	X	X								

For Lab Use Only
FSC: _____
SCR#: 265260

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks
* lab filter dissolved lead

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]			[signature]	12/30/20	1150
[signature]	12/30/20	1603			
			[signature]	12/30/20	16:35

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 2.5 °C

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The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

KAM KAM 7044 0919

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-25255-1

Login Number: 25255 **List Source: Eurofins Lancaster Laboratories Env**
List Number: 1
Creator: Metzger, Katherine A

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-25450-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 9:44:50 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 9:44:50 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-25450-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

HPLC/IC

Qualifier	Qualifier Description
FH	MS and/or MSD recovery above control limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-25450-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-25450-1

Revision
The report being provided is a revision of the original report sent on 1/19/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/5/2021 4:40 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020A: The following sample was not filtered within 15 minutes of sample collection as required by the method: BT-13-W-40-20210105 (410-25450-4). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method 6020A: The post digestion spike (PDS) and the serial dilution (SD) were outside of the acceptance criteria for the analyte lead on the associated prep batch 410-82597. However, the matrix spike (MS) and matrix spike duplicate (MSD) recovered within the acceptance criteria. Per method the PDS and SD are not required and were not reanalyzed. Therefore, the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method SM4500NH3_C_Mod: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: BT-13-W-40-20210105 (410-25450-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-25450-1

Client Sample ID: BT-13-S-5-20210104 — Lab Sample ID: 410-25450-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	1200		280	23	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	600000		120000	50000	ug/Kg	1000	☼	8260C	Total/NA
Chrysene	44		19	3.9	ug/Kg	1	☼	8270D	Total/NA
Pyrene	130		19	3.9	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	150		70	29	mg/Kg	5	☼	8015C TPH	Total/NA
>C12-C22 (1C)	690		70	29	mg/Kg	5	☼	8015C TPH	Total/NA
Total Reported TPH	840		14	5.9	mg/Kg	1	☼	Total TPH	Total/NA
Lead	7.3		1.5	0.60	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-13-S-22-20210104 — Lab Sample ID: 410-25450-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	400		310	25	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	400		310	31	ug/Kg	50	☼	8260C	Total/NA
Benzene	1000		310	31	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	1100		310	31	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	92	J	310	25	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO	25000		6900	2700	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	480	J	620	87	ug/Kg	50	☼	8260C	Total/NA
Anthracene	31		23	4.7	ug/Kg	1	☼	8270D	Total/NA
Chrysene	9.2	J	23	4.7	ug/Kg	1	☼	8270D	Total/NA
Fluorene	210		23	4.7	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	260		23	4.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	49		23	4.7	ug/Kg	1	☼	8270D	Total/NA
Naphthalene - DL	5800		120	47	ug/Kg	5	☼	8270D	Total/NA
>C22-C44 (1C)	5.9	J	14	5.9	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	40		14	5.9	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	46		14	6.0	mg/Kg	1	☼	Total TPH	Total/NA
Lead	13		1.7	0.69	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210105 — Lab Sample ID: 410-25450-3

No Detections.

Client Sample ID: BT-13-W-40-20210105 — Lab Sample ID: 410-25450-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	110		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	37		25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	130		5.0	1.0	ug/L	5		8260C/UST	Total/NA
C4-C12-TPH-GRO	2600		250	150	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	97		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	13	J	25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	43		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Toluene	7.3		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	360		30	7.0	ug/L	5		8260C/UST	Total/NA
t-Butyl alcohol	1700		250	60	ug/L	5		8260C/UST	Total/NA
Anthracene	0.35	J	0.50	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.13	J	0.50	0.10	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.12	J	0.50	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.19	J	0.50	0.10	ug/L	1		8270D	Total/NA
Fluorene	1.3		0.50	0.10	ug/L	1		8270D	Total/NA
Naphthalene	2.0		0.50	0.10	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-13-W-40-20210105 (Continued)
Lab Sample ID: 410-25450-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	1.9		0.50	0.10	ug/L	1		8270D	Total/NA
Pyrene	0.57		0.50	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	150		5.0	3.0	ug/L	1		RSK-175	Total/NA
>C22-C44 (1C)	0.44		0.12	0.086	mg/L	1		8015C TPH	Total/NA
>C12-C22 (1C)	3.1		0.12	0.086	mg/L	1		8015C TPH	Total/NA
Total Reported TPH	3.5		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	2.2		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	41	FH	5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	150		20	10	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	46		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	5.4		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	15		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	5.2		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	77		1.0	0.24	mg/L	1		6010C	Total Recoverable
Lead	0.31	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	73		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	0.90	J	1.5	0.50	mg/L	1		4500 NH3 C-2011	Total/NA
Total Organic Carbon	33		5.0	2.5	mg/L	5		5310C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-13-S-5-20210104
Date Collected: 01/04/21 13:00
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-1
Matrix: Solid
Percent Solids: 84.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		280	23	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
1,3,5-Trimethylbenzene	ND		280	28	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
Toluene	ND		280	34	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
Methyl tertiary butyl ether	ND		280	28	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
Benzene	ND		280	28	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
1,2,4-Trimethylbenzene	ND		280	28	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
Isopropylbenzene	**1200**		280	23	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
1,2-Dibromoethane	ND		280	23	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
1,2-Dichloroethane	ND		280	34	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
t-Butyl alcohol	ND		5700	850	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50
Xylenes, Total	ND		570	80	ug/Kg	☼	01/05/21 21:47	01/08/21 01:00	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*	*01/05/21 21:47*	*01/08/21 01:00*	*50*
4-Bromofluorobenzene (Surr)	*123*		*50 - 131*	*01/05/21 21:47*	*01/08/21 01:00*	*50*
Dibromofluoromethane (Surr)	*102*		*50 - 141*	*01/05/21 21:47*	*01/08/21 01:00*	*50*
Toluene-d8 (Surr)	*122*		*52 - 141*	*01/05/21 21:47*	*01/08/21 01:00*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**600000**		120000	50000	ug/Kg	☼	01/05/21 21:47	01/08/21 15:18	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*54 - 135*	*01/05/21 21:47*	*01/08/21 15:18*	*1000*
4-Bromofluorobenzene (Surr)	*125*		*50 - 131*	*01/05/21 21:47*	*01/08/21 15:18*	*1000*
Dibromofluoromethane (Surr)	*104*		*50 - 141*	*01/05/21 21:47*	*01/08/21 15:18*	*1000*
Toluene-d8 (Surr)	*123*		*52 - 141*	*01/05/21 21:47*	*01/08/21 15:18*	*1000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		19	3.9	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Benzo[a]anthracene	ND		19	7.8	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Benzo[a]pyrene	ND		19	3.9	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Benzo[b]fluoranthene	ND		19	3.9	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Benzo[g,h,i]perylene	ND		19	3.9	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Chrysene	**44**		19	3.9	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Fluorene	ND		19	3.9	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Naphthalene	ND		19	7.8	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Phenanthrene	ND		19	3.9	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1
Pyrene	**130**		19	3.9	ug/Kg	☼	01/08/21 15:47	01/11/21 18:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*48*		*39 - 100*	*01/08/21 15:47*	*01/11/21 18:38*	*1*
Nitrobenzene-d5 (Surr)	*48*		*32 - 97*	*01/08/21 15:47*	*01/11/21 18:38*	*1*
p-Terphenyl-d14 (Surr)	*56*		*45 - 108*	*01/08/21 15:47*	*01/11/21 18:38*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**150**		70	29	mg/Kg	☼	01/06/21 16:59	01/08/21 13:32	5
>C12-C22 (1C)	**690**		70	29	mg/Kg	☼	01/06/21 16:59	01/08/21 13:32	5

Client Sample ID: BT-13-S-5-20210104 — Lab Sample ID: 410-25450-1

Date Collected: 01/04/21 13:00 — **Matrix: Solid**
Date Received: 01/05/21 16:40 — **Percent Solids: 84.5**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*8*	*S1-*	*54 - 137*	*01/06/21 16:59*	*01/08/21 13:32*	*5*
o- terphenyl (Surr) (1C)	*62*		*52 - 154*	*01/06/21 16:59*	*01/08/21 13:32*	*5*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**840**		14	5.9	mg/Kg	☼		03/10/21 17:23	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**7.3**		1.5	0.60	mg/Kg	☼	01/06/21 05:04	01/11/21 10:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**15.5**		1.0	1.0	%			01/05/21 18:21	1

Client Sample ID: BT-13-S-22-20210104 — Lab Sample ID: 410-25450-2

Date Collected: 01/04/21 16:00 — **Matrix: Solid**
Date Received: 01/05/21 16:40 — **Percent Solids: 83.7**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**400**		310	25	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
1,3,5-Trimethylbenzene	**400**		310	31	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
Toluene	ND		310	37	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
Methyl tertiary butyl ether	ND		310	31	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
Benzene	**1000**		310	31	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
1,2,4-Trimethylbenzene	**1100**		310	31	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
Isopropylbenzene	**92**	**J**	310	25	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
1,2-Dibromoethane	ND		310	25	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
1,2-Dichloroethane	ND		310	37	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
C4-C12-TPH-GRO	**25000**		6900	2700	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
t-Butyl alcohol	ND		6200	940	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50
Xylenes, Total	**480**	**J**	620	87	ug/Kg	☼	01/05/21 21:47	01/08/21 01:20	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*120*		*54 - 135*	*01/05/21 21:47*	*01/08/21 01:20*	*50*
4-Bromofluorobenzene (Surr)	*106*		*50 - 131*	*01/05/21 21:47*	*01/08/21 01:20*	*50*
Dibromofluoromethane (Surr)	*115*		*50 - 141*	*01/05/21 21:47*	*01/08/21 01:20*	*50*
Toluene-d8 (Surr)	*114*		*52 - 141*	*01/05/21 21:47*	*01/08/21 01:20*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**31**		23	4.7	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1
Benzo[a]anthracene	ND		23	9.3	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1
Benzo[a]pyrene	ND		23	4.7	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1
Benzo[b]fluoranthene	ND		23	4.7	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1
Benzo[g,h,i]perylene	ND		23	4.7	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1
Chrysene	**9.2**	**J**	23	4.7	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1
Fluorene	**210**		23	4.7	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1
Phenanthrene	**260**		23	4.7	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1
Pyrene	**49**		23	4.7	ug/Kg	☼	01/08/21 15:47	01/11/21 19:00	1

Client Sample ID: BT-13-S-22-20210104

Date Collected: 01/04/21 16:00
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-2

Matrix: Solid
Percent Solids: 83.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	67		39 - 100	01/08/21 15:47	01/11/21 19:00	1
Nitrobenzene-d5 (Surr)	74		32 - 97	01/08/21 15:47	01/11/21 19:00	1
p-Terphenyl-d14 (Surr)	83		45 - 108	01/08/21 15:47	01/11/21 19:00	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5800		120	47	ug/Kg	☼	01/08/21 15:47	01/13/21 13:30	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	70		39 - 100	01/08/21 15:47	01/13/21 13:30	5
Nitrobenzene-d5 (Surr)	72		32 - 97	01/08/21 15:47	01/13/21 13:30	5
p-Terphenyl-d14 (Surr)	79		45 - 108	01/08/21 15:47	01/13/21 13:30	5

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	5.9	J	14	5.9	mg/Kg	☼	01/06/21 16:59	01/07/21 15:30	1
>C12-C22 (1C)	40		14	5.9	mg/Kg	☼	01/06/21 16:59	01/07/21 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	23	S1-	54 - 137	01/06/21 16:59	01/07/21 15:30	1
o- terphenyl (Surr) (1C)	33	S1-	52 - 154	01/06/21 16:59	01/07/21 15:30	1

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	46		14	6.0	mg/Kg	☼		03/10/21 17:23	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	13		1.7	0.69	mg/Kg	☼	01/06/21 05:04	01/11/21 10:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.3		1.0	1.0	%			01/05/21 18:21	1

Client Sample ID: TB-20210105

Date Collected: 01/05/21 00:00
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-3

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/15/21 13:54	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/15/21 13:54	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/15/21 13:54	1
Benzene	ND		1.0	0.20	ug/L			01/15/21 13:54	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/15/21 13:54	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/15/21 13:54	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/15/21 13:54	1
Toluene	ND		1.0	0.20	ug/L			01/15/21 13:54	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/15/21 13:54	1
t-Butyl alcohol	ND		50	12	ug/L			01/15/21 13:54	1

Client Sample ID: TB-20210105 — Lab Sample ID: 410-25450-3

Date Collected: 01/05/21 00:00 — **Matrix: Water**
Date Received: 01/05/21 16:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/15/21 13:54*	*1*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*01/15/21 13:54*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*01/15/21 13:54*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*01/15/21 13:54*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/06/21 07:53	01/06/21 13:43	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/06/21 07:53	01/06/21 13:43	1
Methane (1C)	ND		5.0	3.0	ug/L		01/06/21 07:53	01/06/21 13:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*81*		*28 - 140*	*01/06/21 07:53*	*01/06/21 13:43*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		01/06/21 22:41	01/08/21 11:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	*79*		*46 - 136*	*01/06/21 22:41*	*01/08/21 11:03*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*96*		*46 - 136*	*01/06/21 22:41*	*01/08/21 11:03*	*1*

Client Sample ID: BT-13-W-40-20210105 — Lab Sample ID: 410-25450-4

Date Collected: 01/05/21 12:40 — **Matrix: Water**
Date Received: 01/05/21 16:40

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**110**		25	5.0	ug/L			01/15/21 14:42	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			01/15/21 14:42	5
1,3,5-Trimethylbenzene	**37**		25	1.5	ug/L			01/15/21 14:42	5
Benzene	**130**		5.0	1.0	ug/L			01/15/21 14:42	5
C4-C12-TPH-GRO	**2600**		250	150	ug/L			01/15/21 14:42	5
Ethylbenzene	**97**		5.0	2.0	ug/L			01/15/21 14:42	5
Isopropylbenzene	**13**	**J**	25	1.0	ug/L			01/15/21 14:42	5
Methyl tertiary butyl ether	**43**		5.0	1.0	ug/L			01/15/21 14:42	5
Toluene	**7.3**		5.0	1.0	ug/L			01/15/21 14:42	5
Xylenes, Total	**360**		30	7.0	ug/L			01/15/21 14:42	5
t-Butyl alcohol	**1700**		250	60	ug/L			01/15/21 14:42	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*01/15/21 14:42*	*5*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/15/21 14:42*	*5*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*01/15/21 14:42*	*5*
Toluene-d8 (Surr)	*109*		*80 - 120*		*01/15/21 14:42*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.35**	**J**	0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1
Benzo[a]anthracene	**0.13**	**J**	0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1
Benzo[a]pyrene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1
Benzo[b]fluoranthene	**0.12**	**J**	0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1

Client Sample ID: BT-13-W-40-20210105

Date Collected: 01/05/21 12:40
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1
Chrysene	**0.19**	**J**	0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1
Fluorene	**1.3**		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1
Naphthalene	**2.0**		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1
Phenanthrene	**1.9**		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1
Pyrene	**0.57**		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*44 - 102*	*01/12/21 09:30*	*01/13/21 16:44*	*1*
Nitrobenzene-d5 (Surr)	*76*		*23 - 128*	*01/12/21 09:30*	*01/13/21 16:44*	*1*
p-Terphenyl-d14 (Surr)	*68*		*31 - 113*	*01/12/21 09:30*	*01/13/21 16:44*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/06/21 07:53	01/06/21 14:01	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/06/21 07:53	01/06/21 14:01	1
Methane (1C)	**150**		5.0	3.0	ug/L		01/06/21 07:53	01/06/21 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*87*		*28 - 140*	*01/06/21 07:53*	*01/06/21 14:01*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		01/07/21 04:59	01/08/21 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*87*		*46 - 136*	*01/07/21 04:59*	*01/08/21 15:14*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*102*		*46 - 136*	*01/07/21 04:59*	*01/08/21 15:14*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**0.44**		0.12	0.086	mg/L		01/06/21 20:35	01/07/21 13:43	1
>C12-C22 (1C)	**3.1**		0.12	0.086	mg/L		01/06/21 20:35	01/07/21 13:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*62*		*21 - 116*	*01/06/21 20:35*	*01/07/21 13:43*	*1*
o- terphenyl (Surr) (1C)	*88*		*51 - 126*	*01/06/21 20:35*	*01/07/21 13:43*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**3.5**		0.20	0.074	mg/L			03/10/21 17:23	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**2.2**		0.50	0.25	mg/L			01/06/21 10:03	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**41**	**FH**	5.0	1.5	mg/L			01/06/21 10:03	5
Chloride	**150**		20	10	mg/L			01/07/21 02:58	50

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-25450-1

Client Sample ID: BT-13-W-40-20210105

Date Collected: 01/05/21 12:40
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-4

Matrix: Water

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	46		0.50	0.096	mg/L		01/06/21 05:55	01/12/21 09:39	1
Iron	5.4		0.20	0.040	mg/L		01/06/21 05:55	01/12/21 09:39	1
Magnesium	15		0.10	0.040	mg/L		01/06/21 05:55	01/12/21 09:39	1
Potassium	5.2		0.50	0.20	mg/L		01/06/21 05:55	01/12/21 11:29	1
Sodium	77		1.0	0.24	mg/L		01/06/21 05:55	01/12/21 09:39	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.31	J	0.52	0.073	ug/L		01/06/21 14:54	01/07/21 18:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	73		8.0	8.0	mg/L			01/06/21 23:47	1
Ammonia-N	0.90	J	1.5	0.50	mg/L		01/07/21 08:45	01/07/21 10:57	1
Sulfide	ND		0.30	0.10	mg/L			01/06/21 09:04	1
Total Organic Carbon	33		5.0	2.5	mg/L			01/06/21 13:42	5

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-25450-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-25450-1	BT-13-S-5-20210104	108	123	102	122
410-25450-1 - DL	BT-13-S-5-20210104	111	125	104	123
410-25450-2	BT-13-S-22-20210104	120	106	115	114
LCS 410-83089/5	Lab Control Sample	104	90	101	96
LCS 410-83089/7	Lab Control Sample	105	91	100	98
LCS 410-83217/5	Lab Control Sample	99	88	97	93
LCS 410-83217/7	Lab Control Sample	101	90	97	97
LCSD 410-83089/6	Lab Control Sample Dup	103	90	103	96
LCSD 410-83089/8	Lab Control Sample Dup	108	94	105	102
LCSD 410-83217/6	Lab Control Sample Dup	100	87	97	93
LCSD 410-83217/8	Lab Control Sample Dup	100	89	96	96
MB 410-83089/12	Method Blank	102	88	99	97
MB 410-83217/10	Method Blank	104	88	98	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-25450-3	TB-20210105	101	88	96	108
410-25450-4	BT-13-W-40-20210105	102	89	95	109
LCS 410-85173/5	Lab Control Sample	105	89	96	110
LCS 410-85173/6	Lab Control Sample	103	89	98	112
LCSD 410-85173/7	Lab Control Sample Dup	102	91	97	112
MB 410-85173/8	Method Blank	101	89	97	108

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-25450-1	BT-13-S-5-20210104	48	48	56
410-25450-2	BT-13-S-22-20210104	67	74	83
410-25450-2 - DL	BT-13-S-22-20210104	70	72	79
LCS 410-83383/2-A	Lab Control Sample	76	72	90
MB 410-83383/1-A	Method Blank	73	68	85

Surrogate Legend

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-25450-1
Project/Site: PHL Belmont Terminal Drilling Sampling

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)
410-25450-4	BT-13-W-40-20210105	76	76	68
LCS 410-83911/2-A	Lab Control Sample	76	78	91
MB 410-83911/1-A	Method Blank	79	81	96

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-25450-3	TB-20210105	81
410-25450-4	BT-13-W-40-20210105	87
LCS 410-82401/2-A	Lab Control Sample	95
LCSD 410-82401/3-A	Lab Control Sample Dup	98
MB 410-82401/1-A	Method Blank	102

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1122TCA1	1122TCA2
Lab Sample ID	Client Sample ID	(46-136)	(46-136)
410-25450-3	TB-20210105	79	96
410-25450-4	BT-13-W-40-20210105	87	102
410-25450-4 MS	BT-13-W-40-20210105	85	105
LCS 410-82733/2-A	Lab Control Sample	80	98
LCS 410-82782/2-A	Lab Control Sample	85	100
LCSD 410-82733/3-A	Lab Control Sample Dup	79	96
LCSD 410-82782/3-A	Lab Control Sample Dup	92	106
MB 410-82733/1-A	Method Blank	87	103
MB 410-82782/1-A	Method Blank	90	108

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-25450-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)
410-25450-1	BT-13-S-5-20210104	8 S1-	62
410-25450-1 DU	BT-13-S-5-20210104	22 S1-	105
410-25450-1 MS	BT-13-S-5-20210104	23 S1-	75
410-25450-2	BT-13-S-22-20210104	23 S1-	33 S1-
LCS 410-82642/2-A	Lab Control Sample	72	104
MB 410-82642/1-A	Method Blank	79	96

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	CBNZ1 (21-116)	OTP1 (51-126)
410-25450-4	BT-13-W-40-20210105	62	88
LCS 410-82709/2-A	Lab Control Sample	64	96
LCSD 410-82709/3-A	Lab Control Sample Dup	45	79
MB 410-82709/1-A	Method Blank	56	82

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-25450-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-83089/12
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			01/07/21 22:12	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			01/07/21 22:12	50
Toluene	ND		250	30	ug/Kg			01/07/21 22:12	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			01/07/21 22:12	50
Benzene	ND		250	25	ug/Kg			01/07/21 22:12	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			01/07/21 22:12	50
Isopropylbenzene	ND		250	20	ug/Kg			01/07/21 22:12	50
1,2-Dibromoethane	ND		250	20	ug/Kg			01/07/21 22:12	50
1,2-Dichloroethane	ND		250	30	ug/Kg			01/07/21 22:12	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			01/07/21 22:12	50
t-Butyl alcohol	ND		5000	750	ug/Kg			01/07/21 22:12	50
Xylenes, Total	ND		500	70	ug/Kg			01/07/21 22:12	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*		*01/07/21 22:12*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*01/07/21 22:12*	*50*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*01/07/21 22:12*	*50*
Toluene-d8 (Surr)	*97*		*52 - 141*		*01/07/21 22:12*	*50*

Lab Sample ID: LCS 410-83089/5
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	994		ug/Kg		99	78 - 120
1,3,5-Trimethylbenzene	1000	964		ug/Kg		96	73 - 120
Toluene	1000	1010		ug/Kg		101	80 - 120
Methyl tertiary butyl ether	1000	1100		ug/Kg		110	72 - 120
Benzene	1000	1040		ug/Kg		104	80 - 120
Naphthalene	1000	986		ug/Kg		99	48 - 130
1,2,4-Trimethylbenzene	1000	956		ug/Kg		96	73 - 120
Isopropylbenzene	1000	1020		ug/Kg		102	77 - 120
1,2-Dibromoethane	1000	1080		ug/Kg		108	76 - 120
1,2-Dichloroethane	1000	988		ug/Kg		99	71 - 128
t-Butyl alcohol	10000	9920		ug/Kg		99	74 - 121
Xylenes, Total	3000	3100		ug/Kg		103	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-83089/7
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	47800		ug/Kg		96	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*
4-Bromofluorobenzene (Surr)	*91*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-83089/6
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	1000		ug/Kg		100	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	963		ug/Kg		96	73 - 120	0	30
Toluene			1000	1020		ug/Kg		102	80 - 120	1	30
Methyl tertiary butyl ether			1000	1120		ug/Kg		112	72 - 120	1	30
Benzene			1000	1040		ug/Kg		104	80 - 120	1	30
Naphthalene			1000	1000		ug/Kg		100	48 - 130	2	30
1,2,4-Trimethylbenzene			1000	955		ug/Kg		96	73 - 120	0	30
Isopropylbenzene			1000	1030		ug/Kg		103	77 - 120	0	30
1,2-Dibromoethane			1000	1090		ug/Kg		109	76 - 120	1	30
1,2-Dichloroethane			1000	1010		ug/Kg		101	71 - 128	2	30
t-Butyl alcohol			10000	11100		ug/Kg		111	74 - 121	11	30
Xylenes, Total			3000	3090		ug/Kg		103	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCSD 410-83089/8
Matrix: Solid
Analysis Batch: 83089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	52200		ug/Kg		104	75 - 120	9	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*102*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-83217/10
Matrix: Solid
Analysis Batch: 83217

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			01/08/21 13:47	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			01/08/21 13:47	50
Toluene	ND		250	30	ug/Kg			01/08/21 13:47	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			01/08/21 13:47	50
Benzene	ND		250	25	ug/Kg			01/08/21 13:47	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			01/08/21 13:47	50
Isopropylbenzene	ND		250	20	ug/Kg			01/08/21 13:47	50
1,2-Dibromoethane	ND		250	20	ug/Kg			01/08/21 13:47	50
1,2-Dichloroethane	ND		250	30	ug/Kg			01/08/21 13:47	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			01/08/21 13:47	50
t-Butyl alcohol	ND		5000	750	ug/Kg			01/08/21 13:47	50
Xylenes, Total	ND		500	70	ug/Kg			01/08/21 13:47	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*		*01/08/21 13:47*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*01/08/21 13:47*	*50*
Dibromofluoromethane (Surr)	*98*		*50 - 141*		*01/08/21 13:47*	*50*
Toluene-d8 (Surr)	*96*		*52 - 141*		*01/08/21 13:47*	*50*

Lab Sample ID: LCS 410-83217/5
Matrix: Solid
Analysis Batch: 83217

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	970		ug/Kg		97	78 - 120
1,3,5-Trimethylbenzene	1000	940		ug/Kg		94	73 - 120
Toluene	1000	995		ug/Kg		99	80 - 120
Methyl tertiary butyl ether	1000	974		ug/Kg		97	72 - 120
Benzene	1000	1020		ug/Kg		102	80 - 120
Naphthalene	1000	970		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	1000	939		ug/Kg		94	73 - 120
Isopropylbenzene	1000	982		ug/Kg		98	77 - 120
1,2-Dibromoethane	1000	1050		ug/Kg		105	76 - 120
1,2-Dichloroethane	1000	948		ug/Kg		95	71 - 128
t-Butyl alcohol	10000	9120		ug/Kg		91	74 - 121
Xylenes, Total	3000	3000		ug/Kg		100	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*93*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-83217/7 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 83217

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1000		ug/Kg		100	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-83217/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 83217

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	972		ug/Kg		97	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	945		ug/Kg		95	73 - 120	1	30
Toluene			1000	993		ug/Kg		99	80 - 120	0	30
Methyl tertiary butyl ether			1000	987		ug/Kg		99	72 - 120	1	30
Benzene			1000	1020		ug/Kg		102	80 - 120	0	30
Naphthalene			1000	978		ug/Kg		98	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	940		ug/Kg		94	73 - 120	0	30
Isopropylbenzene			1000	980		ug/Kg		98	77 - 120	0	30
1,2-Dibromoethane			1000	1040		ug/Kg		104	76 - 120	2	30
1,2-Dichloroethane			1000	959		ug/Kg		96	71 - 128	1	30
t-Butyl alcohol			10000	9360		ug/Kg		94	74 - 121	3	30
Xylenes, Total			3000	2990		ug/Kg		100	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*93*		*52 - 141*

Lab Sample ID: LCSD 410-83217/8 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 83217

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1010		ug/Kg		101	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-85173/8
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/15/21 12:18	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/15/21 12:18	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/15/21 12:18	1
Benzene	ND		1.0	0.20	ug/L			01/15/21 12:18	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/15/21 12:18	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/15/21 12:18	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/15/21 12:18	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Toluene	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/15/21 12:18	1
t-Butyl alcohol	ND		50	12	ug/L			01/15/21 12:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/15/21 12:18*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/15/21 12:18*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*01/15/21 12:18*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*01/15/21 12:18*	*1*

Lab Sample ID: LCS 410-85173/5
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.5		ug/L		98	75 - 120
1,2-Dichloroethane	20.0	16.0		ug/L		80	73 - 124
1,3,5-Trimethylbenzene	20.0	19.3		ug/L		96	75 - 120
Benzene	20.0	16.5		ug/L		83	80 - 120
Ethylbenzene	20.0	19.9		ug/L		100	80 - 120
Isopropylbenzene	20.0	18.2		ug/L		91	80 - 120
Methyl tertiary butyl ether	20.0	15.7		ug/L		78	69 - 122
Naphthalene	20.0	18.2		ug/L		91	53 - 124
Toluene	20.0	19.4		ug/L		97	80 - 120
Xylenes, Total	60.0	55.9		ug/L		93	80 - 120
t-Butyl alcohol	200	198		ug/L		99	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*110*		*80 - 120*

Lab Sample ID: LCS 410-85173/6
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	881		ug/L		88	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-85173/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 85173

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCSD 410-85173/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 85173

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	915		ug/L		91	67 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-83383/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 83561 — **Prep Batch: 83383**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Chrysene	ND		17	3.3	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Fluorene	ND		17	3.3	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Naphthalene	ND		17	6.7	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Phenanthrene	ND		17	3.3	ug/Kg		01/08/21 15:47	01/11/21 10:23	1
Pyrene	ND		17	3.3	ug/Kg		01/08/21 15:47	01/11/21 10:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*39 - 100*	*01/08/21 15:47*	*01/11/21 10:23*	*1*
Nitrobenzene-d5 (Surr)	*68*		*32 - 97*	*01/08/21 15:47*	*01/11/21 10:23*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*	*01/08/21 15:47*	*01/11/21 10:23*	*1*

Lab Sample ID: LCS 410-83383/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 83561 — **Prep Batch: 83383**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			1670	1650		ug/Kg		99	75 - 114		
Benzo[a]anthracene			1670	1610		ug/Kg		97	73 - 114		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-83383/2-A
Matrix: Solid
Analysis Batch: 83561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83383

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	1670	1480		ug/Kg		89	76 - 113
Benzo[b]fluoranthene	1670	1460		ug/Kg		87	73 - 117
Benzo[g,h,i]perylene	1670	1660		ug/Kg		99	77 - 114
Chrysene	1670	1610		ug/Kg		97	66 - 111
Fluorene	1670	1480		ug/Kg		89	62 - 110
Naphthalene	1670	1290		ug/Kg		78	60 - 94
Phenanthrene	1670	1650		ug/Kg		99	74 - 112
Pyrene	1670	1610		ug/Kg		97	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*76*		*39 - 100*
Nitrobenzene-d5 (Surr)	*72*		*32 - 97*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*

Lab Sample ID: MB 410-83911/1-A
Matrix: Water
Analysis Batch: 84223

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83911

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Benzo[a]pyrene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Chrysene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Fluorene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Naphthalene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Phenanthrene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1
Pyrene	ND		0.50	0.10	ug/L		01/12/21 09:30	01/13/21 03:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*44 - 102*	*01/12/21 09:30*	*01/13/21 03:41*	*1*
Nitrobenzene-d5 (Surr)	*81*		*23 - 128*	*01/12/21 09:30*	*01/13/21 03:41*	*1*
p-Terphenyl-d14 (Surr)	*96*		*31 - 113*	*01/12/21 09:30*	*01/13/21 03:41*	*1*

Lab Sample ID: LCS 410-83911/2-A
Matrix: Water
Analysis Batch: 84223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83911

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	45.7		ug/L		91	61 - 117
Benzo[a]anthracene	50.0	47.2		ug/L		94	61 - 126
Benzo[a]pyrene	50.0	42.7		ug/L		85	60 - 116
Benzo[b]fluoranthene	50.0	42.7		ug/L		85	61 - 119
Benzo[g,h,i]perylene	50.0	43.0		ug/L		86	54 - 120
Chrysene	50.0	48.3		ug/L		97	65 - 121
Fluorene	50.0	43.2		ug/L		86	56 - 115
Naphthalene	50.0	38.4		ug/L		77	51 - 102

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-83911/2-A
Matrix: Water
Analysis Batch: 84223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Phenanthrene			50.0	45.5		ug/L		91	65 - 113		
Pyrene			50.0	43.4		ug/L		87	65 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*76*		*44 - 102*
Nitrobenzene-d5 (Surr)	*78*		*23 - 128*
p-Terphenyl-d14 (Surr)	*91*		*31 - 113*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-82401/1-A
Matrix: Water
Analysis Batch: 82414

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82401

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/06/21 07:53	01/06/21 10:04	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/06/21 07:53	01/06/21 10:04	1
Methane (1C)	ND		5.0	3.0	ug/L		01/06/21 07:53	01/06/21 10:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*102*		*28 - 140*	*01/06/21 07:53*	*01/06/21 10:04*	*1*

Lab Sample ID: LCS 410-82401/2-A
Matrix: Water
Analysis Batch: 82414

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82401

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	61.8		ug/L		104	85 - 115		
Ethene (1C)			60.4	63.0		ug/L		104	83 - 115		
Methane (1C)			59.4	61.6		ug/L		104	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*95*		*28 - 140*

Lab Sample ID: LCSD 410-82401/3-A
Matrix: Water
Analysis Batch: 82414

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 82401

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	63.0		ug/L		106	85 - 115	2	20
Ethene (1C)			60.4	64.1		ug/L		106	83 - 115	2	20
Methane (1C)			59.4	65.6		ug/L		110	85 - 115	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*98*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-82733/1-A
Matrix: Water
Analysis Batch: 83115

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82733

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/06/21 22:41	01/07/21 19:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*87*		*46 - 136*	*01/06/21 22:41*	*01/07/21 19:58*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*103*		*46 - 136*	*01/06/21 22:41*	*01/07/21 19:58*	*1*

Lab Sample ID: LCS 410-82733/2-A
Matrix: Water
Analysis Batch: 83115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82733

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.116		ug/L		90	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*80*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*98*		*46 - 136*

Lab Sample ID: LCSD 410-82733/3-A
Matrix: Water
Analysis Batch: 83115

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 82733

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.109		ug/L		85	60 - 140	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*79*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*96*		*46 - 136*

Lab Sample ID: MB 410-82782/1-A
Matrix: Water
Analysis Batch: 83115

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82782

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/07/21 04:59	01/07/21 21:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*90*		*46 - 136*	*01/07/21 04:59*	*01/07/21 21:38*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*108*		*46 - 136*	*01/07/21 04:59*	*01/07/21 21:38*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-82782/2-A
Matrix: Water
Analysis Batch: 83115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82782

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.116		ug/L		91	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*100*		*46 - 136*

Lab Sample ID: LCSD 410-82782/3-A
Matrix: Water
Analysis Batch: 83115

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 82782

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.118		ug/L		92	60 - 140	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*92*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*

Lab Sample ID: 410-25450-4 MS
Matrix: Water
Analysis Batch: 83115

Client Sample ID: BT-13-W-40-20210105
Prep Type: Total/NA
Prep Batch: 82782

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)	ND		0.122	0.106		ug/L		87	60 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-82642/1-A
Matrix: Solid
Analysis Batch: 82929

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82642

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		01/06/21 16:59	01/07/21 14:26	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		01/06/21 16:59	01/07/21 14:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*79*		*54 - 137*	*01/06/21 16:59*	*01/07/21 14:26*	*1*
o- terphenyl (Surr) (1C)	*96*		*52 - 154*	*01/06/21 16:59*	*01/07/21 14:26*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 410-82642/2-A
Matrix: Solid
Analysis Batch: 82929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82642

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	115		mg/Kg		86	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*
o- terphenyl (Surr) (1C)	*104*		*52 - 154*

Lab Sample ID: 410-25450-1 MS
Matrix: Solid
Analysis Batch: 83323

Client Sample ID: BT-13-S-5-20210104
Prep Type: Total/NA
Prep Batch: 82642

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	830		158	792	4	mg/Kg	☼	-25	64 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*23*	*S1-*	*54 - 137*
o- terphenyl (Surr) (1C)	*75*		*52 - 154*

Lab Sample ID: 410-25450-1 DU
Matrix: Solid
Analysis Batch: 83323

Client Sample ID: BT-13-S-5-20210104
Prep Type: Total/NA
Prep Batch: 82642

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C22-C44 (1C)	150			82.8		mg/Kg	☼			59	
>C12-C22 (1C)	690			503		mg/Kg	☼			32	

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*22*	*S1-*	*54 - 137*
o- terphenyl (Surr) (1C)	*105*		*52 - 154*

Lab Sample ID: MB 410-82709/1-A
Matrix: Water
Analysis Batch: 82929

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82709

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.10	0.074	mg/L		01/06/21 20:35	01/07/21 12:39	1
>C12-C22 (1C)	ND		0.10	0.074	mg/L		01/06/21 20:35	01/07/21 12:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*56*		*21 - 116*	*01/06/21 20:35*	*01/07/21 12:39*	*1*
o- terphenyl (Surr) (1C)	*82*		*51 - 126*	*01/06/21 20:35*	*01/07/21 12:39*	*1*

Lab Sample ID: LCS 410-82709/2-A
Matrix: Water
Analysis Batch: 82929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82709

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.805	0.573		mg/L		71	53 - 115		

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 410-82709/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 82929 — **Prep Batch: 82709**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	64		21 - 116
o- terphenyl (Surr) (1C)	96		51 - 126

Lab Sample ID: LCSD 410-82709/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 82929 — **Prep Batch: 82709**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.805	0.476		mg/L		59	53 - 115	19	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Chlorobenzene (Surr) (1C)	45		21 - 116
o- terphenyl (Surr) (1C)	79		51 - 126

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-82346/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 82346

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			01/06/21 09:45	1

Lab Sample ID: LCS 410-82346/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 82346

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.740		mg/L		99	90 - 110		

Lab Sample ID: 410-25450-4 MS — **Client Sample ID: BT-13-W-40-20210105**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 82346

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate	2.2		2.50	4.81		mg/L		104	90 - 110		

Lab Sample ID: 410-25450-4 DU — **Client Sample ID: BT-13-W-40-20210105**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 82346

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrogen, Nitrate	2.2			2.26		mg/L				2	15

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-82345/4
Matrix: Water
Analysis Batch: 82345

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/06/21 09:45	1

Lab Sample ID: LCS 410-82345/3
Matrix: Water
Analysis Batch: 82345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.35		mg/L		98	90 - 110

Lab Sample ID: 410-25450-4 MS
Matrix: Water
Analysis Batch: 82345

Client Sample ID: BT-13-W-40-20210105
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	41	FH	25.0	69.6	FH	mg/L		114	90 - 110

Lab Sample ID: 410-25450-4 DU
Matrix: Water
Analysis Batch: 82345

Client Sample ID: BT-13-W-40-20210105
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	41	FH	41.3		mg/L		0.08	15

Lab Sample ID: MB 410-82630/4
Matrix: Water
Analysis Batch: 82630

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/07/21 02:41	1
Chloride	ND		0.40	0.20	mg/L			01/07/21 02:41	1

Lab Sample ID: LCS 410-82630/3
Matrix: Water
Analysis Batch: 82630

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	8.17		mg/L		109	90 - 110
Chloride	3.00	3.30		mg/L		110	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-82044/1-A
Matrix: Solid
Analysis Batch: 83673

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82044

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.56	mg/Kg		01/05/21 08:20	01/11/21 10:09	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-82044/2-A
Matrix: Solid
Analysis Batch: 83673

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82044

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.91	2.77		mg/Kg		95	80 - 120

Lab Sample ID: MB 410-82295/1-A
Matrix: Water
Analysis Batch: 83998

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 82295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		01/05/21 19:17	01/12/21 09:27	1
Iron	ND		0.20	0.040	mg/L		01/05/21 19:17	01/12/21 09:27	1
Magnesium	ND		0.10	0.040	mg/L		01/05/21 19:17	01/12/21 09:27	1
Sodium	ND		1.0	0.24	mg/L		01/05/21 19:17	01/12/21 09:27	1

Lab Sample ID: MB 410-82295/1-A
Matrix: Water
Analysis Batch: 84038

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 82295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.50	0.20	mg/L		01/05/21 19:17	01/12/21 11:19	1

Lab Sample ID: LCS 410-82295/2-A
Matrix: Water
Analysis Batch: 83998

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 82295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.395	J	mg/L		99	80 - 120
Iron	0.400	0.395		mg/L		99	80 - 120
Magnesium	0.200	0.192		mg/L		96	80 - 120
Sodium	2.00	1.99		mg/L		100	80 - 120

Lab Sample ID: LCS 410-82295/2-A
Matrix: Water
Analysis Batch: 84038

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 82295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	6.00	5.76		mg/L		96	80 - 120

Lab Sample ID: LCSD 410-82295/3-A
Matrix: Water
Analysis Batch: 83998

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 82295

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	0.400	0.389	J	mg/L		97	80 - 120	2	20
Iron	0.400	0.387		mg/L		97	80 - 120	2	20
Magnesium	0.200	0.192		mg/L		96	80 - 120	0	20
Sodium	2.00	1.98		mg/L		99	80 - 120	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 410-82295/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 84038 — **Prep Batch: 82295**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Potassium			6.00	5.76		mg/L		96	80 - 120	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-82597/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 83265 — **Prep Batch: 82597**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		01/06/21 14:54	01/07/21 18:04	1

Lab Sample ID: LCS 410-82597/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 83265 — **Prep Batch: 82597**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			30.0	30.4		ug/L		101	90 - 115		

Lab Sample ID: 410-25450-4 MS — **Client Sample ID: BT-13-W-40-20210105**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 83265 — **Prep Batch: 82597**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead	0.31	J	30.0	31.5		ug/L		104	75 - 125		

Lab Sample ID: 410-25450-4 MSD — **Client Sample ID: BT-13-W-40-20210105**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 83265 — **Prep Batch: 82597**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.31	J	30.0	31.1		ug/L		103	75 - 125	1	20

Lab Sample ID: 410-25450-4 DU — **Client Sample ID: BT-13-W-40-20210105**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 83265 — **Prep Batch: 82597**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Lead	0.31	J		0.288	J	ug/L				6	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-83043/61 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 83043

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			01/06/21 23:13	1

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: LCS 410-83043/62
Matrix: Water
Analysis Batch: 83043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	160		mg/L		85	82 - 106

Lab Sample ID: 410-25450-4 DU
Matrix: Water
Analysis Batch: 83043

Client Sample ID: BT-13-W-40-20210105
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	73		73.1		mg/L		0.6	5

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-82930/1-A
Matrix: Water
Analysis Batch: 82941

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		01/07/21 08:45	01/07/21 10:57	1

Lab Sample ID: LCS 410-82930/2-A
Matrix: Water
Analysis Batch: 82941

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	10.0	9.32		mg/L		93	93 - 100

Lab Sample ID: LCSD 410-82930/3-A
Matrix: Water
Analysis Batch: 82941

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 82930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N	10.0	9.38		mg/L		94	93 - 100	1	5

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-82459/1
Matrix: Water
Analysis Batch: 82459

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			01/06/21 09:04	1

Lab Sample ID: LCS 410-82459/13
Matrix: Water
Analysis Batch: 82459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1.01	0.985		mg/L		97	90 - 110

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-25450-1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-82908/5
Matrix: Water
Analysis Batch: 82908

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			01/06/21 12:47	1

Lab Sample ID: LCS 410-82908/4
Matrix: Water
Analysis Batch: 82908

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	24.0		mg/L		96	91 - 113

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-25450-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 82331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	5035	
410-25450-1 - DL	BT-13-S-5-20210104	Total/NA	Solid	5035	
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	5035	

Analysis Batch: 83089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	8260C	82331
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	8260C	82331
MB 410-83089/12	Method Blank	Total/NA	Solid	8260C	
LCS 410-83089/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-83089/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-83089/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-83089/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 83217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1 - DL	BT-13-S-5-20210104	Total/NA	Solid	8260C	82331
MB 410-83217/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-83217/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-83217/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-83217/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-83217/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 85173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-3	TB-20210105	Total/NA	Water	8260C/UST	
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	8260C/UST	
MB 410-85173/8	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-85173/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-85173/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-85173/7	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 83383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	3546	
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	3546	
410-25450-2 - DL	BT-13-S-22-20210104	Total/NA	Solid	3546	
MB 410-83383/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-83383/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 83561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	8270D	83383
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	8270D	83383
MB 410-83383/1-A	Method Blank	Total/NA	Solid	8270D	83383
LCS 410-83383/2-A	Lab Control Sample	Total/NA	Solid	8270D	83383

GC/MS Semi VOA

Prep Batch: 83911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	3510C	
MB 410-83911/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-83911/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 84223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-83911/1-A	Method Blank	Total/NA	Water	8270D	83911
LCS 410-83911/2-A	Lab Control Sample	Total/NA	Water	8270D	83911

Analysis Batch: 84353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	8270D	83911

Analysis Batch: 84372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-2 - DL	BT-13-S-22-20210104	Total/NA	Solid	8270D	83383

GC VOA

Prep Batch: 82401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-3	TB-20210105	Total/NA	Water	RSK-175	
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	RSK-175	
MB 410-82401/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-82401/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-82401/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 82414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-3	TB-20210105	Total/NA	Water	RSK-175	82401
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	RSK-175	82401
MB 410-82401/1-A	Method Blank	Total/NA	Water	RSK-175	82401
LCS 410-82401/2-A	Lab Control Sample	Total/NA	Water	RSK-175	82401
LCSD 410-82401/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	82401

GC Semi VOA

Prep Batch: 82642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	3546	
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	3546	
MB 410-82642/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-82642/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-25450-1 MS	BT-13-S-5-20210104	Total/NA	Solid	3546	
410-25450-1 DU	BT-13-S-5-20210104	Total/NA	Solid	3546	

Prep Batch: 82709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	3510C	
MB 410-82709/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-82709/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-82709/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA

Prep Batch: 82733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-3	TB-20210105	Total/NA	Water	8011	
MB 410-82733/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-82733/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-82733/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Prep Batch: 82782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	8011	
MB 410-82782/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-82782/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-82782/3-A	Lab Control Sample Dup	Total/NA	Water	8011	
410-25450-4 MS	BT-13-W-40-20210105	Total/NA	Water	8011	

Analysis Batch: 82929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	8015C TPH	82642
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	8015C TPH	82709
MB 410-82642/1-A	Method Blank	Total/NA	Solid	8015C TPH	82642
MB 410-82709/1-A	Method Blank	Total/NA	Water	8015C TPH	82709
LCS 410-82642/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	82642
LCS 410-82709/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	82709
LCSD 410-82709/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	82709

Analysis Batch: 83115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-3	TB-20210105	Total/NA	Water	8011	82733
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	8011	82782
MB 410-82733/1-A	Method Blank	Total/NA	Water	8011	82733
MB 410-82782/1-A	Method Blank	Total/NA	Water	8011	82782
LCS 410-82733/2-A	Lab Control Sample	Total/NA	Water	8011	82733
LCS 410-82782/2-A	Lab Control Sample	Total/NA	Water	8011	82782
LCSD 410-82733/3-A	Lab Control Sample Dup	Total/NA	Water	8011	82733
LCSD 410-82782/3-A	Lab Control Sample Dup	Total/NA	Water	8011	82782
410-25450-4 MS	BT-13-W-40-20210105	Total/NA	Water	8011	82782

Analysis Batch: 83323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	8015C TPH	82642
410-25450-1 MS	BT-13-S-5-20210104	Total/NA	Solid	8015C TPH	82642
410-25450-1 DU	BT-13-S-5-20210104	Total/NA	Solid	8015C TPH	82642

Analysis Batch: 101792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	Total TPH	
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	Total TPH	
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	Total TPH	

HPLC/IC

Analysis Batch: 82345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	EPA 300.0 R2.1	
MB 410-82345/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-82345/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-25450-4 MS	BT-13-W-40-20210105	Total/NA	Water	EPA 300.0 R2.1	
410-25450-4 DU	BT-13-W-40-20210105	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 82346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	EPA 300.0 R2.1	
MB 410-82346/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-82346/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-25450-4 MS	BT-13-W-40-20210105	Total/NA	Water	EPA 300.0 R2.1	
410-25450-4 DU	BT-13-W-40-20210105	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 82630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	EPA 300.0 R2.1	
MB 410-82630/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-82630/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 82044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	3050B	
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	3050B	
MB 410-82044/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-82044/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 82295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total Recoverable	Water	3005A	
MB 410-82295/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-82295/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 410-82295/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Filtration Batch: 82351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Dissolved	Water	Filtration	
410-25450-4 MS	BT-13-W-40-20210105	Dissolved	Water	Filtration	
410-25450-4 MSD	BT-13-W-40-20210105	Dissolved	Water	Filtration	
410-25450-4 DU	BT-13-W-40-20210105	Dissolved	Water	Filtration	

Prep Batch: 82597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Dissolved	Water	Non-Digest Prep	82351
MB 410-82597/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-82597/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-25450-4 MS	BT-13-W-40-20210105	Dissolved	Water	Non-Digest Prep	82351
410-25450-4 MSD	BT-13-W-40-20210105	Dissolved	Water	Non-Digest Prep	82351
410-25450-4 DU	BT-13-W-40-20210105	Dissolved	Water	Non-Digest Prep	82351

Metals

Analysis Batch: 83265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Dissolved	Water	6020A	82597
MB 410-82597/1-A	Method Blank	Total/NA	Water	6020A	82597
LCS 410-82597/2-A	Lab Control Sample	Total/NA	Water	6020A	82597
410-25450-4 MS	BT-13-W-40-20210105	Dissolved	Water	6020A	82597
410-25450-4 MSD	BT-13-W-40-20210105	Dissolved	Water	6020A	82597
410-25450-4 DU	BT-13-W-40-20210105	Dissolved	Water	6020A	82597

Analysis Batch: 83673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	6010C	82044
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	6010C	82044
MB 410-82044/1-A	Method Blank	Total/NA	Solid	6010C	82044
LCS 410-82044/2-A	Lab Control Sample	Total/NA	Solid	6010C	82044

Analysis Batch: 83998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total Recoverable	Water	6010C	82295
MB 410-82295/1-A	Method Blank	Total Recoverable	Water	6010C	82295
LCS 410-82295/2-A	Lab Control Sample	Total Recoverable	Water	6010C	82295
LCSD 410-82295/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	82295

Analysis Batch: 84038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total Recoverable	Water	6010C	82295
MB 410-82295/1-A	Method Blank	Total Recoverable	Water	6010C	82295
LCS 410-82295/2-A	Lab Control Sample	Total Recoverable	Water	6010C	82295
LCSD 410-82295/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	82295

General Chemistry

Analysis Batch: 82275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-1	BT-13-S-5-20210104	Total/NA	Solid	Moisture	
410-25450-2	BT-13-S-22-20210104	Total/NA	Solid	Moisture	

Analysis Batch: 82459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	4500 S2 D-2011	
MB 410-82459/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-82459/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Analysis Batch: 82908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	5310C-2011	
MB 410-82908/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-82908/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Prep Batch: 82930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	4500 NH3 B-2011	

General Chemistry (Continued)

Prep Batch: 82930 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-82930/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-82930/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-82930/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 82941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	4500 NH3 C-2011	82930
MB 410-82930/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	82930
LCS 410-82930/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	82930
LCSD 410-82930/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	82930

Analysis Batch: 83043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25450-4	BT-13-W-40-20210105	Total/NA	Water	2320B-2011	
MB 410-83043/61	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-83043/62	Lab Control Sample	Total/NA	Water	2320B-2011	
410-25450-4 DU	BT-13-W-40-20210105	Total/NA	Water	2320B-2011	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-25450-1

Client Sample ID: BT-13-S-5-20210104
Date Collected: 01/04/21 13:00
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	82275	01/05/21 18:21	OEL4	ELLE

Client Sample ID: BT-13-S-5-20210104
Date Collected: 01/04/21 13:00
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-1
Matrix: Solid
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			82331	01/05/21 21:47	UK3O	ELLE
Total/NA	Analysis	8260C		50	83089	01/08/21 01:00	R64Z	ELLE
Total/NA	Prep	5035	DL		82331	01/05/21 21:47	UK3O	ELLE
Total/NA	Analysis	8260C	DL	1000	83217	01/08/21 15:18	R64Z	ELLE
Total/NA	Prep	3546			83383	01/08/21 15:47	FTV5	ELLE
Total/NA	Analysis	8270D		1	83561	01/11/21 18:38	ULM3	ELLE
Total/NA	Prep	3546			82642	01/06/21 16:59	FTV5	ELLE
Total/NA	Analysis	8015C TPH		5	83323	01/08/21 13:32	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101792	03/10/21 17:23	UHEW	ELLE
Total/NA	Prep	3050B			82044	01/06/21 05:04	UAMX	ELLE
Total/NA	Analysis	6010C		1	83673	01/11/21 10:34	WJM9	ELLE

Client Sample ID: BT-13-S-22-20210104
Date Collected: 01/04/21 16:00
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	82275	01/05/21 18:21	OEL4	ELLE

Client Sample ID: BT-13-S-22-20210104
Date Collected: 01/04/21 16:00
Date Received: 01/05/21 16:40

Lab Sample ID: 410-25450-2
Matrix: Solid
Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			82331	01/05/21 21:47	UK3O	ELLE
Total/NA	Analysis	8260C		50	83089	01/08/21 01:20	R64Z	ELLE
Total/NA	Prep	3546			83383	01/08/21 15:47	FTV5	ELLE
Total/NA	Analysis	8270D		1	83561	01/11/21 19:00	ULM3	ELLE
Total/NA	Prep	3546	DL		83383	01/08/21 15:47	FTV5	ELLE
Total/NA	Analysis	8270D	DL	5	84372	01/13/21 13:30	ULM3	ELLE
Total/NA	Prep	3546			82642	01/06/21 16:59	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	82929	01/07/21 15:30	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101792	03/10/21 17:23	UHEW	ELLE
Total/NA	Prep	3050B			82044	01/06/21 05:04	UAMX	ELLE
Total/NA	Analysis	6010C		1	83673	01/11/21 10:31	WJM9	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-25450-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: TB-20210105
Lab Sample ID: 410-25450-3
Date Collected: 01/05/21 00:00
Matrix: Water
Date Received: 01/05/21 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	85173	01/15/21 13:54	UKAD	ELLE
Total/NA	Prep	RSK-175			82401	01/06/21 07:53	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	82414	01/06/21 13:43	LXF2	ELLE
Total/NA	Prep	8011			82733	01/06/21 22:41	K2IL	ELLE
Total/NA	Analysis	8011		1	83115	01/08/21 11:03	AC3T	ELLE

Client Sample ID: BT-13-W-40-20210105
Lab Sample ID: 410-25450-4
Date Collected: 01/05/21 12:40
Matrix: Water
Date Received: 01/05/21 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	85173	01/15/21 14:42	UKAD	ELLE
Total/NA	Prep	3510C			83911	01/12/21 09:30	R9CT	ELLE
Total/NA	Analysis	8270D		1	84353	01/13/21 16:44	W6XI	ELLE
Total/NA	Prep	RSK-175			82401	01/06/21 07:53	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	82414	01/06/21 14:01	LXF2	ELLE
Total/NA	Prep	8011			82782	01/07/21 04:59	UKQ8	ELLE
Total/NA	Analysis	8011		1	83115	01/08/21 15:14	AC3T	ELLE
Total/NA	Prep	3510C			82709	01/06/21 20:35	UKL2	ELLE
Total/NA	Analysis	8015C TPH		1	82929	01/07/21 13:43	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	101792	03/10/21 17:23	UHEW	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	82630	01/07/21 02:58	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	82345	01/06/21 10:03	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	82346	01/06/21 10:03	GJ35	ELLE
Total Recoverable	Prep	3005A			82295	01/06/21 05:55	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	83998	01/12/21 09:39	MDP5	ELLE
Total Recoverable	Prep	3005A			82295	01/06/21 05:55	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	84038	01/12/21 11:29	MDP5	ELLE
Dissolved	Filtration	Filtration			82351	01/06/21 05:20	UDL9	ELLE
Dissolved	Prep	Non-Digest Prep			82597	01/06/21 14:54	UJLA	ELLE
Dissolved	Analysis	6020A		1	83265	01/07/21 18:08	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	83043	01/06/21 23:47	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			82930	01/07/21 08:45	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	82941	01/07/21 10:57	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	82459	01/06/21 09:04	USE1	ELLE
Total/NA	Analysis	5310C-2011		5	82908	01/06/21 13:42	KGQ6	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-25450-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-25450-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-25450-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-25450-1	BT-13-S-5-20210104	Solid	01/04/21 13:00	01/05/21 16:40	
410-25450-2	BT-13-S-22-20210104	Solid	01/04/21 16:00	01/05/21 16:40	
410-25450-3	TB-20210105	Water	01/05/21 00:00	01/05/21 16:40	
410-25450-4	BT-13-W-40-20210105	Water	01/05/21 12:40	01/05/21 16:40	

Environmental Analysis Request/Chain of

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For Eurofins Lancaster Laboratories Envi

Acct. # _____ Group # _____ Sample #

410-25450 Chain of Custody

COC # 608590

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested — Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH DRO+ETRO/moisture	VOC 8260C (soil)/ VOC 8260D (water)	Lead/PAH 8270D	Sulfide/Metal 6010C (including dissolved lead)	Chloride/Nitrate Nitrogen Sulfate	EDB 8011/ Volatile Headspace Hydrocarbon	Total Alkalinity to pH 4.5	TOC	Ammonia Nitrogen		Remarks
BT-13-S-5-20210104	1/4/21	1300	X		X			6	X	X	X								
BT-13-S-22-20210104	1/4/21	1600	X		X			6	X	X	X								
TB-20210105	12/23/20	—					X	4		X				X					
BT-13-W-40-20210105	1/5/21	1240	X			X		19	X	X		X	X	X	X	X	X		

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks
* lab filter dissolved lead

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	1/5/21	13.50	Pienne	1/5/21	13.53
Pienne	1/5/21	16 00			

EDD Required? Yes No
If yes, format: EQuis

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 2.2 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044_0919

3/16/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-25450-1

Login Number: 25450
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-25584-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 5:04:34 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 5:04:34 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-25584-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-25584-1

Revision
The report being provided is a revision of the original report sent on 1/17/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/6/2021 3:35 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.3°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-82845 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-13-S-60-20210106
Lab Sample ID: 410-25584-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	0.92	J	5.6	0.56	ug/Kg	1	☼	8260C	Total/NA
1,2-Dichloroethane	1.0	J	5.6	0.68	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	67	J	120	50	ug/Kg	1	☼	8260C	Total/NA
t-Butyl alcohol	39	J ^c	110	17	ug/Kg	1	☼	8260C	Total/NA
Fluorene	7.1	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	14	J	19	7.5	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	11	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	6.3	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Lead	1.2		1.2	0.50	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210106
Lab Sample ID: 410-25584-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-13-S-60-20210106
Lab Sample ID: 410-25584-1

Date Collected: 01/06/21 10:05
Matrix: Solid

Date Received: 01/06/21 15:35
Percent Solids: 89.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.6	0.45	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
1,3,5-Trimethylbenzene	ND		5.6	0.56	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
Toluene	ND		5.6	0.68	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
Methyl tertiary butyl ether	ND		5.6	0.56	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
Benzene	ND		5.6	0.56	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
1,2,4-Trimethylbenzene	**0.92**	**J**	5.6	0.56	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
Isopropylbenzene	ND		5.6	0.45	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
1,2-Dibromoethane	ND		5.6	0.45	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
1,2-Dichloroethane	**1.0**	**J**	5.6	0.68	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
C4-C12-TPH-GRO	**67**	**J**	120	50	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
t-Butyl alcohol	**39**	**J ^c**	110	17	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1
Xylenes, Total	ND		11	1.6	ug/Kg	☼	01/06/21 21:31	01/07/21 17:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*	*01/06/21 21:31*	*01/07/21 17:10*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*	*01/06/21 21:31*	*01/07/21 17:10*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 141*	*01/06/21 21:31*	*01/07/21 17:10*	*1*
Toluene-d8 (Surr)	*94*		*52 - 141*	*01/06/21 21:31*	*01/07/21 17:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		19	3.7	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Benzo[a]anthracene	ND		19	7.5	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Benzo[a]pyrene	ND		19	3.7	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Benzo[b]fluoranthene	ND		19	3.7	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Benzo[g,h,i]perylene	ND		19	3.7	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Chrysene	ND		19	3.7	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Fluorene	**7.1**	**J**	19	3.7	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Naphthalene	**14**	**J**	19	7.5	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Phenanthrene	**11**	**J**	19	3.7	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1
Pyrene	**6.3**	**J**	19	3.7	ug/Kg	☼	01/07/21 16:02	01/08/21 18:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*39 - 100*	*01/07/21 16:02*	*01/08/21 18:24*	*1*
Nitrobenzene-d5 (Surr)	*68*		*32 - 97*	*01/07/21 16:02*	*01/08/21 18:24*	*1*
p-Terphenyl-d14 (Surr)	*91*		*45 - 108*	*01/07/21 16:02*	*01/08/21 18:24*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		13	5.6	mg/Kg	☼	01/07/21 16:26	01/08/21 12:28	1
>C12-C22 (1C)	ND		13	5.6	mg/Kg	☼	01/07/21 16:26	01/08/21 12:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*66*		*54 - 137*	*01/07/21 16:26*	*01/08/21 12:28*	*1*
o- terphenyl (Surr) (1C)	*86*		*52 - 154*	*01/07/21 16:26*	*01/08/21 12:28*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		13	5.6	mg/Kg	☼		03/16/21 15:03	1

Client Sample ID: BT-13-S-60-20210106 — Lab Sample ID: 410-25584-1

Date Collected: 01/06/21 10:05 — **Matrix: Solid**
Date Received: 01/06/21 15:35 — **Percent Solids: 89.1**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	1.2		1.2	0.50	mg/Kg	☼	01/07/21 04:11	01/08/21 14:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.9		1.0	1.0	%			01/06/21 19:51	1

Client Sample ID: TB-20210106 — Lab Sample ID: 410-25584-2

Date Collected: 01/06/21 00:00 — **Matrix: Water**
Date Received: 01/06/21 15:35

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/15/21 12:42	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/15/21 12:42	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/15/21 12:42	1
Benzene	ND		1.0	0.20	ug/L			01/15/21 12:42	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/15/21 12:42	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/15/21 12:42	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/15/21 12:42	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/15/21 12:42	1
Toluene	ND		1.0	0.20	ug/L			01/15/21 12:42	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/15/21 12:42	1
t-Butyl alcohol	ND		50	12	ug/L			01/15/21 12:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*01/15/21 12:42*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*01/15/21 12:42*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*01/15/21 12:42*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/15/21 12:42*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		01/09/21 02:19	01/11/21 12:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*109*		*46 - 136*	*01/09/21 02:19*	*01/11/21 12:46*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-25584-1	BT-13-S-60-20210106	109	95	106	94
LCS 410-82845/14	Lab Control Sample	104	98	102	96
LCS 410-82845/4	Lab Control Sample	107	100	104	95
LCSD 410-82845/15	Lab Control Sample Dup	106	98	102	95
LCSD 410-82845/5	Lab Control Sample Dup	109	98	103	96
MB 410-82845/7	Method Blank	107	95	106	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-25584-2	TB-20210106	102	91	98	111
LCS 410-85173/5	Lab Control Sample	105	89	96	110
LCS 410-85173/6	Lab Control Sample	103	89	98	112
LCSD 410-85173/7	Lab Control Sample Dup	102	91	97	112
MB 410-85173/8	Method Blank	101	89	97	108

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-25584-1	BT-13-S-60-20210106	69	68	91
LCS 410-83053/2-A	Lab Control Sample	70	67	88
MB 410-83053/1-A	Method Blank	77	71	96

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	1122TCA2 (46-136)
410-25584-2	TB-20210106	109

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)
LCS 410-83451/2-A	Lab Control Sample	102
LCSD 410-83451/3-A	Lab Control Sample Dup	100
MB 410-83451/1-A	Method Blank	105

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)
410-25584-1	BT-13-S-60-20210106	66	86
410-25584-1 MS	BT-13-S-60-20210106	68	104
410-25584-1 MSD	BT-13-S-60-20210106	67	99
LCS 410-83067/2-A	Lab Control Sample	72	104
MB 410-83067/1-A	Method Blank	76	91

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-82845/7
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			01/07/21 12:06	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/07/21 12:06	1
Toluene	ND		5.0	0.60	ug/Kg			01/07/21 12:06	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			01/07/21 12:06	1
Benzene	ND		5.0	0.50	ug/Kg			01/07/21 12:06	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/07/21 12:06	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			01/07/21 12:06	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			01/07/21 12:06	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			01/07/21 12:06	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			01/07/21 12:06	1
t-Butyl alcohol	ND		100	15	ug/Kg			01/07/21 12:06	1
Xylenes, Total	ND		10	1.4	ug/Kg			01/07/21 12:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*		*01/07/21 12:06*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*		*01/07/21 12:06*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 141*		*01/07/21 12:06*	*1*
Toluene-d8 (Surr)	*93*		*52 - 141*		*01/07/21 12:06*	*1*

Lab Sample ID: LCS 410-82845/14
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1070		ug/Kg		107	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCS 410-82845/4
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	20.6		ug/Kg		103	78 - 120
1,3,5-Trimethylbenzene	20.0	19.6		ug/Kg		98	73 - 120
Toluene	20.0	20.7		ug/Kg		104	80 - 120
Methyl tertiary butyl ether	20.0	17.4		ug/Kg		87	72 - 120
Benzene	20.0	22.7		ug/Kg		113	80 - 120
Naphthalene	20.0	19.0		ug/Kg		95	48 - 130
1,2,4-Trimethylbenzene	20.0	19.6		ug/Kg		98	73 - 120
Isopropylbenzene	20.0	20.5		ug/Kg		102	77 - 120
1,2-Dibromoethane	20.0	20.2		ug/Kg		101	76 - 120
1,2-Dichloroethane	20.0	20.6		ug/Kg		103	71 - 128
t-Butyl alcohol	200	202		ug/Kg		101	74 - 121

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-82845/4
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			60.0	62.6		ug/Kg		104	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*100*		*50 - 131*
Dibromofluoromethane (Surr)	*104*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Lab Sample ID: LCSD 410-82845/15
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1060		ug/Kg		106	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Lab Sample ID: LCSD 410-82845/5
Matrix: Solid
Analysis Batch: 82845

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	18.1		ug/Kg		91	78 - 120	13	30
1,3,5-Trimethylbenzene			20.0	17.4		ug/Kg		87	73 - 120	12	30
Toluene			20.0	18.0		ug/Kg		90	80 - 120	14	30
Methyl tertiary butyl ether			20.0	14.9		ug/Kg		75	72 - 120	15	30
Benzene			20.0	20.0		ug/Kg		100	80 - 120	12	30
Naphthalene			20.0	15.7		ug/Kg		79	48 - 130	18	30
1,2,4-Trimethylbenzene			20.0	17.2		ug/Kg		86	73 - 120	13	30
Isopropylbenzene			20.0	18.0		ug/Kg		90	77 - 120	13	30
1,2-Dibromoethane			20.0	17.3		ug/Kg		87	76 - 120	15	30
1,2-Dichloroethane			20.0	18.5		ug/Kg		92	71 - 128	11	30
t-Butyl alcohol			200	182		ug/Kg		91	74 - 121	10	30
Xylenes, Total			60.0	54.5		ug/Kg		91	75 - 120	14	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-85173/8
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/15/21 12:18	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/15/21 12:18	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/15/21 12:18	1
Benzene	ND		1.0	0.20	ug/L			01/15/21 12:18	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/15/21 12:18	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/15/21 12:18	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/15/21 12:18	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Toluene	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/15/21 12:18	1
t-Butyl alcohol	ND		50	12	ug/L			01/15/21 12:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/15/21 12:18*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/15/21 12:18*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*01/15/21 12:18*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*01/15/21 12:18*	*1*

Lab Sample ID: LCS 410-85173/5
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.5		ug/L		98	75 - 120
1,2-Dichloroethane	20.0	16.0		ug/L		80	73 - 124
1,3,5-Trimethylbenzene	20.0	19.3		ug/L		96	75 - 120
Benzene	20.0	16.5		ug/L		83	80 - 120
Ethylbenzene	20.0	19.9		ug/L		100	80 - 120
Isopropylbenzene	20.0	18.2		ug/L		91	80 - 120
Methyl tertiary butyl ether	20.0	15.7		ug/L		78	69 - 122
Naphthalene	20.0	18.2		ug/L		91	53 - 124
Toluene	20.0	19.4		ug/L		97	80 - 120
Xylenes, Total	60.0	55.9		ug/L		93	80 - 120
t-Butyl alcohol	200	198		ug/L		99	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*110*		*80 - 120*

Lab Sample ID: LCS 410-85173/6
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	881		ug/L		88	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-85173/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 85173

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCSD 410-85173/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 85173

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	915		ug/L		91	67 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-83053/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 83270 — **Prep Batch: 83053**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Chrysene	ND		17	3.3	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Fluorene	ND		17	3.3	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Naphthalene	ND		17	6.7	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Phenanthrene	ND		17	3.3	ug/Kg		01/07/21 16:02	01/08/21 13:57	1
Pyrene	ND		17	3.3	ug/Kg		01/07/21 16:02	01/08/21 13:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*39 - 100*	*01/07/21 16:02*	*01/08/21 13:57*	*1*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*	*01/07/21 16:02*	*01/08/21 13:57*	*1*
p-Terphenyl-d14 (Surr)	*96*		*45 - 108*	*01/07/21 16:02*	*01/08/21 13:57*	*1*

Lab Sample ID: LCS 410-83053/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 83270 — **Prep Batch: 83053**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			1670	1600		ug/Kg		96	75 - 114		
Benzo[a]anthracene			1670	1600		ug/Kg		96	73 - 114		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-83053/2-A
Matrix: Solid
Analysis Batch: 83270

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83053

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	1670	1430		ug/Kg		86	76 - 113
Benzo[b]fluoranthene	1670	1390		ug/Kg		84	73 - 117
Benzo[g,h,i]perylene	1670	1640		ug/Kg		99	77 - 114
Chrysene	1670	1580		ug/Kg		95	66 - 111
Fluorene	1670	1420		ug/Kg		85	62 - 110
Naphthalene	1670	1240		ug/Kg		75	60 - 94
Phenanthrene	1670	1560		ug/Kg		93	74 - 112
Pyrene	1670	1540		ug/Kg		93	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*70*		*39 - 100*
Nitrobenzene-d5 (Surr)	*67*		*32 - 97*
p-Terphenyl-d14 (Surr)	*88*		*45 - 108*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-83451/1-A
Matrix: Water
Analysis Batch: 83597

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83451

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/09/21 02:19	01/11/21 09:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*105*		*46 - 136*	*01/09/21 02:19*	*01/11/21 09:25*	*1*

Lab Sample ID: LCS 410-83451/2-A
Matrix: Water
Analysis Batch: 83597

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83451

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.125		ug/L		98	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*102*		*46 - 136*

Lab Sample ID: LCSD 410-83451/3-A
Matrix: Water
Analysis Batch: 83597

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 83451

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)	0.128	0.125		ug/L		98	60 - 140	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*100*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-83067/1-A
Matrix: Solid
Analysis Batch: 83323

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83067

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		01/07/21 16:26	01/08/21 11:45	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		01/07/21 16:26	01/08/21 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*76*		*54 - 137*	*01/07/21 16:26*	*01/08/21 11:45*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*01/07/21 16:26*	*01/08/21 11:45*	*1*

Lab Sample ID: LCS 410-83067/2-A
Matrix: Solid
Analysis Batch: 83323

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83067

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	116		mg/Kg		87	64 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*
o- terphenyl (Surr) (1C)	*104*		*52 - 154*

Lab Sample ID: 410-25584-1 MS
Matrix: Solid
Analysis Batch: 83323

Client Sample ID: BT-13-S-60-20210106
Prep Type: Total/NA
Prep Batch: 83067

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*68*		*54 - 137*
o- terphenyl (Surr) (1C)	*104*		*52 - 154*

Lab Sample ID: 410-25584-1 MSD
Matrix: Solid
Analysis Batch: 83323

Client Sample ID: BT-13-S-60-20210106
Prep Type: Total/NA
Prep Batch: 83067

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*67*		*54 - 137*
o- terphenyl (Surr) (1C)	*99*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-82768/1-A
Matrix: Solid
Analysis Batch: 83377

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 82768

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.58	mg/Kg		01/07/21 04:11	01/08/21 14:32	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-82768/2-A
Matrix: Solid
Analysis Batch: 83377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 82768

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	3.00	3.07		mg/Kg		102	80 - 120

Lab Sample ID: 410-25584-1 MS
Matrix: Solid
Analysis Batch: 83377

Client Sample ID: BT-13-S-60-20210106
Prep Type: Total/NA
Prep Batch: 82768

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.2		3.03	3.91		mg/Kg	☼	91	75 - 125

Lab Sample ID: 410-25584-1 MSD
Matrix: Solid
Analysis Batch: 83377

Client Sample ID: BT-13-S-60-20210106
Prep Type: Total/NA
Prep Batch: 82768

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1.2		3.24	4.22		mg/Kg	☼	95	75 - 125	8	20

Lab Sample ID: 410-25584-1 DU
Matrix: Solid
Analysis Batch: 83377

Client Sample ID: BT-13-S-60-20210106
Prep Type: Total/NA
Prep Batch: 82768

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	1.2		0.633	J F5	mg/Kg	☼	58	20

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-25584-1

GC/MS VOA

Prep Batch: 82722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	5035	

Analysis Batch: 82845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	8260C	82722
MB 410-82845/7	Method Blank	Total/NA	Solid	8260C	
LCS 410-82845/14	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-82845/4	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-82845/15	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-82845/5	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 85173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-2	TB-20210106	Total/NA	Water	8260C/UST	
MB 410-85173/8	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-85173/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-85173/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-85173/7	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 83053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	3546	
MB 410-83053/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-83053/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 83270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	8270D	83053
MB 410-83053/1-A	Method Blank	Total/NA	Solid	8270D	83053
LCS 410-83053/2-A	Lab Control Sample	Total/NA	Solid	8270D	83053

GC Semi VOA

Prep Batch: 83067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	3546	
MB 410-83067/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-83067/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-25584-1 MS	BT-13-S-60-20210106	Total/NA	Solid	3546	
410-25584-1 MSD	BT-13-S-60-20210106	Total/NA	Solid	3546	

Analysis Batch: 83323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	8015C TPH	83067
MB 410-83067/1-A	Method Blank	Total/NA	Solid	8015C TPH	83067
LCS 410-83067/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	83067
410-25584-1 MS	BT-13-S-60-20210106	Total/NA	Solid	8015C TPH	83067
410-25584-1 MSD	BT-13-S-60-20210106	Total/NA	Solid	8015C TPH	83067

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC Semi VOA

Prep Batch: 83451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-2	TB-20210106	Total/NA	Water	8011	
MB 410-83451/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-83451/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-83451/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 83597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-2	TB-20210106	Total/NA	Water	8011	83451
MB 410-83451/1-A	Method Blank	Total/NA	Water	8011	83451
LCS 410-83451/2-A	Lab Control Sample	Total/NA	Water	8011	83451
LCSD 410-83451/3-A	Lab Control Sample Dup	Total/NA	Water	8011	83451

Analysis Batch: 103769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 82768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	3050B	
MB 410-82768/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-82768/2-A	Lab Control Sample	Total/NA	Solid	3050B	
410-25584-1 MS	BT-13-S-60-20210106	Total/NA	Solid	3050B	
410-25584-1 MSD	BT-13-S-60-20210106	Total/NA	Solid	3050B	
410-25584-1 DU	BT-13-S-60-20210106	Total/NA	Solid	3050B	

Analysis Batch: 83377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	6010C	82768
MB 410-82768/1-A	Method Blank	Total/NA	Solid	6010C	82768
LCS 410-82768/2-A	Lab Control Sample	Total/NA	Solid	6010C	82768
410-25584-1 MS	BT-13-S-60-20210106	Total/NA	Solid	6010C	82768
410-25584-1 MSD	BT-13-S-60-20210106	Total/NA	Solid	6010C	82768
410-25584-1 DU	BT-13-S-60-20210106	Total/NA	Solid	6010C	82768

General Chemistry

Analysis Batch: 82692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25584-1	BT-13-S-60-20210106	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-13-S-60-20210106
Lab Sample ID: 410-25584-1
Date Collected: 01/06/21 10:05
Matrix: Solid
Date Received: 01/06/21 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	82692	01/06/21 19:51	PTG7	ELLE

Client Sample ID: BT-13-S-60-20210106
Lab Sample ID: 410-25584-1
Date Collected: 01/06/21 10:05
Matrix: Solid
Date Received: 01/06/21 15:35
Percent Solids: 89.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			82722	01/06/21 21:31	UK3O	ELLE
Total/NA	Analysis	8260C		1	82845	01/07/21 17:10	R64Z	ELLE
Total/NA	Prep	3546			83053	01/07/21 16:02	FTV5	ELLE
Total/NA	Analysis	8270D		1	83270	01/08/21 18:24	ULM3	ELLE
Total/NA	Prep	3546			83067	01/07/21 16:26	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	83323	01/08/21 12:28	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103769	03/16/21 15:03	UHEW	ELLE
Total/NA	Prep	3050B			82768	01/07/21 04:11	UAMX	ELLE
Total/NA	Analysis	6010C		1	83377	01/08/21 14:39	MDP5	ELLE

Client Sample ID: TB-20210106
Lab Sample ID: 410-25584-2
Date Collected: 01/06/21 00:00
Matrix: Water
Date Received: 01/06/21 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	85173	01/15/21 12:42	UKAD	ELLE
Total/NA	Prep	8011			83451	01/09/21 02:19	UKQ8	ELLE
Total/NA	Analysis	8011		1	83597	01/11/21 12:46	AC3T	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-25584-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-25584-1	BT-13-S-60-20210106	Solid	01/06/21 10:05	01/06/21 15:35	
410-25584-2	TB-20210106	Water	01/06/21 00:00	01/06/21 15:35	

Environmental Analysis Request/Chain of

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For Eurofins Lancaster Laboratories Enviro

Acct. # _____ Group # _____ Sample # _____ 410-25584 Chain of Custody

COC #608589

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dave Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested — Preservation and Filtration Codes

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH DRO+GRO/moisture	VOC 8260 (soil)/ VOC 8260 c/o (water)	Lead/PAH 8270D	EDB 8011	Remarks
BT-13-S-60-20210106	1/6/21	1005	X		X			6	X	X	X		
TB-20210106	12/23/20	—					X	4		X		X	

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Relinquished by	Date	Time	Received by	Date	Time
Dave	1/6/21	13:15	Pierre	1/6/21	13:15
Pierre	1/6/21	1515			
			[signature]	1/6/21	15:35

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)
Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13
NYSDEC Category A or B | MA MCP | CT RCP

EDD Required? Yes No
If yes, format: EQuis

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: X
UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.3 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

JR

3/16/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-25584-1

Login Number: 25584
List Number: 1
Creator: Rivera-Santa, Julissa

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-25740-1
Client Project/Site: Belmont Terminal/213402797
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/26/2021 10:54:02 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/26/2021 10:54:02 AM

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Definitions/Glossary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

Job ID: 410-25740-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-25740-1

Revision
The report being provided is a revision of the original report sent on 1/22/2021. The report (revision 1) is being revised due to: Update TPH to report >C12-C22.

Receipt
The samples were received on 1/7/2021 5:15 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.5°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: The method blank for preparation batch 410-83820 contained Anthracene, Fluorene, Naphthalene and Phenanthrene above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank. The associated sample is BT-14-S-25-20210107 (410-25740-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: O-terphenyl surrogate recovery for the following sample was outside control limits: BT-14-S-25-20210107 (410-25740-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

Client Sample ID: BT-14-S-25-20210107 — Lab Sample ID: 410-25740-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	9800		390	32	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	7700		390	39	ug/Kg	50	☼	8260C	Total/NA
Methyl tertiary butyl ether	5100		390	39	ug/Kg	50	☼	8260C	Total/NA
Benzene	4700		390	39	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	23000		390	39	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	890		390	32	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol	21000		7900	1200	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	57000		790	110	ug/Kg	50	☼	8260C	Total/NA
Toluene - DL	26000		3900	470	ug/Kg	500	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	500000		87000	35000	ug/Kg	500	☼	8260C	Total/NA
Anthracene	110	B	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	37		20	7.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	23		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	25		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	23		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	38		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	370	B	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	690	B	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Pyrene	160		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Naphthalene - DL	13000	B	200	79	ug/Kg	10	☼	8270D	Total/NA
>C22-C44 (1C)	120		71	30	mg/Kg	5	☼	8015C TPH	Total/NA
>C12-C22 (1C)	820		71	30	mg/Kg	5	☼	8015C TPH	Total/NA
Total Reported TPH	940		14	6.0	mg/Kg	1	☼	Total TPH	Total/NA
Lead	6.5		1.2	0.49	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-14-S-34-20210107 — Lab Sample ID: 410-25740-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	54	J	300	36	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	48	J	300	30	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	110	J	300	24	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO	42000		6600	2700	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	130	J	600	84	ug/Kg	50	☼	8260C	Total/NA
Anthracene	480		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	150		18	7.3	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	92		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	110		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	40		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Chrysene	170		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Fluorene	1200		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	79		18	7.3	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	1900		18	3.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	510		18	3.7	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	22		13	5.5	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	450		13	5.5	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	470		13	5.5	mg/Kg	1	☼	Total TPH	Total/NA
Lead	5.8		1.1	0.45	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-14-S-25-20210107

Date Collected: 01/07/21 11:45
Date Received: 01/07/21 17:15

Lab Sample ID: 410-25740-1

Matrix: Solid
Percent Solids: 84.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	9800		390	32	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
1,3,5-Trimethylbenzene	7700		390	39	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
Methyl tertiary butyl ether	5100		390	39	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
Benzene	4700		390	39	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
1,2,4-Trimethylbenzene	23000		390	39	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
Isopropylbenzene	890		390	32	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
1,2-Dibromoethane	ND		390	32	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
1,2-Dichloroethane	ND		390	47	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
t-Butyl alcohol	21000		7900	1200	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50
Xylenes, Total	57000		790	110	ug/Kg	☼	01/08/21 07:39	01/15/21 00:26	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*	*^c*	*54 - 135*	*01/08/21 07:39*	*01/15/21 00:26*	*50*
4-Bromofluorobenzene (Surr)	*105*		*50 - 131*	*01/08/21 07:39*	*01/15/21 00:26*	*50*
Dibromofluoromethane (Surr)	*106*		*50 - 141*	*01/08/21 07:39*	*01/15/21 00:26*	*50*
Toluene-d8 (Surr)	*103*		*52 - 141*	*01/08/21 07:39*	*01/15/21 00:26*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	26000		3900	470	ug/Kg	☼	01/08/21 07:39	01/15/21 00:47	500
C4-C12-TPH-GRO	500000		87000	35000	ug/Kg	☼	01/08/21 07:39	01/15/21 00:47	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*	*^c*	*54 - 135*	*01/08/21 07:39*	*01/15/21 00:47*	*500*
4-Bromofluorobenzene (Surr)	*109*		*50 - 131*	*01/08/21 07:39*	*01/15/21 00:47*	*500*
Dibromofluoromethane (Surr)	*100*		*50 - 141*	*01/08/21 07:39*	*01/15/21 00:47*	*500*
Toluene-d8 (Surr)	*103*		*52 - 141*	*01/08/21 07:39*	*01/15/21 00:47*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	110	B	20	4.0	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1
Benzo[a]anthracene	37		20	7.9	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1
Benzo[a]pyrene	23		20	4.0	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1
Benzo[b]fluoranthene	25		20	4.0	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1
Benzo[g,h,i]perylene	23		20	4.0	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1
Chrysene	38		20	4.0	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1
Fluorene	370	B	20	4.0	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1
Phenanthrene	690	B	20	4.0	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1
Pyrene	160		20	4.0	ug/Kg	☼	01/11/21 18:22	01/12/21 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*39 - 100*	*01/11/21 18:22*	*01/12/21 15:57*	*1*
Nitrobenzene-d5 (Surr)	*84*		*32 - 97*	*01/11/21 18:22*	*01/12/21 15:57*	*1*
p-Terphenyl-d14 (Surr)	*88*		*45 - 108*	*01/11/21 18:22*	*01/12/21 15:57*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	13000	B	200	79	ug/Kg	☼	01/11/21 18:22	01/13/21 18:41	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*39 - 100*	*01/11/21 18:22*	*01/13/21 18:41*	*10*

Client Sample ID: BT-14-S-25-20210107

Lab Sample ID: 410-25740-1
Date Collected: 01/07/21 11:45
Matrix: Solid
Date Received: 01/07/21 17:15
Percent Solids: 84.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	*74*		*32 - 97*	*01/11/21 18:22*	*01/13/21 18:41*	*10*
p-Terphenyl-d14 (Surr)	*76*		*45 - 108*	*01/11/21 18:22*	*01/13/21 18:41*	*10*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**120**		71	30	mg/Kg	☼	01/12/21 16:29	01/13/21 14:05	5
>C12-C22 (1C)	**820**		71	30	mg/Kg	☼	01/12/21 16:29	01/13/21 14:05	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	*89*		*54 - 137*	*01/12/21 16:29*	*01/13/21 14:05*	*5*
o- terphenyl (Surr) (1C)	*161*	*S1+*	*52 - 154*	*01/12/21 16:29*	*01/13/21 14:05*	*5*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**940**		14	6.0	mg/Kg	☼		02/03/21 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**6.5**		1.2	0.49	mg/Kg	☼	01/08/21 08:58	01/11/21 16:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.0**		1.0	1.0	%			01/07/21 21:14	1

Client Sample ID: BT-14-S-34-20210107

Lab Sample ID: 410-25740-2
Date Collected: 01/07/21 13:30
Matrix: Solid
Date Received: 01/07/21 17:15
Percent Solids: 90.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		300	24	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
1,3,5-Trimethylbenzene	ND		300	30	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
Toluene	**54**	**J**	300	36	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
Methyl tertiary butyl ether	ND		300	30	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
Benzene	ND		300	30	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
1,2,4-Trimethylbenzene	**48**	**J**	300	30	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
Isopropylbenzene	**110**	**J**	300	24	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
1,2-Dibromoethane	ND		300	24	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
1,2-Dichloroethane	ND		300	36	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
C4-C12-TPH-GRO	**42000**		6600	2700	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
t-Butyl alcohol	ND		6000	900	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50
Xylenes, Total	**130**	**J**	600	84	ug/Kg	☼	01/08/21 07:39	01/15/21 00:06	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*103*	*^c*	*54 - 135*	*01/08/21 07:39*	*01/15/21 00:06*	*50*
4-Bromofluorobenzene (Surr)	*92*		*50 - 131*	*01/08/21 07:39*	*01/15/21 00:06*	*50*
Dibromofluoromethane (Surr)	*100*		*50 - 141*	*01/08/21 07:39*	*01/15/21 00:06*	*50*
Toluene-d8 (Surr)	*96*		*52 - 141*	*01/08/21 07:39*	*01/15/21 00:06*	*50*

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

Client Sample ID: BT-14-S-34-20210107

Date Collected: 01/07/21 13:30
Date Received: 01/07/21 17:15

Lab Sample ID: 410-25740-2

Matrix: Solid
Percent Solids: 90.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	480		18	3.7	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Benzo[a]anthracene	150		18	7.3	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Benzo[a]pyrene	92		18	3.7	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Benzo[b]fluoranthene	110		18	3.7	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Benzo[g,h,i]perylene	40		18	3.7	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Chrysene	170		18	3.7	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Fluorene	1200		18	3.7	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Naphthalene	79		18	7.3	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Phenanthrene	1900		18	3.7	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1
Pyrene	510		18	3.7	ug/Kg	☼	01/14/21 16:00	01/15/21 13:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*39 - 100*	*01/14/21 16:00*	*01/15/21 13:54*	*1*
Nitrobenzene-d5 (Surr)	*76*		*32 - 97*	*01/14/21 16:00*	*01/15/21 13:54*	*1*
p-Terphenyl-d14 (Surr)	*89*		*45 - 108*	*01/14/21 16:00*	*01/15/21 13:54*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	22		13	5.5	mg/Kg	☼	01/12/21 16:29	01/13/21 11:27	1
>C12-C22 (1C)	450		13	5.5	mg/Kg	☼	01/12/21 16:29	01/13/21 11:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*95*		*54 - 137*	*01/12/21 16:29*	*01/13/21 11:27*	*1*
o- terphenyl (Surr) (1C)	*105*		*52 - 154*	*01/12/21 16:29*	*01/13/21 11:27*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	470		13	5.5	mg/Kg	☼		02/03/21 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.8		1.1	0.45	mg/Kg	☼	01/08/21 08:58	01/11/21 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.9		1.0	1.0	%			01/07/21 21:14	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-25740-1	BT-14-S-25-20210107	110 ^c	105	106	103
410-25740-1 - DL	BT-14-S-25-20210107	112 ^c	109	100	103
410-25740-2	BT-14-S-34-20210107	103 ^c	92	100	96
LCS 410-84991/10	Lab Control Sample	99	83	93	90
LCS 410-84991/4	Lab Control Sample	105	91	104	97
LCSD 410-84991/11	Lab Control Sample Dup	99	84	94	90
LCSD 410-84991/5	Lab Control Sample Dup	108	91	105	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-25740-1	BT-14-S-25-20210107	71	84	88
410-25740-1 - DL	BT-14-S-25-20210107	69	74	76
410-25740-2	BT-14-S-34-20210107	83	76	89
LCS 410-84955/2-A	Lab Control Sample	84	70	102
MB 410-84955/1-A	Method Blank	82	67	93

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-25740-1	BT-14-S-25-20210107	89	161 S1+
410-25740-2	BT-14-S-34-20210107	95	105
LCS 410-84139/2-A	Lab Control Sample	69	100
MB 410-84139/1-A	Method Blank	81	98

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: LCS 410-84991/10
Matrix: Solid
Analysis Batch: 84991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	46300		ug/Kg		93	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*93*		*50 - 141*
Toluene-d8 (Surr)	*90*		*52 - 141*

Lab Sample ID: LCS 410-84991/4
Matrix: Solid
Analysis Batch: 84991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			1000	988		ug/Kg		99	78 - 120		
1,3,5-Trimethylbenzene			1000	972		ug/Kg		97	73 - 120		
Toluene			1000	1010		ug/Kg		101	80 - 120		
Methyl tertiary butyl ether			1000	1090		ug/Kg		109	72 - 120		
Benzene			1000	1060		ug/Kg		106	80 - 120		
Naphthalene			1000	1010		ug/Kg		101	48 - 130		
1,2,4-Trimethylbenzene			1000	961		ug/Kg		96	73 - 120		
Isopropylbenzene			1000	1020		ug/Kg		102	77 - 120		
1,2-Dibromoethane			1000	1070		ug/Kg		107	76 - 120		
1,2-Dichloroethane			1000	967		ug/Kg		97	71 - 128		
t-Butyl alcohol			10000	10400		ug/Kg		104	74 - 121		
Xylenes, Total			3000	3080		ug/Kg		103	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*
4-Bromofluorobenzene (Surr)	*91*		*50 - 131*
Dibromofluoromethane (Surr)	*104*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-84991/11
Matrix: Solid
Analysis Batch: 84991

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	47100		ug/Kg		94	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*84*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*90*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-84991/5
Matrix: Solid
Analysis Batch: 84991

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	987		ug/Kg		99	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	963		ug/Kg		96	73 - 120	1	30
Toluene			1000	1000		ug/Kg		100	80 - 120	1	30
Methyl tertiary butyl ether			1000	1080		ug/Kg		108	72 - 120	1	30
Benzene			1000	1060		ug/Kg		106	80 - 120	1	30
Naphthalene			1000	975		ug/Kg		98	48 - 130	4	30
1,2,4-Trimethylbenzene			1000	948		ug/Kg		95	73 - 120	1	30
Isopropylbenzene			1000	1010		ug/Kg		101	77 - 120	2	30
1,2-Dibromoethane			1000	1060		ug/Kg		106	76 - 120	2	30
1,2-Dichloroethane			1000	962		ug/Kg		96	71 - 128	1	30
t-Butyl alcohol			10000	9610		ug/Kg		96	74 - 121	8	30
Xylenes, Total			3000	3060		ug/Kg		102	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*
4-Bromofluorobenzene (Surr)	*91*		*50 - 131*
Dibromofluoromethane (Surr)	*105*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-84955/1-A
Matrix: Solid
Analysis Batch: 85151

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 84955

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Chrysene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Fluorene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Naphthalene	ND		17	6.7	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Phenanthrene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Pyrene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*	*01/14/21 15:59*	*01/15/21 11:57*	*1*
Nitrobenzene-d5 (Surr)	*67*		*32 - 97*	*01/14/21 15:59*	*01/15/21 11:57*	*1*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*	*01/14/21 15:59*	*01/15/21 11:57*	*1*

Lab Sample ID: LCS 410-84955/2-A
Matrix: Solid
Analysis Batch: 85151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 84955

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			1670	1740		ug/Kg		104	75 - 114		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-84955/2-A
Matrix: Solid
Analysis Batch: 85151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 84955

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1670	1680		ug/Kg		101	73 - 114
Benzo[a]pyrene	1670	1620		ug/Kg		97	76 - 113
Benzo[b]fluoranthene	1670	1570		ug/Kg		94	73 - 117
Benzo[g,h,i]perylene	1670	1700		ug/Kg		102	77 - 114
Chrysene	1670	1660		ug/Kg		99	66 - 111
Fluorene	1670	1520		ug/Kg		91	62 - 110
Naphthalene	1670	1340		ug/Kg		80	60 - 94
Phenanthrene	1670	1730		ug/Kg		104	74 - 112
Pyrene	1670	1620		ug/Kg		97	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*84*		*39 - 100*
Nitrobenzene-d5 (Surr)	*70*		*32 - 97*
p-Terphenyl-d14 (Surr)	*102*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-84139/1-A
Matrix: Solid
Analysis Batch: 84396

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 84139

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		01/12/21 16:29	01/13/21 10:23	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		01/12/21 16:29	01/13/21 10:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*81*		*54 - 137*	*01/12/21 16:29*	*01/13/21 10:23*	*1*
o- terphenyl (Surr) (1C)	*98*		*52 - 154*	*01/12/21 16:29*	*01/13/21 10:23*	*1*

Lab Sample ID: LCS 410-84139/2-A
Matrix: Solid
Analysis Batch: 84396

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 84139

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	111		mg/Kg		83	64 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*69*		*54 - 137*
o- terphenyl (Surr) (1C)	*100*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-83274/1-A
Matrix: Solid
Analysis Batch: 83712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83274

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND	^3+	1.5	0.59	mg/Kg		01/08/21 08:58	01/11/21 11:37	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 410-83274/1-A
Matrix: Solid
Analysis Batch: 83780

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 83274

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		01/08/21 08:58	01/11/21 16:13	1

Lab Sample ID: LCS 410-83274/2-A
Matrix: Solid
Analysis Batch: 83780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 83274

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.88	2.96		mg/Kg		103	80 - 120

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

GC/MS VOA

Prep Batch: 83239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	5035	
410-25740-1 - DL	BT-14-S-25-20210107	Total/NA	Solid	5035	
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	5035	

Analysis Batch: 84991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	8260C	83239
410-25740-1 - DL	BT-14-S-25-20210107	Total/NA	Solid	8260C	83239
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	8260C	83239
LCS 410-84991/10	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-84991/4	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-84991/11	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-84991/5	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 83820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	3546	
410-25740-1 - DL	BT-14-S-25-20210107	Total/NA	Solid	3546	

Analysis Batch: 83938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	8270D	83820

Analysis Batch: 84372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1 - DL	BT-14-S-25-20210107	Total/NA	Solid	8270D	83820

Prep Batch: 84955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	3546	
MB 410-84955/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-84955/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 85151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	8270D	84955
MB 410-84955/1-A	Method Blank	Total/NA	Solid	8270D	84955
LCS 410-84955/2-A	Lab Control Sample	Total/NA	Solid	8270D	84955

GC Semi VOA

Prep Batch: 84139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	3546	
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	3546	
MB 410-84139/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-84139/2-A	Lab Control Sample	Total/NA	Solid	3546	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

GC Semi VOA

Analysis Batch: 84396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	8015C TPH	84139
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	8015C TPH	84139
MB 410-84139/1-A	Method Blank	Total/NA	Solid	8015C TPH	84139
LCS 410-84139/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	84139

Analysis Batch: 103628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	Total TPH	
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 83274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	3050B	
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	3050B	
MB 410-83274/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-83274/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 83712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-83274/1-A	Method Blank	Total/NA	Solid	6010C	83274

Analysis Batch: 83780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	6010C	83274
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	6010C	83274
MB 410-83274/1-A	Method Blank	Total/NA	Solid	6010C	83274
LCS 410-83274/2-A	Lab Control Sample	Total/NA	Solid	6010C	83274

General Chemistry

Analysis Batch: 83158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25740-1	BT-14-S-25-20210107	Total/NA	Solid	Moisture	
410-25740-2	BT-14-S-34-20210107	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

Client Sample ID: BT-14-S-25-20210107
Lab Sample ID: 410-25740-1
Date Collected: 01/07/21 11:45
Matrix: Solid
Date Received: 01/07/21 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	83158	01/07/21 21:14	PTG7	ELLE

Client Sample ID: BT-14-S-25-20210107
Lab Sample ID: 410-25740-1
Date Collected: 01/07/21 11:45
Matrix: Solid
Date Received: 01/07/21 17:15
Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			83239	01/08/21 07:39	HDS6	ELLE
Total/NA	Analysis	8260C		50	84991	01/15/21 00:26	NSK7	ELLE
Total/NA	Prep	5035	DL		83239	01/08/21 07:39	HDS6	ELLE
Total/NA	Analysis	8260C	DL	500	84991	01/15/21 00:47	NSK7	ELLE
Total/NA	Prep	3546			83820	01/11/21 18:22	FTV5	ELLE
Total/NA	Analysis	8270D		1	83938	01/12/21 15:57	ULM3	ELLE
Total/NA	Prep	3546	DL		83820	01/11/21 18:22	FTV5	ELLE
Total/NA	Analysis	8270D	DL	10	84372	01/13/21 18:41	ULM3	ELLE
Total/NA	Prep	3546			84139	01/12/21 16:29	FTV5	ELLE
Total/NA	Analysis	8015C TPH		5	84396	01/13/21 14:05	KP5X	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Prep	3050B			83274	01/08/21 08:58	UAMX	ELLE
Total/NA	Analysis	6010C		1	83780	01/11/21 16:20	UCIG	ELLE

Client Sample ID: BT-14-S-34-20210107
Lab Sample ID: 410-25740-2
Date Collected: 01/07/21 13:30
Matrix: Solid
Date Received: 01/07/21 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	83158	01/07/21 21:14	PTG7	ELLE

Client Sample ID: BT-14-S-34-20210107
Lab Sample ID: 410-25740-2
Date Collected: 01/07/21 13:30
Matrix: Solid
Date Received: 01/07/21 17:15
Percent Solids: 90.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			83239	01/08/21 07:39	HDS6	ELLE
Total/NA	Analysis	8260C		50	84991	01/15/21 00:06	NSK7	ELLE
Total/NA	Prep	3546			84955	01/14/21 16:00	DN9W	ELLE
Total/NA	Analysis	8270D		1	85151	01/15/21 13:54	SJ89	ELLE
Total/NA	Prep	3546			84139	01/12/21 16:29	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	84396	01/13/21 11:27	KP5X	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Prep	3050B			83274	01/08/21 08:58	UAMX	ELLE
Total/NA	Analysis	6010C		1	83780	01/11/21 16:23	UCIG	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp.
Job ID: 410-25740-1
Project/Site: Belmont Terminal/213402797

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal/213402797

Job ID: 410-25740-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-25740-1	BT-14-S-25-20210107	Solid	01/07/21 11:45	01/07/21 17:15	
410-25740-2	BT-14-S-34-20210107	Solid	01/07/21 13:30	01/07/21 17:15	

Environ ... equest/Chain of Custody

eurofins | Lancaster Laboratories Environmental

410-25740 Chain of Custody

Sample #

| | | |

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-25740-1

Login Number: 25740
List Number: 1
Creator: Colon Martinez, Jessenia C

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-25856-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
1/20/2021 8:27:31 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
1/20/2021 8:27:31 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-25856-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-25856-1

Receipt
The samples were received on 1/8/2021 3:23 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

Receipt Exceptions
The following samples were collected in an improper container: BT-14-W-44-20210108 (410-25856-1) and TB-20210105 (410-25856-2). 2 amber vials submitted peserved with H3PO4. This is for method 5310 (TOC) not Volatile Headspace Hydrocarbon, Chloride, Sulfate or Nitrate. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

GC/MS VOA
Method 8260C_UST: The method requirement for no headspace was not met on analytical batch 410-86027. Due to the need for re-analysis, the container used for the following sample was previously opened and contained headspace: BT-14-W-44-20210108 (410-25856-1). The original sample container did not contain headspace.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
Method RSK_175: The method requirement for no headspace was not met. The following volatile sample was analyzed with significant headspace in the sample container(s): BT-14-W-44-20210108 (410-25856-1). Significant headspace is defined as a bubble greater than 6 mm in diameter.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-14-W-44-20210108
Lab Sample ID: 410-25856-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	250		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	70		25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	690		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	920		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	53		25	1.0	ug/L	5		8260C/UST	Total/NA
Naphthalene	660		25	5.0	ug/L	5		8260C/UST	Total/NA
Toluene	800		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	1100		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether - DL	7000		50	10	ug/L	50		8260C/UST	Total/NA
t-Butyl alcohol - DL	13000		2500	600	ug/L	50		8260C/UST	Total/NA
Ethane (1C)	1.1	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	410		50	30	ug/L	10		RSK-175	Total/NA

Client Sample ID: TB-20210105
Lab Sample ID: 410-25856-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-14-W-44-20210108 — Lab Sample ID: 410-25856-1

Date Collected: 01/08/21 11:00 — **Matrix: Water**
Date Received: 01/08/21 15:23

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**250**		25	5.0	ug/L			01/15/21 14:18	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			01/15/21 14:18	5
1,3,5-Trimethylbenzene	**70**		25	1.5	ug/L			01/15/21 14:18	5
Benzene	**690**		5.0	1.0	ug/L			01/15/21 14:18	5
Ethylbenzene	**920**		5.0	2.0	ug/L			01/15/21 14:18	5
Isopropylbenzene	**53**		25	1.0	ug/L			01/15/21 14:18	5
Naphthalene	**660**		25	5.0	ug/L			01/15/21 14:18	5
Toluene	**800**		5.0	1.0	ug/L			01/15/21 14:18	5
Xylenes, Total	**1100**		30	7.0	ug/L			01/15/21 14:18	5
Ethylene Dibromide	ND		5.0	1.0	ug/L			01/15/21 14:18	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*01/15/21 14:18*	*5*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*01/15/21 14:18*	*5*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/15/21 14:18*	*5*
Toluene-d8 (Surr)	*112*		*80 - 120*		*01/15/21 14:18*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tertiary butyl ether	**7000**		50	10	ug/L			01/19/21 17:31	50
t-Butyl alcohol	**13000**		2500	600	ug/L			01/19/21 17:31	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*01/19/21 17:31*	*50*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*01/19/21 17:31*	*50*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*01/19/21 17:31*	*50*
Toluene-d8 (Surr)	*109*		*80 - 120*		*01/19/21 17:31*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**1.1**	**J**	5.0	1.0	ug/L		01/15/21 08:31	01/15/21 13:29	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/15/21 08:31	01/15/21 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*83*		*28 - 140*	*01/15/21 08:31*	*01/15/21 13:29*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**410**		50	30	ug/L		01/19/21 08:14	01/19/21 12:30	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*86*		*28 - 140*	*01/19/21 08:14*	*01/19/21 12:30*	*10*

Client Sample ID: TB-20210105 — Lab Sample ID: 410-25856-2

Date Collected: 01/05/21 00:00 — **Matrix: Water**
Date Received: 01/08/21 15:23

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/15/21 13:06	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/15/21 13:06	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/15/21 13:06	1

Client: Stantec Consulting Corp.
Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: TB-20210105
Lab Sample ID: 410-25856-2
Date Collected: 01/05/21 00:00
Matrix: Water
Date Received: 01/08/21 15:23

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			01/15/21 13:06	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/15/21 13:06	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/15/21 13:06	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/15/21 13:06	1
Naphthalene	ND		5.0	1.0	ug/L			01/15/21 13:06	1
Toluene	ND		1.0	0.20	ug/L			01/15/21 13:06	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/15/21 13:06	1
t-Butyl alcohol	ND		50	12	ug/L			01/15/21 13:06	1
Ethylene Dibromide	ND		1.0	0.20	ug/L			01/15/21 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*01/15/21 13:06*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*01/15/21 13:06*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*01/15/21 13:06*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/15/21 13:06*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-25856-1	BT-14-W-44-20210108	104	91	99	112
410-25856-1 - DL	BT-14-W-44-20210108	104	90	94	109
410-25856-2	TB-20210105	103	90	94	111
LCS 410-85173/5	Lab Control Sample	105	89	96	110
LCS 410-86027/5	Lab Control Sample	105	92	97	111
MB 410-85173/8	Method Blank	101	89	97	108
MB 410-86027/8	Method Blank	105	88	99	107

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-25856-1	BT-14-W-44-20210108	83
410-25856-1 - DL	BT-14-W-44-20210108	86
LCS 410-85162/2-A	Lab Control Sample	98
LCS 410-85859/2-A	Lab Control Sample	94
LCSD 410-85859/3-A	Lab Control Sample Dup	92
MB 410-85162/1-A	Method Blank	98
MB 410-85859/1-A	Method Blank	96

Surrogate Legend

Propene = Propene

Client: Stantec Consulting Corp.
Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-85173/8
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/15/21 12:18	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/15/21 12:18	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/15/21 12:18	1
Benzene	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/15/21 12:18	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/15/21 12:18	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Naphthalene	ND		5.0	1.0	ug/L			01/15/21 12:18	1
Toluene	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/15/21 12:18	1
t-Butyl alcohol	ND		50	12	ug/L			01/15/21 12:18	1
Ethylene Dibromide	ND		1.0	0.20	ug/L			01/15/21 12:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/15/21 12:18*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/15/21 12:18*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*01/15/21 12:18*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*01/15/21 12:18*	*1*

Lab Sample ID: LCS 410-85173/5
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.5		ug/L		98	75 - 120
1,2-Dichloroethane	20.0	16.0		ug/L		80	73 - 124
1,3,5-Trimethylbenzene	20.0	19.3		ug/L		96	75 - 120
Benzene	20.0	16.5		ug/L		83	80 - 120
Ethylbenzene	20.0	19.9		ug/L		100	80 - 120
Isopropylbenzene	20.0	18.2		ug/L		91	80 - 120
Methyl tertiary butyl ether	20.0	15.7		ug/L		78	69 - 122
Naphthalene	20.0	18.2		ug/L		91	53 - 124
Toluene	20.0	19.4		ug/L		97	80 - 120
Xylenes, Total	60.0	55.9		ug/L		93	80 - 120
t-Butyl alcohol	200	198		ug/L		99	60 - 130
Ethylene Dibromide	20.0	18.7		ug/L		94	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*110*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-86027/8
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/19/21 16:06	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/19/21 16:06	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/19/21 16:06	1
Benzene	ND		1.0	0.20	ug/L			01/19/21 16:06	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/19/21 16:06	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/19/21 16:06	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/19/21 16:06	1
Naphthalene	ND		5.0	1.0	ug/L			01/19/21 16:06	1
Toluene	ND		1.0	0.20	ug/L			01/19/21 16:06	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/19/21 16:06	1
t-Butyl alcohol	ND		50	12	ug/L			01/19/21 16:06	1
Ethylene Dibromide	ND		1.0	0.20	ug/L			01/19/21 16:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*01/19/21 16:06*	*1*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*01/19/21 16:06*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/19/21 16:06*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*01/19/21 16:06*	*1*

Lab Sample ID: LCS 410-86027/5
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
1,2-Dichloroethane	20.0	16.0		ug/L		80	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	16.4		ug/L		82	80 - 120
Ethylbenzene	20.0	20.0		ug/L		100	80 - 120
Isopropylbenzene	20.0	18.5		ug/L		92	80 - 120
Methyl tertiary butyl ether	20.0	16.1		ug/L		80	69 - 122
Naphthalene	20.0	17.2		ug/L		86	53 - 124
Toluene	20.0	19.8		ug/L		99	80 - 120
Xylenes, Total	60.0	56.6		ug/L		94	80 - 120
t-Butyl alcohol	200	226		ug/L		113	60 - 130
Ethylene Dibromide	20.0	17.5		ug/L		87	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-85162/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 85167
Prep Batch: 85162

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/15/21 08:31	01/15/21 10:09	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/15/21 08:31	01/15/21 10:09	1
Methane (1C)	ND		5.0	3.0	ug/L		01/15/21 08:31	01/15/21 10:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*01/15/21 08:31*	*01/15/21 10:09*	*1*

Lab Sample ID: LCS 410-85162/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 85167
Prep Batch: 85162

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	55.3		ug/L		93	85 - 115
Ethene (1C)	60.4	56.7		ug/L		94	83 - 115
Methane (1C)	59.4	60.3		ug/L		102	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*98*		*28 - 140*

Lab Sample ID: MB 410-85859/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 85865
Prep Batch: 85859

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/19/21 08:14	01/19/21 10:40	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/19/21 08:14	01/19/21 10:40	1
Methane (1C)	ND		5.0	3.0	ug/L		01/19/21 08:14	01/19/21 10:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*96*		*28 - 140*	*01/19/21 08:14*	*01/19/21 10:40*	*1*

Lab Sample ID: LCS 410-85859/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 85865
Prep Batch: 85859

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	56.0		ug/L		94	85 - 115
Ethene (1C)	60.4	56.8		ug/L		94	83 - 115
Methane (1C)	59.4	59.1		ug/L		100	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*94*		*28 - 140*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-85859/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 85865
Prep Batch: 85859

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	53.7		ug/L		90	85 - 115	4	20
Ethene (1C)			60.4	54.9		ug/L		91	83 - 115	3	20
Methane (1C)			59.4	57.7		ug/L		97	85 - 115	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*92*		*28 - 140*

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Analysis Batch: 85173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25856-1	BT-14-W-44-20210108	Total/NA	Water	8260C/UST	
410-25856-2	TB-20210105	Total/NA	Water	8260C/UST	
MB 410-85173/8	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-85173/5	Lab Control Sample	Total/NA	Water	8260C/UST	

Analysis Batch: 86027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25856-1 - DL	BT-14-W-44-20210108	Total/NA	Water	8260C/UST	
MB 410-86027/8	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-86027/5	Lab Control Sample	Total/NA	Water	8260C/UST	

GC VOA

Prep Batch: 85162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25856-1	BT-14-W-44-20210108	Total/NA	Water	RSK-175	
MB 410-85162/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-85162/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 85167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25856-1	BT-14-W-44-20210108	Total/NA	Water	RSK-175	85162
MB 410-85162/1-A	Method Blank	Total/NA	Water	RSK-175	85162
LCS 410-85162/2-A	Lab Control Sample	Total/NA	Water	RSK-175	85162

Prep Batch: 85859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25856-1 - DL	BT-14-W-44-20210108	Total/NA	Water	RSK-175	
MB 410-85859/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-85859/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-85859/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 85865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-25856-1 - DL	BT-14-W-44-20210108	Total/NA	Water	RSK-175	85859
MB 410-85859/1-A	Method Blank	Total/NA	Water	RSK-175	85859
LCS 410-85859/2-A	Lab Control Sample	Total/NA	Water	RSK-175	85859
LCSD 410-85859/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	85859

Lab Chronicle

Client: Stantec Consulting Corp. Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-14-W-44-20210108 Lab Sample ID: 410-25856-1

Date Collected: 01/08/21 11:00 **Matrix: Water**
Date Received: 01/08/21 15:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	85173	01/15/21 14:18	UKAD	ELLE
Total/NA	Analysis	8260C/UST	DL	50	86027	01/19/21 17:31	H9JD	ELLE
Total/NA	Prep	RSK-175			85162	01/15/21 08:31	EG	ELLE
Total/NA	Analysis	RSK-175		1	85167	01/15/21 13:29	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		85859	01/19/21 08:14	EG	ELLE
Total/NA	Analysis	RSK-175	DL	10	85865	01/19/21 12:30	LXF2	ELLE

Client Sample ID: TB-20210105 Lab Sample ID: 410-25856-2

Date Collected: 01/05/21 00:00 **Matrix: Water**
Date Received: 01/08/21 15:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	85173	01/15/21 13:06	UKAD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
5030C	Purge and Trap	SW846	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-25856-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-25856-1	BT-14-W-44-20210108	Water	01/08/21 11:00	01/08/21 15:23	
410-25856-2	TB-20210105	Water	01/05/21 00:00	01/08/21 15:23	

Environm quest/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 410-25856 Chain of Custody

Sample # _____

| | | |

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-25856-1

Login Number: 25856

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Colon Martinez, Jessenia C

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-26092-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 9:56:32 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 9:56:32 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26092-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-26092-1

Revision
The report being provided is a revision of the original report sent on 1/21/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The sample was received on 1/12/2021 4:30 PM; the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.7°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-84999 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-14-S-60-20210111
Lab Sample ID: 410-26092-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1.6	J	4.0	0.32	ug/Kg	1	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	0.62	J	4.0	0.40	ug/Kg	1	☼	8260C	Total/NA
Toluene	7.6		4.0	0.48	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	0.92	J	4.0	0.40	ug/Kg	1	☼	8260C	Total/NA
Benzene	1.4	J	4.0	0.40	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	1.8	J	4.0	0.40	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	1800		87	35	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	7.6	J	7.9	1.1	ug/Kg	1	☼	8260C	Total/NA
Fluorene	4.7	J	19	3.9	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	16	J	19	7.7	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	12	J	19	3.9	ug/Kg	1	☼	8270D	Total/NA
Pyrene	4.9	J	19	3.9	ug/Kg	1	☼	8270D	Total/NA
Lead	18		1.7	0.68	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-14-S-60-20210111
Lab Sample ID: 410-26092-1

Date Collected: 01/11/21 14:30
Matrix: Solid

Date Received: 01/12/21 16:30
Percent Solids: 86.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1.6**	**J**	4.0	0.32	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
1,3,5-Trimethylbenzene	**0.62**	**J**	4.0	0.40	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
Toluene	**7.6**		4.0	0.48	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
Methyl tertiary butyl ether	**0.92**	**J**	4.0	0.40	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
Benzene	**1.4**	**J**	4.0	0.40	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
1,2,4-Trimethylbenzene	**1.8**	**J**	4.0	0.40	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
Isopropylbenzene	ND		4.0	0.32	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
1,2-Dibromoethane	ND		4.0	0.32	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
1,2-Dichloroethane	ND		4.0	0.48	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
C4-C12-TPH-GRO	**1800**		87	35	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
t-Butyl alcohol	ND	^c	79	12	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1
Xylenes, Total	**7.6**	**J**	7.9	1.1	ug/Kg	☼	01/13/21 08:31	01/14/21 23:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*	*01/13/21 08:31*	*01/14/21 23:51*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*	*01/13/21 08:31*	*01/14/21 23:51*	*1*
Dibromofluoromethane (Surr)	*101*		*50 - 141*	*01/13/21 08:31*	*01/14/21 23:51*	*1*
Toluene-d8 (Surr)	*98*		*52 - 141*	*01/13/21 08:31*	*01/14/21 23:51*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		19	3.9	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Benzo[a]anthracene	ND		19	7.7	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Benzo[a]pyrene	ND		19	3.9	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Benzo[b]fluoranthene	ND		19	3.9	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Benzo[g,h,i]perylene	ND		19	3.9	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Chrysene	ND		19	3.9	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Fluorene	**4.7**	**J**	19	3.9	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Naphthalene	**16**	**J**	19	7.7	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Phenanthrene	**12**	**J**	19	3.9	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1
Pyrene	**4.9**	**J**	19	3.9	ug/Kg	☼	01/14/21 16:00	01/15/21 17:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*39 - 100*	*01/14/21 16:00*	*01/15/21 17:25*	*1*
Nitrobenzene-d5 (Surr)	*69*		*32 - 97*	*01/14/21 16:00*	*01/15/21 17:25*	*1*
p-Terphenyl-d14 (Surr)	*94*		*45 - 108*	*01/14/21 16:00*	*01/15/21 17:25*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		14	5.7	mg/Kg	☼	01/20/21 10:28	01/21/21 11:15	1
>C12-C22 (1C)	ND		14	5.7	mg/Kg	☼	01/20/21 10:28	01/21/21 11:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*64*		*54 - 137*	*01/20/21 10:28*	*01/21/21 11:15*	*1*
o- terphenyl (Surr) (1C)	*45*	*S1-*	*52 - 154*	*01/20/21 10:28*	*01/21/21 11:15*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		14	5.8	mg/Kg	☼		03/15/21 09:42	1

Client Sample Results

Client: Stantec Consulting Corp. Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-14-S-60-20210111 **Lab Sample ID: 410-26092-1**
Date Collected: 01/11/21 14:30 **Matrix: Solid**
Date Received: 01/12/21 16:30 **Percent Solids: 86.4**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	18		1.7	0.68	mg/Kg	☼	01/13/21 04:43	01/17/21 15:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.6		1.0	1.0	%			01/12/21 23:32	1

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-26092-1	BT-14-S-60-20210111	108	95	101	98
LCS 410-84999/4	Lab Control Sample	106	98	101	99
LCS 410-84999/6	Lab Control Sample	100	98	99	99
LCSD 410-84999/5	Lab Control Sample Dup	104	99	100	100
LCSD 410-84999/7	Lab Control Sample Dup	101	97	98	100
MB 410-84999/9	Method Blank	106	96	102	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-26092-1	BT-14-S-60-20210111	81	69	94
LCS 410-84955/2-A	Lab Control Sample	84	70	102
MB 410-84955/1-A	Method Blank	82	67	93

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-26092-1	BT-14-S-60-20210111	64	45 S1-
LCS 410-86218/2-A	Lab Control Sample	73	109
MB 410-86218/1-A	Method Blank	75	93

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26092-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-84999/9
Matrix: Solid
Analysis Batch: 84999

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			01/14/21 21:54	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/14/21 21:54	1
Toluene	ND		5.0	0.60	ug/Kg			01/14/21 21:54	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			01/14/21 21:54	1
Benzene	ND		5.0	0.50	ug/Kg			01/14/21 21:54	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/14/21 21:54	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			01/14/21 21:54	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			01/14/21 21:54	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			01/14/21 21:54	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			01/14/21 21:54	1
t-Butyl alcohol	ND		100	15	ug/Kg			01/14/21 21:54	1
Xylenes, Total	ND		10	1.4	ug/Kg			01/14/21 21:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*		*01/14/21 21:54*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*		*01/14/21 21:54*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 141*		*01/14/21 21:54*	*1*
Toluene-d8 (Surr)	*97*		*52 - 141*		*01/14/21 21:54*	*1*

Lab Sample ID: LCS 410-84999/4
Matrix: Solid
Analysis Batch: 84999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	21.1		ug/Kg		106	78 - 120
1,3,5-Trimethylbenzene	20.0	21.2		ug/Kg		106	73 - 120
Toluene	20.0	21.3		ug/Kg		107	80 - 120
Methyl tertiary butyl ether	20.0	16.1		ug/Kg		80	72 - 120
Benzene	20.0	21.8		ug/Kg		109	80 - 120
Naphthalene	20.0	19.8		ug/Kg		99	48 - 130
1,2,4-Trimethylbenzene	20.0	21.0		ug/Kg		105	73 - 120
Isopropylbenzene	20.0	21.2		ug/Kg		106	77 - 120
1,2-Dibromoethane	20.0	20.9		ug/Kg		104	76 - 120
1,2-Dichloroethane	20.0	20.4		ug/Kg		102	71 - 128
t-Butyl alcohol	200	224		ug/Kg		112	74 - 121
Xylenes, Total	60.0	64.5		ug/Kg		108	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-84999/6
Matrix: Solid
Analysis Batch: 84999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	997		ug/Kg		100	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Lab Sample ID: LCSD 410-84999/5
Matrix: Solid
Analysis Batch: 84999

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.8		ug/Kg		104	78 - 120	2	30
1,3,5-Trimethylbenzene			20.0	20.5		ug/Kg		103	73 - 120	3	30
Toluene			20.0	20.8		ug/Kg		104	80 - 120	2	30
Methyl tertiary butyl ether			20.0	16.0		ug/Kg		80	72 - 120	0	30
Benzene			20.0	21.2		ug/Kg		106	80 - 120	2	30
Naphthalene			20.0	19.9		ug/Kg		100	48 - 130	0	30
1,2,4-Trimethylbenzene			20.0	20.4		ug/Kg		102	73 - 120	3	30
Isopropylbenzene			20.0	20.9		ug/Kg		104	77 - 120	2	30
1,2-Dibromoethane			20.0	20.3		ug/Kg		102	76 - 120	3	30
1,2-Dichloroethane			20.0	19.9		ug/Kg		100	71 - 128	3	30
t-Butyl alcohol			200	222		ug/Kg		111	74 - 121	1	30
Xylenes, Total			60.0	63.1		ug/Kg		105	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Lab Sample ID: LCSD 410-84999/7
Matrix: Solid
Analysis Batch: 84999

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	956		ug/Kg		96	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-84955/1-A
Matrix: Solid
Analysis Batch: 85151

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 84955

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Chrysene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Fluorene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Naphthalene	ND		17	6.7	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Phenanthrene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1
Pyrene	ND		17	3.3	ug/Kg		01/14/21 15:59	01/15/21 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*	*01/14/21 15:59*	*01/15/21 11:57*	*1*
Nitrobenzene-d5 (Surr)	*67*		*32 - 97*	*01/14/21 15:59*	*01/15/21 11:57*	*1*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*	*01/14/21 15:59*	*01/15/21 11:57*	*1*

Lab Sample ID: LCS 410-84955/2-A
Matrix: Solid
Analysis Batch: 85151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 84955

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1740		ug/Kg		104	75 - 114
Benzo[a]anthracene	1670	1680		ug/Kg		101	73 - 114
Benzo[a]pyrene	1670	1620		ug/Kg		97	76 - 113
Benzo[b]fluoranthene	1670	1570		ug/Kg		94	73 - 117
Benzo[g,h,i]perylene	1670	1700		ug/Kg		102	77 - 114
Chrysene	1670	1660		ug/Kg		99	66 - 111
Fluorene	1670	1520		ug/Kg		91	62 - 110
Naphthalene	1670	1340		ug/Kg		80	60 - 94
Phenanthrene	1670	1730		ug/Kg		104	74 - 112
Pyrene	1670	1620		ug/Kg		97	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*84*		*39 - 100*
Nitrobenzene-d5 (Surr)	*70*		*32 - 97*
p-Terphenyl-d14 (Surr)	*102*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-86218/1-A
Matrix: Solid
Analysis Batch: 86757

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 86218

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		01/20/21 10:28	01/21/21 10:32	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		01/20/21 10:28	01/21/21 10:32	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-86218/1-A
Matrix: Solid
Analysis Batch: 86757

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 86218

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	75		54 - 137	01/20/21 10:28	01/21/21 10:32	1
o- terphenyl (Surr) (1C)	93		52 - 154	01/20/21 10:28	01/21/21 10:32	1

Lab Sample ID: LCS 410-86218/2-A
Matrix: Solid
Analysis Batch: 86757

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86218

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	122		mg/Kg		91	64 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	73		54 - 137
o- terphenyl (Surr) (1C)	109		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-84258/1-A
Matrix: Solid
Analysis Batch: 84909

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 84258

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.55	mg/Kg		01/13/21 04:43	01/14/21 11:35	1

Lab Sample ID: MB 410-84258/1-A
Matrix: Solid
Analysis Batch: 85448

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 84258

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.55	mg/Kg		01/13/21 04:43	01/17/21 14:07	1

Lab Sample ID: LCS 410-84258/2-A
Matrix: Solid
Analysis Batch: 84909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 84258

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.94	2.87		mg/Kg		97	80 - 120

Lab Sample ID: LCS 410-84258/2-A
Matrix: Solid
Analysis Batch: 85448

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 84258

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.94	3.04		mg/Kg		103	80 - 120

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 84356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	5035	

Analysis Batch: 84999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	8260C	84356
MB 410-84999/9	Method Blank	Total/NA	Solid	8260C	
LCS 410-84999/4	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-84999/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-84999/5	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-84999/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 84955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	3546	
MB 410-84955/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-84955/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 85151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	8270D	84955
MB 410-84955/1-A	Method Blank	Total/NA	Solid	8270D	84955
LCS 410-84955/2-A	Lab Control Sample	Total/NA	Solid	8270D	84955

GC Semi VOA

Prep Batch: 84962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1 - RE	BT-14-S-60-20210111	Total/NA	Solid	3546	
MB 410-84962/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-84962/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 85273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1 - RE	BT-14-S-60-20210111	Total/NA	Solid	8015C TPH	84962
MB 410-84962/1-A	Method Blank	Total/NA	Solid	8015C TPH	84962
LCS 410-84962/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	84962

Prep Batch: 86218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	3546	
MB 410-86218/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-86218/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 86757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	8015C TPH	86218
MB 410-86218/1-A	Method Blank	Total/NA	Solid	8015C TPH	86218
LCS 410-86218/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	86218

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26092-1

GC Semi VOA

Analysis Batch: 103177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 84258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	3050B	
MB 410-84258/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-84258/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 84909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-84258/1-A	Method Blank	Total/NA	Solid	6010C	84258
LCS 410-84258/2-A	Lab Control Sample	Total/NA	Solid	6010C	84258

Analysis Batch: 85448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	6010C	84258
MB 410-84258/1-A	Method Blank	Total/NA	Solid	6010C	84258
LCS 410-84258/2-A	Lab Control Sample	Total/NA	Solid	6010C	84258

General Chemistry

Analysis Batch: 84234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26092-1	BT-14-S-60-20210111	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-14-S-60-20210111
Lab Sample ID: 410-26092-1
Date Collected: 01/11/21 14:30
Matrix: Solid
Date Received: 01/12/21 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	84234	01/12/21 23:32	X4C8	ELLE

Client Sample ID: BT-14-S-60-20210111
Lab Sample ID: 410-26092-1
Date Collected: 01/11/21 14:30
Matrix: Solid
Date Received: 01/12/21 16:30
Percent Solids: 86.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			84356	01/13/21 08:31	HDS6	ELLE
Total/NA	Analysis	8260C		1	84999	01/14/21 23:51	R64Z	ELLE
Total/NA	Prep	3546			84955	01/14/21 16:00	DN9W	ELLE
Total/NA	Analysis	8270D		1	85151	01/15/21 17:25	SJ89	ELLE
Total/NA	Prep	3546	RE		84962	01/14/21 16:22	DN9W	ELLE
Total/NA	Analysis	8015C TPH	RE	1	85273	01/15/21 15:10	YHQ2	ELLE
Total/NA	Prep	3546			86218	01/20/21 10:28	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	86757	01/21/21 11:15	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103177	03/15/21 09:42	UJL4	ELLE
Total/NA	Prep	3050B			84258	01/13/21 04:43	UAMX	ELLE
Total/NA	Analysis	6010C		1	85448	01/17/21 15:09	WJM9	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-26092-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-26092-1	BT-14-S-60-20210111	Solid	01/11/21 14:30	01/12/21 16:30	

Environmental Analysis Request and Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-26092 Chain of Custody

al use only

COC #615503

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dana Hoblitzell	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: _____

Analysis Requested

Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH - DRO	TPH - GRO Moisture + VOC 8260	Lead	PAH 8270D
BT-14-S-60-20210111	1/11/21	1430	X		6	X	X	X	X

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
[signature]	1/12/21	1230	Pierre	1/12/21	12:30
Pierre	1/12/21	1630			
			[signature]	1/12/21	1630

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.7 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-26092-1

Login Number: 26092
List Number: 1
Creator: Metzger, Katherine A

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-26291-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 9:59:17 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 9:59:17 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-26291-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-26291-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-26291-1

Revision
The report being provided is a revision of the original report sent on 1/29/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/13/2021 4:36 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-88275 recovered above the upper control limit for t-Butyl alcohol. Non-detects are reported. Any detection is considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: Surrogate recovery for the following sample was outside control limits: BT-17B-S-45-20210113 (410-26291-3). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6010C: Not SQAR sample, initial weight used not the target weight

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-26291-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-17B-S-15-20210112 — Lab Sample ID: 410-26291-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	230	J	260	21	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	69	J	260	26	ug/Kg	50	☼	8260C	Total/NA
Benzene	120	J	260	26	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	120	J	260	26	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	660		260	21	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol	1600	J	5200	780	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	930		520	73	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	390000	B	57000	23000	ug/Kg	500	☼	8260C	Total/NA
Anthracene	280		17	3.5	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	10	J	17	6.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	6.7	J	17	3.5	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	6.0	J	17	3.5	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	4.4	J	17	3.5	ug/Kg	1	☼	8270D	Total/NA
Chrysene	13	J	17	3.5	ug/Kg	1	☼	8270D	Total/NA
Fluorene	1100		17	3.5	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	1500		17	6.9	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	3300		17	3.5	ug/Kg	1	☼	8270D	Total/NA
Pyrene	100		17	3.5	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	95	J	120	52	mg/Kg	10	☼	8015C TPH	Total/NA
>C12-C22 (1C)	2100		120	52	mg/Kg	10	☼	8015C TPH	Total/NA
Total Reported TPH	2200		13	5.2	mg/Kg	1	☼	Total TPH	Total/NA
Lead	5.4		1.2	0.47	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210113 — Lab Sample ID: 410-26291-2

No Detections.

Client Sample ID: BT-17B-S-45-20210113 — Lab Sample ID: 410-26291-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	14		4.9	0.49	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	59	J	110	43	ug/Kg	1	☼	8260C	Total/NA
t-Butyl alcohol	76	J ^c	98	15	ug/Kg	1	☼	8260C	Total/NA
>C22-C44 (1C)	24		15	6.3	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	24		15	6.3	mg/Kg	1	☼	Total TPH	Total/NA
Lead	11		1.3	0.53	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-17B-S-15-20210112
Lab Sample ID: 410-26291-1

Date Collected: 01/12/21 14:00
Matrix: Solid

Date Received: 01/13/21 16:36
Percent Solids: 95.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	230	J	260	21	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
1,3,5-Trimethylbenzene	69	J	260	26	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
Toluene	ND		260	31	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
Methyl tertiary butyl ether	ND		260	26	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
Benzene	120	J	260	26	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
1,2,4-Trimethylbenzene	120	J	260	26	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
Isopropylbenzene	660		260	21	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
1,2-Dibromoethane	ND		260	21	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
1,2-Dichloroethane	ND		260	31	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
t-Butyl alcohol	1600	J	5200	780	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50
Xylenes, Total	930		520	73	ug/Kg	☼	01/15/21 08:40	01/22/21 12:38	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*54 - 135*	*01/15/21 08:40*	*01/22/21 12:38*	*50*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*	*01/15/21 08:40*	*01/22/21 12:38*	*50*
Dibromofluoromethane (Surr)	*84*		*50 - 141*	*01/15/21 08:40*	*01/22/21 12:38*	*50*
Toluene-d8 (Surr)	*89*		*52 - 141*	*01/15/21 08:40*	*01/22/21 12:38*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	390000	B	57000	23000	ug/Kg	☼	01/15/21 08:40	01/22/21 12:58	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*54 - 135*	*01/15/21 08:40*	*01/22/21 12:58*	*500*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*	*01/15/21 08:40*	*01/22/21 12:58*	*500*
Dibromofluoromethane (Surr)	*80*		*50 - 141*	*01/15/21 08:40*	*01/22/21 12:58*	*500*
Toluene-d8 (Surr)	*89*		*52 - 141*	*01/15/21 08:40*	*01/22/21 12:58*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	280		17	3.5	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Benzo[a]anthracene	10	J	17	6.9	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Benzo[a]pyrene	6.7	J	17	3.5	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Benzo[b]fluoranthene	6.0	J	17	3.5	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Benzo[g,h,i]perylene	4.4	J	17	3.5	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Chrysene	13	J	17	3.5	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Fluorene	1100		17	3.5	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Naphthalene	1500		17	6.9	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Phenanthrene	3300		17	3.5	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1
Pyrene	100		17	3.5	ug/Kg	☼	01/18/21 09:10	01/24/21 06:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*39 - 100*	*01/18/21 09:10*	*01/24/21 06:19*	*1*
Nitrobenzene-d5 (Surr)	*91*		*32 - 97*	*01/18/21 09:10*	*01/24/21 06:19*	*1*
p-Terphenyl-d14 (Surr)	*89*		*45 - 108*	*01/18/21 09:10*	*01/24/21 06:19*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	95	J	120	52	mg/Kg	☼	01/18/21 02:07	01/20/21 14:47	10
>C12-C22 (1C)	2100		120	52	mg/Kg	☼	01/18/21 02:07	01/20/21 14:47	10

Client Sample ID: BT-17B-S-15-20210112 — Lab Sample ID: 410-26291-1

Date Collected: 01/12/21 14:00 — **Matrix: Solid**
Date Received: 01/13/21 16:36 — **Percent Solids: 95.6**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*70*		*54 - 137*	*01/18/21 02:07*	*01/20/21 14:47*	*10*
o- terphenyl (Surr) (1C)	*113*		*52 - 154*	*01/18/21 02:07*	*01/20/21 14:47*	*10*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**2200**		13	5.2	mg/Kg	☼		01/29/21 14:34	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**5.4**		1.2	0.47	mg/Kg	☼	01/15/21 08:31	01/18/21 15:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**4.4**		1.0	1.0	%			01/14/21 21:50	1

Client Sample ID: TB-20210113 — Lab Sample ID: 410-26291-2

Date Collected: 01/13/21 00:00 — **Matrix: Water**
Date Received: 01/13/21 16:36

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/15/21 13:29	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/15/21 13:29	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/15/21 13:29	1
Benzene	ND		1.0	0.20	ug/L			01/15/21 13:29	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/15/21 13:29	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/15/21 13:29	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/15/21 13:29	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/15/21 13:29	1
Toluene	ND		1.0	0.20	ug/L			01/15/21 13:29	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/15/21 13:29	1
t-Butyl alcohol	ND		50	12	ug/L			01/15/21 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*01/15/21 13:29*	*1*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*01/15/21 13:29*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*01/15/21 13:29*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*01/15/21 13:29*	*1*

Client Sample ID: BT-17B-S-45-20210113 — Lab Sample ID: 410-26291-3

Date Collected: 01/13/21 10:30 — **Matrix: Solid**
Date Received: 01/13/21 16:36 — **Percent Solids: 78.8**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		4.9	0.39	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
1,3,5-Trimethylbenzene	ND		4.9	0.49	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
Toluene	ND		4.9	0.59	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
Methyl tertiary butyl ether	ND		4.9	0.49	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
Benzene	**14**		4.9	0.49	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
1,2,4-Trimethylbenzene	ND		4.9	0.49	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
Isopropylbenzene	ND		4.9	0.39	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1

Client Sample ID: BT-17B-S-45-20210113 **Lab Sample ID: 410-26291-3**
Date Collected: 01/13/21 10:30 **Matrix: Solid**
Date Received: 01/13/21 16:36 **Percent Solids: 78.8**

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		4.9	0.39	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
1,2-Dichloroethane	ND		4.9	0.59	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
C4-C12-TPH-GRO	**59**	**J**	110	43	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
t-Butyl alcohol	**76**	**J ^c**	98	15	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1
Xylenes, Total	ND		9.8	1.4	ug/Kg	☼	01/15/21 09:13	01/27/21 01:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*	*01/15/21 09:13*	*01/27/21 01:18*	*1*
4-Bromofluorobenzene (Surr)	*84*		*50 - 131*	*01/15/21 09:13*	*01/27/21 01:18*	*1*
Dibromofluoromethane (Surr)	*101*		*50 - 141*	*01/15/21 09:13*	*01/27/21 01:18*	*1*
Toluene-d8 (Surr)	*104*		*52 - 141*	*01/15/21 09:13*	*01/27/21 01:18*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		35	7.0	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Benzo[a]anthracene	ND		35	14	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Benzo[a]pyrene	ND		35	7.0	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Benzo[b]fluoranthene	ND		35	7.0	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Benzo[g,h,i]perylene	ND		35	7.0	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Chrysene	ND		35	7.0	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Fluorene	ND		35	7.0	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Naphthalene	ND		35	14	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Phenanthrene	ND		35	7.0	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1
Pyrene	ND		35	7.0	ug/Kg	☼	01/26/21 17:05	01/28/21 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*39 - 100*	*01/26/21 17:05*	*01/28/21 16:49*	*1*
Nitrobenzene-d5 (Surr)	*79*		*32 - 97*	*01/26/21 17:05*	*01/28/21 16:49*	*1*
p-Terphenyl-d14 (Surr)	*96*		*45 - 108*	*01/26/21 17:05*	*01/28/21 16:49*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**24**		15	6.3	mg/Kg	☼	01/20/21 10:28	01/21/21 12:20	1
>C12-C22 (1C)	ND		15	6.3	mg/Kg	☼	01/20/21 10:28	01/21/21 12:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*42*	*S1-*	*54 - 137*	*01/20/21 10:28*	*01/21/21 12:20*	*1*
o- terphenyl (Surr) (1C)	*51*	*S1-*	*52 - 154*	*01/20/21 10:28*	*01/21/21 12:20*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**24**		15	6.3	mg/Kg	☼		01/29/21 14:34	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**11**		1.3	0.53	mg/Kg	☼	01/15/21 08:19	01/21/21 14:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**21.2**		1.0	1.0	%			01/14/21 21:50	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26291-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-26291-1	BT-17B-S-15-20210112	87	87	84	89
410-26291-1 - DL	BT-17B-S-15-20210112	87	89	80	89
410-26291-3	BT-17B-S-45-20210113	108	84	101	104
LCS 410-87154/5	Lab Control Sample	98	90	96	96
LCS 410-87154/7	Lab Control Sample	98	90	95	98
LCS 410-88275/5	Lab Control Sample	107	97	100	100
LCS 410-88275/7	Lab Control Sample	106	98	99	100
LCSD 410-87154/6	Lab Control Sample Dup	100	90	97	96
LCSD 410-87154/8	Lab Control Sample Dup	99	89	94	96
LCSD 410-88275/6	Lab Control Sample Dup	104	97	101	100
LCSD 410-88275/8	Lab Control Sample Dup	106	97	98	99
MB 410-87154/10	Method Blank	97	86	92	92
MB 410-88275/10	Method Blank	107	95	102	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-26291-2	TB-20210113	102	88	98	109
LCS 410-85173/5	Lab Control Sample	105	89	96	110
LCS 410-85173/6	Lab Control Sample	103	89	98	112
LCSD 410-85173/7	Lab Control Sample Dup	102	91	97	112
MB 410-85173/8	Method Blank	101	89	97	108

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-26291-1	BT-17B-S-15-20210112	69	91	89
410-26291-3	BT-17B-S-45-20210113	71	79	96
LCS 410-85537/2-A	Lab Control Sample	84	78	91
LCS 410-88215/2-A	Lab Control Sample	79	86	103
MB 410-85537/1-A	Method Blank	79	70	93
MB 410-88215/1-A	Method Blank	77	81	107

Surrogate Legend

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-26291-1
Project/Site: PHL Belmont Terminal Drilling Sampling

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-26291-1	BT-17B-S-15-20210112	70	113
410-26291-1 DU	BT-17B-S-15-20210112	84	374 S1+
410-26291-1 MS	BT-17B-S-15-20210112	81	219 S1+
410-26291-3	BT-17B-S-45-20210113	42 S1-	51 S1-
410-26291-3 MS	BT-17B-S-45-20210113	64	100
410-26291-3 MSD	BT-17B-S-45-20210113	68	94
LCS 410-85473/2-A	Lab Control Sample	72	105
LCS 410-86218/2-A	Lab Control Sample	73	109
LCSD 410-85473/3-A	Lab Control Sample Dup	67	101
MB 410-85473/1-A	Method Blank	72	92
MB 410-86218/1-A	Method Blank	75	93

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-87154/10
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			01/22/21 11:55	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			01/22/21 11:55	50
Toluene	ND		250	30	ug/Kg			01/22/21 11:55	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			01/22/21 11:55	50
Benzene	ND		250	25	ug/Kg			01/22/21 11:55	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			01/22/21 11:55	50
Isopropylbenzene	ND		250	20	ug/Kg			01/22/21 11:55	50
1,2-Dibromoethane	ND		250	20	ug/Kg			01/22/21 11:55	50
1,2-Dichloroethane	ND		250	30	ug/Kg			01/22/21 11:55	50
C4-C12-TPH-GRO	2250	J B	5500	2200	ug/Kg			01/22/21 11:55	50
t-Butyl alcohol	ND		5000	750	ug/Kg			01/22/21 11:55	50
Xylenes, Total	ND		500	70	ug/Kg			01/22/21 11:55	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*		*01/22/21 11:55*	*50*
4-Bromofluorobenzene (Surr)	*86*		*50 - 131*		*01/22/21 11:55*	*50*
Dibromofluoromethane (Surr)	*92*		*50 - 141*		*01/22/21 11:55*	*50*
Toluene-d8 (Surr)	*92*		*52 - 141*		*01/22/21 11:55*	*50*

Lab Sample ID: LCS 410-87154/5
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	974		ug/Kg		97	78 - 120
1,3,5-Trimethylbenzene	1000	971		ug/Kg		97	73 - 120
Toluene	1000	1000		ug/Kg		100	80 - 120
Methyl tertiary butyl ether	1000	1020		ug/Kg		102	72 - 120
Benzene	1000	991		ug/Kg		99	80 - 120
Naphthalene	1000	966		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	1000	961		ug/Kg		96	73 - 120
Isopropylbenzene	1000	1000		ug/Kg		100	77 - 120
1,2-Dibromoethane	1000	1050		ug/Kg		105	76 - 120
1,2-Dichloroethane	1000	889		ug/Kg		89	71 - 128
t-Butyl alcohol	10000	10700		ug/Kg		107	74 - 121
Xylenes, Total	3000	3040		ug/Kg		101	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-87154/7
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	51500		ug/Kg		103	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-87154/6
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	973		ug/Kg		97	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	979		ug/Kg		98	73 - 120	1	30
Toluene			1000	989		ug/Kg		99	80 - 120	1	30
Methyl tertiary butyl ether			1000	1010		ug/Kg		101	72 - 120	0	30
Benzene			1000	974		ug/Kg		97	80 - 120	2	30
Naphthalene			1000	979		ug/Kg		98	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	965		ug/Kg		96	73 - 120	0	30
Isopropylbenzene			1000	988		ug/Kg		99	77 - 120	1	30
1,2-Dibromoethane			1000	1050		ug/Kg		105	76 - 120	0	30
1,2-Dichloroethane			1000	894		ug/Kg		89	71 - 128	1	30
t-Butyl alcohol			10000	10800		ug/Kg		108	74 - 121	1	30
Xylenes, Total			3000	3030		ug/Kg		101	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCSD 410-87154/8
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	48000		ug/Kg		96	75 - 120	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-88275/10
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			01/27/21 00:55	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/27/21 00:55	1
Toluene	ND		5.0	0.60	ug/Kg			01/27/21 00:55	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			01/27/21 00:55	1
Benzene	ND		5.0	0.50	ug/Kg			01/27/21 00:55	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/27/21 00:55	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			01/27/21 00:55	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			01/27/21 00:55	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			01/27/21 00:55	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			01/27/21 00:55	1
t-Butyl alcohol	ND		100	15	ug/Kg			01/27/21 00:55	1
Xylenes, Total	ND		10	1.4	ug/Kg			01/27/21 00:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*		*01/27/21 00:55*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*		*01/27/21 00:55*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 141*		*01/27/21 00:55*	*1*
Toluene-d8 (Surr)	*98*		*52 - 141*		*01/27/21 00:55*	*1*

Lab Sample ID: LCS 410-88275/5
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	19.5		ug/Kg		98	78 - 120
1,3,5-Trimethylbenzene	20.0	19.7		ug/Kg		98	73 - 120
Toluene	20.0	19.6		ug/Kg		98	80 - 120
Methyl tertiary butyl ether	20.0	15.0		ug/Kg		75	72 - 120
Benzene	20.0	19.9		ug/Kg		100	80 - 120
Naphthalene	20.0	18.2		ug/Kg		91	48 - 130
1,2,4-Trimethylbenzene	20.0	19.5		ug/Kg		98	73 - 120
Isopropylbenzene	20.0	19.4		ug/Kg		97	77 - 120
1,2-Dibromoethane	20.0	19.2		ug/Kg		96	76 - 120
1,2-Dichloroethane	20.0	18.3		ug/Kg		92	71 - 128
t-Butyl alcohol	200	211		ug/Kg		106	74 - 121
Xylenes, Total	60.0	59.4		ug/Kg		99	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-88275/7
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1000		ug/Kg		100	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Lab Sample ID: LCSD 410-88275/6
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	18.9		ug/Kg		94	78 - 120	3	30
1,3,5-Trimethylbenzene			20.0	18.9		ug/Kg		95	73 - 120	4	30
Toluene			20.0	19.0		ug/Kg		95	80 - 120	3	30
Methyl tertiary butyl ether			20.0	14.6		ug/Kg		73	72 - 120	2	30
Benzene			20.0	19.3		ug/Kg		97	80 - 120	3	30
Naphthalene			20.0	18.1		ug/Kg		90	48 - 130	0	30
1,2,4-Trimethylbenzene			20.0	19.0		ug/Kg		95	73 - 120	3	30
Isopropylbenzene			20.0	18.8		ug/Kg		94	77 - 120	3	30
1,2-Dibromoethane			20.0	19.3		ug/Kg		96	76 - 120	0	30
1,2-Dichloroethane			20.0	17.7		ug/Kg		89	71 - 128	3	30
t-Butyl alcohol			200	207		ug/Kg		104	74 - 121	2	30
Xylenes, Total			60.0	57.8		ug/Kg		96	75 - 120	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Lab Sample ID: LCSD 410-88275/8
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	993		ug/Kg		99	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-85173/8
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/15/21 12:18	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/15/21 12:18	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/15/21 12:18	1
Benzene	ND		1.0	0.20	ug/L			01/15/21 12:18	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/15/21 12:18	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/15/21 12:18	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/15/21 12:18	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Toluene	ND		1.0	0.20	ug/L			01/15/21 12:18	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/15/21 12:18	1
t-Butyl alcohol	ND		50	12	ug/L			01/15/21 12:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*01/15/21 12:18*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/15/21 12:18*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*01/15/21 12:18*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*01/15/21 12:18*	*1*

Lab Sample ID: LCS 410-85173/5
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.5		ug/L		98	75 - 120
1,2-Dichloroethane	20.0	16.0		ug/L		80	73 - 124
1,3,5-Trimethylbenzene	20.0	19.3		ug/L		96	75 - 120
Benzene	20.0	16.5		ug/L		83	80 - 120
Ethylbenzene	20.0	19.9		ug/L		100	80 - 120
Isopropylbenzene	20.0	18.2		ug/L		91	80 - 120
Methyl tertiary butyl ether	20.0	15.7		ug/L		78	69 - 122
Naphthalene	20.0	18.2		ug/L		91	53 - 124
Toluene	20.0	19.4		ug/L		97	80 - 120
Xylenes, Total	60.0	55.9		ug/L		93	80 - 120
t-Butyl alcohol	200	198		ug/L		99	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*110*		*80 - 120*

Lab Sample ID: LCS 410-85173/6
Matrix: Water
Analysis Batch: 85173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	881		ug/L		88	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-85173/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 85173

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCSD 410-85173/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 85173

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	915		ug/L		91	67 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-85537/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 87465 — **Prep Batch: 85537**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Chrysene	ND		17	3.3	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Fluorene	ND		17	3.3	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Naphthalene	ND		17	6.7	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Phenanthrene	ND		17	3.3	ug/Kg		01/18/21 09:10	01/24/21 03:06	1
Pyrene	ND		17	3.3	ug/Kg		01/18/21 09:10	01/24/21 03:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*39 - 100*	*01/18/21 09:10*	*01/24/21 03:06*	*1*
Nitrobenzene-d5 (Surr)	*70*		*32 - 97*	*01/18/21 09:10*	*01/24/21 03:06*	*1*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*	*01/18/21 09:10*	*01/24/21 03:06*	*1*

Lab Sample ID: LCS 410-85537/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 87465 — **Prep Batch: 85537**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			1670	1540		ug/Kg		92	75 - 114		
Benzo[a]anthracene			1670	1440		ug/Kg		87	73 - 114		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-85537/2-A
Matrix: Solid
Analysis Batch: 87465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	1670	1620		ug/Kg		97	76 - 113
Benzo[b]fluoranthene	1670	1400		ug/Kg		84	73 - 117
Benzo[g,h,i]perylene	1670	1560		ug/Kg		94	77 - 114
Chrysene	1670	1490		ug/Kg		89	66 - 111
Fluorene	1670	1460		ug/Kg		88	62 - 110
Naphthalene	1670	1340		ug/Kg		80	60 - 94
Phenanthrene	1670	1490		ug/Kg		90	74 - 112
Pyrene	1670	1500		ug/Kg		90	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*84*		*39 - 100*
Nitrobenzene-d5 (Surr)	*78*		*32 - 97*
p-Terphenyl-d14 (Surr)	*91*		*45 - 108*

Lab Sample ID: MB 410-88215/1-A
Matrix: Solid
Analysis Batch: 89003

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 88215

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Chrysene	ND		17	3.3	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Fluorene	ND		17	3.3	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Naphthalene	ND		17	6.7	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Phenanthrene	ND		17	3.3	ug/Kg		01/26/21 17:04	01/28/21 12:54	1
Pyrene	ND		17	3.3	ug/Kg		01/26/21 17:04	01/28/21 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*39 - 100*	*01/26/21 17:04*	*01/28/21 12:54*	*1*
Nitrobenzene-d5 (Surr)	*81*		*32 - 97*	*01/26/21 17:04*	*01/28/21 12:54*	*1*
p-Terphenyl-d14 (Surr)	*107*		*45 - 108*	*01/26/21 17:04*	*01/28/21 12:54*	*1*

Lab Sample ID: LCS 410-88215/2-A
Matrix: Solid
Analysis Batch: 89003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 88215

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1650		ug/Kg		99	75 - 114
Benzo[a]anthracene	1670	1780		ug/Kg		107	73 - 114
Benzo[a]pyrene	1670	1640		ug/Kg		99	76 - 113
Benzo[b]fluoranthene	1670	1390		ug/Kg		84	73 - 117
Benzo[g,h,i]perylene	1670	1570		ug/Kg		94	77 - 114
Chrysene	1670	1670		ug/Kg		100	66 - 111
Fluorene	1670	1550		ug/Kg		93	62 - 110
Naphthalene	1670	1260		ug/Kg		76	60 - 94

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-88215/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 89003 — **Prep Batch: 88215**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenanthrene	1670	1630		ug/Kg		98	74 - 112
Pyrene	1670	1500		ug/Kg		90	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*79*		*39 - 100*
Nitrobenzene-d5 (Surr)	*86*		*32 - 97*
p-Terphenyl-d14 (Surr)	*103*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-85473/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 85940 — **Prep Batch: 85473**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		01/18/21 02:07	01/19/21 12:58	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		01/18/21 02:07	01/19/21 12:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*	*01/18/21 02:07*	*01/19/21 12:58*	*1*
o- terphenyl (Surr) (1C)	*92*		*52 - 154*	*01/18/21 02:07*	*01/19/21 12:58*	*1*

Lab Sample ID: LCS 410-85473/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 85940 — **Prep Batch: 85473**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	114		mg/Kg		85	64 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*
o- terphenyl (Surr) (1C)	*105*		*52 - 154*

Lab Sample ID: LCSD 410-85473/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 85940 — **Prep Batch: 85473**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)	134	112		mg/Kg		84	64 - 122	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*67*		*54 - 137*
o- terphenyl (Surr) (1C)	*101*		*52 - 154*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 410-26291-1 MS
Matrix: Solid
Analysis Batch: 86427

Client Sample ID: BT-17B-S-15-20210112
Prep Type: Total/NA
Prep Batch: 85473

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	2400		139	1780	4	mg/Kg	☼	-466	64 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*81*		*54 - 137*
o- terphenyl (Surr) (1C)	*219*	*S1+*	*52 - 154*

Lab Sample ID: 410-26291-1 DU
Matrix: Solid
Analysis Batch: 86427

Client Sample ID: BT-17B-S-15-20210112
Prep Type: Total/NA
Prep Batch: 85473

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C22-C44 (1C)	95	J		82.4	J	mg/Kg	☼			14	
>C12-C22 (1C)	2100			1530		mg/Kg	☼			30	

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*84*		*54 - 137*
o- terphenyl (Surr) (1C)	*374*	*S1+*	*52 - 154*

Lab Sample ID: MB 410-86218/1-A
Matrix: Solid
Analysis Batch: 86757

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 86218

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		01/20/21 10:28	01/21/21 10:32	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		01/20/21 10:28	01/21/21 10:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*75*		*54 - 137*	*01/20/21 10:28*	*01/21/21 10:32*	*1*
o- terphenyl (Surr) (1C)	*93*		*52 - 154*	*01/20/21 10:28*	*01/21/21 10:32*	*1*

Lab Sample ID: LCS 410-86218/2-A
Matrix: Solid
Analysis Batch: 86757

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86218

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	122		mg/Kg		91	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*73*		*54 - 137*
o- terphenyl (Surr) (1C)	*109*		*52 - 154*

Lab Sample ID: 410-26291-3 MS
Matrix: Solid
Analysis Batch: 86757

Client Sample ID: BT-17B-S-45-20210113
Prep Type: Total/NA
Prep Batch: 86218

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	6.4	J	170	140		mg/Kg	☼	79	64 - 122		

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 410-26291-3 MS **Client Sample ID: BT-17B-S-45-20210113**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 86757 **Prep Batch: 86218**

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*64*		*54 - 137*
o- terphenyl (Surr) (1C)	*100*		*52 - 154*

Lab Sample ID: 410-26291-3 MSD **Client Sample ID: BT-17B-S-45-20210113**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 86757 **Prep Batch: 86218**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)	6.4	J	168	137		mg/Kg	☼	78	64 - 122	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*68*		*54 - 137*
o- terphenyl (Surr) (1C)	*94*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-85154/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 86906 **Prep Batch: 85154**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.56	mg/Kg		01/15/21 08:19	01/21/21 14:38	1

Lab Sample ID: LCS 410-85154/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 86906 **Prep Batch: 85154**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	3.00	2.94		mg/Kg		98	80 - 120

Lab Sample ID: MB 410-85161/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 85723 **Prep Batch: 85161**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.57	mg/Kg		01/15/21 08:31	01/18/21 14:55	1

Lab Sample ID: LCS 410-85161/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 85723 **Prep Batch: 85161**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.86	3.09		mg/Kg		108	80 - 120

GC/MS VOA

Prep Batch: 85166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	5035	
410-26291-1 - DL	BT-17B-S-15-20210112	Total/NA	Solid	5035	

Analysis Batch: 85173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-2	TB-20210113	Total/NA	Water	8260C/UST	
MB 410-85173/8	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-85173/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-85173/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-85173/7	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Prep Batch: 85189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	5035	

Analysis Batch: 87154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	8260C	85166
410-26291-1 - DL	BT-17B-S-15-20210112	Total/NA	Solid	8260C	85166
MB 410-87154/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-87154/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-87154/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-87154/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-87154/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 88275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	8260C	85189
MB 410-88275/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-88275/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-88275/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-88275/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-88275/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 85537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	3546	
MB 410-85537/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-85537/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 87465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	8270D	85537
MB 410-85537/1-A	Method Blank	Total/NA	Solid	8270D	85537
LCS 410-85537/2-A	Lab Control Sample	Total/NA	Solid	8270D	85537

Prep Batch: 88215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	3546	

GC/MS Semi VOA (Continued)

Prep Batch: 88215 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-88215/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-88215/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 89003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	8270D	88215
MB 410-88215/1-A	Method Blank	Total/NA	Solid	8270D	88215
LCS 410-88215/2-A	Lab Control Sample	Total/NA	Solid	8270D	88215

GC Semi VOA

Prep Batch: 85473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	3546	
MB 410-85473/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-85473/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-85473/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
410-26291-1 MS	BT-17B-S-15-20210112	Total/NA	Solid	3546	
410-26291-1 DU	BT-17B-S-15-20210112	Total/NA	Solid	3546	

Analysis Batch: 85940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-85473/1-A	Method Blank	Total/NA	Solid	8015C TPH	85473
LCS 410-85473/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	85473
LCSD 410-85473/3-A	Lab Control Sample Dup	Total/NA	Solid	8015C TPH	85473

Prep Batch: 86218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	3546	
MB 410-86218/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-86218/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-26291-3 MS	BT-17B-S-45-20210113	Total/NA	Solid	3546	
410-26291-3 MSD	BT-17B-S-45-20210113	Total/NA	Solid	3546	

Analysis Batch: 86427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	8015C TPH	85473
410-26291-1 MS	BT-17B-S-15-20210112	Total/NA	Solid	8015C TPH	85473
410-26291-1 DU	BT-17B-S-15-20210112	Total/NA	Solid	8015C TPH	85473

Analysis Batch: 86757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	8015C TPH	86218
MB 410-86218/1-A	Method Blank	Total/NA	Solid	8015C TPH	86218
LCS 410-86218/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	86218
410-26291-3 MS	BT-17B-S-45-20210113	Total/NA	Solid	8015C TPH	86218
410-26291-3 MSD	BT-17B-S-45-20210113	Total/NA	Solid	8015C TPH	86218

Prep Batch: 89162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3 - RE	BT-17B-S-45-20210113	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 89162 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-89162/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-89162/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 89477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3 - RE	BT-17B-S-45-20210113	Total/NA	Solid	8015C TPH	89162
MB 410-89162/1-A	Method Blank	Total/NA	Solid	8015C TPH	89162
LCS 410-89162/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	89162

Analysis Batch: 89547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	Total TPH	
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 85154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	3050B	
MB 410-85154/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-85154/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 85161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	3050B	
MB 410-85161/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-85161/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 85723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	6010C	85161
MB 410-85161/1-A	Method Blank	Total/NA	Solid	6010C	85161
LCS 410-85161/2-A	Lab Control Sample	Total/NA	Solid	6010C	85161

Analysis Batch: 86906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	6010C	85154
MB 410-85154/1-A	Method Blank	Total/NA	Solid	6010C	85154
LCS 410-85154/2-A	Lab Control Sample	Total/NA	Solid	6010C	85154

General Chemistry

Analysis Batch: 85048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26291-1	BT-17B-S-15-20210112	Total/NA	Solid	Moisture	
410-26291-3	BT-17B-S-45-20210113	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26291-1

Client Sample ID: BT-17B-S-15-20210112
Date Collected: 01/12/21 14:00
Date Received: 01/13/21 16:36

Lab Sample ID: 410-26291-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	85048	01/14/21 21:50	PTG7	ELLE

Client Sample ID: BT-17B-S-15-20210112
Date Collected: 01/12/21 14:00
Date Received: 01/13/21 16:36

Lab Sample ID: 410-26291-1
Matrix: Solid
Percent Solids: 95.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85166	01/15/21 08:40	Z8FW	ELLE
Total/NA	Analysis	8260C		50	87154	01/22/21 12:38	NSK7	ELLE
Total/NA	Prep	5035	DL		85166	01/15/21 08:40	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	500	87154	01/22/21 12:58	NSK7	ELLE
Total/NA	Prep	3546			85537	01/18/21 09:10	R9CT	ELLE
Total/NA	Analysis	8270D		1	87465	01/24/21 06:19	SJ89	ELLE
Total/NA	Prep	3546			85473	01/18/21 02:07	USL7	ELLE
Total/NA	Analysis	8015C TPH		10	86427	01/20/21 14:47	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	89547	01/29/21 14:34	UJL4	ELLE
Total/NA	Prep	3050B			85161	01/15/21 08:31	UAMX	ELLE
Total/NA	Analysis	6010C		1	85723	01/18/21 15:37	UCIG	ELLE

Client Sample ID: TB-20210113
Date Collected: 01/13/21 00:00
Date Received: 01/13/21 16:36

Lab Sample ID: 410-26291-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	85173	01/15/21 13:29	UKAD	ELLE

Client Sample ID: BT-17B-S-45-20210113
Date Collected: 01/13/21 10:30
Date Received: 01/13/21 16:36

Lab Sample ID: 410-26291-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	85048	01/14/21 21:50	PTG7	ELLE

Client Sample ID: BT-17B-S-45-20210113
Date Collected: 01/13/21 10:30
Date Received: 01/13/21 16:36

Lab Sample ID: 410-26291-3
Matrix: Solid
Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85189	01/15/21 09:13	Z8FW	ELLE
Total/NA	Analysis	8260C		1	88275	01/27/21 01:18	ULCP	ELLE
Total/NA	Prep	3546			88215	01/26/21 17:05	FTV5	ELLE
Total/NA	Analysis	8270D		1	89003	01/28/21 16:49	UWHS	ELLE
Total/NA	Prep	3546			86218	01/20/21 10:28	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	86757	01/21/21 12:20	YHQ2	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-26291-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-17B-S-45-20210113
Lab Sample ID: 410-26291-3

Date Collected: 01/13/21 10:30
Matrix: Solid
Date Received: 01/13/21 16:36
Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546	RE		89162	01/28/21 16:45	DN9W	ELLE
Total/NA	Analysis	8015C TPH	RE	1	89477	01/29/21 12:07	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	89547	01/29/21 14:34	UJL4	ELLE
Total/NA	Prep	3050B			85154	01/15/21 08:19	UAMX	ELLE
Total/NA	Analysis	6010C		1	86906	01/21/21 14:50	UCIG	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-26291-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-26291-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-26291-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-26291-1	BT-17B-S-15-20210112	Solid	01/12/21 14:00	01/13/21 16:36	
410-26291-2	TB-20210113	Water	01/13/21 00:00	01/13/21 16:36	
410-26291-3	BT-17B-S-45-20210113	Solid	01/13/21 10:30	01/13/21 16:36	

Environmental Analysis ... f Custody

410-26291 Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # ___

...ironmental use only

_____

COC # 615504

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dana Hoblitzell / Dave Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO Moisture + VOC 8260	Lead	PAH 8270D	Remarks
BT-17B-S-15-20210112	1/12/21	1400	X		6	X	X	X	X	
TB-20210113	1/13/21	—			2		X			VOCs only
BT-17B-S-45-20210113	1/13/21	1030	X		6	X	X	X	X	

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl	T=Thiosulfate
N=HNO_3	B=NaOH
S=H_2SO_4	P=H_3PO_4
F=Field Filtered	O=Other

Remarks

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is ~~subject~~ to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)	Type VI (Raw Data Only)	
Type III (Reduced non-CLP)	NJ DKQP	TX TRRP-13
NYSDEC Category A or B	MA MCP	CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	1/13/21	0700		1/13/21	0700
	1/13/21	1415	Pierce	1/13/21	1415
Pierce	1/13/21	1620			
				1/13/21	1636

EDD Required? (Yes) No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.9 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-26291-1

Login Number: 26291
List Number: 1
Creator: Rivera, Tatiana

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-26447-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 10:02:00 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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Amek Carter
Project Manager
3/16/2021 10:02:00 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-26447-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-26447-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-26447-1

Revision
The report being provided is a revision of the original report sent on 1/29/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/14/2021 5:04 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26447-1

Client Sample ID: BT-17A-S-13-20210113 — Lab Sample ID: 410-26447-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tertiary butyl ether	890		260	26	ug/Kg	50	☼	8260C	Total/NA
Benzene	1600		260	26	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	2200		260	21	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol	13000		5300	790	ug/Kg	50	☼	8260C	Total/NA
Ethylbenzene - DL	22000		2600	210	ug/Kg	500	☼	8260C	Total/NA
1,3,5-Trimethylbenzene - DL	23000		2600	260	ug/Kg	500	☼	8260C	Total/NA
Toluene - DL	32000		2600	320	ug/Kg	500	☼	8260C	Total/NA
1,2,4-Trimethylbenzene - DL	73000		2600	260	ug/Kg	500	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	1200000	B	58000	23000	ug/Kg	500	☼	8260C	Total/NA
Xylenes, Total - DL	130000		5300	740	ug/Kg	500	☼	8260C	Total/NA
Anthracene	11	J	18	3.6	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	4.5	J	18	3.6	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	4.1	J	18	3.6	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	4.4	J	18	3.6	ug/Kg	1	☼	8270D	Total/NA
Chrysene	4.6	J	18	3.6	ug/Kg	1	☼	8270D	Total/NA
Fluorene	51		18	3.6	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	1200		18	7.2	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	98		18	3.6	ug/Kg	1	☼	8270D	Total/NA
Pyrene	23		18	3.6	ug/Kg	1	☼	8270D	Total/NA
>C12-C22 (1C)	30		13	5.4	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	30		13	5.4	mg/Kg	1	☼	Total TPH	Total/NA
Lead	11		1.2	0.49	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210114 — Lab Sample ID: 410-26447-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-17A-S-13-20210113 — Lab Sample ID: 410-26447-1

Date Collected: 01/13/21 15:15 — **Matrix: Solid**
Date Received: 01/14/21 17:04 — **Percent Solids: 92.8**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tertiary butyl ether	**890**		260	26	ug/Kg	☼	01/15/21 19:22	01/22/21 13:19	50
Benzene	**1600**		260	26	ug/Kg	☼	01/15/21 19:22	01/22/21 13:19	50
Isopropylbenzene	**2200**		260	21	ug/Kg	☼	01/15/21 19:22	01/22/21 13:19	50
1,2-Dibromoethane	ND		260	21	ug/Kg	☼	01/15/21 19:22	01/22/21 13:19	50
1,2-Dichloroethane	ND		260	32	ug/Kg	☼	01/15/21 19:22	01/22/21 13:19	50
t-Butyl alcohol	**13000**		5300	790	ug/Kg	☼	01/15/21 19:22	01/22/21 13:19	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*	*01/15/21 19:22*	*01/22/21 13:19*	*50*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*01/15/21 19:22*	*01/22/21 13:19*	*50*
Dibromofluoromethane (Surr)	*97*		*50 - 141*	*01/15/21 19:22*	*01/22/21 13:19*	*50*
Toluene-d8 (Surr)	*101*		*52 - 141*	*01/15/21 19:22*	*01/22/21 13:19*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**22000**		2600	210	ug/Kg	☼	01/15/21 19:22	01/22/21 13:40	500
1,3,5-Trimethylbenzene	**23000**		2600	260	ug/Kg	☼	01/15/21 19:22	01/22/21 13:40	500
Toluene	**32000**		2600	320	ug/Kg	☼	01/15/21 19:22	01/22/21 13:40	500
1,2,4-Trimethylbenzene	**73000**		2600	260	ug/Kg	☼	01/15/21 19:22	01/22/21 13:40	500
C4-C12-TPH-GRO	**1200000**	**B**	58000	23000	ug/Kg	☼	01/15/21 19:22	01/22/21 13:40	500
Xylenes, Total	**130000**		5300	740	ug/Kg	☼	01/15/21 19:22	01/22/21 13:40	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*	*01/15/21 19:22*	*01/22/21 13:40*	*500*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*	*01/15/21 19:22*	*01/22/21 13:40*	*500*
Dibromofluoromethane (Surr)	*94*		*50 - 141*	*01/15/21 19:22*	*01/22/21 13:40*	*500*
Toluene-d8 (Surr)	*101*		*52 - 141*	*01/15/21 19:22*	*01/22/21 13:40*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**11**	**J**	18	3.6	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Benzo[a]anthracene	ND		18	7.2	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Benzo[a]pyrene	**4.5**	**J**	18	3.6	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Benzo[b]fluoranthene	**4.1**	**J**	18	3.6	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Benzo[g,h,i]perylene	**4.4**	**J**	18	3.6	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Chrysene	**4.6**	**J**	18	3.6	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Fluorene	**51**		18	3.6	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Naphthalene	**1200**		18	7.2	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Phenanthrene	**98**		18	3.6	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1
Pyrene	**23**		18	3.6	ug/Kg	☼	01/20/21 16:51	01/24/21 23:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*39 - 100*	*01/20/21 16:51*	*01/24/21 23:22*	*1*
Nitrobenzene-d5 (Surr)	*68*		*32 - 97*	*01/20/21 16:51*	*01/24/21 23:22*	*1*
p-Terphenyl-d14 (Surr)	*89*		*45 - 108*	*01/20/21 16:51*	*01/24/21 23:22*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		13	5.4	mg/Kg	☼	01/20/21 10:28	01/21/21 11:37	1
>C12-C22 (1C)	**30**		13	5.4	mg/Kg	☼	01/20/21 10:28	01/21/21 11:37	1

Client Sample ID: BT-17A-S-13-20210113 — Lab Sample ID: 410-26447-1

Date Collected: 01/13/21 15:15 — **Matrix: Solid**
Date Received: 01/14/21 17:04 — **Percent Solids: 92.8**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*	*01/20/21 10:28*	*01/21/21 11:37*	*1*
o- terphenyl (Surr) (1C)	*105*		*52 - 154*	*01/20/21 10:28*	*01/21/21 11:37*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**30**		13	5.4	mg/Kg	☼		03/15/21 10:53	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**11**		1.2	0.49	mg/Kg	☼	01/19/21 05:30	01/25/21 09:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**7.2**		1.0	1.0	%			01/19/21 09:42	1

Client Sample ID: TB-20210114 — Lab Sample ID: 410-26447-2

Date Collected: 01/05/21 00:00 — **Matrix: Water**
Date Received: 01/14/21 17:04

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/19/21 16:43	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/19/21 16:43	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/19/21 16:43	1
Benzene	ND		1.0	0.20	ug/L			01/19/21 16:43	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/19/21 16:43	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/19/21 16:43	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/19/21 16:43	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/19/21 16:43	1
Toluene	ND		1.0	0.20	ug/L			01/19/21 16:43	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/19/21 16:43	1
t-Butyl alcohol	ND		50	12	ug/L			01/19/21 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*01/19/21 16:43*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/19/21 16:43*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*01/19/21 16:43*	*1*
Toluene-d8 (Surr)	*110*		*80 - 120*		*01/19/21 16:43*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26447-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-26447-1	BT-17A-S-13-20210113	103	97	97	101
410-26447-1 - DL	BT-17A-S-13-20210113	104	96	94	101
LCS 410-87154/5	Lab Control Sample	98	90	96	96
LCS 410-87154/7	Lab Control Sample	98	90	95	98
LCSD 410-87154/6	Lab Control Sample Dup	100	90	97	96
LCSD 410-87154/8	Lab Control Sample Dup	99	89	94	96
MB 410-87154/10	Method Blank	97	86	92	92

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-26447-2	TB-20210114	104	89	95	110
LCS 410-86027/5	Lab Control Sample	105	92	97	111
LCS 410-86027/6	Lab Control Sample	104	88	98	107
LCSD 410-86027/7	Lab Control Sample Dup	105	92	97	112
MB 410-86027/8	Method Blank	105	88	99	107

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-26447-1	BT-17A-S-13-20210113	74	68	89
LCS 410-86529/2-A	Lab Control Sample	79	69	93
MB 410-86529/1-A	Method Blank	81	78	105

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-26447-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
410-26447-1	BT-17A-S-13-20210113	72	105								
LCS 410-86218/2-A	Lab Control Sample	73	109								
MB 410-86218/1-A	Method Blank	75	93								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-87154/10
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			01/22/21 11:55	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			01/22/21 11:55	50
Toluene	ND		250	30	ug/Kg			01/22/21 11:55	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			01/22/21 11:55	50
Benzene	ND		250	25	ug/Kg			01/22/21 11:55	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			01/22/21 11:55	50
Isopropylbenzene	ND		250	20	ug/Kg			01/22/21 11:55	50
1,2-Dibromoethane	ND		250	20	ug/Kg			01/22/21 11:55	50
1,2-Dichloroethane	ND		250	30	ug/Kg			01/22/21 11:55	50
C4-C12-TPH-GRO	2250	J B	5500	2200	ug/Kg			01/22/21 11:55	50
t-Butyl alcohol	ND		5000	750	ug/Kg			01/22/21 11:55	50
Xylenes, Total	ND		500	70	ug/Kg			01/22/21 11:55	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*		*01/22/21 11:55*	*50*
4-Bromofluorobenzene (Surr)	*86*		*50 - 131*		*01/22/21 11:55*	*50*
Dibromofluoromethane (Surr)	*92*		*50 - 141*		*01/22/21 11:55*	*50*
Toluene-d8 (Surr)	*92*		*52 - 141*		*01/22/21 11:55*	*50*

Lab Sample ID: LCS 410-87154/5
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	974		ug/Kg		97	78 - 120
1,3,5-Trimethylbenzene	1000	971		ug/Kg		97	73 - 120
Toluene	1000	1000		ug/Kg		100	80 - 120
Methyl tertiary butyl ether	1000	1020		ug/Kg		102	72 - 120
Benzene	1000	991		ug/Kg		99	80 - 120
Naphthalene	1000	966		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	1000	961		ug/Kg		96	73 - 120
Isopropylbenzene	1000	1000		ug/Kg		100	77 - 120
1,2-Dibromoethane	1000	1050		ug/Kg		105	76 - 120
1,2-Dichloroethane	1000	889		ug/Kg		89	71 - 128
t-Butyl alcohol	10000	10700		ug/Kg		107	74 - 121
Xylenes, Total	3000	3040		ug/Kg		101	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-87154/7
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	51500		ug/Kg		103	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-87154/6
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	973		ug/Kg		97	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	979		ug/Kg		98	73 - 120	1	30
Toluene			1000	989		ug/Kg		99	80 - 120	1	30
Methyl tertiary butyl ether			1000	1010		ug/Kg		101	72 - 120	0	30
Benzene			1000	974		ug/Kg		97	80 - 120	2	30
Naphthalene			1000	979		ug/Kg		98	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	965		ug/Kg		96	73 - 120	0	30
Isopropylbenzene			1000	988		ug/Kg		99	77 - 120	1	30
1,2-Dibromoethane			1000	1050		ug/Kg		105	76 - 120	0	30
1,2-Dichloroethane			1000	894		ug/Kg		89	71 - 128	1	30
t-Butyl alcohol			10000	10800		ug/Kg		108	74 - 121	1	30
Xylenes, Total			3000	3030		ug/Kg		101	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCSD 410-87154/8
Matrix: Solid
Analysis Batch: 87154

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	48000		ug/Kg		96	75 - 120	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-86027/8
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/19/21 16:06	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/19/21 16:06	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/19/21 16:06	1
Benzene	ND		1.0	0.20	ug/L			01/19/21 16:06	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/19/21 16:06	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/19/21 16:06	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/19/21 16:06	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/19/21 16:06	1
Toluene	ND		1.0	0.20	ug/L			01/19/21 16:06	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/19/21 16:06	1
t-Butyl alcohol	ND		50	12	ug/L			01/19/21 16:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*01/19/21 16:06*	*1*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*01/19/21 16:06*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/19/21 16:06*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*01/19/21 16:06*	*1*

Lab Sample ID: LCS 410-86027/5
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
1,2-Dichloroethane	20.0	16.0		ug/L		80	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	16.4		ug/L		82	80 - 120
Ethylbenzene	20.0	20.0		ug/L		100	80 - 120
Isopropylbenzene	20.0	18.5		ug/L		92	80 - 120
Methyl tertiary butyl ether	20.0	16.1		ug/L		80	69 - 122
Naphthalene	20.0	17.2		ug/L		86	53 - 124
Toluene	20.0	19.8		ug/L		99	80 - 120
Xylenes, Total	60.0	56.6		ug/L		94	80 - 120
t-Butyl alcohol	200	226		ug/L		113	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCS 410-86027/6
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	920		ug/L		92	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-86027/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 86027

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: LCSD 410-86027/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 86027

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	876		ug/L		88	67 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-86529/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 87494 — **Prep Batch: 86529**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Chrysene	ND		17	3.3	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Fluorene	ND		17	3.3	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Naphthalene	ND		17	6.7	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Phenanthrene	ND		17	3.3	ug/Kg		01/20/21 16:51	01/24/21 15:51	1
Pyrene	ND		17	3.3	ug/Kg		01/20/21 16:51	01/24/21 15:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*39 - 100*	*01/20/21 16:51*	*01/24/21 15:51*	*1*
Nitrobenzene-d5 (Surr)	*78*		*32 - 97*	*01/20/21 16:51*	*01/24/21 15:51*	*1*
p-Terphenyl-d14 (Surr)	*105*		*45 - 108*	*01/20/21 16:51*	*01/24/21 15:51*	*1*

Lab Sample ID: LCS 410-86529/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 87494 — **Prep Batch: 86529**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			1670	1500		ug/Kg		90	75 - 114		
Benzo[a]anthracene			1670	1540		ug/Kg		92	73 - 114		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-86529/2-A
Matrix: Solid
Analysis Batch: 87494

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	1670	1600		ug/Kg		96	76 - 113
Benzo[b]fluoranthene	1670	1450		ug/Kg		87	73 - 117
Benzo[g,h,i]perylene	1670	1600		ug/Kg		96	77 - 114
Chrysene	1670	1550		ug/Kg		93	66 - 111
Fluorene	1670	1430		ug/Kg		86	62 - 110
Naphthalene	1670	1190		ug/Kg		72	60 - 94
Phenanthrene	1670	1490		ug/Kg		89	74 - 112
Pyrene	1670	1460		ug/Kg		88	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*79*		*39 - 100*
Nitrobenzene-d5 (Surr)	*69*		*32 - 97*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-86218/1-A
Matrix: Solid
Analysis Batch: 86757

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 86218

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		01/20/21 10:28	01/21/21 10:32	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		01/20/21 10:28	01/21/21 10:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*75*		*54 - 137*	*01/20/21 10:28*	*01/21/21 10:32*	*1*
o- terphenyl (Surr) (1C)	*93*		*52 - 154*	*01/20/21 10:28*	*01/21/21 10:32*	*1*

Lab Sample ID: LCS 410-86218/2-A
Matrix: Solid
Analysis Batch: 86757

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86218

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	122		mg/Kg		91	64 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*73*		*54 - 137*
o- terphenyl (Surr) (1C)	*109*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-85796/1-A
Matrix: Solid
Analysis Batch: 87678

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85796

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		01/19/21 05:30	01/25/21 08:45	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26447-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-85796/2-A
Matrix: Solid
Analysis Batch: 87678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85796

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.80	2.78		mg/Kg		99	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26447-1

GC/MS VOA

Prep Batch: 85366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	5035	
410-26447-1 - DL	BT-17A-S-13-20210113	Total/NA	Solid	5035	

Analysis Batch: 86027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-2	TB-20210114	Total/NA	Water	8260C/UST	
MB 410-86027/8	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-86027/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-86027/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-86027/7	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 87154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	8260C	85366
410-26447-1 - DL	BT-17A-S-13-20210113	Total/NA	Solid	8260C	85366
MB 410-87154/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-87154/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-87154/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-87154/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-87154/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 86529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	3546	
MB 410-86529/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-86529/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 87494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	8270D	86529
MB 410-86529/1-A	Method Blank	Total/NA	Solid	8270D	86529
LCS 410-86529/2-A	Lab Control Sample	Total/NA	Solid	8270D	86529

GC Semi VOA

Prep Batch: 86218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	3546	
MB 410-86218/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-86218/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 86757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	8015C TPH	86218
MB 410-86218/1-A	Method Blank	Total/NA	Solid	8015C TPH	86218
LCS 410-86218/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	86218

Analysis Batch: 103231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	Total TPH	

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-26447-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Metals

Prep Batch: 85796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	3050B	
MB 410-85796/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-85796/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 87678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	6010C	85796
MB 410-85796/1-A	Method Blank	Total/NA	Solid	6010C	85796
LCS 410-85796/2-A	Lab Control Sample	Total/NA	Solid	6010C	85796

General Chemistry

Analysis Batch: 85928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26447-1	BT-17A-S-13-20210113	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26447-1

Client Sample ID: BT-17A-S-13-20210113
Date Collected: 01/13/21 15:15
Date Received: 01/14/21 17:04

Lab Sample ID: 410-26447-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	85928	01/19/21 09:42	UVJN	ELLE

Client Sample ID: BT-17A-S-13-20210113
Date Collected: 01/13/21 15:15
Date Received: 01/14/21 17:04

Lab Sample ID: 410-26447-1
Matrix: Solid
Percent Solids: 92.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85366	01/15/21 19:22	UK3O	ELLE
Total/NA	Analysis	8260C		50	87154	01/22/21 13:19	NSK7	ELLE
Total/NA	Prep	5035	DL		85366	01/15/21 19:22	UK3O	ELLE
Total/NA	Analysis	8260C	DL	500	87154	01/22/21 13:40	NSK7	ELLE
Total/NA	Prep	3546			86529	01/20/21 16:51	FTV5	ELLE
Total/NA	Analysis	8270D		1	87494	01/24/21 23:22	W6XI	ELLE
Total/NA	Prep	3546			86218	01/20/21 10:28	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	86757	01/21/21 11:37	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103231	03/15/21 10:53	UJL4	ELLE
Total/NA	Prep	3050B			85796	01/19/21 05:30	UAMX	ELLE
Total/NA	Analysis	6010C		1	87678	01/25/21 09:57	WJM9	ELLE

Client Sample ID: TB-20210114
Date Collected: 01/05/21 00:00
Date Received: 01/14/21 17:04

Lab Sample ID: 410-26447-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	86027	01/19/21 16:43	H9JD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-26447-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-26447-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-26447-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-26447-1	BT-17A-S-13-20210113	Solid	01/13/21 15:15	01/14/21 17:04	
410-26447-2	TB-20210114	Water	01/05/21 00:00	01/14/21 17:04	

Environmental Analysis Rec[illegible]stody

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Acct. # _____

410-26447 Chain of Custody

e only

COC # 615502

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 23402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

For Lab Use Only
FSC: _____
SCR#: 265447

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Matrix: Soil ☒ Sediment ☐ Tissue	Water: Potable ☐ Ground ☐ NPDES ☐ Surface	Other: trip blank	Total # of Containers	TPH DRO-	TPH-GRO + VOC 8260 MOISTURE	Lead	PAH 8270D	Remarks
BT-17A-S-13-20210113	1/13/21	1515	X		X			6	X	X	X	X	
TB-20210114	1/5/21	—					X	2		X			VOCs only

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	1/14/21	1230	[signature]	1-14-21	1230
[signature]	1-14-21	1636			
			[signature]	1-14-21	1704

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.1 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

3/16/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-26447-1

Login Number: 26447
List Number: 1
Creator: Cyms, Carolyn M

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-26586-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 10:09:05 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

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Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 10:09:05 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-26586-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
E	Result exceeded calibration range.
FL	MS and/or MSD recovery below control limits.

Metals

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-26586-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-26586-1

Revision
The report being provided is a revision of the original report sent on 2/8/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/15/2021 3:49 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with 410-86525 is compliant under 8260C criteria for t-Butyl alcohol. The software does not display the data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the QC passes the criteria.

Method 8260C: The method blank for analytical batch 410-86525 contained C4-C12-TPH-GRO above the method detection limit (MDL). Associated samples were not re-analyzed due to insufficient sample volume; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: The following sample was analyzed outside of analytical holding time due to received out of holding time : TB-20210115 (410-26586-2).

Method 8011: The 1,1,2,2-Tetrachloroethane (Surr) surrogate recovery for the following samples was outside acceptance limits (high biased) on the confirmation column due to matrix interference: BT-17A-W-40-20210114 (410-26586-1). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020A: The following sample was not filtered within 15 minutes of sample collection as required by the method: BT-17A-W-40-20210114 (410-26586-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Job ID: 410-26586-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26586-1

Client Sample ID: BT-17A-W-40-20210114 — Lab Sample ID: 410-26586-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	330		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	100		25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	240		5.0	1.0	ug/L	5		8260C/UST	Total/NA
C4-C12-TPH-GRO	12000		250	150	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	350		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	17	J	25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	130		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	2000		30	7.0	ug/L	5		8260C/UST	Total/NA
t-Butyl alcohol	410		250	60	ug/L	5		8260C/UST	Total/NA
Toluene - DL	2200		50	10	ug/L	50		8260C/UST	Total/NA
Methane (1C)	44		5.0	3.0	ug/L	1		RSK-175	Total/NA
>C22-C44 (1C)	0.12	J	0.14	0.11	mg/L	1		8015C TPH	Total/NA
>C12-C22 (1C)	3.0		0.14	0.11	mg/L	1		8015C TPH	Total/NA
Total Reported TPH	3.1		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	2.8	FL	0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	57		5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	82		20	10	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	33		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	3.0		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	8.4		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	3.8		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	67		1.0	0.24	mg/L	1		6010C	Total Recoverable
Lead	0.16	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	190		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	3.2		1.9	0.63	mg/L	1		4500 NH3 C-2011	Total/NA
Total Organic Carbon	60		1.0	0.50	mg/L	1		5310C-2011	Total/NA

Client Sample ID: TB-20210115 — Lab Sample ID: 410-26586-2

No Detections.

Client Sample ID: BT-17A-S-43-20210114 — Lab Sample ID: 410-26586-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	10		6.3	0.50	ug/Kg	1	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	4.6	J	6.3	0.63	ug/Kg	1	☼	8260C	Total/NA
Toluene	37		6.3	0.75	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	2.0	J	6.3	0.63	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	11		6.3	0.63	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	4.1	J	6.3	0.50	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	390	B	140	55	ug/Kg	1	☼	8260C	Total/NA
t-Butyl alcohol	450	^c	130	19	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	44		13	1.8	ug/Kg	1	☼	8260C	Total/NA
Benzene - DL	1900		400	40	ug/Kg	50	☼	8260C	Total/NA
Benzo[b]fluoranthene	4.9	J	22	4.4	ug/Kg	1	☼	8270D	Total/NA
Pyrene	6.4	J	22	4.4	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	31		16	6.6	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	8.5	J	16	6.6	mg/Kg	1	☼	8015C TPH	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-17A-S-43-20210114 (Continued)
Lab Sample ID: 410-26586-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Reported TPH	40		16	6.6	mg/Kg	1	☼	Total TPH	Total/NA
Lead	13		1.4	0.55	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-17A-S-76-20210115
Lab Sample ID: 410-26586-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	54		4.6	0.37	ug/Kg	1	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	35		4.6	0.46	ug/Kg	1	☼	8260C	Total/NA
Toluene	200		4.6	0.55	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	3.7	J	4.6	0.46	ug/Kg	1	☼	8260C	Total/NA
Benzene	43		4.6	0.46	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	96		4.6	0.46	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	5.4		4.6	0.37	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	3300	B	100	41	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	330		9.2	1.3	ug/Kg	1	☼	8260C	Total/NA
Chrysene	3.8	J	19	3.8	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	10	J	19	7.5	ug/Kg	1	☼	8270D	Total/NA
Lead	3.0		1.2	0.48	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-17A-W-40-20210114
Lab Sample ID: 410-26586-1

Date Collected: 01/14/21 13:00
Matrix: Water
Date Received: 01/15/21 15:49

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**330**		25	5.0	ug/L			01/26/21 19:51	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			01/26/21 19:51	5
1,3,5-Trimethylbenzene	**100**		25	1.5	ug/L			01/26/21 19:51	5
Benzene	**240**		5.0	1.0	ug/L			01/26/21 19:51	5
C4-C12-TPH-GRO	**12000**		250	150	ug/L			01/26/21 19:51	5
Ethylbenzene	**350**		5.0	2.0	ug/L			01/26/21 19:51	5
Isopropylbenzene	**17**	**J**	25	1.0	ug/L			01/26/21 19:51	5
Methyl tertiary butyl ether	**130**		5.0	1.0	ug/L			01/26/21 19:51	5
Xylenes, Total	**2000**		30	7.0	ug/L			01/26/21 19:51	5
t-Butyl alcohol	**410**		250	60	ug/L			01/26/21 19:51	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*01/26/21 19:51*	*5*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*01/26/21 19:51*	*5*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*01/26/21 19:51*	*5*
Toluene-d8 (Surr)	*109*		*80 - 120*		*01/26/21 19:51*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**2200**		50	10	ug/L			01/26/21 20:15	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*01/26/21 20:15*	*50*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*01/26/21 20:15*	*50*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*01/26/21 20:15*	*50*
Toluene-d8 (Surr)	*109*		*80 - 120*		*01/26/21 20:15*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 11:23	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 11:23	1
Methane (1C)	**44**		5.0	3.0	ug/L		01/25/21 07:44	01/25/21 11:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*93*		*28 - 140*	*01/25/21 07:44*	*01/25/21 11:23*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		01/20/21 23:37	01/21/21 16:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*209*	*S1+*	*46 - 136*	*01/20/21 23:37*	*01/21/21 16:07*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*123*		*46 - 136*	*01/20/21 23:37*	*01/21/21 16:07*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**0.12**	**J**	0.14	0.11	mg/L		01/21/21 23:50	01/22/21 15:50	1
>C12-C22 (1C)	**3.0**		0.14	0.11	mg/L		01/21/21 23:50	01/22/21 15:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*60*		*21 - 116*	*01/21/21 23:50*	*01/22/21 15:50*	*1*
o- terphenyl (Surr) (1C)	*47*	*S1-*	*51 - 126*	*01/21/21 23:50*	*01/22/21 15:50*	*1*

Client Sample ID: BT-17A-W-40-20210114 — Lab Sample ID: 410-26586-1

Date Collected: 01/14/21 13:00 — **Matrix: Water**
Date Received: 01/15/21 15:49

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	3.1		0.20	0.074	mg/L			01/29/21 14:44	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	2.8	FL	0.50	0.25	mg/L			01/16/21 05:25	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	57		5.0	1.5	mg/L			01/16/21 05:25	5
Chloride	82		20	10	mg/L			01/16/21 06:21	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	33		0.50	0.096	mg/L		01/19/21 01:11	01/26/21 09:45	1
Iron	3.0		0.20	0.040	mg/L		01/19/21 01:11	01/26/21 09:45	1
Magnesium	8.4		0.10	0.040	mg/L		01/19/21 01:11	01/26/21 09:45	1
Potassium	3.8		0.50	0.20	mg/L		01/19/21 01:11	01/26/21 09:45	1
Sodium	67		1.0	0.24	mg/L		01/19/21 01:11	01/26/21 11:43	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.16	J	0.52	0.073	ug/L		01/18/21 09:46	01/19/21 10:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	190		8.0	8.0	mg/L			01/20/21 00:55	1
Ammonia-N	3.2		1.9	0.63	mg/L		01/26/21 08:27	01/26/21 09:44	1
Sulfide	ND		0.30	0.10	mg/L			01/20/21 10:50	1
Total Organic Carbon	60		1.0	0.50	mg/L			01/19/21 16:15	1

Client Sample ID: TB-20210115 — Lab Sample ID: 410-26586-2

Date Collected: 01/05/21 00:00 — **Matrix: Water**
Date Received: 01/15/21 15:49

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/19/21 17:07	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/19/21 17:07	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/19/21 17:07	1
Benzene	ND		1.0	0.20	ug/L			01/19/21 17:07	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/19/21 17:07	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/19/21 17:07	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/19/21 17:07	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/19/21 17:07	1
Toluene	ND		1.0	0.20	ug/L			01/19/21 17:07	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/19/21 17:07	1
t-Butyl alcohol	ND		50	12	ug/L			01/19/21 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*01/19/21 17:07*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*01/19/21 17:07*	*1*

Client Sample ID: TB-20210115 — Lab Sample ID: 410-26586-2

Date Collected: 01/05/21 00:00 — **Matrix: Water**
Date Received: 01/15/21 15:49

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*01/19/21 17:07*	*1*
Toluene-d8 (Surr)	*112*		*80 - 120*		*01/19/21 17:07*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	H	0.029	0.0097	ug/L		01/20/21 23:40	01/21/21 10:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*94*		*46 - 136*	*01/20/21 23:40*	*01/21/21 10:53*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*109*		*46 - 136*	*01/20/21 23:40*	*01/21/21 10:53*	*1*

Client Sample ID: BT-17A-S-43-20210114 — Lab Sample ID: 410-26586-3

Date Collected: 01/14/21 16:00 — **Matrix: Solid**
Date Received: 01/15/21 15:49 — **Percent Solids: 75.3**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**10**		6.3	0.50	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
1,3,5-Trimethylbenzene	**4.6**	**J**	6.3	0.63	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
Toluene	**37**		6.3	0.75	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
Methyl tertiary butyl ether	**2.0**	**J**	6.3	0.63	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
1,2,4-Trimethylbenzene	**11**		6.3	0.63	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
Isopropylbenzene	**4.1**	**J**	6.3	0.50	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
1,2-Dibromoethane	ND		6.3	0.50	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
1,2-Dichloroethane	ND		6.3	0.75	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
C4-C12-TPH-GRO	**390**	**B**	140	55	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
t-Butyl alcohol	**450**	**^c**	130	19	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1
Xylenes, Total	**44**		13	1.8	ug/Kg	☼	01/18/21 13:57	01/20/21 23:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*	*01/18/21 13:57*	*01/20/21 23:11*	*1*
4-Bromofluorobenzene (Surr)	*84*		*50 - 131*	*01/18/21 13:57*	*01/20/21 23:11*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 141*	*01/18/21 13:57*	*01/20/21 23:11*	*1*
Toluene-d8 (Surr)	*104*		*52 - 141*	*01/18/21 13:57*	*01/20/21 23:11*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1900**		400	40	ug/Kg	☼	01/18/21 13:34	01/21/21 15:32	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*	*01/18/21 13:34*	*01/21/21 15:32*	*50*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*	*01/18/21 13:34*	*01/21/21 15:32*	*50*
Dibromofluoromethane (Surr)	*99*		*50 - 141*	*01/18/21 13:34*	*01/21/21 15:32*	*50*
Toluene-d8 (Surr)	*99*		*52 - 141*	*01/18/21 13:34*	*01/21/21 15:32*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		22	4.4	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1
Benzo[a]anthracene	ND		22	8.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1
Benzo[a]pyrene	ND		22	4.4	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1
Benzo[b]fluoranthene	**4.9**	**J**	22	4.4	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1

Client Sample ID: BT-17A-S-43-20210114 — Lab Sample ID: 410-26586-3

Date Collected: 01/14/21 16:00 — **Matrix: Solid**
Date Received: 01/15/21 15:49 — **Percent Solids: 75.3**

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		22	4.4	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1
Chrysene	ND		22	4.4	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1
Fluorene	ND		22	4.4	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1
Naphthalene	ND		22	8.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1
Phenanthrene	ND		22	4.4	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1
Pyrene	**6.4**	**J**	22	4.4	ug/Kg	☼	01/28/21 09:55	01/29/21 05:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*8*	*S1-*	*39 - 100*	*01/28/21 09:55*	*01/29/21 05:17*	*1*
Nitrobenzene-d5 (Surr)	*9*	*S1-*	*32 - 97*	*01/28/21 09:55*	*01/29/21 05:17*	*1*
p-Terphenyl-d14 (Surr)	*22*	*S1-*	*45 - 108*	*01/28/21 09:55*	*01/29/21 05:17*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**31**		16	6.6	mg/Kg	☼	01/28/21 16:45	01/29/21 12:29	1
>C12-C22 (1C)	**8.5**	**J**	16	6.6	mg/Kg	☼	01/28/21 16:45	01/29/21 12:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*68*		*54 - 137*	*01/28/21 16:45*	*01/29/21 12:29*	*1*
o- terphenyl (Surr) (1C)	*73*		*52 - 154*	*01/28/21 16:45*	*01/29/21 12:29*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**40**		16	6.6	mg/Kg	☼		01/29/21 14:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**13**		1.4	0.55	mg/Kg	☼	01/19/21 05:41	01/25/21 08:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**24.7**		1.0	1.0	%			01/18/21 10:22	1

Client Sample ID: BT-17A-S-76-20210115 — Lab Sample ID: 410-26586-4

Date Collected: 01/15/21 12:05 — **Matrix: Solid**
Date Received: 01/15/21 15:49 — **Percent Solids: 87.9**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**54**		4.6	0.37	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
1,3,5-Trimethylbenzene	**35**		4.6	0.46	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
Toluene	**200**		4.6	0.55	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
Methyl tertiary butyl ether	**3.7**	**J**	4.6	0.46	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
Benzene	**43**		4.6	0.46	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
1,2,4-Trimethylbenzene	**96**		4.6	0.46	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
Isopropylbenzene	**5.4**		4.6	0.37	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
1,2-Dibromoethane	ND		4.6	0.37	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
1,2-Dichloroethane	ND		4.6	0.55	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
C4-C12-TPH-GRO	**3300**	**B**	100	41	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
t-Butyl alcohol	ND	^c	92	14	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1
Xylenes, Total	**330**		9.2	1.3	ug/Kg	☼	01/18/21 13:57	01/20/21 23:34	1

Client Sample ID: BT-17A-S-76-20210115 — Lab Sample ID: 410-26586-4

Date Collected: 01/15/21 12:05 — **Matrix: Solid**
Date Received: 01/15/21 15:49 — **Percent Solids: 87.9**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*	*01/18/21 13:57*	*01/20/21 23:34*	*1*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*01/18/21 13:57*	*01/20/21 23:34*	*1*
Dibromofluoromethane (Surr)	*103*		*50 - 141*	*01/18/21 13:57*	*01/20/21 23:34*	*1*
Toluene-d8 (Surr)	*97*		*52 - 141*	*01/18/21 13:57*	*01/20/21 23:34*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		19	3.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Benzo[a]anthracene	ND		19	7.5	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Benzo[a]pyrene	ND		19	3.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Benzo[b]fluoranthene	ND		19	3.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Benzo[g,h,i]perylene	ND		19	3.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Chrysene	**3.8**	**J**	19	3.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Fluorene	ND		19	3.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Naphthalene	**10**	**J**	19	7.5	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Phenanthrene	ND		19	3.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1
Pyrene	ND		19	3.8	ug/Kg	☼	01/28/21 09:55	01/29/21 05:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*39 - 100*	*01/28/21 09:55*	*01/29/21 05:42*	*1*
Nitrobenzene-d5 (Surr)	*77*		*32 - 97*	*01/28/21 09:55*	*01/29/21 05:42*	*1*
p-Terphenyl-d14 (Surr)	*91*		*45 - 108*	*01/28/21 09:55*	*01/29/21 05:42*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		14	5.7	mg/Kg	☼	01/28/21 16:45	01/29/21 12:50	1
>C12-C22 (1C)	ND		14	5.7	mg/Kg	☼	01/28/21 16:45	01/29/21 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*82*		*54 - 137*	*01/28/21 16:45*	*01/29/21 12:50*	*1*
o- terphenyl (Surr) (1C)	*96*		*52 - 154*	*01/28/21 16:45*	*01/29/21 12:50*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		14	5.7	mg/Kg	☼		01/29/21 14:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.0**		1.2	0.48	mg/Kg	☼	01/18/21 07:49	01/25/21 06:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12.1**		1.0	1.0	%			01/18/21 10:22	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26586-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-26586-3	BT-17A-S-43-20210114	108	84	102	104
410-26586-3 - DL	BT-17A-S-43-20210114	104	94	99	99
410-26586-4	BT-17A-S-76-20210115	109	97	103	97
LCS 410-86525/6	Lab Control Sample	107	98	103	96
LCS 410-86525/8	Lab Control Sample	106	99	101	95
LCS 410-86736/5	Lab Control Sample	100	89	98	96
LCSD 410-86525/7	Lab Control Sample Dup	108	99	103	96
LCSD 410-86525/9	Lab Control Sample Dup	106	99	102	96
LCSD 410-86736/6	Lab Control Sample Dup	100	87	96	94
MB 410-86525/11	Method Blank	108	96	106	94
MB 410-86736/10	Method Blank	93	81	87	87

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-26586-1	BT-17A-W-40-20210114	105	95	95	109
410-26586-1 - DL	BT-17A-W-40-20210114	107	90	94	109
410-26586-2	TB-20210115	103	90	100	112
LCS 410-86027/5	Lab Control Sample	105	92	97	111
LCS 410-86027/6	Lab Control Sample	104	88	98	107
LCS 410-87981/7	Lab Control Sample	106	90	96	109
LCSD 410-86027/7	Lab Control Sample Dup	105	92	97	112
LCSD 410-87981/8	Lab Control Sample Dup	105	90	95	108
MB 410-86027/8	Method Blank	105	88	99	107
MB 410-87981/9	Method Blank	106	89	97	109

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-26586-3	BT-17A-S-43-20210114	8 S1-	9 S1-	22 S1-
410-26586-4	BT-17A-S-76-20210115	81	77	91
LCS 410-88869/2-A	Lab Control Sample	83	76	102
MB 410-88869/1-A	Method Blank	86	79	101

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-26586-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**Propene1 (28-140)**
410-26586-1	BT-17A-W-40-20210114	93
LCS 410-87598/2-A	Lab Control Sample	103
LCSD 410-87598/3-A	Lab Control Sample Dup	104
MB 410-87598/1-A	Method Blank	102

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	**Client Sample ID**	**1122TCA1 (46-136)**	**1122TCA2 (46-136)**
410-26586-1	BT-17A-W-40-20210114	209 S1+	123
410-26586-2	TB-20210115	94	109
LCS 410-86621/2-A	Lab Control Sample	126	135
LCS 410-86622/2-A	Lab Control Sample		106
LCSD 410-86621/3-A	Lab Control Sample Dup	112	121
LCSD 410-86622/3-A	Lab Control Sample Dup		106
MB 410-86621/1-A	Method Blank	112	118
MB 410-86622/1-A	Method Blank		106

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	**Client Sample ID**	**CBNZ1 (54-137)**	**OTP1 (52-154)**
410-26586-3	BT-17A-S-43-20210114	68	73
410-26586-4	BT-17A-S-76-20210115	82	96
410-26586-4 DU	BT-17A-S-76-20210115	82	97
410-26586-4 MS	BT-17A-S-76-20210115	79	105
LCS 410-89162/2-A	Lab Control Sample	79	106
MB 410-89162/1-A	Method Blank	84	96

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-26586-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (21-116)	OTP1 (51-126)								
410-26586-1	BT-17A-W-40-20210114	60	47 S1-								
LCS 410-87051/2-A	Lab Control Sample	64	99								
LCSD 410-87051/3-A	Lab Control Sample Dup	67	100								
MB 410-87051/1-A	Method Blank	55	92								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-86525/11
Matrix: Solid
Analysis Batch: 86525

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			01/20/21 22:01	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/20/21 22:01	1
Toluene	ND		5.0	0.60	ug/Kg			01/20/21 22:01	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			01/20/21 22:01	1
Benzene	ND		5.0	0.50	ug/Kg			01/20/21 22:01	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/20/21 22:01	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			01/20/21 22:01	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			01/20/21 22:01	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			01/20/21 22:01	1
C4-C12-TPH-GRO	1820	B	110	44	ug/Kg			01/20/21 22:01	1
t-Butyl alcohol	ND		100	15	ug/Kg			01/20/21 22:01	1
Xylenes, Total	ND		10	1.4	ug/Kg			01/20/21 22:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*		*01/20/21 22:01*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*		*01/20/21 22:01*	*1*
Dibromofluoromethane (Surr)	*106*		*50 - 141*		*01/20/21 22:01*	*1*
Toluene-d8 (Surr)	*94*		*52 - 141*		*01/20/21 22:01*	*1*

Lab Sample ID: LCS 410-86525/6
Matrix: Solid
Analysis Batch: 86525

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	20.3		ug/Kg		101	78 - 120
1,3,5-Trimethylbenzene	20.0	20.0		ug/Kg		100	73 - 120
Toluene	20.0	20.5		ug/Kg		102	80 - 120
Methyl tertiary butyl ether	20.0	17.4		ug/Kg		87	72 - 120
Benzene	20.0	22.7		ug/Kg		113	80 - 120
Naphthalene	20.0	18.6		ug/Kg		93	48 - 130
1,2,4-Trimethylbenzene	20.0	19.7		ug/Kg		99	73 - 120
Isopropylbenzene	20.0	20.1		ug/Kg		101	77 - 120
1,2-Dibromoethane	20.0	20.5		ug/Kg		102	76 - 120
1,2-Dichloroethane	20.0	21.4		ug/Kg		107	71 - 128
t-Butyl alcohol	200	202		ug/Kg		101	74 - 121
Xylenes, Total	60.0	62.0		ug/Kg		103	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-86525/8
Matrix: Solid
Analysis Batch: 86525

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1070		ug/Kg		107	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Lab Sample ID: LCSD 410-86525/7
Matrix: Solid
Analysis Batch: 86525

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.7		ug/Kg		104	78 - 120	2	30
1,3,5-Trimethylbenzene			20.0	20.0		ug/Kg		100	73 - 120	0	30
Toluene			20.0	21.0		ug/Kg		105	80 - 120	2	30
Methyl tertiary butyl ether			20.0	17.3		ug/Kg		86	72 - 120	1	30
Benzene			20.0	23.2		ug/Kg		116	80 - 120	3	30
Naphthalene			20.0	19.1		ug/Kg		96	48 - 130	3	30
1,2,4-Trimethylbenzene			20.0	19.8		ug/Kg		99	73 - 120	0	30
Isopropylbenzene			20.0	20.4		ug/Kg		102	77 - 120	1	30
1,2-Dibromoethane			20.0	20.5		ug/Kg		103	76 - 120	0	30
1,2-Dichloroethane			20.0	21.1		ug/Kg		106	71 - 128	1	30
t-Butyl alcohol			200	200		ug/Kg		100	74 - 121	1	30
Xylenes, Total			60.0	63.2		ug/Kg		105	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*103*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Lab Sample ID: LCSD 410-86525/9
Matrix: Solid
Analysis Batch: 86525

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1040		ug/Kg		104	75 - 120	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*102*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-86736/10
Matrix: Solid
Analysis Batch: 86736

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			01/21/21 12:24	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			01/21/21 12:24	50
Toluene	ND		250	30	ug/Kg			01/21/21 12:24	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			01/21/21 12:24	50
Benzene	ND		250	25	ug/Kg			01/21/21 12:24	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			01/21/21 12:24	50
Isopropylbenzene	ND		250	20	ug/Kg			01/21/21 12:24	50
1,2-Dibromoethane	ND		250	20	ug/Kg			01/21/21 12:24	50
1,2-Dichloroethane	ND		250	30	ug/Kg			01/21/21 12:24	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			01/21/21 12:24	50
t-Butyl alcohol	ND		5000	750	ug/Kg			01/21/21 12:24	50
Xylenes, Total	ND		500	70	ug/Kg			01/21/21 12:24	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*		*01/21/21 12:24*	*50*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*		*01/21/21 12:24*	*50*
Dibromofluoromethane (Surr)	*87*		*50 - 141*		*01/21/21 12:24*	*50*
Toluene-d8 (Surr)	*87*		*52 - 141*		*01/21/21 12:24*	*50*

Lab Sample ID: LCS 410-86736/5
Matrix: Solid
Analysis Batch: 86736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	961		ug/Kg		96	78 - 120
1,3,5-Trimethylbenzene	1000	950		ug/Kg		95	73 - 120
Toluene	1000	987		ug/Kg		99	80 - 120
Methyl tertiary butyl ether	1000	1030		ug/Kg		103	72 - 120
Benzene	1000	995		ug/Kg		100	80 - 120
Naphthalene	1000	931		ug/Kg		93	48 - 130
1,2,4-Trimethylbenzene	1000	938		ug/Kg		94	73 - 120
Isopropylbenzene	1000	976		ug/Kg		98	77 - 120
1,2-Dibromoethane	1000	1040		ug/Kg		104	76 - 120
1,2-Dichloroethane	1000	925		ug/Kg		92	71 - 128
t-Butyl alcohol	10000	10900		ug/Kg		109	74 - 121
Xylenes, Total	3000	3000		ug/Kg		100	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-86736/6
Matrix: Solid
Analysis Batch: 86736

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	945		ug/Kg		94	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	930		ug/Kg		93	73 - 120	2	30
Toluene			1000	960		ug/Kg		96	80 - 120	3	30
Methyl tertiary butyl ether			1000	1020		ug/Kg		102	72 - 120	1	30
Benzene			1000	973		ug/Kg		97	80 - 120	2	30
Naphthalene			1000	935		ug/Kg		94	48 - 130	0	30
1,2,4-Trimethylbenzene			1000	923		ug/Kg		92	73 - 120	2	30
Isopropylbenzene			1000	961		ug/Kg		96	77 - 120	2	30
1,2-Dibromoethane			1000	1030		ug/Kg		103	76 - 120	1	30
1,2-Dichloroethane			1000	898		ug/Kg		90	71 - 128	3	30
t-Butyl alcohol			10000	10800		ug/Kg		108	74 - 121	1	30
Xylenes, Total			3000	2940		ug/Kg		98	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*94*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-86027/8
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/19/21 16:06	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/19/21 16:06	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/19/21 16:06	1
Benzene	ND		1.0	0.20	ug/L			01/19/21 16:06	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/19/21 16:06	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/19/21 16:06	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/19/21 16:06	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/19/21 16:06	1
Toluene	ND		1.0	0.20	ug/L			01/19/21 16:06	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/19/21 16:06	1
t-Butyl alcohol	ND		50	12	ug/L			01/19/21 16:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*01/19/21 16:06*	*1*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*01/19/21 16:06*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/19/21 16:06*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*01/19/21 16:06*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-86027/5
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,4-Trimethylbenzene			20.0	19.2		ug/L		96	75 - 120		
1,2-Dichloroethane			20.0	16.0		ug/L		80	73 - 124		
1,3,5-Trimethylbenzene			20.0	19.2		ug/L		96	75 - 120		
Benzene			20.0	16.4		ug/L		82	80 - 120		
Ethylbenzene			20.0	20.0		ug/L		100	80 - 120		
Isopropylbenzene			20.0	18.5		ug/L		92	80 - 120		
Methyl tertiary butyl ether			20.0	16.1		ug/L		80	69 - 122		
Naphthalene			20.0	17.2		ug/L		86	53 - 124		
Toluene			20.0	19.8		ug/L		99	80 - 120		
Xylenes, Total			60.0	56.6		ug/L		94	80 - 120		
t-Butyl alcohol			200	226		ug/L		113	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCS 410-86027/6
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	920		ug/L		92	67 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: LCSD 410-86027/7
Matrix: Water
Analysis Batch: 86027

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	876		ug/L		88	67 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-87981/9
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/26/21 12:14	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/26/21 12:14	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/26/21 12:14	1
Benzene	ND		1.0	0.20	ug/L			01/26/21 12:14	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/26/21 12:14	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/26/21 12:14	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/26/21 12:14	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/26/21 12:14	1
Toluene	ND		1.0	0.20	ug/L			01/26/21 12:14	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/26/21 12:14	1
t-Butyl alcohol	ND		50	12	ug/L			01/26/21 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*01/26/21 12:14*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/26/21 12:14*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*01/26/21 12:14*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*01/26/21 12:14*	*1*

Lab Sample ID: LCS 410-87981/7
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	848		ug/L		85	67 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Lab Sample ID: LCSD 410-87981/8
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	874		ug/L		87	67 - 120	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*108*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-88869/1-A
Matrix: Solid
Analysis Batch: 89232

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 88869

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Chrysene	ND		17	3.3	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Fluorene	ND		17	3.3	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Naphthalene	ND		17	6.7	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Phenanthrene	ND		17	3.3	ug/Kg		01/28/21 09:55	01/28/21 22:48	1
Pyrene	ND		17	3.3	ug/Kg		01/28/21 09:55	01/28/21 22:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*86*		*39 - 100*	*01/28/21 09:55*	*01/28/21 22:48*	*1*
Nitrobenzene-d5 (Surr)	*79*		*32 - 97*	*01/28/21 09:55*	*01/28/21 22:48*	*1*
p-Terphenyl-d14 (Surr)	*101*		*45 - 108*	*01/28/21 09:55*	*01/28/21 22:48*	*1*

Lab Sample ID: LCS 410-88869/2-A
Matrix: Solid
Analysis Batch: 89232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 88869

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1530		ug/Kg		92	75 - 114
Benzo[a]anthracene	1670	1590		ug/Kg		95	73 - 114
Benzo[a]pyrene	1670	1840		ug/Kg		110	76 - 113
Benzo[b]fluoranthene	1670	1550		ug/Kg		93	73 - 117
Benzo[g,h,i]perylene	1670	1700		ug/Kg		102	77 - 114
Chrysene	1670	1600		ug/Kg		96	66 - 111
Fluorene	1670	1400		ug/Kg		84	62 - 110
Naphthalene	1670	1240		ug/Kg		74	60 - 94
Phenanthrene	1670	1520		ug/Kg		91	74 - 112
Pyrene	1670	1570		ug/Kg		94	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*83*		*39 - 100*
Nitrobenzene-d5 (Surr)	*76*		*32 - 97*
p-Terphenyl-d14 (Surr)	*102*		*45 - 108*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-87598/1-A
Matrix: Water
Analysis Batch: 87619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87598

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 10:10	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 10:10	1
Methane (1C)	ND		5.0	3.0	ug/L		01/25/21 07:44	01/25/21 10:10	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-87598/1-A
Matrix: Water
Analysis Batch: 87619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87598

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	102		28 - 140	01/25/21 07:44	01/25/21 10:10	1

Lab Sample ID: LCS 410-87598/2-A
Matrix: Water
Analysis Batch: 87619

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87598

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	60.4		ug/L		102	85 - 115
Ethene (1C)	60.4	61.5		ug/L		102	83 - 115
Methane (1C)	59.4	63.5		ug/L		107	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	103		28 - 140

Lab Sample ID: LCSD 410-87598/3-A
Matrix: Water
Analysis Batch: 87619

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87598

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)	59.4	60.7		ug/L		102	85 - 115	0	20
Ethene (1C)	60.4	61.8		ug/L		102	83 - 115	0	20
Methane (1C)	59.4	64.1		ug/L		108	85 - 115	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Propene (1C)	104		28 - 140

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-86621/1-A
Matrix: Water
Analysis Batch: 86685

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 86621

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/20/21 23:37	01/21/21 09:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	112		46 - 136	01/20/21 23:37	01/21/21 09:20	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	118		46 - 136	01/20/21 23:37	01/21/21 09:20	1

Lab Sample ID: LCS 410-86621/2-A
Matrix: Water
Analysis Batch: 86685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.140		ug/L		110	60 - 140

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-86621/2-A
Matrix: Water
Analysis Batch: 86685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86621

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*126*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*135*		*46 - 136*

Lab Sample ID: LCSD 410-86621/3-A
Matrix: Water
Analysis Batch: 86685

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 86621

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.135		ug/L		105	60 - 140	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*112*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*121*		*46 - 136*

Lab Sample ID: MB 410-86622/1-A
Matrix: Water
Analysis Batch: 86688

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 86622

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/20/21 23:40	01/21/21 09:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*01/20/21 23:40*	*01/21/21 09:12*	*1*

Lab Sample ID: LCS 410-86622/2-A
Matrix: Water
Analysis Batch: 86688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 86622

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.132		ug/L		103	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*

Lab Sample ID: LCSD 410-86622/3-A
Matrix: Water
Analysis Batch: 86688

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 86622

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.135		ug/L		106	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-87051/1-A
Matrix: Water
Analysis Batch: 87247

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87051

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.10	0.074	mg/L		01/21/21 23:50	01/22/21 14:45	1
>C12-C22 (1C)	ND		0.10	0.074	mg/L		01/21/21 23:50	01/22/21 14:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*55*		*21 - 116*	*01/21/21 23:50*	*01/22/21 14:45*	*1*
o- terphenyl (Surr) (1C)	*92*		*51 - 126*	*01/21/21 23:50*	*01/22/21 14:45*	*1*

Lab Sample ID: LCS 410-87051/2-A
Matrix: Water
Analysis Batch: 87247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87051

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.803	0.726		mg/L		90	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*64*		*21 - 116*
o- terphenyl (Surr) (1C)	*99*		*51 - 126*

Lab Sample ID: LCSD 410-87051/3-A
Matrix: Water
Analysis Batch: 87247

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87051

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.803	0.762		mg/L		95	53 - 115	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*67*		*21 - 116*
o- terphenyl (Surr) (1C)	*100*		*51 - 126*

Lab Sample ID: MB 410-89162/1-A
Matrix: Solid
Analysis Batch: 89477

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89162

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		01/28/21 16:44	01/29/21 11:24	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		01/28/21 16:44	01/29/21 11:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*84*		*54 - 137*	*01/28/21 16:44*	*01/29/21 11:24*	*1*
o- terphenyl (Surr) (1C)	*96*		*52 - 154*	*01/28/21 16:44*	*01/29/21 11:24*	*1*

Lab Sample ID: LCS 410-89162/2-A
Matrix: Solid
Analysis Batch: 89477

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89162

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	117		mg/Kg		87	64 - 122		

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 410-89162/2-A
Matrix: Solid
Analysis Batch: 89477

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89162

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	79		54 - 137
o- terphenyl (Surr) (1C)	106		52 - 154

Lab Sample ID: 410-26586-4 MS
Matrix: Solid
Analysis Batch: 89477

Client Sample ID: BT-17A-S-76-20210115
Prep Type: Total/NA
Prep Batch: 89162

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	ND		153	141		mg/Kg	☼	92	64 - 122

Surrogate	MS %Recovery	MS Qualifier	Limits
Chlorobenzene (Surr) (1C)	79		54 - 137
o- terphenyl (Surr) (1C)	105		52 - 154

Lab Sample ID: 410-26586-4 DU
Matrix: Solid
Analysis Batch: 89477

Client Sample ID: BT-17A-S-76-20210115
Prep Type: Total/NA
Prep Batch: 89162

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
>C22-C44 (1C)	ND		ND		mg/Kg	☼	NC	
>C12-C22 (1C)	ND		ND		mg/Kg	☼	NC	

Surrogate	DU %Recovery	DU Qualifier	Limits
Chlorobenzene (Surr) (1C)	82		54 - 137
o- terphenyl (Surr) (1C)	97		52 - 154

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-85395/4
Matrix: Water
Analysis Batch: 85395

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			01/16/21 05:07	1

Lab Sample ID: LCS 410-85395/3
Matrix: Water
Analysis Batch: 85395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	0.750	0.757		mg/L		101	90 - 110

Lab Sample ID: 410-26586-1 MS
Matrix: Water
Analysis Batch: 85395

Client Sample ID: BT-17A-W-40-20210114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	2.8	FL	2.50	4.92	FL	mg/L		87	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy (Continued)

Lab Sample ID: 410-26586-1 DU
Matrix: Water
Analysis Batch: 85395

Client Sample ID: BT-17A-W-40-20210114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrogen, Nitrate	2.8	FL		2.66		mg/L				3	15

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-85394/4
Matrix: Water
Analysis Batch: 85394

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/16/21 05:07	1
Chloride	ND		0.40	0.20	mg/L			01/16/21 05:07	1

Lab Sample ID: LCS 410-85394/3
Matrix: Water
Analysis Batch: 85394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.09		mg/L		95	90 - 110		
Chloride			3.00	3.03		mg/L		101	90 - 110		

Lab Sample ID: 410-26586-1 MS
Matrix: Water
Analysis Batch: 85394

Client Sample ID: BT-17A-W-40-20210114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	57		25.0	82.3	E	mg/L		103	90 - 110		

Lab Sample ID: 410-26586-1 DU
Matrix: Water
Analysis Batch: 85394

Client Sample ID: BT-17A-W-40-20210114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	57			54.4		mg/L				4	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-85528/1-A
Matrix: Solid
Analysis Batch: 87587

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		01/18/21 07:49	01/25/21 06:21	1

Lab Sample ID: LCS 410-85528/2-A
Matrix: Solid
Analysis Batch: 87587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85528

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.97	2.92		mg/Kg		98	80 - 120		

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 410-85800/1-A
Matrix: Solid
Analysis Batch: 87669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85800

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		01/19/21 05:41	01/25/21 07:36	1

Lab Sample ID: LCS 410-85800/2-A
Matrix: Solid
Analysis Batch: 87669

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85800

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.68	2.86		mg/Kg		107	80 - 120

Lab Sample ID: MB 410-85759/1-A
Matrix: Water
Analysis Batch: 88086

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 85759

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		01/19/21 01:11	01/26/21 09:36	1
Iron	ND		0.20	0.040	mg/L		01/19/21 01:11	01/26/21 09:36	1
Magnesium	ND		0.10	0.040	mg/L		01/19/21 01:11	01/26/21 09:36	1
Potassium	ND		0.50	0.20	mg/L		01/19/21 01:11	01/26/21 09:36	1

Lab Sample ID: MB 410-85759/1-A
Matrix: Water
Analysis Batch: 88146

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 85759

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		1.0	0.24	mg/L		01/19/21 01:11	01/26/21 11:38	1

Lab Sample ID: LCS 410-85759/2-A
Matrix: Water
Analysis Batch: 88086

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 85759

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.410	J	mg/L		102	80 - 120
Iron	0.400	0.381		mg/L		95	80 - 120
Magnesium	0.200	0.196		mg/L		98	80 - 120
Potassium	6.00	5.79		mg/L		96	80 - 120

Lab Sample ID: LCS 410-85759/2-A
Matrix: Water
Analysis Batch: 88146

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 85759

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	2.00	1.93		mg/L		96	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-85581/1-A
Matrix: Water
Analysis Batch: 86005

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 85581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		01/18/21 09:46	01/19/21 10:24	1

Lab Sample ID: LCS 410-85581/2-A
Matrix: Water
Analysis Batch: 86005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 85581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	30.0		ug/L		100	90 - 115

Lab Sample ID: 410-26586-1 MS
Matrix: Water
Analysis Batch: 86005

Client Sample ID: BT-17A-W-40-20210114
Prep Type: Dissolved
Prep Batch: 85581

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.16	J	30.0	30.6		ug/L		102	75 - 125

Lab Sample ID: 410-26586-1 MSD
Matrix: Water
Analysis Batch: 86005

Client Sample ID: BT-17A-W-40-20210114
Prep Type: Dissolved
Prep Batch: 85581

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.16	J	30.0	31.0		ug/L		103	75 - 125	1	20

Lab Sample ID: 410-26586-1 DU
Matrix: Water
Analysis Batch: 86005

Client Sample ID: BT-17A-W-40-20210114
Prep Type: Dissolved
Prep Batch: 85581

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	0.16	J	0.124	J F5	ug/L		25	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-86899/28
Matrix: Water
Analysis Batch: 86899

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			01/20/21 00:13	1

Lab Sample ID: LCS 410-86899/29
Matrix: Water
Analysis Batch: 86899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	174		mg/L		92	82 - 106

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: LCSD 410-86899/30
Matrix: Water
Analysis Batch: 86899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5			189	174		mg/L		92	82 - 106	0	10

Lab Sample ID: 410-26586-1 DU
Matrix: Water
Analysis Batch: 86899

Client Sample ID: BT-17A-W-40-20210114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	190			187		mg/L				0.3	5

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-87997/1-A
Matrix: Water
Analysis Batch: 88053

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87997

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		01/26/21 08:27	01/26/21 09:44	1

Lab Sample ID: LCS 410-87997/2-A
Matrix: Water
Analysis Batch: 88053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87997

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia-N			10.0	9.30		mg/L		93	93 - 100		

Lab Sample ID: LCSD 410-87997/3-A
Matrix: Water
Analysis Batch: 88053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87997

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N			10.0	9.48		mg/L		95	93 - 100	2	5

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-86341/1
Matrix: Water
Analysis Batch: 86341

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			01/20/21 10:50	1

Lab Sample ID: LCS 410-86341/13
Matrix: Water
Analysis Batch: 86341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			1.00	1.08		mg/L		108	90 - 110		

QC Sample Results

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26586-1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-86321/14
Matrix: Water
Analysis Batch: 86321

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			01/19/21 14:52	1

Lab Sample ID: LCS 410-86321/13
Matrix: Water
Analysis Batch: 86321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.0		mg/L		100	91 - 113		

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26586-1

GC/MS VOA

Prep Batch: 85646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3 - DL	BT-17A-S-43-20210114	Total/NA	Solid	5035	

Prep Batch: 85651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	5035	
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	5035	

Analysis Batch: 86027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-2	TB-20210115	Total/NA	Water	8260C/UST	
MB 410-86027/8	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-86027/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-86027/6	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-86027/7	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 86525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	8260C	85651
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	8260C	85651
MB 410-86525/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-86525/6	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-86525/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-86525/7	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-86525/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 86736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3 - DL	BT-17A-S-43-20210114	Total/NA	Solid	8260C	85646
MB 410-86736/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-86736/5	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-86736/6	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 87981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	8260C/UST	
410-26586-1 - DL	BT-17A-W-40-20210114	Total/NA	Water	8260C/UST	
MB 410-87981/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-87981/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-87981/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 88869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	3546	
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	3546	
MB 410-88869/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-88869/2-A	Lab Control Sample	Total/NA	Solid	3546	

GC/MS Semi VOA

Analysis Batch: 89232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	8270D	88869
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	8270D	88869
MB 410-88869/1-A	Method Blank	Total/NA	Solid	8270D	88869
LCS 410-88869/2-A	Lab Control Sample	Total/NA	Solid	8270D	88869

GC VOA

Prep Batch: 87598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	RSK-175	
MB 410-87598/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-87598/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-87598/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 87619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	RSK-175	87598
MB 410-87598/1-A	Method Blank	Total/NA	Water	RSK-175	87598
LCS 410-87598/2-A	Lab Control Sample	Total/NA	Water	RSK-175	87598
LCSD 410-87598/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	87598

GC Semi VOA

Prep Batch: 86621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	8011	
MB 410-86621/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-86621/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-86621/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Prep Batch: 86622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-2	TB-20210115	Total/NA	Water	8011	
MB 410-86622/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-86622/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-86622/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 86685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	8011	86621
MB 410-86621/1-A	Method Blank	Total/NA	Water	8011	86621
LCS 410-86621/2-A	Lab Control Sample	Total/NA	Water	8011	86621
LCSD 410-86621/3-A	Lab Control Sample Dup	Total/NA	Water	8011	86621

Analysis Batch: 86688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-2	TB-20210115	Total/NA	Water	8011	86622
MB 410-86622/1-A	Method Blank	Total/NA	Water	8011	86622
LCS 410-86622/2-A	Lab Control Sample	Total/NA	Water	8011	86622
LCSD 410-86622/3-A	Lab Control Sample Dup	Total/NA	Water	8011	86622

GC Semi VOA

Prep Batch: 87051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	3510C	
MB 410-87051/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-87051/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-87051/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 87247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	8015C TPH	87051
MB 410-87051/1-A	Method Blank	Total/NA	Water	8015C TPH	87051
LCS 410-87051/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	87051
LCSD 410-87051/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	87051

Prep Batch: 89162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	3546	
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	3546	
MB 410-89162/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-89162/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-26586-4 MS	BT-17A-S-76-20210115	Total/NA	Solid	3546	
410-26586-4 DU	BT-17A-S-76-20210115	Total/NA	Solid	3546	

Prep Batch: 89282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1 - RE	BT-17A-W-40-20210114	Total/NA	Water	3510C	
MB 410-89282/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-89282/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-89282/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 89474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1 - RE	BT-17A-W-40-20210114	Total/NA	Water	8015C TPH	89282
MB 410-89282/1-A	Method Blank	Total/NA	Water	8015C TPH	89282
LCS 410-89282/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	89282
LCSD 410-89282/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	89282

Analysis Batch: 89477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	8015C TPH	89162
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	8015C TPH	89162
MB 410-89162/1-A	Method Blank	Total/NA	Solid	8015C TPH	89162
LCS 410-89162/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	89162
410-26586-4 MS	BT-17A-S-76-20210115	Total/NA	Solid	8015C TPH	89162
410-26586-4 DU	BT-17A-S-76-20210115	Total/NA	Solid	8015C TPH	89162

Analysis Batch: 89548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	Total TPH	
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	Total TPH	
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	Total TPH	

HPLC/IC

Analysis Batch: 85394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	EPA 300.0 R2.1	
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	EPA 300.0 R2.1	
MB 410-85394/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-85394/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-26586-1 MS	BT-17A-W-40-20210114	Total/NA	Water	EPA 300.0 R2.1	
410-26586-1 DU	BT-17A-W-40-20210114	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 85395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	EPA 300.0 R2.1	
MB 410-85395/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-85395/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-26586-1 MS	BT-17A-W-40-20210114	Total/NA	Water	EPA 300.0 R2.1	
410-26586-1 DU	BT-17A-W-40-20210114	Total/NA	Water	EPA 300.0 R2.1	

Metals

Filtration Batch: 85505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Dissolved	Water	Filtration	
410-26586-1 MS	BT-17A-W-40-20210114	Dissolved	Water	Filtration	
410-26586-1 MSD	BT-17A-W-40-20210114	Dissolved	Water	Filtration	
410-26586-1 DU	BT-17A-W-40-20210114	Dissolved	Water	Filtration	

Prep Batch: 85528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	3050B	
MB 410-85528/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-85528/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 85581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Dissolved	Water	Non-Digest Prep	85505
MB 410-85581/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-85581/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-26586-1 MS	BT-17A-W-40-20210114	Dissolved	Water	Non-Digest Prep	85505
410-26586-1 MSD	BT-17A-W-40-20210114	Dissolved	Water	Non-Digest Prep	85505
410-26586-1 DU	BT-17A-W-40-20210114	Dissolved	Water	Non-Digest Prep	85505

Prep Batch: 85759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total Recoverable	Water	3005A	
MB 410-85759/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-85759/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 85800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	3050B	
MB 410-85800/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-85800/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Metals

Analysis Batch: 86005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Dissolved	Water	6020A	85581
MB 410-85581/1-A	Method Blank	Total/NA	Water	6020A	85581
LCS 410-85581/2-A	Lab Control Sample	Total/NA	Water	6020A	85581
410-26586-1 MS	BT-17A-W-40-20210114	Dissolved	Water	6020A	85581
410-26586-1 MSD	BT-17A-W-40-20210114	Dissolved	Water	6020A	85581
410-26586-1 DU	BT-17A-W-40-20210114	Dissolved	Water	6020A	85581

Analysis Batch: 87587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	6010C	85528
MB 410-85528/1-A	Method Blank	Total/NA	Solid	6010C	85528
LCS 410-85528/2-A	Lab Control Sample	Total/NA	Solid	6010C	85528

Analysis Batch: 87669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	6010C	85800
MB 410-85800/1-A	Method Blank	Total/NA	Solid	6010C	85800
LCS 410-85800/2-A	Lab Control Sample	Total/NA	Solid	6010C	85800

Analysis Batch: 88086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total Recoverable	Water	6010C	85759
MB 410-85759/1-A	Method Blank	Total Recoverable	Water	6010C	85759
LCS 410-85759/2-A	Lab Control Sample	Total Recoverable	Water	6010C	85759

Analysis Batch: 88146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total Recoverable	Water	6010C	85759
MB 410-85759/1-A	Method Blank	Total Recoverable	Water	6010C	85759
LCS 410-85759/2-A	Lab Control Sample	Total Recoverable	Water	6010C	85759

General Chemistry

Analysis Batch: 85591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-3	BT-17A-S-43-20210114	Total/NA	Solid	Moisture	
410-26586-4	BT-17A-S-76-20210115	Total/NA	Solid	Moisture	

Analysis Batch: 86321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	5310C-2011	
MB 410-86321/14	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-86321/13	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 86341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	4500 S2 D-2011	
MB 410-86341/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-86341/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26586-1

General Chemistry

Analysis Batch: 86899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	2320B-2011	
MB 410-86899/28	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-86899/29	Lab Control Sample	Total/NA	Water	2320B-2011	
LCSD 410-86899/30	Lab Control Sample Dup	Total/NA	Water	2320B-2011	
410-26586-1 DU	BT-17A-W-40-20210114	Total/NA	Water	2320B-2011	

Prep Batch: 87997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	4500 NH3 B-2011	
MB 410-87997/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-87997/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-87997/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 88053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-26586-1	BT-17A-W-40-20210114	Total/NA	Water	4500 NH3 C-2011	87997
MB 410-87997/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	87997
LCS 410-87997/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	87997
LCSD 410-87997/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	87997

Client Sample ID: BT-17A-W-40-20210114

Lab Sample ID: 410-26586-1

Date Collected: 01/14/21 13:00

Matrix: Water

Date Received: 01/15/21 15:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	87981	01/26/21 19:51	LCW8	ELLE
Total/NA	Analysis	8260C/UST	DL	50	87981	01/26/21 20:15	LCW8	ELLE
Total/NA	Prep	RSK-175			87598	01/25/21 07:44	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	87619	01/25/21 11:23	LXF2	ELLE
Total/NA	Prep	8011			86621	01/20/21 23:37	UKQ8	ELLE
Total/NA	Analysis	8011		1	86685	01/21/21 16:07	AC3T	ELLE
Total/NA	Prep	3510C			87051	01/21/21 23:50	USL7	ELLE
Total/NA	Analysis	8015C TPH		1	87247	01/22/21 15:50	KP5X	ELLE
Total/NA	Prep	3510C	RE		89282	01/28/21 23:25	USL7	ELLE
Total/NA	Analysis	8015C TPH	RE	1	89474	01/29/21 12:29	UHEW	ELLE
Total/NA	Analysis	Total TPH		1	89548	01/29/21 14:44	UJL4	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	85394	01/16/21 05:25	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	85395	01/16/21 05:25	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	85394	01/16/21 06:21	W5UX	ELLE
Total Recoverable	Prep	3005A			85759	01/19/21 01:11	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	88146	01/26/21 11:43	MDP5	ELLE
Total Recoverable	Prep	3005A			85759	01/19/21 01:11	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	88086	01/26/21 09:45	ULJC	ELLE
Dissolved	Filtration	Filtration			85505	01/18/21 05:40	UDL9	ELLE
Dissolved	Prep	Non-Digest Prep			85581	01/18/21 09:46	UJL8	ELLE
Dissolved	Analysis	6020A		1	86005	01/19/21 10:27	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	86899	01/20/21 00:55	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			87997	01/26/21 08:27	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	88053	01/26/21 09:44	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	86341	01/20/21 10:50	USE1	ELLE
Total/NA	Analysis	5310C-2011		1	86321	01/19/21 16:15	KGQ6	ELLE

Client Sample ID: TB-20210115

Lab Sample ID: 410-26586-2

Date Collected: 01/05/21 00:00

Matrix: Water

Date Received: 01/15/21 15:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	86027	01/19/21 17:07	H9JD	ELLE
Total/NA	Prep	8011			86622	01/20/21 23:40	UKQ8	ELLE
Total/NA	Analysis	8011		1	86688	01/21/21 10:53	AC3T	ELLE

Client Sample ID: BT-17A-S-43-20210114

Lab Sample ID: 410-26586-3

Date Collected: 01/14/21 16:00

Matrix: Solid

Date Received: 01/15/21 15:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	85591	01/18/21 10:22	UWC1	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26586-1

Client Sample ID: BT-17A-S-43-20210114

Lab Sample ID: 410-26586-3

Date Collected: 01/14/21 16:00
Date Received: 01/15/21 15:49

Matrix: Solid
Percent Solids: 75.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		85646	01/18/21 13:34	HDS6	ELLE
Total/NA	Analysis	8260C	DL	50	86736	01/21/21 15:32	NSK7	ELLE
Total/NA	Prep	5035			85651	01/18/21 13:57	HDS6	ELLE
Total/NA	Analysis	8260C		1	86525	01/20/21 23:11	ULCP	ELLE
Total/NA	Prep	3546			88869	01/28/21 09:55	A2VL	ELLE
Total/NA	Analysis	8270D		1	89232	01/29/21 05:17	SJ89	ELLE
Total/NA	Prep	3546			89162	01/28/21 16:45	DN9W	ELLE
Total/NA	Analysis	8015C TPH		1	89477	01/29/21 12:29	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	89548	01/29/21 14:44	UJL4	ELLE
Total/NA	Prep	3050B			85800	01/19/21 05:41	UJLA	ELLE
Total/NA	Analysis	6010C		1	87669	01/25/21 08:17	ULJC	ELLE

Client Sample ID: BT-17A-S-76-20210115

Lab Sample ID: 410-26586-4

Date Collected: 01/15/21 12:05
Date Received: 01/15/21 15:49

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	85591	01/18/21 10:22	UWC1	ELLE

Client Sample ID: BT-17A-S-76-20210115

Lab Sample ID: 410-26586-4

Date Collected: 01/15/21 12:05
Date Received: 01/15/21 15:49

Matrix: Solid
Percent Solids: 87.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			85651	01/18/21 13:57	HDS6	ELLE
Total/NA	Analysis	8260C		1	86525	01/20/21 23:34	ULCP	ELLE
Total/NA	Prep	3546			88869	01/28/21 09:55	A2VL	ELLE
Total/NA	Analysis	8270D		1	89232	01/29/21 05:42	SJ89	ELLE
Total/NA	Prep	3546			89162	01/28/21 16:45	DN9W	ELLE
Total/NA	Analysis	8015C TPH		1	89477	01/29/21 12:50	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	89548	01/29/21 14:44	UJL4	ELLE
Total/NA	Prep	3050B			85528	01/18/21 07:49	UAMX	ELLE
Total/NA	Analysis	6010C		1	87587	01/25/21 06:37	ULJC	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-26586-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-26586-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-26586-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-26586-1	BT-17A-W-40-20210114	Water	01/14/21 13:00	01/15/21 15:49	
410-26586-2	TB-20210115	Water	01/05/21 00:00	01/15/21 15:49	
410-26586-3	BT-17A-S-43-20210114	Solid	01/14/21 16:00	01/15/21 15:49	
410-26586-4	BT-17A-S-76-20210115	Solid	01/15/21 12:05	01/15/21 15:49	

Environmental Analysis Re[illegible]stody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-26586 Chain of Custody

[illegible] use only

COC # 616283

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins / Dana Hoblitzell	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: ☐ Tissue ☐ Sediment ☒ Soil ☒ Ground ☐ Potable ☐ Surface ☐ NPDES — Water ☐ Other: ____

Analysis Requested — Preservation and Filtration Codes

For Lab Use Only
FSC: _____
SCR#: 264969

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO/Moisture + VOC 8260	VOCs 8260 c/o	Lead/PAH 8270D	Sulfide/Metals 6010C Chloride Nitrate Nitrogen Sulfate	Chloride Nitrate Nitrogen Sulfate	EDB 8011/Volatile Headspace Hydrocarbons	Total Alkalinity to pH 4.5	TOC	Ammonia Nitrogen	Remarks
BT-17A-W-40-20210114	1/14/21	1300	X			X		19	X	X	X		X	X	X	X	X	X	
TB-20210115	1/5/21	—					X	4		X					X				EDB + VOC only
BT-17A-S-43-20210114	1/14/21	1600	X		X			6	X	X	X	X							
BT-17A-S-76-20210115	1/15/21	1205	X		X			6	X	X	X	X							

*Lab Filter dissolved Lead

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: Andrew.Klingbeil@Stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	1/15/21	1245	[signature]	1/15/21	1245
[signature]	1/15/21	1534			
			[signature]	1/17/21	15:49

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 2.0 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

3/16/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-26586-1

Login Number: 26586
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-27011-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 10:13:05 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 10:13:05 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
FL	MS and/or MSD recovery below control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Stantec Consulting Corp. Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27011-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-27011-1

Revision
The report being provided is a revision of the original report sent on 2/5/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/20/2021 4:42 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.1°C

Receipt Exceptions
One or more containers for the following sample was received broken or leaking: BT17A-W-73-20200119 BT-17A-W-73-20210119 (410-27011-1). One VOA Vial 40ml - Hydrochloric Acid

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-88275 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
Method RSK_175: The following sample(s) was received outside of the holding time. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: TB-20210119 (410-27011-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: Surrogate recovery for the following sample was outside control limits: BT-17A-W-73-20210119 (410-27011-1). Re-extraction and/or re-analysis was performed outside of holding time with acceptable results.The results of the re-extract were 4.2 mg/L for the C12-C22 range and 0.23 mg/L for the >C22-C44 range.

Method 8015C_TPH: Surrogate recovery for the following sample was outside acceptance limits: BT-17A-S-79-20210119 (410-27011-3). The results have been reported per client request as sample could not be re-extracted within hold time.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020A: The following sample was not filtered within 15 minutes of sample collection as required by the method: BT-17A-W-73-20210119 (410-27011-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Job ID: 410-27011-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27011-1

Client Sample ID: BT-17A-W-73-20210119 — Lab Sample ID: 410-27011-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	260		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	78		25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	400		5.0	1.0	ug/L	5		8260C/UST	Total/NA
C4-C12-TPH-GRO	9400		250	150	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	290		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	14	J	25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	47		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	1600		30	7.0	ug/L	5		8260C/UST	Total/NA
t-Butyl alcohol	120	J	250	60	ug/L	5		8260C/UST	Total/NA
Toluene - DL	1900		50	10	ug/L	50		8260C/UST	Total/NA
Anthracene	0.34	J	1.2	0.24	ug/L	1		8270D	Total/NA
Fluorene	1.4		1.2	0.24	ug/L	1		8270D	Total/NA
Naphthalene	40		1.2	0.24	ug/L	1		8270D	Total/NA
Phenanthrene	3.0		1.2	0.24	ug/L	1		8270D	Total/NA
Pyrene	0.52	J	1.2	0.24	ug/L	1		8270D	Total/NA
Ethane (1C)	1.5	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C)	86		5.0	3.0	ug/L	1		RSK-175	Total/NA
>C22-C44 (1C)	0.19		0.095	0.070	mg/L	1		8015C TPH	Total/NA
>C12-C22 (1C)	3.0		0.095	0.070	mg/L	1		8015C TPH	Total/NA
Total Reported TPH	3.2		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	0.84		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	260		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Chloride	81		20	10	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	53		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	42		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	45		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	7.2		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	110		1.0	0.24	mg/L	1		6010C	Total Recoverable
Lead	0.17	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	170	FL	8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	1.5	J	1.9	0.63	mg/L	1		4500 NH3 C-2011	Total/NA
Total Organic Carbon	58		1.0	0.50	mg/L	1		5310C-2011	Total/NA

Client Sample ID: TB-20210119 — Lab Sample ID: 410-27011-2

No Detections.

Client Sample ID: BT-17A-S-79-20210119 — Lab Sample ID: 410-27011-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.65	J	6.7	0.54	ug/Kg	1	☼	8260C	Total/NA
Toluene	2.3	J	6.7	0.81	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	1.6	J	6.7	0.67	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	3.5	J	13	1.9	ug/Kg	1	☼	8260C	Total/NA
>C22-C44 (1C)	130		17	7.0	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	130		17	7.0	mg/Kg	1	☼	Total TPH	Total/NA
Lead	3.5		1.7	0.67	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-17A-W-73-20210119
Lab Sample ID: 410-27011-1

Date Collected: 01/19/21 12:45
Matrix: Water
Date Received: 01/20/21 16:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**260**		25	5.0	ug/L			01/26/21 20:39	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			01/26/21 20:39	5
1,3,5-Trimethylbenzene	**78**		25	1.5	ug/L			01/26/21 20:39	5
Benzene	**400**		5.0	1.0	ug/L			01/26/21 20:39	5
C4-C12-TPH-GRO	**9400**		250	150	ug/L			01/26/21 20:39	5
Ethylbenzene	**290**		5.0	2.0	ug/L			01/26/21 20:39	5
Isopropylbenzene	**14**	**J**	25	1.0	ug/L			01/26/21 20:39	5
Methyl tertiary butyl ether	**47**		5.0	1.0	ug/L			01/26/21 20:39	5
Xylenes, Total	**1600**		30	7.0	ug/L			01/26/21 20:39	5
t-Butyl alcohol	**120**	**J**	250	60	ug/L			01/26/21 20:39	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/26/21 20:39*	*5*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*01/26/21 20:39*	*5*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*01/26/21 20:39*	*5*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/26/21 20:39*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**1900**		50	10	ug/L			01/29/21 17:05	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*01/29/21 17:05*	*50*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*		*01/29/21 17:05*	*50*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*01/29/21 17:05*	*50*
Toluene-d8 (Surr)	*110*		*80 - 120*		*01/29/21 17:05*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.34**	**J**	1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Benzo[a]anthracene	ND		1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Benzo[a]pyrene	ND		1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Benzo[b]fluoranthene	ND		1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Benzo[g,h,i]perylene	ND		1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Chrysene	ND		1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Fluorene	**1.4**		1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Naphthalene	**40**		1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Phenanthrene	**3.0**		1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1
Pyrene	**0.52**	**J**	1.2	0.24	ug/L		01/26/21 00:22	01/26/21 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*44 - 102*	*01/26/21 00:22*	*01/26/21 16:53*	*1*
Nitrobenzene-d5 (Surr)	*74*		*23 - 128*	*01/26/21 00:22*	*01/26/21 16:53*	*1*
p-Terphenyl-d14 (Surr)	*82*		*31 - 113*	*01/26/21 00:22*	*01/26/21 16:53*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**1.5**	**J**	5.0	1.0	ug/L		01/21/21 08:56	01/21/21 15:43	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/21/21 08:56	01/21/21 15:43	1
Methane (1C)	**86**		5.0	3.0	ug/L		01/21/21 08:56	01/21/21 15:43	1

Client Sample ID: BT-17A-W-73-20210119 Lab Sample ID: 410-27011-1

Date Collected: 01/19/21 12:45 **Matrix: Water**
Date Received: 01/20/21 16:42

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*84*		*28 - 140*	*01/21/21 08:56*	*01/21/21 15:43*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		01/23/21 04:31	01/25/21 09:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*82*		*46 - 136*	*01/23/21 04:31*	*01/25/21 09:45*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*87*		*46 - 136*	*01/23/21 04:31*	*01/25/21 09:45*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**0.19**		0.095	0.070	mg/L		01/26/21 10:20	01/27/21 13:06	1
>C12-C22 (1C)	**3.0**		0.095	0.070	mg/L		01/26/21 10:20	01/27/21 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*72*		*21 - 116*	*01/26/21 10:20*	*01/27/21 13:06*	*1*
o- terphenyl (Surr) (1C)	*41*	*S1-*	*51 - 126*	*01/26/21 10:20*	*01/27/21 13:06*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**3.2**		0.20	0.074	mg/L			03/16/21 07:39	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.84**		0.50	0.25	mg/L			01/21/21 06:01	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**260**		50	15	mg/L			01/21/21 06:19	50
Chloride	**81**		20	10	mg/L			01/21/21 06:19	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**53**		0.50	0.096	mg/L		01/21/21 02:05	01/24/21 15:22	1
Iron	**42**		0.20	0.040	mg/L		01/21/21 02:05	01/24/21 15:22	1
Magnesium	**45**		0.10	0.040	mg/L		01/21/21 02:05	01/24/21 15:22	1
Potassium	**7.2**		0.50	0.20	mg/L		01/21/21 02:05	01/26/21 18:45	1
Sodium	**110**		1.0	0.24	mg/L		01/21/21 02:05	01/26/21 18:45	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.17**	**J**	0.52	0.073	ug/L		01/25/21 05:44	01/25/21 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**170**	**FL**	8.0	8.0	mg/L			01/22/21 20:22	1
Ammonia-N	**1.5**	**J**	1.9	0.63	mg/L		01/26/21 09:37	01/26/21 09:44	1
Sulfide	ND		0.30	0.10	mg/L			01/26/21 10:08	1
Total Organic Carbon	**58**		1.0	0.50	mg/L			01/23/21 09:02	1

Client Sample ID: TB-20210119 — Lab Sample ID: 410-27011-2

Date Collected: 01/19/21 00:00 — **Matrix: Water**
Date Received: 01/20/21 16:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/26/21 13:02	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/26/21 13:02	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/26/21 13:02	1
Benzene	ND		1.0	0.20	ug/L			01/26/21 13:02	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/26/21 13:02	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/26/21 13:02	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/26/21 13:02	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/26/21 13:02	1
Toluene	ND		1.0	0.20	ug/L			01/26/21 13:02	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/26/21 13:02	1
t-Butyl alcohol	ND		50	12	ug/L			01/26/21 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/26/21 13:02*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*01/26/21 13:02*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*01/26/21 13:02*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*01/26/21 13:02*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND	H H3	5.0	1.0	ug/L		01/21/21 08:56	01/21/21 16:01	1
Ethene (1C)	ND	H H3	5.0	1.0	ug/L		01/21/21 08:56	01/21/21 16:01	1
Methane (1C)	ND	H H3	5.0	3.0	ug/L		01/21/21 08:56	01/21/21 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*99*		*28 - 140*	*01/21/21 08:56*	*01/21/21 16:01*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		01/25/21 23:20	01/26/21 11:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*82*		*46 - 136*	*01/25/21 23:20*	*01/26/21 11:30*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*86*		*46 - 136*	*01/25/21 23:20*	*01/26/21 11:30*	*1*

Client Sample ID: BT-17A-S-79-20210119 — Lab Sample ID: 410-27011-3

Date Collected: 01/19/21 15:30 — **Matrix: Solid**
Date Received: 01/20/21 16:42 — **Percent Solids: 71.7**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**0.65**	**J**	6.7	0.54	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
1,3,5-Trimethylbenzene	ND		6.7	0.67	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
Toluene	**2.3**	**J**	6.7	0.81	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
Methyl tertiary butyl ether	ND		6.7	0.67	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
Benzene	ND		6.7	0.67	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
1,2,4-Trimethylbenzene	**1.6**	**J**	6.7	0.67	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
Isopropylbenzene	ND		6.7	0.54	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
1,2-Dibromoethane	ND		6.7	0.54	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
1,2-Dichloroethane	ND		6.7	0.81	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
C4-C12-TPH-GRO	ND		150	59	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1

Client Sample ID: BT-17A-S-79-20210119
Lab Sample ID: 410-27011-3

Date Collected: 01/19/21 15:30
Matrix: Solid

Date Received: 01/20/21 16:42
Percent Solids: 71.7

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butyl alcohol	ND	^c	130	20	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1
Xylenes, Total	**3.5**	**J**	13	1.9	ug/Kg	☼	01/21/21 14:13	01/27/21 02:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*	*01/21/21 14:13*	*01/27/21 02:27*	*1*
4-Bromofluorobenzene (Surr)	*84*		*50 - 131*	*01/21/21 14:13*	*01/27/21 02:27*	*1*
Dibromofluoromethane (Surr)	*100*		*50 - 141*	*01/21/21 14:13*	*01/27/21 02:27*	*1*
Toluene-d8 (Surr)	*101*		*52 - 141*	*01/21/21 14:13*	*01/27/21 02:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		23	4.6	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Benzo[a]anthracene	ND		23	9.2	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Benzo[a]pyrene	ND		23	4.6	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Benzo[b]fluoranthene	ND		23	4.6	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Benzo[g,h,i]perylene	ND		23	4.6	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Chrysene	ND		23	4.6	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Fluorene	ND		23	4.6	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Naphthalene	ND		23	9.2	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Phenanthrene	ND		23	4.6	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1
Pyrene	ND		23	4.6	ug/Kg	☼	02/02/21 15:15	02/04/21 05:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*39 - 100*	*02/02/21 15:15*	*02/04/21 05:48*	*1*
Nitrobenzene-d5 (Surr)	*76*		*32 - 97*	*02/02/21 15:15*	*02/04/21 05:48*	*1*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*	*02/02/21 15:15*	*02/04/21 05:48*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**130**		17	7.0	mg/Kg	☼	02/02/21 15:06	02/03/21 11:34	1
>C12-C22 (1C)	ND		17	7.0	mg/Kg	☼	02/02/21 15:06	02/03/21 11:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*6*	*S1-*	*54 - 137*	*02/02/21 15:06*	*02/03/21 11:34*	*1*
o- terphenyl (Surr) (1C)	*17*	*S1-*	*52 - 154*	*02/02/21 15:06*	*02/03/21 11:34*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**130**		17	7.0	mg/Kg	☼		03/16/21 07:39	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.5**		1.7	0.67	mg/Kg	☼	01/22/21 02:11	01/25/21 19:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**28.3**		1.0	1.0	%			01/20/21 22:48	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27011-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-27011-3	BT-17A-S-79-20210119	108	84	100	101
LCS 410-88275/5	Lab Control Sample	107	97	100	100
LCS 410-88275/7	Lab Control Sample	106	98	99	100
LCSD 410-88275/6	Lab Control Sample Dup	104	97	101	100
LCSD 410-88275/8	Lab Control Sample Dup	106	97	98	99
MB 410-88275/10	Method Blank	107	95	102	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-27011-1	BT-17A-W-73-20210119	108	97	95	111
410-27011-1 - DL	BT-17A-W-73-20210119	106	87	95	110
410-27011-2	TB-20210119	108	90	100	108
LCS 410-87981/5	Lab Control Sample	106	90	95	109
LCS 410-87981/7	Lab Control Sample	106	90	96	109
LCS 410-89453/5	Lab Control Sample	111	92	94	112
LCS 410-89453/7	Lab Control Sample	111	93	94	111
LCSD 410-87981/6	Lab Control Sample Dup	112	93	95	111
LCSD 410-87981/8	Lab Control Sample Dup	105	90	95	108
LCSD 410-89453/6	Lab Control Sample Dup	110	92	94	111
LCSD 410-89453/8	Lab Control Sample Dup	111	92	92	112
MB 410-87981/9	Method Blank	106	89	97	109
MB 410-89453/9	Method Blank	108	89	92	111

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-27011-3	BT-17A-S-79-20210119	68	76	90

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	FBP (44-102)	NBZ (23-128)	TPHd14 (31-113)
410-27011-1	BT-17A-W-73-20210119	72	74	82
LCS 410-87914/2-A	Lab Control Sample	74	79	88
LCSD 410-87914/3-A	Lab Control Sample Dup	76	82	92
MB 410-87914/1-A	Method Blank	71	73	96

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	Propene1 (28-140)
410-27011-1	BT-17A-W-73-20210119	84
410-27011-2	TB-20210119	99
LCS 410-86733/2-A	Lab Control Sample	101
LCSD 410-86733/3-A	Lab Control Sample Dup	108
MB 410-86733/1-A	Method Blank	103

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)
410-27011-1	BT-17A-W-73-20210119	82	87
410-27011-2	TB-20210119	82	86
LCS 410-87404/2-A	Lab Control Sample	80	88
LCS 410-87912/2-A	Lab Control Sample	81	85
LCSD 410-87404/3-A	Lab Control Sample Dup	85	88
LCSD 410-87912/3-A	Lab Control Sample Dup	83	90
MB 410-87404/1-A	Method Blank	76	84
MB 410-87912/1-A	Method Blank	92	96

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)
410-27011-3	BT-17A-S-79-20210119	6 S1-	17 S1-
LCS 410-90185/2-A	Lab Control Sample	67	96
MB 410-90185/1-A	Method Blank	84	90

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		CBNZ1	OTP1										
Lab Sample ID	Client Sample ID	(21-116)	(51-126)										
410-27011-1	BT-17A-W-73-20210119	72	41 S1-										
LCS 410-87956/2-A	Lab Control Sample	67	91										
LCSD 410-87956/3-A	Lab Control Sample Dup	70	90										
MB 410-87956/1-A	Method Blank	70	84										

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27011-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-88275/10
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			01/27/21 00:55	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/27/21 00:55	1
Toluene	ND		5.0	0.60	ug/Kg			01/27/21 00:55	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			01/27/21 00:55	1
Benzene	ND		5.0	0.50	ug/Kg			01/27/21 00:55	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			01/27/21 00:55	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			01/27/21 00:55	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			01/27/21 00:55	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			01/27/21 00:55	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			01/27/21 00:55	1
t-Butyl alcohol	ND		100	15	ug/Kg			01/27/21 00:55	1
Xylenes, Total	ND		10	1.4	ug/Kg			01/27/21 00:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*		*01/27/21 00:55*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*		*01/27/21 00:55*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 141*		*01/27/21 00:55*	*1*
Toluene-d8 (Surr)	*98*		*52 - 141*		*01/27/21 00:55*	*1*

Lab Sample ID: LCS 410-88275/5
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	19.5		ug/Kg		98	78 - 120
1,3,5-Trimethylbenzene	20.0	19.7		ug/Kg		98	73 - 120
Toluene	20.0	19.6		ug/Kg		98	80 - 120
Methyl tertiary butyl ether	20.0	15.0		ug/Kg		75	72 - 120
Benzene	20.0	19.9		ug/Kg		100	80 - 120
Naphthalene	20.0	18.2		ug/Kg		91	48 - 130
1,2,4-Trimethylbenzene	20.0	19.5		ug/Kg		98	73 - 120
Isopropylbenzene	20.0	19.4		ug/Kg		97	77 - 120
1,2-Dibromoethane	20.0	19.2		ug/Kg		96	76 - 120
1,2-Dichloroethane	20.0	18.3		ug/Kg		92	71 - 128
t-Butyl alcohol	200	211		ug/Kg		106	74 - 121
Xylenes, Total	60.0	59.4		ug/Kg		99	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-88275/7
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1000		ug/Kg		100	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Lab Sample ID: LCSD 410-88275/6
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	18.9		ug/Kg		94	78 - 120	3	30
1,3,5-Trimethylbenzene			20.0	18.9		ug/Kg		95	73 - 120	4	30
Toluene			20.0	19.0		ug/Kg		95	80 - 120	3	30
Methyl tertiary butyl ether			20.0	14.6		ug/Kg		73	72 - 120	2	30
Benzene			20.0	19.3		ug/Kg		97	80 - 120	3	30
Naphthalene			20.0	18.1		ug/Kg		90	48 - 130	0	30
1,2,4-Trimethylbenzene			20.0	19.0		ug/Kg		95	73 - 120	3	30
Isopropylbenzene			20.0	18.8		ug/Kg		94	77 - 120	3	30
1,2-Dibromoethane			20.0	19.3		ug/Kg		96	76 - 120	0	30
1,2-Dichloroethane			20.0	17.7		ug/Kg		89	71 - 128	3	30
t-Butyl alcohol			200	207		ug/Kg		104	74 - 121	2	30
Xylenes, Total			60.0	57.8		ug/Kg		96	75 - 120	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Lab Sample ID: LCSD 410-88275/8
Matrix: Solid
Analysis Batch: 88275

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	993		ug/Kg		99	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-87981/9
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/26/21 12:14	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/26/21 12:14	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/26/21 12:14	1
Benzene	ND		1.0	0.20	ug/L			01/26/21 12:14	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/26/21 12:14	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/26/21 12:14	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/26/21 12:14	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/26/21 12:14	1
Toluene	ND		1.0	0.20	ug/L			01/26/21 12:14	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/26/21 12:14	1
t-Butyl alcohol	ND		50	12	ug/L			01/26/21 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*01/26/21 12:14*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/26/21 12:14*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*01/26/21 12:14*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*01/26/21 12:14*	*1*

Lab Sample ID: LCS 410-87981/5
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	20.9		ug/L		104	75 - 120
1,2-Dichloroethane	20.0	17.9		ug/L		90	73 - 124
1,3,5-Trimethylbenzene	20.0	20.7		ug/L		103	75 - 120
Benzene	20.0	18.5		ug/L		92	80 - 120
Ethylbenzene	20.0	21.5		ug/L		108	80 - 120
Isopropylbenzene	20.0	20.0		ug/L		100	80 - 120
Methyl tertiary butyl ether	20.0	17.7		ug/L		88	69 - 122
Naphthalene	20.0	18.3		ug/L		92	53 - 124
Toluene	20.0	21.3		ug/L		106	80 - 120
Xylenes, Total	60.0	61.5		ug/L		103	80 - 120
t-Butyl alcohol	200	186		ug/L		93	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Lab Sample ID: LCS 410-87981/7
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	848		ug/L		85	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-87981/7
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*109*		*80 - 120*

Lab Sample ID: LCSD 410-87981/6
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.6		ug/L		103	75 - 120	1	30
1,2-Dichloroethane			20.0	18.5		ug/L		93	73 - 124	3	30
1,3,5-Trimethylbenzene			20.0	21.0		ug/L		105	75 - 120	2	30
Benzene			20.0	18.7		ug/L		93	80 - 120	1	30
Ethylbenzene			20.0	21.2		ug/L		106	80 - 120	1	30
Isopropylbenzene			20.0	19.9		ug/L		100	80 - 120	1	30
Methyl tertiary butyl ether			20.0	17.8		ug/L		89	69 - 122	1	30
Naphthalene			20.0	19.2		ug/L		96	53 - 124	5	30
Toluene			20.0	21.5		ug/L		108	80 - 120	1	30
Xylenes, Total			60.0	61.0		ug/L		102	80 - 120	1	30
t-Butyl alcohol			200	225		ug/L		113	60 - 130	19	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-87981/8
Matrix: Water
Analysis Batch: 87981

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	874		ug/L		87	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*108*		*80 - 120*

Lab Sample ID: MB 410-89453/9
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 14:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 14:16	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-89453/9
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 14:16	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 14:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 14:16	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 14:16	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 14:16	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 14:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/29/21 14:16*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/29/21 14:16*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*01/29/21 14:16*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/29/21 14:16*	*1*

Lab Sample ID: LCS 410-89453/5
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	21.3		ug/L		107	75 - 120
1,2-Dichloroethane	20.0	18.5		ug/L		92	73 - 124
1,3,5-Trimethylbenzene	20.0	21.4		ug/L		107	75 - 120
Benzene	20.0	18.5		ug/L		92	80 - 120
Ethylbenzene	20.0	22.1		ug/L		111	80 - 120
Isopropylbenzene	20.0	20.6		ug/L		103	80 - 120
Methyl tertiary butyl ether	20.0	17.1		ug/L		85	69 - 122
Naphthalene	20.0	18.7		ug/L		94	53 - 124
Toluene	20.0	22.5		ug/L		113	80 - 120
Xylenes, Total	60.0	63.3		ug/L		106	80 - 120
t-Butyl alcohol	200	204		ug/L		102	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	992		ug/L		99	67 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/6
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.6		ug/L		103	75 - 120	4	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	4	30
1,3,5-Trimethylbenzene			20.0	20.9		ug/L		104	75 - 120	3	30
Benzene			20.0	18.3		ug/L		92	80 - 120	1	30
Ethylbenzene			20.0	21.1		ug/L		106	80 - 120	5	30
Isopropylbenzene			20.0	19.6		ug/L		98	80 - 120	5	30
Methyl tertiary butyl ether			20.0	17.2		ug/L		86	69 - 122	1	30
Naphthalene			20.0	18.4		ug/L		92	53 - 124	2	30
Toluene			20.0	21.1		ug/L		105	80 - 120	7	30
Xylenes, Total			60.0	59.7		ug/L		100	80 - 120	6	30
t-Butyl alcohol			200	205		ug/L		102	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/8
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1020		ug/L		102	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-87914/1-A
Matrix: Water
Analysis Batch: 88057

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87914

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-87914/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 88057 **Prep Batch: 87914**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1
Benzo[a]pyrene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1
Chrysene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1
Fluorene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1
Naphthalene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1
Phenanthrene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1
Pyrene	ND		0.50	0.10	ug/L		01/26/21 00:22	01/26/21 12:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*44 - 102*	*01/26/21 00:22*	*01/26/21 12:01*	*1*
Nitrobenzene-d5 (Surr)	*73*		*23 - 128*	*01/26/21 00:22*	*01/26/21 12:01*	*1*
p-Terphenyl-d14 (Surr)	*96*		*31 - 113*	*01/26/21 00:22*	*01/26/21 12:01*	*1*

Lab Sample ID: LCS 410-87914/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 88057 **Prep Batch: 87914**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			50.0	47.3		ug/L		95	61 - 117		
Benzo[a]anthracene			50.0	46.9		ug/L		94	61 - 126		
Benzo[a]pyrene			50.0	48.5		ug/L		97	60 - 116		
Benzo[b]fluoranthene			50.0	42.4		ug/L		85	61 - 119		
Benzo[g,h,i]perylene			50.0	42.4		ug/L		85	54 - 120		
Chrysene			50.0	47.5		ug/L		95	65 - 121		
Fluorene			50.0	43.5		ug/L		87	56 - 115		
Naphthalene			50.0	38.3		ug/L		77	51 - 102		
Phenanthrene			50.0	46.1		ug/L		92	65 - 113		
Pyrene			50.0	46.3		ug/L		93	65 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*74*		*44 - 102*
Nitrobenzene-d5 (Surr)	*79*		*23 - 128*
p-Terphenyl-d14 (Surr)	*88*		*31 - 113*

Lab Sample ID: LCSD 410-87914/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 88057 **Prep Batch: 87914**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene			50.0	47.8		ug/L		96	61 - 117	1	30
Benzo[a]anthracene			50.0	48.9		ug/L		98	61 - 126	4	30
Benzo[a]pyrene			50.0	52.0		ug/L		104	60 - 116	7	30
Benzo[b]fluoranthene			50.0	44.8		ug/L		90	61 - 119	5	30
Benzo[g,h,i]perylene			50.0	45.8		ug/L		92	54 - 120	8	30
Chrysene			50.0	49.3		ug/L		99	65 - 121	4	30
Fluorene			50.0	45.2		ug/L		90	56 - 115	4	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-87914/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 88057 — **Prep Batch: 87914**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene			50.0	39.1		ug/L		78	51 - 102	2	30
Phenanthrene			50.0	46.0		ug/L		92	65 - 113	0	30
Pyrene			50.0	48.3		ug/L		97	65 - 115	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*76*		*44 - 102*
Nitrobenzene-d5 (Surr)	*82*		*23 - 128*
p-Terphenyl-d14 (Surr)	*92*		*31 - 113*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-86733/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 86739 — **Prep Batch: 86733**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/21/21 08:56	01/21/21 11:36	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/21/21 08:56	01/21/21 11:36	1
Methane (1C)	ND		5.0	3.0	ug/L		01/21/21 08:56	01/21/21 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*103*		*28 - 140*	*01/21/21 08:56*	*01/21/21 11:36*	*1*

Lab Sample ID: LCS 410-86733/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 86739 — **Prep Batch: 86733**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	63.0		ug/L		106	85 - 115		
Ethene (1C)			60.4	64.2		ug/L		106	83 - 115		
Methane (1C)			59.4	66.0		ug/L		111	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 140*

Lab Sample ID: LCSD 410-86733/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 86739 — **Prep Batch: 86733**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	61.8		ug/L		104	85 - 115	2	20
Ethene (1C)			60.4	63.2		ug/L		105	83 - 115	2	20
Methane (1C)			59.4	65.3		ug/L		110	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*108*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-87404/1-A
Matrix: Water
Analysis Batch: 87571

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87404

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/23/21 04:31	01/25/21 06:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*76*		*46 - 136*	*01/23/21 04:31*	*01/25/21 06:24*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*84*		*46 - 136*	*01/23/21 04:31*	*01/25/21 06:24*	*1*

Lab Sample ID: LCS 410-87404/2-A
Matrix: Water
Analysis Batch: 87571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87404

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.101		ug/L		79	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*80*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*88*		*46 - 136*

Lab Sample ID: LCSD 410-87404/3-A
Matrix: Water
Analysis Batch: 87571

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87404

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.103		ug/L		81	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*88*		*46 - 136*

Lab Sample ID: MB 410-87912/1-A
Matrix: Water
Analysis Batch: 88066

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/25/21 23:20	01/26/21 10:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*92*		*46 - 136*	*01/25/21 23:20*	*01/26/21 10:23*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*96*		*46 - 136*	*01/25/21 23:20*	*01/26/21 10:23*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-87912/2-A
Matrix: Water
Analysis Batch: 88066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87912

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.108		ug/L		84	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*81*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*85*		*46 - 136*

Lab Sample ID: LCSD 410-87912/3-A
Matrix: Water
Analysis Batch: 88066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87912

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.115		ug/L		90	60 - 140	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*83*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*90*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-87956/1-A
Matrix: Water
Analysis Batch: 88528

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87956

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.10	0.074	mg/L		01/26/21 10:20	01/27/21 12:02	1
>C12-C22 (1C)	ND		0.10	0.074	mg/L		01/26/21 10:20	01/27/21 12:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*70*		*21 - 116*	*01/26/21 10:20*	*01/27/21 12:02*	*1*
o- terphenyl (Surr) (1C)	*84*		*51 - 126*	*01/26/21 10:20*	*01/27/21 12:02*	*1*

Lab Sample ID: LCS 410-87956/2-A
Matrix: Water
Analysis Batch: 88528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87956

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.803	0.750		mg/L		93	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*67*		*21 - 116*
o- terphenyl (Surr) (1C)	*91*		*51 - 126*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 410-87956/3-A
Matrix: Water
Analysis Batch: 88528

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87956

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.803	0.736		mg/L		92	53 - 115	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*70*		*21 - 116*
o- terphenyl (Surr) (1C)	*90*		*51 - 126*

Lab Sample ID: MB 410-90185/1-A
Matrix: Solid
Analysis Batch: 90435

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90185

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/02/21 15:05	02/03/21 10:51	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/02/21 15:05	02/03/21 10:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*84*		*54 - 137*	*02/02/21 15:05*	*02/03/21 10:51*	*1*
o- terphenyl (Surr) (1C)	*90*		*52 - 154*	*02/02/21 15:05*	*02/03/21 10:51*	*1*

Lab Sample ID: LCS 410-90185/2-A
Matrix: Solid
Analysis Batch: 90435

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90185

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	106		mg/Kg		79	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*67*		*54 - 137*
o- terphenyl (Surr) (1C)	*96*		*52 - 154*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-86658/4
Matrix: Water
Analysis Batch: 86658

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			01/21/21 04:49	1

Lab Sample ID: LCS 410-86658/3
Matrix: Water
Analysis Batch: 86658

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.729		mg/L		97	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-86657/4
Matrix: Water
Analysis Batch: 86657

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/21/21 04:49	1
Chloride	ND		0.40	0.20	mg/L			01/21/21 04:49	1

Lab Sample ID: LCS 410-86657/3
Matrix: Water
Analysis Batch: 86657

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.42		mg/L		99	90 - 110
Chloride	3.00	2.92		mg/L		97	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-87046/1-A
Matrix: Solid
Analysis Batch: 87872

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87046

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.54	mg/Kg		01/22/21 02:11	01/25/21 19:09	1

Lab Sample ID: LCS 410-87046/2-A
Matrix: Solid
Analysis Batch: 87872

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87046

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.59	2.65		mg/Kg		103	80 - 120

Lab Sample ID: MB 410-86628/1-A
Matrix: Water
Analysis Batch: 87505

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 86628

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		01/21/21 02:05	01/24/21 14:03	1
Iron	ND		0.20	0.040	mg/L		01/21/21 02:05	01/24/21 14:03	1
Magnesium	ND		0.10	0.040	mg/L		01/21/21 02:05	01/24/21 14:03	1

Lab Sample ID: MB 410-86628/1-A
Matrix: Water
Analysis Batch: 88287

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 86628

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.50	0.20	mg/L		01/21/21 02:05	01/26/21 18:38	1
Sodium	ND		1.0	0.24	mg/L		01/21/21 02:05	01/26/21 18:38	1

Lab Sample ID: LCS 410-86628/2-A
Matrix: Water
Analysis Batch: 87505

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 86628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.422	J	mg/L		105	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-86628/2-A
Matrix: Water
Analysis Batch: 87505

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 86628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.400	0.414		mg/L		103	80 - 120
Magnesium	0.200	0.225		mg/L		113	80 - 120

Lab Sample ID: LCS 410-86628/2-A
Matrix: Water
Analysis Batch: 88287

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 86628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	6.00	6.10		mg/L		102	80 - 120
Sodium	2.00	2.07		mg/L		104	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-87568/1-A
Matrix: Water
Analysis Batch: 88020

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87568

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		01/25/21 05:44	01/25/21 14:05	1

Lab Sample ID: LCS 410-87568/2-A
Matrix: Water
Analysis Batch: 88020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	32.1		ug/L		107	90 - 115

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-87781/21
Matrix: Water
Analysis Batch: 87781

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			01/22/21 20:09	1

Lab Sample ID: LCS 410-87781/22
Matrix: Water
Analysis Batch: 87781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	173		mg/L		92	82 - 106

Lab Sample ID: 410-27011-1 MS
Matrix: Water
Analysis Batch: 87781

Client Sample ID: BT-17A-W-73-20210119
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	170	FL	189	324	FL	mg/L		80	82 - 106

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: 410-27011-1 DU
Matrix: Water
Analysis Batch: 87781

Client Sample ID: BT-17A-W-73-20210119
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	170	FL	173		mg/L		0.08	5

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-87997/1-A
Matrix: Water
Analysis Batch: 88053

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87997

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		01/26/21 08:27	01/26/21 09:44	1

Lab Sample ID: LCS 410-87997/2-A
Matrix: Water
Analysis Batch: 88053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87997

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	10.0	9.30		mg/L		93	93 - 100

Lab Sample ID: LCSD 410-87997/3-A
Matrix: Water
Analysis Batch: 88053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87997

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N	10.0	9.48		mg/L		95	93 - 100	2	5

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-88062/1
Matrix: Water
Analysis Batch: 88062

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			01/26/21 10:08	1

Lab Sample ID: LCS 410-88062/13
Matrix: Water
Analysis Batch: 88062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1.00	1.04		mg/L		104	90 - 110

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-87441/69
Matrix: Water
Analysis Batch: 87441

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			01/23/21 08:06	1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 410-87441/68
Matrix: Water
Analysis Batch: 87441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	25.0		mg/L		100	91 - 113

GC/MS VOA

Prep Batch: 86889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	5035	

Analysis Batch: 87981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	8260C/UST	
410-27011-2	TB-20210119	Total/NA	Water	8260C/UST	
MB 410-87981/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-87981/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-87981/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-87981/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-87981/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 88275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	8260C	86889
MB 410-88275/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-88275/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-88275/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-88275/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-88275/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 89453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1 - DL	BT-17A-W-73-20210119	Total/NA	Water	8260C/UST	
MB 410-89453/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-89453/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-89453/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-89453/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-89453/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 87914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	3510C	
MB 410-87914/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-87914/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-87914/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 88057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	8270D	87914
MB 410-87914/1-A	Method Blank	Total/NA	Water	8270D	87914
LCS 410-87914/2-A	Lab Control Sample	Total/NA	Water	8270D	87914
LCSD 410-87914/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	87914

Prep Batch: 90191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	3546	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27011-1

GC/MS Semi VOA

Analysis Batch: 90698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	8270D	90191

GC VOA

Prep Batch: 86733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	RSK-175	
410-27011-2	TB-20210119	Total/NA	Water	RSK-175	
MB 410-86733/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-86733/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-86733/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 86739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	RSK-175	86733
410-27011-2	TB-20210119	Total/NA	Water	RSK-175	86733
MB 410-86733/1-A	Method Blank	Total/NA	Water	RSK-175	86733
LCS 410-86733/2-A	Lab Control Sample	Total/NA	Water	RSK-175	86733
LCSD 410-86733/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	86733

GC Semi VOA

Prep Batch: 87404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	8011	
MB 410-87404/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-87404/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-87404/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 87571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	8011	87404
MB 410-87404/1-A	Method Blank	Total/NA	Water	8011	87404
LCS 410-87404/2-A	Lab Control Sample	Total/NA	Water	8011	87404
LCSD 410-87404/3-A	Lab Control Sample Dup	Total/NA	Water	8011	87404

Prep Batch: 87912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-2	TB-20210119	Total/NA	Water	8011	
MB 410-87912/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-87912/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-87912/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Prep Batch: 87956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	3510C	
MB 410-87956/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-87956/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-87956/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA

Analysis Batch: 88066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-2	TB-20210119	Total/NA	Water	8011	87912
MB 410-87912/1-A	Method Blank	Total/NA	Water	8011	87912
LCS 410-87912/2-A	Lab Control Sample	Total/NA	Water	8011	87912
LCSD 410-87912/3-A	Lab Control Sample Dup	Total/NA	Water	8011	87912

Analysis Batch: 88528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	8015C TPH	87956
MB 410-87956/1-A	Method Blank	Total/NA	Water	8015C TPH	87956
LCS 410-87956/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	87956
LCSD 410-87956/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	87956

Prep Batch: 89282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1 - RE	BT-17A-W-73-20210119	Total/NA	Water	3510C	
MB 410-89282/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-89282/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-89282/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 89474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-89282/1-A	Method Blank	Total/NA	Water	8015C TPH	89282
LCS 410-89282/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	89282
LCSD 410-89282/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	89282

Prep Batch: 90185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	3546	
MB 410-90185/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-90185/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 90240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1 - RE	BT-17A-W-73-20210119	Total/NA	Water	8015C TPH	89282

Analysis Batch: 90435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	8015C TPH	90185
MB 410-90185/1-A	Method Blank	Total/NA	Solid	8015C TPH	90185
LCS 410-90185/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	90185

Analysis Batch: 103520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	Total TPH	
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	Total TPH	

HPLC/IC

Analysis Batch: 86657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC (Continued)

Analysis Batch: 86657 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-86657/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-86657/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 86658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	EPA 300.0 R2.1	
MB 410-86658/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-86658/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 86628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total Recoverable	Water	3005A	
MB 410-86628/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-86628/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 87046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	3050B	
MB 410-87046/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-87046/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Filtration Batch: 87483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Dissolved	Water	Filtration	

Analysis Batch: 87505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total Recoverable	Water	6010C	86628
MB 410-86628/1-A	Method Blank	Total Recoverable	Water	6010C	86628
LCS 410-86628/2-A	Lab Control Sample	Total Recoverable	Water	6010C	86628

Prep Batch: 87568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Dissolved	Water	Non-Digest Prep	87483
MB 410-87568/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-87568/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 87872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	6010C	87046
MB 410-87046/1-A	Method Blank	Total/NA	Solid	6010C	87046
LCS 410-87046/2-A	Lab Control Sample	Total/NA	Solid	6010C	87046

Analysis Batch: 88020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Dissolved	Water	6020A	87568
MB 410-87568/1-A	Method Blank	Total/NA	Water	6020A	87568
LCS 410-87568/2-A	Lab Control Sample	Total/NA	Water	6020A	87568

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27011-1

Metals

Analysis Batch: 88287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total Recoverable	Water	6010C	86628
MB 410-86628/1-A	Method Blank	Total Recoverable	Water	6010C	86628
LCS 410-86628/2-A	Lab Control Sample	Total Recoverable	Water	6010C	86628

General Chemistry

Analysis Batch: 86608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-3	BT-17A-S-79-20210119	Total/NA	Solid	Moisture	

Analysis Batch: 87441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	5310C-2011	
MB 410-87441/69	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-87441/68	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 87781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	2320B-2011	
MB 410-87781/21	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-87781/22	Lab Control Sample	Total/NA	Water	2320B-2011	
410-27011-1 MS	BT-17A-W-73-20210119	Total/NA	Water	2320B-2011	
410-27011-1 DU	BT-17A-W-73-20210119	Total/NA	Water	2320B-2011	

Prep Batch: 87997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	4500 NH3 B-2011	
MB 410-87997/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-87997/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-87997/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 88053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	4500 NH3 C-2011	87997
MB 410-87997/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	87997
LCS 410-87997/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	87997
LCSD 410-87997/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	87997

Analysis Batch: 88062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27011-1	BT-17A-W-73-20210119	Total/NA	Water	4500 S2 D-2011	
MB 410-88062/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-88062/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-17A-W-73-20210119
Lab Sample ID: 410-27011-1

Date Collected: 01/19/21 12:45
Matrix: Water
Date Received: 01/20/21 16:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	87981	01/26/21 20:39	LCW8	ELLE
Total/NA	Analysis	8260C/UST	DL	50	89453	01/29/21 17:05	UKAD	ELLE
Total/NA	Prep	3510C			87914	01/26/21 00:22	UKQ8	ELLE
Total/NA	Analysis	8270D		1	88057	01/26/21 16:53	SJ89	ELLE
Total/NA	Prep	RSK-175			86733	01/21/21 08:56	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	86739	01/21/21 15:43	LXF2	ELLE
Total/NA	Prep	8011			87404	01/23/21 04:31	UKQ8	ELLE
Total/NA	Analysis	8011		1	87571	01/25/21 09:45	AC3T	ELLE
Total/NA	Prep	3510C			87956	01/26/21 10:20	I5BW	ELLE
Total/NA	Analysis	8015C TPH		1	88528	01/27/21 13:06	YHQ2	ELLE
Total/NA	Prep	3510C	RE		89282	01/28/21 23:25	USL7	ELLE
Total/NA	Analysis	8015C TPH	RE	2	90240	02/02/21 21:15	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103520	03/16/21 07:39	UJL4	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	86658	01/21/21 06:01	GJ35	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	86657	01/21/21 06:19	GJ35	ELLE
Total Recoverable	Prep	3005A			86628	01/21/21 02:05	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	87505	01/24/21 15:22	WJM9	ELLE
Total Recoverable	Prep	3005A			86628	01/21/21 02:05	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	88287	01/26/21 18:45	UCIG	ELLE
Dissolved	Filtration	Filtration			87483	01/24/21 09:33	UDL9	ELLE
Dissolved	Prep	Non-Digest Prep			87568	01/25/21 05:44	UJL8	ELLE
Dissolved	Analysis	6020A		1	88020	01/25/21 14:09	V5SW	ELLE
Total/NA	Analysis	2320B-2011		1	87781	01/22/21 20:22	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			87997	01/26/21 09:37	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	88053	01/26/21 09:44	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	88062	01/26/21 10:08	USE1	ELLE
Total/NA	Analysis	5310C-2011		1	87441	01/23/21 09:02	KGQ6	ELLE

Client Sample ID: TB-20210119
Lab Sample ID: 410-27011-2

Date Collected: 01/19/21 00:00
Matrix: Water
Date Received: 01/20/21 16:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	87981	01/26/21 13:02	LCW8	ELLE
Total/NA	Prep	RSK-175			86733	01/21/21 08:56	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	86739	01/21/21 16:01	LXF2	ELLE
Total/NA	Prep	8011			87912	01/25/21 23:20	UKQ8	ELLE
Total/NA	Analysis	8011		1	88066	01/26/21 11:30	AC3T	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-17A-S-79-20210119
Lab Sample ID: 410-27011-3

Date Collected: 01/19/21 15:30
Matrix: Solid
Date Received: 01/20/21 16:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	86608	01/20/21 22:48	X4C8	ELLE

Client Sample ID: BT-17A-S-79-20210119
Lab Sample ID: 410-27011-3

Date Collected: 01/19/21 15:30
Matrix: Solid
Date Received: 01/20/21 16:42
Percent Solids: 71.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			86889	01/21/21 14:13	Z8FW	ELLE
Total/NA	Analysis	8260C		1	88275	01/27/21 02:27	ULCP	ELLE
Total/NA	Prep	3546			90191	02/02/21 15:15	DN9W	ELLE
Total/NA	Analysis	8270D		1	90698	02/04/21 05:48	UWHS	ELLE
Total/NA	Prep	3546			90185	02/02/21 15:06	DN9W	ELLE
Total/NA	Analysis	8015C TPH		1	90435	02/03/21 11:34	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103520	03/16/21 07:39	UJL4	ELLE
Total/NA	Prep	3050B			87046	01/22/21 02:11	UJL8	ELLE
Total/NA	Analysis	6010C		1	87872	01/25/21 19:15	UCIG	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-27011-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-27011-1	BT-17A-W-73-20210119	Water	01/19/21 12:45	01/20/21 16:42	
410-27011-2	TB-20210119	Water	01/19/21 00:00	01/20/21 16:42	
410-27011-3	BT-17A-S-79-20210119	Solid	01/19/21 15:30	01/20/21 16:42	

Environmental Analysis Request/Chain of

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Env

Acct. # _____ Group # _____ Sample

410-27011 Chain of Custody

COC # 616284

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHC Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Kilmer	P.O. #: 213402797
Sampler: Dave Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: ____

Analysis Requested — Preservation and Filtration Codes

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks
* Lab filter dissolved Lead

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO/Mossure + Non Filter	VOCs 8260 c/d	Lead/PAH 8270	Sulfide/Metals (GRO, Chloride, Nitrate, Nitrogen, Sulfate)	EDB 8011/Volatile Hydrocarbons	Total Alkalinity + pH 4.5	TOC	Ammonia, N Nitrogen
BT-17A-W-73-20210119	1/19/21	1245	X		9	X	X	X		X	X	X	X	X
TB-20210119	1/5/21	—			4		X	X				X		
BT-17A-S-79-20210119	1/19/21	1530	X		6	X	X	X	X					

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.kilmer@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)
Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13
NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	1/20/21	1250		1-20-21	1250
	1/20/21	1629			
				1-20-21	1692

EDD Required? Yes No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 5.1 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-27011-1

Login Number: 27011 **List Source: Eurofins Lancaster Laboratories Env**
List Number: 1
Creator: Jeremiah, Cory T

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-27204-1
Client Project/Site: PHL: Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:23:01 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:23:01 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-27204-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-27204-1

Revision
The report being provided is a revision of the original report sent on 2/10/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/21/2021 4:37 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

GC/MS VOA
Method 8260C: Reanalysis of the following sample was performed outside of the analytical holding time: BT-18A-S-26-20210121 (410-27204-4).

Method 8260C: Internal standard (ISTD) response for the following sample was outside control limits: BT-21-S-15-20210121 (410-27204-3). The sample(s) was re-extracted and/or re-analyzed outside of holding time and ISTD response was within control limits. Surrogate recoveries were also outside of specification, but matrix effect was confirmed in the re-analysis.

Method 8260C: The following sample (initial and re-analysis) was analyzed outside of analytical holding time: BT-18A-S-10-20210120 (410-27204-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: Surrogate recovery for the following sample was outside control limits: BT-18A-S-10-20210120 (410-27204-1). Re-extraction and/or re-analysis was performed outside of holding time with acceptable results.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-18A-S-10-20210120 — Lab Sample ID: 410-27204-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	13000	H	3400	280	ug/Kg	500	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	1900	J H	3400	340	ug/Kg	500	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	3000	J H	3400	340	ug/Kg	500	☼	8260C	Total/NA
Isopropylbenzene	33000	H	3400	280	ug/Kg	500	☼	8260C	Total/NA
Xylenes, Total	51000	H	6900	970	ug/Kg	500	☼	8260C	Total/NA
Toluene - DL	320000	H	34000	4100	ug/Kg	5000	☼	8260C	Total/NA
Benzene - DL	1000000	H	34000	3400	ug/Kg	5000	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	3700000	H	760000	300000	ug/Kg	5000	☼	8260C	Total/NA
Benzo[a]anthracene	60		20	8.1	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	51		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	60		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	30		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	68		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	120		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	790		20	8.1	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	290		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Pyrene	170		20	4.0	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	820		370	150	mg/Kg	25	☼	8015C TPH	Total/NA
>C12-C22 (1C)	3100		370	150	mg/Kg	25	☼	8015C TPH	Total/NA
Total Reported TPH	3900		15	6.1	mg/Kg	1	☼	Total TPH	Total/NA
Lead	31		1.5	0.59	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210121 — Lab Sample ID: 410-27204-2

No Detections.

Client Sample ID: BT-21-S-15-20210121 — Lab Sample ID: 410-27204-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	14000		290	23	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	13000		290	29	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	8700		290	23	ug/Kg	50	☼	8260C	Total/NA
Toluene - DL	62000		2900	340	ug/Kg	500	☼	8260C	Total/NA
Benzene - DL	87000		2900	290	ug/Kg	500	☼	8260C	Total/NA
1,2,4-Trimethylbenzene - DL	38000		2900	290	ug/Kg	500	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	1900000		63000	25000	ug/Kg	500	☼	8260C	Total/NA
Xylenes, Total - DL	87000		5700	800	ug/Kg	500	☼	8260C	Total/NA
Anthracene	330		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	180		20	7.8	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	130		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	150		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	68		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Chrysene	190		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Fluorene	690		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	1300		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Pyrene	490		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Naphthalene - DL	12000		200	78	ug/Kg	10	☼	8270D	Total/NA
>C22-C44 (1C)	460		280	120	mg/Kg	20	☼	8015C TPH	Total/NA
>C12-C22 (1C)	2300		280	120	mg/Kg	20	☼	8015C TPH	Total/NA
Total Reported TPH	2800		14	5.9	mg/Kg	1	☼	Total TPH	Total/NA
Lead	7.5		1.2	0.47	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-18A-S-26-20210121
Lab Sample ID: 410-27204-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1700		340	27	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	590		340	34	ug/Kg	50	☼	8260C	Total/NA
Toluene	8000		340	41	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	1000		340	34	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	6000		340	27	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	5900		680	95	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	600000		74000	30000	ug/Kg	500	☼	8260C	Total/NA
Benzene - DL2	210000	H	34000	3400	ug/Kg	5000	☼	8260C	Total/NA
Benzo[a]anthracene	720		470	190	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	640		470	94	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	620		470	94	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	300	J	470	94	ug/Kg	1	☼	8270D	Total/NA
Chrysene	1100		470	94	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	6500		470	190	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	5200		470	94	ug/Kg	1	☼	8270D	Total/NA
Pyrene	2100		470	94	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	520		260	110	mg/Kg	20	☼	8015C TPH	Total/NA
>C12-C22 (1C)	1800		260	110	mg/Kg	20	☼	8015C TPH	Total/NA
Total Reported TPH	2300		13	5.4	mg/Kg	1	☼	Total TPH	Total/NA
Lead	16		1.4	0.56	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-18A-S-10-20210120 Lab Sample ID: 410-27204-1

Date Collected: 01/20/21 14:00 **Matrix: Solid**
Date Received: 01/21/21 16:37 **Percent Solids: 81.7**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**13000**	**H**	3400	280	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500
1,3,5-Trimethylbenzene	**1900**	**J H**	3400	340	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500
Methyl tertiary butyl ether	ND	H	3400	340	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500
1,2,4-Trimethylbenzene	**3000**	**J H**	3400	340	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500
Isopropylbenzene	**33000**	**H**	3400	280	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500
1,2-Dibromoethane	ND	H	3400	280	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500
1,2-Dichloroethane	ND	H	3400	410	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500
t-Butyl alcohol	ND	H	69000	10000	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500
Xylenes, Total	**51000**	**H**	6900	970	ug/Kg	☼	01/23/21 19:37	02/09/21 18:39	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*54 - 135*	*01/23/21 19:37*	*02/09/21 18:39*	*500*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*	*01/23/21 19:37*	*02/09/21 18:39*	*500*
Dibromofluoromethane (Surr)	*81*		*50 - 141*	*01/23/21 19:37*	*02/09/21 18:39*	*500*
Toluene-d8 (Surr)	*106*		*52 - 141*	*01/23/21 19:37*	*02/09/21 18:39*	*500*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**320000**	**H**	34000	4100	ug/Kg	☼	01/23/21 19:37	02/09/21 18:59	5000
Benzene	**1000000**	**H**	34000	3400	ug/Kg	☼	01/23/21 19:37	02/09/21 18:59	5000
C4-C12-TPH-GRO	**3700000**	**H**	760000	300000	ug/Kg	☼	01/23/21 19:37	02/09/21 18:59	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*25*	*S1-*	*54 - 135*	*01/23/21 19:37*	*02/09/21 18:59*	*5000*
4-Bromofluorobenzene (Surr)	*113*		*50 - 131*	*01/23/21 19:37*	*02/09/21 18:59*	*5000*
Dibromofluoromethane (Surr)	*78*		*50 - 141*	*01/23/21 19:37*	*02/09/21 18:59*	*5000*
Toluene-d8 (Surr)	*111*		*52 - 141*	*01/23/21 19:37*	*02/09/21 18:59*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		20	4.0	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Benzo[a]anthracene	**60**		20	8.1	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Benzo[a]pyrene	**51**		20	4.0	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Benzo[b]fluoranthene	**60**		20	4.0	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Benzo[g,h,i]perylene	**30**		20	4.0	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Chrysene	**68**		20	4.0	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Fluorene	**120**		20	4.0	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Naphthalene	**790**		20	8.1	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Phenanthrene	**290**		20	4.0	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1
Pyrene	**170**		20	4.0	ug/Kg	☼	02/03/21 15:47	02/04/21 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*33*	*S1-*	*39 - 100*	*02/03/21 15:47*	*02/04/21 17:00*	*1*
Nitrobenzene-d5 (Surr)	*49*		*32 - 97*	*02/03/21 15:47*	*02/04/21 17:00*	*1*
p-Terphenyl-d14 (Surr)	*53*		*45 - 108*	*02/03/21 15:47*	*02/04/21 17:00*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**820**		370	150	mg/Kg	☼	02/02/21 15:06	02/03/21 13:48	25
>C12-C22 (1C)	**3100**		370	150	mg/Kg	☼	02/02/21 15:06	02/03/21 13:48	25

Client Sample ID: BT-18A-S-10-20210120 — Lab Sample ID: 410-27204-1

Date Collected: 01/20/21 14:00 — **Matrix: Solid**
Date Received: 01/21/21 16:37 — **Percent Solids: 81.7**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*98*		*54 - 137*	*02/02/21 15:06*	*02/03/21 13:48*	*25*
o- terphenyl (Surr) (1C)	*89*		*52 - 154*	*02/02/21 15:06*	*02/03/21 13:48*	*25*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**3900**		15	6.1	mg/Kg	☼		02/03/21 15:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**31**		1.5	0.59	mg/Kg	☼	01/25/21 04:18	01/29/21 12:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.3**		1.0	1.0	%			01/22/21 12:03	1

Client Sample ID: TB-20210121 — Lab Sample ID: 410-27204-2

Date Collected: 01/21/21 00:00 — **Matrix: Water**
Date Received: 01/21/21 16:37

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 14:40	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 14:40	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 14:40	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 14:40	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 14:40	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 14:40	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 14:40	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 14:40	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 14:40	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 14:40	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*01/29/21 14:40*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*01/29/21 14:40*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*01/29/21 14:40*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/29/21 14:40*	*1*

Client Sample ID: BT-21-S-15-20210121 — Lab Sample ID: 410-27204-3

Date Collected: 01/21/21 09:00 — **Matrix: Solid**
Date Received: 01/21/21 16:37 — **Percent Solids: 85.2**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**14000**		290	23	ug/Kg	☼	01/23/21 19:37	02/04/21 06:13	50
1,3,5-Trimethylbenzene	**13000**		290	29	ug/Kg	☼	01/23/21 19:37	02/04/21 06:13	50
Methyl tertiary butyl ether	ND		290	29	ug/Kg	☼	01/23/21 19:37	02/04/21 06:13	50
Isopropylbenzene	**8700**		290	23	ug/Kg	☼	01/23/21 19:37	02/04/21 06:13	50
1,2-Dibromoethane	ND		290	23	ug/Kg	☼	01/23/21 19:37	02/04/21 06:13	50
1,2-Dichloroethane	ND		290	34	ug/Kg	☼	01/23/21 19:37	02/04/21 06:13	50
t-Butyl alcohol	ND	*3	5700	860	ug/Kg	☼	01/23/21 19:37	02/04/21 06:13	50

Client Sample ID: BT-21-S-15-20210121 — Lab Sample ID: 410-27204-3

Date Collected: 01/21/21 09:00 — **Matrix: Solid**
Date Received: 01/21/21 16:37 — **Percent Solids: 85.2**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	43	S1-	54 - 135	01/23/21 19:37	02/04/21 06:13	50
4-Bromofluorobenzene (Surr)	78		50 - 131	01/23/21 19:37	02/04/21 06:13	50
Dibromofluoromethane (Surr)	41	S1-	50 - 141	01/23/21 19:37	02/04/21 06:13	50
Toluene-d8 (Surr)	50	S1-	52 - 141	01/23/21 19:37	02/04/21 06:13	50

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	62000		2900	340	ug/Kg	☼	01/23/21 19:37	02/04/21 06:34	500
Benzene	87000		2900	290	ug/Kg	☼	01/23/21 19:37	02/04/21 06:34	500
1,2,4-Trimethylbenzene	38000		2900	290	ug/Kg	☼	01/23/21 19:37	02/04/21 06:34	500
C4-C12-TPH-GRO	1900000		63000	25000	ug/Kg	☼	01/23/21 19:37	02/04/21 06:34	500
Xylenes, Total	87000		5700	800	ug/Kg	☼	01/23/21 19:37	02/04/21 06:34	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	42	S1-	54 - 135	01/23/21 19:37	02/04/21 06:34	500
4-Bromofluorobenzene (Surr)	74		50 - 131	01/23/21 19:37	02/04/21 06:34	500
Dibromofluoromethane (Surr)	41	S1-	50 - 141	01/23/21 19:37	02/04/21 06:34	500
Toluene-d8 (Surr)	51	S1-	52 - 141	01/23/21 19:37	02/04/21 06:34	500

Method: 8260C - Volatile Organic Compounds by GC/MS - RA

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	44	S1-	54 - 135	01/23/21 19:37	02/09/21 17:36	50
4-Bromofluorobenzene (Surr)	79		50 - 131	01/23/21 19:37	02/09/21 17:36	50
Dibromofluoromethane (Surr)	42	S1-	50 - 141	01/23/21 19:37	02/09/21 17:36	50
Toluene-d8 (Surr)	45	S1-	52 - 141	01/23/21 19:37	02/09/21 17:36	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	330		20	3.9	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1
Benzo[a]anthracene	180		20	7.8	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1
Benzo[a]pyrene	130		20	3.9	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1
Benzo[b]fluoranthene	150		20	3.9	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1
Benzo[g,h,i]perylene	68		20	3.9	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1
Chrysene	190		20	3.9	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1
Fluorene	690		20	3.9	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1
Phenanthrene	1300		20	3.9	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1
Pyrene	490		20	3.9	ug/Kg	☼	02/03/21 15:47	02/04/21 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	62		39 - 100	02/03/21 15:47	02/04/21 17:25	1
Nitrobenzene-d5 (Surr)	83		32 - 97	02/03/21 15:47	02/04/21 17:25	1
p-Terphenyl-d14 (Surr)	85		45 - 108	02/03/21 15:47	02/04/21 17:25	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	12000		200	78	ug/Kg	☼	02/03/21 15:47	02/05/21 03:13	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	68		39 - 100	02/03/21 15:47	02/05/21 03:13	10
Nitrobenzene-d5 (Surr)	84		32 - 97	02/03/21 15:47	02/05/21 03:13	10
p-Terphenyl-d14 (Surr)	80		45 - 108	02/03/21 15:47	02/05/21 03:13	10

Client Sample ID: BT-21-S-15-20210121 — Lab Sample ID: 410-27204-3

Date Collected: 01/21/21 09:00 — Matrix: Solid
Date Received: 01/21/21 16:37 — Percent Solids: 85.2

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	460		280	120	mg/Kg	☼	02/04/21 16:08	02/08/21 11:39	20
>C12-C22 (1C)	2300		280	120	mg/Kg	☼	02/04/21 16:08	02/08/21 11:39	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*59*		*54 - 137*	*02/04/21 16:08*	*02/08/21 11:39*	*20*
o- terphenyl (Surr) (1C)	*148*		*52 - 154*	*02/04/21 16:08*	*02/08/21 11:39*	*20*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	2800		14	5.9	mg/Kg	☼		02/03/21 15:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	7.5		1.2	0.47	mg/Kg	☼	01/25/21 04:18	01/29/21 12:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.8		1.0	1.0	%			01/22/21 12:03	1

Client Sample ID: BT-18A-S-26-20210121 — Lab Sample ID: 410-27204-4

Date Collected: 01/21/21 11:35 — Matrix: Solid
Date Received: 01/21/21 16:37 — Percent Solids: 92.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	1700		340	27	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
1,3,5-Trimethylbenzene	590		340	34	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
Toluene	8000		340	41	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
Methyl tertiary butyl ether	ND		340	34	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
1,2,4-Trimethylbenzene	1000		340	34	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
Isopropylbenzene	6000		340	27	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
1,2-Dibromoethane	ND		340	27	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
1,2-Dichloroethane	ND		340	41	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
t-Butyl alcohol	ND		6800	1000	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50
Xylenes, Total	5900		680	95	ug/Kg	☼	01/23/21 19:37	02/04/21 06:54	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*79*		*54 - 135*	*01/23/21 19:37*	*02/04/21 06:54*	*50*
4-Bromofluorobenzene (Surr)	*86*		*50 - 131*	*01/23/21 19:37*	*02/04/21 06:54*	*50*
Dibromofluoromethane (Surr)	*78*		*50 - 141*	*01/23/21 19:37*	*02/04/21 06:54*	*50*
Toluene-d8 (Surr)	*94*		*52 - 141*	*01/23/21 19:37*	*02/04/21 06:54*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	600000		74000	30000	ug/Kg	☼	01/23/21 19:37	02/04/21 07:15	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*54 - 135*	*01/23/21 19:37*	*02/04/21 07:15*	*500*
4-Bromofluorobenzene (Surr)	*84*		*50 - 131*	*01/23/21 19:37*	*02/04/21 07:15*	*500*
Dibromofluoromethane (Surr)	*75*		*50 - 141*	*01/23/21 19:37*	*02/04/21 07:15*	*500*
Toluene-d8 (Surr)	*91*		*52 - 141*	*01/23/21 19:37*	*02/04/21 07:15*	*500*

Client Sample ID: BT-18A-S-26-20210121 Lab Sample ID: 410-27204-4

Date Collected: 01/21/21 11:35 **Matrix: Solid**
Date Received: 01/21/21 16:37 **Percent Solids: 92.8**

Method: 8260C - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**210000**	**H**	34000	3400	ug/Kg	☼	01/23/21 19:37	02/09/21 20:01	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*53*	*S1-*	*54 - 135*	*01/23/21 19:37*	*02/09/21 20:01*	*5000*
4-Bromofluorobenzene (Surr)	*82*		*50 - 131*	*01/23/21 19:37*	*02/09/21 20:01*	*5000*
Dibromofluoromethane (Surr)	*69*		*50 - 141*	*01/23/21 19:37*	*02/09/21 20:01*	*5000*
Toluene-d8 (Surr)	*82*		*52 - 141*	*01/23/21 19:37*	*02/09/21 20:01*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		470	94	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Benzo[a]anthracene	**720**		470	190	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Benzo[a]pyrene	**640**		470	94	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Benzo[b]fluoranthene	**620**		470	94	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Benzo[g,h,i]perylene	**300**	**J**	470	94	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Chrysene	**1100**		470	94	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Fluorene	ND		470	94	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Naphthalene	**6500**		470	190	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Phenanthrene	**5200**		470	94	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1
Pyrene	**2100**		470	94	ug/Kg	☼	02/03/21 15:47	02/04/21 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*39 - 100*	*02/03/21 15:47*	*02/04/21 17:48*	*1*
Nitrobenzene-d5 (Surr)	*80*		*32 - 97*	*02/03/21 15:47*	*02/04/21 17:48*	*1*
p-Terphenyl-d14 (Surr)	*89*		*45 - 108*	*02/03/21 15:47*	*02/04/21 17:48*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**520**		260	110	mg/Kg	☼	02/04/21 16:08	02/08/21 11:18	20
>C12-C22 (1C)	**1800**		260	110	mg/Kg	☼	02/04/21 16:08	02/08/21 11:18	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*68*		*54 - 137*	*02/04/21 16:08*	*02/08/21 11:18*	*20*
o- terphenyl (Surr) (1C)	*120*		*52 - 154*	*02/04/21 16:08*	*02/08/21 11:18*	*20*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**2300**		13	5.4	mg/Kg	☼		02/03/21 15:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**16**		1.4	0.56	mg/Kg	☼	01/25/21 04:18	01/29/21 11:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**7.2**		1.0	1.0	%			01/22/21 12:03	1

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-27204-1 - DL	BT-18A-S-10-20210120	25 S1-	113	78	111
410-27204-1	BT-18A-S-10-20210120	89	88	81	106
410-27204-3	BT-21-S-15-20210121	43 S1-	78	41 S1-	50 S1-
410-27204-3 - DL	BT-21-S-15-20210121	42 S1-	74	41 S1-	51 S1-
410-27204-3 - RA	BT-21-S-15-20210121	44 S1-	79	42 S1-	45 S1-
410-27204-4	BT-18A-S-26-20210121	79	86	78	94
410-27204-4 - DL	BT-18A-S-26-20210121	85	84	75	91
410-27204-4 - DL2	BT-18A-S-26-20210121	53 S1-	82	69	82
LCS 410-90717/5	Lab Control Sample	98	86	94	93
LCS 410-90717/8	Lab Control Sample	103	90	97	98
LCS 410-92306/5	Lab Control Sample	93	81	90	85
LCS 410-92306/7	Lab Control Sample	95	83	90	89
LCSD 410-90717/6	Lab Control Sample Dup	98	87	94	94
LCSD 410-90717/9	Lab Control Sample Dup	100	89	95	96
LCSD 410-92306/6	Lab Control Sample Dup	92	80	88	84
LCSD 410-92306/8	Lab Control Sample Dup	93	81	88	88
MB 410-90717/10	Method Blank	98	88	93	94
MB 410-92306/10	Method Blank	95	81	89	87

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-27204-2	TB-20210121	107	92	93	111
LCS 410-89453/5	Lab Control Sample	111	92	94	112
LCS 410-89453/7	Lab Control Sample	111	93	94	111
LCSD 410-89453/6	Lab Control Sample Dup	110	92	94	111
LCSD 410-89453/8	Lab Control Sample Dup	111	92	92	112
MB 410-89453/9	Method Blank	108	89	92	111

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-27204-1	BT-18A-S-10-20210120	33 S1-	49	53

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-27204-3	BT-21-S-15-20210121	62	83	85
410-27204-3 - DL	BT-21-S-15-20210121	68	84	80
410-27204-4	BT-18A-S-26-20210121	67	80	89
LCS 410-90633/2-A	Lab Control Sample	91	84	97
MB 410-90633/1-A	Method Blank	91	82	102

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-27204-1	BT-18A-S-10-20210120	98	89
410-27204-3	BT-21-S-15-20210121	59	148
410-27204-3 DU	BT-21-S-15-20210121	93	213 S1+
410-27204-3 MS	BT-21-S-15-20210121	78	158 S1+
410-27204-4	BT-18A-S-26-20210121	68	120
LCS 410-90185/2-A	Lab Control Sample	67	96
LCS 410-91097/2-A	Lab Control Sample	73	103
MB 410-90185/1-A	Method Blank	84	90
MB 410-91097/1-A	Method Blank	71	91

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-90717/10
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/03/21 23:17	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/03/21 23:17	50
Toluene	ND		250	30	ug/Kg			02/03/21 23:17	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/03/21 23:17	50
Benzene	ND		250	25	ug/Kg			02/03/21 23:17	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/03/21 23:17	50
Isopropylbenzene	ND		250	20	ug/Kg			02/03/21 23:17	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/03/21 23:17	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/03/21 23:17	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/03/21 23:17	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/03/21 23:17	50
Xylenes, Total	ND		500	70	ug/Kg			02/03/21 23:17	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*		*02/03/21 23:17*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*02/03/21 23:17*	*50*
Dibromofluoromethane (Surr)	*93*		*50 - 141*		*02/03/21 23:17*	*50*
Toluene-d8 (Surr)	*94*		*52 - 141*		*02/03/21 23:17*	*50*

Lab Sample ID: LCS 410-90717/5
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1000		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	1000		ug/Kg		100	73 - 120
Toluene	1000	1020		ug/Kg		102	80 - 120
Methyl tertiary butyl ether	1000	1090		ug/Kg		109	72 - 120
Benzene	1000	1020		ug/Kg		102	80 - 120
Naphthalene	1000	981		ug/Kg		98	48 - 130
1,2,4-Trimethylbenzene	1000	997		ug/Kg		100	73 - 120
Isopropylbenzene	1000	979		ug/Kg		98	77 - 120
1,2-Dibromoethane	1000	1080		ug/Kg		108	76 - 120
1,2-Dichloroethane	1000	956		ug/Kg		96	71 - 128
t-Butyl alcohol	10000	8280		ug/Kg		83	74 - 121
Xylenes, Total	3000	3080		ug/Kg		103	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*86*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*93*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-90717/8
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	57000		ug/Kg		114	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-90717/6
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	1000		ug/Kg		100	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	994		ug/Kg		99	73 - 120	1	30
Toluene			1000	1010		ug/Kg		101	80 - 120	0	30
Methyl tertiary butyl ether			1000	1080		ug/Kg		108	72 - 120	1	30
Benzene			1000	1020		ug/Kg		102	80 - 120	0	30
Naphthalene			1000	995		ug/Kg		99	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	977		ug/Kg		98	73 - 120	2	30
Isopropylbenzene			1000	989		ug/Kg		99	77 - 120	1	30
1,2-Dibromoethane			1000	1080		ug/Kg		108	76 - 120	0	30
1,2-Dichloroethane			1000	943		ug/Kg		94	71 - 128	1	30
t-Butyl alcohol			10000	7600		ug/Kg		76	74 - 121	9	30
Xylenes, Total			3000	3070		ug/Kg		102	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*94*		*52 - 141*

Lab Sample ID: LCSD 410-90717/9
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	54600		ug/Kg		109	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-92306/10
Matrix: Solid
Analysis Batch: 92306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Toluene	ND		250	30	ug/Kg			02/09/21 12:25	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/09/21 12:25	50
Benzene	ND		250	25	ug/Kg			02/09/21 12:25	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Isopropylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/09/21 12:25	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/09/21 12:25	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/09/21 12:25	50
Xylenes, Total	ND		500	70	ug/Kg			02/09/21 12:25	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*		*02/09/21 12:25*	*50*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*		*02/09/21 12:25*	*50*
Dibromofluoromethane (Surr)	*89*		*50 - 141*		*02/09/21 12:25*	*50*
Toluene-d8 (Surr)	*87*		*52 - 141*		*02/09/21 12:25*	*50*

Lab Sample ID: LCS 410-92306/5
Matrix: Solid
Analysis Batch: 92306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	928		ug/Kg		93	78 - 120
1,3,5-Trimethylbenzene	1000	895		ug/Kg		89	73 - 120
Toluene	1000	943		ug/Kg		94	80 - 120
Methyl tertiary butyl ether	1000	1040		ug/Kg		104	72 - 120
Benzene	1000	951		ug/Kg		95	80 - 120
Naphthalene	1000	902		ug/Kg		90	48 - 130
1,2,4-Trimethylbenzene	1000	898		ug/Kg		90	73 - 120
Isopropylbenzene	1000	914		ug/Kg		91	77 - 120
1,2-Dibromoethane	1000	1020		ug/Kg		102	76 - 120
1,2-Dichloroethane	1000	892		ug/Kg		89	71 - 128
t-Butyl alcohol	10000	10100		ug/Kg		101	74 - 121
Xylenes, Total	3000	2850		ug/Kg		95	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*85*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-92306/7 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	46000		ug/Kg		92	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*89*		*52 - 141*

Lab Sample ID: LCSD 410-92306/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	907		ug/Kg		91	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	895		ug/Kg		90	73 - 120	0	30
Toluene			1000	914		ug/Kg		91	80 - 120	3	30
Methyl tertiary butyl ether			1000	1030		ug/Kg		103	72 - 120	1	30
Benzene			1000	934		ug/Kg		93	80 - 120	2	30
Naphthalene			1000	899		ug/Kg		90	48 - 130	0	30
1,2,4-Trimethylbenzene			1000	888		ug/Kg		89	73 - 120	1	30
Isopropylbenzene			1000	895		ug/Kg		90	77 - 120	2	30
1,2-Dibromoethane			1000	998		ug/Kg		100	76 - 120	2	30
1,2-Dichloroethane			1000	900		ug/Kg		90	71 - 128	1	30
t-Butyl alcohol			10000	9650		ug/Kg		97	74 - 121	5	30
Xylenes, Total			3000	2810		ug/Kg		94	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*54 - 135*
4-Bromofluorobenzene (Surr)	*80*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*84*		*52 - 141*

Lab Sample ID: LCSD 410-92306/8 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	47800		ug/Kg		96	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*88*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-89453/9
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 14:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 14:16	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 14:16	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 14:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 14:16	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 14:16	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 14:16	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 14:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/29/21 14:16*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/29/21 14:16*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*01/29/21 14:16*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/29/21 14:16*	*1*

Lab Sample ID: LCS 410-89453/5
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	21.3		ug/L		107	75 - 120
1,2-Dichloroethane	20.0	18.5		ug/L		92	73 - 124
1,3,5-Trimethylbenzene	20.0	21.4		ug/L		107	75 - 120
Benzene	20.0	18.5		ug/L		92	80 - 120
Ethylbenzene	20.0	22.1		ug/L		111	80 - 120
Isopropylbenzene	20.0	20.6		ug/L		103	80 - 120
Methyl tertiary butyl ether	20.0	17.1		ug/L		85	69 - 122
Naphthalene	20.0	18.7		ug/L		94	53 - 124
Toluene	20.0	22.5		ug/L		113	80 - 120
Xylenes, Total	60.0	63.3		ug/L		106	80 - 120
t-Butyl alcohol	200	204		ug/L		102	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	992		ug/L		99	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/6
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.6		ug/L		103	75 - 120	4	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	4	30
1,3,5-Trimethylbenzene			20.0	20.9		ug/L		104	75 - 120	3	30
Benzene			20.0	18.3		ug/L		92	80 - 120	1	30
Ethylbenzene			20.0	21.1		ug/L		106	80 - 120	5	30
Isopropylbenzene			20.0	19.6		ug/L		98	80 - 120	5	30
Methyl tertiary butyl ether			20.0	17.2		ug/L		86	69 - 122	1	30
Naphthalene			20.0	18.4		ug/L		92	53 - 124	2	30
Toluene			20.0	21.1		ug/L		105	80 - 120	7	30
Xylenes, Total			60.0	59.7		ug/L		100	80 - 120	6	30
t-Butyl alcohol			200	205		ug/L		102	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/8
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1020		ug/L		102	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-90633/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 90840 — **Prep Batch: 90633**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Benzo[a]anthracene	ND		17	6.7	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Chrysene	ND		17	3.3	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Fluorene	ND		17	3.3	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Naphthalene	ND		17	6.7	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Phenanthrene	ND		17	3.3	ug/Kg		02/03/21 15:47	02/04/21 10:38	1
Pyrene	ND		17	3.3	ug/Kg		02/03/21 15:47	02/04/21 10:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*91*		*39 - 100*	*02/03/21 15:47*	*02/04/21 10:38*	*1*
Nitrobenzene-d5 (Surr)	*82*		*32 - 97*	*02/03/21 15:47*	*02/04/21 10:38*	*1*
p-Terphenyl-d14 (Surr)	*102*		*45 - 108*	*02/03/21 15:47*	*02/04/21 10:38*	*1*

Lab Sample ID: LCS 410-90633/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 90840 — **Prep Batch: 90633**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1620		ug/Kg		97	75 - 114
Benzo[a]anthracene	1670	1610		ug/Kg		97	73 - 114
Benzo[a]pyrene	1670	1850		ug/Kg		111	76 - 113
Benzo[b]fluoranthene	1670	1360		ug/Kg		82	73 - 117
Benzo[g,h,i]perylene	1670	1740		ug/Kg		104	77 - 114
Chrysene	1670	1610		ug/Kg		97	66 - 111
Fluorene	1670	1520		ug/Kg		91	62 - 110
Naphthalene	1670	1380		ug/Kg		83	60 - 94
Phenanthrene	1670	1570		ug/Kg		94	74 - 112
Pyrene	1670	1610		ug/Kg		97	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*91*		*39 - 100*
Nitrobenzene-d5 (Surr)	*84*		*32 - 97*
p-Terphenyl-d14 (Surr)	*97*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-90185/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 90435 — **Prep Batch: 90185**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/02/21 15:05	02/03/21 10:51	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/02/21 15:05	02/03/21 10:51	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-90185/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 90435 — **Prep Batch: 90185**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	84		54 - 137	02/02/21 15:05	02/03/21 10:51	1
o- terphenyl (Surr) (1C)	90		52 - 154	02/02/21 15:05	02/03/21 10:51	1

Lab Sample ID: LCS 410-90185/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 90435 — **Prep Batch: 90185**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	106		mg/Kg		79	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	67		54 - 137
o- terphenyl (Surr) (1C)	96		52 - 154

Lab Sample ID: MB 410-91097/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91363 — **Prep Batch: 91097**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	71		54 - 137	02/04/21 16:08	02/05/21 11:38	1
o- terphenyl (Surr) (1C)	91		52 - 154	02/04/21 16:08	02/05/21 11:38	1

Lab Sample ID: LCS 410-91097/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91363 — **Prep Batch: 91097**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	116		mg/Kg		86	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	73		54 - 137
o- terphenyl (Surr) (1C)	103		52 - 154

Lab Sample ID: 410-27204-3 MS — **Client Sample ID: BT-21-S-15-20210121**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92006 — **Prep Batch: 91097**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	3500		156	6600	4	mg/Kg	☼	2020	64 - 122		

Surrogate	MS %Recovery	MS Qualifier	Limits
Chlorobenzene (Surr) (1C)	78		54 - 137
o- terphenyl (Surr) (1C)	158	S1+	52 - 154

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 410-27204-3 DU **Client Sample ID: BT-21-S-15-20210121**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 92006 **Prep Batch: 91097**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C22-C44 (1C)	460			945		mg/Kg	☼			69	
>C12-C22 (1C)	2300			5590		mg/Kg	☼			83	

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*93*		*54 - 137*
o- terphenyl (Surr) (1C)	*213*	*S1+*	*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-87550/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 89534 **Prep Batch: 87550**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.58	mg/Kg		01/25/21 04:18	01/29/21 11:25	1

Lab Sample ID: LCS 410-87550/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 89534 **Prep Batch: 87550**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.88	2.44		mg/Kg		85	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 87458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	5035	
410-27204-1 - DL	BT-18A-S-10-20210120	Total/NA	Solid	5035	
410-27204-3 - RA	BT-21-S-15-20210121	Total/NA	Solid	5035	
410-27204-3 - DL	BT-21-S-15-20210121	Total/NA	Solid	5035	
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	5035	
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	5035	
410-27204-4 - DL	BT-18A-S-26-20210121	Total/NA	Solid	5035	
410-27204-4 - DL2	BT-18A-S-26-20210121	Total/NA	Solid	5035	

Analysis Batch: 89453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-2	TB-20210121	Total/NA	Water	8260C/UST	
MB 410-89453/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-89453/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-89453/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-89453/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-89453/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 90717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	8260C	87458
410-27204-3 - DL	BT-21-S-15-20210121	Total/NA	Solid	8260C	87458
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	8260C	87458
410-27204-4 - DL	BT-18A-S-26-20210121	Total/NA	Solid	8260C	87458
MB 410-90717/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-90717/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-90717/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-90717/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-90717/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 92306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	8260C	87458
410-27204-1 - DL	BT-18A-S-10-20210120	Total/NA	Solid	8260C	87458
410-27204-3 - RA	BT-21-S-15-20210121	Total/NA	Solid	8260C	87458
410-27204-4 - DL2	BT-18A-S-26-20210121	Total/NA	Solid	8260C	87458
MB 410-92306/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-92306/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-92306/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-92306/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-92306/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 90633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	3546	
410-27204-3 - DL	BT-21-S-15-20210121	Total/NA	Solid	3546	
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	3546	
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	3546	
MB 410-90633/1-A	Method Blank	Total/NA	Solid	3546	

GC/MS Semi VOA (Continued)

Prep Batch: 90633 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-90633/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 90840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	8270D	90633
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	8270D	90633
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	8270D	90633
MB 410-90633/1-A	Method Blank	Total/NA	Solid	8270D	90633
LCS 410-90633/2-A	Lab Control Sample	Total/NA	Solid	8270D	90633

Analysis Batch: 91237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-3 - DL	BT-21-S-15-20210121	Total/NA	Solid	8270D	90633

GC Semi VOA

Prep Batch: 90185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	3546	
MB 410-90185/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-90185/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 90435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	8015C TPH	90185
MB 410-90185/1-A	Method Blank	Total/NA	Solid	8015C TPH	90185
LCS 410-90185/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	90185

Analysis Batch: 90616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	Total TPH	
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	Total TPH	
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	Total TPH	

Prep Batch: 91097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	3546	
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	3546	
MB 410-91097/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-27204-3 MS	BT-21-S-15-20210121	Total/NA	Solid	3546	
410-27204-3 DU	BT-21-S-15-20210121	Total/NA	Solid	3546	

Analysis Batch: 91363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-91097/1-A	Method Blank	Total/NA	Solid	8015C TPH	91097
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	91097

Analysis Batch: 92006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	8015C TPH	91097

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC Semi VOA (Continued)

Analysis Batch: 92006 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	8015C TPH	91097
410-27204-3 MS	BT-21-S-15-20210121	Total/NA	Solid	8015C TPH	91097
410-27204-3 DU	BT-21-S-15-20210121	Total/NA	Solid	8015C TPH	91097

Metals

Prep Batch: 87550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	3050B	
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	3050B	
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	3050B	
MB 410-87550/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-87550/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 89534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	6010C	87550
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	6010C	87550
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	6010C	87550
MB 410-87550/1-A	Method Blank	Total/NA	Solid	6010C	87550
LCS 410-87550/2-A	Lab Control Sample	Total/NA	Solid	6010C	87550

General Chemistry

Analysis Batch: 87220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27204-1	BT-18A-S-10-20210120	Total/NA	Solid	Moisture	
410-27204-3	BT-21-S-15-20210121	Total/NA	Solid	Moisture	
410-27204-4	BT-18A-S-26-20210121	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp. Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-18A-S-10-20210120 Lab Sample ID: 410-27204-1
Date Collected: 01/20/21 14:00 **Matrix: Solid**
Date Received: 01/21/21 16:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	87220	01/22/21 12:03	UGCW	ELLE

Client Sample ID: BT-18A-S-10-20210120 Lab Sample ID: 410-27204-1
Date Collected: 01/20/21 14:00 **Matrix: Solid**
Date Received: 01/21/21 16:37 **Percent Solids: 81.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			87458	01/23/21 19:37	UK3O	ELLE
Total/NA	Analysis	8260C		500	92306	02/09/21 18:39	SWV2	ELLE
Total/NA	Prep	5035	DL		87458	01/23/21 19:37	UK3O	ELLE
Total/NA	Analysis	8260C	DL	5000	92306	02/09/21 18:59	SWV2	ELLE
Total/NA	Prep	3546			90633	02/03/21 15:47	DN9W	ELLE
Total/NA	Analysis	8270D		1	90840	02/04/21 17:00	ULM3	ELLE
Total/NA	Prep	3546			90185	02/02/21 15:06	DN9W	ELLE
Total/NA	Analysis	8015C TPH		25	90435	02/03/21 13:48	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	90616	02/03/21 15:06	UJL4	ELLE
Total/NA	Prep	3050B			87550	01/25/21 04:18	UAMX	ELLE
Total/NA	Analysis	6010C		1	89534	01/29/21 12:11	MDP5	ELLE

Client Sample ID: TB-20210121 Lab Sample ID: 410-27204-2
Date Collected: 01/21/21 00:00 **Matrix: Water**
Date Received: 01/21/21 16:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	89453	01/29/21 14:40	UKAD	ELLE

Client Sample ID: BT-21-S-15-20210121 Lab Sample ID: 410-27204-3
Date Collected: 01/21/21 09:00 **Matrix: Solid**
Date Received: 01/21/21 16:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	87220	01/22/21 12:03	UGCW	ELLE

Client Sample ID: BT-21-S-15-20210121 Lab Sample ID: 410-27204-3
Date Collected: 01/21/21 09:00 **Matrix: Solid**
Date Received: 01/21/21 16:37 **Percent Solids: 85.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			87458	01/23/21 19:37	UK3O	ELLE
Total/NA	Analysis	8260C		50	90717	02/04/21 06:13	ULCP	ELLE
Total/NA	Prep	5035	DL		87458	01/23/21 19:37	UK3O	ELLE
Total/NA	Analysis	8260C	DL	500	90717	02/04/21 06:34	ULCP	ELLE
Total/NA	Prep	5035	RA		87458	01/23/21 19:37	UK3O	ELLE
Total/NA	Analysis	8260C	RA	50	92306	02/09/21 17:36	SWV2	ELLE

Lab Chronicle

Client: Stantec Consulting Corp. Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-21-S-15-20210121 Lab Sample ID: 410-27204-3

Date Collected: 01/21/21 09:00 **Matrix: Solid**
Date Received: 01/21/21 16:37 **Percent Solids: 85.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			90633	02/03/21 15:47	DN9W	ELLE
Total/NA	Analysis	8270D		1	90840	02/04/21 17:25	ULM3	ELLE
Total/NA	Prep	3546	DL		90633	02/03/21 15:47	DN9W	ELLE
Total/NA	Analysis	8270D	DL	10	91237	02/05/21 03:13	UWHS	ELLE
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		20	92006	02/08/21 11:39	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	90616	02/03/21 15:06	UJL4	ELLE
Total/NA	Prep	3050B			87550	01/25/21 04:18	UAMX	ELLE
Total/NA	Analysis	6010C		1	89534	01/29/21 12:07	MDP5	ELLE

Client Sample ID: BT-18A-S-26-20210121 Lab Sample ID: 410-27204-4

Date Collected: 01/21/21 11:35 **Matrix: Solid**
Date Received: 01/21/21 16:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	87220	01/22/21 12:03	UGCW	ELLE

Client Sample ID: BT-18A-S-26-20210121 Lab Sample ID: 410-27204-4

Date Collected: 01/21/21 11:35 **Matrix: Solid**
Date Received: 01/21/21 16:37 **Percent Solids: 92.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			87458	01/23/21 19:37	UK3O	ELLE
Total/NA	Analysis	8260C		50	90717	02/04/21 06:54	ULCP	ELLE
Total/NA	Prep	5035	DL		87458	01/23/21 19:37	UK3O	ELLE
Total/NA	Analysis	8260C	DL	500	90717	02/04/21 07:15	ULCP	ELLE
Total/NA	Prep	5035	DL2		87458	01/23/21 19:37	UK3O	ELLE
Total/NA	Analysis	8260C	DL2	5000	92306	02/09/21 20:01	SWV2	ELLE
Total/NA	Prep	3546			90633	02/03/21 15:47	DN9W	ELLE
Total/NA	Analysis	8270D		1	90840	02/04/21 17:48	ULM3	ELLE
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		20	92006	02/08/21 11:18	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	90616	02/03/21 15:06	UJL4	ELLE
Total/NA	Prep	3050B			87550	01/25/21 04:18	UAMX	ELLE
Total/NA	Analysis	6010C		1	89534	01/29/21 11:45	MDP5	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-27204-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-27204-1	BT-18A-S-10-20210120	Solid	01/20/21 14:00	01/21/21 16:37	
410-27204-2	TB-20210121	Water	01/21/21 00:00	01/21/21 16:37	
410-27204-3	BT-21-S-15-20210121	Solid	01/21/21 09:00	01/21/21 16:37	
410-27204-4	BT-18A-S-26-20210121	Solid	01/21/21 11:35	01/21/21 16:37	

Environmental Analysis [illegible] Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-27204 Chain of Custody

[illegible]nental use only

COC # 608588

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Matrix: Soil ☒ Sediment ☐ Tissue	Matrix: Water Potable ☐ Ground ☐ NPDES ☐ Surface	Matrix: Other: Trip blank	Total # of Containers	TPH DRO	TPH GRO/moisture + VOCs 8260	VOC 8260 c/o	Lead/PAH 8270 D	Remarks
BT-18A-18-10-20210120	1/20/21	1400	X		X			6	X	X	X	X	
TB-20210121	1/8/21	—					X	2			X		
BT-21-S-15-20210121	1/21/21	0900	X		X			6	X	X	X	X	
BT-18A-S-26-20210121	1/21/21	1135	X		X			6	X	X	X	X	

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	1/21/21	1410	Pierre	1/21/21	1410
Pierre	1/21/21	1607			
			[illegible]	1-21-21	1637

EDD Required? Yes No
If yes, format: EQuis

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other X

Temperature upon receipt 28 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

JR

3/16/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-27204-1

Login Number: 27204
List Number: 1
Creator: Rivera-Santa, Julissa

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-27301-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 3:44:21 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 3:44:21 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-27301-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
FH	MS and/or MSD recovery above control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-27301-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-27301-1

Revision
The report being provided is a revision of the original report sent on 2/9/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/22/2021 3:27 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.1°C and 4.9°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: The following sample was diluted due to the nature of the sample matrix: BT-18A-S-49-20210122 (410-27301-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
Method RSK_175: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: TB-20210122 (410-27301-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: Chlorobenzene (Surr) recovery for the following sample was outside control limits: BT-18A-W-38-20210121 (410-27301-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015C_TPH: Surrogate recovery for the following sample was outside acceptance limits: BT-18A-S-49-20210122 (410-27301-3). The results have been reported per client request.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020A: The following samples were not filtered within 15 minutes of sample collection as required by the method: BT-18A-W-38-20210121 (410-27301-1) and EB-20210122 (410-27301-4). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method SM4500NH3_C_Mod: Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation: BT-18A-W-38-20210121 (410-27301-1) and EB-20210122 (410-27301-4).

Job ID: 410-27301-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

Client Sample ID: BT-18A-W-38-20210121 — Lab Sample ID: 410-27301-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	37		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	12	J	25	1.5	ug/L	5		8260C/UST	Total/NA
C4-C12-TPH-GRO	21000		250	150	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	62		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	69		25	1.0	ug/L	5		8260C/UST	Total/NA
Toluene	910		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	280		30	7.0	ug/L	5		8260C/UST	Total/NA
Benzene - DL	12000		500	100	ug/L	500		8260C/UST	Total/NA
Methane (1C)	82		5.0	3.0	ug/L	1		RSK-175	Total/NA
>C22-C44 (1C)	0.21		0.095	0.071	mg/L	1		8015C TPH	Total/NA
>C12-C22 (1C)	2.9		0.095	0.071	mg/L	1		8015C TPH	Total/NA
Total Reported TPH	3.1		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	0.39	J FH	0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	150		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Chloride	140		20	10	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	91		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	5.9		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	30		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	10		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	100		1.0	0.24	mg/L	1		6010C	Total Recoverable
Lead	0.17	J B	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	270		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	0.60	J	1.5	0.50	mg/L	1		4500 NH3 C-2011	Total/NA
Total Organic Carbon	30		1.0	0.50	mg/L	1		5310C-2011	Total/NA

Client Sample ID: TB-20210122 — Lab Sample ID: 410-27301-2

No Detections.

Client Sample ID: BT-18A-S-49-20210122 — Lab Sample ID: 410-27301-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	160	J	430	34	ug/Kg	50	☼	8260C	Total/NA
Benzene	56	J	430	43	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	61	J	430	43	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	38	J	430	34	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO	7600	J	9400	3800	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol	9200		8500	1300	ug/Kg	50	☼	8260C	Total/NA
Benzo[a]pyrene	1300		220	45	ug/Kg	10	☼	8270D	Total/NA
>C22-C44 (1C)	28		16	6.7	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	28		16	6.8	mg/Kg	1	☼	Total TPH	Total/NA
Lead	25		1.6	0.62	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: EB-20210122 — Lab Sample ID: 410-27301-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrogen, Nitrate	0.050	J	0.10	0.050	mg/L	1		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EB-20210122 (Continued)
Lab Sample ID: 410-27301-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.22	J	0.50	0.096	mg/L	1		6010C	Total Recoverable
Sodium	1.4		1.0	0.24	mg/L	1		6010C	Total Recoverable
Lead	0.24	J B	0.52	0.073	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-18A-W-38-20210121 Lab Sample ID: 410-27301-1

Date Collected: 01/21/21 16:10 **Matrix: Water**
Date Received: 01/22/21 15:27

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**37**		25	5.0	ug/L			01/29/21 21:05	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			01/29/21 21:05	5
1,3,5-Trimethylbenzene	**12**	**J**	25	1.5	ug/L			01/29/21 21:05	5
C4-C12-TPH-GRO	**21000**		250	150	ug/L			01/29/21 21:05	5
Ethylbenzene	**62**		5.0	2.0	ug/L			01/29/21 21:05	5
Isopropylbenzene	**69**		25	1.0	ug/L			01/29/21 21:05	5
Methyl tertiary butyl ether	ND		5.0	1.0	ug/L			01/29/21 21:05	5
Toluene	**910**		5.0	1.0	ug/L			01/29/21 21:05	5
Xylenes, Total	**280**		30	7.0	ug/L			01/29/21 21:05	5
t-Butyl alcohol	ND		250	60	ug/L			01/29/21 21:05	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*01/29/21 21:05*	*5*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*01/29/21 21:05*	*5*
Dibromofluoromethane (Surr)	*87*		*80 - 120*		*01/29/21 21:05*	*5*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/29/21 21:05*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**12000**		500	100	ug/L			02/02/21 20:09	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*02/02/21 20:09*	*500*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*02/02/21 20:09*	*500*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*02/02/21 20:09*	*500*
Toluene-d8 (Surr)	*99*		*80 - 120*		*02/02/21 20:09*	*500*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 15:55	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 15:55	1
Methane (1C)	**82**		5.0	3.0	ug/L		01/25/21 07:44	01/25/21 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*92*		*28 - 140*	*01/25/21 07:44*	*01/25/21 15:55*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		01/25/21 23:20	01/26/21 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*	*01/25/21 23:20*	*01/26/21 13:26*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*89*		*46 - 136*	*01/25/21 23:20*	*01/26/21 13:26*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**0.21**		0.095	0.071	mg/L		01/28/21 23:25	01/29/21 13:12	1
>C12-C22 (1C)	**2.9**		0.095	0.071	mg/L		01/28/21 23:25	01/29/21 13:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*117*	*S1+*	*21 - 116*	*01/28/21 23:25*	*01/29/21 13:12*	*1*
o- terphenyl (Surr) (1C)	*72*		*51 - 126*	*01/28/21 23:25*	*01/29/21 13:12*	*1*

Client Sample ID: BT-18A-W-38-20210121

Lab Sample ID: 410-27301-1

Date Collected: 01/21/21 16:10

Matrix: Water

Date Received: 01/22/21 15:27

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	3.1		0.20	0.074	mg/L			02/03/21 13:36	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.39	J FH	0.50	0.25	mg/L			01/23/21 05:39	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	150		50	15	mg/L			01/25/21 19:56	50
Chloride	140		20	10	mg/L			01/25/21 19:56	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	91		0.50	0.096	mg/L		01/26/21 20:03	01/27/21 13:56	1
Iron	5.9		0.20	0.040	mg/L		01/26/21 20:03	01/27/21 13:56	1
Magnesium	30		0.10	0.040	mg/L		01/26/21 20:03	01/27/21 13:56	1
Potassium	10		0.50	0.20	mg/L		01/26/21 20:03	01/27/21 18:40	1
Sodium	100		1.0	0.24	mg/L		01/26/21 20:03	01/27/21 13:56	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.17	J B	0.52	0.073	ug/L		01/26/21 02:57	01/27/21 17:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	270		8.0	8.0	mg/L			01/27/21 01:16	1
Ammonia-N	0.60	J	1.5	0.50	mg/L		01/29/21 18:16	01/29/21 19:34	1
Sulfide	ND		0.30	0.10	mg/L			01/26/21 10:08	1
Total Organic Carbon	30		1.0	0.50	mg/L			01/26/21 20:37	1

Client Sample ID: TB-20210122

Lab Sample ID: 410-27301-2

Date Collected: 01/22/21 00:00

Matrix: Water

Date Received: 01/22/21 15:27

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 15:04	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 15:04	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 15:04	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 15:04	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 15:04	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 15:04	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 15:04	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 15:04	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 15:04	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 15:04	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*01/29/21 15:04*	*1*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*		*01/29/21 15:04*	*1*

Client Sample ID: TB-20210122 — Lab Sample ID: 410-27301-2

Date Collected: 01/22/21 00:00 — **Matrix: Water**
Date Received: 01/22/21 15:27

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*01/29/21 15:04*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*01/29/21 15:04*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND	H	5.0	1.0	ug/L		01/25/21 07:44	01/25/21 16:13	1
Ethene (1C)	ND	H	5.0	1.0	ug/L		01/25/21 07:44	01/25/21 16:13	1
Methane (1C)	ND	H	5.0	3.0	ug/L		01/25/21 07:44	01/25/21 16:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*97*		*28 - 140*	*01/25/21 07:44*	*01/25/21 16:13*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		02/05/21 01:19	02/05/21 09:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	*73*		*46 - 136*	*02/05/21 01:19*	*02/05/21 09:53*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*87*		*46 - 136*	*02/05/21 01:19*	*02/05/21 09:53*	*1*

Client Sample ID: BT-18A-S-49-20210122 — Lab Sample ID: 410-27301-3

Date Collected: 01/22/21 09:00 — **Matrix: Solid**
Date Received: 01/22/21 15:27 — **Percent Solids: 73.4**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**160**	**J**	430	34	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
1,3,5-Trimethylbenzene	ND		430	43	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
Toluene	ND		430	51	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
Methyl tertiary butyl ether	ND		430	43	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
Benzene	**56**	**J**	430	43	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
1,2,4-Trimethylbenzene	**61**	**J**	430	43	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
Isopropylbenzene	**38**	**J**	430	34	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
1,2-Dibromoethane	ND		430	34	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
1,2-Dichloroethane	ND		430	51	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
C4-C12-TPH-GRO	**7600**	**J**	9400	3800	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
t-Butyl alcohol	**9200**		8500	1300	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50
Xylenes, Total	ND		850	120	ug/Kg	☼	01/27/21 09:49	02/04/21 05:11	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*	*01/27/21 09:49*	*02/04/21 05:11*	*50*
4-Bromofluorobenzene (Surr)	*91*		*50 - 131*	*01/27/21 09:49*	*02/04/21 05:11*	*50*
Dibromofluoromethane (Surr)	*92*		*50 - 141*	*01/27/21 09:49*	*02/04/21 05:11*	*50*
Toluene-d8 (Surr)	*95*		*52 - 141*	*01/27/21 09:49*	*02/04/21 05:11*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		220	45	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10
Benzo[a]anthracene	ND		220	90	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10
Benzo[a]pyrene	**1300**		220	45	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10
Benzo[b]fluoranthene	ND		220	45	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10

Client Sample ID: BT-18A-S-49-20210122 — Lab Sample ID: 410-27301-3

Date Collected: 01/22/21 09:00 — **Matrix: Solid**
Date Received: 01/22/21 15:27 — **Percent Solids: 73.4**

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		220	45	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10
Chrysene	ND		220	45	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10
Fluorene	ND		220	45	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10
Naphthalene	ND		220	90	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10
Phenanthrene	ND		220	45	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10
Pyrene	ND		220	45	ug/Kg	☼	02/03/21 16:23	02/04/21 21:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*39 - 100*	*02/03/21 16:23*	*02/04/21 21:05*	*10*
Nitrobenzene-d5 (Surr)	*52*		*32 - 97*	*02/03/21 16:23*	*02/04/21 21:05*	*10*
p-Terphenyl-d14 (Surr)	*76*		*45 - 108*	*02/03/21 16:23*	*02/04/21 21:05*	*10*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**28**		16	6.7	mg/Kg	☼	02/04/21 16:08	02/05/21 13:26	1
>C12-C22 (1C)	ND		16	6.7	mg/Kg	☼	02/04/21 16:08	02/05/21 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*29*	*S1-*	*54 - 137*	*02/04/21 16:08*	*02/05/21 13:26*	*1*
o- terphenyl (Surr) (1C)	*21*	*S1-*	*52 - 154*	*02/04/21 16:08*	*02/05/21 13:26*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**28**		16	6.8	mg/Kg	☼		02/03/21 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**25**		1.6	0.62	mg/Kg	☼	01/25/21 04:18	01/29/21 12:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**26.6**		1.0	1.0	%			01/26/21 10:37	1

Client Sample ID: EB-20210122 — Lab Sample ID: 410-27301-4

Date Collected: 01/22/21 09:45 — **Matrix: Water**
Date Received: 01/22/21 15:27

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 15:29	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 15:29	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 15:29	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 15:29	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 15:29	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 15:29	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 15:29	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 15:29	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 15:29	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 15:29	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 15:29	1

Client Sample ID: EB-20210122 — Lab Sample ID: 410-27301-4

Date Collected: 01/22/21 09:45 — **Matrix: Water**
Date Received: 01/22/21 15:27

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*01/29/21 15:29*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/29/21 15:29*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*01/29/21 15:29*	*1*
Toluene-d8 (Surr)	*110*		*80 - 120*		*01/29/21 15:29*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 16:31	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 16:31	1
Methane (1C)	ND		5.0	3.0	ug/L		01/25/21 07:44	01/25/21 16:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*95*		*28 - 140*	*01/25/21 07:44*	*01/25/21 16:31*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		01/25/21 23:20	01/26/21 13:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*86*		*46 - 136*	*01/25/21 23:20*	*01/26/21 13:43*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*93*		*46 - 136*	*01/25/21 23:20*	*01/26/21 13:43*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.13	0.096	mg/L		01/28/21 23:25	01/29/21 13:33	1
>C12-C22 (1C)	ND		0.13	0.096	mg/L		01/28/21 23:25	01/29/21 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*85*		*21 - 116*	*01/28/21 23:25*	*01/29/21 13:33*	*1*
o- terphenyl (Surr) (1C)	*96*		*51 - 126*	*01/28/21 23:25*	*01/29/21 13:33*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		0.20	0.074	mg/L			02/03/21 13:36	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.050**	**J**	0.10	0.050	mg/L			01/23/21 06:47	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/27/21 12:35	1
Chloride	ND		0.40	0.20	mg/L			01/23/21 06:47	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**0.22**	**J**	0.50	0.096	mg/L		01/26/21 20:03	01/27/21 13:59	1
Iron	ND		0.20	0.040	mg/L		01/26/21 20:03	01/27/21 13:59	1
Magnesium	ND		0.10	0.040	mg/L		01/26/21 20:03	01/27/21 13:59	1
Potassium	ND		0.50	0.20	mg/L		01/26/21 20:03	01/27/21 18:43	1
Sodium	**1.4**		1.0	0.24	mg/L		01/26/21 20:03	01/27/21 13:59	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

Client Sample ID: EB-20210122

Date Collected: 01/22/21 09:45
Date Received: 01/22/21 15:27

Lab Sample ID: 410-27301-4

Matrix: Water

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.24	J B	0.52	0.073	ug/L		01/26/21 02:57	01/27/21 17:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			01/27/21 01:30	1
Ammonia-N	ND		1.5	0.50	mg/L		01/29/21 18:16	01/29/21 19:34	1
Sulfide	ND		0.30	0.10	mg/L			01/26/21 14:22	1
Total Organic Carbon	ND		1.0	0.50	mg/L			01/26/21 22:29	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-27301-3	BT-18A-S-49-20210122	95	91	92	95
LCS 410-90717/5	Lab Control Sample	98	86	94	93
LCS 410-90717/8	Lab Control Sample	103	90	97	98
LCSD 410-90717/6	Lab Control Sample Dup	98	87	94	94
LCSD 410-90717/9	Lab Control Sample Dup	100	89	95	96
MB 410-90717/10	Method Blank	98	88	93	94

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-27301-1	BT-18A-W-38-20210121	102	93	87	111
410-27301-1 - DL	BT-18A-W-38-20210121	96	95	96	99
410-27301-2	TB-20210122	107	87	94	109
410-27301-4	EB-20210122	107	89	94	110
LCS 410-89453/5	Lab Control Sample	111	92	94	112
LCS 410-89453/7	Lab Control Sample	111	93	94	111
LCS 410-90173/5	Lab Control Sample	98	99	96	100
LCS 410-90173/7	Lab Control Sample	96	98	96	99
LCSD 410-89453/6	Lab Control Sample Dup	110	92	94	111
LCSD 410-89453/8	Lab Control Sample Dup	111	92	92	112
LCSD 410-90173/6	Lab Control Sample Dup	97	99	96	99
LCSD 410-90173/8	Lab Control Sample Dup	95	100	96	100
MB 410-89453/9	Method Blank	108	89	92	111
MB 410-90173/9	Method Blank	97	94	96	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-27301-3	BT-18A-S-49-20210122	64	52	76
LCS 410-90653/2-A	Lab Control Sample	89	74	101
MB 410-90653/1-A	Method Blank	93	73	106

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27301-1
Project/Site: PHL Belmont Terminal Drilling Sampling

NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	Propene1 (28-140)
410-27301-1	BT-18A-W-38-20210121	92
410-27301-2	TB-20210122	97
410-27301-4	EB-20210122	95
LCS 410-87598/2-A	Lab Control Sample	103
LCSD 410-87598/3-A	Lab Control Sample Dup	104
MB 410-87598/1-A	Method Blank	102

Surrogate Legend
Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)
410-27301-1	BT-18A-W-38-20210121	89	89
410-27301-2	TB-20210122	73	87
410-27301-4	EB-20210122	86	93
LCS 410-87912/2-A	Lab Control Sample		85
LCS 410-91260/2-A	Lab Control Sample	75	86
LCSD 410-87912/3-A	Lab Control Sample Dup		90
LCSD 410-91260/3-A	Lab Control Sample Dup	79	91
MB 410-87912/1-A	Method Blank		96
MB 410-91260/1-A	Method Blank	79	90

Surrogate Legend
1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)
410-27301-3	BT-18A-S-49-20210122	29 S1-	21 S1-
LCS 410-91097/2-A	Lab Control Sample	73	103
MB 410-91097/1-A	Method Blank	71	91

Surrogate Legend
CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	CBNZ1 (21-116)	OTP1 (51-126)
410-27301-1	BT-18A-W-38-20210121	117 S1+	72

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27301-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(21-116)	(51-126)								
410-27301-4	EB-20210122	85	96								
LCS 410-89282/2-A	Lab Control Sample	73	95								
LCSD 410-89282/3-A	Lab Control Sample Dup	76	100								
MB 410-89282/1-A	Method Blank	83	91								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-90717/10
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/03/21 23:17	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/03/21 23:17	50
Toluene	ND		250	30	ug/Kg			02/03/21 23:17	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/03/21 23:17	50
Benzene	ND		250	25	ug/Kg			02/03/21 23:17	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/03/21 23:17	50
Isopropylbenzene	ND		250	20	ug/Kg			02/03/21 23:17	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/03/21 23:17	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/03/21 23:17	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/03/21 23:17	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/03/21 23:17	50
Xylenes, Total	ND		500	70	ug/Kg			02/03/21 23:17	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*		*02/03/21 23:17*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*02/03/21 23:17*	*50*
Dibromofluoromethane (Surr)	*93*		*50 - 141*		*02/03/21 23:17*	*50*
Toluene-d8 (Surr)	*94*		*52 - 141*		*02/03/21 23:17*	*50*

Lab Sample ID: LCS 410-90717/5
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1000		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	1000		ug/Kg		100	73 - 120
Toluene	1000	1020		ug/Kg		102	80 - 120
Methyl tertiary butyl ether	1000	1090		ug/Kg		109	72 - 120
Benzene	1000	1020		ug/Kg		102	80 - 120
Naphthalene	1000	981		ug/Kg		98	48 - 130
1,2,4-Trimethylbenzene	1000	997		ug/Kg		100	73 - 120
Isopropylbenzene	1000	979		ug/Kg		98	77 - 120
1,2-Dibromoethane	1000	1080		ug/Kg		108	76 - 120
1,2-Dichloroethane	1000	956		ug/Kg		96	71 - 128
t-Butyl alcohol	10000	8280		ug/Kg		83	74 - 121
Xylenes, Total	3000	3080		ug/Kg		103	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*86*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*93*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-90717/8
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	57000		ug/Kg		114	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-90717/6
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	1000		ug/Kg		100	78 - 120	0	30
1,3,5-Trimethylbenzene			1000	994		ug/Kg		99	73 - 120	1	30
Toluene			1000	1010		ug/Kg		101	80 - 120	0	30
Methyl tertiary butyl ether			1000	1080		ug/Kg		108	72 - 120	1	30
Benzene			1000	1020		ug/Kg		102	80 - 120	0	30
Naphthalene			1000	995		ug/Kg		99	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	977		ug/Kg		98	73 - 120	2	30
Isopropylbenzene			1000	989		ug/Kg		99	77 - 120	1	30
1,2-Dibromoethane			1000	1080		ug/Kg		108	76 - 120	0	30
1,2-Dichloroethane			1000	943		ug/Kg		94	71 - 128	1	30
t-Butyl alcohol			10000	7600		ug/Kg		76	74 - 121	9	30
Xylenes, Total			3000	3070		ug/Kg		102	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*94*		*52 - 141*

Lab Sample ID: LCSD 410-90717/9
Matrix: Solid
Analysis Batch: 90717

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	54600		ug/Kg		109	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-89453/9
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 14:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 14:16	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 14:16	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 14:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 14:16	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 14:16	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 14:16	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 14:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/29/21 14:16*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/29/21 14:16*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*01/29/21 14:16*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/29/21 14:16*	*1*

Lab Sample ID: LCS 410-89453/5
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	21.3		ug/L		107	75 - 120
1,2-Dichloroethane	20.0	18.5		ug/L		92	73 - 124
1,3,5-Trimethylbenzene	20.0	21.4		ug/L		107	75 - 120
Benzene	20.0	18.5		ug/L		92	80 - 120
Ethylbenzene	20.0	22.1		ug/L		111	80 - 120
Isopropylbenzene	20.0	20.6		ug/L		103	80 - 120
Methyl tertiary butyl ether	20.0	17.1		ug/L		85	69 - 122
Naphthalene	20.0	18.7		ug/L		94	53 - 124
Toluene	20.0	22.5		ug/L		113	80 - 120
Xylenes, Total	60.0	63.3		ug/L		106	80 - 120
t-Butyl alcohol	200	204		ug/L		102	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	992		ug/L		99	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/6
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.6		ug/L		103	75 - 120	4	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	4	30
1,3,5-Trimethylbenzene			20.0	20.9		ug/L		104	75 - 120	3	30
Benzene			20.0	18.3		ug/L		92	80 - 120	1	30
Ethylbenzene			20.0	21.1		ug/L		106	80 - 120	5	30
Isopropylbenzene			20.0	19.6		ug/L		98	80 - 120	5	30
Methyl tertiary butyl ether			20.0	17.2		ug/L		86	69 - 122	1	30
Naphthalene			20.0	18.4		ug/L		92	53 - 124	2	30
Toluene			20.0	21.1		ug/L		105	80 - 120	7	30
Xylenes, Total			60.0	59.7		ug/L		100	80 - 120	6	30
t-Butyl alcohol			200	205		ug/L		102	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/8
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1020		ug/L		102	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: MB 410-90173/9
Matrix: Water
Analysis Batch: 90173

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/02/21 18:32	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/02/21 18:32	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-90173/9
Matrix: Water
Analysis Batch: 90173

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/02/21 18:32	1
Benzene	ND		1.0	0.20	ug/L			02/02/21 18:32	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/02/21 18:32	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/02/21 18:32	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/02/21 18:32	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/02/21 18:32	1
Toluene	ND		1.0	0.20	ug/L			02/02/21 18:32	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/02/21 18:32	1
t-Butyl alcohol	ND		50	12	ug/L			02/02/21 18:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*02/02/21 18:32*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*02/02/21 18:32*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*02/02/21 18:32*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*02/02/21 18:32*	*1*

Lab Sample ID: LCS 410-90173/5
Matrix: Water
Analysis Batch: 90173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	16.8		ug/L		84	75 - 120
1,2-Dichloroethane	20.0	16.8		ug/L		84	73 - 124
1,3,5-Trimethylbenzene	20.0	16.7		ug/L		84	75 - 120
Benzene	20.0	17.4		ug/L		87	80 - 120
Ethylbenzene	20.0	17.4		ug/L		87	80 - 120
Isopropylbenzene	20.0	16.9		ug/L		85	80 - 120
Methyl tertiary butyl ether	20.0	17.4		ug/L		87	69 - 122
Naphthalene	20.0	17.3		ug/L		87	53 - 124
Toluene	20.0	17.8		ug/L		89	80 - 120
Xylenes, Total	60.0	52.7		ug/L		88	80 - 120
t-Butyl alcohol	200	186		ug/L		93	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-90173/7
Matrix: Water
Analysis Batch: 90173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1000		ug/L		100	67 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-90173/7
Matrix: Water
Analysis Batch: 90173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-90173/6
Matrix: Water
Analysis Batch: 90173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	16.9		ug/L		85	75 - 120	1	30
1,2-Dichloroethane			20.0	16.8		ug/L		84	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	16.8		ug/L		84	75 - 120	0	30
Benzene			20.0	17.5		ug/L		87	80 - 120	0	30
Ethylbenzene			20.0	17.5		ug/L		87	80 - 120	0	30
Isopropylbenzene			20.0	17.2		ug/L		86	80 - 120	1	30
Methyl tertiary butyl ether			20.0	17.4		ug/L		87	69 - 122	0	30
Naphthalene			20.0	17.6		ug/L		88	53 - 124	1	30
Toluene			20.0	17.9		ug/L		89	80 - 120	0	30
Xylenes, Total			60.0	53.3		ug/L		89	80 - 120	1	30
t-Butyl alcohol			200	186		ug/L		93	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-90173/8
Matrix: Water
Analysis Batch: 90173

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	984		ug/L		98	67 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-90653/1-A
Matrix: Solid
Analysis Batch: 90757

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/03/21 16:23	02/04/21 14:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-90653/1-A
Matrix: Solid
Analysis Batch: 90757

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		17	6.7	ug/Kg		02/03/21 16:23	02/04/21 14:19	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/03/21 16:23	02/04/21 14:19	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/03/21 16:23	02/04/21 14:19	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/03/21 16:23	02/04/21 14:19	1
Chrysene	ND		17	3.3	ug/Kg		02/03/21 16:23	02/04/21 14:19	1
Fluorene	ND		17	3.3	ug/Kg		02/03/21 16:23	02/04/21 14:19	1
Naphthalene	ND		17	6.7	ug/Kg		02/03/21 16:23	02/04/21 14:19	1
Phenanthrene	ND		17	3.3	ug/Kg		02/03/21 16:23	02/04/21 14:19	1
Pyrene	ND		17	3.3	ug/Kg		02/03/21 16:23	02/04/21 14:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*93*		*39 - 100*	*02/03/21 16:23*	*02/04/21 14:19*	*1*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*	*02/03/21 16:23*	*02/04/21 14:19*	*1*
p-Terphenyl-d14 (Surr)	*106*		*45 - 108*	*02/03/21 16:23*	*02/04/21 14:19*	*1*

Lab Sample ID: LCS 410-90653/2-A
Matrix: Solid
Analysis Batch: 90757

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90653

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1610		ug/Kg		97	75 - 114
Benzo[a]anthracene	1670	1570		ug/Kg		94	73 - 114
Benzo[a]pyrene	1670	1800		ug/Kg		108	76 - 113
Benzo[b]fluoranthene	1670	1630		ug/Kg		98	73 - 117
Benzo[g,h,i]perylene	1670	1730		ug/Kg		104	77 - 114
Chrysene	1670	1550		ug/Kg		93	66 - 111
Fluorene	1670	1550		ug/Kg		93	62 - 110
Naphthalene	1670	1390		ug/Kg		83	60 - 94
Phenanthrene	1670	1610		ug/Kg		97	74 - 112
Pyrene	1670	1560		ug/Kg		94	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*89*		*39 - 100*
Nitrobenzene-d5 (Surr)	*74*		*32 - 97*
p-Terphenyl-d14 (Surr)	*101*		*45 - 108*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-87598/1-A
Matrix: Water
Analysis Batch: 87619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87598

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 10:10	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/25/21 07:44	01/25/21 10:10	1
Methane (1C)	ND		5.0	3.0	ug/L		01/25/21 07:44	01/25/21 10:10	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-87598/1-A
Matrix: Water
Analysis Batch: 87619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87598

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	102		28 - 140	01/25/21 07:44	01/25/21 10:10	1

Lab Sample ID: LCS 410-87598/2-A
Matrix: Water
Analysis Batch: 87619

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87598

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	60.4		ug/L		102	85 - 115
Ethene (1C)	60.4	61.5		ug/L		102	83 - 115
Methane (1C)	59.4	63.5		ug/L		107	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	103		28 - 140

Lab Sample ID: LCSD 410-87598/3-A
Matrix: Water
Analysis Batch: 87619

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87598

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)	59.4	60.7		ug/L		102	85 - 115	0	20
Ethene (1C)	60.4	61.8		ug/L		102	83 - 115	0	20
Methane (1C)	59.4	64.1		ug/L		108	85 - 115	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Propene (1C)	104		28 - 140

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-87912/1-A
Matrix: Water
Analysis Batch: 88066

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/25/21 23:20	01/26/21 10:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (2C)	96		46 - 136	01/25/21 23:20	01/26/21 10:23	1

Lab Sample ID: LCS 410-87912/2-A
Matrix: Water
Analysis Batch: 88066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87912

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.108		ug/L		84	60 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,1,2,2-Tetrachloroethane (Surr) (2C)	85		46 - 136

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: LCSD 410-87912/3-A
Matrix: Water
Analysis Batch: 88066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 87912

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.115		ug/L		90	60 - 140	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*90*		*46 - 136*

Lab Sample ID: MB 410-91260/1-A
Matrix: Water
Analysis Batch: 91324

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91260

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		02/05/21 01:19	02/05/21 09:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*79*		*46 - 136*	*02/05/21 01:19*	*02/05/21 09:03*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*90*		*46 - 136*	*02/05/21 01:19*	*02/05/21 09:03*	*1*

Lab Sample ID: LCS 410-91260/2-A
Matrix: Water
Analysis Batch: 91324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91260

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.131		ug/L		102	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*75*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*86*		*46 - 136*

Lab Sample ID: LCSD 410-91260/3-A
Matrix: Water
Analysis Batch: 91324

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 91260

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.142		ug/L		111	60 - 140	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*79*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*91*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-89282/1-A
Matrix: Water
Analysis Batch: 89474

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89282

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.10	0.074	mg/L		01/28/21 23:25	01/29/21 11:24	1
>C12-C22 (1C)	ND		0.10	0.074	mg/L		01/28/21 23:25	01/29/21 11:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*83*		*21 - 116*	*01/28/21 23:25*	*01/29/21 11:24*	*1*
o- terphenyl (Surr) (1C)	*91*		*51 - 126*	*01/28/21 23:25*	*01/29/21 11:24*	*1*

Lab Sample ID: LCS 410-89282/2-A
Matrix: Water
Analysis Batch: 89474

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89282

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.803	0.779		mg/L		97	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*73*		*21 - 116*
o- terphenyl (Surr) (1C)	*95*		*51 - 126*

Lab Sample ID: LCSD 410-89282/3-A
Matrix: Water
Analysis Batch: 89474

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 89282

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.803	0.861		mg/L		107	53 - 115	10	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*76*		*21 - 116*
o- terphenyl (Surr) (1C)	*100*		*51 - 126*

Lab Sample ID: MB 410-91097/1-A
Matrix: Solid
Analysis Batch: 91363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91097

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*71*		*54 - 137*	*02/04/21 16:08*	*02/05/21 11:38*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*02/04/21 16:08*	*02/05/21 11:38*	*1*

Lab Sample ID: LCS 410-91097/2-A
Matrix: Solid
Analysis Batch: 91363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91097

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	116		mg/Kg		86	64 - 122		

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 410-91097/2-A
Matrix: Solid
Analysis Batch: 91363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91097

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	73		54 - 137
o- terphenyl (Surr) (1C)	103		52 - 154

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-87410/4
Matrix: Water
Analysis Batch: 87410

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			01/23/21 05:23	1

Lab Sample ID: LCS 410-87410/3
Matrix: Water
Analysis Batch: 87410

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	0.750	0.788		mg/L		105	90 - 110

Lab Sample ID: 410-27301-1 MS
Matrix: Water
Analysis Batch: 87410

Client Sample ID: BT-18A-W-38-20210121
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	0.39	J FH	2.50	3.18	FH	mg/L		112	90 - 110

Lab Sample ID: 410-27301-1 DU
Matrix: Water
Analysis Batch: 87410

Client Sample ID: BT-18A-W-38-20210121
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrogen, Nitrate	0.39	J FH	0.401	J	mg/L		2	15

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-87409/4
Matrix: Water
Analysis Batch: 87409

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/23/21 05:23	1
Chloride	ND		0.40	0.20	mg/L			01/23/21 05:23	1

Lab Sample ID: LCS 410-87409/3
Matrix: Water
Analysis Batch: 87409

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.82		mg/L		104	90 - 110
Chloride	3.00	3.01		mg/L		100	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 410-87799/4
Matrix: Water
Analysis Batch: 87799

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/25/21 15:00	1
Chloride	ND		0.40	0.20	mg/L			01/25/21 15:00	1

Lab Sample ID: LCS 410-87799/3
Matrix: Water
Analysis Batch: 87799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.94		mg/L		106	90 - 110
Chloride	3.00	3.10		mg/L		103	90 - 110

Lab Sample ID: MB 410-88474/4
Matrix: Water
Analysis Batch: 88474

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/27/21 11:46	1
Chloride	ND		0.40	0.20	mg/L			01/27/21 11:46	1

Lab Sample ID: LCS 410-88474/3
Matrix: Water
Analysis Batch: 88474

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.27		mg/L		97	90 - 110
Chloride	3.00	2.78		mg/L		93	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-87550/1-A
Matrix: Solid
Analysis Batch: 89534

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.58	mg/Kg		01/25/21 04:18	01/29/21 11:25	1

Lab Sample ID: LCS 410-87550/2-A
Matrix: Solid
Analysis Batch: 89534

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.88	2.44		mg/Kg		85	80 - 120

Lab Sample ID: MB 410-88300/1-A
Matrix: Water
Analysis Batch: 88656

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 88300

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		01/26/21 20:03	01/27/21 13:30	1
Iron	ND		0.20	0.040	mg/L		01/26/21 20:03	01/27/21 13:30	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 410-88300/1-A
Matrix: Water
Analysis Batch: 88656

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 88300

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		0.10	0.040	mg/L		01/26/21 20:03	01/27/21 13:30	1
Sodium	ND		1.0	0.24	mg/L		01/26/21 20:03	01/27/21 13:30	1

Lab Sample ID: MB 410-88300/1-A
Matrix: Water
Analysis Batch: 88761

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 88300

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.50	0.20	mg/L		01/26/21 20:03	01/27/21 18:33	1

Lab Sample ID: LCS 410-88300/2-A
Matrix: Water
Analysis Batch: 88656

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 88300

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.422	J	mg/L		105	80 - 120
Iron	0.400	0.401		mg/L		100	80 - 120
Magnesium	0.200	0.215		mg/L		107	80 - 120
Sodium	2.00	2.01		mg/L		101	80 - 120

Lab Sample ID: LCS 410-88300/2-A
Matrix: Water
Analysis Batch: 88761

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 88300

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	6.00	6.09		mg/L		101	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-87925/1-A
Matrix: Water
Analysis Batch: 88954

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 87925

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.196	J B	0.52	0.073	ug/L		01/26/21 02:57	01/27/21 16:26	1

Lab Sample ID: LCS 410-87925/2-A
Matrix: Water
Analysis Batch: 88954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 87925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	30.5		ug/L		102	90 - 115

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-88651/36
Matrix: Water
Analysis Batch: 88651

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			01/27/21 00:25	1

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: LCS 410-88651/37
Matrix: Water
Analysis Batch: 88651

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	173		mg/L		92	82 - 106

Lab Sample ID: LCSD 410-88651/40
Matrix: Water
Analysis Batch: 88651

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	189	174		mg/L		92	82 - 106	0	10

Lab Sample ID: 410-27301-1 DU
Matrix: Water
Analysis Batch: 88651

Client Sample ID: BT-18A-W-38-20210121
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	270		266		mg/L		0.5	5

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-89627/1-A
Matrix: Water
Analysis Batch: 89632

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89627

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		01/29/21 18:16	01/29/21 19:34	1

Lab Sample ID: LCS 410-89627/2-A
Matrix: Water
Analysis Batch: 89632

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89627

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	10.0	9.42		mg/L		94	93 - 100

Lab Sample ID: LCSD 410-89627/3-A
Matrix: Water
Analysis Batch: 89632

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 89627

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N	10.0	9.39		mg/L		94	93 - 100	0	5

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-88062/1
Matrix: Water
Analysis Batch: 88062

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			01/26/21 10:08	1

Method: 4500 S2 D-2011 - Sulfide, Total (Continued)

Lab Sample ID: LCS 410-88062/13
Matrix: Water
Analysis Batch: 88062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1.00	1.04		mg/L		104	90 - 110

Lab Sample ID: MB 410-88154/1
Matrix: Water
Analysis Batch: 88154

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			01/26/21 14:22	1

Lab Sample ID: LCS 410-88154/13
Matrix: Water
Analysis Batch: 88154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1.00	1.04		mg/L		104	90 - 110

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-88542/38
Matrix: Water
Analysis Batch: 88542

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			01/26/21 21:33	1

Lab Sample ID: MB 410-88542/5
Matrix: Water
Analysis Batch: 88542

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			01/26/21 13:51	1

Lab Sample ID: LCS 410-88542/37
Matrix: Water
Analysis Batch: 88542

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	24.7		mg/L		98	91 - 113

Lab Sample ID: LCS 410-88542/4
Matrix: Water
Analysis Batch: 88542

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	24.5		mg/L		98	91 - 113

GC/MS VOA

Prep Batch: 88526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	5035	

Analysis Batch: 89453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	8260C/UST	
410-27301-2	TB-20210122	Total/NA	Water	8260C/UST	
410-27301-4	EB-20210122	Total/NA	Water	8260C/UST	
MB 410-89453/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-89453/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-89453/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-89453/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-89453/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 90173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1 - DL	BT-18A-W-38-20210121	Total/NA	Water	8260C/UST	
MB 410-90173/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-90173/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-90173/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-90173/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-90173/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 90717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	8260C	88526
MB 410-90717/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-90717/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-90717/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-90717/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-90717/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 90653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	3546	
MB 410-90653/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-90653/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 90757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	8270D	90653
MB 410-90653/1-A	Method Blank	Total/NA	Solid	8270D	90653
LCS 410-90653/2-A	Lab Control Sample	Total/NA	Solid	8270D	90653

GC VOA

Prep Batch: 87598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	RSK-175	
410-27301-2	TB-20210122	Total/NA	Water	RSK-175	
410-27301-4	EB-20210122	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 87598 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-87598/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-87598/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-87598/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 87619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	RSK-175	87598
410-27301-2	TB-20210122	Total/NA	Water	RSK-175	87598
410-27301-4	EB-20210122	Total/NA	Water	RSK-175	87598
MB 410-87598/1-A	Method Blank	Total/NA	Water	RSK-175	87598
LCS 410-87598/2-A	Lab Control Sample	Total/NA	Water	RSK-175	87598
LCSD 410-87598/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	87598

GC Semi VOA

Prep Batch: 87912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	8011	
410-27301-4	EB-20210122	Total/NA	Water	8011	
MB 410-87912/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-87912/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-87912/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 88066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	8011	87912
410-27301-4	EB-20210122	Total/NA	Water	8011	87912
MB 410-87912/1-A	Method Blank	Total/NA	Water	8011	87912
LCS 410-87912/2-A	Lab Control Sample	Total/NA	Water	8011	87912
LCSD 410-87912/3-A	Lab Control Sample Dup	Total/NA	Water	8011	87912

Prep Batch: 89282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	3510C	
410-27301-4	EB-20210122	Total/NA	Water	3510C	
MB 410-89282/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-89282/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-89282/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 89474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	8015C TPH	89282
410-27301-4	EB-20210122	Total/NA	Water	8015C TPH	89282
MB 410-89282/1-A	Method Blank	Total/NA	Water	8015C TPH	89282
LCS 410-89282/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	89282
LCSD 410-89282/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	89282

Prep Batch: 91097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	3546	
MB 410-91097/1-A	Method Blank	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 91097 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 91260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-2	TB-20210122	Total/NA	Water	8011	
MB 410-91260/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-91260/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-91260/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 91324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-2	TB-20210122	Total/NA	Water	8011	91260
MB 410-91260/1-A	Method Blank	Total/NA	Water	8011	91260
LCS 410-91260/2-A	Lab Control Sample	Total/NA	Water	8011	91260
LCSD 410-91260/3-A	Lab Control Sample Dup	Total/NA	Water	8011	91260

Analysis Batch: 91363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	8015C TPH	91097
MB 410-91097/1-A	Method Blank	Total/NA	Solid	8015C TPH	91097
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	91097

Analysis Batch: 103628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	Total TPH	
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	Total TPH	
410-27301-4	EB-20210122	Total/NA	Water	Total TPH	

HPLC/IC

Analysis Batch: 87409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-4	EB-20210122	Total/NA	Water	EPA 300.0 R2.1	
MB 410-87409/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-87409/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 87410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	EPA 300.0 R2.1	
410-27301-4	EB-20210122	Total/NA	Water	EPA 300.0 R2.1	
MB 410-87410/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-87410/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-27301-1 MS	BT-18A-W-38-20210121	Total/NA	Water	EPA 300.0 R2.1	
410-27301-1 DU	BT-18A-W-38-20210121	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 87799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	EPA 300.0 R2.1	
MB 410-87799/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-87799/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

HPLC/IC

Analysis Batch: 88474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-4	EB-20210122	Total/NA	Water	EPA 300.0 R2.1	
MB 410-88474/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-88474/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 87550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	3050B	
MB 410-87550/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-87550/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Filtration Batch: 87920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Dissolved	Water	Filtration	
410-27301-4	EB-20210122	Dissolved	Water	Filtration	

Prep Batch: 87925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Dissolved	Water	Non-Digest Prep	87920
410-27301-4	EB-20210122	Dissolved	Water	Non-Digest Prep	87920
MB 410-87925/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-87925/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Prep Batch: 88300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total Recoverable	Water	3005A	
410-27301-4	EB-20210122	Total Recoverable	Water	3005A	
MB 410-88300/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-88300/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 88656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total Recoverable	Water	6010C	88300
410-27301-4	EB-20210122	Total Recoverable	Water	6010C	88300
MB 410-88300/1-A	Method Blank	Total Recoverable	Water	6010C	88300
LCS 410-88300/2-A	Lab Control Sample	Total Recoverable	Water	6010C	88300

Analysis Batch: 88761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total Recoverable	Water	6010C	88300
410-27301-4	EB-20210122	Total Recoverable	Water	6010C	88300
MB 410-88300/1-A	Method Blank	Total Recoverable	Water	6010C	88300
LCS 410-88300/2-A	Lab Control Sample	Total Recoverable	Water	6010C	88300

Analysis Batch: 88954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Dissolved	Water	6020A	87925
410-27301-4	EB-20210122	Dissolved	Water	6020A	87925
MB 410-87925/1-A	Method Blank	Total/NA	Water	6020A	87925
LCS 410-87925/2-A	Lab Control Sample	Total/NA	Water	6020A	87925

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

Metals

Analysis Batch: 89534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	6010C	87550
MB 410-87550/1-A	Method Blank	Total/NA	Solid	6010C	87550
LCS 410-87550/2-A	Lab Control Sample	Total/NA	Solid	6010C	87550

General Chemistry

Analysis Batch: 88062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	4500 S2 D-2011	
MB 410-88062/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-88062/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Analysis Batch: 88071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-3	BT-18A-S-49-20210122	Total/NA	Solid	Moisture	

Analysis Batch: 88154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-4	EB-20210122	Total/NA	Water	4500 S2 D-2011	
MB 410-88154/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-88154/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Analysis Batch: 88542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	5310C-2011	
410-27301-4	EB-20210122	Total/NA	Water	5310C-2011	
MB 410-88542/38	Method Blank	Total/NA	Water	5310C-2011	
MB 410-88542/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-88542/37	Lab Control Sample	Total/NA	Water	5310C-2011	
LCS 410-88542/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 88651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	2320B-2011	
410-27301-4	EB-20210122	Total/NA	Water	2320B-2011	
MB 410-88651/36	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-88651/37	Lab Control Sample	Total/NA	Water	2320B-2011	
LCSD 410-88651/40	Lab Control Sample Dup	Total/NA	Water	2320B-2011	
410-27301-1 DU	BT-18A-W-38-20210121	Total/NA	Water	2320B-2011	

Prep Batch: 89627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	4500 NH3 B-2011	
410-27301-4	EB-20210122	Total/NA	Water	4500 NH3 B-2011	
MB 410-89627/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-89627/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-89627/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

General Chemistry

Analysis Batch: 89632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27301-1	BT-18A-W-38-20210121	Total/NA	Water	4500 NH3 C-2011	89627
410-27301-4	EB-20210122	Total/NA	Water	4500 NH3 C-2011	89627
MB 410-89627/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	89627
LCS 410-89627/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	89627
LCSD 410-89627/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	89627

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

Client Sample ID: BT-18A-W-38-20210121

Lab Sample ID: 410-27301-1

Date Collected: 01/21/21 16:10

Matrix: Water

Date Received: 01/22/21 15:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	89453	01/29/21 21:05	UKAD	ELLE
Total/NA	Analysis	8260C/UST	DL	500	90173	02/02/21 20:09	UKAD	ELLE
Total/NA	Prep	RSK-175			87598	01/25/21 07:44	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	87619	01/25/21 15:55	LXF2	ELLE
Total/NA	Prep	8011			87912	01/25/21 23:20	UKQ8	ELLE
Total/NA	Analysis	8011		1	88066	01/26/21 13:26	AC3T	ELLE
Total/NA	Prep	3510C			89282	01/28/21 23:25	USL7	ELLE
Total/NA	Analysis	8015C TPH		1	89474	01/29/21 13:12	UHEW	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	87410	01/23/21 05:39	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	87799	01/25/21 19:56	W5UX	ELLE
Total Recoverable	Prep	3005A			88300	01/26/21 20:03	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	88656	01/27/21 13:56	UCIG	ELLE
Total Recoverable	Prep	3005A			88300	01/26/21 20:03	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	88761	01/27/21 18:40	UCIG	ELLE
Dissolved	Filtration	Filtration			87920	01/26/21 02:46	UJL8	ELLE
Dissolved	Prep	Non-Digest Prep			87925	01/26/21 02:57	UJL8	ELLE
Dissolved	Analysis	6020A		1	88954	01/27/21 17:16	V5SW	ELLE
Total/NA	Analysis	2320B-2011		1	88651	01/27/21 01:16	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			89627	01/29/21 18:16	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	89632	01/29/21 19:34	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	88062	01/26/21 10:08	USE1	ELLE
Total/NA	Analysis	5310C-2011		1	88542	01/26/21 20:37	KGQ6	ELLE

Client Sample ID: TB-20210122

Lab Sample ID: 410-27301-2

Date Collected: 01/22/21 00:00

Matrix: Water

Date Received: 01/22/21 15:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	89453	01/29/21 15:04	UKAD	ELLE
Total/NA	Prep	RSK-175			87598	01/25/21 07:44	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	87619	01/25/21 16:13	LXF2	ELLE
Total/NA	Prep	8011			91260	02/05/21 01:19	K2IL	ELLE
Total/NA	Analysis	8011		1	91324	02/05/21 09:53	UAMZ	ELLE

Client Sample ID: BT-18A-S-49-20210122

Lab Sample ID: 410-27301-3

Date Collected: 01/22/21 09:00

Matrix: Solid

Date Received: 01/22/21 15:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	88071	01/26/21 10:37	UVJN	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-27301-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-18A-S-49-20210122
Lab Sample ID: 410-27301-3

Date Collected: 01/22/21 09:00
Matrix: Solid
Date Received: 01/22/21 15:27
Percent Solids: 73.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			88526	01/27/21 09:49	Z8FW	ELLE
Total/NA	Analysis	8260C		50	90717	02/04/21 05:11	ULCP	ELLE
Total/NA	Prep	3546			90653	02/03/21 16:23	DN9W	ELLE
Total/NA	Analysis	8270D		10	90757	02/04/21 21:05	SJ89	ELLE
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	91363	02/05/21 13:26	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Prep	3050B			87550	01/25/21 04:18	UAMX	ELLE
Total/NA	Analysis	6010C		1	89534	01/29/21 12:04	MDP5	ELLE

Client Sample ID: EB-20210122
Lab Sample ID: 410-27301-4

Date Collected: 01/22/21 09:45
Matrix: Water
Date Received: 01/22/21 15:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	89453	01/29/21 15:29	UKAD	ELLE
Total/NA	Prep	RSK-175			87598	01/25/21 07:44	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	87619	01/25/21 16:31	LXF2	ELLE
Total/NA	Prep	8011			87912	01/25/21 23:20	UKQ8	ELLE
Total/NA	Analysis	8011		1	88066	01/26/21 13:43	AC3T	ELLE
Total/NA	Prep	3510C			89282	01/28/21 23:25	USL7	ELLE
Total/NA	Analysis	8015C TPH		1	89474	01/29/21 13:33	UHEW	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	87409	01/23/21 06:47	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	87410	01/23/21 06:47	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	88474	01/27/21 12:35	GJ35	ELLE
Total Recoverable	Prep	3005A			88300	01/26/21 20:03	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	88656	01/27/21 13:59	UCIG	ELLE
Total Recoverable	Prep	3005A			88300	01/26/21 20:03	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	88761	01/27/21 18:43	UCIG	ELLE
Dissolved	Filtration	Filtration			87920	01/26/21 02:46	UJL8	ELLE
Dissolved	Prep	Non-Digest Prep			87925	01/26/21 02:57	UJL8	ELLE
Dissolved	Analysis	6020A		1	88954	01/27/21 17:00	V5SW	ELLE
Total/NA	Analysis	2320B-2011		1	88651	01/27/21 01:30	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			89627	01/29/21 18:16	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	89632	01/29/21 19:34	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	88154	01/26/21 14:22	USE1	ELLE
Total/NA	Analysis	5310C-2011		1	88542	01/26/21 22:29	KGQ6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-27301-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-27301-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-27301-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-27301-1	BT-18A-W-38-20210121	Water	01/21/21 16:10	01/22/21 15:27	
410-27301-2	TB-20210122	Water	01/22/21 00:00	01/22/21 15:27	
410-27301-3	BT-18A-S-49-20210122	Solid	01/22/21 09:00	01/22/21 15:27	
410-27301-4	EB-20210122	Water	01/22/21 09:45	01/22/21 15:27	

Environmental Analysis Request and Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-27301 Chain of Custody

Use only _____

COC #616285

Client Information

Client: Evergreen c/o Stantec	Acct. #:
Project Name/#: FHL - Belmont Terminal Drilling & Sampling	PWSID #:
Project Manager: Andrew Kirkpatrick	P.O. #:
Sampler: Dave Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water ☒ Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank / equipment blank

Analysis Requested

Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO (Modified 8015)	VOC 8260 C/D	Lead (PAH 8270 D)	Sulfide, Metal (Cobalt)	Chloride, Nitrate, Nitrite, Sulfate	EDB and Volatile Halocarbons	Total Alkalinity EPA 310.2	TOC	Ammonia Nitrogen
BT-18A-W-38-20210119-1	1/21/21	1610	X		19	X	X	X		X	X	X	X	X	X
TB-20210122	1/8/21	—			1			X				X			
BT-18A-S-49-20210122	1/22/21	0900	X		6	X	X	X	X						
EB-20210122	1/22/21	0945	X		19	X	X	X		X	X	X	X	X	X

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes

H=HCl	T=Thiosulfate
N=HNO_3	B=NaOH
S=H_2SO_4	P=H_3PO_4
F=Field Filtered	O=Other

Remarks

* Lab filter dissolved Lead

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: Andrew.Kirkpatrick@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	1/22/21	1320		1/22/21	0:20
	1/22/21	1504			
				1/22/21	15:27

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 2.1-4.9 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-27301-1

Login Number: 27301
List Number: 1
Creator: Metzger, Katherine A

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-27600-1
Client Project/Site: PHL: Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:30:33 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:30:33 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
FH	MS and/or MSD recovery above control limits.

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Job ID: 410-27600-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-27600-1

Revision
The report being provided is a revision of the original report sent on 2/12/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/26/2021 4:53 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.7°C

GC/MS VOA
Method 8260C: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: BT-18B-S-26-20210126 (410-27600-3). Elevated reporting limits (RLs) are provided.

Method 8260C: Reanalysis of the following sample was performed outside of the analytical holding time due to laboratory error : BT-18B-S-11-20210126 (410-27600-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-18B-S-11-20210126 — Lab Sample ID: 410-27600-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	7400		7000	560	ug/Kg	1000	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	720	J	7000	700	ug/Kg	1000	☼	8260C	Total/NA
Toluene	150000		7000	840	ug/Kg	1000	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	1200	J	7000	700	ug/Kg	1000	☼	8260C	Total/NA
Isopropylbenzene	16000		7000	560	ug/Kg	1000	☼	8260C	Total/NA
C4-C12-TPH-GRO	1300000		150000	61000	ug/Kg	1000	☼	8260C	Total/NA
Xylenes, Total	33000		14000	2000	ug/Kg	1000	☼	8260C	Total/NA
Benzene - DL	880000	H	70000	7000	ug/Kg	10000	☼	8260C	Total/NA
Anthracene	220		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	220		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	170		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	170		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	100		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Chrysene	220		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Fluorene	200		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	650		20	7.8	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	840	FH	20	4.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	470	FH	20	3.9	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	330		140	59	mg/Kg	10	☼	8015C TPH	Total/NA
>C12-C22 (1C)	940		140	59	mg/Kg	10	☼	8015C TPH	Total/NA
Total Reported TPH	1300		14	5.9	mg/Kg	1	☼	Total TPH	Total/NA
Lead	17		1.3	0.54	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210126 — Lab Sample ID: 410-27600-2

No Detections.

Client Sample ID: BT-18B-S-26-20210126 — Lab Sample ID: 410-27600-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	7600	J	14000	1100	ug/Kg	2000	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	1600	J	14000	1400	ug/Kg	2000	☼	8260C	Total/NA
Toluene	62000		14000	1700	ug/Kg	2000	☼	8260C	Total/NA
Benzene	640000		14000	1400	ug/Kg	2000	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	3800	J	14000	1400	ug/Kg	2000	☼	8260C	Total/NA
Isopropylbenzene	15000		14000	1100	ug/Kg	2000	☼	8260C	Total/NA
C4-C12-TPH-GRO	1100000		300000	120000	ug/Kg	2000	☼	8260C	Total/NA
Xylenes, Total	37000		28000	3900	ug/Kg	2000	☼	8260C	Total/NA
Anthracene	110		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	160		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	90		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	120		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	69		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Chrysene	160		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Fluorene	120		20	4.0	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	360		20	8.1	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	530		20	4.8	ug/Kg	1	☼	8270D	Total/NA
Pyrene	320		20	4.0	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	150		74	31	mg/Kg	5	☼	8015C TPH	Total/NA
>C12-C22 (1C)	830		74	31	mg/Kg	5	☼	8015C TPH	Total/NA
Total Reported TPH	980		15	6.1	mg/Kg	1	☼	Total TPH	Total/NA
Lead	30		1.4	0.55	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-18B-S-11-20210126 Lab Sample ID: 410-27600-1

Date Collected: 01/26/21 09:00 **Matrix: Solid**
Date Received: 01/26/21 16:53 **Percent Solids: 85.1**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	7400		7000	560	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
1,3,5-Trimethylbenzene	720	J	7000	700	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
Toluene	150000		7000	840	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
Methyl tertiary butyl ether	ND		7000	700	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
1,2,4-Trimethylbenzene	1200	J	7000	700	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
Isopropylbenzene	16000		7000	560	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
1,2-Dibromoethane	ND		7000	560	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
1,2-Dichloroethane	ND		7000	840	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
C4-C12-TPH-GRO	1300000		150000	61000	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
t-Butyl alcohol	ND		140000	21000	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000
Xylenes, Total	33000		14000	2000	ug/Kg	☼	01/27/21 08:35	02/09/21 19:20	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*54 - 135*	*01/27/21 08:35*	*02/09/21 19:20*	*1000*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*	*01/27/21 08:35*	*02/09/21 19:20*	*1000*
Dibromofluoromethane (Surr)	*74*		*50 - 141*	*01/27/21 08:35*	*02/09/21 19:20*	*1000*
Toluene-d8 (Surr)	*82*		*52 - 141*	*01/27/21 08:35*	*02/09/21 19:20*	*1000*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	880000	H	70000	7000	ug/Kg	☼	01/27/21 08:35	02/11/21 17:49	10000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*12*	*S1-*	*54 - 135*	*01/27/21 08:35*	*02/11/21 17:49*	*10000*
4-Bromofluorobenzene (Surr)	*119*		*50 - 131*	*01/27/21 08:35*	*02/11/21 17:49*	*10000*
Dibromofluoromethane (Surr)	*62*		*50 - 141*	*01/27/21 08:35*	*02/11/21 17:49*	*10000*
Toluene-d8 (Surr)	*92*		*52 - 141*	*01/27/21 08:35*	*02/11/21 17:49*	*10000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	220		20	3.9	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Benzo[a]anthracene	220		20	3.9	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Benzo[a]pyrene	170		20	3.9	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Benzo[b]fluoranthene	170		20	3.9	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Benzo[g,h,i]perylene	100		20	3.9	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Chrysene	220		20	3.9	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Fluorene	200		20	3.9	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Naphthalene	650		20	7.8	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Phenanthrene	840	FH	20	4.7	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1
Pyrene	470	FH	20	3.9	ug/Kg	☼	02/05/21 11:12	02/07/21 21:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*62*		*39 - 100*	*02/05/21 11:12*	*02/07/21 21:51*	*1*
Nitrobenzene-d5 (Surr)	*69*		*32 - 97*	*02/05/21 11:12*	*02/07/21 21:51*	*1*
p-Terphenyl-d14 (Surr)	*89*		*45 - 108*	*02/05/21 11:12*	*02/07/21 21:51*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	330		140	59	mg/Kg	☼	02/04/21 16:08	02/08/21 10:56	10
>C12-C22 (1C)	940		140	59	mg/Kg	☼	02/04/21 16:08	02/08/21 10:56	10

Client Sample ID: BT-18B-S-11-20210126 — Lab Sample ID: 410-27600-1

Date Collected: 01/26/21 09:00 — **Matrix: Solid**
Date Received: 01/26/21 16:53 — **Percent Solids: 85.1**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*41*	*S1-*	*54 - 137*	*02/04/21 16:08*	*02/08/21 10:56*	*10*
o- terphenyl (Surr) (1C)	*80*		*52 - 154*	*02/04/21 16:08*	*02/08/21 10:56*	*10*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**1300**		14	5.9	mg/Kg	☼		02/03/21 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**17**		1.3	0.54	mg/Kg	☼	01/27/21 03:50	01/27/21 15:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**14.9**		1.0	1.0	%			01/27/21 02:17	1

Client Sample ID: TB-20210126 — Lab Sample ID: 410-27600-2

Date Collected: 01/26/21 00:00 — **Matrix: Water**
Date Received: 01/26/21 16:53

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 15:53	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 15:53	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 15:53	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 15:53	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 15:53	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 15:53	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 15:53	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 15:53	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 15:53	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 15:53	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 15:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/29/21 15:53*	*1*
4-Bromofluorobenzene (Surr)	*87*		*80 - 120*		*01/29/21 15:53*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*01/29/21 15:53*	*1*
Toluene-d8 (Surr)	*112*		*80 - 120*		*01/29/21 15:53*	*1*

Client Sample ID: BT-18B-S-26-20210126 — Lab Sample ID: 410-27600-3

Date Collected: 01/26/21 12:15 — **Matrix: Solid**
Date Received: 01/26/21 16:53 — **Percent Solids: 81.4**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**7600**	**J**	14000	1100	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
1,3,5-Trimethylbenzene	**1600**	**J**	14000	1400	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
Toluene	**62000**		14000	1700	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
Methyl tertiary butyl ether	ND		14000	1400	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
Benzene	**640000**		14000	1400	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
1,2,4-Trimethylbenzene	**3800**	**J**	14000	1400	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
Isopropylbenzene	**15000**		14000	1100	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000

Client Sample ID: BT-18B-S-26-20210126 — Lab Sample ID: 410-27600-3

Date Collected: 01/26/21 12:15 — **Matrix: Solid**
Date Received: 01/26/21 16:53 — **Percent Solids: 81.4**

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		14000	1100	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
1,2-Dichloroethane	ND		14000	1700	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
C4-C12-TPH-GRO	**1100000**		300000	120000	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
t-Butyl alcohol	ND		280000	41000	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000
Xylenes, Total	**37000**		28000	3900	ug/Kg	☼	01/27/21 08:35	02/09/21 18:18	2000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*32*	*S1-*	*54 - 135*	*01/27/21 08:35*	*02/09/21 18:18*	*2000*
4-Bromofluorobenzene (Surr)	*113*		*50 - 131*	*01/27/21 08:35*	*02/09/21 18:18*	*2000*
Dibromofluoromethane (Surr)	*51*		*50 - 141*	*01/27/21 08:35*	*02/09/21 18:18*	*2000*
Toluene-d8 (Surr)	*58*		*52 - 141*	*01/27/21 08:35*	*02/09/21 18:18*	*2000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**110**		20	4.0	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Benzo[a]anthracene	**160**		20	4.0	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Benzo[a]pyrene	**90**		20	4.0	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Benzo[b]fluoranthene	**120**		20	4.0	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Benzo[g,h,i]perylene	**69**		20	4.0	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Chrysene	**160**		20	4.0	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Fluorene	**120**		20	4.0	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Naphthalene	**360**		20	8.1	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Phenanthrene	**530**		20	4.8	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1
Pyrene	**320**		20	4.0	ug/Kg	☼	02/05/21 11:12	02/07/21 23:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*61*		*39 - 100*	*02/05/21 11:12*	*02/07/21 23:02*	*1*
Nitrobenzene-d5 (Surr)	*68*		*32 - 97*	*02/05/21 11:12*	*02/07/21 23:02*	*1*
p-Terphenyl-d14 (Surr)	*77*		*45 - 108*	*02/05/21 11:12*	*02/07/21 23:02*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**150**		74	31	mg/Kg	☼	02/04/21 16:08	02/08/21 10:35	5
>C12-C22 (1C)	**830**		74	31	mg/Kg	☼	02/04/21 16:08	02/08/21 10:35	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*60*		*54 - 137*	*02/04/21 16:08*	*02/08/21 10:35*	*5*
o- terphenyl (Surr) (1C)	*82*		*52 - 154*	*02/04/21 16:08*	*02/08/21 10:35*	*5*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**980**		15	6.1	mg/Kg	☼		02/03/21 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**30**		1.4	0.55	mg/Kg	☼	01/27/21 03:50	01/27/21 15:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.6**		1.0	1.0	%			01/27/21 02:17	1

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-27600-1	BT-18B-S-11-20210126	86	88	74	82
410-27600-1 - DL	BT-18B-S-11-20210126	12 S1-	119	62	92
410-27600-3	BT-18B-S-26-20210126	32 S1-	113	51	58
LCS 410-92306/5	Lab Control Sample	93	81	90	85
LCS 410-92306/7	Lab Control Sample	95	83	90	89
LCS 410-93280/5	Lab Control Sample	94	83	92	88
LCS 410-93280/7	Lab Control Sample	97	85	94	92
LCSD 410-92306/6	Lab Control Sample Dup	92	80	88	84
LCSD 410-92306/8	Lab Control Sample Dup	93	81	88	88
LCSD 410-93280/6	Lab Control Sample Dup	95	82	91	87
LCSD 410-93280/8	Lab Control Sample Dup	96	83	90	89
MB 410-92306/10	Method Blank	95	81	89	87
MB 410-93280/10	Method Blank	103	88	99	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-27600-2	TB-20210126	108	87	94	112
LCS 410-89453/5	Lab Control Sample	111	92	94	112
LCS 410-89453/7	Lab Control Sample	111	93	94	111
LCSD 410-89453/6	Lab Control Sample Dup	110	92	94	111
LCSD 410-89453/8	Lab Control Sample Dup	111	92	92	112
MB 410-89453/9	Method Blank	108	89	92	111

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-27600-1	BT-18B-S-11-20210126	62	69	89
410-27600-1 MS	BT-18B-S-11-20210126	55	73	101
410-27600-1 MSD	BT-18B-S-11-20210126	62	78	96
410-27600-3	BT-18B-S-26-20210126	61	68	77
LCS 410-91321/2-A	Lab Control Sample	68	71	99
MB 410-91321/1-A	Method Blank	78	80	103

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)								
410-27600-1	BT-18B-S-11-20210126	41 S1-	80								
410-27600-3	BT-18B-S-26-20210126	60	82								
LCS 410-91097/2-A	Lab Control Sample	73	103								
MB 410-91097/1-A	Method Blank	71	91								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-92306/10
Matrix: Solid
Analysis Batch: 92306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Toluene	ND		250	30	ug/Kg			02/09/21 12:25	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/09/21 12:25	50
Benzene	ND		250	25	ug/Kg			02/09/21 12:25	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Isopropylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/09/21 12:25	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/09/21 12:25	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/09/21 12:25	50
Xylenes, Total	ND		500	70	ug/Kg			02/09/21 12:25	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*		*02/09/21 12:25*	*50*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*		*02/09/21 12:25*	*50*
Dibromofluoromethane (Surr)	*89*		*50 - 141*		*02/09/21 12:25*	*50*
Toluene-d8 (Surr)	*87*		*52 - 141*		*02/09/21 12:25*	*50*

Lab Sample ID: LCS 410-92306/5
Matrix: Solid
Analysis Batch: 92306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	928		ug/Kg		93	78 - 120
1,3,5-Trimethylbenzene	1000	895		ug/Kg		89	73 - 120
Toluene	1000	943		ug/Kg		94	80 - 120
Methyl tertiary butyl ether	1000	1040		ug/Kg		104	72 - 120
Benzene	1000	951		ug/Kg		95	80 - 120
Naphthalene	1000	902		ug/Kg		90	48 - 130
1,2,4-Trimethylbenzene	1000	898		ug/Kg		90	73 - 120
Isopropylbenzene	1000	914		ug/Kg		91	77 - 120
1,2-Dibromoethane	1000	1020		ug/Kg		102	76 - 120
1,2-Dichloroethane	1000	892		ug/Kg		89	71 - 128
t-Butyl alcohol	10000	10100		ug/Kg		101	74 - 121
Xylenes, Total	3000	2850		ug/Kg		95	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*85*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-92306/7 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	46000		ug/Kg		92	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*89*		*52 - 141*

Lab Sample ID: LCSD 410-92306/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	907		ug/Kg		91	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	895		ug/Kg		90	73 - 120	0	30
Toluene			1000	914		ug/Kg		91	80 - 120	3	30
Methyl tertiary butyl ether			1000	1030		ug/Kg		103	72 - 120	1	30
Benzene			1000	934		ug/Kg		93	80 - 120	2	30
Naphthalene			1000	899		ug/Kg		90	48 - 130	0	30
1,2,4-Trimethylbenzene			1000	888		ug/Kg		89	73 - 120	1	30
Isopropylbenzene			1000	895		ug/Kg		90	77 - 120	2	30
1,2-Dibromoethane			1000	998		ug/Kg		100	76 - 120	2	30
1,2-Dichloroethane			1000	900		ug/Kg		90	71 - 128	1	30
t-Butyl alcohol			10000	9650		ug/Kg		97	74 - 121	5	30
Xylenes, Total			3000	2810		ug/Kg		94	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*54 - 135*
4-Bromofluorobenzene (Surr)	*80*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*84*		*52 - 141*

Lab Sample ID: LCSD 410-92306/8 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	47800		ug/Kg		96	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*88*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-93280/10
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/11/21 12:36	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/11/21 12:36	50
Toluene	ND		250	30	ug/Kg			02/11/21 12:36	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/11/21 12:36	50
Benzene	ND		250	25	ug/Kg			02/11/21 12:36	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/11/21 12:36	50
Isopropylbenzene	ND		250	20	ug/Kg			02/11/21 12:36	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/11/21 12:36	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/11/21 12:36	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/11/21 12:36	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/11/21 12:36	50
Xylenes, Total	ND		500	70	ug/Kg			02/11/21 12:36	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*		*02/11/21 12:36*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*02/11/21 12:36*	*50*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*02/11/21 12:36*	*50*
Toluene-d8 (Surr)	*95*		*52 - 141*		*02/11/21 12:36*	*50*

Lab Sample ID: LCS 410-93280/5
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	948		ug/Kg		95	78 - 120
1,3,5-Trimethylbenzene	1000	915		ug/Kg		91	73 - 120
Toluene	1000	959		ug/Kg		96	80 - 120
Methyl tertiary butyl ether	1000	1060		ug/Kg		106	72 - 120
Benzene	1000	983		ug/Kg		98	80 - 120
Naphthalene	1000	915		ug/Kg		91	48 - 130
1,2,4-Trimethylbenzene	1000	909		ug/Kg		91	73 - 120
Isopropylbenzene	1000	933		ug/Kg		93	77 - 120
1,2-Dibromoethane	1000	1040		ug/Kg		104	76 - 120
1,2-Dichloroethane	1000	951		ug/Kg		95	71 - 128
t-Butyl alcohol	10000	10400		ug/Kg		104	74 - 121
Xylenes, Total	3000	2930		ug/Kg		98	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*92*		*50 - 141*
Toluene-d8 (Surr)	*88*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-93280/7
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	52500		ug/Kg		105	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*
4-Bromofluorobenzene (Surr)	*85*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*92*		*52 - 141*

Lab Sample ID: LCSD 410-93280/6
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	942		ug/Kg		94	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	915		ug/Kg		91	73 - 120	0	30
Toluene			1000	948		ug/Kg		95	80 - 120	1	30
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120	0	30
Benzene			1000	968		ug/Kg		97	80 - 120	2	30
Naphthalene			1000	919		ug/Kg		92	48 - 130	0	30
1,2,4-Trimethylbenzene			1000	910		ug/Kg		91	73 - 120	0	30
Isopropylbenzene			1000	924		ug/Kg		92	77 - 120	1	30
1,2-Dibromoethane			1000	1030		ug/Kg		103	76 - 120	0	30
1,2-Dichloroethane			1000	928		ug/Kg		93	71 - 128	2	30
t-Butyl alcohol			10000	10500		ug/Kg		105	74 - 121	0	30
Xylenes, Total			3000	2880		ug/Kg		96	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*82*		*50 - 131*
Dibromofluoromethane (Surr)	*91*		*50 - 141*
Toluene-d8 (Surr)	*87*		*52 - 141*

Lab Sample ID: LCSD 410-93280/8
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	50600		ug/Kg		101	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*89*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-89453/9
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 14:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 14:16	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 14:16	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 14:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 14:16	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 14:16	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 14:16	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 14:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/29/21 14:16*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/29/21 14:16*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*01/29/21 14:16*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/29/21 14:16*	*1*

Lab Sample ID: LCS 410-89453/5
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	21.3		ug/L		107	75 - 120
1,2-Dichloroethane	20.0	18.5		ug/L		92	73 - 124
1,3,5-Trimethylbenzene	20.0	21.4		ug/L		107	75 - 120
Benzene	20.0	18.5		ug/L		92	80 - 120
Ethylbenzene	20.0	22.1		ug/L		111	80 - 120
Isopropylbenzene	20.0	20.6		ug/L		103	80 - 120
Methyl tertiary butyl ether	20.0	17.1		ug/L		85	69 - 122
Naphthalene	20.0	18.7		ug/L		94	53 - 124
Toluene	20.0	22.5		ug/L		113	80 - 120
Xylenes, Total	60.0	63.3		ug/L		106	80 - 120
t-Butyl alcohol	200	204		ug/L		102	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	992		ug/L		99	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/6
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.6		ug/L		103	75 - 120	4	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	4	30
1,3,5-Trimethylbenzene			20.0	20.9		ug/L		104	75 - 120	3	30
Benzene			20.0	18.3		ug/L		92	80 - 120	1	30
Ethylbenzene			20.0	21.1		ug/L		106	80 - 120	5	30
Isopropylbenzene			20.0	19.6		ug/L		98	80 - 120	5	30
Methyl tertiary butyl ether			20.0	17.2		ug/L		86	69 - 122	1	30
Naphthalene			20.0	18.4		ug/L		92	53 - 124	2	30
Toluene			20.0	21.1		ug/L		105	80 - 120	7	30
Xylenes, Total			60.0	59.7		ug/L		100	80 - 120	6	30
t-Butyl alcohol			200	205		ug/L		102	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/8
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1020		ug/L		102	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-91321/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91833 — **Prep Batch: 91321**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Chrysene	ND		17	3.3	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Fluorene	ND		17	3.3	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Naphthalene	ND		17	6.7	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Phenanthrene	ND		17	4.0	ug/Kg		02/05/21 11:12	02/07/21 18:19	1
Pyrene	ND		17	3.3	ug/Kg		02/05/21 11:12	02/07/21 18:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*39 - 100*	*02/05/21 11:12*	*02/07/21 18:19*	*1*
Nitrobenzene-d5 (Surr)	*80*		*32 - 97*	*02/05/21 11:12*	*02/07/21 18:19*	*1*
p-Terphenyl-d14 (Surr)	*103*		*45 - 108*	*02/05/21 11:12*	*02/07/21 18:19*	*1*

Lab Sample ID: LCS 410-91321/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91833 — **Prep Batch: 91321**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1500		ug/Kg		90	75 - 114
Benzo[a]anthracene	1670	1710		ug/Kg		102	73 - 114
Benzo[a]pyrene	1670	1640		ug/Kg		98	76 - 113
Benzo[b]fluoranthene	1670	1410		ug/Kg		85	73 - 117
Benzo[g,h,i]perylene	1670	1620		ug/Kg		97	77 - 114
Chrysene	1670	1620		ug/Kg		97	66 - 111
Fluorene	1670	1380		ug/Kg		83	62 - 110
Naphthalene	1670	1130		ug/Kg		68	60 - 94
Phenanthrene	1670	1460		ug/Kg		87	74 - 112
Pyrene	1670	1520		ug/Kg		91	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*68*		*39 - 100*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*
p-Terphenyl-d14 (Surr)	*99*		*45 - 108*

Lab Sample ID: 410-27600-1 MS — **Client Sample ID: BT-18B-S-11-20210126**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91833 — **Prep Batch: 91321**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	220		1930	2050		ug/Kg	☼	95	75 - 114
Benzo[a]anthracene	220		1930	2260		ug/Kg	☼	106	73 - 114
Benzo[a]pyrene	170		1930	2170		ug/Kg	☼	103	76 - 113
Benzo[b]fluoranthene	170		1930	1900		ug/Kg	☼	90	73 - 117
Benzo[g,h,i]perylene	100		1930	1930		ug/Kg	☼	95	77 - 114
Chrysene	220		1930	2100		ug/Kg	☼	98	66 - 111

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 410-27600-1 MS **Client Sample ID: BT-18B-S-11-20210126**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 91833 **Prep Batch: 91321**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluorene	200		1930	1590		ug/Kg	☼	72	62 - 110
Naphthalene	650		1930	2320		ug/Kg	☼	86	60 - 94
Phenanthrene	840	FH	1930	3060	FH	ug/Kg	☼	115	74 - 112
Pyrene	470	FH	1930	2540	FH	ug/Kg	☼	107	70 - 103

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*55*		*39 - 100*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*
p-Terphenyl-d14 (Surr)	*101*		*45 - 108*

Lab Sample ID: 410-27600-1 MSD **Client Sample ID: BT-18B-S-11-20210126**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 91833 **Prep Batch: 91321**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	220		1930	2020		ug/Kg	☼	93	75 - 114	1	30
Benzo[a]anthracene	220		1930	2170		ug/Kg	☼	101	73 - 114	4	30
Benzo[a]pyrene	170		1930	1970		ug/Kg	☼	93	76 - 113	9	30
Benzo[b]fluoranthene	170		1930	1700		ug/Kg	☼	80	73 - 117	11	30
Benzo[g,h,i]perylene	100		1930	1760		ug/Kg	☼	86	77 - 114	9	30
Chrysene	220		1930	2020		ug/Kg	☼	93	66 - 111	4	30
Fluorene	200		1930	1710		ug/Kg	☼	78	62 - 110	7	30
Naphthalene	650		1930	2440		ug/Kg	☼	93	60 - 94	5	30
Phenanthrene	840	FH	1930	3020	FH	ug/Kg	☼	113	74 - 112	1	30
Pyrene	470	FH	1930	2400		ug/Kg	☼	100	70 - 103	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*62*		*39 - 100*
Nitrobenzene-d5 (Surr)	*78*		*32 - 97*
p-Terphenyl-d14 (Surr)	*96*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-91097/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 91363 **Prep Batch: 91097**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*71*		*54 - 137*	*02/04/21 16:08*	*02/05/21 11:38*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*02/04/21 16:08*	*02/05/21 11:38*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 410-91097/2-A
Matrix: Solid
Analysis Batch: 91363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91097

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	116		mg/Kg		86	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*73*		*54 - 137*
o- terphenyl (Surr) (1C)	*103*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-88361/1-A
Matrix: Solid
Analysis Batch: 88669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 88361

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.56	mg/Kg		01/27/21 03:50	01/27/21 14:14	1

Lab Sample ID: LCS 410-88361/2-A
Matrix: Solid
Analysis Batch: 88669

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 88361

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.78	2.97		mg/Kg		107	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 88486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1 - DL	BT-18B-S-11-20210126	Total/NA	Solid	5035	
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	5035	
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	5035	

Analysis Batch: 89453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-2	TB-20210126	Total/NA	Water	8260C/UST	
MB 410-89453/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-89453/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-89453/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-89453/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-89453/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 92306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	8260C	88486
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	8260C	88486
MB 410-92306/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-92306/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-92306/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-92306/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-92306/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 93280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1 - DL	BT-18B-S-11-20210126	Total/NA	Solid	8260C	88486
MB 410-93280/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-93280/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-93280/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-93280/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-93280/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 91321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	3546	
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	3546	
MB 410-91321/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-91321/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-27600-1 MS	BT-18B-S-11-20210126	Total/NA	Solid	3546	
410-27600-1 MSD	BT-18B-S-11-20210126	Total/NA	Solid	3546	

Analysis Batch: 91833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	8270D	91321
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	8270D	91321
MB 410-91321/1-A	Method Blank	Total/NA	Solid	8270D	91321
LCS 410-91321/2-A	Lab Control Sample	Total/NA	Solid	8270D	91321
410-27600-1 MS	BT-18B-S-11-20210126	Total/NA	Solid	8270D	91321
410-27600-1 MSD	BT-18B-S-11-20210126	Total/NA	Solid	8270D	91321

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC Semi VOA

Prep Batch: 91097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	3546	
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	3546	
MB 410-91097/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 91363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-91097/1-A	Method Blank	Total/NA	Solid	8015C TPH	91097
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	91097

Analysis Batch: 92006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	8015C TPH	91097
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	8015C TPH	91097

Analysis Batch: 103628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	Total TPH	
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 88361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	3050B	
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	3050B	
MB 410-88361/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-88361/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 88669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	6010C	88361
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	6010C	88361
MB 410-88361/1-A	Method Blank	Total/NA	Solid	6010C	88361
LCS 410-88361/2-A	Lab Control Sample	Total/NA	Solid	6010C	88361

General Chemistry

Analysis Batch: 88345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27600-1	BT-18B-S-11-20210126	Total/NA	Solid	Moisture	
410-27600-3	BT-18B-S-26-20210126	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp. Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-18B-S-11-20210126 — Lab Sample ID: 410-27600-1
Date Collected: 01/26/21 09:00 — **Matrix: Solid**
Date Received: 01/26/21 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	88345	01/27/21 02:17	PTG7	ELLE

Client Sample ID: BT-18B-S-11-20210126 — Lab Sample ID: 410-27600-1
Date Collected: 01/26/21 09:00 — **Matrix: Solid**
Date Received: 01/26/21 16:53 — **Percent Solids: 85.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			88486	01/27/21 08:35	Z8FW	ELLE
Total/NA	Analysis	8260C		1000	92306	02/09/21 19:20	SWV2	ELLE
Total/NA	Prep	5035	DL		88486	01/27/21 08:35	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	10000	93280	02/11/21 17:49	R64Z	ELLE
Total/NA	Prep	3546			91321	02/05/21 11:12	A2VL	ELLE
Total/NA	Analysis	8270D		1	91833	02/07/21 21:51	SJ89	ELLE
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		10	92006	02/08/21 10:56	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Prep	3050B			88361	01/27/21 03:50	UJL8	ELLE
Total/NA	Analysis	6010C		1	88669	01/27/21 15:03	WJM9	ELLE

Client Sample ID: TB-20210126 — Lab Sample ID: 410-27600-2
Date Collected: 01/26/21 00:00 — **Matrix: Water**
Date Received: 01/26/21 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	89453	01/29/21 15:53	UKAD	ELLE

Client Sample ID: BT-18B-S-26-20210126 — Lab Sample ID: 410-27600-3
Date Collected: 01/26/21 12:15 — **Matrix: Solid**
Date Received: 01/26/21 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	88345	01/27/21 02:17	PTG7	ELLE

Client Sample ID: BT-18B-S-26-20210126 — Lab Sample ID: 410-27600-3
Date Collected: 01/26/21 12:15 — **Matrix: Solid**
Date Received: 01/26/21 16:53 — **Percent Solids: 81.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			88486	01/27/21 08:35	Z8FW	ELLE
Total/NA	Analysis	8260C		2000	92306	02/09/21 18:18	SWV2	ELLE
Total/NA	Prep	3546			91321	02/05/21 11:12	A2VL	ELLE
Total/NA	Analysis	8270D		1	91833	02/07/21 23:02	SJ89	ELLE
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		5	92006	02/08/21 10:35	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-18B-S-26-20210126
Lab Sample ID: 410-27600-3
Date Collected: 01/26/21 12:15
Matrix: Solid
Date Received: 01/26/21 16:53
Percent Solids: 81.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			88361	01/27/21 03:50	UJL8	ELLE
Total/NA	Analysis	6010C		1	88669	01/27/21 15:07	WJM9	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-27600-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-27600-1	BT-18B-S-11-20210126	Solid	01/26/21 09:00	01/26/21 16:53	
410-27600-2	TB-20210126	Water	01/26/21 00:00	01/26/21 16:53	
410-27600-3	BT-18B-S-26-20210126	Solid	01/26/21 12:15	01/26/21 16:53	

Environmental Analysis Request Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-27600 Chain of Custody

e only

COC #608587

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Kilgore	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO/moisture	VOC 8260	VOC 8260 C/D	Lead/PAH 8270D
BT-18B-S-11-20210126	1/26/21	0900	X		X			6	X	X	X		X
TB-20210126	1/8/21	—					X	2			X		
BT-18B-S-26-20210126	1/26/21	1215	X		X			6	X	X	X		X

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.kilgore@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	1/26/21	1236		1/26/21	1236
	1/26	1610			
				1-26-21	1653

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.7 °C

Environmental Analysis Request and Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-27600 Chain of Custody

For Lab Use only

COC #608587

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Kilgore	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO/moisture	VOC 8260	VOC 8260 C/D	Lead/PAH 8270D
BT-18B-S-11-20210126	1/26/21	0900	X		6	X	X	X	X	
TB-20210126	1/8/21	—			2			X		
BT-18B-S-26-20210126	1/26/21	1215	X		6	X	X	X	X	

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes

H=HCl	T=Thiosulfate
N=HNO_3	B=NaOH
S=H_2SO_4	P=H_3PO_4
F=Field Filtered	O=Other

Remarks

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.kilgore@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)
Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13
NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	1/26/21	1236		1/26/21	1236
	1/26	1610			
				1-26-21	1653

EDD Required? Yes No
If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 0.7 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-27600-1

Login Number: 27600
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-27735-1
Client Project/Site: PHL: Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:34:34 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:34:34 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Job ID: 410-27735-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-27735-1

Revision
The report being provided is a revision of the original report sent on 2/11/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/27/2021 4:53 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -0.1°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
Method RSK_175: The following sample(s) was received outside of the holding time. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: TB-20210127 (410-27735-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: Chlorobenzene surrogate recovery for the following sample was outside control limits: BT-18B-W-38-20210127 (410-27735-1). Evidence of matrix interference is present. o-Terphenyl surrogate recovery is also outside control limits. The sample was re-extracted outside method holding time and o-Terphenyl surrogate recovery is again outside control limits. Results are reported from the first trial.

Method 8015C_TPH: Surrogate recovery for the following sample was outside acceptance limits: BT-18B-S-49-20210127 (410-27735-2). The results have been reported per client request.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020A: The following sample was not filtered within 15 minutes of sample collection as required by the method: BT-18B-W-38-20210127 (410-27735-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling Sampling

Job ID: 410-27735-1

Client Sample ID: BT-18B-W-38-20210127 — Lab Sample ID: 410-27735-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C4-C12-TPH-GRO	160000		5000	2900	ug/L	100		8260C/UST	Total/NA
Ethylbenzene	160		100	40	ug/L	100		8260C/UST	Total/NA
Isopropylbenzene	140	J	500	20	ug/L	100		8260C/UST	Total/NA
Toluene	3300		100	20	ug/L	100		8260C/UST	Total/NA
Xylenes, Total	590	J	600	140	ug/L	100		8260C/UST	Total/NA
Benzene - DL	100000		1000	200	ug/L	1000		8260C/UST	Total/NA
Ethane (1C)	1.8	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C)	170		5.0	3.0	ug/L	1		RSK-175	Total/NA
>C22-C44 (1C)	0.38		0.19	0.14	mg/L	2		8015C TPH	Total/NA
>C12-C22 (1C)	3.9		0.19	0.14	mg/L	2		8015C TPH	Total/NA
Total Reported TPH	4.3		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	1.2		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	120		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Chloride	160		20	10	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	61		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	14		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	21		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	10		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	190		1.0	0.24	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	310		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	0.60	J	1.5	0.50	mg/L	1		4500 NH3 C-2011	Total/NA
Sulfide	0.10	J	0.30	0.10	mg/L	1		4500 S2 D-2011	Total/NA
Total Organic Carbon	30		1.0	0.50	mg/L	1		5310C-2011	Total/NA

Client Sample ID: BT-18B-S-49-20210127 — Lab Sample ID: 410-27735-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	46	J	330	40	ug/Kg	50	☼	8260C	Total/NA
Benzene	12000		330	33	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO	2900	J	7300	2900	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol	3000	J	6600	1000	ug/Kg	50	☼	8260C	Total/NA
Benzo[b]fluoranthene	4.7	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
Pyrene	6.7	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	32		15	6.4	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	32		15	6.4	mg/Kg	1	☼	Total TPH	Total/NA
Lead	16		1.6	0.65	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210127 — Lab Sample ID: 410-27735-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-18B-W-38-20210127 Lab Sample ID: 410-27735-1

Date Collected: 01/27/21 09:00 **Matrix: Water**
Date Received: 01/27/21 16:53

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		500	100	ug/L			01/29/21 21:53	100
1,2-Dichloroethane	ND		100	30	ug/L			01/29/21 21:53	100
1,3,5-Trimethylbenzene	ND		500	30	ug/L			01/29/21 21:53	100
C4-C12-TPH-GRO	**160000**		5000	2900	ug/L			01/29/21 21:53	100
Ethylbenzene	**160**		100	40	ug/L			01/29/21 21:53	100
Isopropylbenzene	**140**	**J**	500	20	ug/L			01/29/21 21:53	100
Methyl tertiary butyl ether	ND		100	20	ug/L			01/29/21 21:53	100
Toluene	**3300**		100	20	ug/L			01/29/21 21:53	100
Xylenes, Total	**590**	**J**	600	140	ug/L			01/29/21 21:53	100
t-Butyl alcohol	ND		5000	1200	ug/L			01/29/21 21:53	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*01/29/21 21:53*	*100*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*01/29/21 21:53*	*100*
Dibromofluoromethane (Surr)	*88*		*80 - 120*		*01/29/21 21:53*	*100*
Toluene-d8 (Surr)	*113*		*80 - 120*		*01/29/21 21:53*	*100*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**100000**		1000	200	ug/L			01/29/21 22:17	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/29/21 22:17*	*1000*
4-Bromofluorobenzene (Surr)	*88*		*80 - 120*		*01/29/21 22:17*	*1000*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*01/29/21 22:17*	*1000*
Toluene-d8 (Surr)	*110*		*80 - 120*		*01/29/21 22:17*	*1000*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**1.8**	**J**	5.0	1.0	ug/L		01/28/21 09:33	01/28/21 15:24	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/28/21 09:33	01/28/21 15:24	1
Methane (1C)	**170**		5.0	3.0	ug/L		01/28/21 09:33	01/28/21 15:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*79*		*28 - 140*	*01/28/21 09:33*	*01/28/21 15:24*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (2C)	ND		0.029	0.0095	ug/L		01/30/21 01:16	02/02/21 21:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*116*		*46 - 136*	*01/30/21 01:16*	*02/02/21 21:14*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*133*		*46 - 136*	*01/30/21 01:16*	*02/02/21 21:14*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**0.38**		0.19	0.14	mg/L		01/28/21 23:25	02/02/21 21:37	2
>C12-C22 (1C)	**3.9**		0.19	0.14	mg/L		01/28/21 23:25	02/02/21 21:37	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*127*	*S1+*	*21 - 116*	*01/28/21 23:25*	*02/02/21 21:37*	*2*
o- terphenyl (Surr) (1C)	*11*	*S1-*	*51 - 126*	*01/28/21 23:25*	*02/02/21 21:37*	*2*

Client Sample ID: BT-18B-W-38-20210127

Lab Sample ID: 410-27735-1

Date Collected: 01/27/21 09:00
Matrix: Water
Date Received: 01/27/21 16:53

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	4.3		0.20	0.074	mg/L			02/03/21 13:36	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	1.2		0.50	0.25	mg/L			01/28/21 05:52	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	120		50	15	mg/L			01/28/21 06:09	50
Chloride	160		20	10	mg/L			01/28/21 06:09	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	61		0.50	0.096	mg/L		01/28/21 07:25	01/29/21 14:27	1
Iron	14		0.20	0.040	mg/L		01/28/21 07:25	01/31/21 14:47	1
Magnesium	21		0.10	0.040	mg/L		01/28/21 07:25	01/29/21 14:27	1
Potassium	10		0.50	0.20	mg/L		01/28/21 07:25	02/02/21 10:34	1
Sodium	190		1.0	0.24	mg/L		01/28/21 07:25	01/31/21 14:47	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		01/29/21 11:01	02/01/21 12:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	310		8.0	8.0	mg/L			01/29/21 00:50	1
Ammonia-N	0.60	J	1.5	0.50	mg/L		02/03/21 13:01	02/03/21 13:08	1
Sulfide	0.10	J	0.30	0.10	mg/L			02/02/21 08:00	1
Total Organic Carbon	30		1.0	0.50	mg/L			02/04/21 13:03	1

Client Sample ID: BT-18B-S-49-20210127

Lab Sample ID: 410-27735-2

Date Collected: 01/27/21 12:00
Matrix: Solid
Date Received: 01/27/21 16:53
Percent Solids: 77.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		330	27	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
1,3,5-Trimethylbenzene	ND		330	33	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
Toluene	46	J	330	40	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
Methyl tertiary butyl ether	ND		330	33	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
Benzene	12000		330	33	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
1,2,4-Trimethylbenzene	ND		330	33	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
Isopropylbenzene	ND		330	27	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
1,2-Dibromoethane	ND		330	27	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
1,2-Dichloroethane	ND		330	40	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
C4-C12-TPH-GRO	2900	J	7300	2900	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
t-Butyl alcohol	3000	J	6600	1000	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50
Xylenes, Total	ND		660	93	ug/Kg	☼	01/28/21 14:16	02/09/21 15:11	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*54 - 135*	*01/28/21 14:16*	*02/09/21 15:11*	*50*

Client Sample ID: BT-18B-S-49-20210127 — Lab Sample ID: 410-27735-2

Date Collected: 01/27/21 12:00 — **Matrix: Solid**
Date Received: 01/27/21 16:53 — **Percent Solids: 77.8**

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*	*01/28/21 14:16*	*02/09/21 15:11*	*50*
Dibromofluoromethane (Surr)	*90*		*50 - 141*	*01/28/21 14:16*	*02/09/21 15:11*	*50*
Toluene-d8 (Surr)	*89*		*52 - 141*	*01/28/21 14:16*	*02/09/21 15:11*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		21	4.2	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Benzo[a]anthracene	ND		21	4.2	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Benzo[a]pyrene	ND		21	4.2	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Benzo[b]fluoranthene	**4.7**	**J**	21	4.2	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Benzo[g,h,i]perylene	ND		21	4.2	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Chrysene	ND		21	4.2	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Fluorene	ND		21	4.2	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Naphthalene	ND		21	8.5	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Phenanthrene	ND		21	5.1	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1
Pyrene	**6.7**	**J**	21	4.2	ug/Kg	☼	02/05/21 11:09	02/08/21 01:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*65*		*39 - 100*	*02/05/21 11:09*	*02/08/21 01:31*	*1*
Nitrobenzene-d5 (Surr)	*56*		*32 - 97*	*02/05/21 11:09*	*02/08/21 01:31*	*1*
p-Terphenyl-d14 (Surr)	*77*		*45 - 108*	*02/05/21 11:09*	*02/08/21 01:31*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**32**		15	6.4	mg/Kg	☼	02/04/21 16:08	02/05/21 13:48	1
>C12-C22 (1C)	ND		15	6.4	mg/Kg	☼	02/04/21 16:08	02/05/21 13:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*35*	*S1-*	*54 - 137*	*02/04/21 16:08*	*02/05/21 13:48*	*1*
o- terphenyl (Surr) (1C)	*26*	*S1-*	*52 - 154*	*02/04/21 16:08*	*02/05/21 13:48*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**32**		15	6.4	mg/Kg	☼		02/03/21 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**16**		1.6	0.65	mg/Kg	☼	01/28/21 03:27	02/03/21 10:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**22.2**		1.0	1.0	%			01/27/21 21:17	1

Client Sample ID: TB-20210127 — Lab Sample ID: 410-27735-3

Date Collected: 01/27/21 00:00 — **Matrix: Water**
Date Received: 01/27/21 16:53

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 16:17	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 16:17	1

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling Sampling

Job ID: 410-27735-1

Client Sample ID: TB-20210127
Date Collected: 01/27/21 00:00
Date Received: 01/27/21 16:53

Lab Sample ID: 410-27735-3
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 16:17	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 16:17	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 16:17	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 16:17	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 16:17	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 16:17	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 16:17	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 16:17	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 16:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*		*01/29/21 16:17*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*01/29/21 16:17*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*01/29/21 16:17*	*1*
Toluene-d8 (Surr)	*113*		*80 - 120*		*01/29/21 16:17*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND	H H3	5.0	1.0	ug/L		01/28/21 09:33	01/28/21 15:58	1
Ethene (1C)	ND	H H3	5.0	1.0	ug/L		01/28/21 09:33	01/28/21 15:58	1
Methane (1C)	ND	H H3	5.0	3.0	ug/L		01/28/21 09:33	01/28/21 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*88*		*28 - 140*	*01/28/21 09:33*	*01/28/21 15:58*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		02/03/21 23:08	02/04/21 09:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*72*		*46 - 136*	*02/03/21 23:08*	*02/04/21 09:54*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*81*		*46 - 136*	*02/03/21 23:08*	*02/04/21 09:54*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-27735-2	BT-18B-S-49-20210127	96	83	90	89
LCS 410-92306/5	Lab Control Sample	93	81	90	85
LCS 410-92306/7	Lab Control Sample	95	83	90	89
LCSD 410-92306/6	Lab Control Sample Dup	92	80	88	84
LCSD 410-92306/8	Lab Control Sample Dup	93	81	88	88
MB 410-92306/10	Method Blank	95	81	89	87

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-27735-1	BT-18B-W-38-20210127	103	90	88	113
410-27735-1 - DL	BT-18B-W-38-20210127	108	88	93	110
410-27735-3	TB-20210127	110	91	96	113
LCS 410-89453/5	Lab Control Sample	111	92	94	112
LCS 410-89453/7	Lab Control Sample	111	93	94	111
LCSD 410-89453/6	Lab Control Sample Dup	110	92	94	111
LCSD 410-89453/8	Lab Control Sample Dup	111	92	92	112
MB 410-89453/9	Method Blank	108	89	92	111

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-27735-2	BT-18B-S-49-20210127	65	56	77
LCS 410-91323/2-A	Lab Control Sample	81	63	95
MB 410-91323/1-A	Method Blank	88	73	105

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
		Propene1						
Lab Sample ID	Client Sample ID	(28-140)						
410-27735-1	BT-18B-W-38-20210127	79						
410-27735-3	TB-20210127	88						
LCS 410-88983/2-A	Lab Control Sample	75						
LCSD 410-88983/3-A	Lab Control Sample Dup	94						
MB 410-88983/1-A	Method Blank	86						

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
		1122TCA1	1122TCA2					
Lab Sample ID	Client Sample ID	(46-136)	(46-136)					
410-27735-1	BT-18B-W-38-20210127	116	133					
410-27735-3	TB-20210127	72	81					
LCS 410-89655/2-A	Lab Control Sample	114	130					
LCS 410-90753/2-A	Lab Control Sample	82	88					
LCSD 410-89655/3-A	Lab Control Sample Dup	95	107					
LCSD 410-90753/3-A	Lab Control Sample Dup	78	85					
MB 410-89655/1-A	Method Blank	98	110					
MB 410-90753/1-A	Method Blank	94	98					

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
		CBNZ1	OTP1					
Lab Sample ID	Client Sample ID	(54-137)	(52-154)					
410-27735-2	BT-18B-S-49-20210127	35 S1-	26 S1-					
LCS 410-91097/2-A	Lab Control Sample	73	103					
MB 410-91097/1-A	Method Blank	71	91					

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
		CBNZ1	OTP1					
Lab Sample ID	Client Sample ID	(21-116)	(51-126)					
410-27735-1	BT-18B-W-38-20210127	127 S1+	11 S1-					
LCS 410-89282/2-A	Lab Control Sample	73	95					
LCSD 410-89282/3-A	Lab Control Sample Dup	76	100					
MB 410-89282/1-A	Method Blank	83	91					

Surrogate Legend

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-92306/10
Matrix: Solid
Analysis Batch: 92306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Toluene	ND		250	30	ug/Kg			02/09/21 12:25	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/09/21 12:25	50
Benzene	ND		250	25	ug/Kg			02/09/21 12:25	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Isopropylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/09/21 12:25	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/09/21 12:25	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/09/21 12:25	50
Xylenes, Total	ND		500	70	ug/Kg			02/09/21 12:25	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*		*02/09/21 12:25*	*50*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*		*02/09/21 12:25*	*50*
Dibromofluoromethane (Surr)	*89*		*50 - 141*		*02/09/21 12:25*	*50*
Toluene-d8 (Surr)	*87*		*52 - 141*		*02/09/21 12:25*	*50*

Lab Sample ID: LCS 410-92306/5
Matrix: Solid
Analysis Batch: 92306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	928		ug/Kg		93	78 - 120
1,3,5-Trimethylbenzene	1000	895		ug/Kg		89	73 - 120
Toluene	1000	943		ug/Kg		94	80 - 120
Methyl tertiary butyl ether	1000	1040		ug/Kg		104	72 - 120
Benzene	1000	951		ug/Kg		95	80 - 120
Naphthalene	1000	902		ug/Kg		90	48 - 130
1,2,4-Trimethylbenzene	1000	898		ug/Kg		90	73 - 120
Isopropylbenzene	1000	914		ug/Kg		91	77 - 120
1,2-Dibromoethane	1000	1020		ug/Kg		102	76 - 120
1,2-Dichloroethane	1000	892		ug/Kg		89	71 - 128
t-Butyl alcohol	10000	10100		ug/Kg		101	74 - 121
Xylenes, Total	3000	2850		ug/Kg		95	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*85*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-92306/7 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	46000		ug/Kg		92	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*89*		*52 - 141*

Lab Sample ID: LCSD 410-92306/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	907		ug/Kg		91	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	895		ug/Kg		90	73 - 120	0	30
Toluene			1000	914		ug/Kg		91	80 - 120	3	30
Methyl tertiary butyl ether			1000	1030		ug/Kg		103	72 - 120	1	30
Benzene			1000	934		ug/Kg		93	80 - 120	2	30
Naphthalene			1000	899		ug/Kg		90	48 - 130	0	30
1,2,4-Trimethylbenzene			1000	888		ug/Kg		89	73 - 120	1	30
Isopropylbenzene			1000	895		ug/Kg		90	77 - 120	2	30
1,2-Dibromoethane			1000	998		ug/Kg		100	76 - 120	2	30
1,2-Dichloroethane			1000	900		ug/Kg		90	71 - 128	1	30
t-Butyl alcohol			10000	9650		ug/Kg		97	74 - 121	5	30
Xylenes, Total			3000	2810		ug/Kg		94	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*54 - 135*
4-Bromofluorobenzene (Surr)	*80*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*84*		*52 - 141*

Lab Sample ID: LCSD 410-92306/8 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	47800		ug/Kg		96	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*88*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-89453/9
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			01/29/21 14:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			01/29/21 14:16	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			01/29/21 14:16	1
Benzene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
C4-C12-TPH-GRO	ND		50	29	ug/L			01/29/21 14:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			01/29/21 14:16	1
Isopropylbenzene	ND		5.0	0.20	ug/L			01/29/21 14:16	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Toluene	ND		1.0	0.20	ug/L			01/29/21 14:16	1
Xylenes, Total	ND		6.0	1.4	ug/L			01/29/21 14:16	1
t-Butyl alcohol	ND		50	12	ug/L			01/29/21 14:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/29/21 14:16*	*1*
4-Bromofluorobenzene (Surr)	*89*		*80 - 120*		*01/29/21 14:16*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*01/29/21 14:16*	*1*
Toluene-d8 (Surr)	*111*		*80 - 120*		*01/29/21 14:16*	*1*

Lab Sample ID: LCS 410-89453/5
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	21.3		ug/L		107	75 - 120
1,2-Dichloroethane	20.0	18.5		ug/L		92	73 - 124
1,3,5-Trimethylbenzene	20.0	21.4		ug/L		107	75 - 120
Benzene	20.0	18.5		ug/L		92	80 - 120
Ethylbenzene	20.0	22.1		ug/L		111	80 - 120
Isopropylbenzene	20.0	20.6		ug/L		103	80 - 120
Methyl tertiary butyl ether	20.0	17.1		ug/L		85	69 - 122
Naphthalene	20.0	18.7		ug/L		94	53 - 124
Toluene	20.0	22.5		ug/L		113	80 - 120
Xylenes, Total	60.0	63.3		ug/L		106	80 - 120
t-Butyl alcohol	200	204		ug/L		102	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	992		ug/L		99	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-89453/7
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/6
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.6		ug/L		103	75 - 120	4	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	4	30
1,3,5-Trimethylbenzene			20.0	20.9		ug/L		104	75 - 120	3	30
Benzene			20.0	18.3		ug/L		92	80 - 120	1	30
Ethylbenzene			20.0	21.1		ug/L		106	80 - 120	5	30
Isopropylbenzene			20.0	19.6		ug/L		98	80 - 120	5	30
Methyl tertiary butyl ether			20.0	17.2		ug/L		86	69 - 122	1	30
Naphthalene			20.0	18.4		ug/L		92	53 - 124	2	30
Toluene			20.0	21.1		ug/L		105	80 - 120	7	30
Xylenes, Total			60.0	59.7		ug/L		100	80 - 120	6	30
t-Butyl alcohol			200	205		ug/L		102	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*111*		*80 - 120*

Lab Sample ID: LCSD 410-89453/8
Matrix: Water
Analysis Batch: 89453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1020		ug/L		102	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-91323/1-A
Matrix: Solid
Analysis Batch: 91844

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91323

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Chrysene	ND		17	3.3	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Fluorene	ND		17	3.3	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Naphthalene	ND		17	6.7	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Phenanthrene	ND		17	4.0	ug/Kg		02/05/21 11:09	02/07/21 19:09	1
Pyrene	ND		17	3.3	ug/Kg		02/05/21 11:09	02/07/21 19:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*88*		*39 - 100*	*02/05/21 11:09*	*02/07/21 19:09*	*1*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*	*02/05/21 11:09*	*02/07/21 19:09*	*1*
p-Terphenyl-d14 (Surr)	*105*		*45 - 108*	*02/05/21 11:09*	*02/07/21 19:09*	*1*

Lab Sample ID: LCS 410-91323/2-A
Matrix: Solid
Analysis Batch: 91844

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91323

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1440		ug/Kg		86	75 - 114
Benzo[a]anthracene	1670	1450		ug/Kg		87	73 - 114
Benzo[a]pyrene	1670	1680		ug/Kg		101	76 - 113
Benzo[b]fluoranthene	1670	1470		ug/Kg		88	73 - 117
Benzo[g,h,i]perylene	1670	1570		ug/Kg		94	77 - 114
Chrysene	1670	1470		ug/Kg		88	66 - 111
Fluorene	1670	1410		ug/Kg		84	62 - 110
Naphthalene	1670	1150		ug/Kg		69	60 - 94
Phenanthrene	1670	1460		ug/Kg		87	74 - 112
Pyrene	1670	1460		ug/Kg		88	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*81*		*39 - 100*
Nitrobenzene-d5 (Surr)	*63*		*32 - 97*
p-Terphenyl-d14 (Surr)	*95*		*45 - 108*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-88983/1-A
Matrix: Water
Analysis Batch: 88917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 88983

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		01/28/21 09:33	01/28/21 13:02	1
Ethene (1C)	ND		5.0	1.0	ug/L		01/28/21 09:33	01/28/21 13:02	1
Methane (1C)	ND		5.0	3.0	ug/L		01/28/21 09:33	01/28/21 13:02	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-88983/1-A
Matrix: Water
Analysis Batch: 88917

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 88983

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	86		28 - 140	01/28/21 09:33	01/28/21 13:02	1

Lab Sample ID: LCS 410-88983/2-A
Matrix: Water
Analysis Batch: 88917

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 88983

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	56.7		ug/L		96	85 - 115
Ethene (1C)	60.4	57.6		ug/L		95	83 - 115
Methane (1C)	59.4	59.6		ug/L		100	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	75		28 - 140

Lab Sample ID: LCSD 410-88983/3-A
Matrix: Water
Analysis Batch: 88917

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 88983

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)	59.4	55.9		ug/L		94	85 - 115	2	20
Ethene (1C)	60.4	56.8		ug/L		94	83 - 115	1	20
Methane (1C)	59.4	58.8		ug/L		99	85 - 115	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Propene (1C)	94		28 - 140

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-89655/1-A
Matrix: Water
Analysis Batch: 90212

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		01/30/21 01:16	02/02/21 17:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	98		46 - 136	01/30/21 01:16	02/02/21 17:52	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	110		46 - 136	01/30/21 01:16	02/02/21 17:52	1

Lab Sample ID: LCS 410-89655/2-A
Matrix: Water
Analysis Batch: 90212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.152		ug/L		119	60 - 140

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-89655/2-A
Matrix: Water
Analysis Batch: 90212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89655

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*114*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*130*		*46 - 136*

Lab Sample ID: LCSD 410-89655/3-A
Matrix: Water
Analysis Batch: 90212

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 89655

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.134		ug/L		104	60 - 140	13	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*95*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*107*		*46 - 136*

Lab Sample ID: MB 410-90753/1-A
Matrix: Water
Analysis Batch: 90847

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		02/03/21 23:08	02/04/21 08:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*94*		*46 - 136*	*02/03/21 23:08*	*02/04/21 08:15*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*98*		*46 - 136*	*02/03/21 23:08*	*02/04/21 08:15*	*1*

Lab Sample ID: LCS 410-90753/2-A
Matrix: Water
Analysis Batch: 90847

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90753

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.139		ug/L		109	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*82*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*88*		*46 - 136*

Lab Sample ID: LCSD 410-90753/3-A
Matrix: Water
Analysis Batch: 90847

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 90753

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.135		ug/L		106	60 - 140	3	20

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCSD 410-90753/3-A
Matrix: Water
Analysis Batch: 90847

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 90753

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*78*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*85*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-89282/1-A
Matrix: Water
Analysis Batch: 89474

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 89282

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.10	0.074	mg/L		01/28/21 23:25	01/29/21 11:24	1
>C12-C22 (1C)	ND		0.10	0.074	mg/L		01/28/21 23:25	01/29/21 11:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*83*		*21 - 116*	*01/28/21 23:25*	*01/29/21 11:24*	*1*
o- terphenyl (Surr) (1C)	*91*		*51 - 126*	*01/28/21 23:25*	*01/29/21 11:24*	*1*

Lab Sample ID: LCS 410-89282/2-A
Matrix: Water
Analysis Batch: 89474

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 89282

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.803	0.779		mg/L		97	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*73*		*21 - 116*
o- terphenyl (Surr) (1C)	*95*		*51 - 126*

Lab Sample ID: LCSD 410-89282/3-A
Matrix: Water
Analysis Batch: 89474

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 89282

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.803	0.861		mg/L		107	53 - 115	10	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*76*		*21 - 116*
o- terphenyl (Surr) (1C)	*100*		*51 - 126*

Lab Sample ID: MB 410-91097/1-A
Matrix: Solid
Analysis Batch: 91363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91097

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-91097/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91363 — **Prep Batch: 91097**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	71		54 - 137	02/04/21 16:08	02/05/21 11:38	1
o- terphenyl (Surr) (1C)	91		52 - 154	02/04/21 16:08	02/05/21 11:38	1

Lab Sample ID: LCS 410-91097/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91363 — **Prep Batch: 91097**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	116		mg/Kg		86	64 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	73		54 - 137
o- terphenyl (Surr) (1C)	103		52 - 154

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-88830/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 88830

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			01/28/21 04:46	1

Lab Sample ID: LCS 410-88830/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 88830

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	0.750	0.728		mg/L		97	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-88829/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 88829

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			01/28/21 04:46	1
Chloride	ND		0.40	0.20	mg/L			01/28/21 04:46	1

Lab Sample ID: LCS 410-88829/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 88829

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.26		mg/L		97	90 - 110
Chloride	3.00	2.84		mg/L		95	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-88812/1-A
Matrix: Solid
Analysis Batch: 90521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 88812

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.58	mg/Kg		01/28/21 03:27	02/03/21 09:43	1

Lab Sample ID: LCS 410-88812/2-A
Matrix: Solid
Analysis Batch: 90521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 88812

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.88	2.96		mg/Kg		103	80 - 120

Lab Sample ID: MB 410-88878/1-A
Matrix: Water
Analysis Batch: 89574

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 88878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		01/28/21 07:25	01/29/21 13:40	1
Magnesium	ND		0.10	0.040	mg/L		01/28/21 07:25	01/29/21 13:40	1

Lab Sample ID: MB 410-88878/1-A
Matrix: Water
Analysis Batch: 89825

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 88878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.20	0.040	mg/L		01/28/21 07:25	01/31/21 13:58	1
Sodium	ND		1.0	0.24	mg/L		01/28/21 07:25	01/31/21 13:58	1

Lab Sample ID: MB 410-88878/1-A
Matrix: Water
Analysis Batch: 90085

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 88878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		0.50	0.20	mg/L		01/28/21 07:25	02/02/21 10:21	1

Lab Sample ID: LCS 410-88878/2-A
Matrix: Water
Analysis Batch: 89574

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 88878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.391	J	mg/L		98	80 - 120
Magnesium	0.200	0.173		mg/L		86	80 - 120

Lab Sample ID: LCS 410-88878/2-A
Matrix: Water
Analysis Batch: 89825

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 88878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.400	0.404		mg/L		101	80 - 120
Sodium	2.00	2.00		mg/L		100	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-88878/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 90085 — **Prep Batch: 88878**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Potassium			6.00	6.18		mg/L		103	80 - 120		

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-89452/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 90056 — **Prep Batch: 89452**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		01/29/21 11:01	02/01/21 12:22	1

Lab Sample ID: LCS 410-89452/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 90056 — **Prep Batch: 89452**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			30.0	29.4		ug/L		98	90 - 115		

Lab Sample ID: 410-27735-1 MS — **Client Sample ID: BT-18B-W-38-20210127**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 90056 — **Prep Batch: 89452**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead	ND		30.0	31.5		ug/L		105	75 - 125		

Lab Sample ID: 410-27735-1 MSD — **Client Sample ID: BT-18B-W-38-20210127**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 90056 — **Prep Batch: 89452**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		30.0	31.0		ug/L		103	75 - 125	2	20

Lab Sample ID: 410-27735-1 DU — **Client Sample ID: BT-18B-W-38-20210127**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 90056 — **Prep Batch: 89452**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		ug/L		NC	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-89549/56 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 89549

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			01/28/21 23:35	1

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: LCS 410-89549/57
Matrix: Water
Analysis Batch: 89549

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	175		mg/L		93	82 - 106

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-90564/1-A
Matrix: Water
Analysis Batch: 90567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 90564

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		02/03/21 13:01	02/03/21 13:08	1

Lab Sample ID: LCS 410-90564/2-A
Matrix: Water
Analysis Batch: 90567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90564

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	10.0	9.42		mg/L		94	93 - 100

Lab Sample ID: LCSD 410-90564/16-A
Matrix: Water
Analysis Batch: 90567

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 90564

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N	10.0	9.39		mg/L		94	93 - 100	0	5

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-90031/1
Matrix: Water
Analysis Batch: 90031

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			02/02/21 08:00	1

Lab Sample ID: LCS 410-90031/13
Matrix: Water
Analysis Batch: 90031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1.00	1.04		mg/L		104	90 - 110

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-91100/5
Matrix: Water
Analysis Batch: 91100

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			02/04/21 11:51	1

Client: Stantec Consulting Corp.
Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 410-91100/4
Matrix: Water
Analysis Batch: 91100

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	23.7		mg/L		95	91 - 113

GC/MS VOA

Prep Batch: 89109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	5035	

Analysis Batch: 89453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	8260C/UST	
410-27735-1 - DL	BT-18B-W-38-20210127	Total/NA	Water	8260C/UST	
410-27735-3	TB-20210127	Total/NA	Water	8260C/UST	
MB 410-89453/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-89453/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-89453/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-89453/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-89453/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 92306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	8260C	89109
MB 410-92306/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-92306/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-92306/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-92306/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-92306/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 91323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	3546	
MB 410-91323/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-91323/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 91844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	8270D	91323
MB 410-91323/1-A	Method Blank	Total/NA	Solid	8270D	91323
LCS 410-91323/2-A	Lab Control Sample	Total/NA	Solid	8270D	91323

GC VOA

Analysis Batch: 88917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	RSK-175	88983
410-27735-3	TB-20210127	Total/NA	Water	RSK-175	88983
MB 410-88983/1-A	Method Blank	Total/NA	Water	RSK-175	88983
LCS 410-88983/2-A	Lab Control Sample	Total/NA	Water	RSK-175	88983
LCSD 410-88983/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	88983

Prep Batch: 88983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	RSK-175	
410-27735-3	TB-20210127	Total/NA	Water	RSK-175	
MB 410-88983/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-88983/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 88983 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 410-88983/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 89282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	3510C	
MB 410-89282/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-89282/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-89282/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 89474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-89282/1-A	Method Blank	Total/NA	Water	8015C TPH	89282
LCS 410-89282/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	89282
LCSD 410-89282/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	89282

Prep Batch: 89655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	8011	
MB 410-89655/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-89655/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-89655/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 90212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	8011	89655
MB 410-89655/1-A	Method Blank	Total/NA	Water	8011	89655
LCS 410-89655/2-A	Lab Control Sample	Total/NA	Water	8011	89655
LCSD 410-89655/3-A	Lab Control Sample Dup	Total/NA	Water	8011	89655

Analysis Batch: 90240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	8015C TPH	89282

Prep Batch: 90753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-3	TB-20210127	Total/NA	Water	8011	
MB 410-90753/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-90753/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-90753/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Prep Batch: 90770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1 - RE	BT-18B-W-38-20210127	Total/NA	Water	3510C	
MB 410-90770/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-90770/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-90770/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC Semi VOA

Analysis Batch: 90847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-3	TB-20210127	Total/NA	Water	8011	90753
MB 410-90753/1-A	Method Blank	Total/NA	Water	8011	90753
LCS 410-90753/2-A	Lab Control Sample	Total/NA	Water	8011	90753
LCSD 410-90753/3-A	Lab Control Sample Dup	Total/NA	Water	8011	90753

Prep Batch: 91097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	3546	
MB 410-91097/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 91363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	8015C TPH	91097
MB 410-91097/1-A	Method Blank	Total/NA	Solid	8015C TPH	91097
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	91097

Analysis Batch: 92006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1 - RE	BT-18B-W-38-20210127	Total/NA	Water	8015C TPH	90770
MB 410-90770/1-A	Method Blank	Total/NA	Water	8015C TPH	90770
LCS 410-90770/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	90770
LCSD 410-90770/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	90770

Analysis Batch: 103628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	Total TPH	
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	Total TPH	

HPLC/IC

Analysis Batch: 88829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	EPA 300.0 R2.1	
MB 410-88829/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-88829/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 88830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	EPA 300.0 R2.1	
MB 410-88830/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-88830/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 88812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	3050B	
MB 410-88812/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-88812/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Metals

Prep Batch: 88878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total Recoverable	Water	3005A	
MB 410-88878/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-88878/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 89441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Dissolved	Water	Filtration	
410-27735-1 MS	BT-18B-W-38-20210127	Dissolved	Water	Filtration	
410-27735-1 MSD	BT-18B-W-38-20210127	Dissolved	Water	Filtration	
410-27735-1 DU	BT-18B-W-38-20210127	Dissolved	Water	Filtration	

Prep Batch: 89452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Dissolved	Water	Non-Digest Prep	89441
MB 410-89452/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-89452/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-27735-1 MS	BT-18B-W-38-20210127	Dissolved	Water	Non-Digest Prep	89441
410-27735-1 MSD	BT-18B-W-38-20210127	Dissolved	Water	Non-Digest Prep	89441
410-27735-1 DU	BT-18B-W-38-20210127	Dissolved	Water	Non-Digest Prep	89441

Analysis Batch: 89574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total Recoverable	Water	6010C	88878
MB 410-88878/1-A	Method Blank	Total Recoverable	Water	6010C	88878
LCS 410-88878/2-A	Lab Control Sample	Total Recoverable	Water	6010C	88878

Analysis Batch: 89825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total Recoverable	Water	6010C	88878
MB 410-88878/1-A	Method Blank	Total Recoverable	Water	6010C	88878
LCS 410-88878/2-A	Lab Control Sample	Total Recoverable	Water	6010C	88878

Analysis Batch: 90056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Dissolved	Water	6020A	89452
MB 410-89452/1-A	Method Blank	Total/NA	Water	6020A	89452
LCS 410-89452/2-A	Lab Control Sample	Total/NA	Water	6020A	89452
410-27735-1 MS	BT-18B-W-38-20210127	Dissolved	Water	6020A	89452
410-27735-1 MSD	BT-18B-W-38-20210127	Dissolved	Water	6020A	89452
410-27735-1 DU	BT-18B-W-38-20210127	Dissolved	Water	6020A	89452

Analysis Batch: 90085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total Recoverable	Water	6010C	88878
MB 410-88878/1-A	Method Blank	Total Recoverable	Water	6010C	88878
LCS 410-88878/2-A	Lab Control Sample	Total Recoverable	Water	6010C	88878

Analysis Batch: 90521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	6010C	88812
MB 410-88812/1-A	Method Blank	Total/NA	Solid	6010C	88812

Metals (Continued)

Analysis Batch: 90521 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-88812/2-A	Lab Control Sample	Total/NA	Solid	6010C	88812

General Chemistry

Analysis Batch: 88793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-2	BT-18B-S-49-20210127	Total/NA	Solid	Moisture	

Analysis Batch: 89549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	2320B-2011	
MB 410-89549/56	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-89549/57	Lab Control Sample	Total/NA	Water	2320B-2011	

Analysis Batch: 90031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	4500 S2 D-2011	
MB 410-90031/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-90031/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Prep Batch: 90564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	4500 NH3 B-2011	
MB 410-90564/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-90564/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-90564/16-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 90567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	4500 NH3 C-2011	90564
MB 410-90564/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	90564
LCS 410-90564/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	90564
LCSD 410-90564/16-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	90564

Analysis Batch: 91100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27735-1	BT-18B-W-38-20210127	Total/NA	Water	5310C-2011	
MB 410-91100/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-91100/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-18B-W-38-20210127
Lab Sample ID: 410-27735-1
Date Collected: 01/27/21 09:00
Matrix: Water
Date Received: 01/27/21 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		100	89453	01/29/21 21:53	UKAD	ELLE
Total/NA	Analysis	8260C/UST	DL	1000	89453	01/29/21 22:17	UKAD	ELLE
Total/NA	Prep	RSK-175			88983	01/28/21 09:33	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	88917	01/28/21 15:24	LXF2	ELLE
Total/NA	Prep	8011			89655	01/30/21 01:16	UKQ8	ELLE
Total/NA	Analysis	8011		1	90212	02/02/21 21:14	AC3T	ELLE
Total/NA	Prep	3510C			89282	01/28/21 23:25	USL7	ELLE
Total/NA	Analysis	8015C TPH		2	90240	02/02/21 21:37	YHQ2	ELLE
Total/NA	Prep	3510C	RE		90770	02/04/21 03:00	USL7	ELLE
Total/NA	Analysis	8015C TPH	RE	10	92006	02/08/21 13:49	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	88830	01/28/21 05:52	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	88829	01/28/21 06:09	W5UX	ELLE
Total Recoverable	Prep	3005A			88878	01/28/21 07:25	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	89825	01/31/21 14:47	WJM9	ELLE
Total Recoverable	Prep	3005A			88878	01/28/21 07:25	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	89574	01/29/21 14:27	MDP5	ELLE
Total Recoverable	Prep	3005A			88878	01/28/21 07:25	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	90085	02/02/21 10:34	ULJC	ELLE
Dissolved	Filtration	Filtration			89441	01/29/21 10:31	UAMX	ELLE
Dissolved	Prep	Non-Digest Prep			89452	01/29/21 11:01	UAMX	ELLE
Dissolved	Analysis	6020A		1	90056	02/01/21 12:26	V5SW	ELLE
Total/NA	Analysis	2320B-2011		1	89549	01/29/21 00:50	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			90564	02/03/21 13:01	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	90567	02/03/21 13:08	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	90031	02/02/21 08:00	USE1	ELLE
Total/NA	Analysis	5310C-2011		1	91100	02/04/21 13:03	KGQ6	ELLE

Client Sample ID: BT-18B-S-49-20210127
Lab Sample ID: 410-27735-2
Date Collected: 01/27/21 12:00
Matrix: Solid
Date Received: 01/27/21 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	88793	01/27/21 21:17	PTG7	ELLE

Client Sample ID: BT-18B-S-49-20210127
Lab Sample ID: 410-27735-2
Date Collected: 01/27/21 12:00
Matrix: Solid
Date Received: 01/27/21 16:53
Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			89109	01/28/21 14:16	HDS6	ELLE
Total/NA	Analysis	8260C		50	92306	02/09/21 15:11	SWV2	ELLE
Total/NA	Prep	3546			91323	02/05/21 11:09	A2VL	ELLE
Total/NA	Analysis	8270D		1	91844	02/08/21 01:31	UWHS	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-18B-S-49-20210127
Lab Sample ID: 410-27735-2

Date Collected: 01/27/21 12:00
Matrix: Solid
Date Received: 01/27/21 16:53
Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	91363	02/05/21 13:48	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Prep	3050B			88812	01/28/21 03:27	UAMX	ELLE
Total/NA	Analysis	6010C		1	90521	02/03/21 10:09	WJM9	ELLE

Client Sample ID: TB-20210127
Lab Sample ID: 410-27735-3

Date Collected: 01/27/21 00:00
Matrix: Water
Date Received: 01/27/21 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	89453	01/29/21 16:17	UKAD	ELLE
Total/NA	Prep	RSK-175			88983	01/28/21 09:33	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	88917	01/28/21 15:58	LXF2	ELLE
Total/NA	Prep	8011			90753	02/03/21 23:08	K2IL	ELLE
Total/NA	Analysis	8011		1	90847	02/04/21 09:54	AC3T	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-27735-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-27735-1	BT-18B-W-38-20210127	Water	01/27/21 09:00	01/27/21 16:53	
410-27735-2	BT-18B-S-49-20210127	Solid	01/27/21 12:00	01/27/21 16:53	
410-27735-3	TB-20210127	Water	01/27/21 00:00	01/27/21 16:53	

Environmental Analysis Req ... tody

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Fc 410-27735 Chain of Custody only

Acct. # _____ Group # _____ Sample # _____

COC # 608586

Client Information

Client: Evergreen 40 Stantec
Acct. #: 16657
Project Name/#: PHL: Belmont Terminal Drilling Sampling
PWSID #:
Project Manager: Andrew Klingpeil
P.O. #: 23402797
Sampler: Dane Hopkins
Quote #:
State where samples were collected: PA
For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ Water ☐ Potable ☒ Ground ☐ NPDES ☐ Surface ☐ Other: trip blank

Total # of Containers

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only
FSC:
SCR#:

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO/mass type VOC 8260 c/o	VOC 8260 c/o	Lead/PAH 8270 D	Sulfide/Metal (6010C Cyanide/Nitrate Nitrogen Sulfate	EDB 8011 Volatile Hexane Hydrocarbons	Total Alkalinity to pH 4.5	TDC	Ammonia Nitrogen
BT-1BB-W-38-20210127	1/27/21	0900	X		19	X	X	X		X	X	X	X	X
BT-1BB-S-49-20210127	1/27/21	1200	X		6	X	X	X	X					
TB-20210127	1/5/21	—			4			X			X			

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks
* Lab filter dissolved lead

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingpeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP)
Type VI (Raw Data Only)
Type III (Reduced non-CLP)
NJ DKQP
TX TRRP-13
NYSDEC Category A or B
MA MCP
CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	1/27/21	13 23	Pierre	1/27/21	1323
Pierre	1/27/21				
			Carl	1-29-21	1453

EDD Required? Yes No
If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other X

Temperature upon receipt -0.1 °C NOT FROZEN

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-27735-1

Login Number: 27735
List Number: 1
Creator: Barns, Christopher

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-27876-1
Client Project/Site: PHL: Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:53:15 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:53:15 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Job ID: 410-27876-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-27876-1

Revision
The report being provided is a revision of the original report sent on 2/10/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/28/2021 4:22 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 7.9°C

GC/MS VOA
Method 8260C_UST: The continuing calibration verification (CCV) associated with batch 410-90892 recovered above the upper control limit for t-Butyl alcohol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-03-S-18-20210128
Lab Sample ID: 410-27876-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	3300		270	22	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	3800		270	27	ug/Kg	50	☼	8260C	Total/NA
Toluene	180	J	270	33	ug/Kg	50	☼	8260C	Total/NA
Benzene	930		270	27	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	11000		270	27	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	1600		270	22	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	11000		540	76	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	650000		60000	24000	ug/Kg	500	☼	8260C	Total/NA
Naphthalene	1200		18	7.4	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	56		13	5.5	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	120		13	5.5	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	180		13	5.6	mg/Kg	1	☼	Total TPH	Total/NA
Lead	8.6		1.2	0.47	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210128
Lab Sample ID: 410-27876-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-03-S-18-20210128 — Lab Sample ID: 410-27876-1

Date Collected: 01/28/21 09:10 — **Matrix: Solid**
Date Received: 01/28/21 16:22 — **Percent Solids: 89.7**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**3300**		270	22	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
1,3,5-Trimethylbenzene	**3800**		270	27	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
Toluene	**180**	**J**	270	33	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
Methyl tertiary butyl ether	ND		270	27	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
Benzene	**930**		270	27	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
1,2,4-Trimethylbenzene	**11000**		270	27	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
Isopropylbenzene	**1600**		270	22	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
1,2-Dibromoethane	ND		270	22	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
1,2-Dichloroethane	ND		270	33	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
t-Butyl alcohol	ND		5400	820	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50
Xylenes, Total	**11000**		540	76	ug/Kg	☼	01/29/21 07:17	02/09/21 16:55	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*54 - 135*	*01/29/21 07:17*	*02/09/21 16:55*	*50*
4-Bromofluorobenzene (Surr)	*118*		*50 - 131*	*01/29/21 07:17*	*02/09/21 16:55*	*50*
Dibromofluoromethane (Surr)	*106*		*50 - 141*	*01/29/21 07:17*	*02/09/21 16:55*	*50*
Toluene-d8 (Surr)	*110*		*52 - 141*	*01/29/21 07:17*	*02/09/21 16:55*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**650000**		60000	24000	ug/Kg	☼	01/29/21 07:17	02/09/21 17:16	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*54 - 135*	*01/29/21 07:17*	*02/09/21 17:16*	*500*
4-Bromofluorobenzene (Surr)	*119*		*50 - 131*	*01/29/21 07:17*	*02/09/21 17:16*	*500*
Dibromofluoromethane (Surr)	*107*		*50 - 141*	*01/29/21 07:17*	*02/09/21 17:16*	*500*
Toluene-d8 (Surr)	*113*		*52 - 141*	*01/29/21 07:17*	*02/09/21 17:16*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		18	3.7	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Benzo[a]anthracene	ND		18	3.7	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Benzo[a]pyrene	ND		18	3.7	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Benzo[b]fluoranthene	ND		18	3.7	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Benzo[g,h,i]perylene	ND		18	3.7	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Chrysene	ND		18	3.7	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Fluorene	ND		18	3.7	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Naphthalene	**1200**		18	7.4	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Phenanthrene	ND		18	4.4	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1
Pyrene	ND		18	3.7	ug/Kg	☼	02/06/21 10:36	02/08/21 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*85*		*39 - 100*	*02/06/21 10:36*	*02/08/21 15:14*	*1*
Nitrobenzene-d5 (Surr)	*77*		*32 - 97*	*02/06/21 10:36*	*02/08/21 15:14*	*1*
p-Terphenyl-d14 (Surr)	*96*		*45 - 108*	*02/06/21 10:36*	*02/08/21 15:14*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**56**		13	5.5	mg/Kg	☼	02/04/21 16:08	02/05/21 13:04	1
>C12-C22 (1C)	**120**		13	5.5	mg/Kg	☼	02/04/21 16:08	02/05/21 13:04	1

Client Sample ID: BT-03-S-18-20210128 — Lab Sample ID: 410-27876-1

Date Collected: 01/28/21 09:10 — **Matrix: Solid**
Date Received: 01/28/21 16:22 — **Percent Solids: 89.7**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	*76*		*54 - 137*	*02/04/21 16:08*	*02/05/21 13:04*	*1*
o- terphenyl (Surr) (1C)	*103*		*52 - 154*	*02/04/21 16:08*	*02/05/21 13:04*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**180**		13	5.6	mg/Kg	☼		02/03/21 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**8.6**		1.2	0.47	mg/Kg	☼	01/29/21 04:25	01/31/21 13:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.3**		1.0	1.0	%			01/29/21 00:48	1

Client Sample ID: TB-20210128 — Lab Sample ID: 410-27876-2

Date Collected: 01/28/21 00:00 — **Matrix: Water**
Date Received: 01/28/21 16:22

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/04/21 13:46	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/04/21 13:46	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/04/21 13:46	1
Benzene	ND		1.0	0.20	ug/L			02/04/21 13:46	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/04/21 13:46	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/04/21 13:46	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/04/21 13:46	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/04/21 13:46	1
Toluene	ND		1.0	0.20	ug/L			02/04/21 13:46	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/04/21 13:46	1
t-Butyl alcohol	ND	^c	50	12	ug/L			02/04/21 13:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*02/04/21 13:46*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*02/04/21 13:46*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*02/04/21 13:46*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/04/21 13:46*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-27876-1	BT-03-S-18-20210128	113	118	106	110
410-27876-1 - DL	BT-03-S-18-20210128	115	119	107	113
LCS 410-92306/5	Lab Control Sample	93	81	90	85
LCS 410-92306/7	Lab Control Sample	95	83	90	89
LCSD 410-92306/6	Lab Control Sample Dup	92	80	88	84
LCSD 410-92306/8	Lab Control Sample Dup	93	81	88	88
MB 410-92306/10	Method Blank	95	81	89	87

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-27876-2	TB-20210128	96	95	98	101
LCS 410-90892/5	Lab Control Sample	98	98	96	100
LCS 410-90892/7	Lab Control Sample	94	98	95	101
LCSD 410-90892/6	Lab Control Sample Dup	98	99	96	101
LCSD 410-90892/8	Lab Control Sample Dup	95	97	95	100
MB 410-90892/9	Method Blank	97	97	97	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-27876-1	BT-03-S-18-20210128	85	77	96
LCS 410-91749/2-A	Lab Control Sample	90	74	105
MB 410-91749/1-A	Method Blank	90	73	109 S1+

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
410-27876-1	BT-03-S-18-20210128	76	103								
LCS 410-91097/2-A	Lab Control Sample	73	103								
MB 410-91097/1-A	Method Blank	71	91								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-92306/10 **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Toluene	ND		250	30	ug/Kg			02/09/21 12:25	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/09/21 12:25	50
Benzene	ND		250	25	ug/Kg			02/09/21 12:25	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Isopropylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/09/21 12:25	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/09/21 12:25	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/09/21 12:25	50
Xylenes, Total	ND		500	70	ug/Kg			02/09/21 12:25	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*		*02/09/21 12:25*	*50*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*		*02/09/21 12:25*	*50*
Dibromofluoromethane (Surr)	*89*		*50 - 141*		*02/09/21 12:25*	*50*
Toluene-d8 (Surr)	*87*		*52 - 141*		*02/09/21 12:25*	*50*

Lab Sample ID: LCS 410-92306/5 **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	928		ug/Kg		93	78 - 120
1,3,5-Trimethylbenzene	1000	895		ug/Kg		89	73 - 120
Toluene	1000	943		ug/Kg		94	80 - 120
Methyl tertiary butyl ether	1000	1040		ug/Kg		104	72 - 120
Benzene	1000	951		ug/Kg		95	80 - 120
Naphthalene	1000	902		ug/Kg		90	48 - 130
1,2,4-Trimethylbenzene	1000	898		ug/Kg		90	73 - 120
Isopropylbenzene	1000	914		ug/Kg		91	77 - 120
1,2-Dibromoethane	1000	1020		ug/Kg		102	76 - 120
1,2-Dichloroethane	1000	892		ug/Kg		89	71 - 128
t-Butyl alcohol	10000	10100		ug/Kg		101	74 - 121
Xylenes, Total	3000	2850		ug/Kg		95	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*85*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-92306/7 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	46000		ug/Kg		92	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*89*		*52 - 141*

Lab Sample ID: LCSD 410-92306/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	907		ug/Kg		91	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	895		ug/Kg		90	73 - 120	0	30
Toluene			1000	914		ug/Kg		91	80 - 120	3	30
Methyl tertiary butyl ether			1000	1030		ug/Kg		103	72 - 120	1	30
Benzene			1000	934		ug/Kg		93	80 - 120	2	30
Naphthalene			1000	899		ug/Kg		90	48 - 130	0	30
1,2,4-Trimethylbenzene			1000	888		ug/Kg		89	73 - 120	1	30
Isopropylbenzene			1000	895		ug/Kg		90	77 - 120	2	30
1,2-Dibromoethane			1000	998		ug/Kg		100	76 - 120	2	30
1,2-Dichloroethane			1000	900		ug/Kg		90	71 - 128	1	30
t-Butyl alcohol			10000	9650		ug/Kg		97	74 - 121	5	30
Xylenes, Total			3000	2810		ug/Kg		94	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*54 - 135*
4-Bromofluorobenzene (Surr)	*80*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*84*		*52 - 141*

Lab Sample ID: LCSD 410-92306/8 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	47800		ug/Kg		96	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*88*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-90892/9
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/04/21 12:35	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/04/21 12:35	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/04/21 12:35	1
Benzene	ND		1.0	0.20	ug/L			02/04/21 12:35	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/04/21 12:35	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/04/21 12:35	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/04/21 12:35	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/04/21 12:35	1
Toluene	ND		1.0	0.20	ug/L			02/04/21 12:35	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/04/21 12:35	1
t-Butyl alcohol	ND		50	12	ug/L			02/04/21 12:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*02/04/21 12:35*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*02/04/21 12:35*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*02/04/21 12:35*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*02/04/21 12:35*	*1*

Lab Sample ID: LCS 410-90892/5
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		97	75 - 120
1,2-Dichloroethane	20.0	19.0		ug/L		95	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	19.9		ug/L		99	80 - 120
Ethylbenzene	20.0	19.9		ug/L		100	80 - 120
Isopropylbenzene	20.0	19.9		ug/L		100	80 - 120
Methyl tertiary butyl ether	20.0	19.1		ug/L		95	69 - 122
Naphthalene	20.0	17.8		ug/L		89	53 - 124
Toluene	20.0	20.0		ug/L		100	80 - 120
Xylenes, Total	60.0	60.0		ug/L		100	80 - 120
t-Butyl alcohol	200	210		ug/L		105	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-90892/7
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1040		ug/L		104	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-90892/7
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-90892/6
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.3		ug/L		96	75 - 120	0	30
1,2-Dichloroethane			20.0	18.3		ug/L		92	73 - 124	3	30
1,3,5-Trimethylbenzene			20.0	19.2		ug/L		96	75 - 120	0	30
Benzene			20.0	19.5		ug/L		97	80 - 120	2	30
Ethylbenzene			20.0	19.8		ug/L		99	80 - 120	1	30
Isopropylbenzene			20.0	20.0		ug/L		100	80 - 120	0	30
Methyl tertiary butyl ether			20.0	18.5		ug/L		93	69 - 122	3	30
Naphthalene			20.0	17.7		ug/L		89	53 - 124	1	30
Toluene			20.0	19.9		ug/L		100	80 - 120	0	30
Xylenes, Total			60.0	60.2		ug/L		100	80 - 120	0	30
t-Butyl alcohol			200	206		ug/L		103	60 - 130	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-90892/8
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1070		ug/L		107	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling Sampling

Job ID: 410-27876-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-91749/1-A
Matrix: Solid
Analysis Batch: 91911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91749

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Chrysene	ND		17	3.3	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Fluorene	ND		17	3.3	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Naphthalene	ND		17	6.7	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Phenanthrene	ND		17	4.0	ug/Kg		02/06/21 10:36	02/08/21 11:06	1
Pyrene	ND		17	3.3	ug/Kg		02/06/21 10:36	02/08/21 11:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*90*		*39 - 100*	*02/06/21 10:36*	*02/08/21 11:06*	*1*
Nitrobenzene-d5 (Surr)	*73*		*32 - 97*	*02/06/21 10:36*	*02/08/21 11:06*	*1*
p-Terphenyl-d14 (Surr)	*109*	*S1+*	*45 - 108*	*02/06/21 10:36*	*02/08/21 11:06*	*1*

Lab Sample ID: LCS 410-91749/2-A
Matrix: Solid
Analysis Batch: 91911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1600		ug/Kg		96	75 - 114
Benzo[a]anthracene	1670	1610		ug/Kg		97	73 - 114
Benzo[a]pyrene	1670	1830		ug/Kg		110	76 - 113
Benzo[b]fluoranthene	1670	1610		ug/Kg		97	73 - 117
Benzo[g,h,i]perylene	1670	1690		ug/Kg		101	77 - 114
Chrysene	1670	1530		ug/Kg		92	66 - 111
Fluorene	1670	1550		ug/Kg		93	62 - 110
Naphthalene	1670	1370		ug/Kg		82	60 - 94
Phenanthrene	1670	1600		ug/Kg		96	74 - 112
Pyrene	1670	1600		ug/Kg		96	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*90*		*39 - 100*
Nitrobenzene-d5 (Surr)	*74*		*32 - 97*
p-Terphenyl-d14 (Surr)	*105*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-91097/1-A
Matrix: Solid
Analysis Batch: 91363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91097

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-91097/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91363 — **Prep Batch: 91097**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	71		54 - 137	02/04/21 16:08	02/05/21 11:38	1
o- terphenyl (Surr) (1C)	91		52 - 154	02/04/21 16:08	02/05/21 11:38	1

Lab Sample ID: LCS 410-91097/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91363 — **Prep Batch: 91097**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	116		mg/Kg		86	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	73		54 - 137
o- terphenyl (Surr) (1C)	103		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-89294/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 89810 — **Prep Batch: 89294**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.55	mg/Kg		01/29/21 04:25	01/31/21 12:52	1

Lab Sample ID: LCS 410-89294/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 89810 — **Prep Batch: 89294**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.94	3.17		mg/Kg		108	80 - 120		

Lab Sample ID: LCSD 410-89294/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 89810 — **Prep Batch: 89294**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead			3.00	3.07		mg/Kg		102	80 - 120	3	20

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 89340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1 - DL	BT-03-S-18-20210128	Total/NA	Solid	5035	
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	5035	

Analysis Batch: 90892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-2	TB-20210128	Total/NA	Water	8260C/UST	
MB 410-90892/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-90892/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-90892/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-90892/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-90892/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 92306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	8260C	89340
410-27876-1 - DL	BT-03-S-18-20210128	Total/NA	Solid	8260C	89340
MB 410-92306/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-92306/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-92306/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-92306/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-92306/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 91749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	3546	
MB 410-91749/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-91749/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 91911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	8270D	91749
MB 410-91749/1-A	Method Blank	Total/NA	Solid	8270D	91749
LCS 410-91749/2-A	Lab Control Sample	Total/NA	Solid	8270D	91749

GC Semi VOA

Prep Batch: 91097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	3546	
MB 410-91097/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 91363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	8015C TPH	91097
MB 410-91097/1-A	Method Blank	Total/NA	Solid	8015C TPH	91097
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	91097

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC Semi VOA

Analysis Batch: 103628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 89294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	3050B	
MB 410-89294/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-89294/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 410-89294/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

Analysis Batch: 89810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	6010C	89294
MB 410-89294/1-A	Method Blank	Total/NA	Solid	6010C	89294
LCS 410-89294/2-A	Lab Control Sample	Total/NA	Solid	6010C	89294
LCSD 410-89294/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	89294

General Chemistry

Analysis Batch: 89280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27876-1	BT-03-S-18-20210128	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-03-S-18-20210128
Lab Sample ID: 410-27876-1
Date Collected: 01/28/21 09:10
Matrix: Solid
Date Received: 01/28/21 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	89280	01/29/21 00:48	PTG7	ELLE

Client Sample ID: BT-03-S-18-20210128
Lab Sample ID: 410-27876-1
Date Collected: 01/28/21 09:10
Matrix: Solid
Date Received: 01/28/21 16:22
Percent Solids: 89.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			89340	01/29/21 07:17	Z8FW	ELLE
Total/NA	Analysis	8260C		50	92306	02/09/21 16:55	SWV2	ELLE
Total/NA	Prep	5035	DL		89340	01/29/21 07:17	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	500	92306	02/09/21 17:16	SWV2	ELLE
Total/NA	Prep	3546			91749	02/06/21 10:36	FTV5	ELLE
Total/NA	Analysis	8270D		1	91911	02/08/21 15:14	SJ89	ELLE
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	91363	02/05/21 13:04	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Prep	3050B			89294	01/29/21 04:25	UAMX	ELLE
Total/NA	Analysis	6010C		1	89810	01/31/21 13:31	WJM9	ELLE

Client Sample ID: TB-20210128
Lab Sample ID: 410-27876-2
Date Collected: 01/28/21 00:00
Matrix: Water
Date Received: 01/28/21 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	90892	02/04/21 13:46	UKAD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-27876-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-27876-1	BT-03-S-18-20210128	Solid	01/28/21 09:10	01/28/21 16:22	
410-27876-2	TB-20210128	Water	01/28/21 00:00	01/28/21 16:22	

Environmental Analysis Re ustody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-27876 Chain of Custody

l use only

COC #608585

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16057
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 2184027797
Sampler: Dave Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☐ Tissue ☐ Sediment ☒ Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: trip blank

Analysis Requested

Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO/moisture	VOC 8260 C/D	Lead/PAH 8270D
BT-03-S-18-20210128	1/28/21	0910	X		6	X	X	X	X
TB-20210128	1/8/21	—			2			X	

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl	T=Thiosulfate
N=HNO_3	B=NaOH
S=H_2SO_4	P=H_3PO_4
F=Field Filtered	O=Other

Remarks

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dave	1/28/21	1350		1/28	1350
	1/28/21	1602			
				1/28/21	1622

EDD Required? Yes No

If yes, format: EDuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other _____

Temperature upon receipt 7.9 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-27876-1

Login Number: 27876 **List Source: Eurofins Lancaster Laboratories Env**
List Number: 1
Creator: Metzger, Katherine A

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	False	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-28040-1
Client Project/Site: PHL: Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:56:04 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:56:04 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
^c	CCV Recovery is outside acceptance limits.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-28040-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-28040-1

Revision
The report being provided is a revision of the original report sent on 2/15/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 1/29/2021 5:07 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.2°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-91634 recovered outside acceptance criteria, low biased, for Methyl tertiary butyl ether. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C: The following sample was analyzed via a low-level analysis and a high-level (i.e., methanol extract) analysis. The low-level analysis resulted in a value for C4-C12-TPH-GRO above the upper calibration range. The high-level analysis resulted in a non-detect for this analyte in the lowest possible dilution utilized. The results from the low-level analysis are provided and have been flagged as estimated. BT-03-S-72-20210129 (410-28040-3)

Method 8260C: The laboratory control sample duplicate (LCSD) for preparation batch 410-90079 and analytical batch 410-91634 recovered outside control limits for the following analytes: C4-C12-TPH-GRO.

Method 8260C_UST: The continuing calibration verification (CCV) associated with batch 410-90892 recovered above the upper control limit for t-Butyl alcohol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: Surrogate recovery for the following samples were outside acceptance limits: BT-03-S-46-20210128 (410-28040-1) and BT-03-S-72-20210129 (410-28040-3). The results have been reported per client request.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-03-S-46-20210128
Lab Sample ID: 410-28040-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	97	J	350	42	ug/Kg	50	☼	8260C	Total/NA
Methyl tertiary butyl ether	230	J	350	35	ug/Kg	50	☼	8260C	Total/NA
Benzene	1800		350	35	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO	3900	J	7700	3100	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol	60000		7000	1000	ug/Kg	50	☼	8260C	Total/NA
Anthracene	49		20	4.1	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	31		20	4.1	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	24		20	4.1	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	25		20	4.1	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	9.6	J	20	4.1	ug/Kg	1	☼	8270D	Total/NA
Chrysene	37		20	4.1	ug/Kg	1	☼	8270D	Total/NA
Fluorene	86		20	4.1	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	160		20	8.1	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	260		20	4.9	ug/Kg	1	☼	8270D	Total/NA
Pyrene	96		20	4.1	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	6.4	J	15	6.1	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	6.4	J	15	6.1	mg/Kg	1	☼	Total TPH	Total/NA
Lead	19		1.6	0.63	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210129
Lab Sample ID: 410-28040-2

No Detections.

Client Sample ID: BT-03-S-72-20210129
Lab Sample ID: 410-28040-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C4-C12-TPH-GRO	5600	*+ E *- *1	110	46	ug/Kg	1	☼	8260C	Total/NA
Anthracene	8.9	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	9.6	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	7.4	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
Chrysene	8.2	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
Fluorene	15	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	74		21	8.4	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	39		21	5.1	ug/Kg	1	☼	8270D	Total/NA
Pyrene	17	J	21	4.2	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	16		15	6.4	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	16		15	6.4	mg/Kg	1	☼	Total TPH	Total/NA
Lead	16		1.7	0.70	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-03-S-46-20210128 Lab Sample ID: 410-28040-1

Date Collected: 01/28/21 15:45 **Matrix: Solid**
Date Received: 01/29/21 17:07 **Percent Solids: 81.8**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		350	28	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
1,3,5-Trimethylbenzene	ND		350	35	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
Toluene	**97**	**J**	350	42	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
Methyl tertiary butyl ether	**230**	**J**	350	35	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
Benzene	**1800**		350	35	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
1,2,4-Trimethylbenzene	ND		350	35	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
Isopropylbenzene	ND		350	28	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
1,2-Dibromoethane	ND		350	28	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
1,2-Dichloroethane	ND		350	42	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
C4-C12-TPH-GRO	**3900**	**J**	7700	3100	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
t-Butyl alcohol	**60000**		7000	1000	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50
Xylenes, Total	ND		700	97	ug/Kg	☼	02/02/21 11:24	02/09/21 15:32	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*	*02/02/21 11:24*	*02/09/21 15:32*	*50*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*	*02/02/21 11:24*	*02/09/21 15:32*	*50*
Dibromofluoromethane (Surr)	*94*		*50 - 141*	*02/02/21 11:24*	*02/09/21 15:32*	*50*
Toluene-d8 (Surr)	*93*		*52 - 141*	*02/02/21 11:24*	*02/09/21 15:32*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**49**		20	4.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Benzo[a]anthracene	**31**		20	4.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Benzo[a]pyrene	**24**		20	4.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Benzo[b]fluoranthene	**25**		20	4.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Benzo[g,h,i]perylene	**9.6**	**J**	20	4.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Chrysene	**37**		20	4.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Fluorene	**86**		20	4.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Naphthalene	**160**		20	8.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Phenanthrene	**260**		20	4.9	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1
Pyrene	**96**		20	4.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*39 - 100*	*02/08/21 18:26*	*02/11/21 02:28*	*1*
Nitrobenzene-d5 (Surr)	*61*		*32 - 97*	*02/08/21 18:26*	*02/11/21 02:28*	*1*
p-Terphenyl-d14 (Surr)	*89*		*45 - 108*	*02/08/21 18:26*	*02/11/21 02:28*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**6.4**	**J**	15	6.1	mg/Kg	☼	02/04/21 16:08	02/05/21 12:21	1
>C12-C22 (1C)	ND		15	6.1	mg/Kg	☼	02/04/21 16:08	02/05/21 12:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*42*	*S1-*	*54 - 137*	*02/04/21 16:08*	*02/05/21 12:21*	*1*
o- terphenyl (Surr) (1C)	*41*	*S1-*	*52 - 154*	*02/04/21 16:08*	*02/05/21 12:21*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**6.4**	**J**	15	6.1	mg/Kg	☼		02/03/21 13:36	1

Client Sample ID: BT-03-S-46-20210128 — Lab Sample ID: 410-28040-1

Date Collected: 01/28/21 15:45 — **Matrix: Solid**
Date Received: 01/29/21 17:07 — **Percent Solids: 81.8**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**19**		1.6	0.63	mg/Kg	☼	02/02/21 01:38	02/03/21 12:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.2**		1.0	1.0	%			01/29/21 22:42	1

Client Sample ID: TB-20210129 — Lab Sample ID: 410-28040-2

Date Collected: 01/29/21 00:00 — **Matrix: Water**
Date Received: 01/29/21 17:07

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/04/21 14:10	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/04/21 14:10	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/04/21 14:10	1
Benzene	ND		1.0	0.20	ug/L			02/04/21 14:10	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/04/21 14:10	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/04/21 14:10	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/04/21 14:10	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/04/21 14:10	1
Toluene	ND		1.0	0.20	ug/L			02/04/21 14:10	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/04/21 14:10	1
t-Butyl alcohol	ND	^c	50	12	ug/L			02/04/21 14:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*80 - 120*		*02/04/21 14:10*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*02/04/21 14:10*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*02/04/21 14:10*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*02/04/21 14:10*	*1*

Client Sample ID: BT-03-S-72-20210129 — Lab Sample ID: 410-28040-3

Date Collected: 01/29/21 12:00 — **Matrix: Solid**
Date Received: 01/29/21 17:07 — **Percent Solids: 78.5**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.2	0.42	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
1,3,5-Trimethylbenzene	ND		5.2	0.52	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
Toluene	ND		5.2	0.63	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
Methyl tertiary butyl ether	ND	^c	5.2	0.52	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
Benzene	ND		5.2	0.52	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
1,2,4-Trimethylbenzene	ND		5.2	0.52	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
Isopropylbenzene	ND		5.2	0.42	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
1,2-Dibromoethane	ND		5.2	0.42	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
1,2-Dichloroethane	ND		5.2	0.63	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
C4-C12-TPH-GRO	**5600**	***+ E *- *1**	110	46	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
t-Butyl alcohol	ND		100	16	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1
Xylenes, Total	ND		10	1.5	ug/Kg	☼	02/02/21 10:30	02/06/21 06:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*54 - 135*	*02/02/21 10:30*	*02/06/21 06:34*	*1*

Client Sample ID: BT-03-S-72-20210129 — Lab Sample ID: 410-28040-3

Date Collected: 01/29/21 12:00 — **Matrix: Solid**
Date Received: 01/29/21 17:07 — **Percent Solids: 78.5**

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		50 - 131	02/02/21 10:30	02/06/21 06:34	1
Dibromofluoromethane (Surr)	103		50 - 141	02/02/21 10:30	02/06/21 06:34	1
Toluene-d8 (Surr)	99		52 - 141	02/02/21 10:30	02/06/21 06:34	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**8.9**	**J**	21	4.2	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Benzo[a]anthracene	**9.6**	**J**	21	4.2	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Benzo[a]pyrene	ND		21	4.2	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Benzo[b]fluoranthene	**7.4**	**J**	21	4.2	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Benzo[g,h,i]perylene	ND		21	4.2	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Chrysene	**8.2**	**J**	21	4.2	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Fluorene	**15**	**J**	21	4.2	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Naphthalene	**74**		21	8.4	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Phenanthrene	**39**		21	5.1	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1
Pyrene	**17**	**J**	21	4.2	ug/Kg	☼	02/08/21 18:26	02/11/21 02:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	65		39 - 100	02/08/21 18:26	02/11/21 02:51	1
Nitrobenzene-d5 (Surr)	48		32 - 97	02/08/21 18:26	02/11/21 02:51	1
p-Terphenyl-d14 (Surr)	75		45 - 108	02/08/21 18:26	02/11/21 02:51	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**16**		15	6.4	mg/Kg	☼	02/04/21 16:08	02/05/21 12:43	1
>C12-C22 (1C)	ND		15	6.4	mg/Kg	☼	02/04/21 16:08	02/05/21 12:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	8	S1-	54 - 137	02/04/21 16:08	02/05/21 12:43	1
o- terphenyl (Surr) (1C)	14	S1-	52 - 154	02/04/21 16:08	02/05/21 12:43	1

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**16**		15	6.4	mg/Kg	☼		02/03/21 13:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**16**		1.7	0.70	mg/Kg	☼	02/02/21 01:38	02/03/21 12:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**21.5**		1.0	1.0	%			01/29/21 22:42	1

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-28040-1	BT-03-S-46-20210128	97	96	94	93
410-28040-3	BT-03-S-72-20210129	111	83	103	99
LCS 410-91634/6	Lab Control Sample	107	96	101	98
LCS 410-91634/8	Lab Control Sample	106	97	101	98
LCS 410-92306/5	Lab Control Sample	93	81	90	85
LCS 410-92306/7	Lab Control Sample	95	83	90	89
LCSD 410-91634/7	Lab Control Sample Dup	106	97	100	97
LCSD 410-91634/9	Lab Control Sample Dup	107	97	99	97
LCSD 410-92306/6	Lab Control Sample Dup	92	80	88	84
LCSD 410-92306/8	Lab Control Sample Dup	93	81	88	88
MB 410-91634/11	Method Blank	109	95	104	96
MB 410-92306/10	Method Blank	95	81	89	87

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-28040-2	TB-20210129	81	97	98	99
LCS 410-90892/5	Lab Control Sample	98	98	96	100
LCS 410-90892/7	Lab Control Sample	94	98	95	101
LCSD 410-90892/6	Lab Control Sample Dup	98	99	96	101
LCSD 410-90892/8	Lab Control Sample Dup	95	97	95	100
MB 410-90892/9	Method Blank	97	97	97	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-28040-1	BT-03-S-46-20210128	78	61	89
410-28040-3	BT-03-S-72-20210129	65	48	75
LCS 410-92191/2-A	Lab Control Sample	86	69	100
LCSD 410-92191/3-A	Lab Control Sample Dup	82	68	98
MB 410-92191/1-A	Method Blank	83	72	107

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-28040-1	BT-03-S-46-20210128	42 S1-	41 S1-
410-28040-3	BT-03-S-72-20210129	8 S1-	14 S1-
LCS 410-91097/2-A	Lab Control Sample	73	103
MB 410-91097/1-A	Method Blank	71	91

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling Sampling

Job ID: 410-28040-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-91634/11
Matrix: Solid
Analysis Batch: 91634

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			02/06/21 00:01	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/06/21 00:01	1
Toluene	ND		5.0	0.60	ug/Kg			02/06/21 00:01	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			02/06/21 00:01	1
Benzene	ND		5.0	0.50	ug/Kg			02/06/21 00:01	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/06/21 00:01	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			02/06/21 00:01	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			02/06/21 00:01	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			02/06/21 00:01	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			02/06/21 00:01	1
t-Butyl alcohol	ND		100	15	ug/Kg			02/06/21 00:01	1
Xylenes, Total	ND		10	1.4	ug/Kg			02/06/21 00:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*		*02/06/21 00:01*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*		*02/06/21 00:01*	*1*
Dibromofluoromethane (Surr)	*104*		*50 - 141*		*02/06/21 00:01*	*1*
Toluene-d8 (Surr)	*96*		*52 - 141*		*02/06/21 00:01*	*1*

Lab Sample ID: LCS 410-91634/6
Matrix: Solid
Analysis Batch: 91634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	20.8		ug/Kg		104	78 - 120
1,3,5-Trimethylbenzene	20.0	20.1		ug/Kg		100	73 - 120
Toluene	20.0	20.6		ug/Kg		103	80 - 120
Methyl tertiary butyl ether	20.0	15.2		ug/Kg		76	72 - 120
Benzene	20.0	22.0		ug/Kg		110	80 - 120
Naphthalene	20.0	19.4		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	20.0	19.9		ug/Kg		100	73 - 120
Isopropylbenzene	20.0	19.9		ug/Kg		99	77 - 120
1,2-Dibromoethane	20.0	20.6		ug/Kg		103	76 - 120
1,2-Dichloroethane	20.0	19.8		ug/Kg		99	71 - 128
t-Butyl alcohol	200	214		ug/Kg		107	74 - 121
Xylenes, Total	60.0	62.5		ug/Kg		104	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-91634/8
Matrix: Solid
Analysis Batch: 91634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	996		ug/Kg		100	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-91634/7
Matrix: Solid
Analysis Batch: 91634

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.0		ug/Kg		100	78 - 120	4	30
1,3,5-Trimethylbenzene			20.0	19.4		ug/Kg		97	73 - 120	4	30
Toluene			20.0	20.2		ug/Kg		101	80 - 120	2	30
Methyl tertiary butyl ether			20.0	15.4		ug/Kg		77	72 - 120	1	30
Benzene			20.0	21.7		ug/Kg		109	80 - 120	2	30
Naphthalene			20.0	19.4		ug/Kg		97	48 - 130	0	30
1,2,4-Trimethylbenzene			20.0	19.5		ug/Kg		98	73 - 120	2	30
Isopropylbenzene			20.0	19.3		ug/Kg		96	77 - 120	3	30
1,2-Dibromoethane			20.0	20.1		ug/Kg		100	76 - 120	2	30
1,2-Dichloroethane			20.0	19.7		ug/Kg		99	71 - 128	0	30
t-Butyl alcohol			200	220		ug/Kg		110	74 - 121	3	30
Xylenes, Total			60.0	61.0		ug/Kg		102	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*100*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-91634/9
Matrix: Solid
Analysis Batch: 91634

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	3050	*+ *1	ug/Kg		305	75 - 120	101	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-92306/10
Matrix: Solid
Analysis Batch: 92306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Toluene	ND		250	30	ug/Kg			02/09/21 12:25	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/09/21 12:25	50
Benzene	ND		250	25	ug/Kg			02/09/21 12:25	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/09/21 12:25	50
Isopropylbenzene	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/09/21 12:25	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/09/21 12:25	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/09/21 12:25	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/09/21 12:25	50
Xylenes, Total	ND		500	70	ug/Kg			02/09/21 12:25	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*		*02/09/21 12:25*	*50*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*		*02/09/21 12:25*	*50*
Dibromofluoromethane (Surr)	*89*		*50 - 141*		*02/09/21 12:25*	*50*
Toluene-d8 (Surr)	*87*		*52 - 141*		*02/09/21 12:25*	*50*

Lab Sample ID: LCS 410-92306/5
Matrix: Solid
Analysis Batch: 92306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	928		ug/Kg		93	78 - 120
1,3,5-Trimethylbenzene	1000	895		ug/Kg		89	73 - 120
Toluene	1000	943		ug/Kg		94	80 - 120
Methyl tertiary butyl ether	1000	1040		ug/Kg		104	72 - 120
Benzene	1000	951		ug/Kg		95	80 - 120
Naphthalene	1000	902		ug/Kg		90	48 - 130
1,2,4-Trimethylbenzene	1000	898		ug/Kg		90	73 - 120
Isopropylbenzene	1000	914		ug/Kg		91	77 - 120
1,2-Dibromoethane	1000	1020		ug/Kg		102	76 - 120
1,2-Dichloroethane	1000	892		ug/Kg		89	71 - 128
t-Butyl alcohol	10000	10100		ug/Kg		101	74 - 121
Xylenes, Total	3000	2850		ug/Kg		95	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*85*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-92306/7 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	46000		ug/Kg		92	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*89*		*52 - 141*

Lab Sample ID: LCSD 410-92306/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	907		ug/Kg		91	78 - 120	2	30
1,3,5-Trimethylbenzene			1000	895		ug/Kg		90	73 - 120	0	30
Toluene			1000	914		ug/Kg		91	80 - 120	3	30
Methyl tertiary butyl ether			1000	1030		ug/Kg		103	72 - 120	1	30
Benzene			1000	934		ug/Kg		93	80 - 120	2	30
Naphthalene			1000	899		ug/Kg		90	48 - 130	0	30
1,2,4-Trimethylbenzene			1000	888		ug/Kg		89	73 - 120	1	30
Isopropylbenzene			1000	895		ug/Kg		90	77 - 120	2	30
1,2-Dibromoethane			1000	998		ug/Kg		100	76 - 120	2	30
1,2-Dichloroethane			1000	900		ug/Kg		90	71 - 128	1	30
t-Butyl alcohol			10000	9650		ug/Kg		97	74 - 121	5	30
Xylenes, Total			3000	2810		ug/Kg		94	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*54 - 135*
4-Bromofluorobenzene (Surr)	*80*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*84*		*52 - 141*

Lab Sample ID: LCSD 410-92306/8 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92306

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	47800		ug/Kg		96	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*
4-Bromofluorobenzene (Surr)	*81*		*50 - 131*
Dibromofluoromethane (Surr)	*88*		*50 - 141*
Toluene-d8 (Surr)	*88*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-90892/9
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/04/21 12:35	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/04/21 12:35	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/04/21 12:35	1
Benzene	ND		1.0	0.20	ug/L			02/04/21 12:35	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/04/21 12:35	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/04/21 12:35	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/04/21 12:35	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/04/21 12:35	1
Toluene	ND		1.0	0.20	ug/L			02/04/21 12:35	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/04/21 12:35	1
t-Butyl alcohol	ND		50	12	ug/L			02/04/21 12:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*02/04/21 12:35*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*02/04/21 12:35*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*02/04/21 12:35*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*02/04/21 12:35*	*1*

Lab Sample ID: LCS 410-90892/5
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		97	75 - 120
1,2-Dichloroethane	20.0	19.0		ug/L		95	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	19.9		ug/L		99	80 - 120
Ethylbenzene	20.0	19.9		ug/L		100	80 - 120
Isopropylbenzene	20.0	19.9		ug/L		100	80 - 120
Methyl tertiary butyl ether	20.0	19.1		ug/L		95	69 - 122
Naphthalene	20.0	17.8		ug/L		89	53 - 124
Toluene	20.0	20.0		ug/L		100	80 - 120
Xylenes, Total	60.0	60.0		ug/L		100	80 - 120
t-Butyl alcohol	200	210		ug/L		105	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-90892/7
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1040		ug/L		104	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-90892/7
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-90892/6
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.3		ug/L		96	75 - 120	0	30
1,2-Dichloroethane			20.0	18.3		ug/L		92	73 - 124	3	30
1,3,5-Trimethylbenzene			20.0	19.2		ug/L		96	75 - 120	0	30
Benzene			20.0	19.5		ug/L		97	80 - 120	2	30
Ethylbenzene			20.0	19.8		ug/L		99	80 - 120	1	30
Isopropylbenzene			20.0	20.0		ug/L		100	80 - 120	0	30
Methyl tertiary butyl ether			20.0	18.5		ug/L		93	69 - 122	3	30
Naphthalene			20.0	17.7		ug/L		89	53 - 124	1	30
Toluene			20.0	19.9		ug/L		100	80 - 120	0	30
Xylenes, Total			60.0	60.2		ug/L		100	80 - 120	0	30
t-Butyl alcohol			200	206		ug/L		103	60 - 130	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-90892/8
Matrix: Water
Analysis Batch: 90892

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1070		ug/L		107	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling Sampling

Job ID: 410-28040-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-92191/1-A
Matrix: Solid
Analysis Batch: 92679

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Chrysene	ND		17	3.3	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Fluorene	ND		17	3.3	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Naphthalene	ND		17	6.7	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Phenanthrene	ND		17	4.0	ug/Kg		02/08/21 18:25	02/10/21 00:02	1
Pyrene	ND		17	3.3	ug/Kg		02/08/21 18:25	02/10/21 00:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*39 - 100*	*02/08/21 18:25*	*02/10/21 00:02*	*1*
Nitrobenzene-d5 (Surr)	*72*		*32 - 97*	*02/08/21 18:25*	*02/10/21 00:02*	*1*
p-Terphenyl-d14 (Surr)	*107*		*45 - 108*	*02/08/21 18:25*	*02/10/21 00:02*	*1*

Lab Sample ID: LCS 410-92191/2-A
Matrix: Solid
Analysis Batch: 92679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1520		ug/Kg		91	75 - 114
Benzo[a]anthracene	1670	1490		ug/Kg		89	73 - 114
Benzo[a]pyrene	1670	1730		ug/Kg		104	76 - 113
Benzo[b]fluoranthene	1670	1450		ug/Kg		87	73 - 117
Benzo[g,h,i]perylene	1670	1660		ug/Kg		99	77 - 114
Chrysene	1670	1470		ug/Kg		88	66 - 111
Fluorene	1670	1440		ug/Kg		86	62 - 110
Naphthalene	1670	1230		ug/Kg		74	60 - 94
Phenanthrene	1670	1510		ug/Kg		91	74 - 112
Pyrene	1670	1470		ug/Kg		88	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*86*		*39 - 100*
Nitrobenzene-d5 (Surr)	*69*		*32 - 97*
p-Terphenyl-d14 (Surr)	*100*		*45 - 108*

Lab Sample ID: LCSD 410-92191/3-A
Matrix: Solid
Analysis Batch: 92679

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 92191

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	1670	1460		ug/Kg		88	75 - 114	3	30
Benzo[a]anthracene	1670	1460		ug/Kg		88	73 - 114	2	30
Benzo[a]pyrene	1670	1670		ug/Kg		100	76 - 113	3	30
Benzo[b]fluoranthene	1670	1400		ug/Kg		84	73 - 117	3	30
Benzo[g,h,i]perylene	1670	1590		ug/Kg		95	77 - 114	4	30
Chrysene	1670	1430		ug/Kg		86	66 - 111	2	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-92191/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92679 — **Prep Batch: 92191**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluorene			1670	1390		ug/Kg		84	62 - 110	3	30
Naphthalene			1670	1200		ug/Kg		72	60 - 94	3	30
Phenanthrene			1670	1460		ug/Kg		88	74 - 112	3	30
Pyrene			1670	1450		ug/Kg		87	70 - 103	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*
Nitrobenzene-d5 (Surr)	*68*		*32 - 97*
p-Terphenyl-d14 (Surr)	*98*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-91097/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91363 — **Prep Batch: 91097**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/04/21 16:08	02/05/21 11:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*71*		*54 - 137*	*02/04/21 16:08*	*02/05/21 11:38*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*02/04/21 16:08*	*02/05/21 11:38*	*1*

Lab Sample ID: LCS 410-91097/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 91363 — **Prep Batch: 91097**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	116		mg/Kg		86	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*73*		*54 - 137*
o- terphenyl (Surr) (1C)	*103*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-90003/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 90553 — **Prep Batch: 90003**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.3	0.50	mg/Kg		02/02/21 01:38	02/03/21 10:37	1

Client: Stantec Consulting Corp.
Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-90003/2-A
Matrix: Solid
Analysis Batch: 90553

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 90003

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.70	2.91		mg/Kg		108	80 - 120

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 90079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	5035	

Prep Batch: 90102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	5035	

Analysis Batch: 90892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-2	TB-20210129	Total/NA	Water	8260C/UST	
MB 410-90892/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-90892/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-90892/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-90892/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-90892/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 91634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	8260C	90079
MB 410-91634/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-91634/6	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-91634/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-91634/7	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-91634/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 92306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	8260C	90102
MB 410-92306/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-92306/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-92306/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-92306/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-92306/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 92191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	3546	
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	3546	
MB 410-92191/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-92191/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-92191/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 92679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-92191/1-A	Method Blank	Total/NA	Solid	8270D	92191
LCS 410-92191/2-A	Lab Control Sample	Total/NA	Solid	8270D	92191
LCSD 410-92191/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	92191

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

GC/MS Semi VOA

Analysis Batch: 93046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	8270D	92191
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	8270D	92191

GC Semi VOA

Prep Batch: 91097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	3546	
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	3546	
MB 410-91097/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 91363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	8015C TPH	91097
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	8015C TPH	91097
MB 410-91097/1-A	Method Blank	Total/NA	Solid	8015C TPH	91097
LCS 410-91097/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	91097

Analysis Batch: 103628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	Total TPH	
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 90003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	3050B	
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	3050B	
MB 410-90003/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-90003/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 90553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	6010C	90003
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	6010C	90003
MB 410-90003/1-A	Method Blank	Total/NA	Solid	6010C	90003
LCS 410-90003/2-A	Lab Control Sample	Total/NA	Solid	6010C	90003

General Chemistry

Analysis Batch: 89650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28040-1	BT-03-S-46-20210128	Total/NA	Solid	Moisture	
410-28040-3	BT-03-S-72-20210129	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Client Sample ID: BT-03-S-46-20210128
Lab Sample ID: 410-28040-1
Date Collected: 01/28/21 15:45
Matrix: Solid
Date Received: 01/29/21 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	89650	01/29/21 22:42	PTG7	ELLE

Client Sample ID: BT-03-S-46-20210128
Lab Sample ID: 410-28040-1
Date Collected: 01/28/21 15:45
Matrix: Solid
Date Received: 01/29/21 17:07
Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			90102	02/02/21 11:24	HDS6	ELLE
Total/NA	Analysis	8260C		50	92306	02/09/21 15:32	SWV2	ELLE
Total/NA	Prep	3546			92191	02/08/21 18:26	DN9W	ELLE
Total/NA	Analysis	8270D		1	93046	02/11/21 02:28	UWHS	ELLE
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	91363	02/05/21 12:21	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Prep	3050B			90003	02/02/21 01:38	UJL8	ELLE
Total/NA	Analysis	6010C		1	90553	02/03/21 12:07	WJM9	ELLE

Client Sample ID: TB-20210129
Lab Sample ID: 410-28040-2
Date Collected: 01/29/21 00:00
Matrix: Water
Date Received: 01/29/21 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	90892	02/04/21 14:10	UKAD	ELLE

Client Sample ID: BT-03-S-72-20210129
Lab Sample ID: 410-28040-3
Date Collected: 01/29/21 12:00
Matrix: Solid
Date Received: 01/29/21 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	89650	01/29/21 22:42	PTG7	ELLE

Client Sample ID: BT-03-S-72-20210129
Lab Sample ID: 410-28040-3
Date Collected: 01/29/21 12:00
Matrix: Solid
Date Received: 01/29/21 17:07
Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			90079	02/02/21 10:30	HDS6	ELLE
Total/NA	Analysis	8260C		1	91634	02/06/21 06:34	CHT8	ELLE
Total/NA	Prep	3546			92191	02/08/21 18:26	DN9W	ELLE
Total/NA	Analysis	8270D		1	93046	02/11/21 02:51	UWHS	ELLE
Total/NA	Prep	3546			91097	02/04/21 16:08	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	91363	02/05/21 12:43	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103628	02/03/21 13:36	KP5X	ELLE
Total/NA	Prep	3050B			90003	02/02/21 01:38	UJL8	ELLE
Total/NA	Analysis	6010C		1	90553	02/03/21 12:03	WJM9	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-28040-1
Project/Site: PHL: Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-28040-1	BT-03-S-46-20210128	Solid	01/28/21 15:45	01/29/21 17:07	
410-28040-2	TB-20210129	Water	01/29/21 00:00	01/29/21 17:07	
410-28040-3	BT-03-S-72-20210129	Solid	01/29/21 12:00	01/29/21 17:07	

Environmental Analysis Re ustody

eurofins | Lancaster Laboratories Environmental

Acct. # _____

410-28040 Chain of Custody

use only

COC # 616286

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHC-Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 2138902797
Sampler: Dave Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ Surface ☐ NPDES ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil/Sediment	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO / Moisture	VOC 8260 c/d	Lead / PAH 8270D
BT-03-S-46-20210129	1/29/21	1545	X		X			6	X	X	X	X
TB-20210129	1/8/21	—					X	2			X	
BT-03-S-72-20210129	1/29/21	1200	X		X			6	X	X	X	X

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dave	1/29/21	1330	Pierce	1/29/21	1350
Pierce	1/29/21	1547			
				1-29-21	1707

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 4.2 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-28040-1

Login Number: 28040
List Number: 1
Creator: Metzger, Katherine A

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-28485-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 3:48:20 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 3:48:20 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-28485-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-28485-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28485-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-28485-1

Revision
The report being provided is a revision of the original report sent on 2/18/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 2/4/2021 3:23 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-92153 recovered above the upper control limit for C4-C12-TPH-GRO. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: Phenanthrene was detected above the method detection limit (MDL) in the method blank (MB) associated with preparation batch 410-92192 as well as in the following sample: BT-21-S-26-20210204 (410-28485-1). All affected samples were re-extracted within holding time with an acceptable MB. Surrogate recoveries in the second extraction were outside acceptance limits. Phenanthrene was detected in the second extraction of this sample. The first set of data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-28485-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-21-S-26-20210204
Lab Sample ID: 410-28485-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	25		4.5	0.36	ug/Kg	1	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	5.4		4.5	0.45	ug/Kg	1	☼	8260C	Total/NA
Toluene	80		4.5	0.55	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	11		4.5	0.45	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	32		4.5	0.36	ug/Kg	1	☼	8260C	Total/NA
1,2-Dichloroethane	73		4.5	0.55	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	3800	^c	100	40	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	140		9.1	1.3	ug/Kg	1	☼	8260C	Total/NA
Benzene - DL	5900		250	25	ug/Kg	50	☼	8260C	Total/NA
Chrysene	3.8	J	18	3.5	ug/Kg	1	☼	8270D	Total/NA
Fluorene	5.5	J	18	3.5	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	34		18	7.1	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	23	B	18	4.2	ug/Kg	1	☼	8270D	Total/NA
Pyrene	12	J	18	3.5	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	8.0	J	13	5.4	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	7.5	J	13	5.4	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	16		13	5.4	mg/Kg	1	☼	Total TPH	Total/NA
Lead	7.0		1.2	0.49	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210204
Lab Sample ID: 410-28485-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-21-S-26-20210204
Lab Sample ID: 410-28485-1

Date Collected: 02/04/21 13:00
Matrix: Solid

Date Received: 02/04/21 15:23
Percent Solids: 93.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**25**		4.5	0.36	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
1,3,5-Trimethylbenzene	**5.4**		4.5	0.45	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
Toluene	**80**		4.5	0.55	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
Methyl tertiary butyl ether	ND		4.5	0.45	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
1,2,4-Trimethylbenzene	**11**		4.5	0.45	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
Isopropylbenzene	**32**		4.5	0.36	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
1,2-Dibromoethane	ND		4.5	0.36	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
1,2-Dichloroethane	**73**		4.5	0.55	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
C4-C12-TPH-GRO	**3800**	**^c**	100	40	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
t-Butyl alcohol	ND		91	14	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1
Xylenes, Total	**140**		9.1	1.3	ug/Kg	☼	02/05/21 08:25	02/09/21 01:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*	*02/05/21 08:25*	*02/09/21 01:41*	*1*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*	*02/05/21 08:25*	*02/09/21 01:41*	*1*
Dibromofluoromethane (Surr)	*88*		*50 - 141*	*02/05/21 08:25*	*02/09/21 01:41*	*1*
Toluene-d8 (Surr)	*96*		*52 - 141*	*02/05/21 08:25*	*02/09/21 01:41*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**5900**		250	25	ug/Kg	☼	02/05/21 07:52	02/11/21 15:24	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*71*		*54 - 135*	*02/05/21 07:52*	*02/11/21 15:24*	*50*
4-Bromofluorobenzene (Surr)	*67*		*50 - 131*	*02/05/21 07:52*	*02/11/21 15:24*	*50*
Dibromofluoromethane (Surr)	*68*		*50 - 141*	*02/05/21 07:52*	*02/11/21 15:24*	*50*
Toluene-d8 (Surr)	*68*		*52 - 141*	*02/05/21 07:52*	*02/11/21 15:24*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		18	3.5	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Benzo[a]anthracene	ND		18	3.5	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Benzo[a]pyrene	ND		18	3.5	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Benzo[b]fluoranthene	ND		18	3.5	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Benzo[g,h,i]perylene	ND		18	3.5	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Chrysene	**3.8**	**J**	18	3.5	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Fluorene	**5.5**	**J**	18	3.5	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Naphthalene	**34**		18	7.1	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Phenanthrene	**23**	**B**	18	4.2	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1
Pyrene	**12**	**J**	18	3.5	ug/Kg	☼	02/08/21 18:31	02/10/21 04:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*39 - 100*	*02/08/21 18:31*	*02/10/21 04:39*	*1*
Nitrobenzene-d5 (Surr)	*64*		*32 - 97*	*02/08/21 18:31*	*02/10/21 04:39*	*1*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*	*02/08/21 18:31*	*02/10/21 04:39*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**8.0**	**J**	13	5.4	mg/Kg	☼	02/09/21 10:11	02/09/21 21:51	1
>C12-C22 (1C)	**7.5**	**J**	13	5.4	mg/Kg	☼	02/09/21 10:11	02/09/21 21:51	1

Client Sample ID: BT-21-S-26-20210204 — Lab Sample ID: 410-28485-1

Date Collected: 02/04/21 13:00 — **Matrix: Solid**
Date Received: 02/04/21 15:23 — **Percent Solids: 93.1**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*75*		*54 - 137*	*02/09/21 10:11*	*02/09/21 21:51*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*02/09/21 10:11*	*02/09/21 21:51*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**16**		13	5.4	mg/Kg	☼		02/10/21 09:35	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**7.0**		1.2	0.49	mg/Kg	☼	02/06/21 08:40	02/09/21 11:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**6.9**		1.0	1.0	%			02/04/21 20:01	1

Client Sample ID: TB-20210204 — Lab Sample ID: 410-28485-2

Date Collected: 02/04/21 00:00 — **Matrix: Water**
Date Received: 02/04/21 15:23

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/10/21 13:17	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/10/21 13:17	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/10/21 13:17	1
Benzene	ND		1.0	0.20	ug/L			02/10/21 13:17	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/10/21 13:17	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/10/21 13:17	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/10/21 13:17	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/10/21 13:17	1
Toluene	ND		1.0	0.20	ug/L			02/10/21 13:17	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/10/21 13:17	1
t-Butyl alcohol	ND		50	12	ug/L			02/10/21 13:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*02/10/21 13:17*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/10/21 13:17*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*02/10/21 13:17*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/10/21 13:17*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28485-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-28485-1	BT-21-S-26-20210204	97	90	88	96
410-28485-1 - DL	BT-21-S-26-20210204	71	67	68	68
LCS 410-92153/6	Lab Control Sample	105	98	101	97
LCS 410-93280/5	Lab Control Sample	94	83	92	88
LCS 410-93280/7	Lab Control Sample	97	85	94	92
LCSD 410-92153/7	Lab Control Sample Dup	106	98	101	98
LCSD 410-93280/6	Lab Control Sample Dup	95	82	91	87
LCSD 410-93280/8	Lab Control Sample Dup	96	83	90	89
MB 410-92153/11	Method Blank	110	94	105	95
MB 410-93280/10	Method Blank	103	88	99	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-28485-2	TB-20210204	96	96	96	101
LCS 410-92756/5	Lab Control Sample	96	101	95	102
LCS 410-92756/7	Lab Control Sample	95	99	96	101
LCSD 410-92756/6	Lab Control Sample Dup	97	99	97	102
LCSD 410-92756/8	Lab Control Sample Dup	94	99	95	101
MB 410-92756/9	Method Blank	95	95	96	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-28485-1	BT-21-S-26-20210204	72	64	90
LCS 410-92192/2-A	Lab Control Sample	69	66	90
LCSD 410-92192/3-A	Lab Control Sample Dup	74	67	94
MB 410-92192/1-A	Method Blank	75	70	105

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-28485-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)								
410-28485-1	BT-21-S-26-20210204	75	91								
LCS 410-92275/2-A	Lab Control Sample	71	100								
LCSD 410-92275/9-A	Lab Control Sample Dup	71	95								
MB 410-92275/1-A	Method Blank	78	92								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28485-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-92153/11
Matrix: Solid
Analysis Batch: 92153

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			02/08/21 22:14	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/08/21 22:14	1
Toluene	ND		5.0	0.60	ug/Kg			02/08/21 22:14	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			02/08/21 22:14	1
Benzene	ND		5.0	0.50	ug/Kg			02/08/21 22:14	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/08/21 22:14	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			02/08/21 22:14	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			02/08/21 22:14	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			02/08/21 22:14	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			02/08/21 22:14	1
t-Butyl alcohol	ND		100	15	ug/Kg			02/08/21 22:14	1
Xylenes, Total	ND		10	1.4	ug/Kg			02/08/21 22:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*54 - 135*		*02/08/21 22:14*	*1*
4-Bromofluorobenzene (Surr)	*94*		*50 - 131*		*02/08/21 22:14*	*1*
Dibromofluoromethane (Surr)	*105*		*50 - 141*		*02/08/21 22:14*	*1*
Toluene-d8 (Surr)	*95*		*52 - 141*		*02/08/21 22:14*	*1*

Lab Sample ID: LCS 410-92153/6
Matrix: Solid
Analysis Batch: 92153

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	20.7		ug/Kg		104	78 - 120
1,3,5-Trimethylbenzene	20.0	20.0		ug/Kg		100	73 - 120
Toluene	20.0	20.7		ug/Kg		104	80 - 120
Methyl tertiary butyl ether	20.0	15.6		ug/Kg		78	72 - 120
Benzene	20.0	22.3		ug/Kg		111	80 - 120
Naphthalene	20.0	18.3		ug/Kg		92	48 - 130
1,2,4-Trimethylbenzene	20.0	20.0		ug/Kg		100	73 - 120
Isopropylbenzene	20.0	19.8		ug/Kg		99	77 - 120
1,2-Dibromoethane	20.0	19.9		ug/Kg		100	76 - 120
1,2-Dichloroethane	20.0	19.6		ug/Kg		98	71 - 128
t-Butyl alcohol	200	201		ug/Kg		101	74 - 121
Xylenes, Total	60.0	62.3		ug/Kg		104	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-92153/7
Matrix: Solid
Analysis Batch: 92153

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.6		ug/Kg		103	78 - 120	0	30
1,3,5-Trimethylbenzene			20.0	20.1		ug/Kg		100	73 - 120	1	30
Toluene			20.0	20.8		ug/Kg		104	80 - 120	1	30
Methyl tertiary butyl ether			20.0	15.7		ug/Kg		78	72 - 120	1	30
Benzene			20.0	22.4		ug/Kg		112	80 - 120	1	30
Naphthalene			20.0	18.3		ug/Kg		92	48 - 130	0	30
1,2,4-Trimethylbenzene			20.0	19.7		ug/Kg		98	73 - 120	2	30
Isopropylbenzene			20.0	19.8		ug/Kg		99	77 - 120	0	30
1,2-Dibromoethane			20.0	19.9		ug/Kg		100	76 - 120	0	30
1,2-Dichloroethane			20.0	20.0		ug/Kg		100	71 - 128	2	30
t-Butyl alcohol			200	201		ug/Kg		100	74 - 121	0	30
Xylenes, Total			60.0	62.6		ug/Kg		104	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: MB 410-93280/10
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/11/21 12:36	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/11/21 12:36	50
Toluene	ND		250	30	ug/Kg			02/11/21 12:36	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/11/21 12:36	50
Benzene	ND		250	25	ug/Kg			02/11/21 12:36	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/11/21 12:36	50
Isopropylbenzene	ND		250	20	ug/Kg			02/11/21 12:36	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/11/21 12:36	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/11/21 12:36	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/11/21 12:36	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/11/21 12:36	50
Xylenes, Total	ND		500	70	ug/Kg			02/11/21 12:36	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*		*02/11/21 12:36*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*02/11/21 12:36*	*50*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*02/11/21 12:36*	*50*
Toluene-d8 (Surr)	*95*		*52 - 141*		*02/11/21 12:36*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-93280/5
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			1000	948		ug/Kg		95	78 - 120		
1,3,5-Trimethylbenzene			1000	915		ug/Kg		91	73 - 120		
Toluene			1000	959		ug/Kg		96	80 - 120		
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120		
Benzene			1000	983		ug/Kg		98	80 - 120		
Naphthalene			1000	915		ug/Kg		91	48 - 130		
1,2,4-Trimethylbenzene			1000	909		ug/Kg		91	73 - 120		
Isopropylbenzene			1000	933		ug/Kg		93	77 - 120		
1,2-Dibromoethane			1000	1040		ug/Kg		104	76 - 120		
1,2-Dichloroethane			1000	951		ug/Kg		95	71 - 128		
t-Butyl alcohol			10000	10400		ug/Kg		104	74 - 121		
Xylenes, Total			3000	2930		ug/Kg		98	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*92*		*50 - 141*
Toluene-d8 (Surr)	*88*		*52 - 141*

Lab Sample ID: LCS 410-93280/7
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	52500		ug/Kg		105	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*
4-Bromofluorobenzene (Surr)	*85*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*92*		*52 - 141*

Lab Sample ID: LCSD 410-93280/6
Matrix: Solid
Analysis Batch: 93280

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	942		ug/Kg		94	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	915		ug/Kg		91	73 - 120	0	30
Toluene			1000	948		ug/Kg		95	80 - 120	1	30
Methyl tertiary butyl ether			1000	1060		ug/Kg		106	72 - 120	0	30
Benzene			1000	968		ug/Kg		97	80 - 120	2	30
Naphthalene			1000	919		ug/Kg		92	48 - 130	0	30
1,2,4-Trimethylbenzene			1000	910		ug/Kg		91	73 - 120	0	30
Isopropylbenzene			1000	924		ug/Kg		92	77 - 120	1	30
1,2-Dibromoethane			1000	1030		ug/Kg		103	76 - 120	0	30
1,2-Dichloroethane			1000	928		ug/Kg		93	71 - 128	2	30
t-Butyl alcohol			10000	10500		ug/Kg		105	74 - 121	0	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-93280/6 **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 93280

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Xylenes, Total			3000	2880		ug/Kg		96	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*82*		*50 - 131*
Dibromofluoromethane (Surr)	*91*		*50 - 141*
Toluene-d8 (Surr)	*87*		*52 - 141*

Lab Sample ID: LCSD 410-93280/8 **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 93280

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	50600		ug/Kg		101	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*54 - 135*
4-Bromofluorobenzene (Surr)	*83*		*50 - 131*
Dibromofluoromethane (Surr)	*90*		*50 - 141*
Toluene-d8 (Surr)	*89*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-92756/9 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 92756

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/10/21 12:53	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/10/21 12:53	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/10/21 12:53	1
Benzene	ND		1.0	0.20	ug/L			02/10/21 12:53	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/10/21 12:53	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/10/21 12:53	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/10/21 12:53	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/10/21 12:53	1
Toluene	ND		1.0	0.20	ug/L			02/10/21 12:53	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/10/21 12:53	1
t-Butyl alcohol	ND		50	12	ug/L			02/10/21 12:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*02/10/21 12:53*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*02/10/21 12:53*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*02/10/21 12:53*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/10/21 12:53*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-92756/5
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,4-Trimethylbenzene			20.0	19.0		ug/L		95	75 - 120		
1,2-Dichloroethane			20.0	18.1		ug/L		90	73 - 124		
1,3,5-Trimethylbenzene			20.0	18.6		ug/L		93	75 - 120		
Benzene			20.0	19.4		ug/L		97	80 - 120		
Ethylbenzene			20.0	19.8		ug/L		99	80 - 120		
Isopropylbenzene			20.0	19.5		ug/L		98	80 - 120		
Methyl tertiary butyl ether			20.0	18.1		ug/L		90	69 - 122		
Naphthalene			20.0	17.0		ug/L		85	53 - 124		
Toluene			20.0	19.8		ug/L		99	80 - 120		
Xylenes, Total			60.0	59.3		ug/L		99	80 - 120		
t-Butyl alcohol			200	205		ug/L		103	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 410-92756/7
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	958		ug/L		96	67 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-92756/6
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.1		ug/L		96	75 - 120	1	30
1,2-Dichloroethane			20.0	18.4		ug/L		92	73 - 124	2	30
1,3,5-Trimethylbenzene			20.0	18.9		ug/L		95	75 - 120	2	30
Benzene			20.0	19.6		ug/L		98	80 - 120	1	30
Ethylbenzene			20.0	19.8		ug/L		99	80 - 120	0	30
Isopropylbenzene			20.0	19.8		ug/L		99	80 - 120	1	30
Methyl tertiary butyl ether			20.0	17.8		ug/L		89	69 - 122	1	30
Naphthalene			20.0	17.5		ug/L		88	53 - 124	3	30
Toluene			20.0	19.9		ug/L		100	80 - 120	1	30
Xylenes, Total			60.0	59.5		ug/L		99	80 - 120	0	30
t-Butyl alcohol			200	203		ug/L		102	60 - 130	1	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-92756/6
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-92756/8
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	942		ug/L		94	67 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-92192/1-A
Matrix: Solid
Analysis Batch: 92689

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92192

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Chrysene	ND		17	3.3	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Fluorene	ND		17	3.3	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Naphthalene	ND		17	6.7	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Phenanthrene	5.48	J B	17	4.0	ug/Kg		02/08/21 18:30	02/10/21 02:42	1
Pyrene	ND		17	3.3	ug/Kg		02/08/21 18:30	02/10/21 02:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*39 - 100*	*02/08/21 18:30*	*02/10/21 02:42*	*1*
Nitrobenzene-d5 (Surr)	*70*		*32 - 97*	*02/08/21 18:30*	*02/10/21 02:42*	*1*
p-Terphenyl-d14 (Surr)	*105*		*45 - 108*	*02/08/21 18:30*	*02/10/21 02:42*	*1*

Lab Sample ID: LCS 410-92192/2-A
Matrix: Solid
Analysis Batch: 92689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92192

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene			1670	1400		ug/Kg		84	75 - 114
Benzo[a]anthracene			1670	1480		ug/Kg		89	73 - 114

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-92192/2-A
Matrix: Solid
Analysis Batch: 92689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92192

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	1670	1470		ug/Kg		88	61 - 111
Benzo[b]fluoranthene	1670	1130		ug/Kg		68	63 - 110
Benzo[g,h,i]perylene	1670	1440		ug/Kg		86	77 - 114
Chrysene	1670	1420		ug/Kg		85	66 - 111
Fluorene	1670	1370		ug/Kg		82	68 - 102
Naphthalene	1670	1120		ug/Kg		67	60 - 94
Phenanthrene	1670	1360		ug/Kg		81	74 - 112
Pyrene	1670	1350		ug/Kg		81	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*39 - 100*
Nitrobenzene-d5 (Surr)	*66*		*32 - 97*
p-Terphenyl-d14 (Surr)	*90*		*45 - 108*

Lab Sample ID: LCSD 410-92192/3-A
Matrix: Solid
Analysis Batch: 92689

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 92192

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	1670	1460		ug/Kg		87	75 - 114	4	30
Benzo[a]anthracene	1670	1510		ug/Kg		91	73 - 114	2	30
Benzo[a]pyrene	1670	1610		ug/Kg		97	61 - 111	9	30
Benzo[b]fluoranthene	1670	1300		ug/Kg		78	63 - 110	15	30
Benzo[g,h,i]perylene	1670	1480		ug/Kg		89	77 - 114	3	30
Chrysene	1670	1540		ug/Kg		93	66 - 111	8	30
Fluorene	1670	1430		ug/Kg		86	68 - 102	4	30
Naphthalene	1670	1150		ug/Kg		69	60 - 94	3	30
Phenanthrene	1670	1450		ug/Kg		87	74 - 112	7	30
Pyrene	1670	1400		ug/Kg		84	70 - 103	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*74*		*39 - 100*
Nitrobenzene-d5 (Surr)	*67*		*32 - 97*
p-Terphenyl-d14 (Surr)	*94*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-92275/1-A
Matrix: Solid
Analysis Batch: 92619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/09/21 10:11	02/09/21 20:26	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/09/21 10:11	02/09/21 20:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*78*		*54 - 137*	*02/09/21 10:11*	*02/09/21 20:26*	*1*
o- terphenyl (Surr) (1C)	*92*		*52 - 154*	*02/09/21 10:11*	*02/09/21 20:26*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: LCS 410-92275/2-A
Matrix: Solid
Analysis Batch: 92619

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92275

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	110		mg/Kg		82	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*71*		*54 - 137*
o- terphenyl (Surr) (1C)	*100*		*52 - 154*

Lab Sample ID: LCSD 410-92275/9-A
Matrix: Solid
Analysis Batch: 92619

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 92275

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			134	108		mg/Kg		81	64 - 122	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*71*		*54 - 137*
o- terphenyl (Surr) (1C)	*95*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-91710/1-A
Matrix: Solid
Analysis Batch: 92490

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 91710

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.57	mg/Kg		02/06/21 08:40	02/09/21 10:53	1

Lab Sample ID: LCS 410-91710/2-A
Matrix: Solid
Analysis Batch: 92490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 91710

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.94	2.83		mg/Kg		96	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28485-1

GC/MS VOA

Prep Batch: 91312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1 - DL	BT-21-S-26-20210204	Total/NA	Solid	5035	

Prep Batch: 91347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	5035	

Analysis Batch: 92153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	8260C	91347
MB 410-92153/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-92153/6	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-92153/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 92756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-2	TB-20210204	Total/NA	Water	8260C/UST	
MB 410-92756/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-92756/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-92756/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-92756/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-92756/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 93280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1 - DL	BT-21-S-26-20210204	Total/NA	Solid	8260C	91312
MB 410-93280/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-93280/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-93280/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-93280/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-93280/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 92192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	3546	
MB 410-92192/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-92192/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-92192/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 92689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	8270D	92192
MB 410-92192/1-A	Method Blank	Total/NA	Solid	8270D	92192
LCS 410-92192/2-A	Lab Control Sample	Total/NA	Solid	8270D	92192
LCSD 410-92192/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	92192

GC Semi VOA

Prep Batch: 92275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 92275 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-92275/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-92275/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-92275/9-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 92619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	8015C TPH	92275
MB 410-92275/1-A	Method Blank	Total/NA	Solid	8015C TPH	92275
LCS 410-92275/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	92275
LCSD 410-92275/9-A	Lab Control Sample Dup	Total/NA	Solid	8015C TPH	92275

Analysis Batch: 92825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 91710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	3050B	
MB 410-91710/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-91710/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 92490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	6010C	91710
MB 410-91710/1-A	Method Blank	Total/NA	Solid	6010C	91710
LCS 410-91710/2-A	Lab Control Sample	Total/NA	Solid	6010C	91710

General Chemistry

Analysis Batch: 91215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28485-1	BT-21-S-26-20210204	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28485-1

Client Sample ID: BT-21-S-26-20210204
Date Collected: 02/04/21 13:00
Date Received: 02/04/21 15:23

Lab Sample ID: 410-28485-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	91215	02/04/21 20:01	PTG7	ELLE

Client Sample ID: BT-21-S-26-20210204
Date Collected: 02/04/21 13:00
Date Received: 02/04/21 15:23

Lab Sample ID: 410-28485-1
Matrix: Solid
Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		91312	02/05/21 07:52	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	50	93280	02/11/21 15:24	R64Z	ELLE
Total/NA	Prep	5035			91347	02/05/21 08:25	Z8FW	ELLE
Total/NA	Analysis	8260C		1	92153	02/09/21 01:41	CHT8	ELLE
Total/NA	Prep	3546			92192	02/08/21 18:31	DN9W	ELLE
Total/NA	Analysis	8270D		1	92689	02/10/21 04:39	UWHS	ELLE
Total/NA	Prep	3546			92275	02/09/21 10:11	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	92619	02/09/21 21:51	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	92825	02/10/21 09:35	UJL4	ELLE
Total/NA	Prep	3050B			91710	02/06/21 08:40	UJLA	ELLE
Total/NA	Analysis	6010C		1	92490	02/09/21 11:52	MDP5	ELLE

Client Sample ID: TB-20210204
Date Collected: 02/04/21 00:00
Date Received: 02/04/21 15:23

Lab Sample ID: 410-28485-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	92756	02/10/21 13:17	HDS6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-28485-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-28485-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-28485-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-28485-1	BT-21-S-26-20210204	Solid	02/04/21 13:00	02/04/21 15:23	
410-28485-2	TB-20210204	Water	02/04/21 00:00	02/04/21 15:23	

Environmental Analysis Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # ___

410-28485 Chain of Custody

For environmental use only

COC #612318

Client Information

Client: Evergreen c/o Stantec	Acct. #: 166057
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC:_____

SCR#:_____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil/Sediment	Water	Other	Total # of Containers	TPH GRO / Moisture VOC 8260	TPH DRO	VOC 8260 C/D	Lead / PAH 8270D
BT-21-S-26-20210204	2/4/21	1300	X		X			6	X	X	X	X
TB-20210204	2/4/21	—					X	2			X	

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	2/4/21	13:15	Pierre	2/4/21	13:16
Pierre	2/4/21	15:00			

EDD Required? Yes No

If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other X

Temperature upon receipt 0.6 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-28485-1

Login Number: 28485
List Number: 1
Creator: Colon Martinez, Jessenia C

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-28654-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 3:51:37 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 3:51:37 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28654-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-28654-1

Revision
The report being provided is a revision of the original report sent on 2/16/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 2/5/2021 4:35 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-21-S-42-20210204
Lab Sample ID: 410-28654-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.7	J	5.3	0.53	ug/Kg	1	☼	8260C	Total/NA
Naphthalene	17	J	21	8.2	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	5.5	J	21	4.9	ug/Kg	1	☼	8270D	Total/NA
Pyrene	5.7	J	21	4.1	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	6.2	J	15	6.1	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	6.2	J	15	6.2	mg/Kg	1	☼	Total TPH	Total/NA
Lead	15		1.7	0.68	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210205
Lab Sample ID: 410-28654-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-21-S-42-20210204
Lab Sample ID: 410-28654-1

Date Collected: 02/04/21 13:55
Matrix: Solid

Date Received: 02/05/21 16:35
Percent Solids: 80.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.3	0.42	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
1,3,5-Trimethylbenzene	ND		5.3	0.53	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
Toluene	ND		5.3	0.63	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
Methyl tertiary butyl ether	ND		5.3	0.53	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
Benzene	**1.7**	**J**	5.3	0.53	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
1,2,4-Trimethylbenzene	ND		5.3	0.53	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
Isopropylbenzene	ND		5.3	0.42	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
1,2-Dibromoethane	ND		5.3	0.42	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
1,2-Dichloroethane	ND		5.3	0.63	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
C4-C12-TPH-GRO	ND		120	46	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
t-Butyl alcohol	ND		110	16	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1
Xylenes, Total	ND		11	1.5	ug/Kg	☼	02/06/21 16:56	02/13/21 05:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*54 - 135*	*02/06/21 16:56*	*02/13/21 05:11*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*	*02/06/21 16:56*	*02/13/21 05:11*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 141*	*02/06/21 16:56*	*02/13/21 05:11*	*1*
Toluene-d8 (Surr)	*100*		*52 - 141*	*02/06/21 16:56*	*02/13/21 05:11*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		21	4.1	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Benzo[a]anthracene	ND		21	4.1	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Benzo[a]pyrene	ND		21	4.1	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Benzo[b]fluoranthene	ND		21	4.1	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Benzo[g,h,i]perylene	ND		21	4.1	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Chrysene	ND		21	4.1	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Fluorene	ND		21	4.1	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Naphthalene	**17**	**J**	21	8.2	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Phenanthrene	**5.5**	**J**	21	4.9	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1
Pyrene	**5.7**	**J**	21	4.1	ug/Kg	☼	02/10/21 11:50	02/11/21 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*39 - 100*	*02/10/21 11:50*	*02/11/21 19:08*	*1*
Nitrobenzene-d5 (Surr)	*61*		*32 - 97*	*02/10/21 11:50*	*02/11/21 19:08*	*1*
p-Terphenyl-d14 (Surr)	*72*		*45 - 108*	*02/10/21 11:50*	*02/11/21 19:08*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**6.2**	**J**	15	6.1	mg/Kg	☼	02/09/21 10:11	02/09/21 22:12	1
>C12-C22 (1C)	ND		15	6.1	mg/Kg	☼	02/09/21 10:11	02/09/21 22:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*69*		*54 - 137*	*02/09/21 10:11*	*02/09/21 22:12*	*1*
o- terphenyl (Surr) (1C)	*62*		*52 - 154*	*02/09/21 10:11*	*02/09/21 22:12*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**6.2**	**J**	15	6.2	mg/Kg	☼		03/16/21 10:24	1

Client Sample ID: BT-21-S-42-20210204 — Lab Sample ID: 410-28654-1

Date Collected: 02/04/21 13:55 — **Matrix: Solid**
Date Received: 02/05/21 16:35 — **Percent Solids: 80.5**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	15		1.7	0.68	mg/Kg	☼	02/06/21 08:40	02/09/21 11:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19.5		1.0	1.0	%			02/05/21 20:10	1

Client Sample ID: TB-20210205 — Lab Sample ID: 410-28654-2

Date Collected: 02/03/21 00:00 — **Matrix: Water**
Date Received: 02/05/21 16:35

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/10/21 13:40	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/10/21 13:40	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/10/21 13:40	1
Benzene	ND		1.0	0.20	ug/L			02/10/21 13:40	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/10/21 13:40	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/10/21 13:40	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/10/21 13:40	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/10/21 13:40	1
Toluene	ND		1.0	0.20	ug/L			02/10/21 13:40	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/10/21 13:40	1
t-Butyl alcohol	ND		50	12	ug/L			02/10/21 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*02/10/21 13:40*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*02/10/21 13:40*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*02/10/21 13:40*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*02/10/21 13:40*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28654-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-28654-1	BT-21-S-42-20210204	111	96	102	100
LCS 410-93916/5	Lab Control Sample	103	99	96	103
LCS 410-93916/7	Lab Control Sample	100	100	95	105
LCSD 410-93916/6	Lab Control Sample Dup	102	101	96	104
LCSD 410-93916/8	Lab Control Sample Dup	101	101	95	104
MB 410-93916/11	Method Blank	108	98	99	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-28654-2	TB-20210205	96	95	97	100
LCS 410-92756/5	Lab Control Sample	96	101	95	102
LCS 410-92756/7	Lab Control Sample	95	99	96	101
LCSD 410-92756/6	Lab Control Sample Dup	97	99	97	102
LCSD 410-92756/8	Lab Control Sample Dup	94	99	95	101
MB 410-92756/9	Method Blank	95	95	96	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-28654-1	BT-21-S-42-20210204	70	61	72
LCS 410-92731/2-A	Lab Control Sample	76	67	85
MB 410-92731/1-A	Method Blank	84	71	93

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
410-28654-1	BT-21-S-42-20210204	69	62								
LCS 410-92275/2-A	Lab Control Sample	71	100								
LCSD 410-92275/9-A	Lab Control Sample Dup	71	95								
MB 410-92275/1-A	Method Blank	78	92								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-93916/11
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Toluene	ND		5.0	0.60	ug/Kg			02/12/21 23:24	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Benzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			02/12/21 23:24	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			02/12/21 23:24	1
t-Butyl alcohol	ND		100	15	ug/Kg			02/12/21 23:24	1
Xylenes, Total	ND		10	1.4	ug/Kg			02/12/21 23:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*		*02/12/21 23:24*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*		*02/12/21 23:24*	*1*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*02/12/21 23:24*	*1*
Toluene-d8 (Surr)	*101*		*52 - 141*		*02/12/21 23:24*	*1*

Lab Sample ID: LCS 410-93916/5
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	19.2		ug/Kg		96	78 - 120
1,3,5-Trimethylbenzene	20.0	18.9		ug/Kg		95	73 - 120
Toluene	20.0	19.3		ug/Kg		96	80 - 120
Methyl tertiary butyl ether	20.0	15.5		ug/Kg		77	72 - 120
Benzene	20.0	19.8		ug/Kg		99	80 - 120
Naphthalene	20.0	16.9		ug/Kg		85	48 - 130
1,2,4-Trimethylbenzene	20.0	19.1		ug/Kg		95	73 - 120
Isopropylbenzene	20.0	17.5		ug/Kg		88	77 - 120
1,2-Dibromoethane	20.0	18.2		ug/Kg		91	76 - 120
1,2-Dichloroethane	20.0	17.8		ug/Kg		89	71 - 128
t-Butyl alcohol	200	166		ug/Kg		83	74 - 121
Xylenes, Total	60.0	56.2		ug/Kg		94	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-93916/7
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1110		ug/Kg		111	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*100*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*105*		*52 - 141*

Lab Sample ID: LCSD 410-93916/6
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	21.6		ug/Kg		108	78 - 120	12	30
1,3,5-Trimethylbenzene			20.0	21.4		ug/Kg		107	73 - 120	12	30
Toluene			20.0	21.6		ug/Kg		108	80 - 120	11	30
Methyl tertiary butyl ether			20.0	17.8		ug/Kg		89	72 - 120	14	30
Benzene			20.0	22.0		ug/Kg		110	80 - 120	10	30
Naphthalene			20.0	19.4		ug/Kg		97	48 - 130	14	30
1,2,4-Trimethylbenzene			20.0	21.5		ug/Kg		107	73 - 120	12	30
Isopropylbenzene			20.0	19.8		ug/Kg		99	77 - 120	12	30
1,2-Dibromoethane			20.0	20.6		ug/Kg		103	76 - 120	13	30
1,2-Dichloroethane			20.0	20.5		ug/Kg		103	71 - 128	14	30
t-Butyl alcohol			200	192		ug/Kg		96	74 - 121	14	30
Xylenes, Total			60.0	63.0		ug/Kg		105	75 - 120	11	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*101*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Lab Sample ID: LCSD 410-93916/8
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1130		ug/Kg		113	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*101*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-92756/9
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/10/21 12:53	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/10/21 12:53	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/10/21 12:53	1
Benzene	ND		1.0	0.20	ug/L			02/10/21 12:53	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/10/21 12:53	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/10/21 12:53	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/10/21 12:53	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/10/21 12:53	1
Toluene	ND		1.0	0.20	ug/L			02/10/21 12:53	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/10/21 12:53	1
t-Butyl alcohol	ND		50	12	ug/L			02/10/21 12:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*02/10/21 12:53*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*02/10/21 12:53*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*02/10/21 12:53*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/10/21 12:53*	*1*

Lab Sample ID: LCS 410-92756/5
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.0		ug/L		95	75 - 120
1,2-Dichloroethane	20.0	18.1		ug/L		90	73 - 124
1,3,5-Trimethylbenzene	20.0	18.6		ug/L		93	75 - 120
Benzene	20.0	19.4		ug/L		97	80 - 120
Ethylbenzene	20.0	19.8		ug/L		99	80 - 120
Isopropylbenzene	20.0	19.5		ug/L		98	80 - 120
Methyl tertiary butyl ether	20.0	18.1		ug/L		90	69 - 122
Naphthalene	20.0	17.0		ug/L		85	53 - 124
Toluene	20.0	19.8		ug/L		99	80 - 120
Xylenes, Total	60.0	59.3		ug/L		99	80 - 120
t-Butyl alcohol	200	205		ug/L		103	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 410-92756/7
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	958		ug/L		96	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-92756/7
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-92756/6
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.1		ug/L		96	75 - 120	1	30
1,2-Dichloroethane			20.0	18.4		ug/L		92	73 - 124	2	30
1,3,5-Trimethylbenzene			20.0	18.9		ug/L		95	75 - 120	2	30
Benzene			20.0	19.6		ug/L		98	80 - 120	1	30
Ethylbenzene			20.0	19.8		ug/L		99	80 - 120	0	30
Isopropylbenzene			20.0	19.8		ug/L		99	80 - 120	1	30
Methyl tertiary butyl ether			20.0	17.8		ug/L		89	69 - 122	1	30
Naphthalene			20.0	17.5		ug/L		88	53 - 124	3	30
Toluene			20.0	19.9		ug/L		100	80 - 120	1	30
Xylenes, Total			60.0	59.5		ug/L		99	80 - 120	0	30
t-Butyl alcohol			200	203		ug/L		102	60 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-92756/8
Matrix: Water
Analysis Batch: 92756

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	942		ug/L		94	67 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-92731/1-A
Matrix: Solid
Analysis Batch: 93204

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92731

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Chrysene	ND		17	3.3	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Fluorene	ND		17	3.3	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Naphthalene	ND		17	6.7	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Phenanthrene	ND		17	4.0	ug/Kg		02/10/21 11:50	02/11/21 10:50	1
Pyrene	ND		17	3.3	ug/Kg		02/10/21 11:50	02/11/21 10:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*84*		*39 - 100*	*02/10/21 11:50*	*02/11/21 10:50*	*1*
Nitrobenzene-d5 (Surr)	*71*		*32 - 97*	*02/10/21 11:50*	*02/11/21 10:50*	*1*
p-Terphenyl-d14 (Surr)	*93*		*45 - 108*	*02/10/21 11:50*	*02/11/21 10:50*	*1*

Lab Sample ID: LCS 410-92731/2-A
Matrix: Solid
Analysis Batch: 93204

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92731

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1330		ug/Kg		80	75 - 114
Benzo[a]anthracene	1670	1520		ug/Kg		91	73 - 114
Benzo[a]pyrene	1670	1580		ug/Kg		95	61 - 111
Benzo[b]fluoranthene	1670	1260		ug/Kg		75	63 - 110
Benzo[g,h,i]perylene	1670	1370		ug/Kg		82	77 - 114
Chrysene	1670	1490		ug/Kg		89	66 - 111
Fluorene	1670	1330		ug/Kg		80	68 - 102
Naphthalene	1670	1220		ug/Kg		73	60 - 94
Phenanthrene	1670	1300		ug/Kg		78	74 - 112
Pyrene	1670	1320		ug/Kg		79	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*76*		*39 - 100*
Nitrobenzene-d5 (Surr)	*67*		*32 - 97*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-92275/1-A
Matrix: Solid
Analysis Batch: 92619

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/09/21 10:11	02/09/21 20:26	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/09/21 10:11	02/09/21 20:26	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-92275/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92619 — **Prep Batch: 92275**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	78		54 - 137	02/09/21 10:11	02/09/21 20:26	1
o- terphenyl (Surr) (1C)	92		52 - 154	02/09/21 10:11	02/09/21 20:26	1

Lab Sample ID: LCS 410-92275/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92619 — **Prep Batch: 92275**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	110		mg/Kg		82	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	71		54 - 137
o- terphenyl (Surr) (1C)	100		52 - 154

Lab Sample ID: LCSD 410-92275/9-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92619 — **Prep Batch: 92275**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			134	108		mg/Kg		81	64 - 122	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Chlorobenzene (Surr) (1C)	71		54 - 137
o- terphenyl (Surr) (1C)	95		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-91710/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92490 — **Prep Batch: 91710**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.57	mg/Kg		02/06/21 08:40	02/09/21 10:53	1

Lab Sample ID: LCS 410-91710/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 92490 — **Prep Batch: 91710**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.94	2.83		mg/Kg		96	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28654-1

GC/MS VOA

Prep Batch: 91794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	5035	

Analysis Batch: 92756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-2	TB-20210205	Total/NA	Water	8260C/UST	
MB 410-92756/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-92756/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-92756/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-92756/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-92756/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 93916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	8260C	91794
MB 410-93916/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-93916/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-93916/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-93916/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-93916/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 92731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	3546	
MB 410-92731/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-92731/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 93204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	8270D	92731
MB 410-92731/1-A	Method Blank	Total/NA	Solid	8270D	92731
LCS 410-92731/2-A	Lab Control Sample	Total/NA	Solid	8270D	92731

GC Semi VOA

Prep Batch: 92275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	3546	
MB 410-92275/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-92275/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-92275/9-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 92619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	8015C TPH	92275
MB 410-92275/1-A	Method Blank	Total/NA	Solid	8015C TPH	92275
LCS 410-92275/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	92275
LCSD 410-92275/9-A	Lab Control Sample Dup	Total/NA	Solid	8015C TPH	92275

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC Semi VOA

Analysis Batch: 103651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 91710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	3050B	
MB 410-91710/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-91710/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 92490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	6010C	91710
MB 410-91710/1-A	Method Blank	Total/NA	Solid	6010C	91710
LCS 410-91710/2-A	Lab Control Sample	Total/NA	Solid	6010C	91710

General Chemistry

Analysis Batch: 91647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28654-1	BT-21-S-42-20210204	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp. Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-21-S-42-20210204 Lab Sample ID: 410-28654-1

Date Collected: 02/04/21 13:55 **Matrix: Solid**
Date Received: 02/05/21 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	91647	02/05/21 20:10	OEL4	ELLE

Client Sample ID: BT-21-S-42-20210204 Lab Sample ID: 410-28654-1

Date Collected: 02/04/21 13:55 **Matrix: Solid**
Date Received: 02/05/21 16:35 **Percent Solids: 80.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			91794	02/06/21 16:56	UK3O	ELLE
Total/NA	Analysis	8260C		1	93916	02/13/21 05:11	CHT8	ELLE
Total/NA	Prep	3546			92731	02/10/21 11:50	A2VL	ELLE
Total/NA	Analysis	8270D		1	93204	02/11/21 19:08	UWHS	ELLE
Total/NA	Prep	3546			92275	02/09/21 10:11	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	92619	02/09/21 22:12	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103651	03/16/21 10:24	UJL4	ELLE
Total/NA	Prep	3050B			91710	02/06/21 08:40	UJLA	ELLE
Total/NA	Analysis	6010C		1	92490	02/09/21 11:49	MDP5	ELLE

Client Sample ID: TB-20210205 Lab Sample ID: 410-28654-2

Date Collected: 02/03/21 00:00 **Matrix: Water**
Date Received: 02/05/21 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	92756	02/10/21 13:40	HDS6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-28654-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-28654-1	BT-21-S-42-20210204	Solid	02/04/21 13:55	02/05/21 16:35	
410-28654-2	TB-20210205	Water	02/03/21 00:00	02/05/21 16:35	

Environmental Analysis Request/Chain o

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories E

Acct. # _____ Group # _____ Sampl

410-28654 Chain of Custody

COC # 610336

Client Information	
Client: Evergreen C/O Stantec	Acct. #: 16657
Project Name/#: PHC: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Matrix: Soil ☒ Sediment ☐ Tissue	Water: Potable ☐ Ground ☐ NPDES ☐ Surface	Other: Trip blank	Total # of Containers	Analysis Requested: TPH GRO/moisture VOC 8260D	TPH DRO	VOC 8260 C/D	Lead/PAH 8270D	Remarks
BT-21-S-42-20210204	2/4/21	1355	X		X			6	X	X	X	X	
TB-20210205	2/3/21	—					X	2			X		

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	2/5/21	1309	[signature]	2/5/21	1309
[signature]	2/5/21	1626			
			[signature]	2-5-21	16:35

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: Equis

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other X

Temperature upon receipt 0.6 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-28654-1

Login Number: 28654
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-28885-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 3:55:47 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 3:55:47 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
FL	MS and/or MSD recovery below control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28885-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-28885-1

Revision
The report being provided is a revision of the original report sent on 2/18/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 2/9/2021 5:06 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C

GC/MS VOA
Method 8260C_UST: The continuing calibration verification (CCV) associated with batch 410-93811 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08A-S-11-20210209
Lab Sample ID: 410-28885-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	10	J	21	8.6	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	9.5	J	15	6.4	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	9.5	J	16	6.5	mg/Kg	1	☼	Total TPH	Total/NA
Lead	16		1.9	0.76	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210209
Lab Sample ID: 410-28885-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-08A-S-11-20210209 — Lab Sample ID: 410-28885-1

Date Collected: 02/09/21 11:10 — **Matrix: Solid**
Date Received: 02/09/21 17:06 — **Percent Solids: 76.6**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.4	0.43	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
1,3,5-Trimethylbenzene	ND		5.4	0.54	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
Toluene	ND		5.4	0.65	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
Methyl tertiary butyl ether	ND		5.4	0.54	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
Benzene	ND		5.4	0.54	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
1,2,4-Trimethylbenzene	ND		5.4	0.54	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
Isopropylbenzene	ND		5.4	0.43	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
1,2-Dibromoethane	ND		5.4	0.43	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
1,2-Dichloroethane	ND		5.4	0.65	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
C4-C12-TPH-GRO	ND		120	47	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
t-Butyl alcohol	ND		110	16	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1
Xylenes, Total	ND		11	1.5	ug/Kg	☼	02/10/21 09:14	02/13/21 04:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*	*02/10/21 09:14*	*02/13/21 04:49*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*	*02/10/21 09:14*	*02/13/21 04:49*	*1*
Dibromofluoromethane (Surr)	*100*		*50 - 141*	*02/10/21 09:14*	*02/13/21 04:49*	*1*
Toluene-d8 (Surr)	*102*		*52 - 141*	*02/10/21 09:14*	*02/13/21 04:49*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		21	4.3	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Benzo[a]anthracene	ND		21	4.3	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Benzo[a]pyrene	ND		21	4.3	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Benzo[b]fluoranthene	ND		21	4.3	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Benzo[g,h,i]perylene	ND		21	4.3	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Chrysene	ND		21	4.3	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Fluorene	ND		21	4.3	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Naphthalene	**10**	**J**	21	8.6	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Phenanthrene	ND		21	5.1	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1
Pyrene	ND		21	4.3	ug/Kg	☼	02/12/21 10:12	02/16/21 17:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*54*		*39 - 100*	*02/12/21 10:12*	*02/16/21 17:58*	*1*
Nitrobenzene-d5 (Surr)	*54*		*32 - 97*	*02/12/21 10:12*	*02/16/21 17:58*	*1*
p-Terphenyl-d14 (Surr)	*59*		*45 - 108*	*02/12/21 10:12*	*02/16/21 17:58*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**9.5**	**J**	15	6.4	mg/Kg	☼	02/16/21 16:02	02/17/21 10:54	1
>C12-C22 (1C)	ND		15	6.4	mg/Kg	☼	02/16/21 16:02	02/17/21 10:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*6*	*S1-*	*54 - 137*	*02/16/21 16:02*	*02/17/21 10:54*	*1*
o- terphenyl (Surr) (1C)	*10*	*S1-*	*52 - 154*	*02/16/21 16:02*	*02/17/21 10:54*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**9.5**	**J**	16	6.5	mg/Kg	☼		03/16/21 15:00	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28885-1

Client Sample ID: BT-08A-S-11-20210209

Lab Sample ID: 410-28885-1
Date Collected: 02/09/21 11:10
Matrix: Solid
Date Received: 02/09/21 17:06
Percent Solids: 76.6

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	16		1.9	0.76	mg/Kg	☼	02/10/21 04:34	02/10/21 14:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.4		1.0	1.0	%			02/09/21 21:49	1

Client Sample ID: TB-20210209

Lab Sample ID: 410-28885-2
Date Collected: 01/08/21 00:00
Matrix: Water
Date Received: 02/09/21 17:06

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/12/21 17:45	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/12/21 17:45	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/12/21 17:45	1
Benzene	ND		1.0	0.20	ug/L			02/12/21 17:45	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/12/21 17:45	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/12/21 17:45	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/12/21 17:45	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/12/21 17:45	1
Toluene	ND		1.0	0.20	ug/L			02/12/21 17:45	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/12/21 17:45	1
t-Butyl alcohol	ND	^c	50	12	ug/L			02/12/21 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*02/12/21 17:45*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*02/12/21 17:45*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*02/12/21 17:45*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*02/12/21 17:45*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28885-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-28885-1	BT-08A-S-11-20210209	104	96	100	102
LCS 410-93916/5	Lab Control Sample	103	99	96	103
LCS 410-93916/7	Lab Control Sample	100	100	95	105
LCSD 410-93916/6	Lab Control Sample Dup	102	101	96	104
LCSD 410-93916/8	Lab Control Sample Dup	101	101	95	104
MB 410-93916/11	Method Blank	108	98	99	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-28885-2	TB-20210209	96	93	97	100
LCS 410-93811/5	Lab Control Sample	97	99	96	101
LCS 410-93811/7	Lab Control Sample	95	99	96	101
LCSD 410-93811/6	Lab Control Sample Dup	97	101	98	102
LCSD 410-93811/8	Lab Control Sample Dup	94	99	96	101
MB 410-93811/9	Method Blank	97	97	100	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-28885-1	BT-08A-S-11-20210209	54	54	59
LCS 410-93641/2-A	Lab Control Sample	68	75	75
MB 410-93641/1-A	Method Blank	75	81	85

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)								
410-28885-1	BT-08A-S-11-20210209	6 S1-	10 S1-								
410-28885-1 DU	BT-08A-S-11-20210209	16 S1-	21 S1-								
410-28885-1 MS	BT-08A-S-11-20210209	3 S1-	6 S1-								
LCS 410-94730/2-A	Lab Control Sample	67	98								
MB 410-94730/1-A	Method Blank	76	92								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-93916/11
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Toluene	ND		5.0	0.60	ug/Kg			02/12/21 23:24	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Benzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			02/12/21 23:24	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			02/12/21 23:24	1
t-Butyl alcohol	ND		100	15	ug/Kg			02/12/21 23:24	1
Xylenes, Total	ND		10	1.4	ug/Kg			02/12/21 23:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*		*02/12/21 23:24*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*		*02/12/21 23:24*	*1*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*02/12/21 23:24*	*1*
Toluene-d8 (Surr)	*101*		*52 - 141*		*02/12/21 23:24*	*1*

Lab Sample ID: LCS 410-93916/5
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	19.2		ug/Kg		96	78 - 120
1,3,5-Trimethylbenzene	20.0	18.9		ug/Kg		95	73 - 120
Toluene	20.0	19.3		ug/Kg		96	80 - 120
Methyl tertiary butyl ether	20.0	15.5		ug/Kg		77	72 - 120
Benzene	20.0	19.8		ug/Kg		99	80 - 120
Naphthalene	20.0	16.9		ug/Kg		85	48 - 130
1,2,4-Trimethylbenzene	20.0	19.1		ug/Kg		95	73 - 120
Isopropylbenzene	20.0	17.5		ug/Kg		88	77 - 120
1,2-Dibromoethane	20.0	18.2		ug/Kg		91	76 - 120
1,2-Dichloroethane	20.0	17.8		ug/Kg		89	71 - 128
t-Butyl alcohol	200	166		ug/Kg		83	74 - 121
Xylenes, Total	60.0	56.2		ug/Kg		94	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-93916/7
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1110		ug/Kg		111	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*100*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*105*		*52 - 141*

Lab Sample ID: LCSD 410-93916/6
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	21.6		ug/Kg		108	78 - 120	12	30
1,3,5-Trimethylbenzene			20.0	21.4		ug/Kg		107	73 - 120	12	30
Toluene			20.0	21.6		ug/Kg		108	80 - 120	11	30
Methyl tertiary butyl ether			20.0	17.8		ug/Kg		89	72 - 120	14	30
Benzene			20.0	22.0		ug/Kg		110	80 - 120	10	30
Naphthalene			20.0	19.4		ug/Kg		97	48 - 130	14	30
1,2,4-Trimethylbenzene			20.0	21.5		ug/Kg		107	73 - 120	12	30
Isopropylbenzene			20.0	19.8		ug/Kg		99	77 - 120	12	30
1,2-Dibromoethane			20.0	20.6		ug/Kg		103	76 - 120	13	30
1,2-Dichloroethane			20.0	20.5		ug/Kg		103	71 - 128	14	30
t-Butyl alcohol			200	192		ug/Kg		96	74 - 121	14	30
Xylenes, Total			60.0	63.0		ug/Kg		105	75 - 120	11	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*101*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Lab Sample ID: LCSD 410-93916/8
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1130		ug/Kg		113	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*101*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-93811/9
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/12/21 15:46	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/12/21 15:46	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/12/21 15:46	1
Benzene	ND		1.0	0.20	ug/L			02/12/21 15:46	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/12/21 15:46	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/12/21 15:46	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/12/21 15:46	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/12/21 15:46	1
Toluene	ND		1.0	0.20	ug/L			02/12/21 15:46	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/12/21 15:46	1
t-Butyl alcohol	ND		50	12	ug/L			02/12/21 15:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*02/12/21 15:46*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*02/12/21 15:46*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*02/12/21 15:46*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/12/21 15:46*	*1*

Lab Sample ID: LCS 410-93811/5
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	17.2		ug/L		86	75 - 120
1,2-Dichloroethane	20.0	16.5		ug/L		83	73 - 124
1,3,5-Trimethylbenzene	20.0	16.9		ug/L		85	75 - 120
Benzene	20.0	17.4		ug/L		87	80 - 120
Ethylbenzene	20.0	17.6		ug/L		88	80 - 120
Isopropylbenzene	20.0	17.6		ug/L		88	80 - 120
Methyl tertiary butyl ether	20.0	16.8		ug/L		84	69 - 122
Naphthalene	20.0	15.5		ug/L		77	53 - 124
Toluene	20.0	17.8		ug/L		89	80 - 120
Xylenes, Total	60.0	52.9		ug/L		88	80 - 120
t-Butyl alcohol	200	188		ug/L		94	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 410-93811/7
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	987		ug/L		99	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-93811/7
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-93811/6
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	16.8		ug/L		84	75 - 120	2	30
1,2-Dichloroethane			20.0	16.5		ug/L		83	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	16.7		ug/L		84	75 - 120	1	30
Benzene			20.0	17.3		ug/L		87	80 - 120	0	30
Ethylbenzene			20.0	17.7		ug/L		88	80 - 120	0	30
Isopropylbenzene			20.0	17.9		ug/L		89	80 - 120	1	30
Methyl tertiary butyl ether			20.0	16.6		ug/L		83	69 - 122	1	30
Naphthalene			20.0	14.9		ug/L		74	53 - 124	4	30
Toluene			20.0	17.8		ug/L		89	80 - 120	0	30
Xylenes, Total			60.0	53.6		ug/L		89	80 - 120	1	30
t-Butyl alcohol			200	187		ug/L		94	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-93811/8
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	984		ug/L		98	67 - 120	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-28885-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-93641/1-A
Matrix: Solid
Analysis Batch: 94476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93641

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Chrysene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Fluorene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Naphthalene	ND		17	6.7	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Phenanthrene	ND		17	4.0	ug/Kg		02/12/21 10:12	02/16/21 13:16	1
Pyrene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/16/21 13:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*39 - 100*	*02/12/21 10:12*	*02/16/21 13:16*	*1*
Nitrobenzene-d5 (Surr)	*81*		*32 - 97*	*02/12/21 10:12*	*02/16/21 13:16*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*	*02/12/21 10:12*	*02/16/21 13:16*	*1*

Lab Sample ID: LCS 410-93641/2-A
Matrix: Solid
Analysis Batch: 94476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93641

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1330		ug/Kg		80	75 - 114
Benzo[a]anthracene	1670	1250		ug/Kg		75	73 - 114
Benzo[a]pyrene	1670	1650		ug/Kg		99	61 - 111
Benzo[b]fluoranthene	1670	1320		ug/Kg		79	63 - 110
Benzo[g,h,i]perylene	1670	1560		ug/Kg		94	77 - 114
Chrysene	1670	1300		ug/Kg		78	66 - 111
Fluorene	1670	1180		ug/Kg		71	68 - 102
Naphthalene	1670	1200		ug/Kg		72	60 - 94
Phenanthrene	1670	1310		ug/Kg		78	74 - 112
Pyrene	1670	1340		ug/Kg		80	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*68*		*39 - 100*
Nitrobenzene-d5 (Surr)	*75*		*32 - 97*
p-Terphenyl-d14 (Surr)	*75*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-94730/1-A
Matrix: Solid
Analysis Batch: 95028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 94730

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/16/21 16:02	02/17/21 10:11	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/16/21 16:02	02/17/21 10:11	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-94730/1-A
Matrix: Solid
Analysis Batch: 95028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 94730

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	76		54 - 137	02/16/21 16:02	02/17/21 10:11	1
o- terphenyl (Surr) (1C)	92		52 - 154	02/16/21 16:02	02/17/21 10:11	1

Lab Sample ID: LCS 410-94730/2-A
Matrix: Solid
Analysis Batch: 95028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94730

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	110		mg/Kg		82	64 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	67		54 - 137
o- terphenyl (Surr) (1C)	98		52 - 154

Lab Sample ID: 410-28885-1 MS
Matrix: Solid
Analysis Batch: 95028

Client Sample ID: BT-08A-S-11-20210209
Prep Type: Total/NA
Prep Batch: 94730

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	ND	FL	193	ND	FL	mg/Kg	☼	0	64 - 122

Surrogate	MS %Recovery	MS Qualifier	Limits
Chlorobenzene (Surr) (1C)	3	S1-	54 - 137
o- terphenyl (Surr) (1C)	6	S1-	52 - 154

Lab Sample ID: 410-28885-1 DU
Matrix: Solid
Analysis Batch: 95028

Client Sample ID: BT-08A-S-11-20210209
Prep Type: Total/NA
Prep Batch: 94730

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
>C22-C44 (1C)	9.5	J	10.7	J	mg/Kg	☼	12	
>C12-C22 (1C)	ND		ND		mg/Kg	☼	NC	

Surrogate	DU %Recovery	DU Qualifier	Limits
Chlorobenzene (Surr) (1C)	16	S1-	54 - 137
o- terphenyl (Surr) (1C)	21	S1-	52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-92614/1-A
Matrix: Solid
Analysis Batch: 92950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 92614

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.56	mg/Kg		02/09/21 17:31	02/10/21 13:52	1

Client: Stantec Consulting Corp.
Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-92614/2-A
Matrix: Solid
Analysis Batch: 92950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 92614

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.80	2.70		mg/Kg		96	80 - 120

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 92813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	5035	

Analysis Batch: 93811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-2	TB-20210209	Total/NA	Water	8260C/UST	
MB 410-93811/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-93811/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-93811/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-93811/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-93811/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 93916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	8260C	92813
MB 410-93916/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-93916/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-93916/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-93916/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-93916/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 93641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	3546	
MB 410-93641/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-93641/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 94476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	8270D	93641
MB 410-93641/1-A	Method Blank	Total/NA	Solid	8270D	93641
LCS 410-93641/2-A	Lab Control Sample	Total/NA	Solid	8270D	93641

GC Semi VOA

Prep Batch: 94730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	3546	
MB 410-94730/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-94730/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-28885-1 MS	BT-08A-S-11-20210209	Total/NA	Solid	3546	
410-28885-1 DU	BT-08A-S-11-20210209	Total/NA	Solid	3546	

Analysis Batch: 95028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	8015C TPH	94730
MB 410-94730/1-A	Method Blank	Total/NA	Solid	8015C TPH	94730
LCS 410-94730/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	94730
410-28885-1 MS	BT-08A-S-11-20210209	Total/NA	Solid	8015C TPH	94730
410-28885-1 DU	BT-08A-S-11-20210209	Total/NA	Solid	8015C TPH	94730

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC Semi VOA

Analysis Batch: 103767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 92614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	3050B	
MB 410-92614/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-92614/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 92950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	6010C	92614
MB 410-92614/1-A	Method Blank	Total/NA	Solid	6010C	92614
LCS 410-92614/2-A	Lab Control Sample	Total/NA	Solid	6010C	92614

General Chemistry

Analysis Batch: 92685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-28885-1	BT-08A-S-11-20210209	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08A-S-11-20210209
Lab Sample ID: 410-28885-1
Date Collected: 02/09/21 11:10
Matrix: Solid
Date Received: 02/09/21 17:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	92685	02/09/21 21:49	OEL4	ELLE

Client Sample ID: BT-08A-S-11-20210209
Lab Sample ID: 410-28885-1
Date Collected: 02/09/21 11:10
Matrix: Solid
Date Received: 02/09/21 17:06
Percent Solids: 76.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			92813	02/10/21 09:14	Z8FW	ELLE
Total/NA	Analysis	8260C		1	93916	02/13/21 04:49	CHT8	ELLE
Total/NA	Prep	3546			93641	02/12/21 10:12	A2VL	ELLE
Total/NA	Analysis	8270D		1	94476	02/16/21 17:58	ULM3	ELLE
Total/NA	Prep	3546			94730	02/16/21 16:02	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	95028	02/17/21 10:54	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103767	03/16/21 15:00	UHEW	ELLE
Total/NA	Prep	3050B			92614	02/10/21 04:34	UAMX	ELLE
Total/NA	Analysis	6010C		1	92950	02/10/21 14:38	WJM9	ELLE

Client Sample ID: TB-20210209
Lab Sample ID: 410-28885-2
Date Collected: 01/08/21 00:00
Matrix: Water
Date Received: 02/09/21 17:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	93811	02/12/21 17:45	UCB5	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp. Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-28885-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-28885-1	BT-08A-S-11-20210209	Solid	02/09/21 11:10	02/09/21 17:06	
410-28885-2	TB-20210209	Water	01/08/21 00:00	02/09/21 17:06	

Environmental Analysis Request/Chain of C

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environment

Acct. # _____ Group # _____ Sample # _____

410-28885 Chain of Custody

C #616703

Client Information

Client: Evergreen c/o Stantec

Acct. #: 16657

Project Name/#: PHL - Belmont Terminal Drilling Sampling

PWSID #:

Project Manager: Andrew Klingbeil

P.O. #: 2134027097

Sampler: Dane Hopkins

Quote #:

State where samples were collected: PA

For Compliance: Yes ☐ No ☐

Matrix

Tissue ☐ | Ground ☐ | Surface ☐

Sediment ☐ | Potable ☐ | NPDES ☐

Soil ☒ | Water | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC:

SCR#: 265694

Preservation Codes

H=HCl T=Thiosulfate

N=HNO_3 B=NaOH

S=H_2SO_4 P=H_3PO_4

F=Field Filtered O=Other

Remarks

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH DRO	TPH GRO/moisture VOC 8260	VOC 8260 C/D	Lead/PAH 8270D
BT-08A-S-11-20210209	2/9/21	1110	X		X			6	X	X	X	X
TB-20210209	1/8/21	—					X	2			X	

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)

Type VI (Raw Data Only)

Type III (Reduced non-CLP)

NJ DKQP

TX TRRP-13

NYSDEC Category A or B

MA MCP

CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	1/8/21	1145	Pierre	2/9/21	1145
Pierre	2/9/21	1645			

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other X

Temperature upon receipt 0.9 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc

The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

3/16/2021 (Rev. 11)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-28885-1

Login Number: 28885
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-29037-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 2

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:01:21 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:01:21 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
FL	MS and/or MSD recovery below control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-29037-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-29037-1

Revision
The report being provided is a revision of the original report sent on 2/19/2021.

Report revision history
Revision 1 - 2/22/2021 - The SVOC data was not included in the original report.
Revision 2 - 3/16/2021 - TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 2/10/2021 4:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.6°C

GC/MS VOA
Method 8260C_UST: The continuing calibration verification (CCV) associated with batch 410-93811 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08A-S-38-20210209
Lab Sample ID: 410-29037-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.86	J	5.8	0.58	ug/Kg	1	☼	8260C	Total/NA
Lead	5.9	FL F2	1.4	0.56	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210210
Lab Sample ID: 410-29037-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-08A-S-38-20210209 Lab Sample ID: 410-29037-1

Date Collected: 02/09/21 13:30 **Matrix: Solid**
Date Received: 02/10/21 16:46 **Percent Solids: 83.9**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.8	0.46	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
1,3,5-Trimethylbenzene	ND		5.8	0.58	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
Toluene	ND		5.8	0.70	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
Methyl tertiary butyl ether	ND		5.8	0.58	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
Benzene	**0.86**	**J**	5.8	0.58	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
1,2,4-Trimethylbenzene	ND		5.8	0.58	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
Isopropylbenzene	ND		5.8	0.46	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
1,2-Dibromoethane	ND		5.8	0.46	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
1,2-Dichloroethane	ND		5.8	0.70	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
C4-C12-TPH-GRO	ND		130	51	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
t-Butyl alcohol	ND		120	17	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1
Xylenes, Total	ND		12	1.6	ug/Kg	☼	02/11/21 11:24	02/13/21 04:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*54 - 135*	*02/11/21 11:24*	*02/13/21 04:26*	*1*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*02/11/21 11:24*	*02/13/21 04:26*	*1*
Dibromofluoromethane (Surr)	*100*		*50 - 141*	*02/11/21 11:24*	*02/13/21 04:26*	*1*
Toluene-d8 (Surr)	*102*		*52 - 141*	*02/11/21 11:24*	*02/13/21 04:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		20	3.9	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Benzo[a]anthracene	ND		20	3.9	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Benzo[a]pyrene	ND		20	3.9	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Benzo[b]fluoranthene	ND		20	3.9	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Benzo[g,h,i]perylene	ND		20	3.9	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Chrysene	ND		20	3.9	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Fluorene	ND		20	3.9	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Naphthalene	ND		20	7.8	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Phenanthrene	ND		20	4.7	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1
Pyrene	ND		20	3.9	ug/Kg	☼	02/12/21 10:12	02/16/21 19:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*39 - 100*	*02/12/21 10:12*	*02/16/21 19:07*	*1*
Nitrobenzene-d5 (Surr)	*65*		*32 - 97*	*02/12/21 10:12*	*02/16/21 19:07*	*1*
p-Terphenyl-d14 (Surr)	*82*		*45 - 108*	*02/12/21 10:12*	*02/16/21 19:07*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		14	5.9	mg/Kg	☼	02/12/21 10:06	02/16/21 01:34	1
>C12-C22 (1C)	ND		14	5.9	mg/Kg	☼	02/12/21 10:06	02/16/21 01:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*65*		*54 - 137*	*02/12/21 10:06*	*02/16/21 01:34*	*1*
o- terphenyl (Surr) (1C)	*80*		*52 - 154*	*02/12/21 10:06*	*02/16/21 01:34*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		14	6.0	mg/Kg	☼		03/16/21 14:57	1

Client Sample ID: BT-08A-S-38-20210209 — Lab Sample ID: 410-29037-1

Date Collected: 02/09/21 13:30 — **Matrix: Solid**
Date Received: 02/10/21 16:46 — **Percent Solids: 83.9**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.9	FL F2	1.4	0.56	mg/Kg	☼	02/11/21 13:10	02/12/21 15:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.1		1.0	1.0	%			02/10/21 20:11	1

Client Sample ID: TB-20210210 — Lab Sample ID: 410-29037-2

Date Collected: 02/10/21 00:00 — **Matrix: Water**
Date Received: 02/10/21 16:46

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/12/21 18:08	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/12/21 18:08	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/12/21 18:08	1
Benzene	ND		1.0	0.20	ug/L			02/12/21 18:08	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/12/21 18:08	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/12/21 18:08	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/12/21 18:08	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/12/21 18:08	1
Toluene	ND		1.0	0.20	ug/L			02/12/21 18:08	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/12/21 18:08	1
t-Butyl alcohol	ND	^c	50	12	ug/L			02/12/21 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*02/12/21 18:08*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*02/12/21 18:08*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*02/12/21 18:08*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/12/21 18:08*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-29037-1	BT-08A-S-38-20210209	107	97	100	102
LCS 410-93916/5	Lab Control Sample	103	99	96	103
LCS 410-93916/7	Lab Control Sample	100	100	95	105
LCSD 410-93916/6	Lab Control Sample Dup	102	101	96	104
LCSD 410-93916/8	Lab Control Sample Dup	101	101	95	104
MB 410-93916/11	Method Blank	108	98	99	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-29037-2	TB-20210210	97	95	99	101
LCS 410-93811/5	Lab Control Sample	97	99	96	101
LCS 410-93811/7	Lab Control Sample	95	99	96	101
LCSD 410-93811/6	Lab Control Sample Dup	97	101	98	102
LCSD 410-93811/8	Lab Control Sample Dup	94	99	96	101
MB 410-93811/9	Method Blank	97	97	100	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-29037-1	BT-08A-S-38-20210209	67	65	82
LCS 410-93641/2-A	Lab Control Sample	67	66	79
MB 410-93641/1-A	Method Blank	72	72	86

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)								
410-29037-1	BT-08A-S-38-20210209	65	80								
LCS 410-93644/2-A	Lab Control Sample	71	98								
LCSD 410-93644/3-A	Lab Control Sample Dup	75	102								
MB 410-93644/1-A	Method Blank	83	94								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-29037-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-93916/11
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Toluene	ND		5.0	0.60	ug/Kg			02/12/21 23:24	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Benzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/12/21 23:24	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			02/12/21 23:24	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			02/12/21 23:24	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			02/12/21 23:24	1
t-Butyl alcohol	ND		100	15	ug/Kg			02/12/21 23:24	1
Xylenes, Total	ND		10	1.4	ug/Kg			02/12/21 23:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*54 - 135*		*02/12/21 23:24*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*		*02/12/21 23:24*	*1*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*02/12/21 23:24*	*1*
Toluene-d8 (Surr)	*101*		*52 - 141*		*02/12/21 23:24*	*1*

Lab Sample ID: LCS 410-93916/5
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	19.2		ug/Kg		96	78 - 120
1,3,5-Trimethylbenzene	20.0	18.9		ug/Kg		95	73 - 120
Toluene	20.0	19.3		ug/Kg		96	80 - 120
Methyl tertiary butyl ether	20.0	15.5		ug/Kg		77	72 - 120
Benzene	20.0	19.8		ug/Kg		99	80 - 120
Naphthalene	20.0	16.9		ug/Kg		85	48 - 130
1,2,4-Trimethylbenzene	20.0	19.1		ug/Kg		95	73 - 120
Isopropylbenzene	20.0	17.5		ug/Kg		88	77 - 120
1,2-Dibromoethane	20.0	18.2		ug/Kg		91	76 - 120
1,2-Dichloroethane	20.0	17.8		ug/Kg		89	71 - 128
t-Butyl alcohol	200	166		ug/Kg		83	74 - 121
Xylenes, Total	60.0	56.2		ug/Kg		94	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-93916/7
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1110		ug/Kg		111	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*100*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*105*		*52 - 141*

Lab Sample ID: LCSD 410-93916/6
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	21.6		ug/Kg		108	78 - 120	12	30
1,3,5-Trimethylbenzene			20.0	21.4		ug/Kg		107	73 - 120	12	30
Toluene			20.0	21.6		ug/Kg		108	80 - 120	11	30
Methyl tertiary butyl ether			20.0	17.8		ug/Kg		89	72 - 120	14	30
Benzene			20.0	22.0		ug/Kg		110	80 - 120	10	30
Naphthalene			20.0	19.4		ug/Kg		97	48 - 130	14	30
1,2,4-Trimethylbenzene			20.0	21.5		ug/Kg		107	73 - 120	12	30
Isopropylbenzene			20.0	19.8		ug/Kg		99	77 - 120	12	30
1,2-Dibromoethane			20.0	20.6		ug/Kg		103	76 - 120	13	30
1,2-Dichloroethane			20.0	20.5		ug/Kg		103	71 - 128	14	30
t-Butyl alcohol			200	192		ug/Kg		96	74 - 121	14	30
Xylenes, Total			60.0	63.0		ug/Kg		105	75 - 120	11	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*101*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Lab Sample ID: LCSD 410-93916/8
Matrix: Solid
Analysis Batch: 93916

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1130		ug/Kg		113	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*54 - 135*
4-Bromofluorobenzene (Surr)	*101*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*104*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-93811/9
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/12/21 15:46	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/12/21 15:46	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/12/21 15:46	1
Benzene	ND		1.0	0.20	ug/L			02/12/21 15:46	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/12/21 15:46	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/12/21 15:46	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/12/21 15:46	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/12/21 15:46	1
Toluene	ND		1.0	0.20	ug/L			02/12/21 15:46	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/12/21 15:46	1
t-Butyl alcohol	ND		50	12	ug/L			02/12/21 15:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*02/12/21 15:46*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*02/12/21 15:46*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*02/12/21 15:46*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/12/21 15:46*	*1*

Lab Sample ID: LCS 410-93811/5
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	17.2		ug/L		86	75 - 120
1,2-Dichloroethane	20.0	16.5		ug/L		83	73 - 124
1,3,5-Trimethylbenzene	20.0	16.9		ug/L		85	75 - 120
Benzene	20.0	17.4		ug/L		87	80 - 120
Ethylbenzene	20.0	17.6		ug/L		88	80 - 120
Isopropylbenzene	20.0	17.6		ug/L		88	80 - 120
Methyl tertiary butyl ether	20.0	16.8		ug/L		84	69 - 122
Naphthalene	20.0	15.5		ug/L		77	53 - 124
Toluene	20.0	17.8		ug/L		89	80 - 120
Xylenes, Total	60.0	52.9		ug/L		88	80 - 120
t-Butyl alcohol	200	188		ug/L		94	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 410-93811/7
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	987		ug/L		99	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-93811/7
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-93811/6
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	16.8		ug/L		84	75 - 120	2	30
1,2-Dichloroethane			20.0	16.5		ug/L		83	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	16.7		ug/L		84	75 - 120	1	30
Benzene			20.0	17.3		ug/L		87	80 - 120	0	30
Ethylbenzene			20.0	17.7		ug/L		88	80 - 120	0	30
Isopropylbenzene			20.0	17.9		ug/L		89	80 - 120	1	30
Methyl tertiary butyl ether			20.0	16.6		ug/L		83	69 - 122	1	30
Naphthalene			20.0	14.9		ug/L		74	53 - 124	4	30
Toluene			20.0	17.8		ug/L		89	80 - 120	0	30
Xylenes, Total			60.0	53.6		ug/L		89	80 - 120	1	30
t-Butyl alcohol			200	187		ug/L		94	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-93811/8
Matrix: Water
Analysis Batch: 93811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	984		ug/L		98	67 - 120	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-93641/1-A
Matrix: Solid
Analysis Batch: 94084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93641

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Chrysene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Fluorene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Naphthalene	ND		17	6.7	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Phenanthrene	ND		17	4.0	ug/Kg		02/12/21 10:12	02/15/21 12:14	1
Pyrene	ND		17	3.3	ug/Kg		02/12/21 10:12	02/15/21 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*39 - 100*	*02/12/21 10:12*	*02/15/21 12:14*	*1*
Nitrobenzene-d5 (Surr)	*72*		*32 - 97*	*02/12/21 10:12*	*02/15/21 12:14*	*1*
p-Terphenyl-d14 (Surr)	*86*		*45 - 108*	*02/12/21 10:12*	*02/15/21 12:14*	*1*

Lab Sample ID: LCS 410-93641/2-A
Matrix: Solid
Analysis Batch: 94084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93641

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1320		ug/Kg		79	75 - 114
Benzo[a]anthracene	1670	1420		ug/Kg		85	73 - 114
Benzo[a]pyrene	1670	1510		ug/Kg		91	61 - 111
Benzo[b]fluoranthene	1670	1240		ug/Kg		74	63 - 110
Benzo[g,h,i]perylene	1670	1410		ug/Kg		84	77 - 114
Chrysene	1670	1390		ug/Kg		84	66 - 111
Fluorene	1670	1220		ug/Kg		73	68 - 102
Naphthalene	1670	1170		ug/Kg		70	60 - 94
Phenanthrene	1670	1260		ug/Kg		76	74 - 112
Pyrene	1670	1230		ug/Kg		74	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*67*		*39 - 100*
Nitrobenzene-d5 (Surr)	*66*		*32 - 97*
p-Terphenyl-d14 (Surr)	*79*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-93644/1-A
Matrix: Solid
Analysis Batch: 94363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93644

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/12/21 10:06	02/16/21 01:12	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/12/21 10:06	02/16/21 01:12	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-93644/1-A
Matrix: Solid
Analysis Batch: 94363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93644

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	83		54 - 137	02/12/21 10:06	02/16/21 01:12	1
o- terphenyl (Surr) (1C)	94		52 - 154	02/12/21 10:06	02/16/21 01:12	1

Lab Sample ID: LCS 410-93644/2-A
Matrix: Solid
Analysis Batch: 94363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93644

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	110		mg/Kg		82	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	71		54 - 137
o- terphenyl (Surr) (1C)	98		52 - 154

Lab Sample ID: LCSD 410-93644/3-A
Matrix: Solid
Analysis Batch: 94363

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 93644

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			134	114		mg/Kg		85	64 - 122	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Chlorobenzene (Surr) (1C)	75		54 - 137
o- terphenyl (Surr) (1C)	102		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-93400/1-A
Matrix: Solid
Analysis Batch: 93913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 93400

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.3	0.53	mg/Kg		02/11/21 13:10	02/12/21 15:32	1

Lab Sample ID: LCS 410-93400/2-A
Matrix: Solid
Analysis Batch: 93913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 93400

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.83	2.87		mg/Kg		102	80 - 120		

Lab Sample ID: 410-29037-1 MS
Matrix: Solid
Analysis Batch: 93913

Client Sample ID: BT-08A-S-38-20210209
Prep Type: Total/NA
Prep Batch: 93400

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead	5.9	FL F2	2.75	8.81		mg/Kg	☼	108	75 - 125		

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 410-29037-1 MSD
Client Sample ID: BT-08A-S-38-20210209
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 93913
Prep Batch: 93400

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	5.9	FL F2	2.86	7.15	FL F2	mg/Kg	☼	45	75 - 125	21	20

Lab Sample ID: 410-29037-1 DU
Client Sample ID: BT-08A-S-38-20210209
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 93913
Prep Batch: 93400

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Lead	5.9	FL F2		5.46		mg/Kg	☼			7	20

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-29037-1

GC/MS VOA

Prep Batch: 93350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	5035	

Analysis Batch: 93811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-2	TB-20210210	Total/NA	Water	8260C/UST	
MB 410-93811/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-93811/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-93811/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-93811/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-93811/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 93916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	8260C	93350
MB 410-93916/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-93916/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-93916/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-93916/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-93916/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 93641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	3546	
MB 410-93641/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-93641/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 94084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-93641/1-A	Method Blank	Total/NA	Solid	8270D	93641
LCS 410-93641/2-A	Lab Control Sample	Total/NA	Solid	8270D	93641

Analysis Batch: 94456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	8270D	93641

GC Semi VOA

Prep Batch: 93644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	3546	
MB 410-93644/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-93644/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-93644/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 94363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	8015C TPH	93644
MB 410-93644/1-A	Method Blank	Total/NA	Solid	8015C TPH	93644
LCS 410-93644/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	93644
LCSD 410-93644/3-A	Lab Control Sample Dup	Total/NA	Solid	8015C TPH	93644

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-29037-1

GC Semi VOA

Analysis Batch: 103766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 93400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	3050B	
MB 410-93400/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-93400/2-A	Lab Control Sample	Total/NA	Solid	3050B	
410-29037-1 MS	BT-08A-S-38-20210209	Total/NA	Solid	3050B	
410-29037-1 MSD	BT-08A-S-38-20210209	Total/NA	Solid	3050B	
410-29037-1 DU	BT-08A-S-38-20210209	Total/NA	Solid	3050B	

Analysis Batch: 93913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	6010C	93400
MB 410-93400/1-A	Method Blank	Total/NA	Solid	6010C	93400
LCS 410-93400/2-A	Lab Control Sample	Total/NA	Solid	6010C	93400
410-29037-1 MS	BT-08A-S-38-20210209	Total/NA	Solid	6010C	93400
410-29037-1 MSD	BT-08A-S-38-20210209	Total/NA	Solid	6010C	93400
410-29037-1 DU	BT-08A-S-38-20210209	Total/NA	Solid	6010C	93400

General Chemistry

Analysis Batch: 93085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29037-1	BT-08A-S-38-20210209	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08A-S-38-20210209
Lab Sample ID: 410-29037-1
Date Collected: 02/09/21 13:30
Matrix: Solid
Date Received: 02/10/21 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	93085	02/10/21 20:11	OEL4	ELLE

Client Sample ID: BT-08A-S-38-20210209
Lab Sample ID: 410-29037-1
Date Collected: 02/09/21 13:30
Matrix: Solid
Date Received: 02/10/21 16:46
Percent Solids: 83.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			93350	02/11/21 11:24	Z8FW	ELLE
Total/NA	Analysis	8260C		1	93916	02/13/21 04:26	CHT8	ELLE
Total/NA	Prep	3546			93641	02/12/21 10:12	A2VL	ELLE
Total/NA	Analysis	8270D		1	94456	02/16/21 19:07	W6XI	ELLE
Total/NA	Prep	3546			93644	02/12/21 10:06	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	94363	02/16/21 01:34	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103766	03/16/21 14:57	UHEW	ELLE
Total/NA	Prep	3050B			93400	02/11/21 13:10	UJLA	ELLE
Total/NA	Analysis	6010C		1	93913	02/12/21 15:38	UPJE	ELLE

Client Sample ID: TB-20210210
Lab Sample ID: 410-29037-2
Date Collected: 02/10/21 00:00
Matrix: Water
Date Received: 02/10/21 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	93811	02/12/21 18:08	UCB5	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-29037-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-29037-1	BT-08A-S-38-20210209	Solid	02/09/21 13:30	02/10/21 16:46	
410-29037-2	TB-20210210	Water	02/10/21 00:00	02/10/21 16:46	

Environmental Analysis Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ 410-29037 Chain of Custody

For environmental use only

Lab # _____

COC # 610337

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Kihgbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO/Moisture + VOC 8260	VOC 8260 C/D	Lead/PAH 8270D
BT-08A-S-38-20210209	2/9/21	1330	X		X			6	X	X	X	X
TB-20210210	1/8/21	—					X	2			X	

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.kihgbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) NJ DKQP TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	2/10/21	1356		2.10.21	1356
	2.10.21	1609		Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	2-10-21	1646

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 4.6 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-29037-1

Login Number: 29037
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-29478-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:04:48 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:04:48 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-29478-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-29478-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-29478-1

Revision
The report being provided is a revision of the original report sent on 3/2/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 2/16/2021 3:14 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.1°C

GC/MS VOA
Method 8260C: Surrogate recoveries were outside acceptance criteria, low biased, for the continuing calibration verification (CCV) on analytical batch 410-97295. The surrogate recovery was within specification for the associated samples: BT-01-S-15-20210212 (410-29478-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: Surrogate chlorobenzene recovery for the following sample was outside control limits: BT-01-S-15-20210212 (410-29478-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-29478-1

Client Sample ID: BT-01-S-15-20210212 — Lab Sample ID: 410-29478-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	53	J	300	24	ug/Kg	50	☼	8260C	Total/NA
Toluene	47	J	300	36	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	320		300	24	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO	93000		6600	2600	ug/Kg	50	☼	8260C	Total/NA
Anthracene	9.2	J	20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	6.7	J	20	3.9	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	36		20	4.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	18	J	20	3.9	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	12	J	14	5.9	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	85		14	5.9	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	97		14	6.0	mg/Kg	1	☼	Total TPH	Total/NA
Lead	5.0		1.6	0.63	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210216 — Lab Sample ID: 410-29478-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-01-S-15-20210212

Date Collected: 02/12/21 13:20
Date Received: 02/16/21 15:14

Lab Sample ID: 410-29478-1

Matrix: Solid
Percent Solids: 83.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**53**	**J**	300	24	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
1,3,5-Trimethylbenzene	ND		300	30	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
Toluene	**47**	**J**	300	36	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
Methyl tertiary butyl ether	ND		300	30	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
Benzene	ND		300	30	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
1,2,4-Trimethylbenzene	ND		300	30	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
Isopropylbenzene	**320**		300	24	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
1,2-Dibromoethane	ND		300	24	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
1,2-Dichloroethane	ND		300	36	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
C4-C12-TPH-GRO	**93000**		6600	2600	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
t-Butyl alcohol	ND		6000	900	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50
Xylenes, Total	ND		600	84	ug/Kg	☼	02/17/21 11:04	02/25/21 12:47	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*	*^c*	*54 - 135*	*02/17/21 11:04*	*02/25/21 12:47*	*50*
4-Bromofluorobenzene (Surr)	*89*	*^c*	*50 - 131*	*02/17/21 11:04*	*02/25/21 12:47*	*50*
Dibromofluoromethane (Surr)	*75*	*^c*	*50 - 141*	*02/17/21 11:04*	*02/25/21 12:47*	*50*
Toluene-d8 (Surr)	*78*	*^c*	*52 - 141*	*02/17/21 11:04*	*02/25/21 12:47*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**9.2**	**J**	20	3.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Benzo[a]anthracene	**6.7**	**J**	20	3.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Benzo[a]pyrene	ND		20	3.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Benzo[b]fluoranthene	ND		20	3.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Benzo[g,h,i]perylene	ND		20	3.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Chrysene	ND		20	3.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Fluorene	ND		20	3.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Naphthalene	ND		20	7.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Phenanthrene	**36**		20	4.7	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1
Pyrene	**18**	**J**	20	3.9	ug/Kg	☼	02/23/21 09:32	02/24/21 04:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*39 - 100*	*02/23/21 09:32*	*02/24/21 04:16*	*1*
Nitrobenzene-d5 (Surr)	*97*		*32 - 97*	*02/23/21 09:32*	*02/24/21 04:16*	*1*
p-Terphenyl-d14 (Surr)	*88*		*45 - 108*	*02/23/21 09:32*	*02/24/21 04:16*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**12**	**J**	14	5.9	mg/Kg	☼	02/19/21 10:28	02/22/21 12:02	1
>C12-C22 (1C)	**85**		14	5.9	mg/Kg	☼	02/19/21 10:28	02/22/21 12:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*196*	*S1+*	*54 - 137*	*02/19/21 10:28*	*02/22/21 12:02*	*1*
o- terphenyl (Surr) (1C)	*75*		*52 - 154*	*02/19/21 10:28*	*02/22/21 12:02*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**97**		14	6.0	mg/Kg	☼		02/23/21 12:49	1

Client Sample ID: BT-01-S-15-20210212 — Lab Sample ID: 410-29478-1

Date Collected: 02/12/21 13:20 — **Matrix: Solid**
Date Received: 02/16/21 15:14 — **Percent Solids: 83.7**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.0		1.6	0.63	mg/Kg	☼	02/17/21 04:29	02/17/21 14:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.3		1.0	1.0	%			02/16/21 17:37	1

Client Sample ID: TB-20210216 — Lab Sample ID: 410-29478-2

Date Collected: 02/16/21 00:00 — **Matrix: Water**
Date Received: 02/16/21 15:14

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/24/21 14:56	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/24/21 14:56	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/24/21 14:56	1
Benzene	ND		1.0	0.20	ug/L			02/24/21 14:56	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/24/21 14:56	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/24/21 14:56	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/24/21 14:56	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/24/21 14:56	1
Toluene	ND		1.0	0.20	ug/L			02/24/21 14:56	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/24/21 14:56	1
t-Butyl alcohol	ND		50	12	ug/L			02/24/21 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*02/24/21 14:56*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/24/21 14:56*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*02/24/21 14:56*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/24/21 14:56*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-29478-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-29478-1	BT-01-S-15-20210212	77 ^c	89 ^c	75 ^c	78 ^c
LCS 410-97295/5	Lab Control Sample	83	73	83	79
LCS 410-97295/7	Lab Control Sample	76	67	74	73
LCSD 410-97295/6	Lab Control Sample Dup	85	73	82	78
LCSD 410-97295/8	Lab Control Sample Dup	77	67	74	72
MB 410-97295/10	Method Blank	88	75	83	81

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-29478-2	TB-20210216	95	96	95	101
LCS 410-96909/5	Lab Control Sample	96	98	95	103
LCS 410-96909/7	Lab Control Sample	94	99	95	104
LCSD 410-96909/6	Lab Control Sample Dup	95	99	93	102
LCSD 410-96909/8	Lab Control Sample Dup	94	99	94	103
MB 410-96909/9	Method Blank	95	96	95	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-29478-1	BT-01-S-15-20210212	76	97	88
LCS 410-96335/2-A	Lab Control Sample	74	84	85
LCSD 410-96335/3-A	Lab Control Sample Dup	74	84	88
MB 410-96335/1-A	Method Blank	71	77	92

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-29478-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
410-29478-1	BT-01-S-15-20210212	196 S1+	75								
LCS 410-95524/2-A	Lab Control Sample	69	99								
MB 410-95524/1-A	Method Blank	82	91								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-29478-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-97295/10
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/25/21 11:40	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/25/21 11:40	50
Toluene	ND		250	30	ug/Kg			02/25/21 11:40	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/25/21 11:40	50
Benzene	ND		250	25	ug/Kg			02/25/21 11:40	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/25/21 11:40	50
Isopropylbenzene	ND		250	20	ug/Kg			02/25/21 11:40	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/25/21 11:40	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/25/21 11:40	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/25/21 11:40	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/25/21 11:40	50
Xylenes, Total	ND		500	70	ug/Kg			02/25/21 11:40	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*54 - 135*		*02/25/21 11:40*	*50*
4-Bromofluorobenzene (Surr)	*75*		*50 - 131*		*02/25/21 11:40*	*50*
Dibromofluoromethane (Surr)	*83*		*50 - 141*		*02/25/21 11:40*	*50*
Toluene-d8 (Surr)	*81*		*52 - 141*		*02/25/21 11:40*	*50*

Lab Sample ID: LCS 410-97295/5
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	979		ug/Kg		98	78 - 120
1,3,5-Trimethylbenzene	1000	945		ug/Kg		94	73 - 120
Toluene	1000	993		ug/Kg		99	80 - 120
Methyl tertiary butyl ether	1000	1060		ug/Kg		106	72 - 120
Benzene	1000	1020		ug/Kg		102	80 - 120
Naphthalene	1000	922		ug/Kg		92	48 - 130
1,2,4-Trimethylbenzene	1000	942		ug/Kg		94	73 - 120
Isopropylbenzene	1000	955		ug/Kg		96	77 - 120
1,2-Dibromoethane	1000	1040		ug/Kg		104	76 - 120
1,2-Dichloroethane	1000	967		ug/Kg		97	71 - 128
t-Butyl alcohol	10000	10600		ug/Kg		106	74 - 121
Xylenes, Total	3000	2980		ug/Kg		99	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*54 - 135*
4-Bromofluorobenzene (Surr)	*73*		*50 - 131*
Dibromofluoromethane (Surr)	*83*		*50 - 141*
Toluene-d8 (Surr)	*79*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-97295/7
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	57000		ug/Kg		114	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*76*		*54 - 135*
4-Bromofluorobenzene (Surr)	*67*		*50 - 131*
Dibromofluoromethane (Surr)	*74*		*50 - 141*
Toluene-d8 (Surr)	*73*		*52 - 141*

Lab Sample ID: LCSD 410-97295/6
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	965		ug/Kg		96	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	938		ug/Kg		94	73 - 120	1	30
Toluene			1000	971		ug/Kg		97	80 - 120	2	30
Methyl tertiary butyl ether			1000	1050		ug/Kg		105	72 - 120	1	30
Benzene			1000	1010		ug/Kg		101	80 - 120	1	30
Naphthalene			1000	904		ug/Kg		90	48 - 130	2	30
1,2,4-Trimethylbenzene			1000	928		ug/Kg		93	73 - 120	1	30
Isopropylbenzene			1000	944		ug/Kg		94	77 - 120	1	30
1,2-Dibromoethane			1000	1040		ug/Kg		104	76 - 120	0	30
1,2-Dichloroethane			1000	956		ug/Kg		96	71 - 128	1	30
t-Butyl alcohol			10000	9990		ug/Kg		100	74 - 121	6	30
Xylenes, Total			3000	2950		ug/Kg		98	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*54 - 135*
4-Bromofluorobenzene (Surr)	*73*		*50 - 131*
Dibromofluoromethane (Surr)	*82*		*50 - 141*
Toluene-d8 (Surr)	*78*		*52 - 141*

Lab Sample ID: LCSD 410-97295/8
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	57000		ug/Kg		114	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*77*		*54 - 135*
4-Bromofluorobenzene (Surr)	*67*		*50 - 131*
Dibromofluoromethane (Surr)	*74*		*50 - 141*
Toluene-d8 (Surr)	*72*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-96909/9
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/24/21 14:33	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/24/21 14:33	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/24/21 14:33	1
Benzene	ND		1.0	0.20	ug/L			02/24/21 14:33	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/24/21 14:33	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/24/21 14:33	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/24/21 14:33	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/24/21 14:33	1
Toluene	ND		1.0	0.20	ug/L			02/24/21 14:33	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/24/21 14:33	1
t-Butyl alcohol	ND		50	12	ug/L			02/24/21 14:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*02/24/21 14:33*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/24/21 14:33*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*02/24/21 14:33*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*02/24/21 14:33*	*1*

Lab Sample ID: LCS 410-96909/5
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		96	75 - 120
1,2-Dichloroethane	20.0	18.0		ug/L		90	73 - 124
1,3,5-Trimethylbenzene	20.0	19.0		ug/L		95	75 - 120
Benzene	20.0	19.7		ug/L		99	80 - 120
Ethylbenzene	20.0	19.9		ug/L		99	80 - 120
Isopropylbenzene	20.0	19.6		ug/L		98	80 - 120
Methyl tertiary butyl ether	20.0	18.0		ug/L		90	69 - 122
Naphthalene	20.0	16.8		ug/L		84	53 - 124
Toluene	20.0	20.5		ug/L		102	80 - 120
Xylenes, Total	60.0	59.3		ug/L		99	80 - 120
t-Butyl alcohol	200	203		ug/L		102	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 410-96909/7
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1020		ug/L		102	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-96909/7
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-96909/6
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	18.9		ug/L		94	75 - 120	2	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	1	30
1,3,5-Trimethylbenzene			20.0	18.8		ug/L		94	75 - 120	1	30
Benzene			20.0	19.3		ug/L		96	80 - 120	2	30
Ethylbenzene			20.0	19.5		ug/L		98	80 - 120	2	30
Isopropylbenzene			20.0	19.5		ug/L		98	80 - 120	0	30
Methyl tertiary butyl ether			20.0	17.6		ug/L		88	69 - 122	2	30
Naphthalene			20.0	17.3		ug/L		87	53 - 124	3	30
Toluene			20.0	20.0		ug/L		100	80 - 120	2	30
Xylenes, Total			60.0	58.8		ug/L		98	80 - 120	1	30
t-Butyl alcohol			200	206		ug/L		103	60 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-96909/8
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1040		ug/L		104	67 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-96335/1-A
Matrix: Solid
Analysis Batch: 96681

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Chrysene	ND		17	3.3	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Fluorene	ND		17	3.3	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Naphthalene	ND		17	6.7	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Phenanthrene	ND		17	4.0	ug/Kg		02/23/21 09:32	02/24/21 00:54	1
Pyrene	ND		17	3.3	ug/Kg		02/23/21 09:32	02/24/21 00:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*39 - 100*	*02/23/21 09:32*	*02/24/21 00:54*	*1*
Nitrobenzene-d5 (Surr)	*77*		*32 - 97*	*02/23/21 09:32*	*02/24/21 00:54*	*1*
p-Terphenyl-d14 (Surr)	*92*		*45 - 108*	*02/23/21 09:32*	*02/24/21 00:54*	*1*

Lab Sample ID: LCS 410-96335/2-A
Matrix: Solid
Analysis Batch: 96681

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96335

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1380		ug/Kg		83	75 - 114
Benzo[a]anthracene	1670	1300		ug/Kg		78	73 - 114
Benzo[a]pyrene	1670	1790		ug/Kg		107	61 - 111
Benzo[b]fluoranthene	1670	1350		ug/Kg		81	63 - 110
Benzo[g,h,i]perylene	1670	1640		ug/Kg		98	77 - 114
Chrysene	1670	1480		ug/Kg		89	66 - 111
Fluorene	1670	1250		ug/Kg		75	68 - 102
Naphthalene	1670	1290		ug/Kg		77	60 - 94
Phenanthrene	1670	1400		ug/Kg		84	74 - 112
Pyrene	1670	1420		ug/Kg		85	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*74*		*39 - 100*
Nitrobenzene-d5 (Surr)	*84*		*32 - 97*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*

Lab Sample ID: LCSD 410-96335/3-A
Matrix: Solid
Analysis Batch: 96681

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96335

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	1670	1460		ug/Kg		88	75 - 114	5	30
Benzo[a]anthracene	1670	1340		ug/Kg		80	73 - 114	3	30
Benzo[a]pyrene	1670	1810		ug/Kg		109	61 - 111	1	30
Benzo[b]fluoranthene	1670	1400		ug/Kg		84	63 - 110	4	30
Benzo[g,h,i]perylene	1670	1690		ug/Kg		101	77 - 114	3	30
Chrysene	1670	1480		ug/Kg		89	66 - 111	0	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-96335/3-A
Matrix: Solid
Analysis Batch: 96681

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96335

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluorene			1670	1240		ug/Kg		75	68 - 102	1	30
Naphthalene			1670	1340		ug/Kg		80	60 - 94	4	30
Phenanthrene			1670	1430		ug/Kg		86	74 - 112	2	30
Pyrene			1670	1420		ug/Kg		85	70 - 103	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*74*		*39 - 100*
Nitrobenzene-d5 (Surr)	*84*		*32 - 97*
p-Terphenyl-d14 (Surr)	*88*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-95524/1-A
Matrix: Solid
Analysis Batch: 96050

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/19/21 10:28	02/22/21 11:19	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/19/21 10:28	02/22/21 11:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*82*		*54 - 137*	*02/19/21 10:28*	*02/22/21 11:19*	*1*
o- terphenyl (Surr) (1C)	*91*		*52 - 154*	*02/19/21 10:28*	*02/22/21 11:19*	*1*

Lab Sample ID: LCS 410-95524/2-A
Matrix: Solid
Analysis Batch: 96050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95524

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	112		mg/Kg		84	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*69*		*54 - 137*
o- terphenyl (Surr) (1C)	*99*		*52 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-94879/1-A
Matrix: Solid
Analysis Batch: 95210

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 94879

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		02/17/21 04:29	02/17/21 13:57	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-29478-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-94879/2-A
Matrix: Solid
Analysis Batch: 95210

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 94879

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.80	2.65		mg/Kg		95	80 - 120		

Lab Sample ID: LCSD 410-94879/3-A
Matrix: Solid
Analysis Batch: 95210

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 94879

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead			2.86	3.02		mg/Kg		106	80 - 120	13	20

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-29478-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 95063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	5035	

Analysis Batch: 96909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-2	TB-20210216	Total/NA	Water	8260C/UST	
MB 410-96909/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-96909/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-96909/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-96909/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-96909/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 97295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	8260C	95063
MB 410-97295/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-97295/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-97295/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-97295/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-97295/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 96335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	3546	
MB 410-96335/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-96335/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-96335/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 96681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	8270D	96335
MB 410-96335/1-A	Method Blank	Total/NA	Solid	8270D	96335
LCS 410-96335/2-A	Lab Control Sample	Total/NA	Solid	8270D	96335
LCSD 410-96335/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D	96335

GC Semi VOA

Prep Batch: 95524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	3546	
MB 410-95524/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-95524/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 96050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	8015C TPH	95524
MB 410-95524/1-A	Method Blank	Total/NA	Solid	8015C TPH	95524
LCS 410-95524/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	95524

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-29478-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC Semi VOA

Analysis Batch: 96518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 94879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	3050B	
MB 410-94879/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-94879/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 410-94879/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

Analysis Batch: 95210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	6010C	94879
MB 410-94879/1-A	Method Blank	Total/NA	Solid	6010C	94879
LCS 410-94879/2-A	Lab Control Sample	Total/NA	Solid	6010C	94879
LCSD 410-94879/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	94879

General Chemistry

Analysis Batch: 94802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29478-1	BT-01-S-15-20210212	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-29478-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-01-S-15-20210212
Lab Sample ID: 410-29478-1
Date Collected: 02/12/21 13:20
Matrix: Solid
Date Received: 02/16/21 15:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	94802	02/16/21 17:37	OEL4	ELLE

Client Sample ID: BT-01-S-15-20210212
Lab Sample ID: 410-29478-1
Date Collected: 02/12/21 13:20
Matrix: Solid
Date Received: 02/16/21 15:14
Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			95063	02/17/21 11:04	Z8FW	ELLE
Total/NA	Analysis	8260C		50	97295	02/25/21 12:47	SWV2	ELLE
Total/NA	Prep	3546			96335	02/23/21 09:32	A2VL	ELLE
Total/NA	Analysis	8270D		1	96681	02/24/21 04:16	W6XI	ELLE
Total/NA	Prep	3546			95524	02/19/21 10:28	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	96050	02/22/21 12:02	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	96518	02/23/21 12:49	UKL3	ELLE
Total/NA	Prep	3050B			94879	02/17/21 04:29	UAMX	ELLE
Total/NA	Analysis	6010C		1	95210	02/17/21 14:12	UCIG	ELLE

Client Sample ID: TB-20210216
Lab Sample ID: 410-29478-2
Date Collected: 02/16/21 00:00
Matrix: Water
Date Received: 02/16/21 15:14

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	96909	02/24/21 14:56	HDS6	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-29478-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-29478-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-29478-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-29478-1	BT-01-S-15-20210212	Solid	02/12/21 13:20	02/16/21 15:14	
410-29478-2	TB-20210216	Water	02/16/21 00:00	02/16/21 15:14	

Environmental Analysis Request/Chain of

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For Eurofins Lancaster Laboratories Envi

Acct. # _____ Group # _____ Sample # _____

410-29478 Chain of Custody

COC #610338

Client Information

Client: Evergreen C/O Stantec	Acct. #: 16657
Project Name/#: PHC: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: Trip blank

Analysis Requested

Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO/Moisture VOC 8260	VOC 8260 C/D	Lead/PAH 8270D
BT-01-S-15-20210212	2/12/21	1320	X		6	X	X	X	X
TB-20210216	1/8/21	—			2			X	

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	2/16/21	7:00		2/16/21	7:00
	2/16/21	13:35		2/16/21	1335
	2/16/21				
				2/16/21	1511

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other X

Temperature upon receipt 1.1 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-29478-1

Login Number: 29478
List Number: 1
Creator: Rivera-Santa, Julissa

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-29616-1
Client Project/Site: PHL-Belmont Terminal Drilling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:59:13 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:59:13 PM

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Definitions/Glossary

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-29616-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-29616-1

Revision
The report being provided is a revision of the original report sent on 3/2/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 2/17/2021 3:31 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-97543 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Client Sample ID: BT-01-S-44-45-20210216 — Lab Sample ID: 410-29616-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.46	J	5.2	0.41	ug/Kg	1	☼	8260C	Total/NA
Toluene	0.83	J	5.2	0.62	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	48		5.2	0.52	ug/Kg	1	☼	8260C	Total/NA
Benzene	0.61	J	5.2	0.52	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	190		110	46	ug/Kg	1	☼	8260C	Total/NA
t-Butyl alcohol	1300	^c	100	16	ug/Kg	1	☼	8260C	Total/NA
Benzo[a]anthracene	4.0	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	8.0	J	20	8.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	9.5	J	20	4.8	ug/Kg	1	☼	8270D	Total/NA
Pyrene	7.3	J	20	4.0	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	15		14	6.0	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	15		15	6.1	mg/Kg	1	☼	Total TPH	Total/NA
Lead	7.5		1.6	0.64	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210217 — Lab Sample ID: 410-29616-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-01-S-44-45-20210216

Date Collected: 02/16/21 15:00
Date Received: 02/17/21 15:31

Lab Sample ID: 410-29616-1

Matrix: Solid
Percent Solids: 82.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**0.46**	**J**	5.2	0.41	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
1,3,5-Trimethylbenzene	ND		5.2	0.52	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
Toluene	**0.83**	**J**	5.2	0.62	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
Methyl tertiary butyl ether	**48**		5.2	0.52	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
Benzene	**0.61**	**J**	5.2	0.52	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
1,2,4-Trimethylbenzene	ND		5.2	0.52	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
Isopropylbenzene	ND		5.2	0.41	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
1,2-Dibromoethane	ND		5.2	0.41	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
1,2-Dichloroethane	ND		5.2	0.62	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
C4-C12-TPH-GRO	**190**		110	46	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
t-Butyl alcohol	**1300**	**^c**	100	16	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1
Xylenes, Total	ND		10	1.4	ug/Kg	☼	02/17/21 19:52	02/26/21 02:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*	*02/17/21 19:52*	*02/26/21 02:16*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*	*02/17/21 19:52*	*02/26/21 02:16*	*1*
Dibromofluoromethane (Surr)	*99*		*50 - 141*	*02/17/21 19:52*	*02/26/21 02:16*	*1*
Toluene-d8 (Surr)	*99*		*52 - 141*	*02/17/21 19:52*	*02/26/21 02:16*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		20	4.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Benzo[a]anthracene	**4.0**	**J**	20	4.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Benzo[a]pyrene	ND		20	4.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Benzo[b]fluoranthene	ND		20	4.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Benzo[g,h,i]perylene	ND		20	4.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Chrysene	ND		20	4.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Fluorene	ND		20	4.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Naphthalene	**8.0**	**J**	20	8.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Phenanthrene	**9.5**	**J**	20	4.8	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1
Pyrene	**7.3**	**J**	20	4.0	ug/Kg	☼	02/19/21 10:35	02/20/21 05:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*39 - 100*	*02/19/21 10:35*	*02/20/21 05:05*	*1*
Nitrobenzene-d5 (Surr)	*75*		*32 - 97*	*02/19/21 10:35*	*02/20/21 05:05*	*1*
p-Terphenyl-d14 (Surr)	*81*		*45 - 108*	*02/19/21 10:35*	*02/20/21 05:05*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**15**		14	6.0	mg/Kg	☼	02/19/21 10:28	02/22/21 12:23	1
>C12-C22 (1C)	ND		14	6.0	mg/Kg	☼	02/19/21 10:28	02/22/21 12:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*68*		*54 - 137*	*02/19/21 10:28*	*02/22/21 12:23*	*1*
o- terphenyl (Surr) (1C)	*77*		*52 - 154*	*02/19/21 10:28*	*02/22/21 12:23*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**15**		15	6.1	mg/Kg	☼		02/24/21 08:09	1

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Client Sample ID: BT-01-S-44-45-20210216

Lab Sample ID: 410-29616-1
Date Collected: 02/16/21 15:00
Matrix: Solid
Date Received: 02/17/21 15:31
Percent Solids: 82.2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	7.5		1.6	0.64	mg/Kg	☼	02/22/21 04:20	02/22/21 15:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	17.8		1.0	1.0	%			02/17/21 17:56	1

Client Sample ID: TB-20210217

Lab Sample ID: 410-29616-2
Date Collected: 02/17/21 00:00
Matrix: Water
Date Received: 02/17/21 15:31

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/24/21 15:20	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/24/21 15:20	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/24/21 15:20	1
Benzene	ND		1.0	0.20	ug/L			02/24/21 15:20	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/24/21 15:20	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/24/21 15:20	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/24/21 15:20	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/24/21 15:20	1
Toluene	ND		1.0	0.20	ug/L			02/24/21 15:20	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/24/21 15:20	1
t-Butyl alcohol	ND		50	12	ug/L			02/24/21 15:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*02/24/21 15:20*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*02/24/21 15:20*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*02/24/21 15:20*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*02/24/21 15:20*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-29616-1	BT-01-S-44-45-20210216	109	95	99	99
LCS 410-97543/4	Lab Control Sample	103	98	98	101
LCS 410-97543/8	Lab Control Sample	103	98	98	101
LCSD 410-97543/5	Lab Control Sample Dup	99	99	96	101
LCSD 410-97543/9	Lab Control Sample Dup	103	99	97	101
MB 410-97543/10	Method Blank	104	98	99	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-29616-2	TB-20210217	95	94	95	102
LCS 410-96909/5	Lab Control Sample	96	98	95	103
LCS 410-96909/7	Lab Control Sample	94	99	95	104
LCSD 410-96909/6	Lab Control Sample Dup	95	99	93	102
LCSD 410-96909/8	Lab Control Sample Dup	94	99	94	103
MB 410-96909/9	Method Blank	95	96	95	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-29616-1	BT-01-S-44-45-20210216	75	75	81
LCS 410-95519/2-A	Lab Control Sample	86	86	98
MB 410-95519/1-A	Method Blank	87	87	101

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-29616-1
Project/Site: PHL-Belmont Terminal Drilling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)								
410-29616-1	BT-01-S-44-45-20210216	68	77								
410-29616-1 DU	BT-01-S-44-45-20210216	64	70								
410-29616-1 MS	BT-01-S-44-45-20210216	92	94								
LCS 410-95524/2-A	Lab Control Sample	69	99								
MB 410-95524/1-A	Method Blank	82	91								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-97543/10
Matrix: Solid
Analysis Batch: 97543

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			02/26/21 00:26	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/26/21 00:26	1
Toluene	ND		5.0	0.60	ug/Kg			02/26/21 00:26	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			02/26/21 00:26	1
Benzene	ND		5.0	0.50	ug/Kg			02/26/21 00:26	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			02/26/21 00:26	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			02/26/21 00:26	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			02/26/21 00:26	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			02/26/21 00:26	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			02/26/21 00:26	1
t-Butyl alcohol	ND		100	15	ug/Kg			02/26/21 00:26	1
Xylenes, Total	ND		10	1.4	ug/Kg			02/26/21 00:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*		*02/26/21 00:26*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*		*02/26/21 00:26*	*1*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*02/26/21 00:26*	*1*
Toluene-d8 (Surr)	*99*		*52 - 141*		*02/26/21 00:26*	*1*

Lab Sample ID: LCS 410-97543/4
Matrix: Solid
Analysis Batch: 97543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	21.8		ug/Kg		109	78 - 120
1,3,5-Trimethylbenzene	20.0	21.0		ug/Kg		105	73 - 120
Toluene	20.0	23.0		ug/Kg		115	80 - 120
Methyl tertiary butyl ether	20.0	17.0		ug/Kg		85	72 - 120
Benzene	20.0	23.0		ug/Kg		115	80 - 120
Naphthalene	20.0	18.5		ug/Kg		93	48 - 130
1,2,4-Trimethylbenzene	20.0	21.2		ug/Kg		106	73 - 120
Isopropylbenzene	20.0	20.5		ug/Kg		103	77 - 120
1,2-Dibromoethane	20.0	20.1		ug/Kg		100	76 - 120
1,2-Dichloroethane	20.0	20.5		ug/Kg		103	71 - 128
t-Butyl alcohol	200	205		ug/Kg		103	74 - 121
Xylenes, Total	60.0	64.6		ug/Kg		108	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-97543/8
Matrix: Solid
Analysis Batch: 97543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1140		ug/Kg		114	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-97543/5
Matrix: Solid
Analysis Batch: 97543

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	21.1		ug/Kg		105	78 - 120	3	30
1,3,5-Trimethylbenzene			20.0	20.6		ug/Kg		103	73 - 120	2	30
Toluene			20.0	22.2		ug/Kg		111	80 - 120	4	30
Methyl tertiary butyl ether			20.0	16.8		ug/Kg		84	72 - 120	1	30
Benzene			20.0	22.0		ug/Kg		110	80 - 120	5	30
Naphthalene			20.0	18.5		ug/Kg		92	48 - 130	0	30
1,2,4-Trimethylbenzene			20.0	20.4		ug/Kg		102	73 - 120	4	30
Isopropylbenzene			20.0	19.8		ug/Kg		99	77 - 120	4	30
1,2-Dibromoethane			20.0	19.4		ug/Kg		97	76 - 120	3	30
1,2-Dichloroethane			20.0	20.1		ug/Kg		100	71 - 128	2	30
t-Butyl alcohol			200	200		ug/Kg		100	74 - 121	3	30
Xylenes, Total			60.0	62.0		ug/Kg		103	75 - 120	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-97543/9
Matrix: Solid
Analysis Batch: 97543

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1140		ug/Kg		114	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-96909/9
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/24/21 14:33	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/24/21 14:33	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/24/21 14:33	1
Benzene	ND		1.0	0.20	ug/L			02/24/21 14:33	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/24/21 14:33	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/24/21 14:33	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/24/21 14:33	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/24/21 14:33	1
Toluene	ND		1.0	0.20	ug/L			02/24/21 14:33	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/24/21 14:33	1
t-Butyl alcohol	ND		50	12	ug/L			02/24/21 14:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*02/24/21 14:33*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/24/21 14:33*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*02/24/21 14:33*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*02/24/21 14:33*	*1*

Lab Sample ID: LCS 410-96909/5
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		96	75 - 120
1,2-Dichloroethane	20.0	18.0		ug/L		90	73 - 124
1,3,5-Trimethylbenzene	20.0	19.0		ug/L		95	75 - 120
Benzene	20.0	19.7		ug/L		99	80 - 120
Ethylbenzene	20.0	19.9		ug/L		99	80 - 120
Isopropylbenzene	20.0	19.6		ug/L		98	80 - 120
Methyl tertiary butyl ether	20.0	18.0		ug/L		90	69 - 122
Naphthalene	20.0	16.8		ug/L		84	53 - 124
Toluene	20.0	20.5		ug/L		102	80 - 120
Xylenes, Total	60.0	59.3		ug/L		99	80 - 120
t-Butyl alcohol	200	203		ug/L		102	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 410-96909/7
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1020		ug/L		102	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-96909/7
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-96909/6
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	18.9		ug/L		94	75 - 120	2	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	1	30
1,3,5-Trimethylbenzene			20.0	18.8		ug/L		94	75 - 120	1	30
Benzene			20.0	19.3		ug/L		96	80 - 120	2	30
Ethylbenzene			20.0	19.5		ug/L		98	80 - 120	2	30
Isopropylbenzene			20.0	19.5		ug/L		98	80 - 120	0	30
Methyl tertiary butyl ether			20.0	17.6		ug/L		88	69 - 122	2	30
Naphthalene			20.0	17.3		ug/L		87	53 - 124	3	30
Toluene			20.0	20.0		ug/L		100	80 - 120	2	30
Xylenes, Total			60.0	58.8		ug/L		98	80 - 120	1	30
t-Butyl alcohol			200	206		ug/L		103	60 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-96909/8
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1040		ug/L		104	67 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-95519/1-A
Matrix: Solid
Analysis Batch: 95793

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95519

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Chrysene	ND		17	3.3	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Fluorene	ND		17	3.3	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Naphthalene	ND		17	6.7	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Phenanthrene	ND		17	4.0	ug/Kg		02/19/21 10:35	02/20/21 02:28	1
Pyrene	ND		17	3.3	ug/Kg		02/19/21 10:35	02/20/21 02:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*87*		*39 - 100*	*02/19/21 10:35*	*02/20/21 02:28*	*1*
Nitrobenzene-d5 (Surr)	*87*		*32 - 97*	*02/19/21 10:35*	*02/20/21 02:28*	*1*
p-Terphenyl-d14 (Surr)	*101*		*45 - 108*	*02/19/21 10:35*	*02/20/21 02:28*	*1*

Lab Sample ID: LCS 410-95519/2-A
Matrix: Solid
Analysis Batch: 95793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95519

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1520		ug/Kg		91	75 - 114
Benzo[a]anthracene	1670	1510		ug/Kg		91	73 - 114
Benzo[a]pyrene	1670	1810		ug/Kg		108	61 - 111
Benzo[b]fluoranthene	1670	1560		ug/Kg		93	63 - 110
Benzo[g,h,i]perylene	1670	1590		ug/Kg		95	77 - 114
Chrysene	1670	1550		ug/Kg		93	66 - 111
Fluorene	1670	1480		ug/Kg		89	68 - 102
Naphthalene	1670	1260		ug/Kg		76	60 - 94
Phenanthrene	1670	1530		ug/Kg		92	74 - 112
Pyrene	1670	1530		ug/Kg		92	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*86*		*39 - 100*
Nitrobenzene-d5 (Surr)	*86*		*32 - 97*
p-Terphenyl-d14 (Surr)	*98*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-95524/1-A
Matrix: Solid
Analysis Batch: 96050

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/19/21 10:28	02/22/21 11:19	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/19/21 10:28	02/22/21 11:19	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-95524/1-A
Matrix: Solid
Analysis Batch: 96050

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95524

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	82		54 - 137	02/19/21 10:28	02/22/21 11:19	1
o- terphenyl (Surr) (1C)	91		52 - 154	02/19/21 10:28	02/22/21 11:19	1

Lab Sample ID: LCS 410-95524/2-A
Matrix: Solid
Analysis Batch: 96050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95524

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	112		mg/Kg		84	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	69		54 - 137
o- terphenyl (Surr) (1C)	99		52 - 154

Lab Sample ID: 410-29616-1 MS
Matrix: Solid
Analysis Batch: 96050

Client Sample ID: BT-01-S-44-45-20210216
Prep Type: Total/NA
Prep Batch: 95524

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	ND		162	129		mg/Kg	☼	80	64 - 122		

Surrogate	MS %Recovery	MS Qualifier	Limits
Chlorobenzene (Surr) (1C)	92		54 - 137
o- terphenyl (Surr) (1C)	94		52 - 154

Lab Sample ID: 410-29616-1 DU
Matrix: Solid
Analysis Batch: 96050

Client Sample ID: BT-01-S-44-45-20210216
Prep Type: Total/NA
Prep Batch: 95524

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C22-C44 (1C)	15			14.2		mg/Kg	☼			2	
>C12-C22 (1C)	ND			ND		mg/Kg	☼			NC	

Surrogate	DU %Recovery	DU Qualifier	Limits
Chlorobenzene (Surr) (1C)	64		54 - 137
o- terphenyl (Surr) (1C)	70		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-95948/1-A
Matrix: Solid
Analysis Batch: 96175

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 95948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		02/22/21 04:20	02/22/21 15:18	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-95948/2-A
Matrix: Solid
Analysis Batch: 96175

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 95948

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.97	2.92		mg/Kg		98	80 - 120

Lab Sample ID: LCSD 410-95948/3-A
Matrix: Solid
Analysis Batch: 96175

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 95948

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	2.88	2.79		mg/Kg		97	80 - 120	5	20

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

GC/MS VOA

Prep Batch: 95262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	5035	

Analysis Batch: 96909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-2	TB-20210217	Total/NA	Water	8260C/UST	
MB 410-96909/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-96909/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-96909/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-96909/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-96909/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 97543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	8260C	95262
MB 410-97543/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-97543/4	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-97543/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-97543/5	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-97543/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 95519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	3546	
MB 410-95519/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-95519/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 95793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	8270D	95519
MB 410-95519/1-A	Method Blank	Total/NA	Solid	8270D	95519
LCS 410-95519/2-A	Lab Control Sample	Total/NA	Solid	8270D	95519

GC Semi VOA

Prep Batch: 95524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	3546	
MB 410-95524/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-95524/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-29616-1 MS	BT-01-S-44-45-20210216	Total/NA	Solid	3546	
410-29616-1 DU	BT-01-S-44-45-20210216	Total/NA	Solid	3546	

Analysis Batch: 96050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	8015C TPH	95524
MB 410-95524/1-A	Method Blank	Total/NA	Solid	8015C TPH	95524
LCS 410-95524/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	95524
410-29616-1 MS	BT-01-S-44-45-20210216	Total/NA	Solid	8015C TPH	95524
410-29616-1 DU	BT-01-S-44-45-20210216	Total/NA	Solid	8015C TPH	95524

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

GC Semi VOA

Analysis Batch: 96827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 95948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	3050B	
MB 410-95948/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-95948/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 410-95948/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

Analysis Batch: 96175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	6010C	95948
MB 410-95948/1-A	Method Blank	Total/NA	Solid	6010C	95948
LCS 410-95948/2-A	Lab Control Sample	Total/NA	Solid	6010C	95948
LCSD 410-95948/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	95948

General Chemistry

Analysis Batch: 95250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29616-1	BT-01-S-44-45-20210216	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Client Sample ID: BT-01-S-44-45-20210216
Date Collected: 02/16/21 15:00
Date Received: 02/17/21 15:31

Lab Sample ID: 410-29616-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	95250	02/17/21 17:56	OEL4	ELLE

Client Sample ID: BT-01-S-44-45-20210216
Date Collected: 02/16/21 15:00
Date Received: 02/17/21 15:31

Lab Sample ID: 410-29616-1
Matrix: Solid
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			95262	02/17/21 19:52	UK3O	ELLE
Total/NA	Analysis	8260C		1	97543	02/26/21 02:16	ULCP	ELLE
Total/NA	Prep	3546			95519	02/19/21 10:35	A2VL	ELLE
Total/NA	Analysis	8270D		1	95793	02/20/21 05:05	W6XI	ELLE
Total/NA	Prep	3546			95524	02/19/21 10:28	A2VL	ELLE
Total/NA	Analysis	8015C TPH		1	96050	02/22/21 12:23	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	96827	02/24/21 08:09	UJL4	ELLE
Total/NA	Prep	3050B			95948	02/22/21 04:20	UAMX	ELLE
Total/NA	Analysis	6010C		1	96175	02/22/21 15:35	UCIG	ELLE

Client Sample ID: TB-20210217
Date Collected: 02/17/21 00:00
Date Received: 02/17/21 15:31

Lab Sample ID: 410-29616-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	96909	02/24/21 15:20	HDS6	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp.
Job ID: 410-29616-1
Project/Site: PHL-Belmont Terminal Drilling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: PHL-Belmont Terminal Drilling

Job ID: 410-29616-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-29616-1	BT-01-S-44-45-20210216	Solid	02/16/21 15:00	02/17/21 15:31	
410-29616-2	TB-20210217	Water	02/17/21 00:00	02/17/21 15:31	

Environmental Analysis Reque dy

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For Eurc

Acct. # _____ Grou,

410-29616 Chain of Custody

COC #615411

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL-Belmont Terminal Drilling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO/Moisture/VOC 8260	VOC 8260	Lead	PAH 8270	Remarks
BT-01-S-44-45-20210216	2/16/21	1500	X		X			6	X	X	X	X	X	
TB-20210217	2/03/21	—					X	2			X			

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP)
Type VI (Raw Data Only)
Type III (Reduced non-CLP)
NJ DKQP
TX TRRP-13
NYSDEC Category A or B
MA MCP
CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	2/17/2021	0730		2/17/21	0730
	2/17/21	1320		2/17/21	1320
	2/17/21	1519			
				2/17/21	15:31

EDD Required? Yes No
If yes, format: _____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other X

Temperature upon receipt 3.0 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-29616-1

Login Number: 29616 **List Source: Eurofins Lancaster Laboratories Env**
List Number: 1
Creator: Metzger, Katherine A

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-29945-1
Client Project/Site: PHL: Belmont Terminal Drilling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:27:09 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

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Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:27:09 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-29945-1
Project/Site: PHL: Belmont Terminal Drilling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Job ID: 410-29945-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-29945-1

Revision
The report being provided is a revision of the original report sent on 3/3/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 2/22/2021 4:37 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

GC/MS VOA
Method 8260C: Surrogate recoveries were outside acceptance criteria, low biased, for the continuing calibration verification (CCV) on analytical batch 410-97295. The surrogate recovery was within specification for the associated samples: BT-22B-S-14-20210217 (410-29945-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 410-97503 recovered outside control limits for the following analytes: Fluorene. The associated sample(s) was re-prepared within holding time and the LCS recovery was again outside control limits. The first set of data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Client Sample ID: BT-22B-S-14-20210217 — Lab Sample ID: 410-29945-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	38000		3600	290	ug/Kg	500	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	95000		3600	360	ug/Kg	500	☼	8260C	Total/NA
Toluene	550	J	3600	430	ug/Kg	500	☼	8260C	Total/NA
Benzene	37000		3600	360	ug/Kg	500	☼	8260C	Total/NA
Isopropylbenzene	29000		3600	290	ug/Kg	500	☼	8260C	Total/NA
Xylenes, Total	49000		7200	1000	ug/Kg	500	☼	8260C	Total/NA
1,2,4-Trimethylbenzene - DL	660000		36000	3600	ug/Kg	5000	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	14000000		790000	320000	ug/Kg	5000	☼	8260C	Total/NA
Anthracene	17	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	5.2	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	4.0	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Chrysene	5.5	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Fluorene	90	*+	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	1200		19	7.4	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	120		19	4.5	ug/Kg	1	☼	8270D	Total/NA
Pyrene	13	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	10	J	14	5.8	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	50		14	5.8	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	60		13	5.6	mg/Kg	1	☼	Total TPH	Total/NA
Lead	5.8		1.4	0.57	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-02010222 — Lab Sample ID: 410-29945-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-22B-S-14-20210217

Date Collected: 02/17/21 14:00
Date Received: 02/22/21 16:37

Lab Sample ID: 410-29945-1

Matrix: Solid
Percent Solids: 89.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**38000**		3600	290	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
1,3,5-Trimethylbenzene	**95000**		3600	360	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
Toluene	**550**	**J**	3600	430	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
Methyl tertiary butyl ether	ND		3600	360	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
Benzene	**37000**		3600	360	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
Isopropylbenzene	**29000**		3600	290	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
1,2-Dibromoethane	ND		3600	290	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
1,2-Dichloroethane	ND		3600	430	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
t-Butyl alcohol	ND		72000	11000	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500
Xylenes, Total	**49000**		7200	1000	ug/Kg	☼	02/23/21 08:40	02/25/21 17:37	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*	*^c*	*54 - 135*	*02/23/21 08:40*	*02/25/21 17:37*	*500*
4-Bromofluorobenzene (Surr)	*520*	*^c S1+*	*50 - 131*	*02/23/21 08:40*	*02/25/21 17:37*	*500*
Dibromofluoromethane (Surr)	*107*	*^c*	*50 - 141*	*02/23/21 08:40*	*02/25/21 17:37*	*500*
Toluene-d8 (Surr)	*197*	*^c S1+*	*52 - 141*	*02/23/21 08:40*	*02/25/21 17:37*	*500*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**660000**		36000	3600	ug/Kg	☼	02/23/21 08:40	02/25/21 17:58	5000
C4-C12-TPH-GRO	**14000000**		790000	320000	ug/Kg	☼	02/23/21 08:40	02/25/21 17:58	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*	*^c*	*54 - 135*	*02/23/21 08:40*	*02/25/21 17:58*	*5000*
4-Bromofluorobenzene (Surr)	*435*	*^c S1+*	*50 - 131*	*02/23/21 08:40*	*02/25/21 17:58*	*5000*
Dibromofluoromethane (Surr)	*113*	*^c*	*50 - 141*	*02/23/21 08:40*	*02/25/21 17:58*	*5000*
Toluene-d8 (Surr)	*191*	*^c S1+*	*52 - 141*	*02/23/21 08:40*	*02/25/21 17:58*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**17**	**J**	19	3.7	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Benzo[a]anthracene	**5.2**	**J**	19	3.7	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Benzo[a]pyrene	ND		19	3.7	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Benzo[b]fluoranthene	**4.0**	**J**	19	3.7	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Benzo[g,h,i]perylene	ND		19	3.7	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Chrysene	**5.5**	**J**	19	3.7	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Fluorene	**90**	***+**	19	3.7	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Naphthalene	**1200**		19	7.4	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Phenanthrene	**120**		19	4.5	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1
Pyrene	**13**	**J**	19	3.7	ug/Kg	☼	02/25/21 16:22	02/26/21 02:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*97*		*39 - 100*	*02/25/21 16:22*	*02/26/21 02:33*	*1*
Nitrobenzene-d5 (Surr)	*90*		*32 - 97*	*02/25/21 16:22*	*02/26/21 02:33*	*1*
p-Terphenyl-d14 (Surr)	*99*		*45 - 108*	*02/25/21 16:22*	*02/26/21 02:33*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**10**	**J**	14	5.8	mg/Kg	☼	02/25/21 16:12	02/26/21 13:40	1
>C12-C22 (1C)	**50**		14	5.8	mg/Kg	☼	02/25/21 16:12	02/26/21 13:40	1

Client Sample ID: BT-22B-S-14-20210217

Lab Sample ID: 410-29945-1

Date Collected: 02/17/21 14:00
Matrix: Solid
Date Received: 02/22/21 16:37
Percent Solids: 89.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*69*		*54 - 137*	*02/25/21 16:12*	*02/26/21 13:40*	*1*
o- terphenyl (Surr) (1C)	*97*		*52 - 154*	*02/25/21 16:12*	*02/26/21 13:40*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**60**		13	5.6	mg/Kg	☼		03/16/21 14:53	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**5.8**		1.4	0.57	mg/Kg	☼	02/23/21 08:39	02/24/21 16:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.0**		1.0	1.0	%			02/22/21 20:30	1

Client Sample ID: TB-02010222

Lab Sample ID: 410-29945-2

Date Collected: 02/22/21 00:00
Matrix: Water
Date Received: 02/22/21 16:37

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/24/21 15:43	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/24/21 15:43	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/24/21 15:43	1
Benzene	ND		1.0	0.20	ug/L			02/24/21 15:43	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/24/21 15:43	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/24/21 15:43	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/24/21 15:43	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/24/21 15:43	1
Toluene	ND		1.0	0.20	ug/L			02/24/21 15:43	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/24/21 15:43	1
t-Butyl alcohol	ND		50	12	ug/L			02/24/21 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*02/24/21 15:43*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*02/24/21 15:43*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*02/24/21 15:43*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*02/24/21 15:43*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-29945-1	BT-22B-S-14-20210217	111 ^c	520 ^c S1+	107 ^c	197 ^c S1+
410-29945-1 - DL	BT-22B-S-14-20210217	89 ^c	435 ^c S1+	113 ^c	191 ^c S1+
LCS 410-97295/5	Lab Control Sample	83	73	83	79
LCS 410-97295/7	Lab Control Sample	76	67	74	73
LCS 410-98111/5	Lab Control Sample	98	92	98	99
LCS 410-98111/7	Lab Control Sample	72	68	70	73
LCSD 410-97295/6	Lab Control Sample Dup	85	73	82	78
LCSD 410-97295/8	Lab Control Sample Dup	77	67	74	72
LCSD 410-98111/6	Lab Control Sample Dup	98	90	96	97
LCSD 410-98111/8	Lab Control Sample Dup	73	68	70	73
MB 410-97295/10	Method Blank	88	75	83	81
MB 410-98111/10	Method Blank	96	89	93	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-29945-2	TB-02010222	96	95	97	101
LCS 410-96909/5	Lab Control Sample	96	98	95	103
LCS 410-96909/7	Lab Control Sample	94	99	95	104
LCSD 410-96909/6	Lab Control Sample Dup	95	99	93	102
LCSD 410-96909/8	Lab Control Sample Dup	94	99	94	103
MB 410-96909/9	Method Blank	95	96	95	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-29945-1	BT-22B-S-14-20210217	97	90	99
LCS 410-97503/2-A	Lab Control Sample	94	86	98
MB 410-97503/1-A	Method Blank	100	87	109 S1+

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-29945-1
Project/Site: PHL: Belmont Terminal Drilling

NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-29945-1	BT-22B-S-14-20210217	69	97
410-29945-1 DU	BT-22B-S-14-20210217	72	88
410-29945-1 MS	BT-22B-S-14-20210217	51 S1-	98
LCS 410-97498/2-A	Lab Control Sample	68	97
MB 410-97498/1-A	Method Blank	75	86

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-97295/10
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			02/25/21 11:40	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			02/25/21 11:40	50
Toluene	ND		250	30	ug/Kg			02/25/21 11:40	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			02/25/21 11:40	50
Benzene	ND		250	25	ug/Kg			02/25/21 11:40	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			02/25/21 11:40	50
Isopropylbenzene	ND		250	20	ug/Kg			02/25/21 11:40	50
1,2-Dibromoethane	ND		250	20	ug/Kg			02/25/21 11:40	50
1,2-Dichloroethane	ND		250	30	ug/Kg			02/25/21 11:40	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			02/25/21 11:40	50
t-Butyl alcohol	ND		5000	750	ug/Kg			02/25/21 11:40	50
Xylenes, Total	ND		500	70	ug/Kg			02/25/21 11:40	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*54 - 135*		*02/25/21 11:40*	*50*
4-Bromofluorobenzene (Surr)	*75*		*50 - 131*		*02/25/21 11:40*	*50*
Dibromofluoromethane (Surr)	*83*		*50 - 141*		*02/25/21 11:40*	*50*
Toluene-d8 (Surr)	*81*		*52 - 141*		*02/25/21 11:40*	*50*

Lab Sample ID: LCS 410-97295/5
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	979		ug/Kg		98	78 - 120
1,3,5-Trimethylbenzene	1000	945		ug/Kg		94	73 - 120
Toluene	1000	993		ug/Kg		99	80 - 120
Methyl tertiary butyl ether	1000	1060		ug/Kg		106	72 - 120
Benzene	1000	1020		ug/Kg		102	80 - 120
Naphthalene	1000	922		ug/Kg		92	48 - 130
1,2,4-Trimethylbenzene	1000	942		ug/Kg		94	73 - 120
Isopropylbenzene	1000	955		ug/Kg		96	77 - 120
1,2-Dibromoethane	1000	1040		ug/Kg		104	76 - 120
1,2-Dichloroethane	1000	967		ug/Kg		97	71 - 128
t-Butyl alcohol	10000	10600		ug/Kg		106	74 - 121
Xylenes, Total	3000	2980		ug/Kg		99	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*54 - 135*
4-Bromofluorobenzene (Surr)	*73*		*50 - 131*
Dibromofluoromethane (Surr)	*83*		*50 - 141*
Toluene-d8 (Surr)	*79*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-97295/7
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	57000		ug/Kg		114	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*76*		*54 - 135*
4-Bromofluorobenzene (Surr)	*67*		*50 - 131*
Dibromofluoromethane (Surr)	*74*		*50 - 141*
Toluene-d8 (Surr)	*73*		*52 - 141*

Lab Sample ID: LCSD 410-97295/6
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	965		ug/Kg		96	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	938		ug/Kg		94	73 - 120	1	30
Toluene			1000	971		ug/Kg		97	80 - 120	2	30
Methyl tertiary butyl ether			1000	1050		ug/Kg		105	72 - 120	1	30
Benzene			1000	1010		ug/Kg		101	80 - 120	1	30
Naphthalene			1000	904		ug/Kg		90	48 - 130	2	30
1,2,4-Trimethylbenzene			1000	928		ug/Kg		93	73 - 120	1	30
Isopropylbenzene			1000	944		ug/Kg		94	77 - 120	1	30
1,2-Dibromoethane			1000	1040		ug/Kg		104	76 - 120	0	30
1,2-Dichloroethane			1000	956		ug/Kg		96	71 - 128	1	30
t-Butyl alcohol			10000	9990		ug/Kg		100	74 - 121	6	30
Xylenes, Total			3000	2950		ug/Kg		98	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*54 - 135*
4-Bromofluorobenzene (Surr)	*73*		*50 - 131*
Dibromofluoromethane (Surr)	*82*		*50 - 141*
Toluene-d8 (Surr)	*78*		*52 - 141*

Lab Sample ID: LCSD 410-97295/8
Matrix: Solid
Analysis Batch: 97295

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	57000		ug/Kg		114	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*77*		*54 - 135*
4-Bromofluorobenzene (Surr)	*67*		*50 - 131*
Dibromofluoromethane (Surr)	*74*		*50 - 141*
Toluene-d8 (Surr)	*72*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-98111/10
Matrix: Solid
Analysis Batch: 98111

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			03/01/21 11:34	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			03/01/21 11:34	50
Toluene	ND		250	30	ug/Kg			03/01/21 11:34	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			03/01/21 11:34	50
Benzene	ND		250	25	ug/Kg			03/01/21 11:34	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			03/01/21 11:34	50
Isopropylbenzene	ND		250	20	ug/Kg			03/01/21 11:34	50
1,2-Dibromoethane	ND		250	20	ug/Kg			03/01/21 11:34	50
1,2-Dichloroethane	ND		250	30	ug/Kg			03/01/21 11:34	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			03/01/21 11:34	50
t-Butyl alcohol	ND		5000	750	ug/Kg			03/01/21 11:34	50
Xylenes, Total	ND		500	70	ug/Kg			03/01/21 11:34	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*54 - 135*		*03/01/21 11:34*	*50*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*		*03/01/21 11:34*	*50*
Dibromofluoromethane (Surr)	*93*		*50 - 141*		*03/01/21 11:34*	*50*
Toluene-d8 (Surr)	*96*		*52 - 141*		*03/01/21 11:34*	*50*

Lab Sample ID: LCS 410-98111/5
Matrix: Solid
Analysis Batch: 98111

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	1010		ug/Kg		101	78 - 120
1,3,5-Trimethylbenzene	1000	1020		ug/Kg		102	73 - 120
Toluene	1000	1040		ug/Kg		104	80 - 120
Methyl tertiary butyl ether	1000	1050		ug/Kg		105	72 - 120
Benzene	1000	1020		ug/Kg		102	80 - 120
Naphthalene	1000	857		ug/Kg		86	48 - 130
1,2,4-Trimethylbenzene	1000	1010		ug/Kg		101	73 - 120
Isopropylbenzene	1000	981		ug/Kg		98	77 - 120
1,2-Dibromoethane	1000	1040		ug/Kg		104	76 - 120
1,2-Dichloroethane	1000	929		ug/Kg		93	71 - 128
t-Butyl alcohol	10000	11300		ug/Kg		113	74 - 121
Xylenes, Total	3000	3070		ug/Kg		102	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*92*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-98111/7
Matrix: Solid
Analysis Batch: 98111

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	53800		ug/Kg		108	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*72*		*54 - 135*
4-Bromofluorobenzene (Surr)	*68*		*50 - 131*
Dibromofluoromethane (Surr)	*70*		*50 - 141*
Toluene-d8 (Surr)	*73*		*52 - 141*

Lab Sample ID: LCSD 410-98111/6
Matrix: Solid
Analysis Batch: 98111

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	987		ug/Kg		99	78 - 120	3	30
1,3,5-Trimethylbenzene			1000	994		ug/Kg		99	73 - 120	2	30
Toluene			1000	1010		ug/Kg		101	80 - 120	3	30
Methyl tertiary butyl ether			1000	1040		ug/Kg		104	72 - 120	1	30
Benzene			1000	1010		ug/Kg		101	80 - 120	1	30
Naphthalene			1000	866		ug/Kg		87	48 - 130	1	30
1,2,4-Trimethylbenzene			1000	978		ug/Kg		98	73 - 120	3	30
Isopropylbenzene			1000	960		ug/Kg		96	77 - 120	2	30
1,2-Dibromoethane			1000	1040		ug/Kg		104	76 - 120	0	30
1,2-Dichloroethane			1000	945		ug/Kg		95	71 - 128	2	30
t-Butyl alcohol			10000	10700		ug/Kg		107	74 - 121	5	30
Xylenes, Total			3000	3010		ug/Kg		100	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-98111/8
Matrix: Solid
Analysis Batch: 98111

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	53700		ug/Kg		107	75 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*73*		*54 - 135*
4-Bromofluorobenzene (Surr)	*68*		*50 - 131*
Dibromofluoromethane (Surr)	*70*		*50 - 141*
Toluene-d8 (Surr)	*73*		*52 - 141*

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-96909/9
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			02/24/21 14:33	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			02/24/21 14:33	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			02/24/21 14:33	1
Benzene	ND		1.0	0.20	ug/L			02/24/21 14:33	1
C4-C12-TPH-GRO	ND		50	29	ug/L			02/24/21 14:33	1
Ethylbenzene	ND		1.0	0.40	ug/L			02/24/21 14:33	1
Isopropylbenzene	ND		5.0	0.20	ug/L			02/24/21 14:33	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			02/24/21 14:33	1
Toluene	ND		1.0	0.20	ug/L			02/24/21 14:33	1
Xylenes, Total	ND		6.0	1.4	ug/L			02/24/21 14:33	1
t-Butyl alcohol	ND		50	12	ug/L			02/24/21 14:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*02/24/21 14:33*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*02/24/21 14:33*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*02/24/21 14:33*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*02/24/21 14:33*	*1*

Lab Sample ID: LCS 410-96909/5
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		96	75 - 120
1,2-Dichloroethane	20.0	18.0		ug/L		90	73 - 124
1,3,5-Trimethylbenzene	20.0	19.0		ug/L		95	75 - 120
Benzene	20.0	19.7		ug/L		99	80 - 120
Ethylbenzene	20.0	19.9		ug/L		99	80 - 120
Isopropylbenzene	20.0	19.6		ug/L		98	80 - 120
Methyl tertiary butyl ether	20.0	18.0		ug/L		90	69 - 122
Naphthalene	20.0	16.8		ug/L		84	53 - 124
Toluene	20.0	20.5		ug/L		102	80 - 120
Xylenes, Total	60.0	59.3		ug/L		99	80 - 120
t-Butyl alcohol	200	203		ug/L		102	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCS 410-96909/7
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1020		ug/L		102	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-96909/7
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-96909/6
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	18.9		ug/L		94	75 - 120	2	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	1	30
1,3,5-Trimethylbenzene			20.0	18.8		ug/L		94	75 - 120	1	30
Benzene			20.0	19.3		ug/L		96	80 - 120	2	30
Ethylbenzene			20.0	19.5		ug/L		98	80 - 120	2	30
Isopropylbenzene			20.0	19.5		ug/L		98	80 - 120	0	30
Methyl tertiary butyl ether			20.0	17.6		ug/L		88	69 - 122	2	30
Naphthalene			20.0	17.3		ug/L		87	53 - 124	3	30
Toluene			20.0	20.0		ug/L		100	80 - 120	2	30
Xylenes, Total			60.0	58.8		ug/L		98	80 - 120	1	30
t-Butyl alcohol			200	206		ug/L		103	60 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-96909/8
Matrix: Water
Analysis Batch: 96909

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1040		ug/L		104	67 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-97503/1-A
Matrix: Solid
Analysis Batch: 97623

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 97503

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Chrysene	ND		17	3.3	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Fluorene	ND		17	3.3	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Naphthalene	ND		17	6.7	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Phenanthrene	ND		17	4.0	ug/Kg		02/25/21 16:22	02/26/21 00:36	1
Pyrene	ND		17	3.3	ug/Kg		02/25/21 16:22	02/26/21 00:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*100*		*39 - 100*	*02/25/21 16:22*	*02/26/21 00:36*	*1*
Nitrobenzene-d5 (Surr)	*87*		*32 - 97*	*02/25/21 16:22*	*02/26/21 00:36*	*1*
p-Terphenyl-d14 (Surr)	*109*	*S1+*	*45 - 108*	*02/25/21 16:22*	*02/26/21 00:36*	*1*

Lab Sample ID: LCS 410-97503/2-A
Matrix: Solid
Analysis Batch: 97623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 97503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1580		ug/Kg		95	75 - 114
Benzo[a]anthracene	1670	1640		ug/Kg		98	73 - 114
Benzo[a]pyrene	1670	1540		ug/Kg		92	61 - 111
Benzo[b]fluoranthene	1670	1440		ug/Kg		86	63 - 110
Benzo[g,h,i]perylene	1670	1520		ug/Kg		91	77 - 114
Chrysene	1670	1610		ug/Kg		97	66 - 111
Fluorene	1670	1730	*+	ug/Kg		104	68 - 102
Naphthalene	1670	1390		ug/Kg		83	60 - 94
Phenanthrene	1670	1510		ug/Kg		90	74 - 112
Pyrene	1670	1660		ug/Kg		100	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*94*		*39 - 100*
Nitrobenzene-d5 (Surr)	*86*		*32 - 97*
p-Terphenyl-d14 (Surr)	*98*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-97498/1-A
Matrix: Solid
Analysis Batch: 97727

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 97498

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		02/25/21 16:12	02/26/21 11:52	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		02/25/21 16:12	02/26/21 11:52	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-97498/1-A
Matrix: Solid
Analysis Batch: 97727

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 97498

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	75		54 - 137	02/25/21 16:12	02/26/21 11:52	1
o- terphenyl (Surr) (1C)	86		52 - 154	02/25/21 16:12	02/26/21 11:52	1

Lab Sample ID: LCS 410-97498/2-A
Matrix: Solid
Analysis Batch: 97727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 97498

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	134	111		mg/Kg		83	64 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	68		54 - 137
o- terphenyl (Surr) (1C)	97		52 - 154

Lab Sample ID: 410-29945-1 MS
Matrix: Solid
Analysis Batch: 97727

Client Sample ID: BT-22B-S-14-20210217
Prep Type: Total/NA
Prep Batch: 97498

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)	240		150	367		mg/Kg	☼	86	64 - 122

Surrogate	MS %Recovery	MS Qualifier	Limits
Chlorobenzene (Surr) (1C)	51	S1-	54 - 137
o- terphenyl (Surr) (1C)	98		52 - 154

Lab Sample ID: 410-29945-1 DU
Matrix: Solid
Analysis Batch: 97727

Client Sample ID: BT-22B-S-14-20210217
Prep Type: Total/NA
Prep Batch: 97498

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
>C22-C44 (1C)	10	J	7.74	J	mg/Kg	☼	30	
>C12-C22 (1C)	50		19.3		mg/Kg	☼	89	

Surrogate	DU %Recovery	DU Qualifier	Limits
Chlorobenzene (Surr) (1C)	72		54 - 137
o- terphenyl (Surr) (1C)	88		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-96405/1-A
Matrix: Solid
Analysis Batch: 97141

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96405

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.3	0.52	mg/Kg		02/23/21 08:39	02/24/21 16:07	1

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-96405/2-A
Matrix: Solid
Analysis Batch: 97141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96405

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.70	2.65		mg/Kg		98	80 - 120		

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

GC/MS VOA

Prep Batch: 96406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1 - DL	BT-22B-S-14-20210217	Total/NA	Solid	5035	
410-29945-1 - RA	BT-22B-S-14-20210217	Total/NA	Solid	5035	
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	5035	

Analysis Batch: 96909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-2	TB-02010222	Total/NA	Water	8260C/UST	
MB 410-96909/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-96909/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-96909/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-96909/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-96909/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 97295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	8260C	96406
410-29945-1 - DL	BT-22B-S-14-20210217	Total/NA	Solid	8260C	96406
MB 410-97295/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-97295/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-97295/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-97295/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-97295/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 98111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1 - RA	BT-22B-S-14-20210217	Total/NA	Solid	8260C	96406
MB 410-98111/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-98111/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-98111/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-98111/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-98111/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 97503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	3546	
MB 410-97503/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-97503/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 97623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	8270D	97503
MB 410-97503/1-A	Method Blank	Total/NA	Solid	8270D	97503
LCS 410-97503/2-A	Lab Control Sample	Total/NA	Solid	8270D	97503

GC Semi VOA

Prep Batch: 97498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	3546	
MB 410-97498/1-A	Method Blank	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 97498 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-97498/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-29945-1 MS	BT-22B-S-14-20210217	Total/NA	Solid	3546	
410-29945-1 DU	BT-22B-S-14-20210217	Total/NA	Solid	3546	

Analysis Batch: 97727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	8015C TPH	97498
MB 410-97498/1-A	Method Blank	Total/NA	Solid	8015C TPH	97498
LCS 410-97498/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	97498
410-29945-1 MS	BT-22B-S-14-20210217	Total/NA	Solid	8015C TPH	97498
410-29945-1 DU	BT-22B-S-14-20210217	Total/NA	Solid	8015C TPH	97498

Analysis Batch: 103764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 96405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	3050B	
MB 410-96405/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-96405/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 97141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	6010C	96405
MB 410-96405/1-A	Method Blank	Total/NA	Solid	6010C	96405
LCS 410-96405/2-A	Lab Control Sample	Total/NA	Solid	6010C	96405

General Chemistry

Analysis Batch: 96272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-29945-1	BT-22B-S-14-20210217	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-29945-1
Project/Site: PHL: Belmont Terminal Drilling

Client Sample ID: BT-22B-S-14-20210217
Lab Sample ID: 410-29945-1
Date Collected: 02/17/21 14:00
Matrix: Solid
Date Received: 02/22/21 16:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	96272	02/22/21 20:30	OEL4	ELLE

Client Sample ID: BT-22B-S-14-20210217
Lab Sample ID: 410-29945-1
Date Collected: 02/17/21 14:00
Matrix: Solid
Date Received: 02/22/21 16:37
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			96406	02/23/21 08:40	Z8FW	ELLE
Total/NA	Analysis	8260C		500	97295	02/25/21 17:37	SWV2	ELLE
Total/NA	Prep	5035	DL		96406	02/23/21 08:40	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	5000	97295	02/25/21 17:58	SWV2	ELLE
Total/NA	Prep	5035	RA		96406	02/23/21 08:40	Z8FW	ELLE
Total/NA	Analysis	8260C	RA	500	98111	03/01/21 18:28	NSK7	ELLE
Total/NA	Prep	3546			97503	02/25/21 16:22	FTV5	ELLE
Total/NA	Analysis	8270D		1	97623	02/26/21 02:33	SJ89	ELLE
Total/NA	Prep	3546			97498	02/25/21 16:12	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	97727	02/26/21 13:40	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	103764	03/16/21 14:53	UHEW	ELLE
Total/NA	Prep	3050B			96405	02/23/21 08:39	UAMX	ELLE
Total/NA	Analysis	6010C		1	97141	02/24/21 16:42	UCIG	ELLE

Client Sample ID: TB-02010222
Lab Sample ID: 410-29945-2
Date Collected: 02/22/21 00:00
Matrix: Water
Date Received: 02/22/21 16:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	96909	02/24/21 15:43	HDS6	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-29945-1
Project/Site: PHL: Belmont Terminal Drilling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal Drilling

Job ID: 410-29945-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-29945-1	BT-22B-S-14-20210217	Solid	02/17/21 14:00	02/22/21 16:37	
410-29945-2	TB-02010222	Water	02/22/21 00:00	02/22/21 16:37	

Environmental Analysis Re[illegible]stody

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Acct. # _____

410-29945 Chain of Custody

[illegible]use only

COC # 615412

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Matrix: Soil ☒ Sediment ☐ Tissue	Matrix: Water Potable ☐ Ground ☐ NPDES ☐ Surface	Matrix: Other: trip blank	Total # of Containers	Analysis Requested: TPH-DRO	TPH GRO/Moisture VOC 8260	VOC 8260 C/D	Lead	PAH 8270 D	Remarks
BT-22B-S-14-20210217	2/17/21	1400	X		X			6	X	X	X	X	X	
TB-20210222	1/05/21	—					X	2			X			

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	2/22/21	1215	R Pindhan	22Feb21	1215
R Pindhan	22Feb21	1630			
			Cas	2-22-21	1637

EDD Required? Yes No
If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.6 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.
KAM 7044 0919
Page 26 of 27
3/16/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-29945-1

Login Number: 29945
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-30035-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:08:40 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:08:40 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-30035-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-30035-1

Revision
The report being provided is a revision of the original report sent on 3/8/2021. The report (revision 1) is being revised due to: TPH Carbon range updated to >C12-C22.

Receipt
The samples were received on 2/23/2021 3:57 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-99090 recovered outside acceptance criteria, low biased, for Naphthalene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C: Internal standard (ISTD) response for the following sample was outside control limits: BT-22B-S-40-20210222 (410-30035-2). The sample(s) was re-extracted and/or re-analyzed and ISTD response was outside control limits.

Method 8260C: The following sample was analyzed via a low-level analysis and a high-level (i.e., methanol extract) analysis. The low-level analysis resulted in a value for Benzene above the upper calibration range. The high-level analysis resulted in a value below the RL (estimated J-value) for this analyte in the lowest possible dilution utilized. The results from the high-level analysis are provided and have been flagged as estimated. BT-22B-S-40-20210222 (410-30035-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-30035-1

Client Sample ID: BT-22B-S-31-20210222 — Lab Sample ID: 410-30035-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	840		260	21	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	3200		260	26	ug/Kg	50	☼	8260C	Total/NA
Toluene	64	J	260	31	ug/Kg	50	☼	8260C	Total/NA
Benzene	140	J	260	26	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	470		260	26	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	3000		260	21	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	570		510	72	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	830000		56000	23000	ug/Kg	500	☼	8260C	Total/NA
Benzo[a]anthracene	2700		19	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	2200		19	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	2100		19	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	820		19	3.9	ug/Kg	1	☼	8270D	Total/NA
Chrysene	2900		19	3.9	ug/Kg	1	☼	8270D	Total/NA
Anthracene - DL	6400		190	39	ug/Kg	10	☼	8270D	Total/NA
Fluorene - DL	8000		190	39	ug/Kg	10	☼	8270D	Total/NA
Naphthalene - DL	22000		190	77	ug/Kg	10	☼	8270D	Total/NA
Phenanthrene - DL	26000		190	46	ug/Kg	10	☼	8270D	Total/NA
Pyrene - DL	8700		190	39	ug/Kg	10	☼	8270D	Total/NA
>C22-C44 (1C)	120		69	29	mg/Kg	5	☼	8015C TPH	Total/NA
>C12-C22 (1C)	920		69	29	mg/Kg	5	☼	8015C TPH	Total/NA
Total Reported TPH	2000		14	5.8	mg/Kg	1	☼	Total TPH	Total/NA
Lead	5.2		1.2	0.47	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: BT-22B-S-40-20210222 — Lab Sample ID: 410-30035-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	70		5.8	0.46	ug/Kg	1	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	13		5.8	0.58	ug/Kg	1	☼	8260C	Total/NA
Toluene	8.8		5.8	0.69	ug/Kg	1	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	63		5.8	0.58	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	69		5.8	0.46	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	100		12	1.6	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether - DL	620		440	44	ug/Kg	50	☼	8260C	Total/NA
Benzene - DL	250	J	440	44	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	22000	B	9800	3900	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol - DL	61000	*3	8900	1300	ug/Kg	50	☼	8260C	Total/NA
Anthracene	9.1	J	22	4.5	ug/Kg	1	☼	8270D	Total/NA
Fluorene	11	J	22	4.5	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	3800		22	9.0	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	25		22	5.4	ug/Kg	1	☼	8270D	Total/NA
Pyrene	14	J	22	4.5	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	36		16	6.8	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	7.4	J	16	6.8	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	51		16	6.8	mg/Kg	1	☼	Total TPH	Total/NA
Lead	9.4		1.4	0.56	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210223 — Lab Sample ID: 410-30035-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08B-S-12-20210223
Lab Sample ID: 410-30035-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	130	J	310	25	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	86	J	310	31	ug/Kg	50	☼	8260C	Total/NA
Toluene	76	J	310	37	ug/Kg	50	☼	8260C	Total/NA
Benzene	35	J	310	31	ug/Kg	50	☼	8260C	Total/NA
1,2,4-Trimethylbenzene	50	J	310	31	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	4600		310	25	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	270	J	610	86	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	1200000	B	68000	27000	ug/Kg	500	☼	8260C	Total/NA
Anthracene	470		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	81		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	60		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	68		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	28		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Chrysene	87		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Fluorene	1400		20	3.9	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	2300		20	4.7	ug/Kg	1	☼	8270D	Total/NA
Pyrene	330		20	3.9	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	150	J	280	120	mg/Kg	20	☼	8015C TPH	Total/NA
>C12-C22 (1C)	1700		280	120	mg/Kg	20	☼	8015C TPH	Total/NA
Total Reported TPH	3600		14	5.9	mg/Kg	1	☼	Total TPH	Total/NA
Lead	3.0		1.5	0.61	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-22B-S-31-20210222
Lab Sample ID: 410-30035-1

Date Collected: 02/22/21 15:25
Matrix: Solid

Date Received: 02/23/21 15:57
Percent Solids: 85.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**840**		260	21	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
1,3,5-Trimethylbenzene	**3200**		260	26	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
Toluene	**64**	**J**	260	31	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
Methyl tertiary butyl ether	ND		260	26	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
Benzene	**140**	**J**	260	26	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
1,2,4-Trimethylbenzene	**470**		260	26	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
Isopropylbenzene	**3000**		260	21	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
1,2-Dibromoethane	ND		260	21	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
1,2-Dichloroethane	ND		260	31	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
t-Butyl alcohol	ND		5100	770	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50
Xylenes, Total	**570**		510	72	ug/Kg	☼	02/24/21 08:01	03/03/21 17:40	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*54 - 135*	*02/24/21 08:01*	*03/03/21 17:40*	*50*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*	*02/24/21 08:01*	*03/03/21 17:40*	*50*
Dibromofluoromethane (Surr)	*79*		*50 - 141*	*02/24/21 08:01*	*03/03/21 17:40*	*50*
Toluene-d8 (Surr)	*114*		*52 - 141*	*02/24/21 08:01*	*03/03/21 17:40*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**830000**		56000	23000	ug/Kg	☼	02/24/21 08:01	03/04/21 13:35	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*73*		*54 - 135*	*02/24/21 08:01*	*03/04/21 13:35*	*500*
4-Bromofluorobenzene (Surr)	*92*		*50 - 131*	*02/24/21 08:01*	*03/04/21 13:35*	*500*
Dibromofluoromethane (Surr)	*73*		*50 - 141*	*02/24/21 08:01*	*03/04/21 13:35*	*500*
Toluene-d8 (Surr)	*92*		*52 - 141*	*02/24/21 08:01*	*03/04/21 13:35*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**2700**		19	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:14	1
Benzo[a]pyrene	**2200**		19	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:14	1
Benzo[b]fluoranthene	**2100**		19	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:14	1
Benzo[g,h,i]perylene	**820**		19	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:14	1
Chrysene	**2900**		19	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*39 - 100*	*02/26/21 16:19*	*02/28/21 21:14*	*1*
Nitrobenzene-d5 (Surr)	*94*		*32 - 97*	*02/26/21 16:19*	*02/28/21 21:14*	*1*
p-Terphenyl-d14 (Surr)	*82*		*45 - 108*	*02/26/21 16:19*	*02/28/21 21:14*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**6400**		190	39	ug/Kg	☼	02/26/21 16:19	03/02/21 22:48	10
Fluorene	**8000**		190	39	ug/Kg	☼	02/26/21 16:19	03/02/21 22:48	10
Naphthalene	**22000**		190	77	ug/Kg	☼	02/26/21 16:19	03/02/21 22:48	10
Phenanthrene	**26000**		190	46	ug/Kg	☼	02/26/21 16:19	03/02/21 22:48	10
Pyrene	**8700**		190	39	ug/Kg	☼	02/26/21 16:19	03/02/21 22:48	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*39 - 100*	*02/26/21 16:19*	*03/02/21 22:48*	*10*

Client Sample ID: BT-22B-S-31-20210222 — Lab Sample ID: 410-30035-1

Date Collected: 02/22/21 15:25 — **Matrix: Solid**
Date Received: 02/23/21 15:57 — **Percent Solids: 85.5**

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	*95*		*32 - 97*	*02/26/21 16:19*	*03/02/21 22:48*	*10*
p-Terphenyl-d14 (Surr)	*82*		*45 - 108*	*02/26/21 16:19*	*03/02/21 22:48*	*10*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**120**		69	29	mg/Kg	☼	02/25/21 16:12	03/01/21 11:42	5
>C12-C22 (1C)	**920**		69	29	mg/Kg	☼	02/25/21 16:12	03/01/21 11:42	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	*131*		*54 - 137*	*02/25/21 16:12*	*03/01/21 11:42*	*5*
o- terphenyl (Surr) (1C)	*126*		*52 - 154*	*02/25/21 16:12*	*03/01/21 11:42*	*5*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**2000**		14	5.8	mg/Kg	☼		03/01/21 09:18	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**5.2**		1.2	0.47	mg/Kg	☼	02/24/21 04:42	02/24/21 17:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**14.5**		1.0	1.0	%			02/24/21 01:22	1

Client Sample ID: BT-22B-S-40-20210222 — Lab Sample ID: 410-30035-2

Date Collected: 02/22/21 16:00 — **Matrix: Solid**
Date Received: 02/23/21 15:57 — **Percent Solids: 73.3**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**70**		5.8	0.46	ug/Kg	☼	02/24/21 08:08	03/02/21 22:37	1
1,3,5-Trimethylbenzene	**13**		5.8	0.58	ug/Kg	☼	02/24/21 08:08	03/02/21 22:37	1
Toluene	**8.8**		5.8	0.69	ug/Kg	☼	02/24/21 08:08	03/02/21 22:37	1
1,2,4-Trimethylbenzene	**63**		5.8	0.58	ug/Kg	☼	02/24/21 08:08	03/02/21 22:37	1
Isopropylbenzene	**69**		5.8	0.46	ug/Kg	☼	02/24/21 08:08	03/02/21 22:37	1
1,2-Dibromoethane	ND		5.8	0.46	ug/Kg	☼	02/24/21 08:08	03/02/21 22:37	1
1,2-Dichloroethane	ND		5.8	0.69	ug/Kg	☼	02/24/21 08:08	03/02/21 22:37	1
Xylenes, Total	**100**		12	1.6	ug/Kg	☼	02/24/21 08:08	03/02/21 22:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*	*02/24/21 08:08*	*03/02/21 22:37*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*	*02/24/21 08:08*	*03/02/21 22:37*	*1*
Dibromofluoromethane (Surr)	*98*		*50 - 141*	*02/24/21 08:08*	*03/02/21 22:37*	*1*
Toluene-d8 (Surr)	*102*		*52 - 141*	*02/24/21 08:08*	*03/02/21 22:37*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tertiary butyl ether	**620**		440	44	ug/Kg	☼	02/24/21 08:01	03/03/21 19:03	50
Benzene	**250**	**J**	440	44	ug/Kg	☼	02/24/21 08:01	03/03/21 19:03	50
C4-C12-TPH-GRO	**22000**	**B**	9800	3900	ug/Kg	☼	02/24/21 08:01	03/03/21 19:03	50
t-Butyl alcohol	**61000**	***3**	8900	1300	ug/Kg	☼	02/24/21 08:01	03/03/21 19:03	50

Client Sample ID: BT-22B-S-40-20210222 — Lab Sample ID: 410-30035-2

Date Collected: 02/22/21 16:00 — **Matrix: Solid**
Date Received: 02/23/21 15:57 — **Percent Solids: 73.3**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	31	S1-	54 - 135	02/24/21 08:01	03/03/21 19:03	50
4-Bromofluorobenzene (Surr)	85		50 - 131	02/24/21 08:01	03/03/21 19:03	50
Dibromofluoromethane (Surr)	52		50 - 141	02/24/21 08:01	03/03/21 19:03	50
Toluene-d8 (Surr)	52		52 - 141	02/24/21 08:01	03/03/21 19:03	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**9.1**	**J**	22	4.5	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Benzo[a]anthracene	ND		22	4.5	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Benzo[a]pyrene	ND		22	4.5	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Benzo[b]fluoranthene	ND		22	4.5	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Benzo[g,h,i]perylene	ND		22	4.5	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Chrysene	ND		22	4.5	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Fluorene	**11**	**J**	22	4.5	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Naphthalene	**3800**		22	9.0	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Phenanthrene	**25**		22	5.4	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1
Pyrene	**14**	**J**	22	4.5	ug/Kg	☼	02/26/21 16:19	02/28/21 21:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	75		39 - 100	02/26/21 16:19	02/28/21 21:36	1
Nitrobenzene-d5 (Surr)	83		32 - 97	02/26/21 16:19	02/28/21 21:36	1
p-Terphenyl-d14 (Surr)	84		45 - 108	02/26/21 16:19	02/28/21 21:36	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**36**		16	6.8	mg/Kg	☼	02/25/21 16:12	02/26/21 12:57	1
>C12-C22 (1C)	**7.4**	**J**	16	6.8	mg/Kg	☼	02/25/21 16:12	02/26/21 12:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	68		54 - 137	02/25/21 16:12	02/26/21 12:57	1
o- terphenyl (Surr) (1C)	66		52 - 154	02/25/21 16:12	02/26/21 12:57	1

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**51**		16	6.8	mg/Kg	☼		03/01/21 09:18	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**9.4**		1.4	0.56	mg/Kg	☼	02/24/21 04:42	02/24/21 17:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**26.7**		1.0	1.0	%			02/24/21 01:22	1

Client Sample ID: TB-20210223 — Lab Sample ID: 410-30035-3

Date Collected: 02/03/21 00:00 — **Matrix: Water**
Date Received: 02/23/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/02/21 13:05	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/02/21 13:05	1

Client Sample ID: TB-20210223 — Lab Sample ID: 410-30035-3

Date Collected: 02/03/21 00:00 — **Matrix: Water**
Date Received: 02/23/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/02/21 13:05	1
Benzene	ND		1.0	0.20	ug/L			03/02/21 13:05	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/02/21 13:05	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/02/21 13:05	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/02/21 13:05	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/02/21 13:05	1
Toluene	ND		1.0	0.20	ug/L			03/02/21 13:05	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/02/21 13:05	1
t-Butyl alcohol	ND		50	12	ug/L			03/02/21 13:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*03/02/21 13:05*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*03/02/21 13:05*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*03/02/21 13:05*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*03/02/21 13:05*	*1*

Client Sample ID: BT-08B-S-12-20210223 — Lab Sample ID: 410-30035-4

Date Collected: 02/23/21 13:40 — **Matrix: Solid**
Date Received: 02/23/21 15:57 — **Percent Solids: 84.5**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**130**	**J**	310	25	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
1,3,5-Trimethylbenzene	**86**	**J**	310	31	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
Toluene	**76**	**J**	310	37	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
Methyl tertiary butyl ether	ND		310	31	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
Benzene	**35**	**J**	310	31	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
1,2,4-Trimethylbenzene	**50**	**J**	310	31	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
Isopropylbenzene	**4600**		310	25	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
1,2-Dibromoethane	ND		310	25	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
1,2-Dichloroethane	ND		310	37	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
t-Butyl alcohol	ND		6100	920	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50
Xylenes, Total	**270**	**J**	610	86	ug/Kg	☼	02/24/21 08:01	03/03/21 18:00	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*54 - 135*	*02/24/21 08:01*	*03/03/21 18:00*	*50*
4-Bromofluorobenzene (Surr)	*171*	*S1+*	*50 - 131*	*02/24/21 08:01*	*03/03/21 18:00*	*50*
Dibromofluoromethane (Surr)	*83*		*50 - 141*	*02/24/21 08:01*	*03/03/21 18:00*	*50*
Toluene-d8 (Surr)	*97*		*52 - 141*	*02/24/21 08:01*	*03/03/21 18:00*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**1200000**	**B**	68000	27000	ug/Kg	☼	02/24/21 08:01	03/03/21 18:21	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*78*		*54 - 135*	*02/24/21 08:01*	*03/03/21 18:21*	*500*
4-Bromofluorobenzene (Surr)	*160*	*S1+*	*50 - 131*	*02/24/21 08:01*	*03/03/21 18:21*	*500*
Dibromofluoromethane (Surr)	*81*		*50 - 141*	*02/24/21 08:01*	*03/03/21 18:21*	*500*
Toluene-d8 (Surr)	*99*		*52 - 141*	*02/24/21 08:01*	*03/03/21 18:21*	*500*

Client Sample ID: BT-08B-S-12-20210223 **Lab Sample ID: 410-30035-4**
Date Collected: 02/23/21 13:40 **Matrix: Solid**
Date Received: 02/23/21 15:57 **Percent Solids: 84.5**

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	470		20	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Benzo[a]anthracene	81		20	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Benzo[a]pyrene	60		20	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Benzo[b]fluoranthene	68		20	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Benzo[g,h,i]perylene	28		20	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Chrysene	87		20	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Fluorene	1400		20	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Naphthalene	ND		20	7.8	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Phenanthrene	2300		20	4.7	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1
Pyrene	330		20	3.9	ug/Kg	☼	02/26/21 16:19	02/28/21 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*39 - 100*	*02/26/21 16:19*	*02/28/21 21:58*	*1*
Nitrobenzene-d5 (Surr)	*88*		*32 - 97*	*02/26/21 16:19*	*02/28/21 21:58*	*1*
p-Terphenyl-d14 (Surr)	*86*		*45 - 108*	*02/26/21 16:19*	*02/28/21 21:58*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	150	J	280	120	mg/Kg	☼	02/25/21 16:12	03/01/21 12:03	20
>C12-C22 (1C)	1700		280	120	mg/Kg	☼	02/25/21 16:12	03/01/21 12:03	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*542*	*S1+*	*54 - 137*	*02/25/21 16:12*	*03/01/21 12:03*	*20*
o- terphenyl (Surr) (1C)	*155*	*S1+*	*52 - 154*	*02/25/21 16:12*	*03/01/21 12:03*	*20*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	3600		14	5.9	mg/Kg	☼		03/01/21 09:18	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	3.0		1.5	0.61	mg/Kg	☼	02/24/21 04:42	02/24/21 17:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.5		1.0	1.0	%			02/24/21 01:22	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-30035-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-30035-1	BT-22B-S-31-20210222	82	99	79	114
410-30035-1 - DL	BT-22B-S-31-20210222	73	92	73	92
410-30035-2	BT-22B-S-40-20210222	109	96	98	102
410-30035-2 - DL	BT-22B-S-40-20210222	31 S1-	85	52	52
410-30035-4	BT-08B-S-12-20210223	81	171 S1+	83	97
410-30035-4 - DL	BT-08B-S-12-20210223	78	160 S1+	81	99
LCS 410-98832/6	Lab Control Sample	102	98	98	99
LCS 410-98832/8	Lab Control Sample	103	99	96	98
LCS 410-99090/5	Lab Control Sample	96	89	95	96
LCS 410-99090/8	Lab Control Sample	95	88	94	97
LCS 410-99503/5	Lab Control Sample	97	88	97	95
LCS 410-99503/7	Lab Control Sample	99	90	97	98
LCSD 410-98832/7	Lab Control Sample Dup	102	100	99	99
LCSD 410-98832/9	Lab Control Sample Dup	104	99	97	99
LCSD 410-99090/6	Lab Control Sample Dup	99	91	98	97
LCSD 410-99090/9	Lab Control Sample Dup	99	89	95	95
LCSD 410-99503/6	Lab Control Sample Dup	98	87	96	95
LCSD 410-99503/8	Lab Control Sample Dup	97	89	95	97
MB 410-98832/11	Method Blank	106	98	101	97
MB 410-99090/11	Method Blank	93	84	89	94
MB 410-99503/10	Method Blank	100	88	96	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-30035-3	TB-20210223	96	98	98	103
LCS 410-98583/5	Lab Control Sample	97	100	97	104
LCS 410-98583/7	Lab Control Sample	93	98	95	103
LCSD 410-98583/6	Lab Control Sample Dup	97	99	96	104
LCSD 410-98583/8	Lab Control Sample Dup	94	99	97	105
MB 410-98583/9	Method Blank	94	97	97	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-30035-1	BT-22B-S-31-20210222	81	94	82
410-30035-1 - DL	BT-22B-S-31-20210222	73	95	82
410-30035-2	BT-22B-S-40-20210222	75	83	84
410-30035-4	BT-08B-S-12-20210223	70	88	86
LCS 410-97876/2-A	Lab Control Sample	78	85	87
MB 410-97876/1-A	Method Blank	81	89	100

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-30035-1	BT-22B-S-31-20210222	131	126
410-30035-2	BT-22B-S-40-20210222	68	66
410-30035-4	BT-08B-S-12-20210223	542 S1+	155 S1+

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-98832/11
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			03/02/21 21:33	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			03/02/21 21:33	1
Toluene	ND		5.0	0.60	ug/Kg			03/02/21 21:33	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			03/02/21 21:33	1
Benzene	ND		5.0	0.50	ug/Kg			03/02/21 21:33	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			03/02/21 21:33	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			03/02/21 21:33	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			03/02/21 21:33	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			03/02/21 21:33	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			03/02/21 21:33	1
t-Butyl alcohol	ND		100	15	ug/Kg			03/02/21 21:33	1
Xylenes, Total	ND		10	1.4	ug/Kg			03/02/21 21:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*		*03/02/21 21:33*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*		*03/02/21 21:33*	*1*
Dibromofluoromethane (Surr)	*101*		*50 - 141*		*03/02/21 21:33*	*1*
Toluene-d8 (Surr)	*97*		*52 - 141*		*03/02/21 21:33*	*1*

Lab Sample ID: LCS 410-98832/6
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	21.5		ug/Kg		107	78 - 120
1,3,5-Trimethylbenzene	20.0	20.6		ug/Kg		103	73 - 120
Toluene	20.0	21.7		ug/Kg		108	80 - 120
Methyl tertiary butyl ether	20.0	17.7		ug/Kg		88	72 - 120
Benzene	20.0	22.9		ug/Kg		114	80 - 120
Naphthalene	20.0	19.3		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	20.0	20.7		ug/Kg		103	73 - 120
Isopropylbenzene	20.0	20.2		ug/Kg		101	77 - 120
1,2-Dibromoethane	20.0	20.4		ug/Kg		102	76 - 120
1,2-Dichloroethane	20.0	21.3		ug/Kg		106	71 - 128
t-Butyl alcohol	200	188		ug/Kg		94	74 - 121
Xylenes, Total	60.0	63.5		ug/Kg		106	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-98832/8
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1180		ug/Kg		118	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-98832/7
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.4		ug/Kg		102	78 - 120	5	30
1,3,5-Trimethylbenzene			20.0	19.2		ug/Kg		96	73 - 120	7	30
Toluene			20.0	20.6		ug/Kg		103	80 - 120	5	30
Methyl tertiary butyl ether			20.0	18.0		ug/Kg		90	72 - 120	2	30
Benzene			20.0	21.7		ug/Kg		109	80 - 120	5	30
Naphthalene			20.0	19.6		ug/Kg		98	48 - 130	1	30
1,2,4-Trimethylbenzene			20.0	19.5		ug/Kg		98	73 - 120	6	30
Isopropylbenzene			20.0	19.1		ug/Kg		95	77 - 120	6	30
1,2-Dibromoethane			20.0	20.7		ug/Kg		103	76 - 120	1	30
1,2-Dichloroethane			20.0	21.1		ug/Kg		106	71 - 128	1	30
t-Butyl alcohol			200	196		ug/Kg		98	74 - 121	4	30
Xylenes, Total			60.0	60.5		ug/Kg		101	75 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*100*		*50 - 131*
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Lab Sample ID: LCSD 410-98832/9
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1120		ug/Kg		112	75 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-99090/11
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			03/03/21 12:49	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			03/03/21 12:49	50
Toluene	ND		250	30	ug/Kg			03/03/21 12:49	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			03/03/21 12:49	50
Benzene	ND		250	25	ug/Kg			03/03/21 12:49	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			03/03/21 12:49	50
Isopropylbenzene	ND		250	20	ug/Kg			03/03/21 12:49	50
1,2-Dibromoethane	ND		250	20	ug/Kg			03/03/21 12:49	50
1,2-Dichloroethane	ND		250	30	ug/Kg			03/03/21 12:49	50
C4-C12-TPH-GRO	2610	J B	5500	2200	ug/Kg			03/03/21 12:49	50
t-Butyl alcohol	ND		5000	750	ug/Kg			03/03/21 12:49	50
Xylenes, Total	ND		500	70	ug/Kg			03/03/21 12:49	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*		*03/03/21 12:49*	*50*
4-Bromofluorobenzene (Surr)	*84*		*50 - 131*		*03/03/21 12:49*	*50*
Dibromofluoromethane (Surr)	*89*		*50 - 141*		*03/03/21 12:49*	*50*
Toluene-d8 (Surr)	*94*		*52 - 141*		*03/03/21 12:49*	*50*

Lab Sample ID: LCS 410-99090/5
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	996		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	985		ug/Kg		99	73 - 120
Toluene	1000	1000		ug/Kg		100	80 - 120
Methyl tertiary butyl ether	1000	1000		ug/Kg		100	72 - 120
Benzene	1000	1000		ug/Kg		100	80 - 120
Naphthalene	1000	752		ug/Kg		75	48 - 130
1,2,4-Trimethylbenzene	1000	977		ug/Kg		98	73 - 120
Isopropylbenzene	1000	975		ug/Kg		98	77 - 120
1,2-Dibromoethane	1000	1010		ug/Kg		101	76 - 120
1,2-Dichloroethane	1000	897		ug/Kg		90	71 - 128
t-Butyl alcohol	10000	10200		ug/Kg		102	74 - 121
Xylenes, Total	3000	3060		ug/Kg		102	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-99090/8
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	51500		ug/Kg		103	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-99090/6
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	1010		ug/Kg		101	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	998		ug/Kg		100	73 - 120	1	30
Toluene			1000	1020		ug/Kg		102	80 - 120	1	30
Methyl tertiary butyl ether			1000	1050		ug/Kg		105	72 - 120	5	30
Benzene			1000	1020		ug/Kg		102	80 - 120	1	30
Naphthalene			1000	795		ug/Kg		80	48 - 130	6	30
1,2,4-Trimethylbenzene			1000	986		ug/Kg		99	73 - 120	1	30
Isopropylbenzene			1000	993		ug/Kg		99	77 - 120	2	30
1,2-Dibromoethane			1000	1050		ug/Kg		105	76 - 120	4	30
1,2-Dichloroethane			1000	921		ug/Kg		92	71 - 128	3	30
t-Butyl alcohol			10000	10800		ug/Kg		108	74 - 121	6	30
Xylenes, Total			3000	3100		ug/Kg		103	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*91*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-99090/9
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	50600		ug/Kg		101	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-99503/10 **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 99503

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			03/04/21 11:57	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			03/04/21 11:57	50
Toluene	ND		250	30	ug/Kg			03/04/21 11:57	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			03/04/21 11:57	50
Benzene	ND		250	25	ug/Kg			03/04/21 11:57	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			03/04/21 11:57	50
Isopropylbenzene	ND		250	20	ug/Kg			03/04/21 11:57	50
1,2-Dibromoethane	ND		250	20	ug/Kg			03/04/21 11:57	50
1,2-Dichloroethane	ND		250	30	ug/Kg			03/04/21 11:57	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			03/04/21 11:57	50
t-Butyl alcohol	ND		5000	750	ug/Kg			03/04/21 11:57	50
Xylenes, Total	ND		500	70	ug/Kg			03/04/21 11:57	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*		*03/04/21 11:57*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*03/04/21 11:57*	*50*
Dibromofluoromethane (Surr)	*96*		*50 - 141*		*03/04/21 11:57*	*50*
Toluene-d8 (Surr)	*95*		*52 - 141*		*03/04/21 11:57*	*50*

Lab Sample ID: LCS 410-99503/5 **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 99503

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	983		ug/Kg		98	78 - 120
1,3,5-Trimethylbenzene	1000	975		ug/Kg		98	73 - 120
Toluene	1000	999		ug/Kg		100	80 - 120
Methyl tertiary butyl ether	1000	1030		ug/Kg		103	72 - 120
Benzene	1000	991		ug/Kg		99	80 - 120
Naphthalene	1000	774		ug/Kg		77	48 - 130
1,2,4-Trimethylbenzene	1000	968		ug/Kg		97	73 - 120
Isopropylbenzene	1000	966		ug/Kg		97	77 - 120
1,2-Dibromoethane	1000	1020		ug/Kg		102	76 - 120
1,2-Dichloroethane	1000	919		ug/Kg		92	71 - 128
t-Butyl alcohol	10000	10200		ug/Kg		102	74 - 121
Xylenes, Total	3000	3010		ug/Kg		100	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-99503/7
Matrix: Solid
Analysis Batch: 99503

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	49000		ug/Kg		98	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-99503/6
Matrix: Solid
Analysis Batch: 99503

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	971		ug/Kg		97	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	962		ug/Kg		96	73 - 120	1	30
Toluene			1000	986		ug/Kg		99	80 - 120	1	30
Methyl tertiary butyl ether			1000	1030		ug/Kg		103	72 - 120	1	30
Benzene			1000	981		ug/Kg		98	80 - 120	1	30
Naphthalene			1000	786		ug/Kg		79	48 - 130	2	30
1,2,4-Trimethylbenzene			1000	942		ug/Kg		94	73 - 120	3	30
Isopropylbenzene			1000	947		ug/Kg		95	77 - 120	2	30
1,2-Dibromoethane			1000	1030		ug/Kg		103	76 - 120	1	30
1,2-Dichloroethane			1000	911		ug/Kg		91	71 - 128	1	30
t-Butyl alcohol			10000	10300		ug/Kg		103	74 - 121	1	30
Xylenes, Total			3000	2970		ug/Kg		99	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Lab Sample ID: LCSD 410-99503/8
Matrix: Solid
Analysis Batch: 99503

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	48200		ug/Kg		96	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-98583/9
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/02/21 12:41	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/02/21 12:41	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/02/21 12:41	1
Benzene	ND		1.0	0.20	ug/L			03/02/21 12:41	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/02/21 12:41	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/02/21 12:41	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/02/21 12:41	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/02/21 12:41	1
Toluene	ND		1.0	0.20	ug/L			03/02/21 12:41	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/02/21 12:41	1
t-Butyl alcohol	ND		50	12	ug/L			03/02/21 12:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/02/21 12:41*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*03/02/21 12:41*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*03/02/21 12:41*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*03/02/21 12:41*	*1*

Lab Sample ID: LCS 410-98583/5
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		97	75 - 120
1,2-Dichloroethane	20.0	17.9		ug/L		90	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	19.6		ug/L		98	80 - 120
Ethylbenzene	20.0	19.7		ug/L		98	80 - 120
Isopropylbenzene	20.0	19.5		ug/L		98	80 - 120
Methyl tertiary butyl ether	20.0	17.8		ug/L		89	69 - 122
Naphthalene	20.0	16.6		ug/L		83	53 - 124
Toluene	20.0	20.1		ug/L		100	80 - 120
Xylenes, Total	60.0	58.8		ug/L		98	80 - 120
t-Butyl alcohol	200	202		ug/L		101	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCS 410-98583/7
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	935		ug/L		93	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-98583/7
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-98583/6
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.6		ug/L		98	75 - 120	1	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	19.4		ug/L		97	75 - 120	1	30
Benzene			20.0	19.6		ug/L		98	80 - 120	0	30
Ethylbenzene			20.0	19.6		ug/L		98	80 - 120	0	30
Isopropylbenzene			20.0	19.5		ug/L		97	80 - 120	0	30
Methyl tertiary butyl ether			20.0	17.9		ug/L		89	69 - 122	0	30
Naphthalene			20.0	17.5		ug/L		87	53 - 124	5	30
Toluene			20.0	20.0		ug/L		100	80 - 120	0	30
Xylenes, Total			60.0	58.4		ug/L		97	80 - 120	1	30
t-Butyl alcohol			200	204		ug/L		102	60 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-98583/8
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	901		ug/L		90	67 - 120	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-97876/1-A
Matrix: Solid
Analysis Batch: 98022

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 97876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Chrysene	ND		17	3.3	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Fluorene	ND		17	3.3	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Naphthalene	ND		17	6.7	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Phenanthrene	ND		17	4.0	ug/Kg		02/26/21 16:19	02/28/21 17:29	1
Pyrene	ND		17	3.3	ug/Kg		02/26/21 16:19	02/28/21 17:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*39 - 100*	*02/26/21 16:19*	*02/28/21 17:29*	*1*
Nitrobenzene-d5 (Surr)	*89*		*32 - 97*	*02/26/21 16:19*	*02/28/21 17:29*	*1*
p-Terphenyl-d14 (Surr)	*100*		*45 - 108*	*02/26/21 16:19*	*02/28/21 17:29*	*1*

Lab Sample ID: LCS 410-97876/2-A
Matrix: Solid
Analysis Batch: 98022

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 97876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1490		ug/Kg		89	75 - 114
Benzo[a]anthracene	1670	1300		ug/Kg		78	73 - 114
Benzo[a]pyrene	1670	1830		ug/Kg		110	61 - 111
Benzo[b]fluoranthene	1670	1520		ug/Kg		91	63 - 110
Benzo[g,h,i]perylene	1670	1660		ug/Kg		99	77 - 114
Chrysene	1670	1390		ug/Kg		83	66 - 111
Fluorene	1670	1280		ug/Kg		77	68 - 102
Naphthalene	1670	1320		ug/Kg		79	60 - 94
Phenanthrene	1670	1490		ug/Kg		89	74 - 112
Pyrene	1670	1390		ug/Kg		84	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*78*		*39 - 100*
Nitrobenzene-d5 (Surr)	*85*		*32 - 97*
p-Terphenyl-d14 (Surr)	*87*		*45 - 108*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-96405/1-A
Matrix: Solid
Analysis Batch: 97141

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96405

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.3	0.52	mg/Kg		02/23/21 08:39	02/24/21 16:07	1

Client: Stantec Consulting Corp.
Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-96405/2-A
Matrix: Solid
Analysis Batch: 97141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96405

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.70	2.65		mg/Kg		98	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 96819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	5035	
410-30035-1 - DL	BT-22B-S-31-20210222	Total/NA	Solid	5035	
410-30035-2 - RA	BT-22B-S-40-20210222	Total/NA	Solid	5035	
410-30035-2 - DL	BT-22B-S-40-20210222	Total/NA	Solid	5035	
410-30035-4 - DL	BT-08B-S-12-20210223	Total/NA	Solid	5035	
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	5035	
410-30035-4 - RA	BT-08B-S-12-20210223	Total/NA	Solid	5035	

Prep Batch: 96825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	5035	

Analysis Batch: 98583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-3	TB-20210223	Total/NA	Water	8260C/UST	
MB 410-98583/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-98583/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-98583/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-98583/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-98583/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 98832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	8260C	96825
MB 410-98832/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-98832/6	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-98832/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-98832/7	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-98832/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 99090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	8260C	96819
410-30035-2 - DL	BT-22B-S-40-20210222	Total/NA	Solid	8260C	96819
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	8260C	96819
410-30035-4 - DL	BT-08B-S-12-20210223	Total/NA	Solid	8260C	96819
MB 410-99090/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-99090/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-99090/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-99090/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-99090/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 99503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1 - DL	BT-22B-S-31-20210222	Total/NA	Solid	8260C	96819
410-30035-2 - RA	BT-22B-S-40-20210222	Total/NA	Solid	8260C	96819
410-30035-4 - RA	BT-08B-S-12-20210223	Total/NA	Solid	8260C	96819
MB 410-99503/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-99503/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-99503/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-99503/6	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS VOA (Continued)

Analysis Batch: 99503 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 410-99503/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 97876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	3546	
410-30035-1 - DL	BT-22B-S-31-20210222	Total/NA	Solid	3546	
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	3546	
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	3546	
MB 410-97876/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-97876/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 98022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	8270D	97876
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	8270D	97876
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	8270D	97876
MB 410-97876/1-A	Method Blank	Total/NA	Solid	8270D	97876
LCS 410-97876/2-A	Lab Control Sample	Total/NA	Solid	8270D	97876

Analysis Batch: 98635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1 - DL	BT-22B-S-31-20210222	Total/NA	Solid	8270D	97876

GC Semi VOA

Prep Batch: 97498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	3546	
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	3546	
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	3546	

Analysis Batch: 97727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	8015C TPH	97498

Analysis Batch: 98145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	Total TPH	
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	Total TPH	
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	Total TPH	

Analysis Batch: 98179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	8015C TPH	97498
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	8015C TPH	97498

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Metals

Prep Batch: 96405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	3050B	
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	3050B	
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	3050B	
MB 410-96405/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-96405/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 97141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	6010C	96405
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	6010C	96405
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	6010C	96405
MB 410-96405/1-A	Method Blank	Total/NA	Solid	6010C	96405
LCS 410-96405/2-A	Lab Control Sample	Total/NA	Solid	6010C	96405

General Chemistry

Analysis Batch: 96715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30035-1	BT-22B-S-31-20210222	Total/NA	Solid	Moisture	
410-30035-2	BT-22B-S-40-20210222	Total/NA	Solid	Moisture	
410-30035-4	BT-08B-S-12-20210223	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-30035-1

Client Sample ID: BT-22B-S-31-20210222
Date Collected: 02/22/21 15:25
Date Received: 02/23/21 15:57

Lab Sample ID: 410-30035-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	96715	02/24/21 01:22	PTG7	ELLE

Client Sample ID: BT-22B-S-31-20210222
Date Collected: 02/22/21 15:25
Date Received: 02/23/21 15:57

Lab Sample ID: 410-30035-1
Matrix: Solid
Percent Solids: 85.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			96819	02/24/21 08:01	Z8FW	ELLE
Total/NA	Analysis	8260C		50	99090	03/03/21 17:40	NSK7	ELLE
Total/NA	Prep	5035	DL		96819	02/24/21 08:01	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	500	99503	03/04/21 13:35	NSK7	ELLE
Total/NA	Prep	3546			97876	02/26/21 16:19	FTV5	ELLE
Total/NA	Analysis	8270D		1	98022	02/28/21 21:14	W6XI	ELLE
Total/NA	Prep	3546	DL		97876	02/26/21 16:19	FTV5	ELLE
Total/NA	Analysis	8270D	DL	10	98635	03/02/21 22:48	WKV3	ELLE
Total/NA	Prep	3546			97498	02/25/21 16:12	FTV5	ELLE
Total/NA	Analysis	8015C TPH		5	98179	03/01/21 11:42	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	98145	03/01/21 09:18	UJL4	ELLE
Total/NA	Prep	3050B			96405	02/24/21 04:42	UAMX	ELLE
Total/NA	Analysis	6010C		1	97141	02/24/21 17:10	UCIG	ELLE

Client Sample ID: BT-22B-S-40-20210222
Date Collected: 02/22/21 16:00
Date Received: 02/23/21 15:57

Lab Sample ID: 410-30035-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	96715	02/24/21 01:22	PTG7	ELLE

Client Sample ID: BT-22B-S-40-20210222
Date Collected: 02/22/21 16:00
Date Received: 02/23/21 15:57

Lab Sample ID: 410-30035-2
Matrix: Solid
Percent Solids: 73.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		96819	02/24/21 08:01	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	50	99090	03/03/21 19:03	NSK7	ELLE
Total/NA	Prep	5035	RA		96819	02/24/21 08:01	Z8FW	ELLE
Total/NA	Analysis	8260C	RA	50	99503	03/04/21 19:48	NSK7	ELLE
Total/NA	Prep	5035			96825	02/24/21 08:08	Z8FW	ELLE
Total/NA	Analysis	8260C		1	98832	03/02/21 22:37	CHT8	ELLE
Total/NA	Prep	3546			97876	02/26/21 16:19	FTV5	ELLE
Total/NA	Analysis	8270D		1	98022	02/28/21 21:36	W6XI	ELLE
Total/NA	Prep	3546			97498	02/25/21 16:12	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	97727	02/26/21 12:57	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	98145	03/01/21 09:18	UJL4	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-30035-1

Client Sample ID: BT-22B-S-40-20210222

Lab Sample ID: 410-30035-2
Date Collected: 02/22/21 16:00
Matrix: Solid
Date Received: 02/23/21 15:57
Percent Solids: 73.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			96405	02/24/21 04:42	UAMX	ELLE
Total/NA	Analysis	6010C		1	97141	02/24/21 17:13	UCIG	ELLE

Client Sample ID: TB-20210223

Lab Sample ID: 410-30035-3
Date Collected: 02/03/21 00:00
Matrix: Water
Date Received: 02/23/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	98583	03/02/21 13:05	LCW8	ELLE

Client Sample ID: BT-08B-S-12-20210223

Lab Sample ID: 410-30035-4
Date Collected: 02/23/21 13:40
Matrix: Solid
Date Received: 02/23/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	96715	02/24/21 01:22	PTG7	ELLE

Client Sample ID: BT-08B-S-12-20210223

Lab Sample ID: 410-30035-4
Date Collected: 02/23/21 13:40
Matrix: Solid
Date Received: 02/23/21 15:57
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			96819	02/24/21 08:01	Z8FW	ELLE
Total/NA	Analysis	8260C		50	99090	03/03/21 18:00	NSK7	ELLE
Total/NA	Prep	5035	DL		96819	02/24/21 08:01	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	500	99090	03/03/21 18:21	NSK7	ELLE
Total/NA	Prep	5035	RA		96819	02/24/21 08:01	Z8FW	ELLE
Total/NA	Analysis	8260C	RA	50	99503	03/04/21 13:14	NSK7	ELLE
Total/NA	Prep	3546			97876	02/26/21 16:19	FTV5	ELLE
Total/NA	Analysis	8270D		1	98022	02/28/21 21:58	W6XI	ELLE
Total/NA	Prep	3546			97498	02/25/21 16:12	FTV5	ELLE
Total/NA	Analysis	8015C TPH		20	98179	03/01/21 12:03	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	98145	03/01/21 09:18	UJL4	ELLE
Total/NA	Prep	3050B			96405	02/24/21 04:42	UAMX	ELLE
Total/NA	Analysis	6010C		1	97141	02/24/21 17:35	UCIG	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-30035-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-30035-1	BT-22B-S-31-20210222	Solid	02/22/21 15:25	02/23/21 15:57	
410-30035-2	BT-22B-S-40-20210222	Solid	02/22/21 16:00	02/23/21 15:57	
410-30035-3	TB-20210223	Water	02/03/21 00:00	02/23/21 15:57	
410-30035-4	BT-08B-S-12-20210223	Solid	02/23/21 13:40	02/23/21 15:57	

Environmental Analysis Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. #

410-30035 Chain of Custody

Environmental use only

Sample #

COC # 616704

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dave Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil ☒ Sediment ☐ Tissue ☐	Water: Potable ☐ Ground ☐ Surface ☐ NPDES ☐	Other:	Total # of Containers	TPH-DRO	TPH-GRO / Moisture Use 8260	VOC 8260 C/D	Lead / PAH 8270D
BT-22B-S-31-20210222	2/22/21	1525	X		X			6	X	X	X	X
BT-22B-S-40-20210222	2/22/21	1600	X		X			6	X	X	X	X
TB-20210223	2/3/21	—					X	2			X	
BT-08B-S-12-20210223	2/23/21	1340	X		X			6	X	X	X	X

Other: trip blank

Analysis Requested

Preservation and Filtration Codes

Preservation Codes

H=HCl	T=Thiosulfate
N=HNO_3	B=NaOH
S=H_2SO_4	P=H_3PO_4
F=Field Filtered	O=Other

Remarks

For Lab Use Only

FSC:

SCR#:

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days:

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dave	2/23/21	1350	Penn	2/23/21	1350
Penn	2/23/21	1537			
			Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other ____		

EDD Required? Yes No

If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Temperature upon receipt 1.6 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-30035-1

Login Number: 30035
List Number: 1
Creator: Jeremiah, Cory T

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-30432-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/8/2021 7:57:33 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/8/2021 7:57:33 AM

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Client: Stantec Consulting Corp. Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-30432-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-30432-1

Receipt
The samples were received on 2/25/2021 7:32 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.0°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-99090 recovered outside acceptance criteria, low biased, for Naphthalene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08B-S-28-20210225
Lab Sample ID: 410-30432-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	45	J	290	23	ug/Kg	50	☼	8260C	Total/NA
1,3,5-Trimethylbenzene	49	J	290	29	ug/Kg	50	☼	8260C	Total/NA
Toluene	65	J	290	34	ug/Kg	50	☼	8260C	Total/NA
Methyl tertiary butyl ether	90	J	290	29	ug/Kg	50	☼	8260C	Total/NA
Benzene	60	J	290	29	ug/Kg	50	☼	8260C	Total/NA
Isopropylbenzene	1300		290	23	ug/Kg	50	☼	8260C	Total/NA
t-Butyl alcohol	1500	J	5700	860	ug/Kg	50	☼	8260C	Total/NA
Xylenes, Total	110	J	570	80	ug/Kg	50	☼	8260C	Total/NA
C4-C12-TPH-GRO - DL	440000		63000	25000	ug/Kg	500	☼	8260C	Total/NA
Anthracene	110		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]anthracene	36		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[a]pyrene	27		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[b]fluoranthene	29		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Benzo[g,h,i]perylene	14	J	19	3.7	ug/Kg	1	☼	8270D	Total/NA
Chrysene	40		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Fluorene	260		19	3.7	ug/Kg	1	☼	8270D	Total/NA
Naphthalene	87		19	7.4	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	630		19	4.5	ug/Kg	1	☼	8270D	Total/NA
Pyrene	120		19	3.7	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	7.5	J	13	5.6	mg/Kg	1	☼	8015C TPH	Total/NA
>C12-C22 (1C)	80		13	5.6	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	88		13	5.6	mg/Kg	1	☼	Total TPH	Total/NA
Lead	8.7		1.4	0.55	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210225
Lab Sample ID: 410-30432-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-08B-S-28-20210225 **Lab Sample ID: 410-30432-1**
Date Collected: 02/25/21 10:25 **Matrix: Solid**
Date Received: 02/25/21 19:32 **Percent Solids: 89.1**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	45	J	290	23	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
1,3,5-Trimethylbenzene	49	J	290	29	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
Toluene	65	J	290	34	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
Methyl tertiary butyl ether	90	J	290	29	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
Benzene	60	J	290	29	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
1,2,4-Trimethylbenzene	ND		290	29	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
Isopropylbenzene	1300		290	23	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
1,2-Dibromoethane	ND		290	23	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
1,2-Dichloroethane	ND		290	34	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
t-Butyl alcohol	1500	J	5700	860	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50
Xylenes, Total	110	J	570	80	ug/Kg	☼	02/26/21 08:12	03/03/21 18:42	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*54 - 135*	*02/26/21 08:12*	*03/03/21 18:42*	*50*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*	*02/26/21 08:12*	*03/03/21 18:42*	*50*
Dibromofluoromethane (Surr)	*86*		*50 - 141*	*02/26/21 08:12*	*03/03/21 18:42*	*50*
Toluene-d8 (Surr)	*94*		*52 - 141*	*02/26/21 08:12*	*03/03/21 18:42*	*50*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	440000		63000	25000	ug/Kg	☼	02/26/21 08:12	03/04/21 13:55	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*54 - 135*	*02/26/21 08:12*	*03/04/21 13:55*	*500*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*	*02/26/21 08:12*	*03/04/21 13:55*	*500*
Dibromofluoromethane (Surr)	*82*		*50 - 141*	*02/26/21 08:12*	*03/04/21 13:55*	*500*
Toluene-d8 (Surr)	*93*		*52 - 141*	*02/26/21 08:12*	*03/04/21 13:55*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	110		19	3.7	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Benzo[a]anthracene	36		19	3.7	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Benzo[a]pyrene	27		19	3.7	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Benzo[b]fluoranthene	29		19	3.7	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Benzo[g,h,i]perylene	14	J	19	3.7	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Chrysene	40		19	3.7	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Fluorene	260		19	3.7	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Naphthalene	87		19	7.4	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Phenanthrene	630		19	4.5	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1
Pyrene	120		19	3.7	ug/Kg	☼	02/26/21 16:19	03/03/21 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*39 - 100*	*02/26/21 16:19*	*03/03/21 00:17*	*1*
Nitrobenzene-d5 (Surr)	*82*		*32 - 97*	*02/26/21 16:19*	*03/03/21 00:17*	*1*
p-Terphenyl-d14 (Surr)	*89*		*45 - 108*	*02/26/21 16:19*	*03/03/21 00:17*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	7.5	J	13	5.6	mg/Kg	☼	03/03/21 16:09	03/04/21 10:58	1
>C12-C22 (1C)	80		13	5.6	mg/Kg	☼	03/03/21 16:09	03/04/21 10:58	1

Client Sample ID: BT-08B-S-28-20210225 — Lab Sample ID: 410-30432-1

Date Collected: 02/25/21 10:25 — **Matrix: Solid**
Date Received: 02/25/21 19:32 — **Percent Solids: 89.1**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*31*	*S1-*	*54 - 137*	*03/03/21 16:09*	*03/04/21 10:58*	*1*
o- terphenyl (Surr) (1C)	*66*		*52 - 154*	*03/03/21 16:09*	*03/04/21 10:58*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**88**		13	5.6	mg/Kg	☼		03/08/21 09:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**8.7**		1.4	0.55	mg/Kg	☼	03/01/21 01:18	03/01/21 10:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**10.9**		1.0	1.0	%			02/26/21 00:27	1

Client Sample ID: TB-20210225 — Lab Sample ID: 410-30432-2

Date Collected: 02/03/21 00:00 — **Matrix: Water**
Date Received: 02/25/21 19:32

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/02/21 13:29	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/02/21 13:29	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/02/21 13:29	1
Benzene	ND		1.0	0.20	ug/L			03/02/21 13:29	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/02/21 13:29	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/02/21 13:29	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/02/21 13:29	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/02/21 13:29	1
Toluene	ND		1.0	0.20	ug/L			03/02/21 13:29	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/02/21 13:29	1
t-Butyl alcohol	ND		50	12	ug/L			03/02/21 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*03/02/21 13:29*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*03/02/21 13:29*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*03/02/21 13:29*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*03/02/21 13:29*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-30432-1	BT-08B-S-28-20210225	89	89	86	94
410-30432-1 - DL	BT-08B-S-28-20210225	87	88	82	93
LCS 410-99090/5	Lab Control Sample	96	89	95	96
LCS 410-99090/8	Lab Control Sample	95	88	94	97
LCS 410-99503/5	Lab Control Sample	97	88	97	95
LCS 410-99503/7	Lab Control Sample	99	90	97	98
LCSD 410-99090/6	Lab Control Sample Dup	99	91	98	97
LCSD 410-99090/9	Lab Control Sample Dup	99	89	95	95
LCSD 410-99503/6	Lab Control Sample Dup	98	87	96	95
LCSD 410-99503/8	Lab Control Sample Dup	97	89	95	97
MB 410-99090/11	Method Blank	93	84	89	94
MB 410-99503/10	Method Blank	100	88	96	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-30432-2	TB-20210225	95	97	97	102
LCS 410-98583/5	Lab Control Sample	97	100	97	104
LCS 410-98583/7	Lab Control Sample	93	98	95	103
LCSD 410-98583/6	Lab Control Sample Dup	97	99	96	104
LCSD 410-98583/8	Lab Control Sample Dup	94	99	97	105
MB 410-98583/9	Method Blank	94	97	97	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-30432-1	BT-08B-S-28-20210225	78	82	89

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
410-30432-1	BT-08B-S-28-20210225	31 S1-	66								
410-30432-1 DU	BT-08B-S-28-20210225	28 S1-	58								
410-30432-1 MS	BT-08B-S-28-20210225	58	108								
LCS 410-99262/2-A	Lab Control Sample	72	100								
MB 410-99262/1-A	Method Blank	81	90								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-99090/11
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			03/03/21 12:49	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			03/03/21 12:49	50
Toluene	ND		250	30	ug/Kg			03/03/21 12:49	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			03/03/21 12:49	50
Benzene	ND		250	25	ug/Kg			03/03/21 12:49	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			03/03/21 12:49	50
Isopropylbenzene	ND		250	20	ug/Kg			03/03/21 12:49	50
1,2-Dibromoethane	ND		250	20	ug/Kg			03/03/21 12:49	50
1,2-Dichloroethane	ND		250	30	ug/Kg			03/03/21 12:49	50
C4-C12-TPH-GRO	2610	J B	5500	2200	ug/Kg			03/03/21 12:49	50
t-Butyl alcohol	ND		5000	750	ug/Kg			03/03/21 12:49	50
Xylenes, Total	ND		500	70	ug/Kg			03/03/21 12:49	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*54 - 135*		*03/03/21 12:49*	*50*
4-Bromofluorobenzene (Surr)	*84*		*50 - 131*		*03/03/21 12:49*	*50*
Dibromofluoromethane (Surr)	*89*		*50 - 141*		*03/03/21 12:49*	*50*
Toluene-d8 (Surr)	*94*		*52 - 141*		*03/03/21 12:49*	*50*

Lab Sample ID: LCS 410-99090/5
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	996		ug/Kg		100	78 - 120
1,3,5-Trimethylbenzene	1000	985		ug/Kg		99	73 - 120
Toluene	1000	1000		ug/Kg		100	80 - 120
Methyl tertiary butyl ether	1000	1000		ug/Kg		100	72 - 120
Benzene	1000	1000		ug/Kg		100	80 - 120
Naphthalene	1000	752		ug/Kg		75	48 - 130
1,2,4-Trimethylbenzene	1000	977		ug/Kg		98	73 - 120
Isopropylbenzene	1000	975		ug/Kg		98	77 - 120
1,2-Dibromoethane	1000	1010		ug/Kg		101	76 - 120
1,2-Dichloroethane	1000	897		ug/Kg		90	71 - 128
t-Butyl alcohol	10000	10200		ug/Kg		102	74 - 121
Xylenes, Total	3000	3060		ug/Kg		102	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*96*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-99090/8
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	51500		ug/Kg		103	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*54 - 135*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*
Dibromofluoromethane (Surr)	*94*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-99090/6
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	1010		ug/Kg		101	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	998		ug/Kg		100	73 - 120	1	30
Toluene			1000	1020		ug/Kg		102	80 - 120	1	30
Methyl tertiary butyl ether			1000	1050		ug/Kg		105	72 - 120	5	30
Benzene			1000	1020		ug/Kg		102	80 - 120	1	30
Naphthalene			1000	795		ug/Kg		80	48 - 130	6	30
1,2,4-Trimethylbenzene			1000	986		ug/Kg		99	73 - 120	1	30
Isopropylbenzene			1000	993		ug/Kg		99	77 - 120	2	30
1,2-Dibromoethane			1000	1050		ug/Kg		105	76 - 120	4	30
1,2-Dichloroethane			1000	921		ug/Kg		92	71 - 128	3	30
t-Butyl alcohol			10000	10800		ug/Kg		108	74 - 121	6	30
Xylenes, Total			3000	3100		ug/Kg		103	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*91*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Lab Sample ID: LCSD 410-99090/9
Matrix: Solid
Analysis Batch: 99090

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	50600		ug/Kg		101	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-99503/10
Matrix: Solid
Analysis Batch: 99503

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		250	20	ug/Kg			03/04/21 11:57	50
1,3,5-Trimethylbenzene	ND		250	25	ug/Kg			03/04/21 11:57	50
Toluene	ND		250	30	ug/Kg			03/04/21 11:57	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			03/04/21 11:57	50
Benzene	ND		250	25	ug/Kg			03/04/21 11:57	50
1,2,4-Trimethylbenzene	ND		250	25	ug/Kg			03/04/21 11:57	50
Isopropylbenzene	ND		250	20	ug/Kg			03/04/21 11:57	50
1,2-Dibromoethane	ND		250	20	ug/Kg			03/04/21 11:57	50
1,2-Dichloroethane	ND		250	30	ug/Kg			03/04/21 11:57	50
C4-C12-TPH-GRO	ND		5500	2200	ug/Kg			03/04/21 11:57	50
t-Butyl alcohol	ND		5000	750	ug/Kg			03/04/21 11:57	50
Xylenes, Total	ND		500	70	ug/Kg			03/04/21 11:57	50

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*		*03/04/21 11:57*	*50*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*		*03/04/21 11:57*	*50*
Dibromofluoromethane (Surr)	*96*		*50 - 141*		*03/04/21 11:57*	*50*
Toluene-d8 (Surr)	*95*		*52 - 141*		*03/04/21 11:57*	*50*

Lab Sample ID: LCS 410-99503/5
Matrix: Solid
Analysis Batch: 99503

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	1000	983		ug/Kg		98	78 - 120
1,3,5-Trimethylbenzene	1000	975		ug/Kg		98	73 - 120
Toluene	1000	999		ug/Kg		100	80 - 120
Methyl tertiary butyl ether	1000	1030		ug/Kg		103	72 - 120
Benzene	1000	991		ug/Kg		99	80 - 120
Naphthalene	1000	774		ug/Kg		77	48 - 130
1,2,4-Trimethylbenzene	1000	968		ug/Kg		97	73 - 120
Isopropylbenzene	1000	966		ug/Kg		97	77 - 120
1,2-Dibromoethane	1000	1020		ug/Kg		102	76 - 120
1,2-Dichloroethane	1000	919		ug/Kg		92	71 - 128
t-Butyl alcohol	10000	10200		ug/Kg		102	74 - 121
Xylenes, Total	3000	3010		ug/Kg		100	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*
4-Bromofluorobenzene (Surr)	*88*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-99503/7
Matrix: Solid
Analysis Batch: 99503

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			50000	49000		ug/Kg		98	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*90*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-99503/6
Matrix: Solid
Analysis Batch: 99503

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			1000	971		ug/Kg		97	78 - 120	1	30
1,3,5-Trimethylbenzene			1000	962		ug/Kg		96	73 - 120	1	30
Toluene			1000	986		ug/Kg		99	80 - 120	1	30
Methyl tertiary butyl ether			1000	1030		ug/Kg		103	72 - 120	1	30
Benzene			1000	981		ug/Kg		98	80 - 120	1	30
Naphthalene			1000	786		ug/Kg		79	48 - 130	2	30
1,2,4-Trimethylbenzene			1000	942		ug/Kg		94	73 - 120	3	30
Isopropylbenzene			1000	947		ug/Kg		95	77 - 120	2	30
1,2-Dibromoethane			1000	1030		ug/Kg		103	76 - 120	1	30
1,2-Dichloroethane			1000	911		ug/Kg		91	71 - 128	1	30
t-Butyl alcohol			10000	10300		ug/Kg		103	74 - 121	1	30
Xylenes, Total			3000	2970		ug/Kg		99	75 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*87*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*95*		*52 - 141*

Lab Sample ID: LCSD 410-99503/8
Matrix: Solid
Analysis Batch: 99503

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			50000	48200		ug/Kg		96	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*
4-Bromofluorobenzene (Surr)	*89*		*50 - 131*
Dibromofluoromethane (Surr)	*95*		*50 - 141*
Toluene-d8 (Surr)	*97*		*52 - 141*

Client: Stantec Consulting Corp.
Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-98583/9
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/02/21 12:41	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/02/21 12:41	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/02/21 12:41	1
Benzene	ND		1.0	0.20	ug/L			03/02/21 12:41	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/02/21 12:41	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/02/21 12:41	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/02/21 12:41	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/02/21 12:41	1
Toluene	ND		1.0	0.20	ug/L			03/02/21 12:41	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/02/21 12:41	1
t-Butyl alcohol	ND		50	12	ug/L			03/02/21 12:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/02/21 12:41*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*03/02/21 12:41*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*03/02/21 12:41*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*03/02/21 12:41*	*1*

Lab Sample ID: LCS 410-98583/5
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		97	75 - 120
1,2-Dichloroethane	20.0	17.9		ug/L		90	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	19.6		ug/L		98	80 - 120
Ethylbenzene	20.0	19.7		ug/L		98	80 - 120
Isopropylbenzene	20.0	19.5		ug/L		98	80 - 120
Methyl tertiary butyl ether	20.0	17.8		ug/L		89	69 - 122
Naphthalene	20.0	16.6		ug/L		83	53 - 124
Toluene	20.0	20.1		ug/L		100	80 - 120
Xylenes, Total	60.0	58.8		ug/L		98	80 - 120
t-Butyl alcohol	200	202		ug/L		101	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCS 410-98583/7
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	935		ug/L		93	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-98583/7
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-98583/6
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.6		ug/L		98	75 - 120	1	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	19.4		ug/L		97	75 - 120	1	30
Benzene			20.0	19.6		ug/L		98	80 - 120	0	30
Ethylbenzene			20.0	19.6		ug/L		98	80 - 120	0	30
Isopropylbenzene			20.0	19.5		ug/L		97	80 - 120	0	30
Methyl tertiary butyl ether			20.0	17.9		ug/L		89	69 - 122	0	30
Naphthalene			20.0	17.5		ug/L		87	53 - 124	5	30
Toluene			20.0	20.0		ug/L		100	80 - 120	0	30
Xylenes, Total			60.0	58.4		ug/L		97	80 - 120	1	30
t-Butyl alcohol			200	204		ug/L		102	60 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-98583/8
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	901		ug/L		90	67 - 120	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-99262/1-A
Client Sample ID: Method Blank
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 99502
Prep Batch: 99262

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		03/03/21 16:08	03/04/21 09:54	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		03/03/21 16:08	03/04/21 09:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*81*		*54 - 137*	*03/03/21 16:08*	*03/04/21 09:54*	*1*
o- terphenyl (Surr) (1C)	*90*		*52 - 154*	*03/03/21 16:08*	*03/04/21 09:54*	*1*

Lab Sample ID: LCS 410-99262/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 99502
Prep Batch: 99262

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	111		mg/Kg		83	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*
o- terphenyl (Surr) (1C)	*100*		*52 - 154*

Lab Sample ID: 410-30432-1 MS
Client Sample ID: BT-08B-S-28-20210225
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 99502
Prep Batch: 99262

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	99		148	278		mg/Kg	☼	121	64 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*58*		*54 - 137*
o- terphenyl (Surr) (1C)	*108*		*52 - 154*

Lab Sample ID: 410-30432-1 DU
Client Sample ID: BT-08B-S-28-20210225
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 99502
Prep Batch: 99262

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C22-C44 (1C)	7.5	J		6.89	J	mg/Kg	☼			9	
>C12-C22 (1C)	80			71.3		mg/Kg	☼			11	

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*28*	*S1-*	*54 - 137*
o- terphenyl (Surr) (1C)	*58*		*52 - 154*

Client: Stantec Consulting Corp.
Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-98043/1-A
Matrix: Solid
Analysis Batch: 98217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 98043

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.3	0.52	mg/Kg		03/01/21 01:18	03/01/21 10:05	1

Lab Sample ID: LCS 410-98043/2-A
Matrix: Solid
Analysis Batch: 98217

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 98043

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.42	2.49		mg/Kg		103	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp. Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 97686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	5035	
410-30432-1 - DL	BT-08B-S-28-20210225	Total/NA	Solid	5035	

Analysis Batch: 98583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-2	TB-20210225	Total/NA	Water	8260C/UST	
MB 410-98583/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-98583/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-98583/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-98583/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-98583/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 99090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	8260C	97686
MB 410-99090/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-99090/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-99090/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-99090/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-99090/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 99503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1 - DL	BT-08B-S-28-20210225	Total/NA	Solid	8260C	97686
MB 410-99503/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-99503/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-99503/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-99503/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-99503/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 97876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	3546	

Analysis Batch: 98635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	8270D	97876

GC Semi VOA

Prep Batch: 99262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	3546	
MB 410-99262/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-99262/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-30432-1 MS	BT-08B-S-28-20210225	Total/NA	Solid	3546	
410-30432-1 DU	BT-08B-S-28-20210225	Total/NA	Solid	3546	

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC Semi VOA

Analysis Batch: 99502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	8015C TPH	99262
MB 410-99262/1-A	Method Blank	Total/NA	Solid	8015C TPH	99262
LCS 410-99262/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	99262
410-30432-1 MS	BT-08B-S-28-20210225	Total/NA	Solid	8015C TPH	99262
410-30432-1 DU	BT-08B-S-28-20210225	Total/NA	Solid	8015C TPH	99262

Analysis Batch: 100593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 98043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	3050B	
MB 410-98043/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-98043/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 98217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	6010C	98043
MB 410-98043/1-A	Method Blank	Total/NA	Solid	6010C	98043
LCS 410-98043/2-A	Lab Control Sample	Total/NA	Solid	6010C	98043

General Chemistry

Analysis Batch: 97626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30432-1	BT-08B-S-28-20210225	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp. Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08B-S-28-20210225 Lab Sample ID: 410-30432-1

Date Collected: 02/25/21 10:25 **Matrix: Solid**
Date Received: 02/25/21 19:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	97626	02/26/21 00:27	PTG7	ELLE

Client Sample ID: BT-08B-S-28-20210225 Lab Sample ID: 410-30432-1

Date Collected: 02/25/21 10:25 **Matrix: Solid**
Date Received: 02/25/21 19:32 **Percent Solids: 89.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			97686	02/26/21 08:12	Z8FW	ELLE
Total/NA	Analysis	8260C		50	99090	03/03/21 18:42	NSK7	ELLE
Total/NA	Prep	5035	DL		97686	02/26/21 08:12	Z8FW	ELLE
Total/NA	Analysis	8260C	DL	500	99503	03/04/21 13:55	NSK7	ELLE
Total/NA	Prep	3546			97876	02/26/21 16:19	FTV5	ELLE
Total/NA	Analysis	8270D		1	98635	03/03/21 00:17	WKV3	ELLE
Total/NA	Prep	3546			99262	03/03/21 16:09	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	99502	03/04/21 10:58	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	100593	03/08/21 09:44	YHQ2	ELLE
Total/NA	Prep	3050B			98043	03/01/21 01:18	UJL8	ELLE
Total/NA	Analysis	6010C		1	98217	03/01/21 10:23	WJM9	ELLE

Client Sample ID: TB-20210225 Lab Sample ID: 410-30432-2

Date Collected: 02/03/21 00:00 **Matrix: Water**
Date Received: 02/25/21 19:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	98583	03/02/21 13:29	LCW8	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-30432-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-30432-1	BT-08B-S-28-20210225	Solid	02/25/21 10:25	02/25/21 19:32	
410-30432-2	TB-20210225	Water	02/03/21 00:00	02/25/21 19:32	

Environmental Analysis Request/Chain of C

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environm

Acct. # _____ Group # _____ Sample # ___

410-30432 Chain of Custody

OC #615415

Client Information

Client: Evergreen c/o Stantec

Acct. #: 16657

Project Name/#: PHL: Belmont Terminal Drilling Sampling

PWSID #:

Project Manager: Andrew Kihgbeil

P.O. #: 213402797

Sampler: Dane Hopkins

Quote #:

State where samples were collected: PA

For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐

Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐

Other: trip blank

Total # of Containers

Analysis Requested

Preservation and Filtration Codes

TPH-DRO | TPH-GRO/Moisture | VOC 8260 C/D | Lead/PAH 8270 D

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO/Moisture	VOC 8260 C/D	Lead/PAH 8270 D
BT-08B-S-28-20210225	2/25/21	1025	X		X			6	X	X	X	X
TB-20210225	2/3/21	—					X	2			X	

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.kihgbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP)

Type VI (Raw Data Only)

Type III (Reduced non-CLP)

NJ DKQP

TX TRRP-13

NYSDEC Category A or B

MA MCP

CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	2/25/21	1440	Pierre	2/25/21	1440
Pierre	2/25/21	1900			
			Christopher M Burns	2/25/21	1932

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other X

Temperature upon receipt 5.0 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-30432-1

Login Number: 30432

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Barns, Christopher

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-30631-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/9/2021 8:47:48 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/9/2021 8:47:48 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^c	CCV Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-30631-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-30631-1

Receipt
The samples were received on 2/26/2021 7:35 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.5°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-98832 recovered above the upper control limit for C4-C12-TPH-GRO. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C_UST: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): BT-08B-W-37-20210225 (410-30631-1). The sample container was received with headspace.

Method 8260C_UST: The method requirement for no headspace was not met. The container (s) used for reanalysis of the following sample contained headspace: BT-08B-W-37-20210225 (410-30631-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
Method RSK_175: The method requirement for no headspace was not met. The following volatile sample was analyzed for Methane with significant headspace in the sample container(s): BT-08B-W-37-20210225 (410-30631-1). Significant headspace is defined as a bubble greater than 6 mm in diameter.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: Surrogate recovery for the following sample was outside control limits: BT-08B-W-37-20210225 (410-30631-1). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

Method 8015C_TPH: Surrogate recovery for the following sample was outside control limits: BT-08B-S-48-20210226 (410-30631-3). Re-extraction and/or re-analysis was performed and surrogate recovery was outside control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: The surrogate recovery for MB, LCS and LCSD associated with preparation batch 410-98808 and analytical batch 410-99023 were outside the lower control limits.

Method 8011: The 1,1,2,2-Tetrachloroethane surrogate recovery for the following samples was outside acceptance limits (high biased) on the confirmation column due to matrix interference: BT-08B-W-37-20210225 (410-30631-1), TB-20210226 (410-30631-2) and (410-30675-H-6-C). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

Job ID: 410-30631-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

Method 6020A: The following sample was not filtered within 15 minutes of sample collection as required by the method:
BT-08B-W-37-20210225 (410-30631-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method 6020A: The following sample was not filtered within 15 minutes of sample collection as required by the method:
BT-08B-W-37-20210225 (410-30631-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08B-W-37-20210225
Lab Sample ID: 410-30631-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	39		5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	20		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Benzene	75		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Ethylbenzene	31		1.0	0.40	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	84		5.0	0.20	ug/L	1		8260C/UST	Total/NA
Methyl tertiary butyl ether	140		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Toluene	160		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	180		6.0	1.4	ug/L	1		8260C/UST	Total/NA
C4-C12-TPH-GRO - DL	6900		1000	580	ug/L	20		8260C/UST	Total/NA
t-Butyl alcohol - DL	3800		1000	240	ug/L	20		8260C/UST	Total/NA
Anthracene	1.7		0.50	0.10	ug/L	1		8270D	Total/NA
Fluorene	12		0.50	0.12	ug/L	1		8270D	Total/NA
Naphthalene	7.6		0.50	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	8.6		0.50	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.60		0.50	0.10	ug/L	1		8270D	Total/NA
Ethane (1C)	7.2		5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	14000		500	300	ug/L	100		RSK-175	Total/NA
>C22-C44 (1C)	0.17		0.095	0.070	mg/L	1		8015C TPH	Total/NA
>C12-C22 (1C)	1.3		0.095	0.070	mg/L	1		8015C TPH	Total/NA
Total Reported TPH	1.5		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	0.53		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	18		5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	400		80	40	mg/L	200		EPA 300.0 R2.1	Total/NA
Calcium	78		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	31		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	43		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	15		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	250		1.0	0.24	mg/L	1		6010C	Total Recoverable
Lead	2.9		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	370		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	0.94		0.75	0.25	mg/L	1		4500 NH3 C-2011	Total/NA
Total Organic Carbon	15		1.0	0.50	mg/L	1		5310C-2011	Total/NA

Client Sample ID: TB-20210226
Lab Sample ID: 410-30631-2

No Detections.

Client Sample ID: BT-08B-S-48-20210226
Lab Sample ID: 410-30631-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.60	J	4.4	0.35	ug/Kg	1	☼	8260C	Total/NA
Toluene	1.4	J	4.4	0.53	ug/Kg	1	☼	8260C	Total/NA
Methyl tertiary butyl ether	50		4.4	0.44	ug/Kg	1	☼	8260C	Total/NA
Benzene	5.3		4.4	0.44	ug/Kg	1	☼	8260C	Total/NA
Isopropylbenzene	0.35	J	4.4	0.35	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	310	^c	97	39	ug/Kg	1	☼	8260C	Total/NA
t-Butyl alcohol	1200		88	13	ug/Kg	1	☼	8260C	Total/NA
Xylenes, Total	1.5	J	8.8	1.2	ug/Kg	1	☼	8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: BT-08B-S-48-20210226 (Continued)
Lab Sample ID: 410-30631-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	6.0	J	20	4.7	ug/Kg	1	☼	8270D	Total/NA
>C22-C44 (1C)	14		14	5.9	mg/Kg	1	☼	8015C TPH	Total/NA
Total Reported TPH	14		14	5.9	mg/Kg	1	☼	Total TPH	Total/NA
Lead	12		1.5	0.62	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-08B-W-37-20210225 Lab Sample ID: 410-30631-1

Date Collected: 02/25/21 15:30 **Matrix: Water**
Date Received: 02/26/21 19:35

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**39**		5.0	1.0	ug/L			03/02/21 18:38	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/02/21 18:38	1
1,3,5-Trimethylbenzene	**20**		5.0	0.30	ug/L			03/02/21 18:38	1
Benzene	**75**		1.0	0.20	ug/L			03/02/21 18:38	1
Ethylbenzene	**31**		1.0	0.40	ug/L			03/02/21 18:38	1
Isopropylbenzene	**84**		5.0	0.20	ug/L			03/02/21 18:38	1
Methyl tertiary butyl ether	**140**		1.0	0.20	ug/L			03/02/21 18:38	1
Toluene	**160**		1.0	0.20	ug/L			03/02/21 18:38	1
Xylenes, Total	**180**		6.0	1.4	ug/L			03/02/21 18:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 120*		*03/02/21 18:38*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*03/02/21 18:38*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*03/02/21 18:38*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*03/02/21 18:38*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C4-C12-TPH-GRO	**6900**		1000	580	ug/L			03/09/21 13:31	20
t-Butyl alcohol	**3800**		1000	240	ug/L			03/09/21 13:31	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*03/09/21 13:31*	*20*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*03/09/21 13:31*	*20*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*03/09/21 13:31*	*20*
Toluene-d8 (Surr)	*102*		*80 - 120*		*03/09/21 13:31*	*20*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**1.7**		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 12:37	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 12:37	1
Benzo[a]pyrene	ND	^c	0.50	0.11	ug/L		03/04/21 17:15	03/05/21 12:37	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 12:37	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 12:37	1
Chrysene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 12:37	1
Fluorene	**12**		0.50	0.12	ug/L		03/04/21 17:15	03/05/21 12:37	1
Naphthalene	**7.6**		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 12:37	1
Phenanthrene	**8.6**		0.50	0.11	ug/L		03/04/21 17:15	03/05/21 12:37	1
Pyrene	**0.60**		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 12:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*44 - 102*	*03/04/21 17:15*	*03/05/21 12:37*	*1*
Nitrobenzene-d5 (Surr)	*76*		*23 - 128*	*03/04/21 17:15*	*03/05/21 12:37*	*1*
p-Terphenyl-d14 (Surr)	*79*		*31 - 113*	*03/04/21 17:15*	*03/05/21 12:37*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**7.2**		5.0	1.0	ug/L		03/02/21 09:55	03/02/21 15:00	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/02/21 09:55	03/02/21 15:00	1

Client Sample ID: BT-08B-W-37-20210225 Lab Sample ID: 410-30631-1

Date Collected: 02/25/21 15:30 **Matrix: Water**
Date Received: 02/26/21 19:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*81*		*28 - 140*	*03/02/21 09:55*	*03/02/21 15:00*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**14000**		500	300	ug/L		03/03/21 09:10	03/03/21 13:18	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*102*		*28 - 140*	*03/03/21 09:10*	*03/03/21 13:18*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		03/02/21 16:50	03/03/21 09:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*107*		*46 - 136*	*03/02/21 16:50*	*03/03/21 09:29*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*204*	*S1+ ^c*	*46 - 136*	*03/02/21 16:50*	*03/03/21 09:29*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**0.17**		0.095	0.070	mg/L		03/02/21 20:57	03/03/21 13:15	1
>C12-C22 (1C)	**1.3**		0.095	0.070	mg/L		03/02/21 20:57	03/03/21 13:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*163*	*S1+*	*21 - 116*	*03/02/21 20:57*	*03/03/21 13:15*	*1*
o- terphenyl (Surr) (1C)	*101*		*51 - 126*	*03/02/21 20:57*	*03/03/21 13:15*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**1.5**		0.20	0.074	mg/L			03/09/21 09:44	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	**0.53**		0.50	0.25	mg/L			02/27/21 10:47	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**18**		5.0	1.5	mg/L			02/27/21 10:47	5
Chloride	**400**		80	40	mg/L			03/03/21 00:47	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**78**		0.50	0.096	mg/L		03/01/21 03:21	03/03/21 16:03	1
Iron	**31**		0.20	0.040	mg/L		03/01/21 03:21	03/04/21 20:01	1
Magnesium	**43**		0.10	0.040	mg/L		03/01/21 03:21	03/03/21 16:03	1
Potassium	**15**		0.50	0.20	mg/L		03/01/21 03:21	03/04/21 20:01	1
Sodium	**250**		1.0	0.24	mg/L		03/01/21 03:21	03/03/21 16:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.9**		0.52	0.073	ug/L		03/01/21 10:58	03/03/21 18:00	1

Client Sample ID: BT-08B-W-37-20210225 — Lab Sample ID: 410-30631-1

Date Collected: 02/25/21 15:30 — **Matrix: Water**
Date Received: 02/26/21 19:35

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**370**		8.0	8.0	mg/L			03/03/21 06:24	1
Ammonia-N	**0.94**		0.75	0.25	mg/L		03/04/21 07:30	03/04/21 08:28	1
Sulfide	ND		0.30	0.10	mg/L			03/03/21 16:39	1
Total Organic Carbon	**15**		1.0	0.50	mg/L			02/28/21 02:01	1

Client Sample ID: TB-20210226 — Lab Sample ID: 410-30631-2

Date Collected: 02/23/21 00:00 — **Matrix: Water**
Date Received: 02/26/21 19:35

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/02/21 13:53	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/02/21 13:53	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/02/21 13:53	1
Benzene	ND		1.0	0.20	ug/L			03/02/21 13:53	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/02/21 13:53	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/02/21 13:53	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/02/21 13:53	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/02/21 13:53	1
Toluene	ND		1.0	0.20	ug/L			03/02/21 13:53	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/02/21 13:53	1
t-Butyl alcohol	ND		50	12	ug/L			03/02/21 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*03/02/21 13:53*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*03/02/21 13:53*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*03/02/21 13:53*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*03/02/21 13:53*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		03/02/21 16:50	03/03/21 09:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*98*		*46 - 136*	*03/02/21 16:50*	*03/03/21 09:46*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*186*	*S1+ ^c*	*46 - 136*	*03/02/21 16:50*	*03/03/21 09:46*	*1*

Client Sample ID: BT-08B-S-48-20210226 — Lab Sample ID: 410-30631-3

Date Collected: 02/26/21 08:40 — **Matrix: Solid**
Date Received: 02/26/21 19:35 — **Percent Solids: 84.1**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**0.60**	**J**	4.4	0.35	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
1,3,5-Trimethylbenzene	ND		4.4	0.44	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
Toluene	**1.4**	**J**	4.4	0.53	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
Methyl tertiary butyl ether	**50**		4.4	0.44	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
Benzene	**5.3**		4.4	0.44	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
1,2,4-Trimethylbenzene	ND		4.4	0.44	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
Isopropylbenzene	**0.35**	**J**	4.4	0.35	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
1,2-Dibromoethane	ND		4.4	0.35	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1

Client Sample ID: BT-08B-S-48-20210226 **Lab Sample ID: 410-30631-3**
Date Collected: 02/26/21 08:40 **Matrix: Solid**
Date Received: 02/26/21 19:35 **Percent Solids: 84.1**

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		4.4	0.53	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
C4-C12-TPH-GRO	**310**	**^c**	97	39	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
t-Butyl alcohol	**1200**		88	13	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1
Xylenes, Total	**1.5**	**J**	8.8	1.2	ug/Kg	☼	03/01/21 13:02	03/02/21 23:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*54 - 135*	*03/01/21 13:02*	*03/02/21 23:46*	*1*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*	*03/01/21 13:02*	*03/02/21 23:46*	*1*
Dibromofluoromethane (Surr)	*99*		*50 - 141*	*03/01/21 13:02*	*03/02/21 23:46*	*1*
Toluene-d8 (Surr)	*99*		*52 - 141*	*03/01/21 13:02*	*03/02/21 23:46*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		20	3.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Benzo[a]anthracene	ND		20	3.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Benzo[a]pyrene	ND	*+	20	3.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Benzo[b]fluoranthene	ND		20	3.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Benzo[g,h,i]perylene	ND		20	3.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Chrysene	ND		20	3.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Fluorene	ND		20	3.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Naphthalene	ND	B	20	7.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Phenanthrene	**6.0**	**J**	20	4.7	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1
Pyrene	ND		20	3.9	ug/Kg	☼	03/01/21 18:30	03/02/21 22:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*39 - 100*	*03/01/21 18:30*	*03/02/21 22:03*	*1*
Nitrobenzene-d5 (Surr)	*80*		*32 - 97*	*03/01/21 18:30*	*03/02/21 22:03*	*1*
p-Terphenyl-d14 (Surr)	*86*		*45 - 108*	*03/01/21 18:30*	*03/02/21 22:03*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	**14**		14	5.9	mg/Kg	☼	03/02/21 01:08	03/02/21 12:36	1
>C12-C22 (1C)	ND		14	5.9	mg/Kg	☼	03/02/21 01:08	03/02/21 12:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*4*	*S1-*	*54 - 137*	*03/02/21 01:08*	*03/02/21 12:36*	*1*
o- terphenyl (Surr) (1C)	*4*	*S1-*	*52 - 154*	*03/02/21 01:08*	*03/02/21 12:36*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	**14**		14	5.9	mg/Kg	☼		03/08/21 09:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**12**		1.5	0.62	mg/Kg	☼	03/01/21 01:18	03/01/21 10:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**15.9**		1.0	1.0	%			02/27/21 12:51	1

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-30631-3	BT-08B-S-48-20210226	109	97	99	99
LCS 410-98832/6	Lab Control Sample	102	98	98	99
LCS 410-98832/8	Lab Control Sample	103	99	96	98
LCSD 410-98832/7	Lab Control Sample Dup	102	100	99	99
LCSD 410-98832/9	Lab Control Sample Dup	104	99	97	99
MB 410-98832/11	Method Blank	106	98	101	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-30631-1 - DL	BT-08B-W-37-20210225	99	100	102	102
410-30631-1	BT-08B-W-37-20210225	88	99	96	104
410-30631-2	TB-20210226	95	97	97	103
LCS 410-101043/5	Lab Control Sample	101	100	101	99
LCS 410-101043/7	Lab Control Sample	99	99	101	99
LCS 410-98583/5	Lab Control Sample	97	100	97	104
LCS 410-98583/7	Lab Control Sample	93	98	95	103
LCSD 410-101043/6	Lab Control Sample Dup	102	99	102	100
LCSD 410-101043/8	Lab Control Sample Dup	101	103	103	101
LCSD 410-98583/6	Lab Control Sample Dup	97	99	96	104
LCSD 410-98583/8	Lab Control Sample Dup	94	99	97	105
MB 410-101043/9	Method Blank	98	99	102	100
MB 410-98583/9	Method Blank	94	97	97	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-30631-3	BT-08B-S-48-20210226	71	80	86
LCS 410-98361/2-A	Lab Control Sample	87	88	99
MB 410-98361/1-A	Method Blank	82	87	101

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	FBP (44-102)	NBZ (23-128)	TPHd14 (31-113)						
410-30631-1	BT-08B-W-37-20210225	68	76	79						
LCS 410-99739/2-A	Lab Control Sample	71	85	92						
LCSD 410-99739/3-A	Lab Control Sample Dup	69	82	91						
MB 410-99739/1-A	Method Blank	67	81	94						

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Propene1 (28-140)								
410-30631-1	BT-08B-W-37-20210225	81								
410-30631-1 - DL	BT-08B-W-37-20210225	102								
LCS 410-98623/2-A	Lab Control Sample	98								
LCS 410-99093/2-A	Lab Control Sample	105								
LCSD 410-98623/3-A	Lab Control Sample Dup	99								
MB 410-98623/1-A	Method Blank	101								
MB 410-99093/1-A	Method Blank	104								

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)							
410-30631-1	BT-08B-W-37-20210225	107	204 S1+ ^c							
410-30631-2	TB-20210226	98	186 S1+ ^c							
LCS 410-98808/2-A	Lab Control Sample	97	187 S1+							
LCSD 410-98808/3-A	Lab Control Sample Dup	99	188 S1+							
MB 410-98808/1-A	Method Blank	95	182 S1+							

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	CBNZ1 (54-137)	OTP1 (52-154)							
410-30631-3	BT-08B-S-48-20210226	4 S1-	4 S1-							
LCS 410-98477/2-A	Lab Control Sample	56	93							

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
LCSD 410-98477/3-A	Lab Control Sample Dup	67	96								
MB 410-98477/1-A	Method Blank	73	89								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(21-116)	(51-126)								
410-30631-1	BT-08B-W-37-20210225	163 S1+	101								
LCS 410-98915/2-A	Lab Control Sample	63	94								
LCSD 410-98915/3-A	Lab Control Sample Dup	62	90								
MB 410-98915/1-A	Method Blank	65	89								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)

OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-30631-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-98832/11
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			03/02/21 21:33	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			03/02/21 21:33	1
Toluene	ND		5.0	0.60	ug/Kg			03/02/21 21:33	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			03/02/21 21:33	1
Benzene	ND		5.0	0.50	ug/Kg			03/02/21 21:33	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			03/02/21 21:33	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			03/02/21 21:33	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			03/02/21 21:33	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			03/02/21 21:33	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			03/02/21 21:33	1
t-Butyl alcohol	ND		100	15	ug/Kg			03/02/21 21:33	1
Xylenes, Total	ND		10	1.4	ug/Kg			03/02/21 21:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*54 - 135*		*03/02/21 21:33*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*		*03/02/21 21:33*	*1*
Dibromofluoromethane (Surr)	*101*		*50 - 141*		*03/02/21 21:33*	*1*
Toluene-d8 (Surr)	*97*		*52 - 141*		*03/02/21 21:33*	*1*

Lab Sample ID: LCS 410-98832/6
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	21.5		ug/Kg		107	78 - 120
1,3,5-Trimethylbenzene	20.0	20.6		ug/Kg		103	73 - 120
Toluene	20.0	21.7		ug/Kg		108	80 - 120
Methyl tertiary butyl ether	20.0	17.7		ug/Kg		88	72 - 120
Benzene	20.0	22.9		ug/Kg		114	80 - 120
Naphthalene	20.0	19.3		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	20.0	20.7		ug/Kg		103	73 - 120
Isopropylbenzene	20.0	20.2		ug/Kg		101	77 - 120
1,2-Dibromoethane	20.0	20.4		ug/Kg		102	76 - 120
1,2-Dichloroethane	20.0	21.3		ug/Kg		106	71 - 128
t-Butyl alcohol	200	188		ug/Kg		94	74 - 121
Xylenes, Total	60.0	63.5		ug/Kg		106	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-98832/8
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1180		ug/Kg		118	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*96*		*50 - 141*
Toluene-d8 (Surr)	*98*		*52 - 141*

Lab Sample ID: LCSD 410-98832/7
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.4		ug/Kg		102	78 - 120	5	30
1,3,5-Trimethylbenzene			20.0	19.2		ug/Kg		96	73 - 120	7	30
Toluene			20.0	20.6		ug/Kg		103	80 - 120	5	30
Methyl tertiary butyl ether			20.0	18.0		ug/Kg		90	72 - 120	2	30
Benzene			20.0	21.7		ug/Kg		109	80 - 120	5	30
Naphthalene			20.0	19.6		ug/Kg		98	48 - 130	1	30
1,2,4-Trimethylbenzene			20.0	19.5		ug/Kg		98	73 - 120	6	30
Isopropylbenzene			20.0	19.1		ug/Kg		95	77 - 120	6	30
1,2-Dibromoethane			20.0	20.7		ug/Kg		103	76 - 120	1	30
1,2-Dichloroethane			20.0	21.1		ug/Kg		106	71 - 128	1	30
t-Butyl alcohol			200	196		ug/Kg		98	74 - 121	4	30
Xylenes, Total			60.0	60.5		ug/Kg		101	75 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*54 - 135*
4-Bromofluorobenzene (Surr)	*100*		*50 - 131*
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Lab Sample ID: LCSD 410-98832/9
Matrix: Solid
Analysis Batch: 98832

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1120		ug/Kg		112	75 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*99*		*52 - 141*

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-30631-1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-101043/9
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/09/21 12:19	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/09/21 12:19	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/09/21 12:19	1
Benzene	ND		1.0	0.20	ug/L			03/09/21 12:19	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/09/21 12:19	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/09/21 12:19	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/09/21 12:19	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/09/21 12:19	1
Toluene	ND		1.0	0.20	ug/L			03/09/21 12:19	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/09/21 12:19	1
t-Butyl alcohol	ND		50	12	ug/L			03/09/21 12:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*03/09/21 12:19*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*03/09/21 12:19*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*03/09/21 12:19*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*03/09/21 12:19*	*1*

Lab Sample ID: LCS 410-101043/5
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.5		ug/L		97	75 - 120
1,2-Dichloroethane	20.0	18.8		ug/L		94	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	19.0		ug/L		95	80 - 120
Ethylbenzene	20.0	19.2		ug/L		96	80 - 120
Isopropylbenzene	20.0	18.5		ug/L		93	80 - 120
Methyl tertiary butyl ether	20.0	19.5		ug/L		98	69 - 122
Naphthalene	20.0	19.0		ug/L		95	53 - 124
Toluene	20.0	19.2		ug/L		96	80 - 120
Xylenes, Total	60.0	55.8		ug/L		93	80 - 120
t-Butyl alcohol	200	186		ug/L		93	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 410-101043/7
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1030		ug/L		103	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-101043/7
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-101043/6
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.5		ug/L		97	75 - 120	0	30
1,2-Dichloroethane			20.0	18.7		ug/L		94	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	19.1		ug/L		96	75 - 120	0	30
Benzene			20.0	18.7		ug/L		93	80 - 120	2	30
Ethylbenzene			20.0	19.0		ug/L		95	80 - 120	1	30
Isopropylbenzene			20.0	18.5		ug/L		93	80 - 120	0	30
Methyl tertiary butyl ether			20.0	19.3		ug/L		97	69 - 122	1	30
Naphthalene			20.0	19.3		ug/L		96	53 - 124	1	30
Toluene			20.0	19.2		ug/L		96	80 - 120	0	30
Xylenes, Total			60.0	55.6		ug/L		93	80 - 120	0	30
t-Butyl alcohol			200	187		ug/L		94	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-101043/8
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1060		ug/L		106	67 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 410-98583/9
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/02/21 12:41	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/02/21 12:41	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-98583/9
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/02/21 12:41	1
Benzene	ND		1.0	0.20	ug/L			03/02/21 12:41	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/02/21 12:41	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/02/21 12:41	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/02/21 12:41	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/02/21 12:41	1
Toluene	ND		1.0	0.20	ug/L			03/02/21 12:41	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/02/21 12:41	1
t-Butyl alcohol	ND		50	12	ug/L			03/02/21 12:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/02/21 12:41*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*03/02/21 12:41*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*03/02/21 12:41*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*03/02/21 12:41*	*1*

Lab Sample ID: LCS 410-98583/5
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,4-Trimethylbenzene			20.0	19.3		ug/L		97	75 - 120		
1,2-Dichloroethane			20.0	17.9		ug/L		90	73 - 124		
1,3,5-Trimethylbenzene			20.0	19.2		ug/L		96	75 - 120		
Benzene			20.0	19.6		ug/L		98	80 - 120		
Ethylbenzene			20.0	19.7		ug/L		98	80 - 120		
Isopropylbenzene			20.0	19.5		ug/L		98	80 - 120		
Methyl tertiary butyl ether			20.0	17.8		ug/L		89	69 - 122		
Naphthalene			20.0	16.6		ug/L		83	53 - 124		
Toluene			20.0	20.1		ug/L		100	80 - 120		
Xylenes, Total			60.0	58.8		ug/L		98	80 - 120		
t-Butyl alcohol			200	202		ug/L		101	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCS 410-98583/7
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	935		ug/L		93	67 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-98583/7
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-98583/6
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.6		ug/L		98	75 - 120	1	30
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	19.4		ug/L		97	75 - 120	1	30
Benzene			20.0	19.6		ug/L		98	80 - 120	0	30
Ethylbenzene			20.0	19.6		ug/L		98	80 - 120	0	30
Isopropylbenzene			20.0	19.5		ug/L		97	80 - 120	0	30
Methyl tertiary butyl ether			20.0	17.9		ug/L		89	69 - 122	0	30
Naphthalene			20.0	17.5		ug/L		87	53 - 124	5	30
Toluene			20.0	20.0		ug/L		100	80 - 120	0	30
Xylenes, Total			60.0	58.4		ug/L		97	80 - 120	1	30
t-Butyl alcohol			200	204		ug/L		102	60 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-98583/8
Matrix: Water
Analysis Batch: 98583

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	901		ug/L		90	67 - 120	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-98361/1-A
Matrix: Solid
Analysis Batch: 98635

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 98361

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		03/01/21 18:30	03/02/21 16:28	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-98361/1-A
Matrix: Solid
Analysis Batch: 98635

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 98361

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		17	3.3	ug/Kg		03/01/21 18:30	03/02/21 16:28	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		03/01/21 18:30	03/02/21 16:28	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		03/01/21 18:30	03/02/21 16:28	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		03/01/21 18:30	03/02/21 16:28	1
Chrysene	ND		17	3.3	ug/Kg		03/01/21 18:30	03/02/21 16:28	1
Fluorene	ND		17	3.3	ug/Kg		03/01/21 18:30	03/02/21 16:28	1
Naphthalene	8.24	J B	17	6.7	ug/Kg		03/01/21 18:30	03/02/21 16:28	1
Phenanthrene	ND		17	4.0	ug/Kg		03/01/21 18:30	03/02/21 16:28	1
Pyrene	ND		17	3.3	ug/Kg		03/01/21 18:30	03/02/21 16:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*39 - 100*	*03/01/21 18:30*	*03/02/21 16:28*	*1*
Nitrobenzene-d5 (Surr)	*87*		*32 - 97*	*03/01/21 18:30*	*03/02/21 16:28*	*1*
p-Terphenyl-d14 (Surr)	*101*		*45 - 108*	*03/01/21 18:30*	*03/02/21 16:28*	*1*

Lab Sample ID: LCS 410-98361/2-A
Matrix: Solid
Analysis Batch: 98635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 98361

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1530		ug/Kg		92	75 - 114
Benzo[a]anthracene	1670	1510		ug/Kg		91	73 - 114
Benzo[a]pyrene	1670	1910	*+	ug/Kg		114	61 - 111
Benzo[b]fluoranthene	1670	1540		ug/Kg		93	63 - 110
Benzo[g,h,i]perylene	1670	1770		ug/Kg		106	77 - 114
Chrysene	1670	1590		ug/Kg		96	66 - 111
Fluorene	1670	1370		ug/Kg		82	68 - 102
Naphthalene	1670	1340		ug/Kg		80	60 - 94
Phenanthrene	1670	1580		ug/Kg		95	74 - 112
Pyrene	1670	1540		ug/Kg		93	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*87*		*39 - 100*
Nitrobenzene-d5 (Surr)	*88*		*32 - 97*
p-Terphenyl-d14 (Surr)	*99*		*45 - 108*

Lab Sample ID: MB 410-99739/1-A
Matrix: Water
Analysis Batch: 99965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 99739

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 09:41	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 09:41	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		03/04/21 17:15	03/05/21 09:41	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 09:41	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 09:41	1
Chrysene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 09:41	1
Fluorene	ND		0.50	0.12	ug/L		03/04/21 17:15	03/05/21 09:41	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-99739/1-A
Matrix: Water
Analysis Batch: 99965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 99739

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 09:41	1
Phenanthrene	ND		0.50	0.11	ug/L		03/04/21 17:15	03/05/21 09:41	1
Pyrene	ND		0.50	0.10	ug/L		03/04/21 17:15	03/05/21 09:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*44 - 102*	*03/04/21 17:15*	*03/05/21 09:41*	*1*
Nitrobenzene-d5 (Surr)	*81*		*23 - 128*	*03/04/21 17:15*	*03/05/21 09:41*	*1*
p-Terphenyl-d14 (Surr)	*94*		*31 - 113*	*03/04/21 17:15*	*03/05/21 09:41*	*1*

Lab Sample ID: LCS 410-99739/2-A
Matrix: Water
Analysis Batch: 99965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 99739

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	45.2		ug/L		90	61 - 117
Benzo[a]anthracene	50.0	50.0		ug/L		100	61 - 126
Benzo[a]pyrene	50.0	55.5		ug/L		111	60 - 116
Benzo[b]fluoranthene	50.0	48.3		ug/L		97	61 - 119
Benzo[g,h,i]perylene	50.0	45.2		ug/L		90	54 - 120
Chrysene	50.0	50.1		ug/L		100	65 - 121
Fluorene	50.0	40.3		ug/L		81	56 - 115
Naphthalene	50.0	39.5		ug/L		79	51 - 102
Phenanthrene	50.0	47.5		ug/L		95	65 - 113
Pyrene	50.0	45.0		ug/L		90	65 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*71*		*44 - 102*
Nitrobenzene-d5 (Surr)	*85*		*23 - 128*
p-Terphenyl-d14 (Surr)	*92*		*31 - 113*

Lab Sample ID: LCSD 410-99739/3-A
Matrix: Water
Analysis Batch: 99965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 99739

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	50.0	44.4		ug/L		89	61 - 117	2	30
Benzo[a]anthracene	50.0	47.8		ug/L		96	61 - 126	4	30
Benzo[a]pyrene	50.0	56.2		ug/L		112	60 - 116	1	30
Benzo[b]fluoranthene	50.0	47.3		ug/L		95	61 - 119	2	30
Benzo[g,h,i]perylene	50.0	49.1		ug/L		98	54 - 120	8	30
Chrysene	50.0	48.0		ug/L		96	65 - 121	4	30
Fluorene	50.0	40.1		ug/L		80	56 - 115	0	30
Naphthalene	50.0	37.8		ug/L		76	51 - 102	4	30
Phenanthrene	50.0	48.1		ug/L		96	65 - 113	1	30
Pyrene	50.0	44.9		ug/L		90	65 - 115	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*44 - 102*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-99739/3-A
Matrix: Water
Analysis Batch: 99965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 99739

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*82*		*23 - 128*
p-Terphenyl-d14 (Surr)	*91*		*31 - 113*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-98623/1-A
Matrix: Water
Analysis Batch: 98626

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 98623

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/02/21 09:55	03/02/21 11:31	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/02/21 09:55	03/02/21 11:31	1
Methane (1C)	ND		5.0	3.0	ug/L		03/02/21 09:55	03/02/21 11:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*101*		*28 - 140*	*03/02/21 09:55*	*03/02/21 11:31*	*1*

Lab Sample ID: LCS 410-98623/2-A
Matrix: Water
Analysis Batch: 98626

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 98623

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	61.3		ug/L		103	85 - 115		
Ethene (1C)			60.4	62.0		ug/L		103	83 - 115		
Methane (1C)			59.4	63.5		ug/L		107	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*98*		*28 - 140*

Lab Sample ID: LCSD 410-98623/3-A
Matrix: Water
Analysis Batch: 98626

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 98623

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	61.7		ug/L		104	85 - 115	1	20
Ethene (1C)			60.4	62.6		ug/L		104	83 - 115	1	20
Methane (1C)			59.4	64.5		ug/L		109	85 - 115	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*99*		*28 - 140*

Lab Sample ID: MB 410-99093/1-A
Matrix: Water
Analysis Batch: 99111

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 99093

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/03/21 09:10	03/03/21 10:52	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/03/21 09:10	03/03/21 10:52	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-99093/1-A
Matrix: Water
Analysis Batch: 99111

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 99093

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	ND		5.0	3.0	ug/L		03/03/21 09:10	03/03/21 10:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*03/03/21 09:10*	*03/03/21 10:52*	*1*

Lab Sample ID: LCS 410-99093/2-A
Matrix: Water
Analysis Batch: 99111

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 99093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	61.6		ug/L		104	85 - 115
Ethene (1C)	60.4	62.4		ug/L		103	83 - 115
Methane (1C)	59.4	65.0		ug/L		110	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*105*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-98808/1-A
Matrix: Water
Analysis Batch: 99023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 98808

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		03/02/21 16:50	03/03/21 06:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*95*		*46 - 136*	*03/02/21 16:50*	*03/03/21 06:59*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*182*	*S1+*	*46 - 136*	*03/02/21 16:50*	*03/03/21 06:59*	*1*

Lab Sample ID: LCS 410-98808/2-A
Matrix: Water
Analysis Batch: 99023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 98808

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.132		ug/L		103	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*97*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*187*	*S1+*	*46 - 136*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCSD 410-98808/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 99023
Prep Batch: 98808

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.136		ug/L		107	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*99*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*188*	*S1+*	*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-98477/1-A
Client Sample ID: Method Blank
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 98592
Prep Batch: 98477

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		03/02/21 01:08	03/02/21 11:10	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		03/02/21 01:08	03/02/21 11:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*73*		*54 - 137*	*03/02/21 01:08*	*03/02/21 11:10*	*1*
o- terphenyl (Surr) (1C)	*89*		*52 - 154*	*03/02/21 01:08*	*03/02/21 11:10*	*1*

Lab Sample ID: LCS 410-98477/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 98592
Prep Batch: 98477

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28) (1C)			134	97.3		mg/Kg		73	64 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*56*		*54 - 137*
o- terphenyl (Surr) (1C)	*93*		*52 - 154*

Lab Sample ID: LCSD 410-98477/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 98592
Prep Batch: 98477

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			134	106		mg/Kg		79	64 - 122	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*67*		*54 - 137*
o- terphenyl (Surr) (1C)	*96*		*52 - 154*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-98915/1-A
Matrix: Water
Analysis Batch: 99142

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 98915

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		0.10	0.074	mg/L		03/02/21 20:57	03/03/21 12:11	1
>C12-C22 (1C)	ND		0.10	0.074	mg/L		03/02/21 20:57	03/03/21 12:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*65*		*21 - 116*	*03/02/21 20:57*	*03/03/21 12:11*	*1*
o- terphenyl (Surr) (1C)	*89*		*51 - 126*	*03/02/21 20:57*	*03/03/21 12:11*	*1*

Lab Sample ID: LCS 410-98915/2-A
Matrix: Water
Analysis Batch: 99142

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 98915

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.803	0.542		mg/L		68	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*63*		*21 - 116*
o- terphenyl (Surr) (1C)	*94*		*51 - 126*

Lab Sample ID: LCSD 410-98915/3-A
Matrix: Water
Analysis Batch: 99142

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 98915

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.803	0.509		mg/L		63	53 - 115	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*62*		*21 - 116*
o- terphenyl (Surr) (1C)	*90*		*51 - 126*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-97953/4
Matrix: Water
Analysis Batch: 97953

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			02/27/21 06:39	1

Lab Sample ID: LCS 410-97953/3
Matrix: Water
Analysis Batch: 97953

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate			0.750	0.775		mg/L		103	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-97952/4
Matrix: Water
Analysis Batch: 97952

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			02/27/21 06:39	1

Lab Sample ID: LCS 410-97952/3
Matrix: Water
Analysis Batch: 97952

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.81		mg/L		104	90 - 110

Lab Sample ID: MB 410-98845/4
Matrix: Water
Analysis Batch: 98845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.40	0.20	mg/L			03/02/21 21:21	1

Lab Sample ID: LCS 410-98845/3
Matrix: Water
Analysis Batch: 98845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.00	2.89		mg/L		96	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-98043/1-A
Matrix: Solid
Analysis Batch: 98217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 98043

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.3	0.52	mg/Kg		03/01/21 01:18	03/01/21 10:05	1

Lab Sample ID: LCS 410-98043/2-A
Matrix: Solid
Analysis Batch: 98217

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 98043

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.42	2.49		mg/Kg		103	80 - 120

Lab Sample ID: MB 410-98054/1-A
Matrix: Water
Analysis Batch: 99290

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 98054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		03/01/21 03:21	03/03/21 15:34	1
Magnesium	ND		0.10	0.040	mg/L		03/01/21 03:21	03/03/21 15:34	1
Sodium	ND		1.0	0.24	mg/L		03/01/21 03:21	03/03/21 15:34	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 410-98054/1-A
Matrix: Water
Analysis Batch: 99916

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 98054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.20	0.040	mg/L		03/01/21 03:21	03/04/21 19:26	1
Potassium	ND		0.50	0.20	mg/L		03/01/21 03:21	03/04/21 19:26	1

Lab Sample ID: LCS 410-98054/2-A
Matrix: Water
Analysis Batch: 99290

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 98054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.404	J	mg/L		101	80 - 120
Magnesium	0.200	0.214		mg/L		107	80 - 120
Sodium	2.00	2.20		mg/L		110	80 - 120

Lab Sample ID: LCS 410-98054/2-A
Matrix: Water
Analysis Batch: 99916

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 98054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.400	0.431		mg/L		108	80 - 120
Potassium	6.00	6.20		mg/L		103	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-98211/1-A
Matrix: Water
Analysis Batch: 99531

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 98211

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/01/21 10:58	03/03/21 17:56	1

Lab Sample ID: LCS 410-98211/2-A
Matrix: Water
Analysis Batch: 99531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 98211

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	29.5		ug/L		98	90 - 115

Lab Sample ID: 410-30631-1 MS
Matrix: Water
Analysis Batch: 99531

Client Sample ID: BT-08B-W-37-20210225
Prep Type: Dissolved
Prep Batch: 98211

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.9		30.0	33.3		ug/L		101	75 - 125

Lab Sample ID: 410-30631-1 MSD
Matrix: Water
Analysis Batch: 99531

Client Sample ID: BT-08B-W-37-20210225
Prep Type: Dissolved
Prep Batch: 98211

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	2.9		30.0	34.3		ug/L		104	75 - 125	3	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 410-30631-1 DU
Matrix: Water
Analysis Batch: 99531

Client Sample ID: BT-08B-W-37-20210225
Prep Type: Dissolved
Prep Batch: 98211

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	2.9		2.91		ug/L		0.7	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-99233/90
Matrix: Water
Analysis Batch: 99233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			03/03/21 03:38	1

Lab Sample ID: LCS 410-99233/91
Matrix: Water
Analysis Batch: 99233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	187		mg/L		99	82 - 106

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-99462/1-A
Matrix: Water
Analysis Batch: 99509

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 99462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		03/04/21 07:30	03/04/21 08:28	1

Lab Sample ID: LCS 410-99462/2-A
Matrix: Water
Analysis Batch: 99509

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 99462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia-N	10.0	9.40		mg/L		94	93 - 100

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-99282/1
Matrix: Water
Analysis Batch: 99282

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			03/03/21 16:39	1

Lab Sample ID: LCS 410-99282/13
Matrix: Water
Analysis Batch: 99282

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1.00	1.04		mg/L		104	90 - 110

Client: Stantec Consulting Corp.
Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-98641/37
Matrix: Water
Analysis Batch: 98641

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			02/27/21 22:59	1

Lab Sample ID: LCS 410-98641/36
Matrix: Water
Analysis Batch: 98641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.7		mg/L		103	91 - 113		

GC/MS VOA

Prep Batch: 98284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	5035	

Analysis Batch: 98583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	8260C/UST	
410-30631-2	TB-20210226	Total/NA	Water	8260C/UST	
MB 410-98583/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-98583/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-98583/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-98583/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-98583/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 98832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	8260C	98284
MB 410-98832/11	Method Blank	Total/NA	Solid	8260C	
LCS 410-98832/6	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-98832/8	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-98832/7	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-98832/9	Lab Control Sample Dup	Total/NA	Solid	8260C	

Analysis Batch: 101043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1 - DL	BT-08B-W-37-20210225	Total/NA	Water	8260C/UST	
MB 410-101043/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-101043/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-101043/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-101043/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-101043/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 98361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	3546	
MB 410-98361/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-98361/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 98635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	8270D	98361
MB 410-98361/1-A	Method Blank	Total/NA	Solid	8270D	98361
LCS 410-98361/2-A	Lab Control Sample	Total/NA	Solid	8270D	98361

Prep Batch: 99739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	3510C	
MB 410-99739/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-99739/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-99739/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC/MS Semi VOA

Analysis Batch: 99965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	8270D	99739
MB 410-99739/1-A	Method Blank	Total/NA	Water	8270D	99739
LCS 410-99739/2-A	Lab Control Sample	Total/NA	Water	8270D	99739
LCSD 410-99739/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	99739

GC VOA

Prep Batch: 98623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	RSK-175	
MB 410-98623/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-98623/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-98623/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 98626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	RSK-175	98623
MB 410-98623/1-A	Method Blank	Total/NA	Water	RSK-175	98623
LCS 410-98623/2-A	Lab Control Sample	Total/NA	Water	RSK-175	98623
LCSD 410-98623/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	98623

Prep Batch: 99093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1 - DL	BT-08B-W-37-20210225	Total/NA	Water	RSK-175	
MB 410-99093/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-99093/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 99111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1 - DL	BT-08B-W-37-20210225	Total/NA	Water	RSK-175	99093
MB 410-99093/1-A	Method Blank	Total/NA	Water	RSK-175	99093
LCS 410-99093/2-A	Lab Control Sample	Total/NA	Water	RSK-175	99093

GC Semi VOA

Prep Batch: 98477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	3546	
MB 410-98477/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-98477/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 410-98477/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 98592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	8015C TPH	98477
MB 410-98477/1-A	Method Blank	Total/NA	Solid	8015C TPH	98477
LCS 410-98477/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	98477
LCSD 410-98477/3-A	Lab Control Sample Dup	Total/NA	Solid	8015C TPH	98477

Prep Batch: 98808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	8011	

GC Semi VOA (Continued)

Prep Batch: 98808 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-2	TB-20210226	Total/NA	Water	8011	
MB 410-98808/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-98808/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-98808/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Prep Batch: 98915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	3510C	
MB 410-98915/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-98915/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-98915/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 99023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	8011	98808
410-30631-2	TB-20210226	Total/NA	Water	8011	98808
MB 410-98808/1-A	Method Blank	Total/NA	Water	8011	98808
LCS 410-98808/2-A	Lab Control Sample	Total/NA	Water	8011	98808
LCSD 410-98808/3-A	Lab Control Sample Dup	Total/NA	Water	8011	98808

Analysis Batch: 99142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	8015C TPH	98915
MB 410-98915/1-A	Method Blank	Total/NA	Water	8015C TPH	98915
LCS 410-98915/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	98915
LCSD 410-98915/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	98915

Prep Batch: 99262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3 - RE	BT-08B-S-48-20210226	Total/NA	Solid	3546	
MB 410-99262/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-99262/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 99502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3 - RE	BT-08B-S-48-20210226	Total/NA	Solid	8015C TPH	99262
MB 410-99262/1-A	Method Blank	Total/NA	Solid	8015C TPH	99262
LCS 410-99262/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	99262

Prep Batch: 99881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1 - RE	BT-08B-W-37-20210225	Total/NA	Water	3510C	
MB 410-99881/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-99881/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-99881/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 100166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1 - RE	BT-08B-W-37-20210225	Total/NA	Water	8015C TPH	99881
MB 410-99881/1-A	Method Blank	Total/NA	Water	8015C TPH	99881
LCS 410-99881/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	99881

GC Semi VOA (Continued)

Analysis Batch: 100166 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 410-99881/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	99881

Analysis Batch: 100593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	Total TPH	
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	Total TPH	

HPLC/IC

Analysis Batch: 97952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	EPA 300.0 R2.1	
MB 410-97952/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-97952/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 97953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	EPA 300.0 R2.1	
MB 410-97953/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-97953/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 98845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	EPA 300.0 R2.1	
MB 410-98845/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-98845/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 98043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	3050B	
MB 410-98043/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-98043/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 98054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total Recoverable	Water	3005A	
MB 410-98054/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-98054/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 98071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Dissolved	Water	Filtration	
410-30631-1 MS	BT-08B-W-37-20210225	Dissolved	Water	Filtration	
410-30631-1 MSD	BT-08B-W-37-20210225	Dissolved	Water	Filtration	
410-30631-1 DU	BT-08B-W-37-20210225	Dissolved	Water	Filtration	

Prep Batch: 98211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Dissolved	Water	Non-Digest Prep	98071
MB 410-98211/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	

Metals (Continued)

Prep Batch: 98211 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-98211/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-30631-1 MS	BT-08B-W-37-20210225	Dissolved	Water	Non-Digest Prep	98071
410-30631-1 MSD	BT-08B-W-37-20210225	Dissolved	Water	Non-Digest Prep	98071
410-30631-1 DU	BT-08B-W-37-20210225	Dissolved	Water	Non-Digest Prep	98071

Analysis Batch: 98217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	6010C	98043
MB 410-98043/1-A	Method Blank	Total/NA	Solid	6010C	98043
LCS 410-98043/2-A	Lab Control Sample	Total/NA	Solid	6010C	98043

Analysis Batch: 99290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total Recoverable	Water	6010C	98054
MB 410-98054/1-A	Method Blank	Total Recoverable	Water	6010C	98054
LCS 410-98054/2-A	Lab Control Sample	Total Recoverable	Water	6010C	98054

Analysis Batch: 99531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Dissolved	Water	6020A	98211
MB 410-98211/1-A	Method Blank	Total/NA	Water	6020A	98211
LCS 410-98211/2-A	Lab Control Sample	Total/NA	Water	6020A	98211
410-30631-1 MS	BT-08B-W-37-20210225	Dissolved	Water	6020A	98211
410-30631-1 MSD	BT-08B-W-37-20210225	Dissolved	Water	6020A	98211
410-30631-1 DU	BT-08B-W-37-20210225	Dissolved	Water	6020A	98211

Analysis Batch: 99916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total Recoverable	Water	6010C	98054
MB 410-98054/1-A	Method Blank	Total Recoverable	Water	6010C	98054
LCS 410-98054/2-A	Lab Control Sample	Total Recoverable	Water	6010C	98054

General Chemistry

Analysis Batch: 97988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-3	BT-08B-S-48-20210226	Total/NA	Solid	Moisture	

Analysis Batch: 98641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	5310C-2011	
MB 410-98641/37	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-98641/36	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 99233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	2320B-2011	
MB 410-99233/90	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-99233/91	Lab Control Sample	Total/NA	Water	2320B-2011	

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

General Chemistry

Analysis Batch: 99282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	4500 S2 D-2011	
MB 410-99282/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-99282/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Prep Batch: 99462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	4500 NH3 B-2011	
MB 410-99462/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCS 410-99462/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 99509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-30631-1	BT-08B-W-37-20210225	Total/NA	Water	4500 NH3 C-2011	99462
MB 410-99462/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	99462
LCS 410-99462/2-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	99462

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-30631-1

Client Sample ID: BT-08B-W-37-20210225

Lab Sample ID: 410-30631-1

Date Collected: 02/25/21 15:30
Matrix: Water
Date Received: 02/26/21 19:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST	DL	20	101043	03/09/21 13:31	LCW8	ELLE
Total/NA	Analysis	8260C/UST		1	98583	03/02/21 18:38	LCW8	ELLE
Total/NA	Prep	3510C			99739	03/04/21 17:15	DFX4	ELLE
Total/NA	Analysis	8270D		1	99965	03/05/21 12:37	UWHS	ELLE
Total/NA	Prep	RSK-175			98623	03/02/21 09:55	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	98626	03/02/21 15:00	YUE6	ELLE
Total/NA	Prep	RSK-175	DL		99093	03/03/21 09:10	YUE6	ELLE
Total/NA	Analysis	RSK-175	DL	100	99111	03/03/21 13:18	YUE6	ELLE
Total/NA	Prep	8011			98808	03/02/21 16:50	QQ3P	ELLE
Total/NA	Analysis	8011		1	99023	03/03/21 09:29	AC3T	ELLE
Total/NA	Prep	3510C			98915	03/02/21 20:57	UKL2	ELLE
Total/NA	Analysis	8015C TPH		1	99142	03/03/21 13:15	YHQ2	ELLE
Total/NA	Prep	3510C	RE		99881	03/04/21 20:07	UKL2	ELLE
Total/NA	Analysis	8015C TPH	RE	1	100166	03/05/21 13:30	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	100593	03/09/21 09:44	YHQ2	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		200	98845	03/03/21 00:47	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	97952	02/27/21 10:47	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	97953	02/27/21 10:47	W5UX	ELLE
Total Recoverable	Prep	3005A			98054	03/01/21 03:21	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	99290	03/03/21 16:03	MDP5	ELLE
Total Recoverable	Prep	3005A			98054	03/01/21 03:21	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	99916	03/04/21 20:01	UCIG	ELLE
Dissolved	Filtration	Filtration			98071	03/01/21 06:05	UDL9	ELLE
Dissolved	Prep	Non-Digest Prep			98211	03/01/21 10:58	UPJE	ELLE
Dissolved	Analysis	6020A		1	99531	03/03/21 18:00	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	99233	03/03/21 06:24	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			99462	03/04/21 07:30	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	99509	03/04/21 08:28	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	99282	03/03/21 16:39	USE1	ELLE
Total/NA	Analysis	5310C-2011		1	98641	02/28/21 02:01	KGQ6	ELLE

Client Sample ID: TB-20210226

Lab Sample ID: 410-30631-2

Date Collected: 02/23/21 00:00
Matrix: Water
Date Received: 02/26/21 19:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	98583	03/02/21 13:53	LCW8	ELLE
Total/NA	Prep	8011			98808	03/02/21 16:50	QQ3P	ELLE
Total/NA	Analysis	8011		1	99023	03/03/21 09:46	AC3T	ELLE

Lab Chronicle

Client: Stantec Consulting Corp. Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-08B-S-48-20210226 Lab Sample ID: 410-30631-3

Date Collected: 02/26/21 08:40 **Matrix: Solid**
Date Received: 02/26/21 19:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	97988	02/27/21 12:51	LY8S	ELLE

Client Sample ID: BT-08B-S-48-20210226 Lab Sample ID: 410-30631-3

Date Collected: 02/26/21 08:40 **Matrix: Solid**
Date Received: 02/26/21 19:35 **Percent Solids: 84.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			98284	03/01/21 13:02	Z8FW	ELLE
Total/NA	Analysis	8260C		1	98832	03/02/21 23:46	CHT8	ELLE
Total/NA	Prep	3546			98361	03/01/21 18:30	QQ3P	ELLE
Total/NA	Analysis	8270D		1	98635	03/02/21 22:03	WKV3	ELLE
Total/NA	Prep	3546			98477	03/02/21 01:08	USL7	ELLE
Total/NA	Analysis	8015C TPH		1	98592	03/02/21 12:36	YHQ2	ELLE
Total/NA	Prep	3546	RE		99262	03/03/21 16:09	FTV5	ELLE
Total/NA	Analysis	8015C TPH	RE	1	99502	03/04/21 10:37	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	100593	03/08/21 09:44	YHQ2	ELLE
Total/NA	Prep	3050B			98043	03/01/21 01:18	UJL8	ELLE
Total/NA	Analysis	6010C		1	98217	03/01/21 10:11	WJM9	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-30631-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-30631-1	BT-08B-W-37-20210225	Water	02/25/21 15:30	02/26/21 19:35	
410-30631-2	TB-20210226	Water	02/23/21 00:00	02/26/21 19:35	
410-30631-3	BT-08B-S-48-20210226	Solid	02/26/21 08:40	02/26/21 19:35	

Environmental Analysis Request/Chain of Cu

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental

Acct. # _____ Group # _____ Sample # _____

410-30631 Chain of Custody

C #615413

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL-Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Kirkpatrick	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water ☐ Potable ☒ Ground ☐ NPDES ☐ Surface | Other: Air blank

Analysis Requested

Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	TPH-DRO	TPH-GRO/Moisture + VOC 8260 C/D	VOC 8260 C/D	Lead/PAH 8270D	Sulfide/Metals 6010C (including dissolved lead)	Chloride/Nitrate/Sulfate	EDB 8011/Volatile Headspace Hydrocarbons	Total Alkalinity & pH 4.5	TOC	Ammonia Nitrogen	Remarks
BT-08B-W-37-20210225	2/25/21	1530	X		19	X	X	X	●	X	X	X	X	X	X	* no PAH
TB-20210226	2/23/21	—			4			X				X				
BT-08B-S-48-20210226	2/26/21	0840	X		6	X	X	X	X							

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

* Lab filter for dissolved lead

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.kirkpatrick@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) NJ DKQP TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	2/26/21	1315		2.26.21	1315
	2-26-21	1910			
				2-26-21	1935

EDD Required? Yes No

If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other _____

Temperature upon receipt 4.5 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-30631-1

Login Number: 30631

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Sanchez, Melvin E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-31075-1
Client Project/Site: PHL Belmont Terminal Drilling Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/16/2021 4:18:22 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
3/16/2021 4:18:22 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Stantec Consulting Corp. Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-31075-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-31075-1

Receipt
The samples were received on 3/3/2021 5:06 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C

GC/MS VOA
Method 8260C: The continuing calibration verification (CCV) associated with batch 410-101296 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: The surrogate recovery for the Blank (MB) associated with preparation batch 410-99759 and analytical batch 410-99926 was outside the upper control limits for p-Terphenyl-d14 (Surr). The MB was non-detect for all target analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Client Sample ID: BT-22A-S-16-20210302
Lab Sample ID: 410-31075-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.2	J	5.8	0.58	ug/Kg	1	☼	8260C	Total/NA
C4-C12-TPH-GRO	340		130	51	ug/Kg	1	☼	8260C	Total/NA
Lead	9.8		1.2	0.48	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210303
Lab Sample ID: 410-31075-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-22A-S-16-20210302
Lab Sample ID: 410-31075-1

Date Collected: 03/02/21 14:05
Matrix: Solid
Date Received: 03/03/21 17:06
Percent Solids: 91.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.8	0.47	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
1,3,5-Trimethylbenzene	ND		5.8	0.58	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
Toluene	ND		5.8	0.70	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
Methyl tertiary butyl ether	ND		5.8	0.58	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
Benzene	**1.2**	**J**	5.8	0.58	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
1,2,4-Trimethylbenzene	ND		5.8	0.58	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
Isopropylbenzene	ND		5.8	0.47	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
1,2-Dibromoethane	ND		5.8	0.47	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
1,2-Dichloroethane	ND		5.8	0.70	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
C4-C12-TPH-GRO	**340**		130	51	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
t-Butyl alcohol	ND	^c	120	18	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1
Xylenes, Total	ND		12	1.6	ug/Kg	☼	03/04/21 09:20	03/09/21 23:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*	*03/04/21 09:20*	*03/09/21 23:56*	*1*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*	*03/04/21 09:20*	*03/09/21 23:56*	*1*
Dibromofluoromethane (Surr)	*99*		*50 - 141*	*03/04/21 09:20*	*03/09/21 23:56*	*1*
Toluene-d8 (Surr)	*100*		*52 - 141*	*03/04/21 09:20*	*03/09/21 23:56*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		18	3.6	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Benzo[a]anthracene	ND		18	3.6	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Benzo[a]pyrene	ND		18	3.6	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Benzo[b]fluoranthene	ND		18	3.6	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Benzo[g,h,i]perylene	ND		18	3.6	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Chrysene	ND		18	3.6	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Fluorene	ND		18	3.6	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Naphthalene	ND		18	7.3	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Phenanthrene	ND		18	4.4	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1
Pyrene	ND		18	3.6	ug/Kg	☼	03/04/21 16:13	03/05/21 07:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*66*		*39 - 100*	*03/04/21 16:13*	*03/05/21 07:22*	*1*
Nitrobenzene-d5 (Surr)	*59*		*32 - 97*	*03/04/21 16:13*	*03/05/21 07:22*	*1*
p-Terphenyl-d14 (Surr)	*85*		*45 - 108*	*03/04/21 16:13*	*03/05/21 07:22*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		13	5.5	mg/Kg	☼	03/05/21 15:58	03/09/21 13:21	1
>C12-C22 (1C)	ND		13	5.5	mg/Kg	☼	03/05/21 15:58	03/09/21 13:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*54*		*54 - 137*	*03/05/21 15:58*	*03/09/21 13:21*	*1*
o- terphenyl (Surr) (1C)	*78*		*52 - 154*	*03/05/21 15:58*	*03/09/21 13:21*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		13	5.5	mg/Kg	☼		03/11/21 13:09	1

Client Sample ID: BT-22A-S-16-20210302 — Lab Sample ID: 410-31075-1

Date Collected: 03/02/21 14:05 — **Matrix: Solid**
Date Received: 03/03/21 17:06 — **Percent Solids: 91.3**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	9.8		1.2	0.48	mg/Kg	☼	03/04/21 13:10	03/05/21 10:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.7		1.0	1.0	%			03/04/21 09:05	1

Client Sample ID: TB-20210303 — Lab Sample ID: 410-31075-2

Date Collected: 03/03/21 00:00 — **Matrix: Water**
Date Received: 03/03/21 17:06

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/09/21 13:07	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/09/21 13:07	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/09/21 13:07	1
Benzene	ND		1.0	0.20	ug/L			03/09/21 13:07	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/09/21 13:07	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/09/21 13:07	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/09/21 13:07	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/09/21 13:07	1
Toluene	ND		1.0	0.20	ug/L			03/09/21 13:07	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/09/21 13:07	1
t-Butyl alcohol	ND		50	12	ug/L			03/09/21 13:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*03/09/21 13:07*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*03/09/21 13:07*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*03/09/21 13:07*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*03/09/21 13:07*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-31075-1	BT-22A-S-16-20210302	103	98	99	100
LCS 410-101296/4	Lab Control Sample	97	99	98	100
LCS 410-101296/5	Lab Control Sample	96	99	99	101
LCSD 410-101296/6	Lab Control Sample Dup	98	100	101	101
LCSD 410-101296/7	Lab Control Sample Dup	98	99	99	100
MB 410-101296/9	Method Blank	99	97	102	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-31075-2	TB-20210303	100	100	102	101
LCS 410-101043/5	Lab Control Sample	101	100	101	99
LCS 410-101043/7	Lab Control Sample	99	99	101	99
LCSD 410-101043/6	Lab Control Sample Dup	102	99	102	100
LCSD 410-101043/8	Lab Control Sample Dup	101	103	103	101
MB 410-101043/9	Method Blank	98	99	102	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-31075-1	BT-22A-S-16-20210302	66	59	85
LCS 410-99759/2-A	Lab Control Sample	86	74	102
MB 410-99759/1-A	Method Blank	88	75	110 S1+

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		CBNZ1	OTP1								
Lab Sample ID	Client Sample ID	(54-137)	(52-154)								
410-31075-1	BT-22A-S-16-20210302	54	78								
410-31075-1 DU	BT-22A-S-16-20210302	66	88								
410-31075-1 MS	BT-22A-S-16-20210302	65	99								
LCS 410-100221/2-A	Lab Control Sample	65	95								
MB 410-100221/1-A	Method Blank	69	86								

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-101296/9
Matrix: Solid
Analysis Batch: 101296

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			03/09/21 22:51	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			03/09/21 22:51	1
Toluene	ND		5.0	0.60	ug/Kg			03/09/21 22:51	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			03/09/21 22:51	1
Benzene	ND		5.0	0.50	ug/Kg			03/09/21 22:51	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			03/09/21 22:51	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			03/09/21 22:51	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			03/09/21 22:51	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			03/09/21 22:51	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			03/09/21 22:51	1
t-Butyl alcohol	ND		100	15	ug/Kg			03/09/21 22:51	1
Xylenes, Total	ND		10	1.4	ug/Kg			03/09/21 22:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*		*03/09/21 22:51*	*1*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*		*03/09/21 22:51*	*1*
Dibromofluoromethane (Surr)	*102*		*50 - 141*		*03/09/21 22:51*	*1*
Toluene-d8 (Surr)	*99*		*52 - 141*		*03/09/21 22:51*	*1*

Lab Sample ID: LCS 410-101296/4
Matrix: Solid
Analysis Batch: 101296

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1150		ug/Kg		115	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Lab Sample ID: LCS 410-101296/5
Matrix: Solid
Analysis Batch: 101296

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	22.2		ug/Kg		111	78 - 120
1,3,5-Trimethylbenzene	20.0	22.5		ug/Kg		113	73 - 120
Toluene	20.0	21.0		ug/Kg		105	80 - 120
Methyl tertiary butyl ether	20.0	19.8		ug/Kg		99	72 - 120
Benzene	20.0	21.2		ug/Kg		106	80 - 120
Naphthalene	20.0	18.5		ug/Kg		92	48 - 130
1,2,4-Trimethylbenzene	20.0	22.3		ug/Kg		111	73 - 120
Isopropylbenzene	20.0	22.4		ug/Kg		112	77 - 120
1,2-Dibromoethane	20.0	19.8		ug/Kg		99	76 - 120
1,2-Dichloroethane	20.0	20.4		ug/Kg		102	71 - 128
t-Butyl alcohol	200	205		ug/Kg		102	74 - 121

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-101296/5
Matrix: Solid
Analysis Batch: 101296

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			60.0	66.3		ug/Kg		111	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-101296/6
Matrix: Solid
Analysis Batch: 101296

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	21.8		ug/Kg		109	78 - 120	2	30
1,3,5-Trimethylbenzene			20.0	22.2		ug/Kg		111	73 - 120	1	30
Toluene			20.0	20.7		ug/Kg		104	80 - 120	2	30
Methyl tertiary butyl ether			20.0	19.7		ug/Kg		99	72 - 120	1	30
Benzene			20.0	20.8		ug/Kg		104	80 - 120	2	30
Naphthalene			20.0	18.4		ug/Kg		92	48 - 130	1	30
1,2,4-Trimethylbenzene			20.0	22.0		ug/Kg		110	73 - 120	1	30
Isopropylbenzene			20.0	22.0		ug/Kg		110	77 - 120	2	30
1,2-Dibromoethane			20.0	20.2		ug/Kg		101	76 - 120	2	30
1,2-Dichloroethane			20.0	20.4		ug/Kg		102	71 - 128	0	30
t-Butyl alcohol			200	215		ug/Kg		108	74 - 121	5	30
Xylenes, Total			60.0	64.9		ug/Kg		108	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*100*		*50 - 131*
Dibromofluoromethane (Surr)	*101*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Lab Sample ID: LCSD 410-101296/7
Matrix: Solid
Analysis Batch: 101296

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1110		ug/Kg		111	75 - 120	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*99*		*50 - 131*
Dibromofluoromethane (Surr)	*99*		*50 - 141*
Toluene-d8 (Surr)	*100*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-101043/9
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/09/21 12:19	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/09/21 12:19	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/09/21 12:19	1
Benzene	ND		1.0	0.20	ug/L			03/09/21 12:19	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/09/21 12:19	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/09/21 12:19	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/09/21 12:19	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/09/21 12:19	1
Toluene	ND		1.0	0.20	ug/L			03/09/21 12:19	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/09/21 12:19	1
t-Butyl alcohol	ND		50	12	ug/L			03/09/21 12:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*03/09/21 12:19*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*03/09/21 12:19*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*03/09/21 12:19*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*03/09/21 12:19*	*1*

Lab Sample ID: LCS 410-101043/5
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.5		ug/L		97	75 - 120
1,2-Dichloroethane	20.0	18.8		ug/L		94	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	19.0		ug/L		95	80 - 120
Ethylbenzene	20.0	19.2		ug/L		96	80 - 120
Isopropylbenzene	20.0	18.5		ug/L		93	80 - 120
Methyl tertiary butyl ether	20.0	19.5		ug/L		98	69 - 122
Naphthalene	20.0	19.0		ug/L		95	53 - 124
Toluene	20.0	19.2		ug/L		96	80 - 120
Xylenes, Total	60.0	55.8		ug/L		93	80 - 120
t-Butyl alcohol	200	186		ug/L		93	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 410-101043/7
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1030		ug/L		103	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-101043/7
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-101043/6
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	19.5		ug/L		97	75 - 120	0	30
1,2-Dichloroethane			20.0	18.7		ug/L		94	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	19.1		ug/L		96	75 - 120	0	30
Benzene			20.0	18.7		ug/L		93	80 - 120	2	30
Ethylbenzene			20.0	19.0		ug/L		95	80 - 120	1	30
Isopropylbenzene			20.0	18.5		ug/L		93	80 - 120	0	30
Methyl tertiary butyl ether			20.0	19.3		ug/L		97	69 - 122	1	30
Naphthalene			20.0	19.3		ug/L		96	53 - 124	1	30
Toluene			20.0	19.2		ug/L		96	80 - 120	0	30
Xylenes, Total			60.0	55.6		ug/L		93	80 - 120	0	30
t-Butyl alcohol			200	187		ug/L		94	60 - 130	0	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-101043/8
Matrix: Water
Analysis Batch: 101043

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1060		ug/L		106	67 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-99759/1-A
Matrix: Solid
Analysis Batch: 99926

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 99759

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		17	3.3	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Benzo[a]anthracene	ND		17	3.3	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Benzo[a]pyrene	ND		17	3.3	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Benzo[b]fluoranthene	ND		17	3.3	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Benzo[g,h,i]perylene	ND		17	3.3	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Chrysene	ND		17	3.3	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Fluorene	ND		17	3.3	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Naphthalene	ND		17	6.7	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Phenanthrene	ND		17	4.0	ug/Kg		03/04/21 16:13	03/05/21 02:16	1
Pyrene	ND		17	3.3	ug/Kg		03/04/21 16:13	03/05/21 02:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*88*		*39 - 100*	*03/04/21 16:13*	*03/05/21 02:16*	*1*
Nitrobenzene-d5 (Surr)	*75*		*32 - 97*	*03/04/21 16:13*	*03/05/21 02:16*	*1*
p-Terphenyl-d14 (Surr)	*110*	*S1+*	*45 - 108*	*03/04/21 16:13*	*03/05/21 02:16*	*1*

Lab Sample ID: LCS 410-99759/2-A
Matrix: Solid
Analysis Batch: 99926

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 99759

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	1670	1630		ug/Kg		98	75 - 114
Benzo[a]anthracene	1670	1590		ug/Kg		95	73 - 114
Benzo[a]pyrene	1670	1690		ug/Kg		102	61 - 111
Benzo[b]fluoranthene	1670	1640		ug/Kg		99	63 - 110
Benzo[g,h,i]perylene	1670	1610		ug/Kg		97	77 - 114
Chrysene	1670	1600		ug/Kg		96	66 - 111
Fluorene	1670	1570		ug/Kg		94	68 - 102
Naphthalene	1670	1340		ug/Kg		80	60 - 94
Phenanthrene	1670	1520		ug/Kg		91	74 - 112
Pyrene	1670	1620		ug/Kg		97	70 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*86*		*39 - 100*
Nitrobenzene-d5 (Surr)	*74*		*32 - 97*
p-Terphenyl-d14 (Surr)	*102*		*45 - 108*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-100221/1-A
Matrix: Solid
Analysis Batch: 100665

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 100221

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C22-C44 (1C)	ND		12	5.0	mg/Kg		03/05/21 15:58	03/08/21 12:30	1
>C12-C22 (1C)	ND		12	5.0	mg/Kg		03/05/21 15:58	03/08/21 12:30	1

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 410-100221/1-A
Matrix: Solid
Analysis Batch: 100665

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 100221

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Chlorobenzene (Surr) (1C)	69		54 - 137	03/05/21 15:58	03/08/21 12:30	1
o- terphenyl (Surr) (1C)	86		52 - 154	03/05/21 15:58	03/08/21 12:30	1

Lab Sample ID: LCS 410-100221/2-A
Matrix: Solid
Analysis Batch: 100665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 100221

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	102		mg/Kg		77	64 - 122		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Chlorobenzene (Surr) (1C)	65		54 - 137
o- terphenyl (Surr) (1C)	95		52 - 154

Lab Sample ID: 410-31075-1 MS
Matrix: Solid
Analysis Batch: 101105

Client Sample ID: BT-22A-S-16-20210302
Prep Type: Total/NA
Prep Batch: 100221

Surrogate	MS %Recovery	MS Qualifier	Limits
Chlorobenzene (Surr) (1C)	65		54 - 137
o- terphenyl (Surr) (1C)	99		52 - 154

Lab Sample ID: 410-31075-1 DU
Matrix: Solid
Analysis Batch: 101105

Client Sample ID: BT-22A-S-16-20210302
Prep Type: Total/NA
Prep Batch: 100221

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C22-C44 (1C)	ND			ND		mg/Kg	☼			NC	
>C12-C22 (1C)	ND			ND		mg/Kg	☼			NC	

Surrogate	DU %Recovery	DU Qualifier	Limits
Chlorobenzene (Surr) (1C)	66		54 - 137
o- terphenyl (Surr) (1C)	88		52 - 154

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-99675/1-A
Matrix: Solid
Analysis Batch: 100128

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 99675

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.59	mg/Kg		03/04/21 13:10	03/05/21 09:33	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-31075-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-99675/2-A
Matrix: Solid
Analysis Batch: 100128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 99675

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			2.91	3.00		mg/Kg		103	80 - 120		

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

GC/MS VOA

Prep Batch: 99569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	5035	

Analysis Batch: 101043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-2	TB-20210303	Total/NA	Water	8260C/UST	
MB 410-101043/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-101043/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-101043/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-101043/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-101043/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 101296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	8260C	99569
MB 410-101296/9	Method Blank	Total/NA	Solid	8260C	
LCS 410-101296/4	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-101296/5	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-101296/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-101296/7	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 99759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	3546	
MB 410-99759/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-99759/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 99926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	8270D	99759
MB 410-99759/1-A	Method Blank	Total/NA	Solid	8270D	99759
LCS 410-99759/2-A	Lab Control Sample	Total/NA	Solid	8270D	99759

GC Semi VOA

Prep Batch: 100221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	3546	
MB 410-100221/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-100221/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-31075-1 MS	BT-22A-S-16-20210302	Total/NA	Solid	3546	
410-31075-1 DU	BT-22A-S-16-20210302	Total/NA	Solid	3546	

Analysis Batch: 100665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-100221/1-A	Method Blank	Total/NA	Solid	8015C TPH	100221
LCS 410-100221/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	100221

Analysis Batch: 101105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	8015C TPH	100221

GC Semi VOA (Continued)

Analysis Batch: 101105 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1 MS	BT-22A-S-16-20210302	Total/NA	Solid	8015C TPH	100221
410-31075-1 DU	BT-22A-S-16-20210302	Total/NA	Solid	8015C TPH	100221

Analysis Batch: 102210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	Total TPH	

Metals

Prep Batch: 99675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	3050B	
MB 410-99675/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-99675/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 100128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	6010C	99675
MB 410-99675/1-A	Method Blank	Total/NA	Solid	6010C	99675
LCS 410-99675/2-A	Lab Control Sample	Total/NA	Solid	6010C	99675

General Chemistry

Analysis Batch: 99554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31075-1	BT-22A-S-16-20210302	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal Drilling Sampling

Job ID: 410-31075-1

Client Sample ID: BT-22A-S-16-20210302
Date Collected: 03/02/21 14:05
Date Received: 03/03/21 17:06

Lab Sample ID: 410-31075-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	99554	03/04/21 09:05	UVJN	ELLE

Client Sample ID: BT-22A-S-16-20210302
Date Collected: 03/02/21 14:05
Date Received: 03/03/21 17:06

Lab Sample ID: 410-31075-1
Matrix: Solid
Percent Solids: 91.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			99569	03/04/21 09:20	Z8FW	ELLE
Total/NA	Analysis	8260C		1	101296	03/09/21 23:56	CHT8	ELLE
Total/NA	Prep	3546			99759	03/04/21 16:13	FTV5	ELLE
Total/NA	Analysis	8270D		1	99926	03/05/21 07:22	UWHS	ELLE
Total/NA	Prep	3546			100221	03/05/21 15:58	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	101105	03/09/21 13:21	YHQ2	ELLE
Total/NA	Analysis	Total TPH		1	102210	03/11/21 13:09	UJL4	ELLE
Total/NA	Prep	3050B			99675	03/04/21 13:10	UJLA	ELLE
Total/NA	Analysis	6010C		1	100128	03/05/21 10:36	MDP5	ELLE

Client Sample ID: TB-20210303
Date Collected: 03/03/21 00:00
Date Received: 03/03/21 17:06

Lab Sample ID: 410-31075-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	101043	03/09/21 13:07	LCW8	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
6010C	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-31075-1
Project/Site: PHL Belmont Terminal Drilling Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-31075-1	BT-22A-S-16-20210302	Solid	03/02/21 14:05	03/03/21 17:06	
410-31075-2	TB-20210303	Water	03/03/21 00:00	03/03/21 17:06	

Environmental Analysis Request/Chain of

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environ

Acct. # _____ Group # _____ Sample # __

410-31075 Chain of Custody

COC # 615414

Client Information

Client: Evergreen c/o Stantec	Acct. #: 10057
Project Name/#: PHL: Belmont Terminal Drilling Sampling	PWSID #:
Project Manager: Andrew Kihgbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC: _____

SCR#: _____

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	TPH-DRO	TPH-GRO/Moisture + Vol 8260	VOC 8260 C/D	Lead/PAH 8270D
BT-22A-S-16-20210302	3/2/21	1405	x		x			6	x	x	x	x
TB-20210303	2/23/21	—					x	2			x	

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: Andrew.Kihgbeil@Stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)

Type III (Reduced non-CLP) NJ DKQP TX TRRP-13

NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	3/3/21	1501	Pierre	3/3/21	1501
Pierre	3/4	1700			
			Received by	3.3.21	1706

EDD Required? Yes No

If yes, format: EDuIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other 9

Temperature upon receipt 1.4 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-31075-1

Login Number: 31075
List Number: 1
Creator: Sanchez, Melvin E

List Source: Eurofins Lancaster Laboratories Env

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-31756-1
Client Project/Site: Belmont Terminal Drilling Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
3/18/2021 11:53:07 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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Amek Carter
Project Manager
3/18/2021 11:53:07 AM

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Client: Stantec Consulting Corp. Job ID: 410-31756-1
Project/Site: Belmont Terminal Drilling Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
B	Analyte was found in the blank.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-31756-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-31756-1

Receipt
The samples were received on 3/9/2021 5:49 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.7°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015C_TPH: The method blank contained >C22-C44 above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples was not performed.
BT-08B-W-71-20210308 (410-31756-3)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: The 1,1,2,2-Tetrachloroethane surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: BT-08B-W-71-20210308 (410-31756-3). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal Drilling Sampling

Job ID: 410-31756-1

Client Sample ID: BT-08B-S-71-20210308 — Lab Sample ID: 410-31756-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	3.2		1.4	0.56	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: TB-20210309 — Lab Sample ID: 410-31756-2

No Detections.

Client Sample ID: BT-08B-W-71-20210308 — Lab Sample ID: 410-31756-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.35	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
C4-C12-TPH-GRO	82		50	29	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	0.42	J	5.0	0.20	ug/L	1		8260C/UST	Total/NA
Methyl tertiary butyl ether	2.3		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Toluene	0.47	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	29	J	50	12	ug/L	1		8260C/UST	Total/NA
Anthracene	0.12	J	0.50	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.36	J	0.50	0.12	ug/L	1		8270D	Total/NA
Naphthalene	0.74		0.50	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.81		0.50	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.15	J	0.50	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	31		5.0	3.0	ug/L	1		RSK-175	Total/NA
>C12-C22 (1C)	10		0.95	0.70	mg/L	10		8015C TPH	Total/NA
Total Reported TPH	10		0.20	0.074	mg/L	1		Total TPH	Total/NA
Nitrogen, Nitrate	0.55		0.50	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	280		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Chloride	77		20	10	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	51		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	46		0.20	0.040	mg/L	1		6010C	Total Recoverable
Magnesium	44		0.10	0.040	mg/L	1		6010C	Total Recoverable
Potassium	3.5		0.50	0.20	mg/L	1		6010C	Total Recoverable
Sodium	72		1.0	0.24	mg/L	1		6010C	Total Recoverable
Lead	0.32	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	130		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Ammonia-N	2.3		0.75	0.25	mg/L	1		4500 NH3 C-2011	Total/NA
Total Organic Carbon	16		1.0	0.50	mg/L	1		5310C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BT-08B-S-71-20210308
Lab Sample ID: 410-31756-1
Date Collected: 03/08/21 14:40
Matrix: Solid
Date Received: 03/09/21 17:49
Percent Solids: 78.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		6.0	0.48	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
1,3,5-Trimethylbenzene	ND		6.0	0.60	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
Toluene	ND		6.0	0.72	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
Methyl tertiary butyl ether	ND		6.0	0.60	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
Benzene	ND		6.0	0.60	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
1,2,4-Trimethylbenzene	ND		6.0	0.60	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
Isopropylbenzene	ND		6.0	0.48	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
1,2-Dibromoethane	ND		6.0	0.48	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
1,2-Dichloroethane	ND		6.0	0.72	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
C4-C12-TPH-GRO	ND		130	53	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
t-Butyl alcohol	ND		120	18	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1
Xylenes, Total	ND		12	1.7	ug/Kg	☼	03/10/21 10:19	03/17/21 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*54 - 135*	*03/10/21 10:19*	*03/17/21 14:09*	*1*
4-Bromofluorobenzene (Surr)	*95*		*50 - 131*	*03/10/21 10:19*	*03/17/21 14:09*	*1*
Dibromofluoromethane (Surr)	*101*		*50 - 141*	*03/10/21 10:19*	*03/17/21 14:09*	*1*
Toluene-d8 (Surr)	*100*		*52 - 141*	*03/10/21 10:19*	*03/17/21 14:09*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		21	4.2	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Benzo[a]anthracene	ND		21	4.2	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Benzo[a]pyrene	ND		21	4.2	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Benzo[b]fluoranthene	ND		21	4.2	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Benzo[g,h,i]perylene	ND		21	4.2	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Chrysene	ND		21	4.2	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Fluorene	ND		21	4.2	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Naphthalene	ND		21	8.4	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Phenanthrene	ND		21	5.0	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1
Pyrene	ND		21	4.2	ug/Kg	☼	03/13/21 15:58	03/16/21 05:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*92*		*39 - 100*	*03/13/21 15:58*	*03/16/21 05:52*	*1*
Nitrobenzene-d5 (Surr)	*81*		*32 - 97*	*03/13/21 15:58*	*03/16/21 05:52*	*1*
p-Terphenyl-d14 (Surr)	*110*	*S1+*	*45 - 108*	*03/13/21 15:58*	*03/16/21 05:52*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		15	6.3	mg/Kg	☼	03/16/21 16:38	03/17/21 14:44	1
>C22-C44 (1C)	ND		15	6.3	mg/Kg	☼	03/16/21 16:38	03/17/21 14:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*70*		*54 - 137*	*03/16/21 16:38*	*03/17/21 14:44*	*1*
o- terphenyl (Surr) (1C)	*92*		*52 - 154*	*03/16/21 16:38*	*03/17/21 14:44*	*1*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	ND		15	6.4	mg/Kg	☼		03/16/21 07:25	1

Client Sample ID: BT-08B-S-71-20210308 — Lab Sample ID: 410-31756-1

Date Collected: 03/08/21 14:40 — **Matrix: Solid**
Date Received: 03/09/21 17:49 — **Percent Solids: 78.5**

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.2**		1.4	0.56	mg/Kg	☼	03/10/21 13:46	03/11/21 11:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**21.5**		1.0	1.0	%			03/10/21 07:58	1

Client Sample ID: TB-20210309 — Lab Sample ID: 410-31756-2

Date Collected: 03/09/21 00:00 — **Matrix: Water**
Date Received: 03/09/21 17:49

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/11/21 18:43	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/11/21 18:43	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/11/21 18:43	1
Benzene	ND		1.0	0.20	ug/L			03/11/21 18:43	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/11/21 18:43	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/11/21 18:43	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/11/21 18:43	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/11/21 18:43	1
Toluene	ND		1.0	0.20	ug/L			03/11/21 18:43	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/11/21 18:43	1
t-Butyl alcohol	ND		50	12	ug/L			03/11/21 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*03/11/21 18:43*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*03/11/21 18:43*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/11/21 18:43*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*03/11/21 18:43*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		03/15/21 21:20	03/16/21 07:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*87*		*46 - 136*	*03/15/21 21:20*	*03/16/21 07:25*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*94*		*46 - 136*	*03/15/21 21:20*	*03/16/21 07:25*	*1*

Client Sample ID: BT-08B-W-71-20210308 — Lab Sample ID: 410-31756-3

Date Collected: 03/08/21 17:00 — **Matrix: Water**
Date Received: 03/09/21 17:49

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/11/21 19:55	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/11/21 19:55	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/11/21 19:55	1
Benzene	**0.35**	**J**	1.0	0.20	ug/L			03/11/21 19:55	1
C4-C12-TPH-GRO	**82**		50	29	ug/L			03/11/21 19:55	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/11/21 19:55	1
Isopropylbenzene	**0.42**	**J**	5.0	0.20	ug/L			03/11/21 19:55	1

Client Sample ID: BT-08B-W-71-20210308
Lab Sample ID: 410-31756-3
Date Collected: 03/08/21 17:00
Matrix: Water
Date Received: 03/09/21 17:49

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tertiary butyl ether	**2.3**		1.0	0.20	ug/L			03/11/21 19:55	1
Toluene	**0.47**	**J**	1.0	0.20	ug/L			03/11/21 19:55	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/11/21 19:55	1
t-Butyl alcohol	**29**	**J**	50	12	ug/L			03/11/21 19:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*03/11/21 19:55*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*03/11/21 19:55*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/11/21 19:55*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*03/11/21 19:55*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.12**	**J**	0.50	0.10	ug/L		03/13/21 01:30	03/15/21 07:50	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/15/21 07:50	1
Benzo[a]pyrene	ND	*+	0.50	0.11	ug/L		03/13/21 01:30	03/15/21 07:50	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/15/21 07:50	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/15/21 07:50	1
Chrysene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/15/21 07:50	1
Fluorene	**0.36**	**J**	0.50	0.12	ug/L		03/13/21 01:30	03/15/21 07:50	1
Naphthalene	**0.74**		0.50	0.10	ug/L		03/13/21 01:30	03/15/21 07:50	1
Phenanthrene	**0.81**		0.50	0.11	ug/L		03/13/21 01:30	03/15/21 07:50	1
Pyrene	**0.15**	**J**	0.50	0.10	ug/L		03/13/21 01:30	03/15/21 07:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*44 - 102*	*03/13/21 01:30*	*03/15/21 07:50*	*1*
Nitrobenzene-d5 (Surr)	*60*		*23 - 128*	*03/13/21 01:30*	*03/15/21 07:50*	*1*
p-Terphenyl-d14 (Surr)	*71*		*31 - 113*	*03/13/21 01:30*	*03/15/21 07:50*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/10/21 09:15	03/10/21 15:00	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/10/21 09:15	03/10/21 15:00	1
Methane (1C)	**31**		5.0	3.0	ug/L		03/10/21 09:15	03/10/21 15:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*78*		*28 - 140*	*03/10/21 09:15*	*03/10/21 15:00*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	^c	0.029	0.0095	ug/L		03/11/21 20:35	03/12/21 13:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*156*	*S1+*	*46 - 136*	*03/11/21 20:35*	*03/12/21 13:01*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*134*		*46 - 136*	*03/11/21 20:35*	*03/12/21 13:01*	*1*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	**10**		0.95	0.70	mg/L		03/10/21 20:49	03/12/21 12:07	10
>C22-C44 (1C)	ND	B	0.95	0.70	mg/L		03/10/21 20:49	03/12/21 12:07	10

Client Sample ID: BT-08B-W-71-20210308
Date Collected: 03/08/21 17:00
Date Received: 03/09/21 17:49

Lab Sample ID: 410-31756-3
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*91*		*21 - 116*	*03/10/21 20:49*	*03/12/21 12:07*	*10*
o- terphenyl (Surr) (1C)	*76*		*51 - 126*	*03/10/21 20:49*	*03/12/21 12:07*	*10*

Method: Total TPH - Total TPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Reported TPH	10		0.20	0.074	mg/L			03/16/21 07:25	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	0.55		0.50	0.25	mg/L			03/10/21 15:36	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	280		50	15	mg/L			03/16/21 16:27	50
Chloride	77		20	10	mg/L			03/16/21 16:27	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	51		0.50	0.096	mg/L		03/10/21 20:00	03/11/21 17:19	1
Iron	46		0.20	0.040	mg/L		03/10/21 20:00	03/11/21 17:19	1
Magnesium	44		0.10	0.040	mg/L		03/10/21 20:00	03/11/21 17:19	1
Potassium	3.5		0.50	0.20	mg/L		03/10/21 20:00	03/12/21 16:51	1
Sodium	72		1.0	0.24	mg/L		03/10/21 20:00	03/11/21 17:19	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.32	J	0.52	0.073	ug/L		03/11/21 07:27	03/11/21 15:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	130		8.0	8.0	mg/L			03/10/21 23:48	1
Ammonia-N	2.3		0.75	0.25	mg/L		03/16/21 09:42	03/16/21 10:33	1
Sulfide	ND		0.30	0.10	mg/L			03/12/21 12:30	1
Total Organic Carbon	16		1.0	0.50	mg/L			03/12/21 21:11	1

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-31756-1
Project/Site: Belmont Terminal Drilling Sampling

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(54-135)	(50-131)	(50-141)	(52-141)
410-31756-1	BT-08B-S-71-20210308	105	95	101	100
LCS 410-104066/5	Lab Control Sample	100	96	97	101
LCS 410-104066/7	Lab Control Sample	98	97	98	102
LCSD 410-104066/6	Lab Control Sample Dup	99	97	98	103
LCSD 410-104066/8	Lab Control Sample Dup	98	98	97	103
MB 410-104066/10	Method Blank	103	96	99	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-31756-2	TB-20210309	97	95	99	103
410-31756-3	BT-08B-W-71-20210308	97	96	99	103
LCS 410-102190/5	Lab Control Sample	98	98	97	104
LCS 410-102190/7	Lab Control Sample	94	98	97	105
LCSD 410-102190/6	Lab Control Sample Dup	98	98	98	104
LCSD 410-102190/8	Lab Control Sample Dup	95	97	98	105
MB 410-102190/9	Method Blank	97	94	99	104

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(39-100)	(32-97)	(45-108)
410-31756-1	BT-08B-S-71-20210308	92	81	110 S1+

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-31756-1
Project/Site: Belmont Terminal Drilling Sampling

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)
410-31756-3	BT-08B-W-71-20210308	63	60	71
LCS 410-102881/2-A	Lab Control Sample	57	74	88
LCSD 410-102881/3-A	Lab Control Sample Dup	56	72	87
MB 410-102881/1-A	Method Blank	52	60	78

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-31756-3	BT-08B-W-71-20210308	78
LCS 410-101561/2-A	Lab Control Sample	93
LCSD 410-101561/3-A	Lab Control Sample Dup	94
MB 410-101561/1-A	Method Blank	94

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1122TCA1	1122TCA2
Lab Sample ID	Client Sample ID	(46-136)	(46-136)
410-31756-2	TB-20210309	87	94
410-31756-3	BT-08B-W-71-20210308	156 S1+	134
LCS 410-102390/2-A	Lab Control Sample	106	102
LCS 410-103453/2-A	Lab Control Sample	85	91
LCSD 410-102390/3-A	Lab Control Sample Dup	108	103
LCSD 410-103453/3-A	Lab Control Sample Dup	85	90
MB 410-102390/1-A	Method Blank	107	104
MB 410-103453/1-A	Method Blank	87	90

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		CBNZ1	OTP1
Lab Sample ID	Client Sample ID	(54-137)	(52-154)
410-31756-1	BT-08B-S-71-20210308	70	92
410-31756-1 DU	BT-08B-S-71-20210308	71	95
410-31756-1 MS	BT-08B-S-71-20210308	71	119
LCS 410-103812/2-A	Lab Control Sample	72	101
MB 410-103812/1-A	Method Blank	72	96

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-31756-1
Project/Site: Belmont Terminal Drilling Sampling

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		CBNZ1	OTP1										
Lab Sample ID	Client Sample ID	(21-116)	(51-126)										
410-31756-3	BT-08B-W-71-20210308	91	76										
LCS 410-101874/2-A	Lab Control Sample	71	90										
LCSD 410-101874/3-A	Lab Control Sample Dup	77	96										
MB 410-101874/1-A	Method Blank	83	97										

Surrogate Legend

CBNZ = Chlorobenzene (Surr)
OTP = o- terphenyl (Surr)

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal Drilling Sampling

Job ID: 410-31756-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-104066/10
Matrix: Solid
Analysis Batch: 104066

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	0.40	ug/Kg			03/17/21 13:40	1
1,3,5-Trimethylbenzene	ND		5.0	0.50	ug/Kg			03/17/21 13:40	1
Toluene	ND		5.0	0.60	ug/Kg			03/17/21 13:40	1
Methyl tertiary butyl ether	ND		5.0	0.50	ug/Kg			03/17/21 13:40	1
Benzene	ND		5.0	0.50	ug/Kg			03/17/21 13:40	1
1,2,4-Trimethylbenzene	ND		5.0	0.50	ug/Kg			03/17/21 13:40	1
Isopropylbenzene	ND		5.0	0.40	ug/Kg			03/17/21 13:40	1
1,2-Dibromoethane	ND		5.0	0.40	ug/Kg			03/17/21 13:40	1
1,2-Dichloroethane	ND		5.0	0.60	ug/Kg			03/17/21 13:40	1
C4-C12-TPH-GRO	ND		110	44	ug/Kg			03/17/21 13:40	1
t-Butyl alcohol	ND		100	15	ug/Kg			03/17/21 13:40	1
Xylenes, Total	ND		10	1.4	ug/Kg			03/17/21 13:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*54 - 135*		*03/17/21 13:40*	*1*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*		*03/17/21 13:40*	*1*
Dibromofluoromethane (Surr)	*99*		*50 - 141*		*03/17/21 13:40*	*1*
Toluene-d8 (Surr)	*100*		*52 - 141*		*03/17/21 13:40*	*1*

Lab Sample ID: LCS 410-104066/5
Matrix: Solid
Analysis Batch: 104066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	20.9		ug/Kg		105	78 - 120
1,3,5-Trimethylbenzene	20.0	21.7		ug/Kg		108	73 - 120
Toluene	20.0	19.5		ug/Kg		97	80 - 120
Methyl tertiary butyl ether	20.0	16.4		ug/Kg		82	72 - 120
Benzene	20.0	18.2		ug/Kg		91	80 - 120
Naphthalene	20.0	19.4		ug/Kg		97	48 - 130
1,2,4-Trimethylbenzene	20.0	21.9		ug/Kg		109	73 - 120
Isopropylbenzene	20.0	21.4		ug/Kg		107	77 - 120
1,2-Dibromoethane	20.0	19.6		ug/Kg		98	76 - 120
1,2-Dichloroethane	20.0	17.2		ug/Kg		86	71 - 128
t-Butyl alcohol	200	196		ug/Kg		98	74 - 121
Xylenes, Total	60.0	62.3		ug/Kg		104	75 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*54 - 135*
4-Bromofluorobenzene (Surr)	*96*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*101*		*52 - 141*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-104066/7
Matrix: Solid
Analysis Batch: 104066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C4-C12-TPH-GRO			1000	1070		ug/Kg		107	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*102*		*52 - 141*

Lab Sample ID: LCSD 410-104066/6
Matrix: Solid
Analysis Batch: 104066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	21.2		ug/Kg		106	78 - 120	1	30
1,3,5-Trimethylbenzene			20.0	22.3		ug/Kg		111	73 - 120	3	30
Toluene			20.0	19.8		ug/Kg		99	80 - 120	1	30
Methyl tertiary butyl ether			20.0	16.7		ug/Kg		84	72 - 120	2	30
Benzene			20.0	18.3		ug/Kg		92	80 - 120	1	30
Naphthalene			20.0	19.2		ug/Kg		96	48 - 130	1	30
1,2,4-Trimethylbenzene			20.0	22.2		ug/Kg		111	73 - 120	2	30
Isopropylbenzene			20.0	21.7		ug/Kg		108	77 - 120	1	30
1,2-Dibromoethane			20.0	19.9		ug/Kg		100	76 - 120	2	30
1,2-Dichloroethane			20.0	17.2		ug/Kg		86	71 - 128	0	30
t-Butyl alcohol			200	213		ug/Kg		106	74 - 121	8	30
Xylenes, Total			60.0	64.1		ug/Kg		107	75 - 120	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*54 - 135*
4-Bromofluorobenzene (Surr)	*97*		*50 - 131*
Dibromofluoromethane (Surr)	*98*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Lab Sample ID: LCSD 410-104066/8
Matrix: Solid
Analysis Batch: 104066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1050		ug/Kg		105	75 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*54 - 135*
4-Bromofluorobenzene (Surr)	*98*		*50 - 131*
Dibromofluoromethane (Surr)	*97*		*50 - 141*
Toluene-d8 (Surr)	*103*		*52 - 141*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-102190/9
Matrix: Water
Analysis Batch: 102190

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/11/21 15:33	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/11/21 15:33	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/11/21 15:33	1
Benzene	ND		1.0	0.20	ug/L			03/11/21 15:33	1
C4-C12-TPH-GRO	ND		50	29	ug/L			03/11/21 15:33	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/11/21 15:33	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/11/21 15:33	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/11/21 15:33	1
Toluene	ND		1.0	0.20	ug/L			03/11/21 15:33	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/11/21 15:33	1
t-Butyl alcohol	ND		50	12	ug/L			03/11/21 15:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*03/11/21 15:33*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*03/11/21 15:33*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/11/21 15:33*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*03/11/21 15:33*	*1*

Lab Sample ID: LCS 410-102190/5
Matrix: Water
Analysis Batch: 102190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	18.2		ug/L		91	75 - 120
1,2-Dichloroethane	20.0	18.0		ug/L		90	73 - 124
1,3,5-Trimethylbenzene	20.0	18.1		ug/L		90	75 - 120
Benzene	20.0	19.2		ug/L		96	80 - 120
Ethylbenzene	20.0	18.6		ug/L		93	80 - 120
Isopropylbenzene	20.0	18.8		ug/L		94	80 - 120
Methyl tertiary butyl ether	20.0	17.3		ug/L		87	69 - 122
Naphthalene	20.0	15.6		ug/L		78	53 - 124
Toluene	20.0	19.3		ug/L		97	80 - 120
Xylenes, Total	60.0	56.0		ug/L		93	80 - 120
t-Butyl alcohol	200	193		ug/L		96	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCS 410-102190/7
Matrix: Water
Analysis Batch: 102190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C4-C12-TPH-GRO	1000	1020		ug/L		102	67 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-102190/7
Matrix: Water
Analysis Batch: 102190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Lab Sample ID: LCSD 410-102190/6
Matrix: Water
Analysis Batch: 102190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	18.4		ug/L		92	75 - 120	1	30
1,2-Dichloroethane			20.0	18.0		ug/L		90	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	18.4		ug/L		92	75 - 120	2	30
Benzene			20.0	19.4		ug/L		97	80 - 120	1	30
Ethylbenzene			20.0	19.0		ug/L		95	80 - 120	2	30
Isopropylbenzene			20.0	18.9		ug/L		95	80 - 120	1	30
Methyl tertiary butyl ether			20.0	17.4		ug/L		87	69 - 122	0	30
Naphthalene			20.0	15.6		ug/L		78	53 - 124	0	30
Toluene			20.0	19.6		ug/L		98	80 - 120	2	30
Xylenes, Total			60.0	56.7		ug/L		95	80 - 120	1	30
t-Butyl alcohol			200	194		ug/L		97	60 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-102190/8
Matrix: Water
Analysis Batch: 102190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C4-C12-TPH-GRO			1000	1050		ug/L		105	67 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-102881/1-A
Matrix: Water
Analysis Batch: 103032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 102881

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/14/21 21:38	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/14/21 21:38	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		03/13/21 01:30	03/14/21 21:38	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/14/21 21:38	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/14/21 21:38	1
Chrysene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/14/21 21:38	1
Fluorene	ND		0.50	0.12	ug/L		03/13/21 01:30	03/14/21 21:38	1
Naphthalene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/14/21 21:38	1
Phenanthrene	ND		0.50	0.11	ug/L		03/13/21 01:30	03/14/21 21:38	1
Pyrene	ND		0.50	0.10	ug/L		03/13/21 01:30	03/14/21 21:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*52*		*44 - 102*	*03/13/21 01:30*	*03/14/21 21:38*	*1*
Nitrobenzene-d5 (Surr)	*60*		*23 - 128*	*03/13/21 01:30*	*03/14/21 21:38*	*1*
p-Terphenyl-d14 (Surr)	*78*		*31 - 113*	*03/13/21 01:30*	*03/14/21 21:38*	*1*

Lab Sample ID: LCS 410-102881/2-A
Matrix: Water
Analysis Batch: 103032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 102881

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	42.0		ug/L		84	61 - 117
Benzo[a]anthracene	50.0	44.6		ug/L		89	61 - 126
Benzo[a]pyrene	50.0	58.3	*+	ug/L		117	60 - 116
Benzo[b]fluoranthene	50.0	49.2		ug/L		98	61 - 119
Benzo[g,h,i]perylene	50.0	45.9		ug/L		92	54 - 120
Chrysene	50.0	46.1		ug/L		92	65 - 121
Fluorene	50.0	36.1		ug/L		72	56 - 115
Naphthalene	50.0	32.2		ug/L		64	51 - 102
Phenanthrene	50.0	41.3		ug/L		83	65 - 113
Pyrene	50.0	43.6		ug/L		87	65 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*57*		*44 - 102*
Nitrobenzene-d5 (Surr)	*74*		*23 - 128*
p-Terphenyl-d14 (Surr)	*88*		*31 - 113*

Lab Sample ID: LCSD 410-102881/3-A
Matrix: Water
Analysis Batch: 103032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 102881

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	50.0	42.3		ug/L		85	61 - 117	1	30
Benzo[a]anthracene	50.0	45.0		ug/L		90	61 - 126	1	30
Benzo[a]pyrene	50.0	56.6		ug/L		113	60 - 116	3	30
Benzo[b]fluoranthene	50.0	49.0		ug/L		98	61 - 119	0	30
Benzo[g,h,i]perylene	50.0	43.5		ug/L		87	54 - 120	6	30
Chrysene	50.0	46.8		ug/L		94	65 - 121	1	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-102881/3-A
Matrix: Water
Analysis Batch: 103032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 102881

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluorene			50.0	36.3		ug/L		73	56 - 115	1	30
Naphthalene			50.0	32.8		ug/L		66	51 - 102	2	30
Phenanthrene			50.0	42.6		ug/L		85	65 - 113	3	30
Pyrene			50.0	44.9		ug/L		90	65 - 115	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*56*		*44 - 102*
Nitrobenzene-d5 (Surr)	*72*		*23 - 128*
p-Terphenyl-d14 (Surr)	*87*		*31 - 113*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-101561/1-A
Matrix: Water
Analysis Batch: 101564

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 101561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/10/21 09:15	03/10/21 10:55	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/10/21 09:15	03/10/21 10:55	1
Methane (1C)	ND		5.0	3.0	ug/L		03/10/21 09:15	03/10/21 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*94*		*28 - 140*	*03/10/21 09:15*	*03/10/21 10:55*	*1*

Lab Sample ID: LCS 410-101561/2-A
Matrix: Water
Analysis Batch: 101564

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101561

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	55.3		ug/L		93	85 - 115
Ethene (1C)			60.4	56.5		ug/L		94	83 - 115
Methane (1C)			59.4	60.0		ug/L		101	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*93*		*28 - 140*

Lab Sample ID: LCSD 410-101561/3-A
Matrix: Water
Analysis Batch: 101564

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 101561

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	57.0		ug/L		96	85 - 115	3	20
Ethene (1C)			60.4	57.7		ug/L		96	83 - 115	2	20
Methane (1C)			59.4	60.1		ug/L		101	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*94*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-102390/1-A
Matrix: Water
Analysis Batch: 102492

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 102390

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		03/11/21 20:35	03/12/21 07:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*107*		*46 - 136*	*03/11/21 20:35*	*03/12/21 07:21*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*104*		*46 - 136*	*03/11/21 20:35*	*03/12/21 07:21*	*1*

Lab Sample ID: LCS 410-102390/2-A
Matrix: Water
Analysis Batch: 102492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 102390

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.139		ug/L		109	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*106*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*102*		*46 - 136*

Lab Sample ID: LCSD 410-102390/3-A
Matrix: Water
Analysis Batch: 102492

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 102390

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.144		ug/L		113	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*108*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*103*		*46 - 136*

Lab Sample ID: MB 410-103453/1-A
Matrix: Water
Analysis Batch: 103492

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103453

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		03/15/21 21:20	03/16/21 06:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*87*		*46 - 136*	*03/15/21 21:20*	*03/16/21 06:01*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*90*		*46 - 136*	*03/15/21 21:20*	*03/16/21 06:01*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-103453/2-A
Matrix: Water
Analysis Batch: 103492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103453

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.128		ug/L		100	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*91*		*46 - 136*

Lab Sample ID: LCSD 410-103453/3-A
Matrix: Water
Analysis Batch: 103492

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103453

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.120		ug/L		93	60 - 140	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*90*		*46 - 136*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 410-101874/1-A
Matrix: Water
Analysis Batch: 102590

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 101874

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		0.10	0.074	mg/L		03/10/21 20:49	03/12/21 11:03	1
>C22-C44 (1C)	0.0878	J B	0.10	0.074	mg/L		03/10/21 20:49	03/12/21 11:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*83*		*21 - 116*	*03/10/21 20:49*	*03/12/21 11:03*	*1*
o- terphenyl (Surr) (1C)	*97*		*51 - 126*	*03/10/21 20:49*	*03/12/21 11:03*	*1*

Lab Sample ID: LCS 410-101874/2-A
Matrix: Water
Analysis Batch: 102590

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101874

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			0.803	0.599		mg/L		75	53 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*71*		*21 - 116*
o- terphenyl (Surr) (1C)	*90*		*51 - 126*

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCSD 410-101874/3-A
Matrix: Water
Analysis Batch: 102590

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 101874

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)			0.803	0.684		mg/L		85	53 - 115	13	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*77*		*21 - 116*
o- terphenyl (Surr) (1C)	*96*		*51 - 126*

Lab Sample ID: MB 410-103812/1-A
Matrix: Solid
Analysis Batch: 104078

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103812

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
>C12-C22 (1C)	ND		12	5.0	mg/Kg		03/16/21 16:38	03/17/21 14:01	1
>C22-C44 (1C)	ND		12	5.0	mg/Kg		03/16/21 16:38	03/17/21 14:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*	*03/16/21 16:38*	*03/17/21 14:01*	*1*
o- terphenyl (Surr) (1C)	*96*		*52 - 154*	*03/16/21 16:38*	*03/17/21 14:01*	*1*

Lab Sample ID: LCS 410-103812/2-A
Matrix: Solid
Analysis Batch: 104078

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103812

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)			134	106		mg/Kg		79	64 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*72*		*54 - 137*
o- terphenyl (Surr) (1C)	*101*		*52 - 154*

Lab Sample ID: 410-31756-1 MS
Matrix: Solid
Analysis Batch: 104078

Client Sample ID: BT-08B-S-71-20210308
Prep Type: Total/NA
Prep Batch: 103812

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
DRO (C10-C28) (1C)	ND		169	131		mg/Kg	☼	77	64 - 122		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*71*		*54 - 137*
o- terphenyl (Surr) (1C)	*119*		*52 - 154*

Lab Sample ID: 410-31756-1 DU
Matrix: Solid
Analysis Batch: 104078

Client Sample ID: BT-08B-S-71-20210308
Prep Type: Total/NA
Prep Batch: 103812

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
>C12-C22 (1C)	ND			ND		mg/Kg	☼			NC	
>C22-C44 (1C)	ND			ND		mg/Kg	☼			NC	

Method: 8015C TPH - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 410-31756-1 DU
Matrix: Solid
Analysis Batch: 104078

Client Sample ID: BT-08B-S-71-20210308
Prep Type: Total/NA
Prep Batch: 103812

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Chlorobenzene (Surr) (1C)	*71*		*54 - 137*
o- terphenyl (Surr) (1C)	*95*		*52 - 154*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatgraphy

Lab Sample ID: MB 410-101663/4
Matrix: Water
Analysis Batch: 101663

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.10	0.050	mg/L			03/10/21 15:03	1

Lab Sample ID: LCS 410-101663/3
Matrix: Water
Analysis Batch: 101663

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate	0.750	0.805		mg/L		107	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-103763/4
Matrix: Water
Analysis Batch: 103763

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			03/16/21 11:23	1
Chloride	ND		0.40	0.20	mg/L			03/16/21 11:23	1

Lab Sample ID: LCS 410-103763/3
Matrix: Water
Analysis Batch: 103763

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.77		mg/L		104	90 - 110
Chloride	3.00	2.94		mg/L		98	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-101700/1-A
Matrix: Solid
Analysis Batch: 102194

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 101700

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.4	0.55	mg/Kg		03/10/21 13:46	03/11/21 10:27	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-101700/2-A
Matrix: Solid
Analysis Batch: 102194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	2.86	2.68		mg/Kg		94	80 - 120

Lab Sample ID: MB 410-101847/1-A
Matrix: Water
Analysis Batch: 102357

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 101847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		03/10/21 20:00	03/11/21 16:13	1
Iron	ND		0.20	0.040	mg/L		03/10/21 20:00	03/11/21 16:13	1
Magnesium	ND		0.10	0.040	mg/L		03/10/21 20:00	03/11/21 16:13	1
Potassium	ND	^3+	0.50	0.20	mg/L		03/10/21 20:00	03/11/21 16:13	1
Sodium	ND		1.0	0.24	mg/L		03/10/21 20:00	03/11/21 16:13	1

Lab Sample ID: MB 410-101847/1-A
Matrix: Water
Analysis Batch: 102807

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 101847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		03/10/21 20:00	03/12/21 15:44	1
Iron	ND		0.20	0.040	mg/L		03/10/21 20:00	03/12/21 15:44	1
Magnesium	ND		0.10	0.040	mg/L		03/10/21 20:00	03/12/21 15:44	1
Potassium	ND		0.50	0.20	mg/L		03/10/21 20:00	03/12/21 15:44	1
Sodium	ND		1.0	0.24	mg/L		03/10/21 20:00	03/12/21 15:44	1

Lab Sample ID: LCS 410-101847/2-A
Matrix: Water
Analysis Batch: 102357

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 101847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.395	J	mg/L		99	80 - 120
Iron	0.400	0.439		mg/L		110	80 - 120
Magnesium	0.200	0.214		mg/L		107	80 - 120
Sodium	2.00	2.10		mg/L		105	80 - 120

Lab Sample ID: LCS 410-101847/2-A
Matrix: Water
Analysis Batch: 102807

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 101847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.430	J	mg/L		107	80 - 120
Iron	0.400	0.419		mg/L		105	80 - 120
Magnesium	0.200	0.214		mg/L		107	80 - 120
Potassium	6.00	6.07		mg/L		101	80 - 120
Sodium	2.00	2.09		mg/L		104	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-101987/1-A
Matrix: Water
Analysis Batch: 102369

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 101987

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/11/21 07:27	03/11/21 15:43	1

Lab Sample ID: LCS 410-101987/2-A
Matrix: Water
Analysis Batch: 102369

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 101987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	29.7		ug/L		99	90 - 115

Lab Sample ID: 410-31756-3 MS
Matrix: Water
Analysis Batch: 102369

Client Sample ID: BT-08B-W-71-20210308
Prep Type: Dissolved
Prep Batch: 101987

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.32	J	30.0	29.7		ug/L		98	75 - 125

Lab Sample ID: 410-31756-3 MSD
Matrix: Water
Analysis Batch: 102369

Client Sample ID: BT-08B-W-71-20210308
Prep Type: Dissolved
Prep Batch: 101987

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.32	J	30.0	30.7		ug/L		101	75 - 125	3	20

Lab Sample ID: 410-31756-3 DU
Matrix: Water
Analysis Batch: 102369

Client Sample ID: BT-08B-W-71-20210308
Prep Type: Dissolved
Prep Batch: 101987

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	0.32	J	0.253	J F5	ug/L		24	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-102220/38
Matrix: Water
Analysis Batch: 102220

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			03/10/21 21:59	1

Lab Sample ID: LCS 410-102220/40
Matrix: Water
Analysis Batch: 102220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	180		mg/L		95	82 - 106

Method: 4500 NH3 C-2011 - Ammonia

Lab Sample ID: MB 410-103636/1-A
Matrix: Water
Analysis Batch: 103654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103636

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	ND		0.75	0.25	mg/L		03/16/21 09:42	03/16/21 10:33	1

Lab Sample ID: LCSD 410-103636/3-A
Matrix: Water
Analysis Batch: 103654

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103636

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia-N			10.0	9.30		mg/L		93	93 - 100	0	5

Lab Sample ID: LCS 410-103636/3-A
Matrix: Water
Analysis Batch: 103654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia-N			10.0	9.33		mg/L		93	93 - 100		

Method: 4500 S2 D-2011 - Sulfide, Total

Lab Sample ID: MB 410-102684/1
Matrix: Water
Analysis Batch: 102684

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.30	0.10	mg/L			03/12/21 12:30	1

Lab Sample ID: LCS 410-102684/13
Matrix: Water
Analysis Batch: 102684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			1.00	1.05		mg/L		105	90 - 110		

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-102960/5
Matrix: Water
Analysis Batch: 102960

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			03/12/21 18:18	1

Lab Sample ID: LCS 410-102960/4
Matrix: Water
Analysis Batch: 102960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	24.7		mg/L		99	91 - 113		

GC/MS VOA

Prep Batch: 101605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	5035	

Analysis Batch: 102190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-2	TB-20210309	Total/NA	Water	8260C/UST	
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	8260C/UST	
MB 410-102190/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-102190/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCS 410-102190/7	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-102190/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	
LCSD 410-102190/8	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 104066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	8260C	101605
MB 410-104066/10	Method Blank	Total/NA	Solid	8260C	
LCS 410-104066/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-104066/7	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 410-104066/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
LCSD 410-104066/8	Lab Control Sample Dup	Total/NA	Solid	8260C	

GC/MS Semi VOA

Prep Batch: 102881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	3510C	
MB 410-102881/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-102881/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-102881/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 102965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	3546	

Analysis Batch: 103032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	8270D	102881
MB 410-102881/1-A	Method Blank	Total/NA	Water	8270D	102881
LCS 410-102881/2-A	Lab Control Sample	Total/NA	Water	8270D	102881
LCSD 410-102881/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	102881

Analysis Batch: 103352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	8270D	102965

GC VOA

Prep Batch: 101561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	RSK-175	
MB 410-101561/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-101561/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 101561 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 410-101561/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 101564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	RSK-175	101561
MB 410-101561/1-A	Method Blank	Total/NA	Water	RSK-175	101561
LCS 410-101561/2-A	Lab Control Sample	Total/NA	Water	RSK-175	101561
LCSD 410-101561/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	101561

GC Semi VOA

Prep Batch: 101874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	3510C	
MB 410-101874/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-101874/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-101874/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 102390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	8011	
MB 410-102390/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-102390/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-102390/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 102492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	8011	102390
MB 410-102390/1-A	Method Blank	Total/NA	Water	8011	102390
LCS 410-102390/2-A	Lab Control Sample	Total/NA	Water	8011	102390
LCSD 410-102390/3-A	Lab Control Sample Dup	Total/NA	Water	8011	102390

Analysis Batch: 102590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	8015C TPH	101874
MB 410-101874/1-A	Method Blank	Total/NA	Water	8015C TPH	101874
LCS 410-101874/2-A	Lab Control Sample	Total/NA	Water	8015C TPH	101874
LCSD 410-101874/3-A	Lab Control Sample Dup	Total/NA	Water	8015C TPH	101874

Prep Batch: 103453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-2	TB-20210309	Total/NA	Water	8011	
MB 410-103453/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-103453/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-103453/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 103492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-2	TB-20210309	Total/NA	Water	8011	103453
MB 410-103453/1-A	Method Blank	Total/NA	Water	8011	103453
LCS 410-103453/2-A	Lab Control Sample	Total/NA	Water	8011	103453

GC Semi VOA (Continued)

Analysis Batch: 103492 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 410-103453/3-A	Lab Control Sample Dup	Total/NA	Water	8011	103453

Analysis Batch: 103509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	Total TPH	
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	Total TPH	

Prep Batch: 103812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	3546	
MB 410-103812/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-103812/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-31756-1 MS	BT-08B-S-71-20210308	Total/NA	Solid	3546	
410-31756-1 DU	BT-08B-S-71-20210308	Total/NA	Solid	3546	

Analysis Batch: 104078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	8015C TPH	103812
MB 410-103812/1-A	Method Blank	Total/NA	Solid	8015C TPH	103812
LCS 410-103812/2-A	Lab Control Sample	Total/NA	Solid	8015C TPH	103812
410-31756-1 MS	BT-08B-S-71-20210308	Total/NA	Solid	8015C TPH	103812
410-31756-1 DU	BT-08B-S-71-20210308	Total/NA	Solid	8015C TPH	103812

HPLC/IC

Analysis Batch: 101663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	EPA 300.0 R2.1	
MB 410-101663/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-101663/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 103763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	EPA 300.0 R2.1	
MB 410-103763/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-103763/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Filtration Batch: 101442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Dissolved	Water	Filtration	
410-31756-3 MS	BT-08B-W-71-20210308	Dissolved	Water	Filtration	
410-31756-3 MSD	BT-08B-W-71-20210308	Dissolved	Water	Filtration	
410-31756-3 DU	BT-08B-W-71-20210308	Dissolved	Water	Filtration	

Prep Batch: 101700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	3050B	
MB 410-101700/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-101700/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Metals

Prep Batch: 101847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total Recoverable	Water	3005A	
MB 410-101847/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-101847/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 101987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Dissolved	Water	Non-Digest Prep	101442
MB 410-101987/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-101987/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-31756-3 MS	BT-08B-W-71-20210308	Dissolved	Water	Non-Digest Prep	101442
410-31756-3 MSD	BT-08B-W-71-20210308	Dissolved	Water	Non-Digest Prep	101442
410-31756-3 DU	BT-08B-W-71-20210308	Dissolved	Water	Non-Digest Prep	101442

Analysis Batch: 102194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	6010C	101700
MB 410-101700/1-A	Method Blank	Total/NA	Solid	6010C	101700
LCS 410-101700/2-A	Lab Control Sample	Total/NA	Solid	6010C	101700

Analysis Batch: 102357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total Recoverable	Water	6010C	101847
MB 410-101847/1-A	Method Blank	Total Recoverable	Water	6010C	101847
LCS 410-101847/2-A	Lab Control Sample	Total Recoverable	Water	6010C	101847

Analysis Batch: 102369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Dissolved	Water	6020A	101987
MB 410-101987/1-A	Method Blank	Total/NA	Water	6020A	101987
LCS 410-101987/2-A	Lab Control Sample	Total/NA	Water	6020A	101987
410-31756-3 MS	BT-08B-W-71-20210308	Dissolved	Water	6020A	101987
410-31756-3 MSD	BT-08B-W-71-20210308	Dissolved	Water	6020A	101987
410-31756-3 DU	BT-08B-W-71-20210308	Dissolved	Water	6020A	101987

Analysis Batch: 102807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total Recoverable	Water	6010C	101847
MB 410-101847/1-A	Method Blank	Total Recoverable	Water	6010C	101847
LCS 410-101847/2-A	Lab Control Sample	Total Recoverable	Water	6010C	101847

General Chemistry

Analysis Batch: 101496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-1	BT-08B-S-71-20210308	Total/NA	Solid	Moisture	

Analysis Batch: 102220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	2320B-2011	
MB 410-102220/38	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-102220/40	Lab Control Sample	Total/NA	Water	2320B-2011	

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-31756-1
Project/Site: Belmont Terminal Drilling Sampling

General Chemistry

Analysis Batch: 102684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	4500 S2 D-2011	
MB 410-102684/1	Method Blank	Total/NA	Water	4500 S2 D-2011	
LCS 410-102684/13	Lab Control Sample	Total/NA	Water	4500 S2 D-2011	

Analysis Batch: 102960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	5310C-2011	
MB 410-102960/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-102960/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Prep Batch: 103636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	4500 NH3 B-2011	
MB 410-103636/1-A	Method Blank	Total/NA	Water	4500 NH3 B-2011	
LCSD 410-103636/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 B-2011	

Analysis Batch: 103654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-31756-3	BT-08B-W-71-20210308	Total/NA	Water	4500 NH3 C-2011	103636
MB 410-103636/1-A	Method Blank	Total/NA	Water	4500 NH3 C-2011	103636
LCS 410-103636/3-A	Lab Control Sample	Total/NA	Water	4500 NH3 C-2011	
LCSD 410-103636/3-A	Lab Control Sample Dup	Total/NA	Water	4500 NH3 C-2011	103636

Client Sample ID: BT-08B-S-71-20210308

Lab Sample ID: 410-31756-1

Date Collected: 03/08/21 14:40

Matrix: Solid

Date Received: 03/09/21 17:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	101496	03/10/21 07:58	UVJN	ELLE

Client Sample ID: BT-08B-S-71-20210308

Lab Sample ID: 410-31756-1

Date Collected: 03/08/21 14:40

Matrix: Solid

Date Received: 03/09/21 17:49

Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			101605	03/10/21 10:19	Z8FW	ELLE
Total/NA	Analysis	8260C		1	104066	03/17/21 14:09	UCB5	ELLE
Total/NA	Prep	3546			102965	03/13/21 15:58	FTV5	ELLE
Total/NA	Analysis	8270D		1	103352	03/16/21 05:52	UWHS	ELLE
Total/NA	Prep	3546			103812	03/16/21 16:38	FTV5	ELLE
Total/NA	Analysis	8015C TPH		1	104078	03/17/21 14:44	UHEW	ELLE
Total/NA	Analysis	Total TPH		1	103509	03/16/21 07:25	UJL4	ELLE
Total/NA	Prep	3050B			101700	03/10/21 13:46	UJLA	ELLE
Total/NA	Analysis	6010C		1	102194	03/11/21 11:34	MDP5	ELLE

Client Sample ID: TB-20210309

Lab Sample ID: 410-31756-2

Date Collected: 03/09/21 00:00

Matrix: Water

Date Received: 03/09/21 17:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	102190	03/11/21 18:43	H9JD	ELLE
Total/NA	Prep	8011			103453	03/15/21 21:20	K2IL	ELLE
Total/NA	Analysis	8011		1	103492	03/16/21 07:25	AC3T	ELLE

Client Sample ID: BT-08B-W-71-20210308

Lab Sample ID: 410-31756-3

Date Collected: 03/08/21 17:00

Matrix: Water

Date Received: 03/09/21 17:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	102190	03/11/21 19:55	H9JD	ELLE
Total/NA	Prep	3510C			102881	03/13/21 01:30	UKQ8	ELLE
Total/NA	Analysis	8270D		1	103032	03/15/21 07:50	W6XI	ELLE
Total/NA	Prep	RSK-175			101561	03/10/21 09:15	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	101564	03/10/21 15:00	YUE6	ELLE
Total/NA	Prep	8011			102390	03/11/21 20:35	K2IL	ELLE
Total/NA	Analysis	8011		1	102492	03/12/21 13:01	AC3T	ELLE
Total/NA	Prep	3510C			101874	03/10/21 20:49	UKL2	ELLE
Total/NA	Analysis	8015C TPH		10	102590	03/12/21 12:07	UHEW	ELLE
Total/NA	Analysis	Total TPH		1	103509	03/16/21 07:25	UJL4	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	101663	03/10/21 15:36	W5UX	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	103763	03/16/21 16:27	W5UX	ELLE
Total Recoverable	Prep	3005A			101847	03/10/21 20:00	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	102357	03/11/21 17:19	MDP5	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-31756-1
Project/Site: Belmont Terminal Drilling Sampling

Client Sample ID: BT-08B-W-71-20210308
Lab Sample ID: 410-31756-3

Date Collected: 03/08/21 17:00
Matrix: Water
Date Received: 03/09/21 17:49

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			101847	03/10/21 20:00	UJL8	ELLE
Total Recoverable	Analysis	6010C		1	102807	03/12/21 16:51	MDP5	ELLE
Dissolved	Filtration	Filtration			101442	03/10/21 05:36	UDL9	ELLE
Dissolved	Prep	Non-Digest Prep			101987	03/11/21 07:27	UJL8	ELLE
Dissolved	Analysis	6020A		1	102369	03/11/21 15:47	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	102220	03/10/21 23:48	DI9Q	ELLE
Total/NA	Prep	4500 NH3 B-2011			103636	03/16/21 09:42	UML5	ELLE
Total/NA	Analysis	4500 NH3 C-2011		1	103654	03/16/21 10:33	UML5	ELLE
Total/NA	Analysis	4500 S2 D-2011		1	102684	03/12/21 12:30	USE1	ELLE
Total/NA	Analysis	5310C-2011		1	102960	03/12/21 21:11	KGQ6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-31756-1
Project/Site: Belmont Terminal Drilling Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C TPH	3510C	Water	>C12-C22 (1C)
8015C TPH	3510C	Water	>C22-C44 (1C)
8015C TPH	3546	Solid	>C12-C22 (1C)
8015C TPH	3546	Solid	>C22-C44 (1C)
Moisture		Solid	Percent Moisture
Total TPH		Solid	Total Reported TPH
Total TPH		Water	Total Reported TPH

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal Drilling Sampling

Job ID: 410-31756-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
8015C TPH	Diesel Range Organics (DRO) (GC)	SW846	ELLE
Total TPH	Total TPH	None	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatgraphy	EPA	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
4500 NH3 C-2011	Ammonia	SM	ELLE
4500 S2 D-2011	Sulfide, Total	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
Moisture	Percent Moisture	EPA	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3050B	Preparation, Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
4500 NH3 B-2011	Ammonia, Distillation	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Filtration	Sample Filtration	None	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

None = None

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal Drilling Sampling

Job ID: 410-31756-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-31756-1	BT-08B-S-71-20210308	Solid	03/08/21 14:40	03/09/21 17:49	
410-31756-2	TB-20210309	Water	03/09/21 00:00	03/09/21 17:49	
410-31756-3	BT-08B-W-71-20210308	Water	03/08/21 17:00	03/09/21 17:49	

Environmental Analysis Rec[illegible]stody

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Acct. # _____

410-31756 Chain of Custody

[illegible]se only

COC # 616128

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: Belmont Terminal Drilling Samples	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix

Soil ☒ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested

Preservation and Filtration Codes

For Lab Use Only

FSC: _____

SCR#: 265403

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

*lab filter dissolved Lead

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Potable	Ground	NPDES	Surface	Other	Total # of Containers	TPH DRO	TPH GRO/moisture + VOC 8260	VOC 8260 C/D	Lead/PAH 8270D (including dissolved Lead) Metals 6010C/Sulfide	Chloride/Nitrate Nitrogen Sulfate	EDB 8011/ Volatile Hydrocarbons	Total Alkalinity to pH 4.5	TOC	Ammonia Nitrogen
BT-08B-S-71-20210308	3/8/21	1440	X		X						6	X	X	X	X					
TB-20210309	2/3/21	—								X	4			X				X		
BT-08B-W-71-20210308	3/8/21	1700	X				X				19	X	X	X	X	X	X	X	X	X

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	3/9/21	1430		3/9/21	1430
	3/9/21	1733			
				3-9-21	1749

EDD Required? Yes No

If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other _____

Temperature upon receipt 5.7 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-31756-1

Login Number: 31756

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Sanchez, Melvin E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-33523-1
Client Project/Site: PHL Belmont Terminal GW Sampling
Revision: 2

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
4/15/2021 7:34:59 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
4/15/2021 7:34:59 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-33523-1
Project/Site: PHL Belmont Terminal GW Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.

HPLC/IC

Qualifier	Qualifier Description
FL	MS and/or MSD recovery below control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-33523-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-33523-1

Revision
The report being provided is a revision of the original report sent on 4/6/2021.

Report revision history
Revision 1 - 4/15/2021 - Reason -Add amended COC.
Revision 2 - 4/15/2021 - Reason - Correct sample ID for S-462-20210323.

Receipt
The samples were received on 3/24/2021 5:03 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9°C, 2.0°C, 5.0°C and 5.7°C

Receipt Exceptions
One or more containers for the following sample was received empty:

1 40 mL unpreserved amber vial.

TW-5-20210323 (410-33523-4).

GC/MS VOA
Method 8260C_UST: The continuing calibration verification (CCV) associated with batch 410-108729 recovered above the upper control limit for t-Butyl alcohol. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: S-463-20210322 — Lab Sample ID: 410-33523-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	3.8	J	5.0	2.0	ug/L	5		8260C/UST	Total/NA
1,2-Dichloroethane	2.2	J	5.0	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	16		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	17	J	30	7.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	4.4	J	25	1.0	ug/L	5		8260C/UST	Total/NA
Benzene - DL	8400		50	10	ug/L	50		8260C/UST	Total/NA
Naphthalene	3.4		0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.21	J	0.52	0.11	ug/L	1		8270D	Total/NA
Methane (1C)	120		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	150		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	95		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	7.1		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	250		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	61		5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	5.0		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	56		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-461-20210322 — Lab Sample ID: 410-33523-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	21		5.0	2.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	1.8	J	25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	470		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	200		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tert-butyl ether	28		5.0	1.0	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	18	J	25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	25		25	1.0	ug/L	5		8260C/UST	Total/NA
t-Butyl alcohol	1100	^c	250	60	ug/L	5		8260C/UST	Total/NA
Benzene - DL	1000		50	10	ug/L	50		8260C/UST	Total/NA
Fluorene	0.25	J	0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	0.94		0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.24	J	0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.25	J	0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C) - DL	7800		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	30		5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	130		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	31		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	400		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	1.2		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	100		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	12		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	88		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-464-20210322 — Lab Sample ID: 410-33523-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	70	J	100	40	ug/L	100		8260C/UST	Total/NA
Toluene	750		100	20	ug/L	100		8260C/UST	Total/NA
Xylenes, Total	320	J	600	140	ug/L	100		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: S-464-20210322 (Continued) — Lab Sample ID: 410-33523-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	92	J	500	20	ug/L	100		8260C/UST	Total/NA
Benzene - DL	120000		1000	200	ug/L	1000		8260C/UST	Total/NA
Anthracene	0.13	J	0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.42	J	0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	9.6		0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.64		0.51	0.11	ug/L	1		8270D	Total/NA
Methane (1C) - DL	2700		100	60	ug/L	20		RSK-175	Total/NA
Sulfate	100		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	97		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	20		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	310		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	1.1		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	110		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	19		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	91		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: TW-5-20210323 — Lab Sample ID: 410-33523-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	430		100	40	ug/L	100		8260C/UST	Total/NA
Toluene	8400		100	20	ug/L	100		8260C/UST	Total/NA
Xylenes, Total	2000		600	140	ug/L	100		8260C/UST	Total/NA
Isopropylbenzene	100	J	500	20	ug/L	100		8260C/UST	Total/NA
Benzene - DL	640000		5000	1000	ug/L	5000		8260C/UST	Total/NA
Anthracene	0.21	J	0.53	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.11	J	0.53	0.11	ug/L	1		8270D	Total/NA
Fluorene	0.72		0.53	0.13	ug/L	1		8270D	Total/NA
Naphthalene	18		0.53	0.11	ug/L	1		8270D	Total/NA
Phenanthrene	1.2		0.53	0.12	ug/L	1		8270D	Total/NA
Pyrene	0.35	J	0.53	0.11	ug/L	1		8270D	Total/NA
Methane (1C) - DL	3800		100	60	ug/L	20		RSK-175	Total/NA
Sulfate	93		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	240		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	29		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	710		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	13		5.0	2.5	mg/L	5		351.2	Total/NA
Total Carbon	400		25	13	mg/L	25		5310 B-2011	Total/NA
Total Organic Carbon	110		5.0	2.5	mg/L	5		5310C-2011	Total/NA
Total Inorganic Carbon	290		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: MW-37-20210323 — Lab Sample ID: 410-33523-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	1700		100	20	ug/L	100		8260C/UST	Total/NA
Isopropylbenzene	28	J	500	20	ug/L	100		8260C/UST	Total/NA
Benzene - DL	210000		5000	1000	ug/L	5000		8260C/UST	Total/NA
Anthracene	0.23	J	0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.40	J	0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.58		0.51	0.11	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-37-20210323 (Continued) — Lab Sample ID: 410-33523-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	1.1		0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.41	J	0.51	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.81		0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.55		0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	5.1		0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	1.4		0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	1.3		0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C) - DL	2900		100	60	ug/L	20		RSK-175	Total/NA
Sulfate	3.8	J	5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	63		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	36		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.13	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	300		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	6.1		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	190		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	68		5.0	2.5	mg/L	5		5310C-2011	Total/NA
Total Inorganic Carbon	120		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-393D-20210323 — Lab Sample ID: 410-33523-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	65		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Benzo[b]fluoranthene	0.11	J	0.52	0.10	ug/L	1		8270D	Total/NA
Pyrene	0.10	J	0.52	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	4.1	J	5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	250		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	55		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	20		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.25	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	130		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	39		2.0	1.0	mg/L	2		5310 B-2011	Total/NA
Total Organic Carbon	1.7		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	37		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-458-20210323 — Lab Sample ID: 410-33523-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	6.4		5.0	1.5	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	2.3	J	25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	2.5	J	5.0	1.0	ug/L	5		8260C/UST	Total/NA
Benzene	270		5.0	1.0	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	5.2	J	25	5.0	ug/L	5		8260C/UST	Total/NA
Naphthalene	0.67		0.53	0.11	ug/L	1		8270D	Total/NA
Phenanthrene	0.22	J	0.53	0.12	ug/L	1		8270D	Total/NA
Methane (1C)	17		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	89		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	110		0.50	0.096	mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-458-20210323 (Continued)

Lab Sample ID: 410-33523-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	3.3		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	370		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	81		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	3.0		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	78		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: MW-36-20210323

Lab Sample ID: 410-33523-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	250		100	40	ug/L	100		8260C/UST	Total/NA
1,2-Dichloroethane	1600		100	30	ug/L	100		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	49	J	500	30	ug/L	100		8260C/UST	Total/NA
Toluene	12000		100	20	ug/L	100		8260C/UST	Total/NA
Xylenes, Total	920		600	140	ug/L	100		8260C/UST	Total/NA
Methyl tert-butyl ether	40	J	100	20	ug/L	100		8260C/UST	Total/NA
Naphthalene	670		500	100	ug/L	100		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	130	J	500	100	ug/L	100		8260C/UST	Total/NA
Isopropylbenzene	83	J	500	20	ug/L	100		8260C/UST	Total/NA
Benzene - DL	550000		5000	1000	ug/L	5000		8260C/UST	Total/NA
Anthracene	1.4		0.53	0.11	ug/L	1		8270D	Total/NA
Chrysene	0.12	J	0.53	0.11	ug/L	1		8270D	Total/NA
Fluorene	8.3		0.53	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	8.1		0.53	0.12	ug/L	1		8270D	Total/NA
Pyrene	0.72		0.53	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	550		2.7	0.53	ug/L	5		8270D	Total/NA
Ethane (1C)	7.7		5.0	1.0	ug/L	1		RSK-175	Total/NA
Ethene (1C)	20		5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	7900		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	3.1	J FL	5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	290		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	67		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	520		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	12		5.0	2.5	mg/L	5		351.2	Total/NA
Total Carbon	470		25	13	mg/L	25		5310 B-2011	Total/NA
Total Organic Carbon	180		5.0	2.5	mg/L	5		5310C-2011	Total/NA
Total Inorganic Carbon	290		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-462-20210323

Lab Sample ID: 410-33523-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	17		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	18		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	1.8		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	100		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	9.5		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	39		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	5.5		5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	47		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	2.2	J	5.0	0.20	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	20	J	50	12	ug/L	1		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-462-20210323 (Continued) — Lab Sample ID: 410-33523-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	2.2		0.52	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	7.9		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	190		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	72		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	20		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	160		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	46		2.0	1.0	mg/L	2		5310 B-2011	Total/NA
Total Organic Carbon	3.5		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	43		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-460-20210323 — Lab Sample ID: 410-33523-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	4.7		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	3.9	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	0.68	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	12		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	2.3		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	22		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	22		5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	12		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	1.3	J	5.0	0.20	ug/L	1		8260C/UST	Total/NA
Anthracene	0.36	J	0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	1.2		0.52	0.13	ug/L	1		8270D	Total/NA
Naphthalene	1.8		0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	1.6		0.52	0.12	ug/L	1		8270D	Total/NA
Methane (1C)	28		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	250		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	50		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	26		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.11	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	110		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	42		2.0	1.0	mg/L	2		5310 B-2011	Total/NA
Total Organic Carbon	2.5		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	40		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: TB-20210324 — Lab Sample ID: 410-33523-11

No Detections.

Client Sample ID: FB-20210324 — Lab Sample ID: 410-33523-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.15	J	0.50	0.096	mg/L	1		6010C	Total Recoverable

Client Sample ID: EB-20210324 — Lab Sample ID: 410-33523-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.15	J	0.50	0.096	mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: S-459-20210324

Lab Sample ID: 410-33523-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	14		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	14		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	0.63	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	49		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Benzene	13		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	36		5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	40		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	3.3	J	5.0	0.20	ug/L	1		8260C/UST	Total/NA
Anthracene	0.14	J	0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.92		0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	28		0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.52		0.51	0.11	ug/L	1		8270D	Total/NA
Methane (1C)	14		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	320		200	60	mg/L	200		EPA 300.0 R2.1	Total/NA
Calcium	58		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	27		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.15	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	150		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.57	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	50		2.0	1.0	mg/L	2		5310 B-2011	Total/NA
Total Organic Carbon	4.0		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	46		2.0	0.60	mg/L	1		SM5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-463-20210322

Date Collected: 03/22/21 13:30
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-1

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**3.8**	**J**	5.0	2.0	ug/L			03/30/21 15:35	5
1,2-Dichloroethane	**2.2**	**J**	5.0	1.5	ug/L			03/30/21 15:35	5
1,3,5-Trimethylbenzene	ND		25	1.5	ug/L			03/30/21 15:35	5
Toluene	**16**		5.0	1.0	ug/L			03/30/21 15:35	5
Xylenes, Total	**17**	**J**	30	7.0	ug/L			03/30/21 15:35	5
Methyl tert-butyl ether	ND		5.0	1.0	ug/L			03/30/21 15:35	5
Naphthalene	ND		25	5.0	ug/L			03/30/21 15:35	5
1,2,4-Trimethylbenzene	ND		25	5.0	ug/L			03/30/21 15:35	5
Isopropylbenzene	**4.4**	**J**	25	1.0	ug/L			03/30/21 15:35	5
t-Butyl alcohol	ND	^c	250	60	ug/L			03/30/21 15:35	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*03/30/21 15:35*	*5*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*03/30/21 15:35*	*5*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*03/30/21 15:35*	*5*
Toluene-d8 (Surr)	*108*		*80 - 120*		*03/30/21 15:35*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**8400**		50	10	ug/L			03/30/21 15:59	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/30/21 15:59*	*50*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*03/30/21 15:59*	*50*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*03/30/21 15:59*	*50*
Toluene-d8 (Surr)	*106*		*80 - 120*		*03/30/21 15:59*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.52	0.10	ug/L		03/27/21 09:58	03/30/21 03:48	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		03/27/21 09:58	03/30/21 03:48	1
Benzo[a]pyrene	ND		0.52	0.11	ug/L		03/27/21 09:58	03/30/21 03:48	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		03/27/21 09:58	03/30/21 03:48	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		03/27/21 09:58	03/30/21 03:48	1
Chrysene	ND		0.52	0.10	ug/L		03/27/21 09:58	03/30/21 03:48	1
Fluorene	ND		0.52	0.12	ug/L		03/27/21 09:58	03/30/21 03:48	1
Naphthalene	**3.4**		0.52	0.10	ug/L		03/27/21 09:58	03/30/21 03:48	1
Phenanthrene	**0.21**	**J**	0.52	0.11	ug/L		03/27/21 09:58	03/30/21 03:48	1
Pyrene	ND		0.52	0.10	ug/L		03/27/21 09:58	03/30/21 03:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*44 - 102*	*03/27/21 09:58*	*03/30/21 03:48*	*1*
Nitrobenzene-d5 (Surr)	*70*		*23 - 128*	*03/27/21 09:58*	*03/30/21 03:48*	*1*
p-Terphenyl-d14 (Surr)	*47*		*31 - 113*	*03/27/21 09:58*	*03/30/21 03:48*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 12:49	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 12:49	1
Methane (1C)	**120**		5.0	3.0	ug/L		03/26/21 09:13	03/26/21 12:49	1

Client Sample ID: S-463-20210322 — Lab Sample ID: 410-33523-1

Date Collected: 03/22/21 13:30 — **Matrix: Water**
Date Received: 03/24/21 17:03

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*88*		*28 - 140*	*03/26/21 09:13*	*03/26/21 12:49*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		04/01/21 18:00	04/02/21 07:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	*84*		*46 - 136*	*04/01/21 18:00*	*04/02/21 07:59*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*101*		*46 - 136*	*04/01/21 18:00*	*04/02/21 07:59*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**150**		50	15	mg/L			03/30/21 18:30	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**95**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 13:06	1
Iron	**7.1**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 13:06	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**250**		8.0	8.0	mg/L			03/27/21 02:16	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:24	1
Total Carbon	**61**		5.0	2.5	mg/L			03/31/21 13:38	5
Total Organic Carbon	**5.0**		1.0	0.50	mg/L			03/26/21 15:59	1
Total Inorganic Carbon	**56**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-461-20210322 — Lab Sample ID: 410-33523-2

Date Collected: 03/22/21 15:25 — **Matrix: Water**
Date Received: 03/24/21 17:03

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**21**		5.0	2.0	ug/L			03/30/21 16:23	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			03/30/21 16:23	5
1,3,5-Trimethylbenzene	**1.8**	**J**	25	1.5	ug/L			03/30/21 16:23	5
Toluene	**470**		5.0	1.0	ug/L			03/30/21 16:23	5
Xylenes, Total	**200**		30	7.0	ug/L			03/30/21 16:23	5
Methyl tert-butyl ether	**28**		5.0	1.0	ug/L			03/30/21 16:23	5
Naphthalene	ND		25	5.0	ug/L			03/30/21 16:23	5
1,2,4-Trimethylbenzene	**18**	**J**	25	5.0	ug/L			03/30/21 16:23	5
Isopropylbenzene	**25**		25	1.0	ug/L			03/30/21 16:23	5
t-Butyl alcohol	**1100**	**^c**	250	60	ug/L			03/30/21 16:23	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/30/21 16:23*	*5*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*03/30/21 16:23*	*5*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*03/30/21 16:23*	*5*

Client Sample ID: S-461-20210322

Date Collected: 03/22/21 15:25
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-2

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*106*		*80 - 120*		*03/30/21 16:23*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1000**		50	10	ug/L			03/30/21 16:47	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*03/30/21 16:47*	*50*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*03/30/21 16:47*	*50*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/30/21 16:47*	*50*
Toluene-d8 (Surr)	*105*		*80 - 120*		*03/30/21 16:47*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:17	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:17	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		03/27/21 09:58	03/30/21 04:17	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:17	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:17	1
Chrysene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:17	1
Fluorene	**0.25**	**J**	0.51	0.12	ug/L		03/27/21 09:58	03/30/21 04:17	1
Naphthalene	**0.94**		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:17	1
Phenanthrene	**0.24**	**J**	0.51	0.11	ug/L		03/27/21 09:58	03/30/21 04:17	1
Pyrene	**0.25**	**J**	0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	*69*		*44 - 102*	*03/27/21 09:58*	*03/30/21 04:17*	*1*
Nitrobenzene-d5 (Surr)	*50*		*23 - 128*	*03/27/21 09:58*	*03/30/21 04:17*	*1*
p-Terphenyl-d14 (Surr)	*76*		*31 - 113*	*03/27/21 09:58*	*03/30/21 04:17*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 13:07	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*79*		*28 - 140*	*03/26/21 09:13*	*03/26/21 13:07*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**7800**		250	150	ug/L		03/30/21 11:11	03/30/21 20:33	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*105*		*28 - 140*	*03/30/21 11:11*	*03/30/21 20:33*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		04/01/21 18:00	04/02/21 08:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*	*04/01/21 18:00*	*04/02/21 08:16*	*1*

Client Sample ID: S-461-20210322

Date Collected: 03/22/21 15:25
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-2

Matrix: Water

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*102*		*46 - 136*	*04/01/21 18:00*	*04/02/21 08:16*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**30**		5.0	1.5	mg/L			03/30/21 18:51	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**130**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 12:38	1
Iron	**31**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 12:38	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**400**		8.0	8.0	mg/L			03/27/21 01:46	1
Total Kjeldahl Nitrogen	**1.2**		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:14	1
Total Carbon	**100**		10	5.0	mg/L			03/31/21 14:10	10
Total Organic Carbon	**12**		1.0	0.50	mg/L			03/26/21 16:13	1
Total Inorganic Carbon	**88**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-464-20210322

Date Collected: 03/22/21 15:35
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-3

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**70**	**J**	100	40	ug/L			03/30/21 17:10	100
1,2-Dichloroethane	ND		100	30	ug/L			03/30/21 17:10	100
1,3,5-Trimethylbenzene	ND		500	30	ug/L			03/30/21 17:10	100
Toluene	**750**		100	20	ug/L			03/30/21 17:10	100
Xylenes, Total	**320**	**J**	600	140	ug/L			03/30/21 17:10	100
Methyl tert-butyl ether	ND		100	20	ug/L			03/30/21 17:10	100
Naphthalene	ND		500	100	ug/L			03/30/21 17:10	100
1,2,4-Trimethylbenzene	ND		500	100	ug/L			03/30/21 17:10	100
Isopropylbenzene	**92**	**J**	500	20	ug/L			03/30/21 17:10	100
t-Butyl alcohol	ND	^c	5000	1200	ug/L			03/30/21 17:10	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*03/30/21 17:10*	*100*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*03/30/21 17:10*	*100*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*03/30/21 17:10*	*100*
Toluene-d8 (Surr)	*106*		*80 - 120*		*03/30/21 17:10*	*100*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**120000**		1000	200	ug/L			03/30/21 17:34	1000

Client Sample ID: S-464-20210322

Date Collected: 03/22/21 15:35
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*03/30/21 17:34*	*1000*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*03/30/21 17:34*	*1000*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*03/30/21 17:34*	*1000*
Toluene-d8 (Surr)	*106*		*80 - 120*		*03/30/21 17:34*	*1000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.13**	**J**	0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:45	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:45	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		03/27/21 09:58	03/30/21 04:45	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:45	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:45	1
Chrysene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:45	1
Fluorene	**0.42**	**J**	0.51	0.12	ug/L		03/27/21 09:58	03/30/21 04:45	1
Naphthalene	**9.6**		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:45	1
Phenanthrene	**0.64**		0.51	0.11	ug/L		03/27/21 09:58	03/30/21 04:45	1
Pyrene	ND		0.51	0.10	ug/L		03/27/21 09:58	03/30/21 04:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*44 - 102*	*03/27/21 09:58*	*03/30/21 04:45*	*1*
Nitrobenzene-d5 (Surr)	*68*		*23 - 128*	*03/27/21 09:58*	*03/30/21 04:45*	*1*
p-Terphenyl-d14 (Surr)	*82*		*31 - 113*	*03/27/21 09:58*	*03/30/21 04:45*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 13:25	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 13:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*91*		*28 - 140*	*03/26/21 09:13*	*03/26/21 13:25*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**2700**		100	60	ug/L		03/30/21 11:11	03/30/21 21:06	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*108*		*28 - 140*	*03/30/21 11:11*	*03/30/21 21:06*	*20*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/01/21 18:00	04/02/21 08:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*80*		*46 - 136*	*04/01/21 18:00*	*04/02/21 08:33*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*97*		*46 - 136*	*04/01/21 18:00*	*04/02/21 08:33*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**100**		50	15	mg/L			03/30/21 19:07	50

Client Sample ID: S-464-20210322

Date Collected: 03/22/21 15:35
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-3
Matrix: Water

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**97**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 12:41	1
Iron	**20**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 12:41	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**310**		8.0	8.0	mg/L			03/27/21 01:38	1
Total Kjeldahl Nitrogen	**1.1**		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:01	1
Total Carbon	**110**		10	5.0	mg/L			03/31/21 14:21	10
Total Organic Carbon	**19**		1.0	0.50	mg/L			03/26/21 16:27	1
Total Inorganic Carbon	**91**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: TW-5-20210323

Date Collected: 03/23/21 10:15
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-4
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**430**		100	40	ug/L			03/30/21 17:58	100
1,2-Dichloroethane	ND		100	30	ug/L			03/30/21 17:58	100
1,3,5-Trimethylbenzene	ND		500	30	ug/L			03/30/21 17:58	100
Toluene	**8400**		100	20	ug/L			03/30/21 17:58	100
Xylenes, Total	**2000**		600	140	ug/L			03/30/21 17:58	100
Methyl tert-butyl ether	ND		100	20	ug/L			03/30/21 17:58	100
Naphthalene	ND		500	100	ug/L			03/30/21 17:58	100
1,2,4-Trimethylbenzene	ND		500	100	ug/L			03/30/21 17:58	100
Isopropylbenzene	**100**	**J**	500	20	ug/L			03/30/21 17:58	100
t-Butyl alcohol	ND	^c	5000	1200	ug/L			03/30/21 17:58	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*03/30/21 17:58*	*100*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*03/30/21 17:58*	*100*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*03/30/21 17:58*	*100*
Toluene-d8 (Surr)	*108*		*80 - 120*		*03/30/21 17:58*	*100*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**640000**		5000	1000	ug/L			04/01/21 13:17	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*04/01/21 13:17*	*5000*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/01/21 13:17*	*5000*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*04/01/21 13:17*	*5000*
Toluene-d8 (Surr)	*97*		*80 - 120*		*04/01/21 13:17*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.21**	**J**	0.53	0.11	ug/L		03/29/21 09:00	03/30/21 11:39	1

Client Sample ID: TW-5-20210323

Date Collected: 03/23/21 10:15
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 11:39	1
Benzo[a]pyrene	ND		0.53	0.12	ug/L		03/29/21 09:00	03/30/21 11:39	1
Benzo[b]fluoranthene	**0.11**	**J**	0.53	0.11	ug/L		03/29/21 09:00	03/30/21 11:39	1
Benzo[g,h,i]perylene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 11:39	1
Chrysene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 11:39	1
Fluorene	**0.72**		0.53	0.13	ug/L		03/29/21 09:00	03/30/21 11:39	1
Naphthalene	**18**		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 11:39	1
Phenanthrene	**1.2**		0.53	0.12	ug/L		03/29/21 09:00	03/30/21 11:39	1
Pyrene	**0.35**	**J**	0.53	0.11	ug/L		03/29/21 09:00	03/30/21 11:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*44 - 102*	*03/29/21 09:00*	*03/30/21 11:39*	*1*
Nitrobenzene-d5 (Surr)	*89*		*23 - 128*	*03/29/21 09:00*	*03/30/21 11:39*	*1*
p-Terphenyl-d14 (Surr)	*98*		*31 - 113*	*03/29/21 09:00*	*03/30/21 11:39*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 14:17	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 14:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 140*	*03/26/21 09:13*	*03/26/21 14:17*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**3800**		100	60	ug/L		03/30/21 11:11	03/30/21 21:23	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*93*		*28 - 140*	*03/30/21 11:11*	*03/30/21 21:23*	*20*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (2C)	ND	^c	0.029	0.0097	ug/L		04/04/21 07:49	04/05/21 07:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*77*		*46 - 136*	*04/04/21 07:49*	*04/05/21 07:18*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*115*		*46 - 136*	*04/04/21 07:49*	*04/05/21 07:18*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**93**		50	15	mg/L			03/30/21 22:11	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**240**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 13:03	1
Iron	**29**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 13:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:42	1

Client Sample ID: TW-5-20210323

Lab Sample ID: 410-33523-4

Date Collected: 03/23/21 10:15

Matrix: Water

Date Received: 03/24/21 17:03

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	710		8.0	8.0	mg/L			03/27/21 00:55	1
Total Kjeldahl Nitrogen	13		5.0	2.5	mg/L		03/26/21 07:10	03/30/21 12:29	5
Total Carbon	400		25	13	mg/L			03/31/21 14:32	25
Total Organic Carbon	110		5.0	2.5	mg/L			03/26/21 16:41	5
Total Inorganic Carbon	290		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: MW-37-20210323

Lab Sample ID: 410-33523-5

Date Collected: 03/23/21 09:35

Matrix: Water

Date Received: 03/24/21 17:03

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		100	40	ug/L			03/30/21 18:45	100
1,2-Dichloroethane	ND		100	30	ug/L			03/30/21 18:45	100
1,3,5-Trimethylbenzene	ND		500	30	ug/L			03/30/21 18:45	100
Toluene	1700		100	20	ug/L			03/30/21 18:45	100
Xylenes, Total	ND		600	140	ug/L			03/30/21 18:45	100
Methyl tert-butyl ether	ND		100	20	ug/L			03/30/21 18:45	100
Naphthalene	ND		500	100	ug/L			03/30/21 18:45	100
1,2,4-Trimethylbenzene	ND		500	100	ug/L			03/30/21 18:45	100
Isopropylbenzene	28	J	500	20	ug/L			03/30/21 18:45	100
t-Butyl alcohol	ND	^c	5000	1200	ug/L			03/30/21 18:45	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 120*		*03/30/21 18:45*	*100*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*03/30/21 18:45*	*100*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*03/30/21 18:45*	*100*
Toluene-d8 (Surr)	*108*		*80 - 120*		*03/30/21 18:45*	*100*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	210000		5000	1000	ug/L			04/01/21 13:41	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*04/01/21 13:41*	*5000*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/01/21 13:41*	*5000*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*04/01/21 13:41*	*5000*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/01/21 13:41*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	0.23	J	0.51	0.10	ug/L		03/29/21 09:00	03/30/21 12:07	1
Benzo[a]anthracene	0.40	J	0.51	0.10	ug/L		03/29/21 09:00	03/30/21 12:07	1
Benzo[a]pyrene	0.58		0.51	0.11	ug/L		03/29/21 09:00	03/30/21 12:07	1
Benzo[b]fluoranthene	1.1		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 12:07	1
Benzo[g,h,i]perylene	0.41	J	0.51	0.10	ug/L		03/29/21 09:00	03/30/21 12:07	1
Chrysene	0.81		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 12:07	1
Fluorene	0.55		0.51	0.12	ug/L		03/29/21 09:00	03/30/21 12:07	1
Naphthalene	5.1		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 12:07	1
Phenanthrene	1.4		0.51	0.11	ug/L		03/29/21 09:00	03/30/21 12:07	1
Pyrene	1.3		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 12:07	1

Client Sample ID: MW-37-20210323

Date Collected: 03/23/21 09:35
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*44 - 102*	*03/29/21 09:00*	*03/30/21 12:07*	*1*
Nitrobenzene-d5 (Surr)	*33*		*23 - 128*	*03/29/21 09:00*	*03/30/21 12:07*	*1*
p-Terphenyl-d14 (Surr)	*73*		*31 - 113*	*03/29/21 09:00*	*03/30/21 12:07*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 14:35	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*83*		*28 - 140*	*03/26/21 09:13*	*03/26/21 14:35*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**2900**		100	60	ug/L		03/30/21 11:11	03/30/21 21:40	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*95*		*28 - 140*	*03/30/21 11:11*	*03/30/21 21:40*	*20*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0097	ug/L		04/04/21 07:49	04/05/21 07:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*95*		*46 - 136*	*04/04/21 07:49*	*04/05/21 07:34*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*134*		*46 - 136*	*04/04/21 07:49*	*04/05/21 07:34*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**3.8**	**J**	5.0	1.5	mg/L			03/30/21 21:37	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**63**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 12:43	1
Iron	**36**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 12:43	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.13**	**J**	0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**300**		8.0	8.0	mg/L			03/27/21 01:31	1
Total Kjeldahl Nitrogen	**6.1**		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:20	1
Total Carbon	**190**		10	5.0	mg/L			03/31/21 14:43	10
Total Organic Carbon	**68**		5.0	2.5	mg/L			03/26/21 17:24	5
Total Inorganic Carbon	**120**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-393D-20210323

Date Collected: 03/23/21 12:10
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-6

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	2.0	ug/L			03/30/21 19:33	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			03/30/21 19:33	5
1,3,5-Trimethylbenzene	ND		25	1.5	ug/L			03/30/21 19:33	5
Toluene	ND		5.0	1.0	ug/L			03/30/21 19:33	5
Xylenes, Total	ND		30	7.0	ug/L			03/30/21 19:33	5
Methyl tert-butyl ether	ND		5.0	1.0	ug/L			03/30/21 19:33	5
Benzene	**65**		5.0	1.0	ug/L			03/30/21 19:33	5
Naphthalene	ND		25	5.0	ug/L			03/30/21 19:33	5
1,2,4-Trimethylbenzene	ND		25	5.0	ug/L			03/30/21 19:33	5
Isopropylbenzene	ND		25	1.0	ug/L			03/30/21 19:33	5
t-Butyl alcohol	ND	^c	250	60	ug/L			03/30/21 19:33	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*03/30/21 19:33*	*5*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*03/30/21 19:33*	*5*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*03/30/21 19:33*	*5*
Toluene-d8 (Surr)	*105*		*80 - 120*		*03/30/21 19:33*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 12:35	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 12:35	1
Benzo[a]pyrene	ND		0.52	0.11	ug/L		03/29/21 09:00	03/30/21 12:35	1
Benzo[b]fluoranthene	**0.11**	**J**	0.52	0.10	ug/L		03/29/21 09:00	03/30/21 12:35	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 12:35	1
Chrysene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 12:35	1
Fluorene	ND		0.52	0.12	ug/L		03/29/21 09:00	03/30/21 12:35	1
Naphthalene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 12:35	1
Phenanthrene	ND		0.52	0.11	ug/L		03/29/21 09:00	03/30/21 12:35	1
Pyrene	**0.10**	**J**	0.52	0.10	ug/L		03/29/21 09:00	03/30/21 12:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*		*44 - 102*	*03/29/21 09:00*	*03/30/21 12:35*	*1*
Nitrobenzene-d5 (Surr)	*99*		*23 - 128*	*03/29/21 09:00*	*03/30/21 12:35*	*1*
p-Terphenyl-d14 (Surr)	*82*		*31 - 113*	*03/29/21 09:00*	*03/30/21 12:35*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 14:53	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 14:53	1
Methane (1C)	**4.1**	**J**	5.0	3.0	ug/L		03/26/21 09:13	03/26/21 14:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*88*		*28 - 140*	*03/26/21 09:13*	*03/26/21 14:53*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		04/01/21 18:00	04/02/21 08:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*91*		*46 - 136*	*04/01/21 18:00*	*04/02/21 08:49*	*1*

Client Sample ID: S-393D-20210323

Date Collected: 03/23/21 12:10
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-6

Matrix: Water

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*104*		*46 - 136*	*04/01/21 18:00*	*04/02/21 08:49*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**250**		50	15	mg/L			03/30/21 20:14	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**55**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 12:57	1
Iron	**20**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 12:57	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.25**	**J**	0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**130**		8.0	8.0	mg/L			03/27/21 02:35	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 11:51	1
Total Carbon	**39**		2.0	1.0	mg/L			03/31/21 14:53	2
Total Organic Carbon	**1.7**		1.0	0.50	mg/L			03/26/21 15:03	1
Total Inorganic Carbon	**37**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-458-20210323

Date Collected: 03/23/21 12:10
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-7

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	2.0	ug/L			03/29/21 19:29	5
1,2-Dichloroethane	**6.4**		5.0	1.5	ug/L			03/29/21 19:29	5
1,3,5-Trimethylbenzene	**2.3**	**J**	25	1.5	ug/L			03/29/21 19:29	5
Toluene	**2.5**	**J**	5.0	1.0	ug/L			03/29/21 19:29	5
Xylenes, Total	ND		30	7.0	ug/L			03/29/21 19:29	5
Methyl tert-butyl ether	ND		5.0	1.0	ug/L			03/29/21 19:29	5
Benzene	**270**		5.0	1.0	ug/L			03/29/21 19:29	5
Naphthalene	ND		25	5.0	ug/L			03/29/21 19:29	5
1,2,4-Trimethylbenzene	**5.2**	**J**	25	5.0	ug/L			03/29/21 19:29	5
Isopropylbenzene	ND		25	1.0	ug/L			03/29/21 19:29	5
t-Butyl alcohol	ND		250	60	ug/L			03/29/21 19:29	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/29/21 19:29*	*5*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*03/29/21 19:29*	*5*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*03/29/21 19:29*	*5*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/29/21 19:29*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:03	1
Benzo[a]anthracene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:03	1

Client Sample ID: S-458-20210323

Date Collected: 03/23/21 12:10
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-7

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.53	0.12	ug/L		03/29/21 09:00	03/30/21 13:03	1
Benzo[b]fluoranthene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:03	1
Benzo[g,h,i]perylene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:03	1
Chrysene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:03	1
Fluorene	ND		0.53	0.13	ug/L		03/29/21 09:00	03/30/21 13:03	1
Naphthalene	**0.67**		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:03	1
Phenanthrene	**0.22**	**J**	0.53	0.12	ug/L		03/29/21 09:00	03/30/21 13:03	1
Pyrene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*44 - 102*	*03/29/21 09:00*	*03/30/21 13:03*	*1*
Nitrobenzene-d5 (Surr)	*97*		*23 - 128*	*03/29/21 09:00*	*03/30/21 13:03*	*1*
p-Terphenyl-d14 (Surr)	*104*		*31 - 113*	*03/29/21 09:00*	*03/30/21 13:03*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 15:11	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 15:11	1
Methane (1C)	**17**		5.0	3.0	ug/L		03/26/21 09:13	03/26/21 15:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*86*		*28 - 140*	*03/26/21 09:13*	*03/26/21 15:11*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/01/21 18:00	04/02/21 09:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*	*04/01/21 18:00*	*04/02/21 09:06*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*103*		*46 - 136*	*04/01/21 18:00*	*04/02/21 09:06*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**89**		50	15	mg/L			03/30/21 15:49	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**		0.50	0.096	mg/L		03/25/21 21:54	03/26/21 12:35	1
Iron	**3.3**		0.20	0.040	mg/L		03/25/21 21:54	03/26/21 12:35	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**370**		8.0	8.0	mg/L			03/27/21 01:59	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 11:57	1
Total Carbon	**81**		10	5.0	mg/L			03/31/21 15:37	10
Total Organic Carbon	**3.0**		1.0	0.50	mg/L			03/26/21 17:37	1
Total Inorganic Carbon	**78**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: MW-36-20210323

Date Collected: 03/23/21 14:05
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-8

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**250**		100	40	ug/L			03/29/21 19:53	100
1,2-Dichloroethane	**1600**		100	30	ug/L			03/29/21 19:53	100
1,3,5-Trimethylbenzene	**49**	**J**	500	30	ug/L			03/29/21 19:53	100
Toluene	**12000**		100	20	ug/L			03/29/21 19:53	100
Xylenes, Total	**920**		600	140	ug/L			03/29/21 19:53	100
Methyl tert-butyl ether	**40**	**J**	100	20	ug/L			03/29/21 19:53	100
Naphthalene	**670**		500	100	ug/L			03/29/21 19:53	100
1,2,4-Trimethylbenzene	**130**	**J**	500	100	ug/L			03/29/21 19:53	100
Isopropylbenzene	**83**	**J**	500	20	ug/L			03/29/21 19:53	100
t-Butyl alcohol	ND		5000	1200	ug/L			03/29/21 19:53	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*03/29/21 19:53*	*100*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*		*03/29/21 19:53*	*100*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*03/29/21 19:53*	*100*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/29/21 19:53*	*100*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**550000**		5000	1000	ug/L			03/30/21 14:48	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*03/30/21 14:48*	*5000*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*03/30/21 14:48*	*5000*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*03/30/21 14:48*	*5000*
Toluene-d8 (Surr)	*105*		*80 - 120*		*03/30/21 14:48*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**1.4**		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:31	1
Benzo[a]anthracene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:31	1
Benzo[a]pyrene	ND		0.53	0.12	ug/L		03/29/21 09:00	03/30/21 13:31	1
Benzo[b]fluoranthene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:31	1
Benzo[g,h,i]perylene	ND		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:31	1
Chrysene	**0.12**	**J**	0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:31	1
Fluorene	**8.3**		0.53	0.13	ug/L		03/29/21 09:00	03/30/21 13:31	1
Phenanthrene	**8.1**		0.53	0.12	ug/L		03/29/21 09:00	03/30/21 13:31	1
Pyrene	**0.72**		0.53	0.11	ug/L		03/29/21 09:00	03/30/21 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*44 - 102*	*03/29/21 09:00*	*03/30/21 13:31*	*1*
Nitrobenzene-d5 (Surr)	*93*		*23 - 128*	*03/29/21 09:00*	*03/30/21 13:31*	*1*
p-Terphenyl-d14 (Surr)	*95*		*31 - 113*	*03/29/21 09:00*	*03/30/21 13:31*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**550**		2.7	0.53	ug/L		03/29/21 09:00	04/02/21 02:43	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*84*		*44 - 102*	*03/29/21 09:00*	*04/02/21 02:43*	*5*
Nitrobenzene-d5 (Surr)	*98*		*23 - 128*	*03/29/21 09:00*	*04/02/21 02:43*	*5*

Client Sample ID: MW-36-20210323

Date Collected: 03/23/21 14:05
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-8

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl-d14 (Surr)	*107*		*31 - 113*	*03/29/21 09:00*	*04/02/21 02:43*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	7.7		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 15:29	1
Ethene (1C)	20		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 15:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*88*		*28 - 140*	*03/26/21 09:13*	*03/26/21 15:29*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	7900		250	150	ug/L		03/30/21 11:11	03/30/21 21:57	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*107*		*28 - 140*	*03/30/21 11:11*	*03/30/21 21:57*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (2C)	ND		0.029	0.0096	ug/L		04/01/21 18:00	04/02/21 09:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	*120*		*46 - 136*	*04/01/21 18:00*	*04/02/21 09:23*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*109*		*46 - 136*	*04/01/21 18:00*	*04/02/21 09:23*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.1	J FL	5.0	1.5	mg/L			04/01/21 16:32	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	290		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 13:00	1
Iron	67		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 13:00	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/26/21 04:27	03/26/21 15:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	520		8.0	8.0	mg/L			03/27/21 01:18	1
Total Kjeldahl Nitrogen	12		5.0	2.5	mg/L		03/26/21 07:10	03/30/21 12:31	5
Total Carbon	470		25	13	mg/L			03/31/21 16:09	25
Total Organic Carbon	180		5.0	2.5	mg/L			03/26/21 17:51	5
Total Inorganic Carbon	290		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-462-20210323

Date Collected: 03/23/21 14:15
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-9

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**17**		1.0	0.40	ug/L			03/29/21 15:04	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/29/21 15:04	1
1,3,5-Trimethylbenzene	**18**		5.0	0.30	ug/L			03/29/21 15:04	1
Toluene	**1.8**		1.0	0.20	ug/L			03/29/21 15:04	1
Xylenes, Total	**100**		6.0	1.4	ug/L			03/29/21 15:04	1
Methyl tert-butyl ether	**9.5**		1.0	0.20	ug/L			03/29/21 15:04	1
Benzene	**39**		1.0	0.20	ug/L			03/29/21 15:04	1
Naphthalene	**5.5**		5.0	1.0	ug/L			03/29/21 15:04	1
1,2,4-Trimethylbenzene	**47**		5.0	1.0	ug/L			03/29/21 15:04	1
Isopropylbenzene	**2.2**	**J**	5.0	0.20	ug/L			03/29/21 15:04	1
t-Butyl alcohol	**20**	**J**	50	12	ug/L			03/29/21 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*03/29/21 15:04*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*03/29/21 15:04*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*03/29/21 15:04*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*03/29/21 15:04*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 13:59	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 13:59	1
Benzo[a]pyrene	ND		0.52	0.11	ug/L		03/29/21 09:00	03/30/21 13:59	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 13:59	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 13:59	1
Chrysene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 13:59	1
Fluorene	ND		0.52	0.12	ug/L		03/29/21 09:00	03/30/21 13:59	1
Naphthalene	**2.2**		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 13:59	1
Phenanthrene	ND		0.52	0.11	ug/L		03/29/21 09:00	03/30/21 13:59	1
Pyrene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*44 - 102*	*03/29/21 09:00*	*03/30/21 13:59*	*1*
Nitrobenzene-d5 (Surr)	*93*		*23 - 128*	*03/29/21 09:00*	*03/30/21 13:59*	*1*
p-Terphenyl-d14 (Surr)	*82*		*31 - 113*	*03/29/21 09:00*	*03/30/21 13:59*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 15:47	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 15:47	1
Methane (1C)	**7.9**		5.0	3.0	ug/L		03/26/21 09:13	03/26/21 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*90*		*28 - 140*	*03/26/21 09:13*	*03/26/21 15:47*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		04/01/21 18:00	04/02/21 09:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*104*		*46 - 136*	*04/01/21 18:00*	*04/02/21 09:40*	*1*

Client Sample ID: S-462-20210323 — Lab Sample ID: 410-33523-9

Date Collected: 03/23/21 14:15 — **Matrix: Water**
Date Received: 03/24/21 17:03

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*98*		*46 - 136*	*04/01/21 18:00*	*04/02/21 09:40*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**190**		50	15	mg/L			03/30/21 16:55	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**72**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 12:52	1
Iron	**20**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 12:52	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**160**		8.0	8.0	mg/L			03/27/21 02:22	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:22	1
Total Carbon	**46**		2.0	1.0	mg/L			03/31/21 16:20	2
Total Organic Carbon	**3.5**		1.0	0.50	mg/L			03/26/21 18:05	1
Total Inorganic Carbon	**43**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-460-20210323 — Lab Sample ID: 410-33523-10

Date Collected: 03/23/21 16:05 — **Matrix: Water**
Date Received: 03/24/21 17:03

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**4.7**		1.0	0.40	ug/L			03/29/21 15:28	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/29/21 15:28	1
1,3,5-Trimethylbenzene	**3.9**	**J**	5.0	0.30	ug/L			03/29/21 15:28	1
Toluene	**0.68**	**J**	1.0	0.20	ug/L			03/29/21 15:28	1
Xylenes, Total	**12**		6.0	1.4	ug/L			03/29/21 15:28	1
Methyl tert-butyl ether	**2.3**		1.0	0.20	ug/L			03/29/21 15:28	1
Benzene	**22**		1.0	0.20	ug/L			03/29/21 15:28	1
Naphthalene	**22**		5.0	1.0	ug/L			03/29/21 15:28	1
1,2,4-Trimethylbenzene	**12**		5.0	1.0	ug/L			03/29/21 15:28	1
Isopropylbenzene	**1.3**	**J**	5.0	0.20	ug/L			03/29/21 15:28	1
t-Butyl alcohol	ND		50	12	ug/L			03/29/21 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*03/29/21 15:28*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*03/29/21 15:28*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*03/29/21 15:28*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*03/29/21 15:28*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.36**	**J**	0.52	0.10	ug/L		03/29/21 09:00	03/30/21 14:27	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 14:27	1

Client Sample ID: S-460-20210323

Date Collected: 03/23/21 16:05
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-10

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.52	0.12	ug/L		03/29/21 09:00	03/30/21 14:27	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 14:27	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 14:27	1
Chrysene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 14:27	1
Fluorene	**1.2**		0.52	0.13	ug/L		03/29/21 09:00	03/30/21 14:27	1
Naphthalene	**1.8**		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 14:27	1
Phenanthrene	**1.6**		0.52	0.12	ug/L		03/29/21 09:00	03/30/21 14:27	1
Pyrene	ND		0.52	0.10	ug/L		03/29/21 09:00	03/30/21 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*44 - 102*	*03/29/21 09:00*	*03/30/21 14:27*	*1*
Nitrobenzene-d5 (Surr)	*89*		*23 - 128*	*03/29/21 09:00*	*03/30/21 14:27*	*1*
p-Terphenyl-d14 (Surr)	*72*		*31 - 113*	*03/29/21 09:00*	*03/30/21 14:27*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 16:05	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 16:05	1
Methane (1C)	**28**		5.0	3.0	ug/L		03/26/21 09:13	03/26/21 16:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*90*		*28 - 140*	*03/26/21 09:13*	*03/26/21 16:05*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0097	ug/L		04/01/21 18:00	04/02/21 09:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*	*04/01/21 18:00*	*04/02/21 09:56*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*101*		*46 - 136*	*04/01/21 18:00*	*04/02/21 09:56*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**250**		50	15	mg/L			03/30/21 15:15	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**50**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 12:54	1
Iron	**26**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 12:54	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.11**	**J**	0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**110**		8.0	8.0	mg/L			03/27/21 02:29	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:10	1
Total Carbon	**42**		2.0	1.0	mg/L			03/31/21 16:31	2
Total Organic Carbon	**2.5**		1.0	0.50	mg/L			03/26/21 18:19	1
Total Inorganic Carbon	**40**		2.0	0.60	mg/L			04/01/21 13:56	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: TB-20210324

Date Collected: 03/24/21 00:00
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-11

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			03/29/21 12:39	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/29/21 12:39	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/29/21 12:39	1
Toluene	ND		1.0	0.20	ug/L			03/29/21 12:39	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/29/21 12:39	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			03/29/21 12:39	1
Benzene	ND		1.0	0.20	ug/L			03/29/21 12:39	1
Naphthalene	ND		5.0	1.0	ug/L			03/29/21 12:39	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/29/21 12:39	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/29/21 12:39	1
t-Butyl alcohol	ND		50	12	ug/L			03/29/21 12:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*03/29/21 12:39*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*03/29/21 12:39*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/29/21 12:39*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*03/29/21 12:39*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/01/21 18:00	04/02/21 10:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*	*04/01/21 18:00*	*04/02/21 10:13*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*102*		*46 - 136*	*04/01/21 18:00*	*04/02/21 10:13*	*1*

Client Sample ID: FB-20210324

Date Collected: 03/24/21 08:30
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-12

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			03/29/21 13:04	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/29/21 13:04	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/29/21 13:04	1
Toluene	ND		1.0	0.20	ug/L			03/29/21 13:04	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/29/21 13:04	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			03/29/21 13:04	1
Benzene	ND		1.0	0.20	ug/L			03/29/21 13:04	1
Naphthalene	ND		5.0	1.0	ug/L			03/29/21 13:04	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/29/21 13:04	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/29/21 13:04	1
t-Butyl alcohol	ND		50	12	ug/L			03/29/21 13:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/29/21 13:04*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*03/29/21 13:04*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/29/21 13:04*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/29/21 13:04*	*1*

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: FB-20210324
Date Collected: 03/24/21 08:30
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-12
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 14:55	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 14:55	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		03/29/21 09:00	03/30/21 14:55	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 14:55	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 14:55	1
Chrysene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 14:55	1
Fluorene	ND		0.51	0.12	ug/L		03/29/21 09:00	03/30/21 14:55	1
Naphthalene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 14:55	1
Phenanthrene	ND		0.51	0.11	ug/L		03/29/21 09:00	03/30/21 14:55	1
Pyrene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*44 - 102*	*03/29/21 09:00*	*03/30/21 14:55*	*1*
Nitrobenzene-d5 (Surr)	*85*		*23 - 128*	*03/29/21 09:00*	*03/30/21 14:55*	*1*
p-Terphenyl-d14 (Surr)	*89*		*31 - 113*	*03/29/21 09:00*	*03/30/21 14:55*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 16:23	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 16:23	1
Methane (1C)	ND		5.0	3.0	ug/L		03/26/21 09:13	03/26/21 16:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*101*		*28 - 140*	*03/26/21 09:13*	*03/26/21 16:23*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/01/21 18:00	04/02/21 10:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*90*		*46 - 136*	*04/01/21 18:00*	*04/02/21 10:30*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*	*04/01/21 18:00*	*04/02/21 10:30*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			04/03/21 10:07	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**0.15**	**J**	0.50	0.096	mg/L		03/26/21 13:55	03/29/21 18:20	1
Iron	ND		0.20	0.040	mg/L		03/26/21 13:55	03/29/21 18:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			03/27/21 02:49	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:04	1
Total Carbon	ND		1.0	0.50	mg/L			03/31/21 17:04	1
Total Organic Carbon	ND		1.0	0.50	mg/L			03/26/21 19:01	1
Total Inorganic Carbon	ND		2.0	0.60	mg/L			04/01/21 13:56	1

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: EB-20210324

Date Collected: 03/24/21 08:40
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-13

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			03/29/21 13:28	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/29/21 13:28	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/29/21 13:28	1
Toluene	ND		1.0	0.20	ug/L			03/29/21 13:28	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/29/21 13:28	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			03/29/21 13:28	1
Benzene	ND		1.0	0.20	ug/L			03/29/21 13:28	1
Naphthalene	ND		5.0	1.0	ug/L			03/29/21 13:28	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/29/21 13:28	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/29/21 13:28	1
t-Butyl alcohol	ND		50	12	ug/L			03/29/21 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*03/29/21 13:28*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*03/29/21 13:28*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*03/29/21 13:28*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/29/21 13:28*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:23	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:23	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		03/29/21 09:00	03/30/21 15:23	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:23	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:23	1
Chrysene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:23	1
Fluorene	ND		0.51	0.12	ug/L		03/29/21 09:00	03/30/21 15:23	1
Naphthalene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:23	1
Phenanthrene	ND		0.51	0.11	ug/L		03/29/21 09:00	03/30/21 15:23	1
Pyrene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*44 - 102*	*03/29/21 09:00*	*03/30/21 15:23*	*1*
Nitrobenzene-d5 (Surr)	*97*		*23 - 128*	*03/29/21 09:00*	*03/30/21 15:23*	*1*
p-Terphenyl-d14 (Surr)	*104*		*31 - 113*	*03/29/21 09:00*	*03/30/21 15:23*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 16:41	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 16:41	1
Methane (1C)	ND		5.0	3.0	ug/L		03/26/21 09:13	03/26/21 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*03/26/21 09:13*	*03/26/21 16:41*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/01/21 18:00	04/02/21 10:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*84*		*46 - 136*	*04/01/21 18:00*	*04/02/21 10:47*	*1*

Client Sample ID: EB-20210324

Date Collected: 03/24/21 08:40
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-13

Matrix: Water

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*100*		*46 - 136*	*04/01/21 18:00*	*04/02/21 10:47*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			03/30/21 14:42	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**0.15**	**J**	0.50	0.096	mg/L		03/26/21 13:55	03/29/21 18:17	1
Iron	ND		0.20	0.040	mg/L		03/26/21 13:55	03/29/21 18:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			03/27/21 02:42	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:08	1
Total Carbon	ND		1.0	0.50	mg/L			03/31/21 17:14	1
Total Organic Carbon	ND		1.0	0.50	mg/L			03/26/21 19:15	1
Total Inorganic Carbon	ND		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-459-20210324

Date Collected: 03/24/21 08:30
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-14

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**14**		1.0	0.40	ug/L			03/29/21 15:52	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/29/21 15:52	1
1,3,5-Trimethylbenzene	**14**		5.0	0.30	ug/L			03/29/21 15:52	1
Toluene	**0.63**	**J**	1.0	0.20	ug/L			03/29/21 15:52	1
Xylenes, Total	**49**		6.0	1.4	ug/L			03/29/21 15:52	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			03/29/21 15:52	1
Benzene	**13**		1.0	0.20	ug/L			03/29/21 15:52	1
Naphthalene	**36**		5.0	1.0	ug/L			03/29/21 15:52	1
1,2,4-Trimethylbenzene	**40**		5.0	1.0	ug/L			03/29/21 15:52	1
Isopropylbenzene	**3.3**	**J**	5.0	0.20	ug/L			03/29/21 15:52	1
t-Butyl alcohol	ND		50	12	ug/L			03/29/21 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*03/29/21 15:52*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*03/29/21 15:52*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*03/29/21 15:52*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*03/29/21 15:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.14**	**J**	0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:51	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:51	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		03/29/21 09:00	03/30/21 15:51	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:51	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:51	1
Chrysene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:51	1

Client Sample ID: S-459-20210324

Date Collected: 03/24/21 08:30
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-14

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**0.92**		0.51	0.12	ug/L		03/29/21 09:00	03/30/21 15:51	1
Naphthalene	**28**		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:51	1
Phenanthrene	**0.52**		0.51	0.11	ug/L		03/29/21 09:00	03/30/21 15:51	1
Pyrene	ND		0.51	0.10	ug/L		03/29/21 09:00	03/30/21 15:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*		*44 - 102*	*03/29/21 09:00*	*03/30/21 15:51*	*1*
Nitrobenzene-d5 (Surr)	*95*		*23 - 128*	*03/29/21 09:00*	*03/30/21 15:51*	*1*
p-Terphenyl-d14 (Surr)	*89*		*31 - 113*	*03/29/21 09:00*	*03/30/21 15:51*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/05/21 09:39	04/05/21 16:30	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/05/21 09:39	04/05/21 16:30	1
Methane (1C)	**14**		5.0	3.0	ug/L		04/05/21 09:39	04/05/21 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*87*		*28 - 140*	*04/05/21 09:39*	*04/05/21 16:30*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/01/21 18:00	04/02/21 11:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*100*		*46 - 136*	*04/01/21 18:00*	*04/02/21 11:03*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*04/01/21 18:00*	*04/02/21 11:03*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**320**		200	60	mg/L			03/31/21 01:19	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**58**		0.50	0.096	mg/L		03/26/21 02:02	03/26/21 13:08	1
Iron	**27**		0.20	0.040	mg/L		03/26/21 02:02	03/26/21 13:08	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.15**	**J**	0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**150**		8.0	8.0	mg/L			03/27/21 01:52	1
Total Kjeldahl Nitrogen	**0.57**	**J**	1.0	0.50	mg/L		03/26/21 07:10	03/30/21 12:06	1
Total Carbon	**50**		2.0	1.0	mg/L			03/31/21 17:25	2
Total Organic Carbon	**4.0**		1.0	0.50	mg/L			03/26/21 19:30	1
Total Inorganic Carbon	**46**		2.0	0.60	mg/L			04/01/21 13:56	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-33523-1	S-463-20210322	91	95	96	108
410-33523-1 - DL	S-463-20210322	94	94	98	106
410-33523-2	S-461-20210322	94	95	98	106
410-33523-2 - DL	S-461-20210322	95	94	99	105
410-33523-3	S-464-20210322	91	95	95	106
410-33523-3 - DL	S-464-20210322	93	95	98	106
410-33523-4	TW-5-20210323	91	93	94	108
410-33523-4 - DL	TW-5-20210323	95	99	98	97
410-33523-5	MW-37-20210323	90	93	93	108
410-33523-5 - DL	MW-37-20210323	94	96	99	99
410-33523-6	S-393D-20210323	96	93	100	105
410-33523-7	S-458-20210323	94	105	102	96
410-33523-8	MW-36-20210323	97	110	98	97
410-33523-8 - DL	MW-36-20210323	95	94	101	105
410-33523-9	S-462-20210323	93	104	101	97
410-33523-10	S-460-20210323	96	102	103	94
410-33523-11	TB-20210324	91	101	99	98
410-33523-12	FB-20210324	94	100	99	96
410-33523-13	EB-20210324	97	100	103	96
410-33523-14	S-459-20210324	93	106	102	96
LCS 410-108244/4	Lab Control Sample	100	105	100	97
LCS 410-108729/4	Lab Control Sample	95	99	97	108
LCS 410-109781/4	Lab Control Sample	100	102	97	99
LCSD 410-108244/5	Lab Control Sample Dup	100	104	99	97
LCSD 410-108729/5	Lab Control Sample Dup	94	98	96	107
LCSD 410-109781/5	Lab Control Sample Dup	99	101	101	98
MB 410-108244/6	Method Blank	94	103	101	95
MB 410-108729/6	Method Blank	94	96	98	107
MB 410-109781/6	Method Blank	95	97	100	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)
410-33523-1	S-463-20210322	70	70	47
410-33523-2	S-461-20210322	69	50	76
410-33523-3	S-464-20210322	74	68	82
410-33523-4	TW-5-20210323	72	89	98
410-33523-5	MW-37-20210323	74	33	73
410-33523-6	S-393D-20210323	80	99	82
410-33523-7	S-458-20210323	79	97	104
410-33523-8	MW-36-20210323	71	93	95

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-33523-1
Project/Site: PHL Belmont Terminal GW Sampling

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	FBP (44-102)	NBZ (23-128)	TPHd14 (31-113)
410-33523-8 - DL	MW-36-20210323	84	98	107
410-33523-9	S-462-20210323	76	93	82
410-33523-10	S-460-20210323	75	89	72
410-33523-12	FB-20210324	72	85	89
410-33523-13	EB-20210324	83	97	104
410-33523-14	S-459-20210324	80	95	89
LCS 410-107953/2-A	Lab Control Sample	84	85	103
LCS 410-108180/2-A	Lab Control Sample	76	94	99
LCSD 410-108180/3-A	Lab Control Sample Dup	73	90	94
MB 410-107953/1-A	Method Blank	78	76	94
MB 410-108180/1-A	Method Blank	61	76	83

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	Propene1 (28-140)
410-33523-1	S-463-20210322	88
410-33523-2	S-461-20210322	79
410-33523-2 - DL	S-461-20210322	105
410-33523-3	S-464-20210322	91
410-33523-3 - DL	S-464-20210322	108
410-33523-4	TW-5-20210323	80
410-33523-4 - DL	TW-5-20210323	93
410-33523-5	MW-37-20210323	83
410-33523-5 - DL	MW-37-20210323	95
410-33523-6	S-393D-20210323	88
410-33523-7	S-458-20210323	86
410-33523-8	MW-36-20210323	88
410-33523-8 - DL	MW-36-20210323	107
410-33523-9	S-462-20210323	90
410-33523-10	S-460-20210323	90
410-33523-12	FB-20210324	101
410-33523-13	EB-20210324	98
410-33523-14	S-459-20210324	87
LCS 410-107588/2-A	Lab Control Sample	101
LCS 410-108835/2-A	Lab Control Sample	97
LCS 410-110753/2-A	Lab Control Sample	97
LCSD 410-107588/3-A	Lab Control Sample Dup	105
LCSD 410-110753/3-A	Lab Control Sample Dup	103
MB 410-107588/1-A	Method Blank	100
MB 410-108835/1-A	Method Blank	100
MB 410-110753/1-A	Method Blank	102

Surrogate Legend

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-33523-1
Project/Site: PHL Belmont Terminal GW Sampling

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		1122TCA1	1122TCA2								
Lab Sample ID	Client Sample ID	(46-136)	(46-136)								
410-33523-1	S-463-20210322	84	101								
410-33523-2	S-461-20210322	88	102								
410-33523-3	S-464-20210322	80	97								
410-33523-4	TW-5-20210323	77	115								
410-33523-5	MW-37-20210323	95	134								
410-33523-6	S-393D-20210323	91	104								
410-33523-7	S-458-20210323	88	103								
410-33523-8	MW-36-20210323	120	109								
410-33523-9	S-462-20210323	104	98								
410-33523-10	S-460-20210323	89	101								
410-33523-11	TB-20210324	89	102								
410-33523-12	FB-20210324	90	105								
410-33523-13	EB-20210324	84	100								
410-33523-14	S-459-20210324	100	106								
LCS 410-110041/2-A	Lab Control Sample	89	101								
LCS 410-110574/2-A	Lab Control Sample	88	103								
LCSD 410-110041/3-A	Lab Control Sample Dup	85	99								
LCSD 410-110574/3-A	Lab Control Sample Dup	87	101								
MB 410-110041/1-A	Method Blank	88	101								
MB 410-110574/1-A	Method Blank	85	99								

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-108244/6
Matrix: Water
Analysis Batch: 108244

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			03/29/21 11:57	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/29/21 11:57	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/29/21 11:57	1
Toluene	ND		1.0	0.20	ug/L			03/29/21 11:57	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/29/21 11:57	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			03/29/21 11:57	1
Benzene	ND		1.0	0.20	ug/L			03/29/21 11:57	1
Naphthalene	ND		5.0	1.0	ug/L			03/29/21 11:57	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/29/21 11:57	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/29/21 11:57	1
t-Butyl alcohol	ND		50	12	ug/L			03/29/21 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/29/21 11:57*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*03/29/21 11:57*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*03/29/21 11:57*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*03/29/21 11:57*	*1*

Lab Sample ID: LCS 410-108244/4
Matrix: Water
Analysis Batch: 108244

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	20.0		ug/L		100	80 - 120
1,2-Dichloroethane	20.0	19.0		ug/L		95	73 - 124
1,3,5-Trimethylbenzene	20.0	19.7		ug/L		99	75 - 120
Toluene	20.0	19.8		ug/L		99	80 - 120
Xylenes, Total	60.0	58.4		ug/L		97	80 - 120
Methyl tert-butyl ether	20.0	19.9		ug/L		99	69 - 122
Benzene	20.0	21.2		ug/L		106	80 - 120
Naphthalene	20.0	18.5		ug/L		92	53 - 124
1,2,4-Trimethylbenzene	20.0	19.4		ug/L		97	75 - 120
Isopropylbenzene	20.0	19.2		ug/L		96	80 - 120
t-Butyl alcohol	200	187		ug/L		94	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCSD 410-108244/5
Matrix: Water
Analysis Batch: 108244

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	20.0	21.7		ug/L		108	80 - 120	8	30
1,2-Dichloroethane	20.0	20.5		ug/L		102	73 - 124	7	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-108244/5
Matrix: Water
Analysis Batch: 108244

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene			20.0	21.0		ug/L		105	75 - 120	6	30
Toluene			20.0	21.7		ug/L		109	80 - 120	9	30
Xylenes, Total			60.0	63.0		ug/L		105	80 - 120	8	30
Methyl tert-butyl ether			20.0	21.6		ug/L		108	69 - 122	8	30
Benzene			20.0	22.9		ug/L		115	80 - 120	8	30
Naphthalene			20.0	19.9		ug/L		99	53 - 124	7	30
1,2,4-Trimethylbenzene			20.0	20.8		ug/L		104	75 - 120	7	30
Isopropylbenzene			20.0	20.5		ug/L		103	80 - 120	7	30
t-Butyl alcohol			200	204		ug/L		102	60 - 130	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: MB 410-108729/6
Matrix: Water
Analysis Batch: 108729

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			03/30/21 10:54	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/30/21 10:54	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			03/30/21 10:54	1
Toluene	ND		1.0	0.20	ug/L			03/30/21 10:54	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/30/21 10:54	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			03/30/21 10:54	1
Benzene	ND		1.0	0.20	ug/L			03/30/21 10:54	1
Naphthalene	ND		5.0	1.0	ug/L			03/30/21 10:54	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			03/30/21 10:54	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/30/21 10:54	1
t-Butyl alcohol	ND		50	12	ug/L			03/30/21 10:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*03/30/21 10:54*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*03/30/21 10:54*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*03/30/21 10:54*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*03/30/21 10:54*	*1*

Lab Sample ID: LCS 410-108729/4
Matrix: Water
Analysis Batch: 108729

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene			20.0	20.0		ug/L		100	80 - 120
1,2-Dichloroethane			20.0	17.6		ug/L		88	73 - 124
1,3,5-Trimethylbenzene			20.0	19.8		ug/L		99	75 - 120
Toluene			20.0	20.6		ug/L		103	80 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-108729/4
Matrix: Water
Analysis Batch: 108729

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Xylenes, Total	60.0	59.3		ug/L		99	80 - 120
Methyl tert-butyl ether	20.0	17.6		ug/L		88	69 - 122
Benzene	20.0	19.7		ug/L		99	80 - 120
Naphthalene	20.0	16.2		ug/L		81	53 - 124
1,2,4-Trimethylbenzene	20.0	19.7		ug/L		98	75 - 120
Isopropylbenzene	20.0	19.7		ug/L		99	80 - 120
t-Butyl alcohol	200	199		ug/L		99	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*108*		*80 - 120*

Lab Sample ID: LCSD 410-108729/5
Matrix: Water
Analysis Batch: 108729

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	20.0	19.5		ug/L		98	80 - 120	2	30
1,2-Dichloroethane	20.0	17.3		ug/L		87	73 - 124	1	30
1,3,5-Trimethylbenzene	20.0	19.4		ug/L		97	75 - 120	2	30
Toluene	20.0	20.1		ug/L		101	80 - 120	2	30
Xylenes, Total	60.0	58.1		ug/L		97	80 - 120	2	30
Methyl tert-butyl ether	20.0	17.6		ug/L		88	69 - 122	0	30
Benzene	20.0	19.3		ug/L		97	80 - 120	2	30
Naphthalene	20.0	16.2		ug/L		81	53 - 124	0	30
1,2,4-Trimethylbenzene	20.0	19.3		ug/L		97	75 - 120	2	30
Isopropylbenzene	20.0	19.4		ug/L		97	80 - 120	2	30
t-Butyl alcohol	200	198		ug/L		99	60 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Sample ID: MB 410-109781/6
Matrix: Water
Analysis Batch: 109781

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			04/01/21 10:52	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/01/21 10:52	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/01/21 10:52	1
Toluene	ND		1.0	0.20	ug/L			04/01/21 10:52	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/01/21 10:52	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/01/21 10:52	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-109781/6
Matrix: Water
Analysis Batch: 109781

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			04/01/21 10:52	1
Naphthalene	ND		5.0	1.0	ug/L			04/01/21 10:52	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/01/21 10:52	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/01/21 10:52	1
t-Butyl alcohol	ND		50	12	ug/L			04/01/21 10:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*04/01/21 10:52*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/01/21 10:52*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/01/21 10:52*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*04/01/21 10:52*	*1*

Lab Sample ID: LCS 410-109781/4
Matrix: Water
Analysis Batch: 109781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			20.0	21.0		ug/L		105	80 - 120		
1,2-Dichloroethane			20.0	19.3		ug/L		97	73 - 124		
1,3,5-Trimethylbenzene			20.0	20.4		ug/L		102	75 - 120		
Toluene			20.0	21.5		ug/L		108	80 - 120		
Xylenes, Total			60.0	61.4		ug/L		102	80 - 120		
Methyl tert-butyl ether			20.0	20.1		ug/L		100	69 - 122		
Benzene			20.0	21.1		ug/L		106	80 - 120		
Naphthalene			20.0	17.9		ug/L		90	53 - 124		
1,2,4-Trimethylbenzene			20.0	20.5		ug/L		103	75 - 120		
Isopropylbenzene			20.0	20.1		ug/L		101	80 - 120		
t-Butyl alcohol			200	205		ug/L		102	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-109781/5
Matrix: Water
Analysis Batch: 109781

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	20.8		ug/L		104	80 - 120	1	30
1,2-Dichloroethane			20.0	19.4		ug/L		97	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	20.6		ug/L		103	75 - 120	1	30
Toluene			20.0	21.3		ug/L		106	80 - 120	1	30
Xylenes, Total			60.0	60.5		ug/L		101	80 - 120	1	30
Methyl tert-butyl ether			20.0	20.0		ug/L		100	69 - 122	0	30
Benzene			20.0	21.1		ug/L		105	80 - 120	0	30
Naphthalene			20.0	18.0		ug/L		90	53 - 124	0	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-109781/5
Matrix: Water
Analysis Batch: 109781

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	20.6		ug/L		103	75 - 120	0	30
Isopropylbenzene			20.0	19.8		ug/L		99	80 - 120	2	30
t-Butyl alcohol			200	210		ug/L		105	60 - 130	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-107953/1-A
Matrix: Water
Analysis Batch: 108484

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107953

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		03/27/21 09:57	03/29/21 21:05	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		03/27/21 09:57	03/29/21 21:05	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		03/27/21 09:57	03/29/21 21:05	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		03/27/21 09:57	03/29/21 21:05	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		03/27/21 09:57	03/29/21 21:05	1
Chrysene	ND		0.50	0.10	ug/L		03/27/21 09:57	03/29/21 21:05	1
Fluorene	ND		0.50	0.12	ug/L		03/27/21 09:57	03/29/21 21:05	1
Naphthalene	ND		0.50	0.10	ug/L		03/27/21 09:57	03/29/21 21:05	1
Phenanthrene	ND		0.50	0.11	ug/L		03/27/21 09:57	03/29/21 21:05	1
Pyrene	ND		0.50	0.10	ug/L		03/27/21 09:57	03/29/21 21:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*78*		*44 - 102*	*03/27/21 09:57*	*03/29/21 21:05*	*1*
Nitrobenzene-d5 (Surr)	*76*		*23 - 128*	*03/27/21 09:57*	*03/29/21 21:05*	*1*
p-Terphenyl-d14 (Surr)	*94*		*31 - 113*	*03/27/21 09:57*	*03/29/21 21:05*	*1*

Lab Sample ID: LCS 410-107953/2-A
Matrix: Water
Analysis Batch: 108484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107953

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			50.0	51.5		ug/L		103	61 - 117		
Benzo[a]anthracene			50.0	51.7		ug/L		103	61 - 126		
Benzo[a]pyrene			50.0	50.5		ug/L		101	60 - 116		
Benzo[b]fluoranthene			50.0	48.2		ug/L		96	61 - 119		
Benzo[g,h,i]perylene			50.0	51.1		ug/L		102	54 - 120		
Chrysene			50.0	53.4		ug/L		107	65 - 121		
Fluorene			50.0	49.3		ug/L		99	56 - 115		
Naphthalene			50.0	43.7		ug/L		87	51 - 102		
Phenanthrene			50.0	52.0		ug/L		104	65 - 113		
Pyrene			50.0	52.0		ug/L		104	65 - 115		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-107953/2-A
Matrix: Water
Analysis Batch: 108484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107953

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*84*		*44 - 102*
Nitrobenzene-d5 (Surr)	*85*		*23 - 128*
p-Terphenyl-d14 (Surr)	*103*		*31 - 113*

Lab Sample ID: MB 410-108180/1-A
Matrix: Water
Analysis Batch: 108735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108180

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		03/29/21 09:00	03/30/21 10:15	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		03/29/21 09:00	03/30/21 10:15	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		03/29/21 09:00	03/30/21 10:15	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		03/29/21 09:00	03/30/21 10:15	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		03/29/21 09:00	03/30/21 10:15	1
Chrysene	ND		0.50	0.10	ug/L		03/29/21 09:00	03/30/21 10:15	1
Fluorene	ND		0.50	0.12	ug/L		03/29/21 09:00	03/30/21 10:15	1
Naphthalene	ND		0.50	0.10	ug/L		03/29/21 09:00	03/30/21 10:15	1
Phenanthrene	ND		0.50	0.11	ug/L		03/29/21 09:00	03/30/21 10:15	1
Pyrene	ND		0.50	0.10	ug/L		03/29/21 09:00	03/30/21 10:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*61*		*44 - 102*	*03/29/21 09:00*	*03/30/21 10:15*	*1*
Nitrobenzene-d5 (Surr)	*76*		*23 - 128*	*03/29/21 09:00*	*03/30/21 10:15*	*1*
p-Terphenyl-d14 (Surr)	*83*		*31 - 113*	*03/29/21 09:00*	*03/30/21 10:15*	*1*

Lab Sample ID: LCS 410-108180/2-A
Matrix: Water
Analysis Batch: 108735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108180

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	50.6		ug/L		101	61 - 117
Benzo[a]anthracene	50.0	52.6		ug/L		105	61 - 126
Benzo[a]pyrene	50.0	50.2		ug/L		100	60 - 116
Benzo[b]fluoranthene	50.0	48.1		ug/L		96	61 - 119
Benzo[g,h,i]perylene	50.0	38.1		ug/L		76	54 - 120
Chrysene	50.0	51.2		ug/L		102	65 - 121
Fluorene	50.0	45.9		ug/L		92	56 - 115
Naphthalene	50.0	40.0		ug/L		80	51 - 102
Phenanthrene	50.0	50.0		ug/L		100	65 - 113
Pyrene	50.0	48.0		ug/L		96	65 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*76*		*44 - 102*
Nitrobenzene-d5 (Surr)	*94*		*23 - 128*
p-Terphenyl-d14 (Surr)	*99*		*31 - 113*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-108180/3-A
Matrix: Water
Analysis Batch: 108735

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 108180

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene			50.0	48.8		ug/L		98	61 - 117	4	30
Benzo[a]anthracene			50.0	49.3		ug/L		99	61 - 126	6	30
Benzo[a]pyrene			50.0	46.5		ug/L		93	60 - 116	8	30
Benzo[b]fluoranthene			50.0	45.8		ug/L		92	61 - 119	5	30
Benzo[g,h,i]perylene			50.0	35.6		ug/L		71	54 - 120	7	30
Chrysene			50.0	48.1		ug/L		96	65 - 121	6	30
Fluorene			50.0	43.2		ug/L		86	56 - 115	6	30
Naphthalene			50.0	38.4		ug/L		77	51 - 102	4	30
Phenanthrene			50.0	48.1		ug/L		96	65 - 113	4	30
Pyrene			50.0	46.0		ug/L		92	65 - 115	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*73*		*44 - 102*
Nitrobenzene-d5 (Surr)	*90*		*23 - 128*
p-Terphenyl-d14 (Surr)	*94*		*31 - 113*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-107588/1-A
Matrix: Water
Analysis Batch: 107594

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107588

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 10:55	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/26/21 09:13	03/26/21 10:55	1
Methane (1C)	ND		5.0	3.0	ug/L		03/26/21 09:13	03/26/21 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*100*		*28 - 140*	*03/26/21 09:13*	*03/26/21 10:55*	*1*

Lab Sample ID: LCS 410-107588/2-A
Matrix: Water
Analysis Batch: 107594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107588

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	58.3		ug/L		98	85 - 115
Ethene (1C)			60.4	59.6		ug/L		99	83 - 115
Methane (1C)			59.4	60.6		ug/L		102	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 140*

Lab Sample ID: LCSD 410-107588/3-A
Matrix: Water
Analysis Batch: 107594

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 107588

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	60.5		ug/L		102	85 - 115	4	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-107588/3-A
Matrix: Water
Analysis Batch: 107594

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 107588

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethene (1C)			60.4	62.5		ug/L		104	83 - 115	5	20
Methane (1C)			59.4	63.0		ug/L		106	85 - 115	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*105*		*28 - 140*

Lab Sample ID: MB 410-108835/1-A
Matrix: Water
Analysis Batch: 108837

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108835

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		03/30/21 11:11	03/30/21 18:18	1
Ethene (1C)	ND		5.0	1.0	ug/L		03/30/21 11:11	03/30/21 18:18	1
Methane (1C)	ND		5.0	3.0	ug/L		03/30/21 11:11	03/30/21 18:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*100*		*28 - 140*	*03/30/21 11:11*	*03/30/21 18:18*	*1*

Lab Sample ID: LCS 410-108835/2-A
Matrix: Water
Analysis Batch: 108837

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108835

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	56.8		ug/L		96	85 - 115
Ethene (1C)			60.4	58.3		ug/L		97	83 - 115
Methane (1C)			59.4	56.5		ug/L		95	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*97*		*28 - 140*

Lab Sample ID: MB 410-110753/1-A
Matrix: Water
Analysis Batch: 110717

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/05/21 09:39	04/05/21 10:47	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/05/21 09:39	04/05/21 10:47	1
Methane (1C)	ND		5.0	3.0	ug/L		04/05/21 09:39	04/05/21 10:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*102*		*28 - 140*	*04/05/21 09:39*	*04/05/21 10:47*	*1*

Lab Sample ID: LCS 410-110753/2-A
Matrix: Water
Analysis Batch: 110717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110753

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	61.8		ug/L		104	85 - 115

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-110753/2-A
Matrix: Water
Analysis Batch: 110717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110753

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethene (1C)			60.4	62.7		ug/L		104	83 - 115		
Methane (1C)			59.4	63.8		ug/L		107	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*97*		*28 - 140*

Lab Sample ID: LCSD 410-110753/3-A
Matrix: Water
Analysis Batch: 110717

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 110753

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	61.4		ug/L		103	85 - 115	1	20
Ethene (1C)			60.4	62.2		ug/L		103	83 - 115	1	20
Methane (1C)			59.4	63.9		ug/L		108	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*103*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-110041/1-A
Matrix: Water
Analysis Batch: 110184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110041

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		04/01/21 18:00	04/02/21 06:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*	*04/01/21 18:00*	*04/02/21 06:53*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*101*		*46 - 136*	*04/01/21 18:00*	*04/02/21 06:53*	*1*

Lab Sample ID: LCS 410-110041/2-A
Matrix: Water
Analysis Batch: 110184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110041

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.126		ug/L		99	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*101*		*46 - 136*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCSD 410-110041/3-A
Matrix: Water
Analysis Batch: 110184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 110041

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.123		ug/L		96	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*99*		*46 - 136*

Lab Sample ID: MB 410-110574/1-A
Matrix: Water
Analysis Batch: 110636

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110574

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		04/04/21 07:49	04/05/21 06:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*	*04/04/21 07:49*	*04/05/21 06:27*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*99*		*46 - 136*	*04/04/21 07:49*	*04/05/21 06:27*	*1*

Lab Sample ID: LCS 410-110574/2-A
Matrix: Water
Analysis Batch: 110636

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110574

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.118		ug/L		92	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*103*		*46 - 136*

Lab Sample ID: LCSD 410-110574/3-A
Matrix: Water
Analysis Batch: 110636

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 110574

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.116		ug/L		91	60 - 140	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*87*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*101*		*46 - 136*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-108868/4
Matrix: Water
Analysis Batch: 108868

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			03/30/21 11:29	1

Lab Sample ID: LCS 410-108868/3
Matrix: Water
Analysis Batch: 108868

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.67		mg/L		102	90 - 110

Lab Sample ID: MB 410-108912/4
Matrix: Water
Analysis Batch: 108912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			03/30/21 12:36	1

Lab Sample ID: LCS 410-108912/3
Matrix: Water
Analysis Batch: 108912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.46		mg/L		100	90 - 110

Lab Sample ID: MB 410-108929/4
Matrix: Water
Analysis Batch: 108929

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			03/30/21 11:28	1

Lab Sample ID: LCS 410-108929/3
Matrix: Water
Analysis Batch: 108929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.85		mg/L		105	90 - 110

Lab Sample ID: MB 410-109002/4
Matrix: Water
Analysis Batch: 109002

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			03/30/21 18:45	1

Lab Sample ID: LCS 410-109002/3
Matrix: Water
Analysis Batch: 109002

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.63		mg/L		102	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-110015/4
Matrix: Water
Analysis Batch: 110015

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			04/01/21 15:22	1

Lab Sample ID: LCS 410-110015/3
Matrix: Water
Analysis Batch: 110015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.60		mg/L		101	90 - 110

Lab Sample ID: 410-33523-8 MS
Matrix: Water
Analysis Batch: 110015

Client Sample ID: MW-36-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	3.1	J FL	25.0	2.62	J FL	mg/L		-2	90 - 110

Lab Sample ID: 410-33523-8 DU
Matrix: Water
Analysis Batch: 110015

Client Sample ID: MW-36-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	3.1	J FL	3.03	J	mg/L		2	15

Lab Sample ID: MB 410-110253/4
Matrix: Water
Analysis Batch: 110253

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			04/03/21 07:42	1

Lab Sample ID: LCS 410-110253/3
Matrix: Water
Analysis Batch: 110253

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.78		mg/L		104	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-107437/1-A
Matrix: Water
Analysis Batch: 107730

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 107437

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		03/25/21 21:54	03/26/21 11:46	1
Iron	ND		0.20	0.040	mg/L		03/25/21 21:54	03/26/21 11:46	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-107437/2-A
Matrix: Water
Analysis Batch: 107730

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 107437

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.414	J	mg/L		103	80 - 120
Iron	0.400	0.404		mg/L		101	80 - 120

Lab Sample ID: MB 410-107734/1-A
Matrix: Water
Analysis Batch: 108635

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 107734

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		03/26/21 13:55	03/29/21 17:52	1
Iron	ND		0.20	0.040	mg/L		03/26/21 13:55	03/29/21 17:52	1

Lab Sample ID: LCS 410-107734/2-A
Matrix: Water
Analysis Batch: 108635

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 107734

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.421	J	mg/L		105	80 - 120
Iron	0.400	0.435		mg/L		109	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-107466/1-A
Matrix: Water
Analysis Batch: 107932

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107466

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		03/26/21 04:26	03/26/21 15:13	1

Lab Sample ID: LCS 410-107466/2-A
Matrix: Water
Analysis Batch: 107932

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107466

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	32.2		ug/L		107	90 - 115

Lab Sample ID: 410-33523-6 MS
Matrix: Water
Analysis Batch: 107932

Client Sample ID: S-393D-20210323
Prep Type: Dissolved
Prep Batch: 107466

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.25	J	30.0	30.6		ug/L		101	75 - 125

Lab Sample ID: 410-33523-6 MSD
Matrix: Water
Analysis Batch: 107932

Client Sample ID: S-393D-20210323
Prep Type: Dissolved
Prep Batch: 107466

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.25	J	30.0	31.5		ug/L		104	75 - 125	3	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 410-33523-6 DU
Matrix: Water
Analysis Batch: 107932

Client Sample ID: S-393D-20210323
Prep Type: Dissolved
Prep Batch: 107466

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	0.25	J	0.186	J F5	ug/L		28	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-108389/104
Matrix: Water
Analysis Batch: 108389

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			03/27/21 00:30	1

Lab Sample ID: LCS 410-108389/105
Matrix: Water
Analysis Batch: 108389

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	164		mg/L		87	82 - 106

Lab Sample ID: 410-33523-4 MS
Matrix: Water
Analysis Batch: 108389

Client Sample ID: TW-5-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	710		189	879		mg/L		91	82 - 106

Lab Sample ID: 410-33523-4 DU
Matrix: Water
Analysis Batch: 108389

Client Sample ID: TW-5-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	710		707		mg/L		0.07	5

Lab Sample ID: 410-33523-8 DU
Matrix: Water
Analysis Batch: 108389

Client Sample ID: MW-36-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	520		514		mg/L		0.3	5

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 410-107502/2-A
Matrix: Water
Analysis Batch: 108915

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 107502

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/26/21 07:10	03/30/21 09:04	1

Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: LCS 410-107502/1-A
Matrix: Water
Analysis Batch: 108915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 107502

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Kjeldahl Nitrogen			4.00	4.05		mg/L		101	90 - 110		

Lab Sample ID: 410-33523-1 MS
Matrix: Water
Analysis Batch: 108915

Client Sample ID: S-463-20210322
Prep Type: Total/NA
Prep Batch: 107502

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Kjeldahl Nitrogen	ND		5.00	5.44		mg/L		109	90 - 110		

Lab Sample ID: 410-33523-1 DU
Matrix: Water
Analysis Batch: 108915

Client Sample ID: S-463-20210322
Prep Type: Total/NA
Prep Batch: 107502

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Kjeldahl Nitrogen	ND		ND		mg/L				NC	20

Method: 5310 B-2011 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 410-109858/5
Matrix: Water
Analysis Batch: 109858

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1.0	0.50	mg/L			03/31/21 13:28	1

Lab Sample ID: LCS 410-109858/4
Matrix: Water
Analysis Batch: 109858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon			25.0	23.9		mg/L		96	91 - 115		

Lab Sample ID: 410-33523-1 MS
Matrix: Water
Analysis Batch: 109858

Client Sample ID: S-463-20210322
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon	61		50.0	115		mg/L		108	91 - 115		

Lab Sample ID: 410-33523-7 MS
Matrix: Water
Analysis Batch: 109858

Client Sample ID: S-458-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon	81		100	187		mg/L		106	91 - 115		

Method: 5310 B-2011 - Carbon, Total and Total Inorganic (Continued)

Lab Sample ID: 410-33523-1 DU
Matrix: Water
Analysis Batch: 109858

Client Sample ID: S-463-20210322
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Carbon	61			65.8		mg/L				7	20

Lab Sample ID: 410-33523-7 DU
Matrix: Water
Analysis Batch: 109858

Client Sample ID: S-458-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Carbon	81			82.7		mg/L				2	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-107967/5
Matrix: Water
Analysis Batch: 107967

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			03/26/21 14:49	1

Lab Sample ID: LCS 410-107967/4
Matrix: Water
Analysis Batch: 107967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	27.0		mg/L		108	91 - 113		

Lab Sample ID: 410-33523-6 MS
Matrix: Water
Analysis Batch: 107967

Client Sample ID: S-393D-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	1.7		10.0	12.6		mg/L		108	91 - 113		

Lab Sample ID: 410-33523-10 MS
Matrix: Water
Analysis Batch: 107967

Client Sample ID: S-460-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	2.5		10.0	13.2		mg/L		107	91 - 113		

Lab Sample ID: 410-33523-6 DU
Matrix: Water
Analysis Batch: 107967

Client Sample ID: S-393D-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	1.7			1.70		mg/L				3	3

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: 410-33523-10 DU
Matrix: Water
Analysis Batch: 107967

Client Sample ID: S-460-20210323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	2.5			2.44		mg/L				2	3

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

GC/MS VOA

Analysis Batch: 108244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-7	S-458-20210323	Total/NA	Water	8260C/UST	
410-33523-8	MW-36-20210323	Total/NA	Water	8260C/UST	
410-33523-9	S-462-20210323	Total/NA	Water	8260C/UST	
410-33523-10	S-460-20210323	Total/NA	Water	8260C/UST	
410-33523-11	TB-20210324	Total/NA	Water	8260C/UST	
410-33523-12	FB-20210324	Total/NA	Water	8260C/UST	
410-33523-13	EB-20210324	Total/NA	Water	8260C/UST	
410-33523-14	S-459-20210324	Total/NA	Water	8260C/UST	
MB 410-108244/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-108244/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-108244/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 108729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	8260C/UST	
410-33523-1 - DL	S-463-20210322	Total/NA	Water	8260C/UST	
410-33523-2	S-461-20210322	Total/NA	Water	8260C/UST	
410-33523-2 - DL	S-461-20210322	Total/NA	Water	8260C/UST	
410-33523-3	S-464-20210322	Total/NA	Water	8260C/UST	
410-33523-3 - DL	S-464-20210322	Total/NA	Water	8260C/UST	
410-33523-4	TW-5-20210323	Total/NA	Water	8260C/UST	
410-33523-5	MW-37-20210323	Total/NA	Water	8260C/UST	
410-33523-6	S-393D-20210323	Total/NA	Water	8260C/UST	
410-33523-8 - DL	MW-36-20210323	Total/NA	Water	8260C/UST	
MB 410-108729/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-108729/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-108729/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 109781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-4 - DL	TW-5-20210323	Total/NA	Water	8260C/UST	
410-33523-5 - DL	MW-37-20210323	Total/NA	Water	8260C/UST	
MB 410-109781/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-109781/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-109781/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 107953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	3510C	
410-33523-2	S-461-20210322	Total/NA	Water	3510C	
410-33523-3	S-464-20210322	Total/NA	Water	3510C	
MB 410-107953/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-107953/2-A	Lab Control Sample	Total/NA	Water	3510C	

Prep Batch: 108180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-4	TW-5-20210323	Total/NA	Water	3510C	
410-33523-5	MW-37-20210323	Total/NA	Water	3510C	
410-33523-6	S-393D-20210323	Total/NA	Water	3510C	

GC/MS Semi VOA (Continued)

Prep Batch: 108180 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-7	S-458-20210323	Total/NA	Water	3510C	
410-33523-8	MW-36-20210323	Total/NA	Water	3510C	
410-33523-8 - DL	MW-36-20210323	Total/NA	Water	3510C	
410-33523-9	S-462-20210323	Total/NA	Water	3510C	
410-33523-10	S-460-20210323	Total/NA	Water	3510C	
410-33523-12	FB-20210324	Total/NA	Water	3510C	
410-33523-13	EB-20210324	Total/NA	Water	3510C	
410-33523-14	S-459-20210324	Total/NA	Water	3510C	
MB 410-108180/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-108180/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-108180/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 108484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	8270D	107953
410-33523-2	S-461-20210322	Total/NA	Water	8270D	107953
410-33523-3	S-464-20210322	Total/NA	Water	8270D	107953
MB 410-107953/1-A	Method Blank	Total/NA	Water	8270D	107953
LCS 410-107953/2-A	Lab Control Sample	Total/NA	Water	8270D	107953

Analysis Batch: 108735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-4	TW-5-20210323	Total/NA	Water	8270D	108180
410-33523-5	MW-37-20210323	Total/NA	Water	8270D	108180
410-33523-6	S-393D-20210323	Total/NA	Water	8270D	108180
410-33523-7	S-458-20210323	Total/NA	Water	8270D	108180
410-33523-8	MW-36-20210323	Total/NA	Water	8270D	108180
410-33523-9	S-462-20210323	Total/NA	Water	8270D	108180
410-33523-10	S-460-20210323	Total/NA	Water	8270D	108180
410-33523-12	FB-20210324	Total/NA	Water	8270D	108180
410-33523-13	EB-20210324	Total/NA	Water	8270D	108180
410-33523-14	S-459-20210324	Total/NA	Water	8270D	108180
MB 410-108180/1-A	Method Blank	Total/NA	Water	8270D	108180
LCS 410-108180/2-A	Lab Control Sample	Total/NA	Water	8270D	108180
LCSD 410-108180/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	108180

Analysis Batch: 109767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-8 - DL	MW-36-20210323	Total/NA	Water	8270D	108180

GC VOA

Prep Batch: 107588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	RSK-175	
410-33523-2	S-461-20210322	Total/NA	Water	RSK-175	
410-33523-3	S-464-20210322	Total/NA	Water	RSK-175	
410-33523-4	TW-5-20210323	Total/NA	Water	RSK-175	
410-33523-5	MW-37-20210323	Total/NA	Water	RSK-175	
410-33523-6	S-393D-20210323	Total/NA	Water	RSK-175	
410-33523-7	S-458-20210323	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 107588 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-8	MW-36-20210323	Total/NA	Water	RSK-175	
410-33523-9	S-462-20210323	Total/NA	Water	RSK-175	
410-33523-10	S-460-20210323	Total/NA	Water	RSK-175	
410-33523-12	FB-20210324	Total/NA	Water	RSK-175	
410-33523-13	EB-20210324	Total/NA	Water	RSK-175	
MB 410-107588/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-107588/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-107588/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 107594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	RSK-175	107588
410-33523-2	S-461-20210322	Total/NA	Water	RSK-175	107588
410-33523-3	S-464-20210322	Total/NA	Water	RSK-175	107588
410-33523-4	TW-5-20210323	Total/NA	Water	RSK-175	107588
410-33523-5	MW-37-20210323	Total/NA	Water	RSK-175	107588
410-33523-6	S-393D-20210323	Total/NA	Water	RSK-175	107588
410-33523-7	S-458-20210323	Total/NA	Water	RSK-175	107588
410-33523-8	MW-36-20210323	Total/NA	Water	RSK-175	107588
410-33523-9	S-462-20210323	Total/NA	Water	RSK-175	107588
410-33523-10	S-460-20210323	Total/NA	Water	RSK-175	107588
410-33523-12	FB-20210324	Total/NA	Water	RSK-175	107588
410-33523-13	EB-20210324	Total/NA	Water	RSK-175	107588
MB 410-107588/1-A	Method Blank	Total/NA	Water	RSK-175	107588
LCS 410-107588/2-A	Lab Control Sample	Total/NA	Water	RSK-175	107588
LCSD 410-107588/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	107588

Prep Batch: 108835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-2 - DL	S-461-20210322	Total/NA	Water	RSK-175	
410-33523-3 - DL	S-464-20210322	Total/NA	Water	RSK-175	
410-33523-4 - DL	TW-5-20210323	Total/NA	Water	RSK-175	
410-33523-5 - DL	MW-37-20210323	Total/NA	Water	RSK-175	
410-33523-8 - DL	MW-36-20210323	Total/NA	Water	RSK-175	
MB 410-108835/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-108835/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 108837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-2 - DL	S-461-20210322	Total/NA	Water	RSK-175	108835
410-33523-3 - DL	S-464-20210322	Total/NA	Water	RSK-175	108835
410-33523-4 - DL	TW-5-20210323	Total/NA	Water	RSK-175	108835
410-33523-5 - DL	MW-37-20210323	Total/NA	Water	RSK-175	108835
410-33523-8 - DL	MW-36-20210323	Total/NA	Water	RSK-175	108835
MB 410-108835/1-A	Method Blank	Total/NA	Water	RSK-175	108835
LCS 410-108835/2-A	Lab Control Sample	Total/NA	Water	RSK-175	108835

Analysis Batch: 110717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-14	S-459-20210324	Total/NA	Water	RSK-175	110753
MB 410-110753/1-A	Method Blank	Total/NA	Water	RSK-175	110753

GC VOA (Continued)

Analysis Batch: 110717 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-110753/2-A	Lab Control Sample	Total/NA	Water	RSK-175	110753
LCSD 410-110753/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	110753

Prep Batch: 110753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-14	S-459-20210324	Total/NA	Water	RSK-175	
MB 410-110753/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-110753/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-110753/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 110041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	8011	
410-33523-2	S-461-20210322	Total/NA	Water	8011	
410-33523-3	S-464-20210322	Total/NA	Water	8011	
410-33523-6	S-393D-20210323	Total/NA	Water	8011	
410-33523-7	S-458-20210323	Total/NA	Water	8011	
410-33523-8	MW-36-20210323	Total/NA	Water	8011	
410-33523-9	S-462-20210323	Total/NA	Water	8011	
410-33523-10	S-460-20210323	Total/NA	Water	8011	
410-33523-11	TB-20210324	Total/NA	Water	8011	
410-33523-12	FB-20210324	Total/NA	Water	8011	
410-33523-13	EB-20210324	Total/NA	Water	8011	
410-33523-14	S-459-20210324	Total/NA	Water	8011	
MB 410-110041/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-110041/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-110041/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 110184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	8011	110041
410-33523-2	S-461-20210322	Total/NA	Water	8011	110041
410-33523-3	S-464-20210322	Total/NA	Water	8011	110041
410-33523-6	S-393D-20210323	Total/NA	Water	8011	110041
410-33523-7	S-458-20210323	Total/NA	Water	8011	110041
410-33523-8	MW-36-20210323	Total/NA	Water	8011	110041
410-33523-9	S-462-20210323	Total/NA	Water	8011	110041
410-33523-10	S-460-20210323	Total/NA	Water	8011	110041
410-33523-11	TB-20210324	Total/NA	Water	8011	110041
410-33523-12	FB-20210324	Total/NA	Water	8011	110041
410-33523-13	EB-20210324	Total/NA	Water	8011	110041
410-33523-14	S-459-20210324	Total/NA	Water	8011	110041
MB 410-110041/1-A	Method Blank	Total/NA	Water	8011	110041
LCS 410-110041/2-A	Lab Control Sample	Total/NA	Water	8011	110041
LCSD 410-110041/3-A	Lab Control Sample Dup	Total/NA	Water	8011	110041

Prep Batch: 110574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-4	TW-5-20210323	Total/NA	Water	8011	

GC Semi VOA (Continued)

Prep Batch: 110574 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-5	MW-37-20210323	Total/NA	Water	8011	
MB 410-110574/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-110574/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-110574/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 110636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-4	TW-5-20210323	Total/NA	Water	8011	110574
410-33523-5	MW-37-20210323	Total/NA	Water	8011	110574
MB 410-110574/1-A	Method Blank	Total/NA	Water	8011	110574
LCS 410-110574/2-A	Lab Control Sample	Total/NA	Water	8011	110574
LCSD 410-110574/3-A	Lab Control Sample Dup	Total/NA	Water	8011	110574

HPLC/IC

Analysis Batch: 108868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-108868/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-108868/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 108912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-2	S-461-20210322	Total/NA	Water	EPA 300.0 R2.1	
410-33523-6	S-393D-20210323	Total/NA	Water	EPA 300.0 R2.1	
410-33523-7	S-458-20210323	Total/NA	Water	EPA 300.0 R2.1	
410-33523-9	S-462-20210323	Total/NA	Water	EPA 300.0 R2.1	
410-33523-10	S-460-20210323	Total/NA	Water	EPA 300.0 R2.1	
410-33523-13	EB-20210324	Total/NA	Water	EPA 300.0 R2.1	
MB 410-108912/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-108912/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 108929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	EPA 300.0 R2.1	
410-33523-3	S-464-20210322	Total/NA	Water	EPA 300.0 R2.1	
MB 410-108929/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-108929/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 109002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-4	TW-5-20210323	Total/NA	Water	EPA 300.0 R2.1	
410-33523-5	MW-37-20210323	Total/NA	Water	EPA 300.0 R2.1	
410-33523-14	S-459-20210324	Total/NA	Water	EPA 300.0 R2.1	
MB 410-109002/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-109002/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 110015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-8	MW-36-20210323	Total/NA	Water	EPA 300.0 R2.1	
MB 410-110015/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-110015/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC (Continued)

Analysis Batch: 110015 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-8 MS	MW-36-20210323	Total/NA	Water	EPA 300.0 R2.1	
410-33523-8 DU	MW-36-20210323	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 110253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-12	FB-20210324	Total/NA	Water	EPA 300.0 R2.1	
MB 410-110253/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-110253/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 107437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total Recoverable	Water	3005A	
410-33523-2	S-461-20210322	Total Recoverable	Water	3005A	
410-33523-3	S-464-20210322	Total Recoverable	Water	3005A	
410-33523-4	TW-5-20210323	Total Recoverable	Water	3005A	
410-33523-5	MW-37-20210323	Total Recoverable	Water	3005A	
410-33523-6	S-393D-20210323	Total Recoverable	Water	3005A	
410-33523-7	S-458-20210323	Total Recoverable	Water	3005A	
410-33523-8	MW-36-20210323	Total Recoverable	Water	3005A	
410-33523-9	S-462-20210323	Total Recoverable	Water	3005A	
410-33523-10	S-460-20210323	Total Recoverable	Water	3005A	
410-33523-14	S-459-20210324	Total Recoverable	Water	3005A	
MB 410-107437/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-107437/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 107466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Dissolved	Water	Non-Digest Prep	
410-33523-2	S-461-20210322	Dissolved	Water	Non-Digest Prep	
410-33523-3	S-464-20210322	Dissolved	Water	Non-Digest Prep	
410-33523-4	TW-5-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-5	MW-37-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-6	S-393D-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-7	S-458-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-8	MW-36-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-9	S-462-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-10	S-460-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-14	S-459-20210324	Dissolved	Water	Non-Digest Prep	
MB 410-107466/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-107466/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-33523-6 MS	S-393D-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-6 MSD	S-393D-20210323	Dissolved	Water	Non-Digest Prep	
410-33523-6 DU	S-393D-20210323	Dissolved	Water	Non-Digest Prep	

Analysis Batch: 107730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total Recoverable	Water	6010C	107437
410-33523-2	S-461-20210322	Total Recoverable	Water	6010C	107437
410-33523-3	S-464-20210322	Total Recoverable	Water	6010C	107437

Metals (Continued)

Analysis Batch: 107730 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-4	TW-5-20210323	Total Recoverable	Water	6010C	107437
410-33523-5	MW-37-20210323	Total Recoverable	Water	6010C	107437
410-33523-6	S-393D-20210323	Total Recoverable	Water	6010C	107437
410-33523-7	S-458-20210323	Total Recoverable	Water	6010C	107437
410-33523-8	MW-36-20210323	Total Recoverable	Water	6010C	107437
410-33523-9	S-462-20210323	Total Recoverable	Water	6010C	107437
410-33523-10	S-460-20210323	Total Recoverable	Water	6010C	107437
410-33523-14	S-459-20210324	Total Recoverable	Water	6010C	107437
MB 410-107437/1-A	Method Blank	Total Recoverable	Water	6010C	107437
LCS 410-107437/2-A	Lab Control Sample	Total Recoverable	Water	6010C	107437

Prep Batch: 107734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-12	FB-20210324	Total Recoverable	Water	3005A	
410-33523-13	EB-20210324	Total Recoverable	Water	3005A	
MB 410-107734/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-107734/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 107932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Dissolved	Water	6020A	107466
410-33523-2	S-461-20210322	Dissolved	Water	6020A	107466
410-33523-3	S-464-20210322	Dissolved	Water	6020A	107466
410-33523-4	TW-5-20210323	Dissolved	Water	6020A	107466
410-33523-5	MW-37-20210323	Dissolved	Water	6020A	107466
410-33523-6	S-393D-20210323	Dissolved	Water	6020A	107466
410-33523-7	S-458-20210323	Dissolved	Water	6020A	107466
410-33523-8	MW-36-20210323	Dissolved	Water	6020A	107466
410-33523-9	S-462-20210323	Dissolved	Water	6020A	107466
410-33523-10	S-460-20210323	Dissolved	Water	6020A	107466
410-33523-14	S-459-20210324	Dissolved	Water	6020A	107466
MB 410-107466/1-A	Method Blank	Total/NA	Water	6020A	107466
LCS 410-107466/2-A	Lab Control Sample	Total/NA	Water	6020A	107466
410-33523-6 MS	S-393D-20210323	Dissolved	Water	6020A	107466
410-33523-6 MSD	S-393D-20210323	Dissolved	Water	6020A	107466
410-33523-6 DU	S-393D-20210323	Dissolved	Water	6020A	107466

Analysis Batch: 108635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-12	FB-20210324	Total Recoverable	Water	6010C	107734
410-33523-13	EB-20210324	Total Recoverable	Water	6010C	107734
MB 410-107734/1-A	Method Blank	Total Recoverable	Water	6010C	107734
LCS 410-107734/2-A	Lab Control Sample	Total Recoverable	Water	6010C	107734

General Chemistry

Prep Batch: 107502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	351.2	
410-33523-2	S-461-20210322	Total/NA	Water	351.2	
410-33523-3	S-464-20210322	Total/NA	Water	351.2	

General Chemistry (Continued)

Prep Batch: 107502 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-4	TW-5-20210323	Total/NA	Water	351.2	
410-33523-5	MW-37-20210323	Total/NA	Water	351.2	
410-33523-6	S-393D-20210323	Total/NA	Water	351.2	
410-33523-7	S-458-20210323	Total/NA	Water	351.2	
410-33523-8	MW-36-20210323	Total/NA	Water	351.2	
410-33523-9	S-462-20210323	Total/NA	Water	351.2	
410-33523-10	S-460-20210323	Total/NA	Water	351.2	
410-33523-12	FB-20210324	Total/NA	Water	351.2	
410-33523-13	EB-20210324	Total/NA	Water	351.2	
410-33523-14	S-459-20210324	Total/NA	Water	351.2	
MB 410-107502/2-A	Method Blank	Total/NA	Water	351.2	
LCS 410-107502/1-A	Lab Control Sample	Total/NA	Water	351.2	
410-33523-1 MS	S-463-20210322	Total/NA	Water	351.2	
410-33523-1 DU	S-463-20210322	Total/NA	Water	351.2	

Analysis Batch: 107967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	5310C-2011	
410-33523-2	S-461-20210322	Total/NA	Water	5310C-2011	
410-33523-3	S-464-20210322	Total/NA	Water	5310C-2011	
410-33523-4	TW-5-20210323	Total/NA	Water	5310C-2011	
410-33523-5	MW-37-20210323	Total/NA	Water	5310C-2011	
410-33523-6	S-393D-20210323	Total/NA	Water	5310C-2011	
410-33523-7	S-458-20210323	Total/NA	Water	5310C-2011	
410-33523-8	MW-36-20210323	Total/NA	Water	5310C-2011	
410-33523-9	S-462-20210323	Total/NA	Water	5310C-2011	
410-33523-10	S-460-20210323	Total/NA	Water	5310C-2011	
410-33523-12	FB-20210324	Total/NA	Water	5310C-2011	
410-33523-13	EB-20210324	Total/NA	Water	5310C-2011	
410-33523-14	S-459-20210324	Total/NA	Water	5310C-2011	
MB 410-107967/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-107967/4	Lab Control Sample	Total/NA	Water	5310C-2011	
410-33523-6 MS	S-393D-20210323	Total/NA	Water	5310C-2011	
410-33523-10 MS	S-460-20210323	Total/NA	Water	5310C-2011	
410-33523-6 DU	S-393D-20210323	Total/NA	Water	5310C-2011	
410-33523-10 DU	S-460-20210323	Total/NA	Water	5310C-2011	

Analysis Batch: 108389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	2320B-2011	
410-33523-2	S-461-20210322	Total/NA	Water	2320B-2011	
410-33523-3	S-464-20210322	Total/NA	Water	2320B-2011	
410-33523-4	TW-5-20210323	Total/NA	Water	2320B-2011	
410-33523-5	MW-37-20210323	Total/NA	Water	2320B-2011	
410-33523-6	S-393D-20210323	Total/NA	Water	2320B-2011	
410-33523-7	S-458-20210323	Total/NA	Water	2320B-2011	
410-33523-8	MW-36-20210323	Total/NA	Water	2320B-2011	
410-33523-9	S-462-20210323	Total/NA	Water	2320B-2011	
410-33523-10	S-460-20210323	Total/NA	Water	2320B-2011	
410-33523-12	FB-20210324	Total/NA	Water	2320B-2011	
410-33523-13	EB-20210324	Total/NA	Water	2320B-2011	

General Chemistry (Continued)

Analysis Batch: 108389 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-14	S-459-20210324	Total/NA	Water	2320B-2011	
MB 410-108389/104	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-108389/105	Lab Control Sample	Total/NA	Water	2320B-2011	
410-33523-4 MS	TW-5-20210323	Total/NA	Water	2320B-2011	
410-33523-4 DU	TW-5-20210323	Total/NA	Water	2320B-2011	
410-33523-8 DU	MW-36-20210323	Total/NA	Water	2320B-2011	

Analysis Batch: 108915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	351.2	107502
410-33523-2	S-461-20210322	Total/NA	Water	351.2	107502
410-33523-3	S-464-20210322	Total/NA	Water	351.2	107502
410-33523-4	TW-5-20210323	Total/NA	Water	351.2	107502
410-33523-5	MW-37-20210323	Total/NA	Water	351.2	107502
410-33523-6	S-393D-20210323	Total/NA	Water	351.2	107502
410-33523-7	S-458-20210323	Total/NA	Water	351.2	107502
410-33523-8	MW-36-20210323	Total/NA	Water	351.2	107502
410-33523-9	S-462-20210323	Total/NA	Water	351.2	107502
410-33523-10	S-460-20210323	Total/NA	Water	351.2	107502
410-33523-12	FB-20210324	Total/NA	Water	351.2	107502
410-33523-13	EB-20210324	Total/NA	Water	351.2	107502
410-33523-14	S-459-20210324	Total/NA	Water	351.2	107502
MB 410-107502/2-A	Method Blank	Total/NA	Water	351.2	107502
LCS 410-107502/1-A	Lab Control Sample	Total/NA	Water	351.2	107502
410-33523-1 MS	S-463-20210322	Total/NA	Water	351.2	107502
410-33523-1 DU	S-463-20210322	Total/NA	Water	351.2	107502

Analysis Batch: 109858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	5310 B-2011	
410-33523-2	S-461-20210322	Total/NA	Water	5310 B-2011	
410-33523-3	S-464-20210322	Total/NA	Water	5310 B-2011	
410-33523-4	TW-5-20210323	Total/NA	Water	5310 B-2011	
410-33523-5	MW-37-20210323	Total/NA	Water	5310 B-2011	
410-33523-6	S-393D-20210323	Total/NA	Water	5310 B-2011	
410-33523-7	S-458-20210323	Total/NA	Water	5310 B-2011	
410-33523-8	MW-36-20210323	Total/NA	Water	5310 B-2011	
410-33523-9	S-462-20210323	Total/NA	Water	5310 B-2011	
410-33523-10	S-460-20210323	Total/NA	Water	5310 B-2011	
410-33523-12	FB-20210324	Total/NA	Water	5310 B-2011	
410-33523-13	EB-20210324	Total/NA	Water	5310 B-2011	
410-33523-14	S-459-20210324	Total/NA	Water	5310 B-2011	
MB 410-109858/5	Method Blank	Total/NA	Water	5310 B-2011	
LCS 410-109858/4	Lab Control Sample	Total/NA	Water	5310 B-2011	
410-33523-1 MS	S-463-20210322	Total/NA	Water	5310 B-2011	
410-33523-7 MS	S-458-20210323	Total/NA	Water	5310 B-2011	
410-33523-1 DU	S-463-20210322	Total/NA	Water	5310 B-2011	
410-33523-7 DU	S-458-20210323	Total/NA	Water	5310 B-2011	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

General Chemistry

Analysis Batch: 109955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33523-1	S-463-20210322	Total/NA	Water	SM5310C	
410-33523-2	S-461-20210322	Total/NA	Water	SM5310C	
410-33523-3	S-464-20210322	Total/NA	Water	SM5310C	
410-33523-4	TW-5-20210323	Total/NA	Water	SM5310C	
410-33523-5	MW-37-20210323	Total/NA	Water	SM5310C	
410-33523-6	S-393D-20210323	Total/NA	Water	SM5310C	
410-33523-7	S-458-20210323	Total/NA	Water	SM5310C	
410-33523-8	MW-36-20210323	Total/NA	Water	SM5310C	
410-33523-9	S-462-20210323	Total/NA	Water	SM5310C	
410-33523-10	S-460-20210323	Total/NA	Water	SM5310C	
410-33523-12	FB-20210324	Total/NA	Water	SM5310C	
410-33523-13	EB-20210324	Total/NA	Water	SM5310C	
410-33523-14	S-459-20210324	Total/NA	Water	SM5310C	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: S-463-20210322

Date Collected: 03/22/21 13:30
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	108729	03/30/21 15:35	LCW8	ELLE
Total/NA	Analysis	8260C/UST	DL	50	108729	03/30/21 15:59	LCW8	ELLE
Total/NA	Prep	3510C			107953	03/27/21 09:58	DN9W	ELLE
Total/NA	Analysis	8270D		1	108484	03/30/21 03:48	W6XI	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 12:49	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 07:59	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	108929	03/30/21 18:30	W5UX	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 13:06	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:38	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 02:16	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:24	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	109858	03/31/21 13:38	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 15:59	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-461-20210322

Date Collected: 03/22/21 15:25
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	108729	03/30/21 16:23	LCW8	ELLE
Total/NA	Analysis	8260C/UST	DL	50	108729	03/30/21 16:47	LCW8	ELLE
Total/NA	Prep	3510C			107953	03/27/21 09:58	DN9W	ELLE
Total/NA	Analysis	8270D		1	108484	03/30/21 04:17	W6XI	ELLE
Total/NA	Prep	RSK-175	DL		108835	03/30/21 11:11	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	108837	03/30/21 20:33	LXF2	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 13:07	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 08:16	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	108912	03/30/21 18:51	W5UX	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 12:38	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:44	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 01:46	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:14	JCG7	ELLE

Client Sample ID: S-461-20210322

Lab Sample ID: 410-33523-2

Date Collected: 03/22/21 15:25

Matrix: Water

Date Received: 03/24/21 17:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 14:10	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 16:13	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-464-20210322

Lab Sample ID: 410-33523-3

Date Collected: 03/22/21 15:35

Matrix: Water

Date Received: 03/24/21 17:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		100	108729	03/30/21 17:10	LCW8	ELLE
Total/NA	Analysis	8260C/UST	DL	1000	108729	03/30/21 17:34	LCW8	ELLE
Total/NA	Prep	3510C			107953	03/27/21 09:58	DN9W	ELLE
Total/NA	Analysis	8270D		1	108484	03/30/21 04:45	W6XI	ELLE
Total/NA	Prep	RSK-175	DL		108835	03/30/21 11:11	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	20	108837	03/30/21 21:06	LXF2	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 13:25	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 08:33	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	108929	03/30/21 19:07	W5UX	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 12:41	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:46	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 01:38	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:01	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 14:21	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 16:27	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: TW-5-20210323

Lab Sample ID: 410-33523-4

Date Collected: 03/23/21 10:15

Matrix: Water

Date Received: 03/24/21 17:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST	DL	5000	109781	04/01/21 13:17	LCW8	ELLE
Total/NA	Analysis	8260C/UST		100	108729	03/30/21 17:58	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 11:39	SJ89	ELLE
Total/NA	Prep	RSK-175	DL		108835	03/30/21 11:11	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	20	108837	03/30/21 21:23	LXF2	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 14:17	LXF2	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: TW-5-20210323

Lab Sample ID: 410-33523-4

Date Collected: 03/23/21 10:15

Matrix: Water

Date Received: 03/24/21 17:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8011			110574	04/04/21 07:49	UKQ8	ELLE
Total/NA	Analysis	8011		1	110636	04/05/21 07:18	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	109002	03/30/21 22:11	Z7CH	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 13:03	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:42	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 00:55	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		5	108915	03/30/21 12:29	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		25	109858	03/31/21 14:32	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		5	107967	03/26/21 16:41	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: MW-37-20210323

Lab Sample ID: 410-33523-5

Date Collected: 03/23/21 09:35

Matrix: Water

Date Received: 03/24/21 17:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST	DL	5000	109781	04/01/21 13:41	LCW8	ELLE
Total/NA	Analysis	8260C/UST		100	108729	03/30/21 18:45	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 12:07	SJ89	ELLE
Total/NA	Prep	RSK-175	DL		108835	03/30/21 11:11	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	20	108837	03/30/21 21:40	LXF2	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 14:35	LXF2	ELLE
Total/NA	Prep	8011			110574	04/04/21 07:49	UKQ8	ELLE
Total/NA	Analysis	8011		1	110636	04/05/21 07:34	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	109002	03/30/21 21:37	Z7CH	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 12:43	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:36	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 01:31	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:20	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 14:43	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		5	107967	03/26/21 17:24	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: S-393D-20210323

Lab Sample ID: 410-33523-6

Date Collected: 03/23/21 12:10

Matrix: Water

Date Received: 03/24/21 17:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	108729	03/30/21 19:33	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 12:35	SJ89	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 14:53	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 08:49	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	108912	03/30/21 20:14	W5UX	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 12:57	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:17	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 02:35	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:51	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		2	109858	03/31/21 14:53	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 15:03	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-458-20210323

Lab Sample ID: 410-33523-7

Date Collected: 03/23/21 12:10

Matrix: Water

Date Received: 03/24/21 17:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	108244	03/29/21 19:29	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 13:03	SJ89	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 15:11	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 09:06	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	108912	03/30/21 15:49	W5UX	ELLE
Total Recoverable	Prep	3005A			107437	03/25/21 21:54	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 12:35	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:40	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 01:59	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:57	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 15:37	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 17:37	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: MW-36-20210323

Date Collected: 03/23/21 14:05
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		100	108244	03/29/21 19:53	LCW8	ELLE
Total/NA	Analysis	8260C/UST	DL	5000	108729	03/30/21 14:48	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 13:31	SJ89	ELLE
Total/NA	Prep	3510C	DL		108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D	DL	5	109767	04/02/21 02:43	WKV3	ELLE
Total/NA	Prep	RSK-175	DL		108835	03/30/21 11:11	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	108837	03/30/21 21:57	LXF2	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 15:29	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 09:23	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110015	04/01/21 16:32	GJ35	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 13:00	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:27	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:50	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 01:18	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		5	108915	03/30/21 12:31	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		25	109858	03/31/21 16:09	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		5	107967	03/26/21 17:51	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-462-20210323

Date Collected: 03/23/21 14:15
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	108244	03/29/21 15:04	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 13:59	SJ89	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 15:47	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 09:40	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	108912	03/30/21 16:55	W5UX	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 12:52	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:34	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 02:22	DI9Q	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: S-462-20210323
Date Collected: 03/23/21 14:15
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:22	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		2	109858	03/31/21 16:20	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 18:05	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-460-20210323
Date Collected: 03/23/21 16:05
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	108244	03/29/21 15:28	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 14:27	SJ89	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 16:05	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 09:56	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	108912	03/30/21 15:15	W5UX	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 12:54	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:32	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 02:29	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:10	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		2	109858	03/31/21 16:31	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 18:19	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: TB-20210324
Date Collected: 03/24/21 00:00
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	108244	03/29/21 12:39	LCW8	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 10:13	AC3T	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Client Sample ID: FB-20210324

Date Collected: 03/24/21 08:30
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	108244	03/29/21 13:04	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 14:55	SJ89	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 16:23	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 10:30	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	110253	04/03/21 10:07	W5UX	ELLE
Total Recoverable	Prep	3005A			107734	03/26/21 13:55	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108635	03/29/21 18:20	ULJC	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 02:49	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:04	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		1	109858	03/31/21 17:04	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 19:01	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: EB-20210324

Date Collected: 03/24/21 08:40
Date Received: 03/24/21 17:03

Lab Sample ID: 410-33523-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	108244	03/29/21 13:28	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 15:23	SJ89	ELLE
Total/NA	Prep	RSK-175			107588	03/26/21 09:13	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	107594	03/26/21 16:41	LXF2	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 10:47	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	108912	03/30/21 14:42	W5UX	ELLE
Total Recoverable	Prep	3005A			107734	03/26/21 13:55	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108635	03/29/21 18:17	ULJC	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 02:42	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:08	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		1	109858	03/31/21 17:14	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 19:15	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33523-1
Project/Site: PHL Belmont Terminal GW Sampling

Client Sample ID: S-459-20210324
Lab Sample ID: 410-33523-14
Date Collected: 03/24/21 08:30
Matrix: Water
Date Received: 03/24/21 17:03

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	108244	03/29/21 15:52	LCW8	ELLE
Total/NA	Prep	3510C			108180	03/29/21 09:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	108735	03/30/21 15:51	SJ89	ELLE
Total/NA	Prep	RSK-175			110753	04/05/21 09:39	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	110717	04/05/21 16:30	YUE6	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 11:03	AC3T	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		200	109002	03/31/21 01:19	Z7CH	ELLE
Total Recoverable	Prep	3005A			107437	03/26/21 02:02	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	107730	03/26/21 13:08	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			107466	03/26/21 04:26	UJL8	ELLE
Dissolved	Analysis	6020A		1	107932	03/26/21 15:48	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	108389	03/27/21 01:52	DI9Q	ELLE
Total/NA	Prep	351.2			107502	03/26/21 07:10	UNJS	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 12:06	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		2	109858	03/31/21 17:25	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	107967	03/26/21 19:30	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-33523-1
Project/Site: PHL Belmont Terminal GW Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310 B-2011		Water	Total Carbon
SM5310C		Water	Total Inorganic Carbon

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-33523-1
Project/Site: PHL Belmont Terminal GW Sampling

Method	Method Description	Protocol	Laboratory
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
5310 B-2011	Carbon, Total and Total Inorganic	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
SM5310C	Carbon, Total Inorganic	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: PHL Belmont Terminal GW Sampling

Job ID: 410-33523-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-33523-1	S-463-20210322	Water	03/22/21 13:30	03/24/21 17:03	
410-33523-2	S-461-20210322	Water	03/22/21 15:25	03/24/21 17:03	
410-33523-3	S-464-20210322	Water	03/22/21 15:35	03/24/21 17:03	
410-33523-4	TW-5-20210323	Water	03/23/21 10:15	03/24/21 17:03	
410-33523-5	MW-37-20210323	Water	03/23/21 09:35	03/24/21 17:03	
410-33523-6	S-393D-20210323	Water	03/23/21 12:10	03/24/21 17:03	
410-33523-7	S-458-20210323	Water	03/23/21 12:10	03/24/21 17:03	
410-33523-8	MW-36-20210323	Water	03/23/21 14:05	03/24/21 17:03	
410-33523-9	S-462-20210323	Water	03/23/21 14:15	03/24/21 17:03	
410-33523-10	S-460-20210323	Water	03/23/21 16:05	03/24/21 17:03	
410-33523-11	TB-20210324	Water	03/24/21 00:00	03/24/21 17:03	
410-33523-12	FB-20210324	Water	03/24/21 08:30	03/24/21 17:03	
410-33523-13	EB-20210324	Water	03/24/21 08:40	03/24/21 17:03	
410-33523-14	S-459-20210324	Water	03/24/21 08:30	03/24/21 17:03	

Environmental Ana[illegible]in of Custody

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410-33523 Chain of Custody

[illegible]oratories Environmental use only

[illegible] Sample # _____

COC #616995

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL: Belmont Terminal GW Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins, Maddie Bredehoeft, Michael Ochmanowicz, J Kachel	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: ☐ Tissue ☐ Sediment ☐ Soil ☒ Ground ☐ Potable ☐ Surface ☐ NPDES ☐ Water ☐ Other: ____

For Lab Use Only
FSC: _____
SCR#: 266014

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	Evergreen Petro Short List (VOC+SVOC+Metals)	TBA	dissolved Lead (field filtered)	TIC	Sulfate	dissolved headspace gases (methane, ethane, ethene)	total iron	total calcium	Total Kjeldahl Nitrogen	Alkalinity as $CaCO_3$	Remarks
S-463-20210322	3/22/21	1330	X			X		21	X	X	X	X	X	X	X	X	X	X	*refer to A Klingbeil email for Petro Short List analytes; *dissolved lead was field filtered
S-461-20210322	3/22/21	1525	X			X		21	X	X	X	X	X	X	X	X	X	X	
S-464-20210322	3/22/21	1535	X			X		21	X	X	X	X	X	X	X	X	X	X	
TW-5-20210323	3/23/21	1015	X			X		21	X	X	X	X	X	X	X	X	X	X	
MW-37-20210323	3/23/21	0935	X			X		21	X	X	X	X	X	X	X	X	X	X	
S-363D-20210323	3/23/21	1210	X			X		21	X	X	X	X	X	X	X	X	X	X	
S-[illegible]458-20210323	3/23/21	1210	X			X		21	X	X	X	X	X	X	X	X	X	X	
MW-36-20210323	3/23/21	1405	X			X		21	X	X	X	X	X	X	X	X	X	X	
MW-462-20210323	3/23/21	1415	X			X		21	X	X	X	X	X	X	X	X	X	X	
S-460-20210323	3/23/21	1605	X			X		21	X	X	X	X	X	X	X	X	X	X	

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	3/24	10:00	[signature]	3/24	10:00
[signature]	3/24	1635			
			[signature]	3/24/21	17:03

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other X

Temperature upon receipt 1.9-5.7 °C

Environmental Analysis Request/Chain of Custody

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Acct. # _____ Group # _____ Sample # _____

COC # 616997

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHC: Belmont Terminal GW Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins, Mochmanowicz, Maddie Bradehoeft	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☐ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: blank (trip, field, equipment)

Analysis Requested — Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	Evergreen Petro Short List (VOC + SVOC + Metals)	TBA	dissolved lead (field filtered)	TIC/sulfate	dissolved headspace gases (methane, ethane, ethene)	total iron + total calcium	Total Kjeldahl Nitrogen	Alkalinity as Ca CO_3	VOC 8260 + EDB 8011		Remarks
TB-20210324	3/19/21	—					TB	4									X		
FB-20210324	3/24/21	0830					FB	21	X	X	X	X	X	X	X	X			
EB-20210324	3/24/21	0840					EB	21	X	X	X	X	X	X	X	X			
S-459-20210324	3/24/21	0830	X			X		21	X	X	X	X	X	X	X	X			

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks
* refer to A Klingbeil email for Evergreen Petro Short List analytes

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	3/24	10:00	[signature]	3/24	10:00
[signature]	3/24	16:35			
			[signature]	3/24/21	17:03

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ____ FedEx ____ Other X

Temperature upon receipt 1.9-5.7°C

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4/15/2021 (Rev. 2)

Environmental Ana[illegible]in of Custody

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410-33523 Chain of Custody

[illegible]ratories Environmental use only

___ Sample # _____

COC #616995

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHL: Belmont Terminal GW Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins, Maddie Brekehoeft, Michael Ochmanowicz, J Kachel	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Soil ☐ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: ___

For Lab Use Only
FSC: ___
SCR#: 266014

Preservation Codes
H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, P=H_3PO_4, F=Field Filtered, O=Other

Analysis Requested — Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	Evergreen Petro Short List (VOC + SVOC + Metals)	TBA	dissolved Lead (field filtered)	TIC	Sulfate	dissolved headspace gases (methane, ethane, ethene)	Total iron	Total Calcium	Total Kjeldahl Nitrogen	Alkalinity as $CaCO_3$	Remarks
S-463-20210322	3/22/21	1330	X			X		21	X	X	X	X	X	X	X	X	X	X	*refer to A Klingbeil email for Petro Short List analytes
S-461-20210322	3/22/21	1525	X			X		21	X	X	X	X	X	X	X	X	X	X	*dissolved lead was field filtered
S-464-20210322	3/22/21	1535	X			X		21	X	X	X	X	X	X	X	X	X	X	
TW-5-20210323	3/23/21	1015	X			X		21	X	X	X	X	X	X	X	X	X	X	
MW-37-20210323	3/23/21	0935	X			X		21	X	X	X	X	X	X	X	X	X	X	
S-393D ~~S-363D~~ JK 3/31/2021 -20210323	3/23/21	1210	X			X		21	X	X	X	X	X	X	X	X	X	X	
S-~~[illegible]~~ JD 458-20210323	3/23/21	1210	X			X		21	X	X	X	X	X	X	X	X	X	X	
MW-36-20210323	3/23/21	1405	X			X		21	X	X	X	X	X	X	X	X	X	X	
S ~~MW~~-462-20210323	3/23/21	1415	X			X		21	X	X	X	X	X	X	X	X	X	X	
S-460-20210323	3/23/21	1605	X			X		21	X	X	X	X	X	X	X	X	X	X	

JK 4/13/21

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	3/24	10:00	[signature]	3/24	1000
[signature]	3/24	1635			
			[signature]	3/2/21	17:03

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)
Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13
NYSDEC Category A or B | MA MCP | CT RCP

EDD Required? Yes No
If yes, format: EQuIS

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS ___ FedEx ___ Other X

Temperature upon receipt 1.9-5.7°C

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ES

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-33523-1

Login Number: 33523 **List Source: Eurofins Lancaster Laboratories Env**
List Number: 1
Creator: Sanchez, Melvin E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-33879-1
Client Project/Site: PHL: Belmont Terminal GW Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Andrew Klingbeil

Authorized for release by:
4/8/2021 12:43:47 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Amek Carter
Project Manager
4/8/2021 12:43:47 PM

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
FH	MS and/or MSD recovery above control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
FH	MS and/or MSD recovery above control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-33879-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-33879-1

Receipt
The samples were received on 3/26/2021 6:18 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 1.0°C, 4.6°C, 4.6°C, 5.7°C and 5.8°C

Receipt Exceptions
The COC states that 21 containers were sent. When received at the lab, only 20 containers were sent.

S-455-20210326 (410-33879-14)

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: The surrogate recovery for the blank associated with preparation batch 410-110001 was outside the lower control limits. Samples S-470-20210325 (410-33879-6) were re-extracted and re-analyzed. All other associated samples did not contain any target analytes; therefore, re-extraction was not performed.

Method 8270D: The continuing calibration verification (CCV) associated with batch 410-110727 recovered above the upper control limit for Chrysene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
Method RSK_175: The continuing calibration verification (CCV) recovered below the lower control limit for Propene (surrogate). The samples associated with this CCV had sample surrogate within quality control limits; therefore, the data have been reported. S-468-20210324 (410-33879-1), S-467-20210324 (410-33879-3), S-456-20210324 (410-33879-4), S-472-20210324 (410-33879-5), RW-1-20210326 (410-33879-11), S-453-20210326 (410-33879-13), S-455-20210326 (410-33879-14) and S-452-20210326 (410-33879-15).

Method RSK_175: The method requirement for no headspace was not met. The following volatile sample was analyzed for Ethane and Ethene with significant headspace in the sample container(s): S-457-20210326 (410-33879-10). Significant headspace is defined as a bubble greater than 6 mm in diameter.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: The 1,1,2,2-Tetrachloroethane surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: S-468-20210324 (410-33879-1), S-457-20210326 (410-33879-10) and S-452-20210326 (410-33879-15). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

Job ID: 410-33879-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

Method 5310C: The following samples were analyzed in duplicate: S-457-20210326 (410-33879-10), S-455-20210326 (410-33879-14), S-452-20210326 (410-33879-15), (410-33879-I-10 DU) and (410-33879-I-10 MS). The RPD between the two replicates was > 10%. Re-analysis was performed with RPD >10%.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-468-20210324 — Lab Sample ID: 410-33879-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3,5-Trimethylbenzene	94		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	23		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	210		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	13		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	130		5.0	0.20	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	360		50	12	ug/L	1		8260C/UST	Total/NA
Ethylbenzene - DL	400		10	4.0	ug/L	10		8260C/UST	Total/NA
Benzene - DL	410		10	2.0	ug/L	10		8260C/UST	Total/NA
1,2,4-Trimethylbenzene - DL	280		50	10	ug/L	10		8260C/UST	Total/NA
Naphthalene - DL2	3100		250	50	ug/L	50		8260C/UST	Total/NA
Anthracene	16		0.55	0.11	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	2.8		0.55	0.11	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	1.9		0.55	0.12	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	2.0		0.55	0.11	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.60		0.55	0.11	ug/L	1		8270D	Total/NA
Chrysene	3.4		0.55	0.11	ug/L	1		8270D	Total/NA
Fluorene	67		0.55	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	85		0.55	0.12	ug/L	1		8270D	Total/NA
Pyrene	12		0.55	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	3200		28	5.5	ug/L	50		8270D	Total/NA
Ethane (1C)	1.2	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	15000		500	300	ug/L	100		RSK-175	Total/NA
Sulfate	2.5	J	5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	33		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	50		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	160		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	6.2		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	71		5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	16		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	55		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-466-20210324 — Lab Sample ID: 410-33879-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	10		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	8.0		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	1.4		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	35		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	0.64	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	18		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	93	*1	5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	26		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	2.0	J	5.0	0.20	ug/L	1		8260C/UST	Total/NA
Anthracene	0.37	J	0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	1.9		0.52	0.12	ug/L	1		8270D	Total/NA
Naphthalene	57		0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	1.6		0.52	0.11	ug/L	1		8270D	Total/NA
Methane (1C)	14		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	230		20	6.0	mg/L	20		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-466-20210324 (Continued)
Lab Sample ID: 410-33879-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	56		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	31		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	140		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	44		2.0	1.0	mg/L	2		5310 B-2011	Total/NA
Total Organic Carbon	3.2		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	41		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-467-20210324
Lab Sample ID: 410-33879-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	25		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,2-Dichloroethane	0.65	J	1.0	0.30	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	22		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	20		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	55		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	78		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	85	*1	5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	64		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	100		5.0	0.20	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	570		50	12	ug/L	1		8260C/UST	Total/NA
Benzene - DL	370		10	2.0	ug/L	10		8260C/UST	Total/NA
Anthracene	6.3		0.64	0.13	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.38	J	0.64	0.13	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.20	J	0.64	0.14	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.31	J	0.64	0.13	ug/L	1		8270D	Total/NA
Chrysene	0.55	J	0.64	0.13	ug/L	1		8270D	Total/NA
Fluorene	32		0.64	0.15	ug/L	1		8270D	Total/NA
Naphthalene	66		0.64	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	39		0.64	0.14	ug/L	1		8270D	Total/NA
Pyrene	3.0		0.64	0.13	ug/L	1		8270D	Total/NA
Ethane (1C)	2.8	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	18000		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	6.6		5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	50		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	51		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.00038	J	0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	230		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	8.9		5.0	2.5	mg/L	5		351.2	Total/NA
Total Carbon	89		5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	25		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	64		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-456-20210324
Lab Sample ID: 410-33879-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	9.6		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	4.6	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	14		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	10		6.0	1.4	ug/L	1		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-456-20210324 (Continued)
Lab Sample ID: 410-33879-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	33		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	23	*1	5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	6.5		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	44		5.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene - DL	220		10	2.0	ug/L	10		8260C/UST	Total/NA
t-Butyl alcohol - DL	1200		500	120	ug/L	10		8260C/UST	Total/NA
Anthracene	2.4		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	1.9		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	2.8		0.52	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	6.0		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	2.6		0.52	0.10	ug/L	1		8270D	Total/NA
Chrysene	5.5		0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	9.6		0.52	0.13	ug/L	1		8270D	Total/NA
Naphthalene	7.1		0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	5.7		0.52	0.11	ug/L	1		8270D	Total/NA
Pyrene	8.6		0.52	0.10	ug/L	1		8270D	Total/NA
Ethane (1C)	1.2	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	12000		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	9.0		5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	41		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	29		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	150		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	2.0		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	48		5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	9.8		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	38		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-472-20210324
Lab Sample ID: 410-33879-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3,5-Trimethylbenzene	130		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	8.8		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	290		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	0.79	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	180		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	110		5.0	0.20	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	25	J	50	12	ug/L	1		8260C/UST	Total/NA
Ethylbenzene - DL	970		10	4.0	ug/L	10		8260C/UST	Total/NA
1,2,4-Trimethylbenzene - DL	490		50	10	ug/L	10		8260C/UST	Total/NA
Naphthalene - DL2	3500		250	50	ug/L	50		8260C/UST	Total/NA
Anthracene	9.9		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	2.4		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	1.6		0.52	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	1.8		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.62		0.52	0.10	ug/L	1		8270D	Total/NA
Chrysene	2.7		0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	38		0.52	0.12	ug/L	1		8270D	Total/NA
Phenanthrene	49		0.52	0.11	ug/L	1		8270D	Total/NA
Pyrene	8.6		0.52	0.10	ug/L	1		8270D	Total/NA
Naphthalene - DL	5800		52	10	ug/L	100		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-472-20210324 (Continued)
Lab Sample ID: 410-33879-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethane (1C)	4.1	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	12000		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	19		5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	77		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	140		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.00043	J	0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	120		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	4.3		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	85		5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	26		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	59		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-470-20210325
Lab Sample ID: 410-33879-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.38	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	1.9		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	7.0		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	1.6	J	5.0	1.0	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	16	J	50	12	ug/L	1		8260C/UST	Total/NA
Naphthalene	1.5		0.51	0.10	ug/L	1		8270D	Total/NA
Ethane (1C)	1.3	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C)	32		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	300		50	15	mg/L	50		EPA 300.0 R2.1	Total/NA
Calcium	56		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	64		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	160		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.65	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	69		5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	15		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	54		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-465-20210325
Lab Sample ID: 410-33879-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	88		10	4.0	ug/L	10		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	12	J	50	3.0	ug/L	10		8260C/UST	Total/NA
Toluene	1300		10	2.0	ug/L	10		8260C/UST	Total/NA
Xylenes, Total	470		60	14	ug/L	10		8260C/UST	Total/NA
Naphthalene	36	J	50	10	ug/L	10		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	36	J	50	10	ug/L	10		8260C/UST	Total/NA
Isopropylbenzene	19	J	50	2.0	ug/L	10		8260C/UST	Total/NA
Benzene - DL	30000		500	100	ug/L	500		8260C/UST	Total/NA
Anthracene	0.14	J	0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.24	J	0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	21		0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.13	J	0.51	0.11	ug/L	1		8270D	Total/NA
Methane (1C)	150		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	96		20	6.0	mg/L	20		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-465-20210325 (Continued)
Lab Sample ID: 410-33879-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	110		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	5.7		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.00012	J	0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	310		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	1.1		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	88		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	18		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	70		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-469-20210325
Lab Sample ID: 410-33879-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	1.1		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	28		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Sulfate	81		20	6.0	mg/L	20		EPA 300.0 R2.1	Total/NA
Calcium	78		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	0.26		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.000089	J	0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	310		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	75		5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	2.0		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	73		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: TB-20210326
Lab Sample ID: 410-33879-9

No Detections.

Client Sample ID: S-457-20210326
Lab Sample ID: 410-33879-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1400		10	4.0	ug/L	10		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	150		50	3.0	ug/L	10		8260C/UST	Total/NA
Toluene	770		10	2.0	ug/L	10		8260C/UST	Total/NA
Xylenes, Total	3500		60	14	ug/L	10		8260C/UST	Total/NA
Methyl tert-butyl ether	3700		10	2.0	ug/L	10		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	550		50	10	ug/L	10		8260C/UST	Total/NA
Isopropylbenzene	53		50	2.0	ug/L	10		8260C/UST	Total/NA
Benzene - DL	18000		100	20	ug/L	100		8260C/UST	Total/NA
Naphthalene - DL	4300		500	100	ug/L	100		8260C/UST	Total/NA
t-Butyl alcohol - DL	23000		5000	1200	ug/L	100		8260C/UST	Total/NA
Anthracene	1.6		0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.15	J	0.51	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.19	J	0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	14		0.51	0.12	ug/L	1		8270D	Total/NA
Phenanthrene	13		0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.86		0.51	0.10	ug/L	1		8270D	Total/NA
Naphthalene - DL	3100		51	10	ug/L	100		8270D	Total/NA
Ethane (1C)	6.4		5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	14000		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	2.2	J	5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-457-20210326 (Continued)
Lab Sample ID: 410-33879-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	77		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	36		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.0013		0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	240		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.97	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	140		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	44		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	96		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: RW-1-20210326
Lab Sample ID: 410-33879-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	28		5.0	2.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	200		25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	27		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	1100		30	7.0	ug/L	5		8260C/UST	Total/NA
Benzene	230		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Naphthalene	99		25	5.0	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	810		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	61		25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tert-butyl ether - DL	11000		50	10	ug/L	50		8260C/UST	Total/NA
t-Butyl alcohol - DL	48000		2500	600	ug/L	50		8260C/UST	Total/NA
Anthracene	2.3		0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.32	J	0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.17	J	0.51	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.19	J	0.51	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.35	J	0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	12		0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	61		0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	9.9		0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	2.5		0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C) - DL	17000		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	1.8	J	5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	110		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	47		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.00084		0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	480		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	29		10	5.0	mg/L	10		351.2	Total/NA
Total Carbon	200		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	38		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	160		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-454-20210326
Lab Sample ID: 410-33879-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.65	J	1.0	0.40	ug/L	1		8260C/UST	Total/NA
Toluene	0.57	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	1.7	J	6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	0.88	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: S-454-20210326 (Continued)
Lab Sample ID: 410-33879-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	12		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	1.4		0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.18	J	0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.19	J	0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	3.8	J	5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	200		20	6.0	mg/L	20		EPA 300.0 R2.1	Total/NA
Calcium	53		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	22		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	130		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	40		2.0	1.0	mg/L	2		5310 B-2011	Total/NA
Total Organic Carbon	2.0		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	38		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-453-20210326
Lab Sample ID: 410-33879-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3,5-Trimethylbenzene	220		25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	50		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	1800		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tert-butyl ether	50		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Naphthalene	400		25	5.0	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	690		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	66		25	1.0	ug/L	5		8260C/UST	Total/NA
Ethylbenzene - DL	1300		50	20	ug/L	50		8260C/UST	Total/NA
Benzene - DL	3800		50	10	ug/L	50		8260C/UST	Total/NA
Fluorene	2.7		0.51	0.12	ug/L	1		8270D	Total/NA
Phenanthrene	1.9		0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.17	J	0.51	0.10	ug/L	1		8270D	Total/NA
Naphthalene - DL	300		2.5	0.51	ug/L	5		8270D	Total/NA
Ethane (1C)	2.4	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	17000		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	7.0	FH	5.0	1.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Calcium	43		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	74		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.0089		0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	150		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.58	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	75		5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	19		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	56		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-455-20210326
Lab Sample ID: 410-33879-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	530		5.0	2.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	170		25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	410		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	580		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tert-butyl ether	400		5.0	1.0	ug/L	5		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-455-20210326 (Continued)
Lab Sample ID: 410-33879-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	280		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	120		25	1.0	ug/L	5		8260C/UST	Total/NA
t-Butyl alcohol	2200		250	60	ug/L	5		8260C/UST	Total/NA
Benzene - DL	6300		50	10	ug/L	50		8260C/UST	Total/NA
Naphthalene - DL	4800		250	50	ug/L	50		8260C/UST	Total/NA
Anthracene	6.9		0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.29	J	0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.11	J	0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	43		0.51	0.12	ug/L	1		8270D	Total/NA
Phenanthrene	38		0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	2.8		0.51	0.10	ug/L	1		8270D	Total/NA
Naphthalene - DL	4400		51	10	ug/L	100		8270D	Total/NA
Ethane (1C)	2.4	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	19000		250	150	ug/L	50		RSK-175	Total/NA
Calcium	76		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	41		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.0033		0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	400		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	7.2		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	120		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	13		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	110		2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-452-20210326
Lab Sample ID: 410-33879-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	760		5.0	2.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	110		25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	57		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	1600		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tert-butyl ether	1000		5.0	1.0	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	320		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	83		25	1.0	ug/L	5		8260C/UST	Total/NA
Benzene - DL	3200		50	10	ug/L	50		8260C/UST	Total/NA
Naphthalene - DL	1300		250	50	ug/L	50		8260C/UST	Total/NA
t-Butyl alcohol - DL	22000		2500	600	ug/L	50		8260C/UST	Total/NA
Anthracene	5.6		0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	1.0		0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.58		0.51	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.77		0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.27	J	0.51	0.10	ug/L	1		8270D	Total/NA
Chrysene	1.2		0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	21		0.51	0.12	ug/L	1		8270D	Total/NA
Phenanthrene	30		0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	4.6		0.51	0.10	ug/L	1		8270D	Total/NA
Naphthalene - DL	1300		10	2.0	ug/L	20		8270D	Total/NA
Ethane (1C)	2.8	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	14000		250	150	ug/L	50		RSK-175	Total/NA
Calcium	39		0.50	0.096	mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-452-20210326 (Continued)
Lab Sample ID: 410-33879-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	50		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.0010		0.00052	0.000073	mg/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	290		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	3.4		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	120		10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	23		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	97		2.0	0.60	mg/L	1		SM5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-468-20210324
Lab Sample ID: 410-33879-1
Date Collected: 03/24/21 12:00
Matrix: Groundwater
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/03/21 01:37	1
1,3,5-Trimethylbenzene	**94**		5.0	0.30	ug/L			04/03/21 01:37	1
Toluene	**23**		1.0	0.20	ug/L			04/03/21 01:37	1
Xylenes, Total	**210**		6.0	1.4	ug/L			04/03/21 01:37	1
Methyl tert-butyl ether	**13**		1.0	0.20	ug/L			04/03/21 01:37	1
Isopropylbenzene	**130**		5.0	0.20	ug/L			04/03/21 01:37	1
t-Butyl alcohol	**360**		50	12	ug/L			04/03/21 01:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*04/03/21 01:37*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/03/21 01:37*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*04/03/21 01:37*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*04/03/21 01:37*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**400**		10	4.0	ug/L			04/06/21 15:53	10
Benzene	**410**		10	2.0	ug/L			04/06/21 15:53	10
1,2,4-Trimethylbenzene	**280**		50	10	ug/L			04/06/21 15:53	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*04/06/21 15:53*	*10*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*04/06/21 15:53*	*10*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*04/06/21 15:53*	*10*
Toluene-d8 (Surr)	*106*		*80 - 120*		*04/06/21 15:53*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**3100**		250	50	ug/L			04/06/21 21:02	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 120*		*04/06/21 21:02*	*50*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/06/21 21:02*	*50*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/06/21 21:02*	*50*
Toluene-d8 (Surr)	*106*		*80 - 120*		*04/06/21 21:02*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**16**		0.55	0.11	ug/L		03/31/21 17:30	04/02/21 00:18	1
Benzo[a]anthracene	**2.8**		0.55	0.11	ug/L		03/31/21 17:30	04/02/21 00:18	1
Benzo[a]pyrene	**1.9**		0.55	0.12	ug/L		03/31/21 17:30	04/02/21 00:18	1
Benzo[b]fluoranthene	**2.0**		0.55	0.11	ug/L		03/31/21 17:30	04/02/21 00:18	1
Benzo[g,h,i]perylene	**0.60**		0.55	0.11	ug/L		03/31/21 17:30	04/02/21 00:18	1
Chrysene	**3.4**		0.55	0.11	ug/L		03/31/21 17:30	04/02/21 00:18	1
Fluorene	**67**		0.55	0.13	ug/L		03/31/21 17:30	04/02/21 00:18	1
Phenanthrene	**85**		0.55	0.12	ug/L		03/31/21 17:30	04/02/21 00:18	1
Pyrene	**12**		0.55	0.11	ug/L		03/31/21 17:30	04/02/21 00:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*59*		*44 - 102*	*03/31/21 17:30*	*04/02/21 00:18*	*1*
Nitrobenzene-d5 (Surr)	*79*		*23 - 128*	*03/31/21 17:30*	*04/02/21 00:18*	*1*

Client Sample ID: S-468-20210324
Date Collected: 03/24/21 12:00
Date Received: 03/26/21 18:18

Lab Sample ID: 410-33879-1
Matrix: Groundwater

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl-d14 (Surr)	*75*		*31 - 113*	*03/31/21 17:30*	*04/02/21 00:18*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**3200**		28	5.5	ug/L		03/31/21 17:30	04/02/21 22:48	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*44 - 102*	*03/31/21 17:30*	*04/02/21 22:48*	*50*
Nitrobenzene-d5 (Surr)	*79*		*23 - 128*	*03/31/21 17:30*	*04/02/21 22:48*	*50*
p-Terphenyl-d14 (Surr)	*75*		*31 - 113*	*03/31/21 17:30*	*04/02/21 22:48*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**1.2**	**J**	5.0	1.0	ug/L		04/06/21 08:39	04/06/21 14:33	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:39	04/06/21 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*88*	*^c*	*28 - 140*	*04/06/21 08:39*	*04/06/21 14:33*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**15000**		500	300	ug/L		04/07/21 10:42	04/07/21 20:52	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*109*		*28 - 140*	*04/07/21 10:42*	*04/07/21 20:52*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		03/30/21 16:55	03/30/21 23:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*149*	*S1+*	*46 - 136*	*03/30/21 16:55*	*03/30/21 23:24*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*131*		*46 - 136*	*03/30/21 16:55*	*03/30/21 23:24*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**2.5**	**J**	5.0	1.5	mg/L			04/03/21 09:49	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**33**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:13	1
Iron	**50**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:13	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**160**		8.0	8.0	mg/L			03/29/21 23:14	1
Total Kjeldahl Nitrogen	**6.2**		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:18	1
Total Carbon	**71**		5.0	2.5	mg/L			03/31/21 17:36	5

Client Sample ID: S-468-20210324 — Lab Sample ID: 410-33879-1

Date Collected: 03/24/21 12:00 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	16		1.0	0.50	mg/L			03/30/21 15:55	1
Total Inorganic Carbon	55		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-466-20210324 — Lab Sample ID: 410-33879-2

Date Collected: 03/24/21 10:40 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	10		1.0	0.40	ug/L			04/03/21 02:01	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/03/21 02:01	1
1,3,5-Trimethylbenzene	8.0		5.0	0.30	ug/L			04/03/21 02:01	1
Toluene	1.4		1.0	0.20	ug/L			04/03/21 02:01	1
Xylenes, Total	35		6.0	1.4	ug/L			04/03/21 02:01	1
Methyl tert-butyl ether	0.64	J	1.0	0.20	ug/L			04/03/21 02:01	1
Benzene	18		1.0	0.20	ug/L			04/03/21 02:01	1
Naphthalene	93	*1	5.0	1.0	ug/L			04/03/21 02:01	1
1,2,4-Trimethylbenzene	26		5.0	1.0	ug/L			04/03/21 02:01	1
Isopropylbenzene	2.0	J	5.0	0.20	ug/L			04/03/21 02:01	1
t-Butyl alcohol	ND		50	12	ug/L			04/03/21 02:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*80 - 120*		*04/03/21 02:01*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/03/21 02:01*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*04/03/21 02:01*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/03/21 02:01*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	0.37	J	0.52	0.10	ug/L		03/31/21 17:30	04/02/21 00:47	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 00:47	1
Benzo[a]pyrene	ND		0.52	0.11	ug/L		03/31/21 17:30	04/02/21 00:47	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 00:47	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 00:47	1
Chrysene	ND		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 00:47	1
Fluorene	1.9		0.52	0.12	ug/L		03/31/21 17:30	04/02/21 00:47	1
Naphthalene	57		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 00:47	1
Phenanthrene	1.6		0.52	0.11	ug/L		03/31/21 17:30	04/02/21 00:47	1
Pyrene	ND		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 00:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*62*		*44 - 102*	*03/31/21 17:30*	*04/02/21 00:47*	*1*
Nitrobenzene-d5 (Surr)	*78*		*23 - 128*	*03/31/21 17:30*	*04/02/21 00:47*	*1*
p-Terphenyl-d14 (Surr)	*65*		*31 - 113*	*03/31/21 17:30*	*04/02/21 00:47*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/07/21 21:10	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/07/21 21:10	1
Methane (1C)	14		5.0	3.0	ug/L		04/07/21 10:42	04/07/21 21:10	1

Client Sample ID: S-466-20210324 — Lab Sample ID: 410-33879-2

Date Collected: 03/24/21 10:40 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*93*		*28 - 140*	*04/07/21 10:42*	*04/07/21 21:10*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		03/30/21 16:55	03/30/21 23:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*111*		*46 - 136*	*03/30/21 16:55*	*03/30/21 23:41*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*108*		*46 - 136*	*03/30/21 16:55*	*03/30/21 23:41*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**230**		20	6.0	mg/L			04/03/21 09:59	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**56**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:34	1
Iron	**31**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:34	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**140**		8.0	8.0	mg/L			03/29/21 23:38	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:26	1
Total Carbon	**44**		2.0	1.0	mg/L			03/31/21 17:47	2
Total Organic Carbon	**3.2**		1.0	0.50	mg/L			03/30/21 14:34	1
Total Inorganic Carbon	**41**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-467-20210324 — Lab Sample ID: 410-33879-3

Date Collected: 03/24/21 12:55 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**25**		1.0	0.40	ug/L			04/03/21 02:25	1
1,2-Dichloroethane	**0.65**	**J**	1.0	0.30	ug/L			04/03/21 02:25	1
1,3,5-Trimethylbenzene	**22**		5.0	0.30	ug/L			04/03/21 02:25	1
Toluene	**20**		1.0	0.20	ug/L			04/03/21 02:25	1
Xylenes, Total	**55**		6.0	1.4	ug/L			04/03/21 02:25	1
Methyl tert-butyl ether	**78**		1.0	0.20	ug/L			04/03/21 02:25	1
Naphthalene	**85**	***1**	5.0	1.0	ug/L			04/03/21 02:25	1
1,2,4-Trimethylbenzene	**64**		5.0	1.0	ug/L			04/03/21 02:25	1
Isopropylbenzene	**100**		5.0	0.20	ug/L			04/03/21 02:25	1
t-Butyl alcohol	**570**		50	12	ug/L			04/03/21 02:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 120*		*04/03/21 02:25*	*1*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*04/03/21 02:25*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*04/03/21 02:25*	*1*

Client Sample ID: S-467-20210324 — Lab Sample ID: 410-33879-3

Date Collected: 03/24/21 12:55 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*80 - 120*		*04/03/21 02:25*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**370**		10	2.0	ug/L			04/06/21 16:17	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 120*		*04/06/21 16:17*	*10*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/06/21 16:17*	*10*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*04/06/21 16:17*	*10*
Toluene-d8 (Surr)	*105*		*80 - 120*		*04/06/21 16:17*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**6.3**		0.64	0.13	ug/L		03/31/21 17:30	04/02/21 01:15	1
Benzo[a]anthracene	**0.38**	**J**	0.64	0.13	ug/L		03/31/21 17:30	04/02/21 01:15	1
Benzo[a]pyrene	**0.20**	**J**	0.64	0.14	ug/L		03/31/21 17:30	04/02/21 01:15	1
Benzo[b]fluoranthene	**0.31**	**J**	0.64	0.13	ug/L		03/31/21 17:30	04/02/21 01:15	1
Benzo[g,h,i]perylene	ND		0.64	0.13	ug/L		03/31/21 17:30	04/02/21 01:15	1
Chrysene	**0.55**	**J**	0.64	0.13	ug/L		03/31/21 17:30	04/02/21 01:15	1
Fluorene	**32**		0.64	0.15	ug/L		03/31/21 17:30	04/02/21 01:15	1
Naphthalene	**66**		0.64	0.13	ug/L		03/31/21 17:30	04/02/21 01:15	1
Phenanthrene	**39**		0.64	0.14	ug/L		03/31/21 17:30	04/02/21 01:15	1
Pyrene	**3.0**		0.64	0.13	ug/L		03/31/21 17:30	04/02/21 01:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*44 - 102*	*03/31/21 17:30*	*04/02/21 01:15*	*1*
Nitrobenzene-d5 (Surr)	*79*		*23 - 128*	*03/31/21 17:30*	*04/02/21 01:15*	*1*
p-Terphenyl-d14 (Surr)	*67*		*31 - 113*	*03/31/21 17:30*	*04/02/21 01:15*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**2.8**	**J**	5.0	1.0	ug/L		04/06/21 08:43	04/06/21 16:25	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*78*	*^c*	*28 - 140*	*04/06/21 08:43*	*04/06/21 16:25*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**18000**		250	150	ug/L		04/07/21 10:42	04/07/21 21:28	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*107*		*28 - 140*	*04/07/21 10:42*	*04/07/21 21:28*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0097	ug/L		03/30/21 16:55	03/30/21 23:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*104*		*46 - 136*	*03/30/21 16:55*	*03/30/21 23:57*	*1*

Client Sample ID: S-467-20210324 — Lab Sample ID: 410-33879-3

Date Collected: 03/24/21 12:55 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*	*03/30/21 16:55*	*03/30/21 23:57*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**6.6**		5.0	1.5	mg/L			04/03/21 09:02	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**50**		0.50	0.096	mg/L		03/29/21 14:35	03/31/21 04:08	1
Iron	**51**		0.20	0.040	mg/L		03/29/21 14:35	03/31/21 04:08	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.00038**	**J**	0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**230**		8.0	8.0	mg/L			03/29/21 23:21	1
Total Kjeldahl Nitrogen	**8.9**		5.0	2.5	mg/L		03/29/21 15:08	03/30/21 11:47	5
Total Carbon	**89**		5.0	2.5	mg/L			03/31/21 17:57	5
Total Organic Carbon	**25**		1.0	0.50	mg/L			03/30/21 16:11	1
Total Inorganic Carbon	**64**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-456-20210324 — Lab Sample ID: 410-33879-4

Date Collected: 03/24/21 12:20 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**9.6**		1.0	0.40	ug/L			04/03/21 02:49	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/03/21 02:49	1
1,3,5-Trimethylbenzene	**4.6**	**J**	5.0	0.30	ug/L			04/03/21 02:49	1
Toluene	**14**		1.0	0.20	ug/L			04/03/21 02:49	1
Xylenes, Total	**10**		6.0	1.4	ug/L			04/03/21 02:49	1
Methyl tert-butyl ether	**33**		1.0	0.20	ug/L			04/03/21 02:49	1
Naphthalene	**23**	***1**	5.0	1.0	ug/L			04/03/21 02:49	1
1,2,4-Trimethylbenzene	**6.5**		5.0	1.0	ug/L			04/03/21 02:49	1
Isopropylbenzene	**44**		5.0	0.20	ug/L			04/03/21 02:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 120*		*04/03/21 02:49*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*04/03/21 02:49*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*04/03/21 02:49*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*04/03/21 02:49*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**220**		10	2.0	ug/L			04/06/21 16:41	10
t-Butyl alcohol	**1200**		500	120	ug/L			04/06/21 16:41	10

Client Sample ID: S-456-20210324 — Lab Sample ID: 410-33879-4

Date Collected: 03/24/21 12:20 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		80 - 120		04/06/21 16:41	10
4-Bromofluorobenzene (Surr)	93		80 - 120		04/06/21 16:41	10
Dibromofluoromethane (Surr)	98		80 - 120		04/06/21 16:41	10
Toluene-d8 (Surr)	106		80 - 120		04/06/21 16:41	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	2.4		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 01:43	1
Benzo[a]anthracene	1.9		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 01:43	1
Benzo[a]pyrene	2.8		0.52	0.11	ug/L		03/31/21 17:30	04/02/21 01:43	1
Benzo[b]fluoranthene	6.0		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 01:43	1
Benzo[g,h,i]perylene	2.6		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 01:43	1
Chrysene	5.5		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 01:43	1
Fluorene	9.6		0.52	0.13	ug/L		03/31/21 17:30	04/02/21 01:43	1
Naphthalene	7.1		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 01:43	1
Phenanthrene	5.7		0.52	0.11	ug/L		03/31/21 17:30	04/02/21 01:43	1
Pyrene	8.6		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 01:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	59		44 - 102	03/31/21 17:30	04/02/21 01:43	1
Nitrobenzene-d5 (Surr)	75		23 - 128	03/31/21 17:30	04/02/21 01:43	1
p-Terphenyl-d14 (Surr)	66		31 - 113	03/31/21 17:30	04/02/21 01:43	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	1.2	J	5.0	1.0	ug/L		04/06/21 08:43	04/06/21 16:43	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 16:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	70	^c	28 - 140	04/06/21 08:43	04/06/21 16:43	1

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	12000		250	150	ug/L		04/07/21 10:42	04/07/21 21:47	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	107		28 - 140	04/07/21 10:42	04/07/21 21:47	50

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		03/30/21 16:55	03/31/21 00:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	85		46 - 136	03/30/21 16:55	03/31/21 00:14	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	120		46 - 136	03/30/21 16:55	03/31/21 00:14	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	9.0		5.0	1.5	mg/L			04/03/21 10:08	5

Client Sample ID: S-456-20210324 — Lab Sample ID: 410-33879-4

Date Collected: 03/24/21 12:20 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	41		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:26	1
Iron	29		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:26	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	150		8.0	8.0	mg/L			03/29/21 23:45	1
Total Kjeldahl Nitrogen	2.0		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:15	1
Total Carbon	48		5.0	2.5	mg/L			03/31/21 18:52	5
Total Organic Carbon	9.8		1.0	0.50	mg/L			03/30/21 16:27	1
Total Inorganic Carbon	38		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-472-20210324 — Lab Sample ID: 410-33879-5

Date Collected: 03/24/21 14:45 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/03/21 03:12	1
1,3,5-Trimethylbenzene	130		5.0	0.30	ug/L			04/03/21 03:12	1
Toluene	8.8		1.0	0.20	ug/L			04/03/21 03:12	1
Xylenes, Total	290		6.0	1.4	ug/L			04/03/21 03:12	1
Methyl tert-butyl ether	0.79	J	1.0	0.20	ug/L			04/03/21 03:12	1
Benzene	180		1.0	0.20	ug/L			04/03/21 03:12	1
Isopropylbenzene	110		5.0	0.20	ug/L			04/03/21 03:12	1
t-Butyl alcohol	25	J	50	12	ug/L			04/03/21 03:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 120*		*04/03/21 03:12*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/03/21 03:12*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*04/03/21 03:12*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*04/03/21 03:12*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	970		10	4.0	ug/L			04/06/21 17:05	10
1,2,4-Trimethylbenzene	490		50	10	ug/L			04/06/21 17:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*04/06/21 17:05*	*10*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/06/21 17:05*	*10*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/06/21 17:05*	*10*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/06/21 17:05*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	3500		250	50	ug/L			04/06/21 21:26	50

Client Sample ID: S-472-20210324 **Lab Sample ID: 410-33879-5**
Date Collected: 03/24/21 14:45 **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		80 - 120		04/06/21 21:26	50
4-Bromofluorobenzene (Surr)	99		80 - 120		04/06/21 21:26	50
Dibromofluoromethane (Surr)	99		80 - 120		04/06/21 21:26	50
Toluene-d8 (Surr)	106		80 - 120		04/06/21 21:26	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	9.9		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 02:11	1
Benzo[a]anthracene	2.4		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 02:11	1
Benzo[a]pyrene	1.6		0.52	0.11	ug/L		03/31/21 17:30	04/02/21 02:11	1
Benzo[b]fluoranthene	1.8		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 02:11	1
Benzo[g,h,i]perylene	0.62		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 02:11	1
Chrysene	2.7		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 02:11	1
Fluorene	38		0.52	0.12	ug/L		03/31/21 17:30	04/02/21 02:11	1
Phenanthrene	49		0.52	0.11	ug/L		03/31/21 17:30	04/02/21 02:11	1
Pyrene	8.6		0.52	0.10	ug/L		03/31/21 17:30	04/02/21 02:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	64		44 - 102	03/31/21 17:30	04/02/21 02:11	1
Nitrobenzene-d5 (Surr)	0.7	S1-	23 - 128	03/31/21 17:30	04/02/21 02:11	1
p-Terphenyl-d14 (Surr)	69		31 - 113	03/31/21 17:30	04/02/21 02:11	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5800		52	10	ug/L		03/31/21 17:30	04/02/21 23:16	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	79		44 - 102	03/31/21 17:30	04/02/21 23:16	100
Nitrobenzene-d5 (Surr)	0	S1-	23 - 128	03/31/21 17:30	04/02/21 23:16	100
p-Terphenyl-d14 (Surr)	67		31 - 113	03/31/21 17:30	04/02/21 23:16	100

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	4.1	J	5.0	1.0	ug/L		04/06/21 08:43	04/06/21 17:01	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 17:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	75	^c	28 - 140	04/06/21 08:43	04/06/21 17:01	1

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	12000		250	150	ug/L		04/07/21 10:42	04/07/21 22:05	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	107		28 - 140	04/07/21 10:42	04/07/21 22:05	50

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		03/30/21 16:55	03/31/21 00:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	121		46 - 136	03/30/21 16:55	03/31/21 00:31	1

Client Sample ID: S-472-20210324
Lab Sample ID: 410-33879-5

Date Collected: 03/24/21 14:45
Matrix: Groundwater
Date Received: 03/26/21 18:18

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*104*		*46 - 136*	*03/30/21 16:55*	*03/31/21 00:31*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**19**		5.0	1.5	mg/L			04/03/21 10:24	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**77**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:32	1
Iron	**140**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:32	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.00043**	**J**	0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**120**		8.0	8.0	mg/L			03/29/21 23:32	1
Total Kjeldahl Nitrogen	**4.3**		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:22	1
Total Carbon	**85**		5.0	2.5	mg/L			03/31/21 19:24	5
Total Organic Carbon	**26**		1.0	0.50	mg/L			03/30/21 17:16	1
Total Inorganic Carbon	**59**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-470-20210325
Lab Sample ID: 410-33879-6

Date Collected: 03/25/21 09:00
Matrix: Groundwater
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			04/02/21 23:50	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/02/21 23:50	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/02/21 23:50	1
Toluene	**0.38**	**J**	1.0	0.20	ug/L			04/02/21 23:50	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/02/21 23:50	1
Methyl tert-butyl ether	**1.9**		1.0	0.20	ug/L			04/02/21 23:50	1
Benzene	**7.0**		1.0	0.20	ug/L			04/02/21 23:50	1
Naphthalene	**1.6**	**J**	5.0	1.0	ug/L			04/02/21 23:50	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/02/21 23:50	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/02/21 23:50	1
t-Butyl alcohol	**16**	**J**	50	12	ug/L			04/02/21 23:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*80 - 120*		*04/02/21 23:50*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/02/21 23:50*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*04/02/21 23:50*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/02/21 23:50*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:00	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:00	1

Client Sample ID: S-470-20210325 **Lab Sample ID: 410-33879-6**
Date Collected: 03/25/21 09:00 **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.51	0.11	ug/L		04/01/21 17:00	04/03/21 03:00	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:00	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:00	1
Chrysene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:00	1
Fluorene	ND		0.51	0.12	ug/L		04/01/21 17:00	04/03/21 03:00	1
Naphthalene	**1.5**		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:00	1
Phenanthrene	ND		0.51	0.11	ug/L		04/01/21 17:00	04/03/21 03:00	1
Pyrene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*44 - 102*	*04/01/21 17:00*	*04/03/21 03:00*	*1*
Nitrobenzene-d5 (Surr)	*0.6*	*S1-*	*23 - 128*	*04/01/21 17:00*	*04/03/21 03:00*	*1*
p-Terphenyl-d14 (Surr)	*73*		*31 - 113*	*04/01/21 17:00*	*04/03/21 03:00*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**1.3**	**J**	5.0	1.0	ug/L		04/07/21 10:42	04/07/21 22:23	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/07/21 22:23	1
Methane (1C)	**32**		5.0	3.0	ug/L		04/07/21 10:42	04/07/21 22:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 140*	*04/07/21 10:42*	*04/07/21 22:23*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		03/30/21 16:55	03/31/21 00:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*	*03/30/21 16:55*	*03/31/21 00:47*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*104*		*46 - 136*	*03/30/21 16:55*	*03/31/21 00:47*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**300**		50	15	mg/L			04/03/21 10:41	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**56**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:16	1
Iron	**64**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:16	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 13:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**160**		8.0	8.0	mg/L			03/29/21 23:09	1
Total Kjeldahl Nitrogen	**0.65**	**J**	1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:34	1
Total Carbon	**69**		5.0	2.5	mg/L			03/31/21 19:35	5
Total Organic Carbon	**15**		1.0	0.50	mg/L			03/30/21 17:32	1
Total Inorganic Carbon	**54**		2.0	0.60	mg/L			04/01/21 13:56	1

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-465-20210325
Lab Sample ID: 410-33879-7
Date Collected: 03/25/21 10:30
Matrix: Groundwater
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**88**		10	4.0	ug/L			04/03/21 02:36	10
1,2-Dichloroethane	ND		10	3.0	ug/L			04/03/21 02:36	10
1,3,5-Trimethylbenzene	**12**	**J**	50	3.0	ug/L			04/03/21 02:36	10
Toluene	**1300**		10	2.0	ug/L			04/03/21 02:36	10
Xylenes, Total	**470**		60	14	ug/L			04/03/21 02:36	10
Methyl tert-butyl ether	ND		10	2.0	ug/L			04/03/21 02:36	10
Naphthalene	**36**	**J**	50	10	ug/L			04/03/21 02:36	10
1,2,4-Trimethylbenzene	**36**	**J**	50	10	ug/L			04/03/21 02:36	10
Isopropylbenzene	**19**	**J**	50	2.0	ug/L			04/03/21 02:36	10
t-Butyl alcohol	ND		500	120	ug/L			04/03/21 02:36	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*04/03/21 02:36*	*10*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/03/21 02:36*	*10*
Dibromofluoromethane (Surr)	*91*		*80 - 120*		*04/03/21 02:36*	*10*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/03/21 02:36*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**30000**		500	100	ug/L			04/06/21 17:28	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*04/06/21 17:28*	*500*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/06/21 17:28*	*500*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/06/21 17:28*	*500*
Toluene-d8 (Surr)	*106*		*80 - 120*		*04/06/21 17:28*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.14**	**J**	0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:28	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:28	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		04/01/21 17:00	04/03/21 03:28	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:28	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:28	1
Chrysene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:28	1
Fluorene	**0.24**	**J**	0.51	0.12	ug/L		04/01/21 17:00	04/03/21 03:28	1
Naphthalene	**21**		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:28	1
Phenanthrene	**0.13**	**J**	0.51	0.11	ug/L		04/01/21 17:00	04/03/21 03:28	1
Pyrene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*52*		*44 - 102*	*04/01/21 17:00*	*04/03/21 03:28*	*1*
Nitrobenzene-d5 (Surr)	*69*		*23 - 128*	*04/01/21 17:00*	*04/03/21 03:28*	*1*
p-Terphenyl-d14 (Surr)	*66*		*31 - 113*	*04/01/21 17:00*	*04/03/21 03:28*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/07/21 22:42	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/07/21 22:42	1
Methane (1C)	**150**		5.0	3.0	ug/L		04/07/21 10:42	04/07/21 22:42	1

Client Sample ID: S-465-20210325 — Lab Sample ID: 410-33879-7

Date Collected: 03/25/21 10:30 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*58*		*28 - 140*	*04/07/21 10:42*	*04/07/21 22:42*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		03/30/21 16:55	03/31/21 01:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*101*		*46 - 136*	*03/30/21 16:55*	*03/31/21 01:04*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*117*		*46 - 136*	*03/30/21 16:55*	*03/31/21 01:04*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**96**		20	6.0	mg/L			04/03/21 10:58	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 08:56	1
Iron	**5.7**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 08:56	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.00012**	**J**	0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 13:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**310**		8.0	8.0	mg/L			03/29/21 22:47	1
Total Kjeldahl Nitrogen	**1.1**		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:20	1
Total Carbon	**88**		10	5.0	mg/L			03/31/21 19:46	10
Total Organic Carbon	**18**		1.0	0.50	mg/L			03/30/21 17:48	1
Total Inorganic Carbon	**70**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-469-20210325 — Lab Sample ID: 410-33879-8

Date Collected: 03/25/21 11:25 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			04/03/21 00:14	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/03/21 00:14	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/03/21 00:14	1
Toluene	**1.1**		1.0	0.20	ug/L			04/03/21 00:14	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/03/21 00:14	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/03/21 00:14	1
Benzene	**28**		1.0	0.20	ug/L			04/03/21 00:14	1
Naphthalene	ND		5.0	1.0	ug/L			04/03/21 00:14	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/03/21 00:14	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/03/21 00:14	1
t-Butyl alcohol	ND		50	12	ug/L			04/03/21 00:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*04/03/21 00:14*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/03/21 00:14*	*1*

Client Sample ID: S-469-20210325 — Lab Sample ID: 410-33879-8

Date Collected: 03/25/21 11:25 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*04/03/21 00:14*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/03/21 00:14*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:56	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:56	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		04/01/21 17:00	04/03/21 03:56	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:56	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:56	1
Chrysene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:56	1
Fluorene	ND		0.51	0.12	ug/L		04/01/21 17:00	04/03/21 03:56	1
Naphthalene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:56	1
Phenanthrene	ND		0.51	0.11	ug/L		04/01/21 17:00	04/03/21 03:56	1
Pyrene	ND		0.51	0.10	ug/L		04/01/21 17:00	04/03/21 03:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*60*		*44 - 102*	*04/01/21 17:00*	*04/03/21 03:56*	*1*
Nitrobenzene-d5 (Surr)	*77*		*23 - 128*	*04/01/21 17:00*	*04/03/21 03:56*	*1*
p-Terphenyl-d14 (Surr)	*72*		*31 - 113*	*04/01/21 17:00*	*04/03/21 03:56*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/08/21 03:49	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/08/21 03:49	1
Methane (1C)	ND		5.0	3.0	ug/L		04/07/21 10:42	04/08/21 03:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 140*	*04/07/21 10:42*	*04/08/21 03:49*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		03/30/21 16:55	03/31/21 01:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*95*		*46 - 136*	*03/30/21 16:55*	*03/31/21 01:21*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*110*		*46 - 136*	*03/30/21 16:55*	*03/31/21 01:21*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**81**		20	6.0	mg/L			04/03/21 11:47	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**78**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:29	1
Iron	**0.26**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:29	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.000089**	**J**	0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:11	1

Client: Stantec Consulting Corp. Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-469-20210325 — Lab Sample ID: 410-33879-8

Date Collected: 03/25/21 11:25 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**310**		8.0	8.0	mg/L			03/29/21 23:51	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:16	1
Total Carbon	**75**		5.0	2.5	mg/L			03/31/21 19:57	5
Total Organic Carbon	**2.0**		1.0	0.50	mg/L			03/30/21 18:04	1
Total Inorganic Carbon	**73**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: TB-20210326 — Lab Sample ID: 410-33879-9

Date Collected: 03/19/21 00:00 — **Matrix: Water**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			04/01/21 19:28	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/01/21 19:28	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/01/21 19:28	1
Toluene	ND		1.0	0.20	ug/L			04/01/21 19:28	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/01/21 19:28	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/01/21 19:28	1
Benzene	ND		1.0	0.20	ug/L			04/01/21 19:28	1
Naphthalene	ND		5.0	1.0	ug/L			04/01/21 19:28	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/01/21 19:28	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/01/21 19:28	1
t-Butyl alcohol	ND		50	12	ug/L			04/01/21 19:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*04/01/21 19:28*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/01/21 19:28*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*04/01/21 19:28*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/01/21 19:28*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0097	ug/L		04/01/21 18:00	04/02/21 11:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*90*		*46 - 136*	*04/01/21 18:00*	*04/02/21 11:20*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*102*		*46 - 136*	*04/01/21 18:00*	*04/02/21 11:20*	*1*

Client Sample ID: S-457-20210326 — Lab Sample ID: 410-33879-10

Date Collected: 03/26/21 09:20 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1400**		10	4.0	ug/L			04/03/21 03:24	10
1,2-Dichloroethane	ND		10	3.0	ug/L			04/03/21 03:24	10
1,3,5-Trimethylbenzene	**150**		50	3.0	ug/L			04/03/21 03:24	10
Toluene	**770**		10	2.0	ug/L			04/03/21 03:24	10
Xylenes, Total	**3500**		60	14	ug/L			04/03/21 03:24	10
Methyl tert-butyl ether	**3700**		10	2.0	ug/L			04/03/21 03:24	10
1,2,4-Trimethylbenzene	**550**		50	10	ug/L			04/03/21 03:24	10

Client Sample ID: S-457-20210326
Lab Sample ID: 410-33879-10
Date Collected: 03/26/21 09:20
Matrix: Groundwater
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	**53**		50	2.0	ug/L			04/03/21 03:24	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 120*		*04/03/21 03:24*	*10*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/03/21 03:24*	*10*
Dibromofluoromethane (Surr)	*89*		*80 - 120*		*04/03/21 03:24*	*10*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/03/21 03:24*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**18000**		100	20	ug/L			04/03/21 03:48	100
Naphthalene	**4300**		500	100	ug/L			04/03/21 03:48	100
t-Butyl alcohol	**23000**		5000	1200	ug/L			04/03/21 03:48	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 120*		*04/03/21 03:48*	*100*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/03/21 03:48*	*100*
Dibromofluoromethane (Surr)	*89*		*80 - 120*		*04/03/21 03:48*	*100*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/03/21 03:48*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**1.6**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 05:43	1
Benzo[a]anthracene	**0.15**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/06/21 05:43	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		04/02/21 10:00	04/06/21 05:43	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 05:43	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 05:43	1
Chrysene	**0.19**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/06/21 05:43	1
Fluorene	**14**		0.51	0.12	ug/L		04/02/21 10:00	04/06/21 05:43	1
Phenanthrene	**13**		0.51	0.11	ug/L		04/02/21 10:00	04/06/21 05:43	1
Pyrene	**0.86**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 05:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*44 - 102*	*04/02/21 10:00*	*04/06/21 05:43*	*1*
Nitrobenzene-d5 (Surr)	*54*		*23 - 128*	*04/02/21 10:00*	*04/06/21 05:43*	*1*
p-Terphenyl-d14 (Surr)	*76*		*31 - 113*	*04/02/21 10:00*	*04/06/21 05:43*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**3100**		51	10	ug/L		04/02/21 10:00	04/07/21 03:40	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*44 - 102*	*04/02/21 10:00*	*04/07/21 03:40*	*100*
Nitrobenzene-d5 (Surr)	*56*		*23 - 128*	*04/02/21 10:00*	*04/07/21 03:40*	*100*
p-Terphenyl-d14 (Surr)	*64*		*31 - 113*	*04/02/21 10:00*	*04/07/21 03:40*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**6.4**		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 18:13	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 18:13	1

Client Sample ID: S-457-20210326
Lab Sample ID: 410-33879-10
Date Collected: 03/26/21 09:20
Matrix: Groundwater
Date Received: 03/26/21 18:18

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	79	^c	28 - 140	04/06/21 08:43	04/06/21 18:13	1

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	14000		250	150	ug/L		04/07/21 10:42	04/08/21 04:08	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	104		28 - 140	04/07/21 10:42	04/08/21 04:08	50

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		03/30/21 16:55	03/31/21 01:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	155	S1+	46 - 136	03/30/21 16:55	03/31/21 01:38	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	113		46 - 136	03/30/21 16:55	03/31/21 01:38	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.2	J	5.0	1.5	mg/L			04/03/21 12:04	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	77		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:24	1
Iron	36		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:24	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0013		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	240		8.0	8.0	mg/L			03/29/21 23:27	1
Total Kjeldahl Nitrogen	0.97	J	1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:24	1
Total Carbon	140		10	5.0	mg/L			03/31/21 20:08	10
Total Organic Carbon	44		1.0	0.50	mg/L			03/30/21 18:21	1
Total Inorganic Carbon	96		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: RW-1-20210326
Lab Sample ID: 410-33879-11
Date Collected: 03/26/21 09:10
Matrix: Groundwater
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	28		5.0	2.0	ug/L			04/03/21 04:11	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			04/03/21 04:11	5
1,3,5-Trimethylbenzene	200		25	1.5	ug/L			04/03/21 04:11	5
Toluene	27		5.0	1.0	ug/L			04/03/21 04:11	5
Xylenes, Total	1100		30	7.0	ug/L			04/03/21 04:11	5
Benzene	230		5.0	1.0	ug/L			04/03/21 04:11	5
Naphthalene	99		25	5.0	ug/L			04/03/21 04:11	5
1,2,4-Trimethylbenzene	810		25	5.0	ug/L			04/03/21 04:11	5

Client Sample ID: RW-1-20210326 **Lab Sample ID: 410-33879-11**
Date Collected: 03/26/21 09:10 **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	**61**		25	1.0	ug/L			04/03/21 04:11	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 120*		*04/03/21 04:11*	*5*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/03/21 04:11*	*5*
Dibromofluoromethane (Surr)	*91*		*80 - 120*		*04/03/21 04:11*	*5*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/03/21 04:11*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**11000**		50	10	ug/L			04/03/21 04:35	50
t-Butyl alcohol	**48000**		2500	600	ug/L			04/03/21 04:35	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*04/03/21 04:35*	*50*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/03/21 04:35*	*50*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*04/03/21 04:35*	*50*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/03/21 04:35*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**2.3**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 06:39	1
Benzo[a]anthracene	**0.32**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/06/21 06:39	1
Benzo[a]pyrene	**0.17**	**J**	0.51	0.11	ug/L		04/02/21 10:00	04/06/21 06:39	1
Benzo[b]fluoranthene	**0.19**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/06/21 06:39	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 06:39	1
Chrysene	**0.35**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/06/21 06:39	1
Fluorene	**12**		0.51	0.12	ug/L		04/02/21 10:00	04/06/21 06:39	1
Naphthalene	**61**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 06:39	1
Phenanthrene	**9.9**		0.51	0.11	ug/L		04/02/21 10:00	04/06/21 06:39	1
Pyrene	**2.5**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 06:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*66*		*44 - 102*	*04/02/21 10:00*	*04/06/21 06:39*	*1*
Nitrobenzene-d5 (Surr)	*52*		*23 - 128*	*04/02/21 10:00*	*04/06/21 06:39*	*1*
p-Terphenyl-d14 (Surr)	*77*		*31 - 113*	*04/02/21 10:00*	*04/06/21 06:39*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 18:49	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*63*	*^c*	*28 - 140*	*04/06/21 08:43*	*04/06/21 18:49*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**17000**		250	150	ug/L		04/07/21 10:42	04/08/21 04:28	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*04/07/21 10:42*	*04/08/21 04:28*	*50*

Client Sample ID: RW-1-20210326 — Lab Sample ID: 410-33879-11

Date Collected: 03/26/21 09:10 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0097	ug/L		03/30/21 16:55	03/31/21 01:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*120*		*46 - 136*	*03/30/21 16:55*	*03/31/21 01:54*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*109*		*46 - 136*	*03/30/21 16:55*	*03/31/21 01:54*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**1.8**	**J**	5.0	1.5	mg/L			04/03/21 12:20	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:43	1
Iron	**47**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:43	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.00084**		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 13:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**480**		8.0	8.0	mg/L			03/29/21 21:59	1
Total Kjeldahl Nitrogen	**29**		10	5.0	mg/L		03/29/21 15:08	03/30/21 11:45	10
Total Carbon	**200**		10	5.0	mg/L			03/31/21 20:41	10
Total Organic Carbon	**38**		1.0	0.50	mg/L			03/30/21 19:09	1
Total Inorganic Carbon	**160**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-454-20210326 — Lab Sample ID: 410-33879-12

Date Collected: 03/26/21 10:20 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**0.65**	**J**	1.0	0.40	ug/L			04/03/21 00:37	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/03/21 00:37	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/03/21 00:37	1
Toluene	**0.57**	**J**	1.0	0.20	ug/L			04/03/21 00:37	1
Xylenes, Total	**1.7**	**J**	6.0	1.4	ug/L			04/03/21 00:37	1
Methyl tert-butyl ether	**0.88**	**J**	1.0	0.20	ug/L			04/03/21 00:37	1
Benzene	**12**		1.0	0.20	ug/L			04/03/21 00:37	1
Naphthalene	ND		5.0	1.0	ug/L			04/03/21 00:37	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/03/21 00:37	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/03/21 00:37	1
t-Butyl alcohol	ND		50	12	ug/L			04/03/21 00:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*04/03/21 00:37*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*04/03/21 00:37*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*04/03/21 00:37*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/03/21 00:37*	*1*

Client Sample ID: S-454-20210326 **Lab Sample ID: 410-33879-12**
Date Collected: 03/26/21 10:20 **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 07:07	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 07:07	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		04/02/21 10:00	04/06/21 07:07	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 07:07	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 07:07	1
Chrysene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 07:07	1
Fluorene	ND		0.51	0.12	ug/L		04/02/21 10:00	04/06/21 07:07	1
Naphthalene	**1.4**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 07:07	1
Phenanthrene	**0.18**	**J**	0.51	0.11	ug/L		04/02/21 10:00	04/06/21 07:07	1
Pyrene	**0.19**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/06/21 07:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*77*		*44 - 102*	*04/02/21 10:00*	*04/06/21 07:07*	*1*
Nitrobenzene-d5 (Surr)	*83*		*23 - 128*	*04/02/21 10:00*	*04/06/21 07:07*	*1*
p-Terphenyl-d14 (Surr)	*79*		*31 - 113*	*04/02/21 10:00*	*04/06/21 07:07*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/08/21 04:47	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/08/21 04:47	1
Methane (1C)	**3.8**	**J**	5.0	3.0	ug/L		04/07/21 10:42	04/08/21 04:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*90*		*28 - 140*	*04/07/21 10:42*	*04/08/21 04:47*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		03/30/21 16:55	03/31/21 02:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*	*03/30/21 16:55*	*03/31/21 02:11*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*100*		*46 - 136*	*03/30/21 16:55*	*03/31/21 02:11*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**200**		20	6.0	mg/L			04/03/21 12:37	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**53**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:45	1
Iron	**22**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:45	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 13:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**130**		8.0	8.0	mg/L			03/29/21 22:53	1
Total Kjeldahl Nitrogen	ND	FH	1.0	0.50	mg/L		03/29/21 15:08	03/30/21 10:52	1
Total Carbon	**40**		2.0	1.0	mg/L			03/31/21 20:51	2
Total Organic Carbon	**2.0**		1.0	0.50	mg/L			03/30/21 19:26	1

Client Sample ID: S-454-20210326 — Lab Sample ID: 410-33879-12

Date Collected: 03/26/21 10:20 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Inorganic Carbon	**38**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-453-20210326 — Lab Sample ID: 410-33879-13

Date Collected: 03/26/21 11:25 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		5.0	1.5	ug/L			04/03/21 04:59	5
1,3,5-Trimethylbenzene	**220**		25	1.5	ug/L			04/03/21 04:59	5
Toluene	**50**		5.0	1.0	ug/L			04/03/21 04:59	5
Xylenes, Total	**1800**		30	7.0	ug/L			04/03/21 04:59	5
Methyl tert-butyl ether	**50**		5.0	1.0	ug/L			04/03/21 04:59	5
Naphthalene	**400**		25	5.0	ug/L			04/03/21 04:59	5
1,2,4-Trimethylbenzene	**690**		25	5.0	ug/L			04/03/21 04:59	5
Isopropylbenzene	**66**		25	1.0	ug/L			04/03/21 04:59	5
t-Butyl alcohol	ND		250	60	ug/L			04/03/21 04:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 120*		*04/03/21 04:59*	*5*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*04/03/21 04:59*	*5*
Dibromofluoromethane (Surr)	*90*		*80 - 120*		*04/03/21 04:59*	*5*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/03/21 04:59*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1300**		50	20	ug/L			04/03/21 05:22	50
Benzene	**3800**		50	10	ug/L			04/03/21 05:22	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*04/03/21 05:22*	*50*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/03/21 05:22*	*50*
Dibromofluoromethane (Surr)	*90*		*80 - 120*		*04/03/21 05:22*	*50*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/03/21 05:22*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/05/21 13:37	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/05/21 13:37	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		04/02/21 10:00	04/05/21 13:37	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/05/21 13:37	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/05/21 13:37	1
Chrysene	ND	^c	0.51	0.10	ug/L		04/02/21 10:00	04/05/21 13:37	1
Fluorene	**2.7**		0.51	0.12	ug/L		04/02/21 10:00	04/05/21 13:37	1
Phenanthrene	**1.9**		0.51	0.11	ug/L		04/02/21 10:00	04/05/21 13:37	1
Pyrene	**0.17**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/05/21 13:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*44 - 102*	*04/02/21 10:00*	*04/05/21 13:37*	*1*
Nitrobenzene-d5 (Surr)	*1*	*S1-*	*23 - 128*	*04/02/21 10:00*	*04/05/21 13:37*	*1*
p-Terphenyl-d14 (Surr)	*68*		*31 - 113*	*04/02/21 10:00*	*04/05/21 13:37*	*1*

Client Sample ID: S-453-20210326
Lab Sample ID: 410-33879-13
Date Collected: 03/26/21 11:25
Matrix: Groundwater
Date Received: 03/26/21 18:18

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	300		2.5	0.51	ug/L		04/02/21 10:00	04/06/21 07:35	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*44 - 102*	*04/02/21 10:00*	*04/06/21 07:35*	*5*
Nitrobenzene-d5 (Surr)	*0*	*S1-*	*23 - 128*	*04/02/21 10:00*	*04/06/21 07:35*	*5*
p-Terphenyl-d14 (Surr)	*67*		*31 - 113*	*04/02/21 10:00*	*04/06/21 07:35*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	2.4	J	5.0	1.0	ug/L		04/06/21 08:43	04/06/21 19:26	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 19:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*73*	*^c*	*28 - 140*	*04/06/21 08:43*	*04/06/21 19:26*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	17000		250	150	ug/L		04/07/21 10:42	04/08/21 05:06	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*99*		*28 - 140*	*04/07/21 10:42*	*04/08/21 05:06*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		03/30/21 16:55	03/31/21 02:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*124*		*46 - 136*	*03/30/21 16:55*	*03/31/21 02:28*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*119*		*46 - 136*	*03/30/21 16:55*	*03/31/21 02:28*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	7.0	FH	5.0	1.5	mg/L			04/03/21 12:54	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	43		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:37	1
Iron	74		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:37	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0089		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	150		8.0	8.0	mg/L			03/29/21 22:21	1
Total Kjeldahl Nitrogen	0.58	J	1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:03	1
Total Carbon	75		5.0	2.5	mg/L			03/31/21 21:02	5
Total Organic Carbon	19		1.0	0.50	mg/L			03/30/21 19:42	1
Total Inorganic Carbon	56		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-455-20210326
Lab Sample ID: 410-33879-14
Date Collected: 03/26/21 11:10
Matrix: Groundwater
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**530**		5.0	2.0	ug/L			04/03/21 05:46	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			04/03/21 05:46	5
1,3,5-Trimethylbenzene	**170**		25	1.5	ug/L			04/03/21 05:46	5
Toluene	**410**		5.0	1.0	ug/L			04/03/21 05:46	5
Xylenes, Total	**580**		30	7.0	ug/L			04/03/21 05:46	5
Methyl tert-butyl ether	**400**		5.0	1.0	ug/L			04/03/21 05:46	5
1,2,4-Trimethylbenzene	**280**		25	5.0	ug/L			04/03/21 05:46	5
Isopropylbenzene	**120**		25	1.0	ug/L			04/03/21 05:46	5
t-Butyl alcohol	**2200**		250	60	ug/L			04/03/21 05:46	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*04/03/21 05:46*	*5*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/03/21 05:46*	*5*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*04/03/21 05:46*	*5*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/03/21 05:46*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**6300**		50	10	ug/L			04/03/21 06:10	50
Naphthalene	**4800**		250	50	ug/L			04/03/21 06:10	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 120*		*04/03/21 06:10*	*50*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/03/21 06:10*	*50*
Dibromofluoromethane (Surr)	*89*		*80 - 120*		*04/03/21 06:10*	*50*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/03/21 06:10*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**6.9**		0.51	0.10	ug/L		04/02/21 10:00	04/05/21 14:05	1
Benzo[a]anthracene	**0.29**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/05/21 14:05	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		04/02/21 10:00	04/05/21 14:05	1
Benzo[b]fluoranthene	**0.11**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/05/21 14:05	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/02/21 10:00	04/05/21 14:05	1
Fluorene	**43**		0.51	0.12	ug/L		04/02/21 10:00	04/05/21 14:05	1
Phenanthrene	**38**		0.51	0.11	ug/L		04/02/21 10:00	04/05/21 14:05	1
Pyrene	**2.8**		0.51	0.10	ug/L		04/02/21 10:00	04/05/21 14:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*44 - 102*	*04/02/21 10:00*	*04/05/21 14:05*	*1*
Nitrobenzene-d5 (Surr)	*43*		*23 - 128*	*04/02/21 10:00*	*04/05/21 14:05*	*1*
p-Terphenyl-d14 (Surr)	*71*		*31 - 113*	*04/02/21 10:00*	*04/05/21 14:05*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		51	10	ug/L		04/02/21 10:00	04/07/21 02:45	100
Naphthalene	**4400**		51	10	ug/L		04/02/21 10:00	04/07/21 02:45	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*44 - 102*	*04/02/21 10:00*	*04/07/21 02:45*	*100*
Nitrobenzene-d5 (Surr)	*44*		*23 - 128*	*04/02/21 10:00*	*04/07/21 02:45*	*100*

Client Sample ID: S-455-20210326 **Lab Sample ID: 410-33879-14**
Date Collected: 03/26/21 11:10 **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl-d14 (Surr)	*67*		*31 - 113*	*04/02/21 10:00*	*04/07/21 02:45*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**2.4**	**J**	5.0	1.0	ug/L		04/06/21 08:43	04/06/21 19:44	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*63*	*^c*	*28 - 140*	*04/06/21 08:43*	*04/06/21 19:44*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**19000**		250	150	ug/L		04/07/21 10:42	04/08/21 05:25	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*101*		*28 - 140*	*04/07/21 10:42*	*04/08/21 05:25*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		03/30/21 16:55	03/31/21 02:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*103*		*46 - 136*	*03/30/21 16:55*	*03/31/21 02:44*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*118*		*46 - 136*	*03/30/21 16:55*	*03/31/21 02:44*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.5	mg/L			04/03/21 13:43	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**76**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:48	1
Iron	**41**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:48	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.0033**		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**400**		8.0	8.0	mg/L			03/29/21 22:41	1
Total Kjeldahl Nitrogen	**7.2**		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:11	1
Total Carbon	**120**		10	5.0	mg/L			03/31/21 21:13	10
Total Organic Carbon	**13**		1.0	0.50	mg/L			03/30/21 20:30	1
Total Inorganic Carbon	**110**		2.0	0.60	mg/L			04/01/21 13:56	1

Client Sample ID: S-452-20210326 — Lab Sample ID: 410-33879-15

Date Collected: 03/26/21 12:30 — **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**760**		5.0	2.0	ug/L			04/03/21 06:34	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			04/03/21 06:34	5
1,3,5-Trimethylbenzene	**110**		25	1.5	ug/L			04/03/21 06:34	5
Toluene	**57**		5.0	1.0	ug/L			04/03/21 06:34	5
Xylenes, Total	**1600**		30	7.0	ug/L			04/03/21 06:34	5
Methyl tert-butyl ether	**1000**		5.0	1.0	ug/L			04/03/21 06:34	5
1,2,4-Trimethylbenzene	**320**		25	5.0	ug/L			04/03/21 06:34	5
Isopropylbenzene	**83**		25	1.0	ug/L			04/03/21 06:34	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 120*		*04/03/21 06:34*	*5*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/03/21 06:34*	*5*
Dibromofluoromethane (Surr)	*91*		*80 - 120*		*04/03/21 06:34*	*5*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/03/21 06:34*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**3200**		50	10	ug/L			04/03/21 06:57	50
Naphthalene	**1300**		250	50	ug/L			04/03/21 06:57	50
t-Butyl alcohol	**22000**		2500	600	ug/L			04/03/21 06:57	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 120*		*04/03/21 06:57*	*50*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/03/21 06:57*	*50*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*04/03/21 06:57*	*50*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/03/21 06:57*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**5.6**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 08:31	1
Benzo[a]anthracene	**1.0**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 08:31	1
Benzo[a]pyrene	**0.58**		0.51	0.11	ug/L		04/02/21 10:00	04/06/21 08:31	1
Benzo[b]fluoranthene	**0.77**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 08:31	1
Benzo[g,h,i]perylene	**0.27**	**J**	0.51	0.10	ug/L		04/02/21 10:00	04/06/21 08:31	1
Chrysene	**1.2**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 08:31	1
Fluorene	**21**		0.51	0.12	ug/L		04/02/21 10:00	04/06/21 08:31	1
Phenanthrene	**30**		0.51	0.11	ug/L		04/02/21 10:00	04/06/21 08:31	1
Pyrene	**4.6**		0.51	0.10	ug/L		04/02/21 10:00	04/06/21 08:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*59*		*44 - 102*	*04/02/21 10:00*	*04/06/21 08:31*	*1*
Nitrobenzene-d5 (Surr)	*39*		*23 - 128*	*04/02/21 10:00*	*04/06/21 08:31*	*1*
p-Terphenyl-d14 (Surr)	*53*		*31 - 113*	*04/02/21 10:00*	*04/06/21 08:31*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**1300**		10	2.0	ug/L		04/02/21 10:00	04/07/21 03:13	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*65*		*44 - 102*	*04/02/21 10:00*	*04/07/21 03:13*	*20*
Nitrobenzene-d5 (Surr)	*42*		*23 - 128*	*04/02/21 10:00*	*04/07/21 03:13*	*20*

Client Sample ID: S-452-20210326 **Lab Sample ID: 410-33879-15**
Date Collected: 03/26/21 12:30 **Matrix: Groundwater**
Date Received: 03/26/21 18:18

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl-d14 (Surr)	*53*		*31 - 113*	*04/02/21 10:00*	*04/07/21 03:13*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**2.8**	**J**	5.0	1.0	ug/L		04/06/21 08:43	04/06/21 20:02	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*71*	*^c*	*28 - 140*	*04/06/21 08:43*	*04/06/21 20:02*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**14000**		250	150	ug/L		04/07/21 10:42	04/08/21 05:44	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*97*		*28 - 140*	*04/07/21 10:42*	*04/08/21 05:44*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		03/30/21 16:55	03/31/21 03:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*138*	*S1+*	*46 - 136*	*03/30/21 16:55*	*03/31/21 03:01*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*119*		*46 - 136*	*03/30/21 16:55*	*03/31/21 03:01*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.5	mg/L			04/03/21 14:00	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**39**		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 09:40	1
Iron	**50**		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 09:40	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.0010**		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 14:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**290**		8.0	8.0	mg/L			03/29/21 22:34	1
Total Kjeldahl Nitrogen	**3.4**		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 11:05	1
Total Carbon	**120**		10	5.0	mg/L			03/31/21 15:26	10
Total Organic Carbon	**23**		1.0	0.50	mg/L			03/30/21 20:47	1
Total Inorganic Carbon	**97**		2.0	0.60	mg/L			04/01/21 13:56	1

Surrogate Summary

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Groundwater **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-33879-1	S-468-20210324	89	96	97	107
410-33879-1 - DL	S-468-20210324	91	93	101	106
410-33879-1 - DL2	S-468-20210324	90	96	100	106
410-33879-2	S-466-20210324	92	97	96	104
410-33879-3	S-467-20210324	86	90	95	105
410-33879-3 - DL	S-467-20210324	90	96	99	105
410-33879-4	S-456-20210324	87	94	96	105
410-33879-4 - DL	S-456-20210324	91	93	98	106
410-33879-5	S-472-20210324	88	96	95	108
410-33879-5 - DL	S-472-20210324	91	97	100	103
410-33879-5 - DL2	S-472-20210324	90	99	99	106
410-33879-6	S-470-20210325	92	96	92	104
410-33879-7	S-465-20210325	89	97	91	103
410-33879-7 - DL	S-465-20210325	93	96	100	106
410-33879-8	S-469-20210325	89	96	92	104
410-33879-10	S-457-20210326	86	96	89	104
410-33879-10 - DL	S-457-20210326	86	97	89	104
410-33879-11	RW-1-20210326	88	97	91	102
410-33879-11 - DL	RW-1-20210326	91	97	93	102
410-33879-12	S-454-20210326	93	95	95	102
410-33879-13	S-453-20210326	87	93	90	102
410-33879-13 - DL	S-453-20210326	89	98	90	103
410-33879-14	S-455-20210326	89	98	92	103
410-33879-14 - DL	S-455-20210326	87	96	89	103
410-33879-15	S-452-20210326	88	96	91	103
410-33879-15 - DL	S-452-20210326	90	98	93	104

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-33879-9	TB-20210326	98	99	103	99
LCS 410-109783/4	Lab Control Sample	96	103	99	99
LCS 410-110423/4	Lab Control Sample	95	99	99	103
LCS 410-110434/4	Lab Control Sample	93	97	91	104
LCS 410-111242/4	Lab Control Sample	94	98	100	105
LCSD 410-109783/5	Lab Control Sample Dup	97	103	98	100
LCSD 410-110423/5	Lab Control Sample Dup	88	98	100	104
LCSD 410-110434/5	Lab Control Sample Dup	94	99	94	104
LCSD 410-111242/5	Lab Control Sample Dup	97	99	101	106
MB 410-109783/6	Method Blank	97	98	100	99
MB 410-110423/6	Method Blank	91	97	100	106

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
MB 410-110434/6	Method Blank	89	96	93	104
MB 410-111242/6	Method Blank	94	96	101	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Groundwater **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)
410-33879-1	S-468-20210324	59	79	75
410-33879-1 - DL	S-468-20210324	68	79	75
410-33879-2	S-466-20210324	62	78	65
410-33879-3	S-467-20210324	63	79	67
410-33879-4	S-456-20210324	59	75	66
410-33879-5	S-472-20210324	64	0.7 S1-	69
410-33879-5 - DL	S-472-20210324	79	0 S1-	67
410-33879-6	S-470-20210325	67	0.6 S1-	73
410-33879-7	S-465-20210325	52	69	66
410-33879-8	S-469-20210325	60	77	72
410-33879-10	S-457-20210326	67	54	76
410-33879-10 - DL	S-457-20210326	68	56	64
410-33879-11	RW-1-20210326	66	52	77
410-33879-12	S-454-20210326	77	83	79
410-33879-13	S-453-20210326	63	1 S1-	68
410-33879-13 - DL	S-453-20210326	68	0 S1-	67
410-33879-14	S-455-20210326	71	43	71
410-33879-14 - DL	S-455-20210326	74	44	67
410-33879-15	S-452-20210326	59	39	53
410-33879-15 - DL	S-452-20210326	65	42	53

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)
LCS 410-109526/2-A	Lab Control Sample	54	70	77
LCS 410-110001/2-A	Lab Control Sample	66	80	83
LCS 410-110187/2-A	Lab Control Sample	84	91	100
LCSD 410-110001/3-A	Lab Control Sample Dup	69	79	82
LCSD 410-110187/3-A	Lab Control Sample Dup	90	90	103

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		FBP	NBZ	TPHd14						
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)						
MB 410-109526/1-A	Method Blank	58	75	80						
MB 410-110001/1-A	Method Blank	43 S1-	61	67						
MB 410-110187/1-A	Method Blank	89	93	102						

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

NBZ = Nitrobenzene-d5 (Surr)

TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Groundwater **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		Propene1								
Lab Sample ID	Client Sample ID	(28-140)								
410-33879-1	S-468-20210324	88 ^c								
410-33879-1 - DL	S-468-20210324	109								
410-33879-2	S-466-20210324	93								
410-33879-3	S-467-20210324	78 ^c								
410-33879-3 - DL	S-467-20210324	107								
410-33879-4	S-456-20210324	70 ^c								
410-33879-4 - DL	S-456-20210324	107								
410-33879-5	S-472-20210324	75 ^c								
410-33879-5 - DL	S-472-20210324	107								
410-33879-6	S-470-20210325	89								
410-33879-7	S-465-20210325	58								
410-33879-8	S-469-20210325	80								
410-33879-10	S-457-20210326	79 ^c								
410-33879-10 - DL	S-457-20210326	104								
410-33879-11	RW-1-20210326	63 ^c								
410-33879-11 - DL	RW-1-20210326	104								
410-33879-12	S-454-20210326	90								
410-33879-13	S-453-20210326	73 ^c								
410-33879-13 - DL	S-453-20210326	99								
410-33879-14	S-455-20210326	63 ^c								
410-33879-14 - DL	S-455-20210326	101								
410-33879-15	S-452-20210326	71 ^c								
410-33879-15 - DL	S-452-20210326	97								

Surrogate Legend

Propene = Propene

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		Propene1								
Lab Sample ID	Client Sample ID	(28-140)								
LCS 410-111160/2-A	Lab Control Sample	92								
LCS 410-111165/2-A	Lab Control Sample	86								
LCS 410-111787/2-A	Lab Control Sample	101								
LCSD 410-111165/3-A	Lab Control Sample Dup	90								

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Propene1 (28-140)								
LCSD 410-111787/3-A	Lab Control Sample Dup	100								
MB 410-111160/1-A	Method Blank	91								
MB 410-111165/1-A	Method Blank	88								
MB 410-111787/1-A	Method Blank	103								

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Groundwater **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)							
410-33879-1	S-468-20210324	149 S1+	131							
410-33879-2	S-466-20210324	111	108							
410-33879-3	S-467-20210324	104	105							
410-33879-4	S-456-20210324	85	120							
410-33879-5	S-472-20210324	121	104							
410-33879-6	S-470-20210325	89	104							
410-33879-7	S-465-20210325	101	117							
410-33879-8	S-469-20210325	95	110							
410-33879-10	S-457-20210326	155 S1+	113							
410-33879-11	RW-1-20210326	120	109							
410-33879-12	S-454-20210326	89	100							
410-33879-13	S-453-20210326	124	119							
410-33879-14	S-455-20210326	103	118							
410-33879-15	S-452-20210326	138 S1+	119							

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)							
410-33879-9	TB-20210326	90	102							
LCS 410-108977/2-A	Lab Control Sample	92	102							
LCS 410-110041/2-A	Lab Control Sample	89	101							
LCSD 410-108977/3-A	Lab Control Sample Dup	91	103							
LCSD 410-110041/3-A	Lab Control Sample Dup	85	99							
MB 410-108977/1-A	Method Blank	95	106							
MB 410-110041/1-A	Method Blank	88	101							

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-109783/6
Matrix: Water
Analysis Batch: 109783

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			04/01/21 11:03	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/01/21 11:03	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/01/21 11:03	1
Toluene	ND		1.0	0.20	ug/L			04/01/21 11:03	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/01/21 11:03	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/01/21 11:03	1
Benzene	ND		1.0	0.20	ug/L			04/01/21 11:03	1
Naphthalene	ND		5.0	1.0	ug/L			04/01/21 11:03	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/01/21 11:03	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/01/21 11:03	1
t-Butyl alcohol	ND		50	12	ug/L			04/01/21 11:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*04/01/21 11:03*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/01/21 11:03*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/01/21 11:03*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/01/21 11:03*	*1*

Lab Sample ID: LCS 410-109783/4
Matrix: Water
Analysis Batch: 109783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			20.0	20.2		ug/L		101	80 - 120		
1,2-Dichloroethane			20.0	18.3		ug/L		92	73 - 124		
1,3,5-Trimethylbenzene			20.0	19.9		ug/L		100	75 - 120		
Toluene			20.0	20.5		ug/L		102	80 - 120		
Xylenes, Total			60.0	59.7		ug/L		100	80 - 120		
Methyl tert-butyl ether			20.0	19.2		ug/L		96	69 - 122		
Benzene			20.0	20.0		ug/L		100	80 - 120		
Naphthalene			20.0	18.4		ug/L		92	53 - 124		
1,2,4-Trimethylbenzene			20.0	19.6		ug/L		98	75 - 120		
Isopropylbenzene			20.0	19.4		ug/L		97	80 - 120		
t-Butyl alcohol			200	193		ug/L		97	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-109783/5
Matrix: Water
Analysis Batch: 109783

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	22.3		ug/L		111	80 - 120	10	30
1,2-Dichloroethane			20.0	19.5		ug/L		98	73 - 124	6	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-109783/5
Matrix: Water
Analysis Batch: 109783

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene			20.0	22.3		ug/L		111	75 - 120	11	30
Toluene			20.0	21.9		ug/L		110	80 - 120	7	30
Xylenes, Total			60.0	64.7		ug/L		108	80 - 120	8	30
Methyl tert-butyl ether			20.0	20.6		ug/L		103	69 - 122	7	30
Benzene			20.0	21.9		ug/L		110	80 - 120	9	30
Naphthalene			20.0	20.5		ug/L		103	53 - 124	11	30
1,2,4-Trimethylbenzene			20.0	22.2		ug/L		111	75 - 120	12	30
Isopropylbenzene			20.0	21.0		ug/L		105	80 - 120	8	30
t-Butyl alcohol			200	209		ug/L		104	60 - 130	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 410-110423/6
Matrix: Water
Analysis Batch: 110423

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			04/02/21 21:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/02/21 21:16	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/02/21 21:16	1
Toluene	ND		1.0	0.20	ug/L			04/02/21 21:16	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/02/21 21:16	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/02/21 21:16	1
Benzene	ND		1.0	0.20	ug/L			04/02/21 21:16	1
Naphthalene	ND		5.0	1.0	ug/L			04/02/21 21:16	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/02/21 21:16	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/02/21 21:16	1
t-Butyl alcohol	ND		50	12	ug/L			04/02/21 21:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*04/02/21 21:16*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*04/02/21 21:16*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/02/21 21:16*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*04/02/21 21:16*	*1*

Lab Sample ID: LCS 410-110423/4
Matrix: Water
Analysis Batch: 110423

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene			20.0	20.3		ug/L		102	80 - 120
1,2-Dichloroethane			20.0	18.3		ug/L		92	73 - 124
1,3,5-Trimethylbenzene			20.0	19.5		ug/L		97	75 - 120
Toluene			20.0	20.2		ug/L		101	80 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-110423/4
Matrix: Water
Analysis Batch: 110423

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			60.0	60.2		ug/L		100	80 - 120		
Methyl tert-butyl ether			20.0	17.5		ug/L		88	69 - 122		
Benzene			20.0	20.2		ug/L		101	80 - 120		
Naphthalene			20.0	17.0		ug/L		85	53 - 124		
1,2,4-Trimethylbenzene			20.0	19.5		ug/L		98	75 - 120		
Isopropylbenzene			20.0	20.0		ug/L		100	80 - 120		
t-Butyl alcohol			200	204		ug/L		102	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-110423/5
Matrix: Water
Analysis Batch: 110423

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	18.2		ug/L		91	80 - 120	11	30
1,2-Dichloroethane			20.0	15.3		ug/L		77	73 - 124	18	30
1,3,5-Trimethylbenzene			20.0	17.7		ug/L		89	75 - 120	9	30
Toluene			20.0	18.4		ug/L		92	80 - 120	9	30
Xylenes, Total			60.0	54.4		ug/L		91	80 - 120	10	30
Methyl tert-butyl ether			20.0	15.8		ug/L		79	69 - 122	10	30
Benzene			20.0	18.3		ug/L		92	80 - 120	10	30
Naphthalene			20.0	11.2	*1	ug/L		56	53 - 124	41	30
1,2,4-Trimethylbenzene			20.0	17.9		ug/L		89	75 - 120	9	30
Isopropylbenzene			20.0	17.7		ug/L		88	80 - 120	12	30
t-Butyl alcohol			200	191		ug/L		95	60 - 130	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 410-110434/6
Matrix: Water
Analysis Batch: 110434

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			04/02/21 21:27	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/02/21 21:27	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/02/21 21:27	1
Toluene	ND		1.0	0.20	ug/L			04/02/21 21:27	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/02/21 21:27	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/02/21 21:27	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-110434/6
Matrix: Water
Analysis Batch: 110434

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			04/02/21 21:27	1
Naphthalene	ND		5.0	1.0	ug/L			04/02/21 21:27	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/02/21 21:27	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/02/21 21:27	1
t-Butyl alcohol	ND		50	12	ug/L			04/02/21 21:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 120*		*04/02/21 21:27*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/02/21 21:27*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*04/02/21 21:27*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/02/21 21:27*	*1*

Lab Sample ID: LCS 410-110434/4
Matrix: Water
Analysis Batch: 110434

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			20.0	19.3		ug/L		96	80 - 120		
1,2-Dichloroethane			20.0	17.4		ug/L		87	73 - 124		
1,3,5-Trimethylbenzene			20.0	18.6		ug/L		93	75 - 120		
Toluene			20.0	20.0		ug/L		100	80 - 120		
Xylenes, Total			60.0	57.2		ug/L		95	80 - 120		
Methyl tert-butyl ether			20.0	16.4		ug/L		82	69 - 122		
Benzene			20.0	19.5		ug/L		97	80 - 120		
Naphthalene			20.0	18.5		ug/L		92	53 - 124		
1,2,4-Trimethylbenzene			20.0	18.5		ug/L		93	75 - 120		
Isopropylbenzene			20.0	18.3		ug/L		91	80 - 120		
t-Butyl alcohol			200	201		ug/L		101	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Dibromofluoromethane (Surr)	*91*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: LCSD 410-110434/5
Matrix: Water
Analysis Batch: 110434

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	18.2		ug/L		91	80 - 120	6	30
1,2-Dichloroethane			20.0	16.8		ug/L		84	73 - 124	3	30
1,3,5-Trimethylbenzene			20.0	17.4		ug/L		87	75 - 120	7	30
Toluene			20.0	18.9		ug/L		95	80 - 120	5	30
Xylenes, Total			60.0	54.0		ug/L		90	80 - 120	6	30
Methyl tert-butyl ether			20.0	15.3		ug/L		77	69 - 122	7	30
Benzene			20.0	18.3		ug/L		92	80 - 120	6	30
Naphthalene			20.0	14.9		ug/L		74	53 - 124	22	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-110434/5
Matrix: Water
Analysis Batch: 110434

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	17.9		ug/L		89	75 - 120	4	30
Isopropylbenzene			20.0	17.4		ug/L		87	80 - 120	5	30
t-Butyl alcohol			200	199		ug/L		100	60 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: MB 410-111242/6
Matrix: Water
Analysis Batch: 111242

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			04/06/21 12:39	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/06/21 12:39	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/06/21 12:39	1
Toluene	ND		1.0	0.20	ug/L			04/06/21 12:39	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/06/21 12:39	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/06/21 12:39	1
Benzene	ND		1.0	0.20	ug/L			04/06/21 12:39	1
Naphthalene	ND		5.0	1.0	ug/L			04/06/21 12:39	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/06/21 12:39	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/06/21 12:39	1
t-Butyl alcohol	ND		50	12	ug/L			04/06/21 12:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*04/06/21 12:39*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*04/06/21 12:39*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*04/06/21 12:39*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*04/06/21 12:39*	*1*

Lab Sample ID: LCS 410-111242/4
Matrix: Water
Analysis Batch: 111242

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			20.0	20.3		ug/L		102	80 - 120		
1,2-Dichloroethane			20.0	17.9		ug/L		89	73 - 124		
1,3,5-Trimethylbenzene			20.0	19.8		ug/L		99	75 - 120		
Toluene			20.0	20.8		ug/L		104	80 - 120		
Xylenes, Total			60.0	61.7		ug/L		103	80 - 120		
Methyl tert-butyl ether			20.0	18.7		ug/L		94	69 - 122		
Benzene			20.0	20.7		ug/L		103	80 - 120		
Naphthalene			20.0	17.7		ug/L		89	53 - 124		
1,2,4-Trimethylbenzene			20.0	20.2		ug/L		101	75 - 120		
Isopropylbenzene			20.0	20.7		ug/L		104	80 - 120		

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-111242/4
Matrix: Water
Analysis Batch: 111242

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
t-Butyl alcohol			200	207		ug/L		103	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Lab Sample ID: LCSD 410-111242/5
Matrix: Water
Analysis Batch: 111242

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	19.6		ug/L		98	80 - 120	4	30
1,2-Dichloroethane			20.0	17.9		ug/L		89	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	19.3		ug/L		97	75 - 120	3	30
Toluene			20.0	20.2		ug/L		101	80 - 120	3	30
Xylenes, Total			60.0	58.8		ug/L		98	80 - 120	5	30
Methyl tert-butyl ether			20.0	17.7		ug/L		88	69 - 122	6	30
Benzene			20.0	19.7		ug/L		99	80 - 120	5	30
Naphthalene			20.0	16.4		ug/L		82	53 - 124	8	30
1,2,4-Trimethylbenzene			20.0	19.2		ug/L		96	75 - 120	5	30
Isopropylbenzene			20.0	19.6		ug/L		98	80 - 120	6	30
t-Butyl alcohol			200	198		ug/L		99	60 - 130	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-109526/1-A
Matrix: Water
Analysis Batch: 109773

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 109526

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		03/31/21 17:30	04/01/21 12:04	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		03/31/21 17:30	04/01/21 12:04	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		03/31/21 17:30	04/01/21 12:04	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		03/31/21 17:30	04/01/21 12:04	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		03/31/21 17:30	04/01/21 12:04	1
Chrysene	ND		0.50	0.10	ug/L		03/31/21 17:30	04/01/21 12:04	1
Fluorene	ND		0.50	0.12	ug/L		03/31/21 17:30	04/01/21 12:04	1
Naphthalene	ND		0.50	0.10	ug/L		03/31/21 17:30	04/01/21 12:04	1
Phenanthrene	ND		0.50	0.11	ug/L		03/31/21 17:30	04/01/21 12:04	1
Pyrene	ND		0.50	0.10	ug/L		03/31/21 17:30	04/01/21 12:04	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-109526/1-A
Matrix: Water
Analysis Batch: 109773

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 109526

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	58		44 - 102	03/31/21 17:30	04/01/21 12:04	1
Nitrobenzene-d5 (Surr)	75		23 - 128	03/31/21 17:30	04/01/21 12:04	1
p-Terphenyl-d14 (Surr)	80		31 - 113	03/31/21 17:30	04/01/21 12:04	1

Lab Sample ID: LCS 410-109526/2-A
Matrix: Water
Analysis Batch: 109773

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109526

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	36.8		ug/L		74	61 - 117
Benzo[a]anthracene	50.0	39.8		ug/L		80	61 - 126
Benzo[a]pyrene	50.0	42.1		ug/L		84	60 - 116
Benzo[b]fluoranthene	50.0	40.3		ug/L		81	61 - 119
Benzo[g,h,i]perylene	50.0	36.0		ug/L		72	54 - 120
Chrysene	50.0	40.9		ug/L		82	65 - 121
Fluorene	50.0	32.7		ug/L		65	56 - 115
Naphthalene	50.0	33.7		ug/L		67	51 - 102
Phenanthrene	50.0	36.8		ug/L		74	65 - 113
Pyrene	50.0	36.9		ug/L		74	65 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	54		44 - 102
Nitrobenzene-d5 (Surr)	70		23 - 128
p-Terphenyl-d14 (Surr)	77		31 - 113

Lab Sample ID: MB 410-110001/1-A
Matrix: Water
Analysis Batch: 110428

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110001

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		04/01/21 17:00	04/02/21 21:24	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		04/01/21 17:00	04/02/21 21:24	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		04/01/21 17:00	04/02/21 21:24	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		04/01/21 17:00	04/02/21 21:24	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		04/01/21 17:00	04/02/21 21:24	1
Chrysene	ND		0.50	0.10	ug/L		04/01/21 17:00	04/02/21 21:24	1
Fluorene	ND		0.50	0.12	ug/L		04/01/21 17:00	04/02/21 21:24	1
Naphthalene	ND		0.50	0.10	ug/L		04/01/21 17:00	04/02/21 21:24	1
Phenanthrene	ND		0.50	0.11	ug/L		04/01/21 17:00	04/02/21 21:24	1
Pyrene	ND		0.50	0.10	ug/L		04/01/21 17:00	04/02/21 21:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	43	S1-	44 - 102	04/01/21 17:00	04/02/21 21:24	1
Nitrobenzene-d5 (Surr)	61		23 - 128	04/01/21 17:00	04/02/21 21:24	1
p-Terphenyl-d14 (Surr)	67		31 - 113	04/01/21 17:00	04/02/21 21:24	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-110001/2-A
Matrix: Water
Analysis Batch: 110428

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110001

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			50.0	42.2		ug/L		84	61 - 117		
Benzo[a]anthracene			50.0	43.4		ug/L		87	61 - 126		
Benzo[a]pyrene			50.0	46.2		ug/L		92	60 - 116		
Benzo[b]fluoranthene			50.0	45.9		ug/L		92	61 - 119		
Benzo[g,h,i]perylene			50.0	38.0		ug/L		76	54 - 120		
Chrysene			50.0	44.4		ug/L		89	65 - 121		
Fluorene			50.0	40.1		ug/L		80	56 - 115		
Naphthalene			50.0	37.4		ug/L		75	51 - 102		
Phenanthrene			50.0	41.9		ug/L		84	65 - 113		
Pyrene			50.0	42.9		ug/L		86	65 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*66*		*44 - 102*
Nitrobenzene-d5 (Surr)	*80*		*23 - 128*
p-Terphenyl-d14 (Surr)	*83*		*31 - 113*

Lab Sample ID: LCSD 410-110001/3-A
Matrix: Water
Analysis Batch: 110428

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 110001

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene			50.0	44.2		ug/L		88	61 - 117	5	30
Benzo[a]anthracene			50.0	43.1		ug/L		86	61 - 126	1	30
Benzo[a]pyrene			50.0	48.2		ug/L		96	60 - 116	4	30
Benzo[b]fluoranthene			50.0	46.6		ug/L		93	61 - 119	1	30
Benzo[g,h,i]perylene			50.0	38.8		ug/L		78	54 - 120	2	30
Chrysene			50.0	45.7		ug/L		91	65 - 121	3	30
Fluorene			50.0	40.0		ug/L		80	56 - 115	0	30
Naphthalene			50.0	39.9		ug/L		80	51 - 102	6	30
Phenanthrene			50.0	42.9		ug/L		86	65 - 113	2	30
Pyrene			50.0	42.1		ug/L		84	65 - 115	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*69*		*44 - 102*
Nitrobenzene-d5 (Surr)	*79*		*23 - 128*
p-Terphenyl-d14 (Surr)	*82*		*31 - 113*

Lab Sample ID: MB 410-110187/1-A
Matrix: Water
Analysis Batch: 110481

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110187

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		04/02/21 10:00	04/03/21 03:39	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		04/02/21 10:00	04/03/21 03:39	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		04/02/21 10:00	04/03/21 03:39	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		04/02/21 10:00	04/03/21 03:39	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		04/02/21 10:00	04/03/21 03:39	1
Chrysene	ND		0.50	0.10	ug/L		04/02/21 10:00	04/03/21 03:39	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-110187/1-A
Matrix: Water
Analysis Batch: 110481

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110187

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		0.50	0.12	ug/L		04/02/21 10:00	04/03/21 03:39	1
Naphthalene	ND		0.50	0.10	ug/L		04/02/21 10:00	04/03/21 03:39	1
Phenanthrene	ND		0.50	0.11	ug/L		04/02/21 10:00	04/03/21 03:39	1
Pyrene	ND		0.50	0.10	ug/L		04/02/21 10:00	04/03/21 03:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*89*		*44 - 102*	*04/02/21 10:00*	*04/03/21 03:39*	*1*
Nitrobenzene-d5 (Surr)	*93*		*23 - 128*	*04/02/21 10:00*	*04/03/21 03:39*	*1*
p-Terphenyl-d14 (Surr)	*102*		*31 - 113*	*04/02/21 10:00*	*04/03/21 03:39*	*1*

Lab Sample ID: LCS 410-110187/2-A
Matrix: Water
Analysis Batch: 110481

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110187

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	50.5		ug/L		101	61 - 117
Benzo[a]anthracene	50.0	51.2		ug/L		102	61 - 126
Benzo[a]pyrene	50.0	50.1		ug/L		100	60 - 116
Benzo[b]fluoranthene	50.0	46.3		ug/L		93	61 - 119
Benzo[g,h,i]perylene	50.0	48.7		ug/L		97	54 - 120
Chrysene	50.0	52.4		ug/L		105	65 - 121
Fluorene	50.0	48.0		ug/L		96	56 - 115
Naphthalene	50.0	43.1		ug/L		86	51 - 102
Phenanthrene	50.0	50.9		ug/L		102	65 - 113
Pyrene	50.0	49.7		ug/L		99	65 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*84*		*44 - 102*
Nitrobenzene-d5 (Surr)	*91*		*23 - 128*
p-Terphenyl-d14 (Surr)	*100*		*31 - 113*

Lab Sample ID: LCSD 410-110187/3-A
Matrix: Water
Analysis Batch: 110481

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 110187

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	50.0	50.3		ug/L		101	61 - 117	0	30
Benzo[a]anthracene	50.0	50.7		ug/L		101	61 - 126	1	30
Benzo[a]pyrene	50.0	49.4		ug/L		99	60 - 116	1	30
Benzo[b]fluoranthene	50.0	44.0		ug/L		88	61 - 119	5	30
Benzo[g,h,i]perylene	50.0	47.7		ug/L		95	54 - 120	2	30
Chrysene	50.0	51.8		ug/L		104	65 - 121	1	30
Fluorene	50.0	48.7		ug/L		97	56 - 115	1	30
Naphthalene	50.0	42.4		ug/L		85	51 - 102	2	30
Phenanthrene	50.0	50.1		ug/L		100	65 - 113	2	30
Pyrene	50.0	49.9		ug/L		100	65 - 115	1	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-110187/3-A
Matrix: Water
Analysis Batch: 110481

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 110187

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl (Surr)	90		44 - 102
Nitrobenzene-d5 (Surr)	90		23 - 128
p-Terphenyl-d14 (Surr)	103		31 - 113

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-111160/1-A
Matrix: Water
Analysis Batch: 111174

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 111160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/06/21 08:39	04/06/21 08:56	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:39	04/06/21 08:56	1
Methane (1C)	ND		5.0	3.0	ug/L		04/06/21 08:39	04/06/21 08:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	91		28 - 140	04/06/21 08:39	04/06/21 08:56	1

Lab Sample ID: LCS 410-111160/2-A
Matrix: Water
Analysis Batch: 111174

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	59.8		ug/L		101	85 - 115
Ethene (1C)	60.4	60.6		ug/L		100	83 - 115
Methane (1C)	59.4	56.3		ug/L		95	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Propene (1C)	92		28 - 140

Lab Sample ID: MB 410-111165/1-A
Matrix: Water
Analysis Batch: 111174

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 111165

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 15:32	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/06/21 08:43	04/06/21 15:32	1
Methane (1C)	ND		5.0	3.0	ug/L		04/06/21 08:43	04/06/21 15:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	88		28 - 140	04/06/21 08:43	04/06/21 15:32	1

Lab Sample ID: LCS 410-111165/2-A
Matrix: Water
Analysis Batch: 111174

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111165

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	59.4		ug/L		100	85 - 115

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-111165/2-A
Matrix: Water
Analysis Batch: 111174

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111165

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethene (1C)			60.4	59.7		ug/L		99	83 - 115		
Methane (1C)			59.4	51.9		ug/L		87	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*86*		*28 - 140*

Lab Sample ID: LCSD 410-111165/3-A
Matrix: Water
Analysis Batch: 111174

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 111165

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	59.1		ug/L		99	85 - 115	1	20
Ethene (1C)			60.4	59.2		ug/L		98	83 - 115	1	20
Methane (1C)			59.4	55.4		ug/L		93	85 - 115	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*90*		*28 - 140*

Lab Sample ID: MB 410-111787/1-A
Matrix: Water
Analysis Batch: 111705

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 111787

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/07/21 19:42	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/07/21 10:42	04/07/21 19:42	1
Methane (1C)	ND		5.0	3.0	ug/L		04/07/21 10:42	04/07/21 19:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*103*		*28 - 140*	*04/07/21 10:42*	*04/07/21 19:42*	*1*

Lab Sample ID: LCS 410-111787/2-A
Matrix: Water
Analysis Batch: 111705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111787

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	60.0		ug/L		101	85 - 115		
Ethene (1C)			60.4	60.7		ug/L		101	83 - 115		
Methane (1C)			59.4	61.2		ug/L		103	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 140*

Lab Sample ID: LCSD 410-111787/3-A
Matrix: Water
Analysis Batch: 111705

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 111787

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	59.6		ug/L		100	85 - 115	1	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-111787/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 111705
Prep Batch: 111787

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethene (1C)			60.4	60.6		ug/L		100	83 - 115	0	20
Methane (1C)			59.4	61.3		ug/L		103	85 - 115	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*100*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-108977/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 109059
Prep Batch: 108977

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		03/30/21 16:55	03/30/21 19:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*95*		*46 - 136*	*03/30/21 16:55*	*03/30/21 19:47*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*03/30/21 16:55*	*03/30/21 19:47*	*1*

Lab Sample ID: LCS 410-108977/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 109059
Prep Batch: 108977

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.159		ug/L		124	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*92*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*102*		*46 - 136*

Lab Sample ID: LCSD 410-108977/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 109059
Prep Batch: 108977

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.144		ug/L		113	60 - 140	10	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*91*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*103*		*46 - 136*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: MB 410-110041/1-A
Matrix: Water
Analysis Batch: 110184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 110041

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		04/01/21 18:00	04/02/21 06:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*	*04/01/21 18:00*	*04/02/21 06:53*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*101*		*46 - 136*	*04/01/21 18:00*	*04/02/21 06:53*	*1*

Lab Sample ID: LCS 410-110041/2-A
Matrix: Water
Analysis Batch: 110184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 110041

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.126		ug/L		99	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*101*		*46 - 136*

Lab Sample ID: LCSD 410-110041/3-A
Matrix: Water
Analysis Batch: 110184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 110041

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)	0.128	0.123		ug/L		96	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*99*		*46 - 136*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-110508/4
Matrix: Water
Analysis Batch: 110508

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			04/03/21 04:35	1

Lab Sample ID: LCS 410-110508/3
Matrix: Water
Analysis Batch: 110508

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7.50	7.66		mg/L		102	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 410-110516/4
Matrix: Water
Analysis Batch: 110516

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.30	mg/L			04/03/21 08:45	1

Lab Sample ID: LCS 410-110516/3
Matrix: Water
Analysis Batch: 110516

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7.50	7.06		mg/L		94	90 - 110		

Lab Sample ID: 410-33879-3 MS
Matrix: Groundwater
Analysis Batch: 110516

Client Sample ID: S-467-20210324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	6.6		25.0	33.4		mg/L		107	90 - 110		

Lab Sample ID: 410-33879-13 MS
Matrix: Groundwater
Analysis Batch: 110516

Client Sample ID: S-453-20210326
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	7.0	FH	25.0	39.8	FH	mg/L		131	90 - 110		

Lab Sample ID: 410-33879-3 DU
Matrix: Groundwater
Analysis Batch: 110516

Client Sample ID: S-467-20210324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	6.6			6.48		mg/L				2	15

Lab Sample ID: 410-33879-13 DU
Matrix: Groundwater
Analysis Batch: 110516

Client Sample ID: S-453-20210326
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfate	7.0	FH		6.76		mg/L				3	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-108406/1-A
Matrix: Water
Analysis Batch: 108823

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 108406

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		03/29/21 14:35	03/30/21 08:51	1
Iron	ND		0.20	0.040	mg/L		03/29/21 14:35	03/30/21 08:51	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-108406/2-A
Matrix: Water
Analysis Batch: 108823

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 108406

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	0.400	0.399	J	mg/L		100	80 - 120
Iron	0.400	0.419		mg/L		105	80 - 120

Lab Sample ID: 410-33879-3 MS
Matrix: Groundwater
Analysis Batch: 109162

Client Sample ID: S-467-20210324
Prep Type: Total Recoverable
Prep Batch: 108406

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50		0.400	50.5	4	mg/L		108	75 - 125
Iron	51		0.400	51.3	4	mg/L		117	75 - 125

Lab Sample ID: 410-33879-3 MSD
Matrix: Groundwater
Analysis Batch: 109162

Client Sample ID: S-467-20210324
Prep Type: Total Recoverable
Prep Batch: 108406

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	50		0.400	51.0	4	mg/L		224	75 - 125	1	20
Iron	51		0.400	51.8	4	mg/L		240	75 - 125	1	20

Lab Sample ID: 410-33879-7 MS
Matrix: Groundwater
Analysis Batch: 108823

Client Sample ID: S-465-20210325
Prep Type: Total Recoverable
Prep Batch: 108406

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	110		0.400	111	4	mg/L		-863	75 - 125
Iron	5.7		0.400	5.92	4	mg/L		59	75 - 125

Lab Sample ID: 410-33879-7 MSD
Matrix: Groundwater
Analysis Batch: 108823

Client Sample ID: S-465-20210325
Prep Type: Total Recoverable
Prep Batch: 108406

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	110		0.400	117	4	mg/L		599	75 - 125	5	20
Iron	5.7		0.400	6.20	4	mg/L		130	75 - 125	5	20

Lab Sample ID: 410-33879-3 DU
Matrix: Groundwater
Analysis Batch: 109162

Client Sample ID: S-467-20210324
Prep Type: Total Recoverable
Prep Batch: 108406

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Calcium	50		49.6		mg/L		0.8	20
Iron	51		50.3		mg/L		1	20

Lab Sample ID: 410-33879-7 DU
Matrix: Groundwater
Analysis Batch: 108823

Client Sample ID: S-465-20210325
Prep Type: Total Recoverable
Prep Batch: 108406

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Calcium	110		109		mg/L		5	20
Iron	5.7		5.43		mg/L		5	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-108601/1-A
Matrix: Water
Analysis Batch: 108940

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108601

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00052	0.000073	mg/L		03/29/21 20:30	03/30/21 13:33	1

Lab Sample ID: LCS 410-108601/2-A
Matrix: Water
Analysis Batch: 108940

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108601

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.0300	0.0313		mg/L		104	90 - 115

Lab Sample ID: 410-33879-6 MS
Matrix: Groundwater
Analysis Batch: 108940

Client Sample ID: S-470-20210325
Prep Type: Dissolved
Prep Batch: 108601

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		0.0300	0.0321		mg/L		107	75 - 125

Lab Sample ID: 410-33879-6 MSD
Matrix: Groundwater
Analysis Batch: 108940

Client Sample ID: S-470-20210325
Prep Type: Dissolved
Prep Batch: 108601

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		0.0300	0.0322		mg/L		107	75 - 125	0	20

Lab Sample ID: 410-33879-6 DU
Matrix: Groundwater
Analysis Batch: 108940

Client Sample ID: S-470-20210325
Prep Type: Dissolved
Prep Batch: 108601

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		mg/L		NC	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-108933/22
Matrix: Water
Analysis Batch: 108933

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			03/29/21 21:35	1

Lab Sample ID: LCS 410-108933/25
Matrix: Water
Analysis Batch: 108933

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	179		mg/L		95	82 - 106

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: 410-33879-11 MS
Matrix: Groundwater
Analysis Batch: 108933
Client Sample ID: RW-1-20210326
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	480		189	638		mg/L		83	82 - 106

Lab Sample ID: 410-33879-11 DU
Matrix: Groundwater
Analysis Batch: 108933
Client Sample ID: RW-1-20210326
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	480		481		mg/L		0.1	5

Lab Sample ID: 410-33879-13 DU
Matrix: Groundwater
Analysis Batch: 108933
Client Sample ID: S-453-20210326
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	150		149		mg/L		1	5

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 410-108432/2-A
Matrix: Water
Analysis Batch: 108915
Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108432

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		03/29/21 15:08	03/30/21 10:50	1

Lab Sample ID: LCS 410-108432/1-A
Matrix: Water
Analysis Batch: 108915
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108432

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	4.00	4.18		mg/L		105	90 - 110

Lab Sample ID: 410-33879-12 MS
Matrix: Groundwater
Analysis Batch: 108915
Client Sample ID: S-454-20210326
Prep Type: Total/NA
Prep Batch: 108432

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	ND	FH	5.00	5.61	FH	mg/L		112	90 - 110

Lab Sample ID: 410-33879-12 DU
Matrix: Groundwater
Analysis Batch: 108915
Client Sample ID: S-454-20210326
Prep Type: Total/NA
Prep Batch: 108432

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Kjeldahl Nitrogen	ND	FH	ND		mg/L		NC	20

Client: Stantec Consulting Corp.
Project/Site: PHL: Belmont Terminal GW Sampling

Job ID: 410-33879-1

Method: 5310 B-2011 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 410-109858/34
Matrix: Water
Analysis Batch: 109858

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1.0	0.50	mg/L			03/31/21 18:41	1

Lab Sample ID: MB 410-109858/5
Matrix: Water
Analysis Batch: 109858

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1.0	0.50	mg/L			03/31/21 13:28	1

Lab Sample ID: LCS 410-109858/33
Matrix: Water
Analysis Batch: 109858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	25.0	24.4		mg/L		98	91 - 115

Lab Sample ID: LCS 410-109858/4
Matrix: Water
Analysis Batch: 109858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	25.0	23.9		mg/L		96	91 - 115

Lab Sample ID: 410-33879-4 MS
Matrix: Groundwater
Analysis Batch: 109858

Client Sample ID: S-456-20210324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	48		50.0	103		mg/L		110	91 - 115

Lab Sample ID: 410-33879-4 DU
Matrix: Groundwater
Analysis Batch: 109858

Client Sample ID: S-456-20210324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Carbon	48		50.0		mg/L		3	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-109316/5
Matrix: Water
Analysis Batch: 109316

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			03/30/21 14:18	1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 410-109316/4
Matrix: Water
Analysis Batch: 109316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	23.6		mg/L		95	91 - 113

Lab Sample ID: 410-33879-2 MS
Matrix: Groundwater
Analysis Batch: 109316

Client Sample ID: S-466-20210324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	3.2		10.0	12.9		mg/L		97	91 - 113

Lab Sample ID: 410-33879-10 MS
Matrix: Groundwater
Analysis Batch: 109316

Client Sample ID: S-457-20210326
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	44		10.0	51.4	4	mg/L		75	91 - 113

Lab Sample ID: 410-33879-2 DU
Matrix: Groundwater
Analysis Batch: 109316

Client Sample ID: S-466-20210324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	3.2		3.52	F5	mg/L		8	3

Lab Sample ID: 410-33879-10 DU
Matrix: Groundwater
Analysis Batch: 109316

Client Sample ID: S-457-20210326
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	44		43.8		mg/L		0.5	3

GC/MS VOA

Analysis Batch: 109783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-9	TB-20210326	Total/NA	Water	8260C/UST	
MB 410-109783/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-109783/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-109783/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 110423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-2	S-466-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-3	S-467-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-4	S-456-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-5	S-472-20210324	Total/NA	Groundwater	8260C/UST	
MB 410-110423/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-110423/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-110423/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 110434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-6	S-470-20210325	Total/NA	Groundwater	8260C/UST	
410-33879-7	S-465-20210325	Total/NA	Groundwater	8260C/UST	
410-33879-8	S-469-20210325	Total/NA	Groundwater	8260C/UST	
410-33879-10	S-457-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-10 - DL	S-457-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-11 - DL	RW-1-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-12	S-454-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-13	S-453-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-13 - DL	S-453-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-14	S-455-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-14 - DL	S-455-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-15	S-452-20210326	Total/NA	Groundwater	8260C/UST	
410-33879-15 - DL	S-452-20210326	Total/NA	Groundwater	8260C/UST	
MB 410-110434/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-110434/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-110434/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 111242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1 - DL	S-468-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-1 - DL2	S-468-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-3 - DL	S-467-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-4 - DL	S-456-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-5 - DL	S-472-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-5 - DL2	S-472-20210324	Total/NA	Groundwater	8260C/UST	
410-33879-7 - DL	S-465-20210325	Total/NA	Groundwater	8260C/UST	
MB 410-111242/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-111242/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-111242/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 109526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1 - DL	S-468-20210324	Total/NA	Groundwater	3510C	
410-33879-1	S-468-20210324	Total/NA	Groundwater	3510C	
410-33879-2	S-466-20210324	Total/NA	Groundwater	3510C	
410-33879-3	S-467-20210324	Total/NA	Groundwater	3510C	
410-33879-4	S-456-20210324	Total/NA	Groundwater	3510C	
410-33879-5 - DL	S-472-20210324	Total/NA	Groundwater	3510C	
410-33879-5	S-472-20210324	Total/NA	Groundwater	3510C	
MB 410-109526/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-109526/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 109773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-109526/1-A	Method Blank	Total/NA	Water	8270D	109526
LCS 410-109526/2-A	Lab Control Sample	Total/NA	Water	8270D	109526

Prep Batch: 110001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-6	S-470-20210325	Total/NA	Groundwater	3510C	
410-33879-7	S-465-20210325	Total/NA	Groundwater	3510C	
410-33879-8	S-469-20210325	Total/NA	Groundwater	3510C	
MB 410-110001/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-110001/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-110001/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 110099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	8270D	109526
410-33879-2	S-466-20210324	Total/NA	Groundwater	8270D	109526
410-33879-3	S-467-20210324	Total/NA	Groundwater	8270D	109526
410-33879-4	S-456-20210324	Total/NA	Groundwater	8270D	109526
410-33879-5	S-472-20210324	Total/NA	Groundwater	8270D	109526

Prep Batch: 110187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-10	S-457-20210326	Total/NA	Groundwater	3510C	
410-33879-10 - DL	S-457-20210326	Total/NA	Groundwater	3510C	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	3510C	
410-33879-12	S-454-20210326	Total/NA	Groundwater	3510C	
410-33879-13 - DL	S-453-20210326	Total/NA	Groundwater	3510C	
410-33879-13	S-453-20210326	Total/NA	Groundwater	3510C	
410-33879-14	S-455-20210326	Total/NA	Groundwater	3510C	
410-33879-14 - DL	S-455-20210326	Total/NA	Groundwater	3510C	
410-33879-15 - DL	S-452-20210326	Total/NA	Groundwater	3510C	
410-33879-15	S-452-20210326	Total/NA	Groundwater	3510C	
MB 410-110187/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-110187/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-110187/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 110428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1 - DL	S-468-20210324	Total/NA	Groundwater	8270D	109526

GC/MS Semi VOA (Continued)

Analysis Batch: 110428 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-5 - DL	S-472-20210324	Total/NA	Groundwater	8270D	109526
410-33879-6	S-470-20210325	Total/NA	Groundwater	8270D	110001
410-33879-7	S-465-20210325	Total/NA	Groundwater	8270D	110001
410-33879-8	S-469-20210325	Total/NA	Groundwater	8270D	110001
MB 410-110001/1-A	Method Blank	Total/NA	Water	8270D	110001
LCS 410-110001/2-A	Lab Control Sample	Total/NA	Water	8270D	110001
LCSD 410-110001/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	110001

Analysis Batch: 110481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-110187/1-A	Method Blank	Total/NA	Water	8270D	110187
LCS 410-110187/2-A	Lab Control Sample	Total/NA	Water	8270D	110187
LCSD 410-110187/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	110187

Analysis Batch: 110727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-13	S-453-20210326	Total/NA	Groundwater	8270D	110187
410-33879-14	S-455-20210326	Total/NA	Groundwater	8270D	110187

Analysis Batch: 111021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-10	S-457-20210326	Total/NA	Groundwater	8270D	110187
410-33879-11	RW-1-20210326	Total/NA	Groundwater	8270D	110187
410-33879-12	S-454-20210326	Total/NA	Groundwater	8270D	110187
410-33879-13 - DL	S-453-20210326	Total/NA	Groundwater	8270D	110187
410-33879-15	S-452-20210326	Total/NA	Groundwater	8270D	110187

Analysis Batch: 111509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-10 - DL	S-457-20210326	Total/NA	Groundwater	8270D	110187
410-33879-14 - DL	S-455-20210326	Total/NA	Groundwater	8270D	110187
410-33879-15 - DL	S-452-20210326	Total/NA	Groundwater	8270D	110187

GC VOA

Prep Batch: 111160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	RSK-175	
MB 410-111160/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-111160/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Prep Batch: 111165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-3	S-467-20210324	Total/NA	Groundwater	RSK-175	
410-33879-4	S-456-20210324	Total/NA	Groundwater	RSK-175	
410-33879-5	S-472-20210324	Total/NA	Groundwater	RSK-175	
410-33879-10	S-457-20210326	Total/NA	Groundwater	RSK-175	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	RSK-175	
410-33879-13	S-453-20210326	Total/NA	Groundwater	RSK-175	
410-33879-14	S-455-20210326	Total/NA	Groundwater	RSK-175	
410-33879-15	S-452-20210326	Total/NA	Groundwater	RSK-175	

GC VOA (Continued)

Prep Batch: 111165 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-111165/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-111165/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-111165/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 111174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	RSK-175	111160
410-33879-3	S-467-20210324	Total/NA	Groundwater	RSK-175	111165
410-33879-4	S-456-20210324	Total/NA	Groundwater	RSK-175	111165
410-33879-5	S-472-20210324	Total/NA	Groundwater	RSK-175	111165
410-33879-10	S-457-20210326	Total/NA	Groundwater	RSK-175	111165
410-33879-11	RW-1-20210326	Total/NA	Groundwater	RSK-175	111165
410-33879-13	S-453-20210326	Total/NA	Groundwater	RSK-175	111165
410-33879-14	S-455-20210326	Total/NA	Groundwater	RSK-175	111165
410-33879-15	S-452-20210326	Total/NA	Groundwater	RSK-175	111165
MB 410-111160/1-A	Method Blank	Total/NA	Water	RSK-175	111160
MB 410-111165/1-A	Method Blank	Total/NA	Water	RSK-175	111165
LCS 410-111160/2-A	Lab Control Sample	Total/NA	Water	RSK-175	111160
LCS 410-111165/2-A	Lab Control Sample	Total/NA	Water	RSK-175	111165
LCSD 410-111165/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	111165

Analysis Batch: 111705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1 - DL	S-468-20210324	Total/NA	Groundwater	RSK-175	111787
410-33879-2	S-466-20210324	Total/NA	Groundwater	RSK-175	111787
410-33879-3 - DL	S-467-20210324	Total/NA	Groundwater	RSK-175	111787
410-33879-4 - DL	S-456-20210324	Total/NA	Groundwater	RSK-175	111787
410-33879-5 - DL	S-472-20210324	Total/NA	Groundwater	RSK-175	111787
410-33879-6	S-470-20210325	Total/NA	Groundwater	RSK-175	111787
410-33879-7	S-465-20210325	Total/NA	Groundwater	RSK-175	111787
410-33879-8	S-469-20210325	Total/NA	Groundwater	RSK-175	111787
410-33879-10 - DL	S-457-20210326	Total/NA	Groundwater	RSK-175	111787
410-33879-11 - DL	RW-1-20210326	Total/NA	Groundwater	RSK-175	111787
410-33879-12	S-454-20210326	Total/NA	Groundwater	RSK-175	111787
410-33879-13 - DL	S-453-20210326	Total/NA	Groundwater	RSK-175	111787
410-33879-14 - DL	S-455-20210326	Total/NA	Groundwater	RSK-175	111787
410-33879-15 - DL	S-452-20210326	Total/NA	Groundwater	RSK-175	111787
MB 410-111787/1-A	Method Blank	Total/NA	Water	RSK-175	111787
LCS 410-111787/2-A	Lab Control Sample	Total/NA	Water	RSK-175	111787
LCSD 410-111787/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	111787

Prep Batch: 111787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1 - DL	S-468-20210324	Total/NA	Groundwater	RSK-175	
410-33879-2	S-466-20210324	Total/NA	Groundwater	RSK-175	
410-33879-3 - DL	S-467-20210324	Total/NA	Groundwater	RSK-175	
410-33879-4 - DL	S-456-20210324	Total/NA	Groundwater	RSK-175	
410-33879-5 - DL	S-472-20210324	Total/NA	Groundwater	RSK-175	
410-33879-6	S-470-20210325	Total/NA	Groundwater	RSK-175	
410-33879-7	S-465-20210325	Total/NA	Groundwater	RSK-175	
410-33879-8	S-469-20210325	Total/NA	Groundwater	RSK-175	

GC VOA (Continued)

Prep Batch: 111787 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-10 - DL	S-457-20210326	Total/NA	Groundwater	RSK-175	
410-33879-11 - DL	RW-1-20210326	Total/NA	Groundwater	RSK-175	
410-33879-12	S-454-20210326	Total/NA	Groundwater	RSK-175	
410-33879-13 - DL	S-453-20210326	Total/NA	Groundwater	RSK-175	
410-33879-14 - DL	S-455-20210326	Total/NA	Groundwater	RSK-175	
410-33879-15 - DL	S-452-20210326	Total/NA	Groundwater	RSK-175	
MB 410-111787/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-111787/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-111787/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 108977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	8011	
410-33879-2	S-466-20210324	Total/NA	Groundwater	8011	
410-33879-3	S-467-20210324	Total/NA	Groundwater	8011	
410-33879-4	S-456-20210324	Total/NA	Groundwater	8011	
410-33879-5	S-472-20210324	Total/NA	Groundwater	8011	
410-33879-6	S-470-20210325	Total/NA	Groundwater	8011	
410-33879-7	S-465-20210325	Total/NA	Groundwater	8011	
410-33879-8	S-469-20210325	Total/NA	Groundwater	8011	
410-33879-10	S-457-20210326	Total/NA	Groundwater	8011	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	8011	
410-33879-12	S-454-20210326	Total/NA	Groundwater	8011	
410-33879-13	S-453-20210326	Total/NA	Groundwater	8011	
410-33879-14	S-455-20210326	Total/NA	Groundwater	8011	
410-33879-15	S-452-20210326	Total/NA	Groundwater	8011	
MB 410-108977/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-108977/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-108977/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 109059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	8011	108977
410-33879-2	S-466-20210324	Total/NA	Groundwater	8011	108977
410-33879-3	S-467-20210324	Total/NA	Groundwater	8011	108977
410-33879-4	S-456-20210324	Total/NA	Groundwater	8011	108977
410-33879-5	S-472-20210324	Total/NA	Groundwater	8011	108977
410-33879-6	S-470-20210325	Total/NA	Groundwater	8011	108977
410-33879-7	S-465-20210325	Total/NA	Groundwater	8011	108977
410-33879-8	S-469-20210325	Total/NA	Groundwater	8011	108977
410-33879-10	S-457-20210326	Total/NA	Groundwater	8011	108977
410-33879-11	RW-1-20210326	Total/NA	Groundwater	8011	108977
410-33879-12	S-454-20210326	Total/NA	Groundwater	8011	108977
410-33879-13	S-453-20210326	Total/NA	Groundwater	8011	108977
410-33879-14	S-455-20210326	Total/NA	Groundwater	8011	108977
410-33879-15	S-452-20210326	Total/NA	Groundwater	8011	108977
MB 410-108977/1-A	Method Blank	Total/NA	Water	8011	108977
LCS 410-108977/2-A	Lab Control Sample	Total/NA	Water	8011	108977
LCSD 410-108977/3-A	Lab Control Sample Dup	Total/NA	Water	8011	108977

QC Association Summary

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

GC Semi VOA

Prep Batch: 110041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-9	TB-20210326	Total/NA	Water	8011	
MB 410-110041/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-110041/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-110041/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 110184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-9	TB-20210326	Total/NA	Water	8011	110041
MB 410-110041/1-A	Method Blank	Total/NA	Water	8011	110041
LCS 410-110041/2-A	Lab Control Sample	Total/NA	Water	8011	110041
LCSD 410-110041/3-A	Lab Control Sample Dup	Total/NA	Water	8011	110041

HPLC/IC

Analysis Batch: 110508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-2	S-466-20210324	Total/NA	Groundwater	EPA 300.0 R2.1	
MB 410-110508/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-110508/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 110516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-3	S-467-20210324	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-4	S-456-20210324	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-5	S-472-20210324	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-6	S-470-20210325	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-7	S-465-20210325	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-8	S-469-20210325	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-10	S-457-20210326	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-12	S-454-20210326	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-13	S-453-20210326	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-14	S-455-20210326	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-15	S-452-20210326	Total/NA	Groundwater	EPA 300.0 R2.1	
MB 410-110516/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-110516/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-33879-3 MS	S-467-20210324	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-13 MS	S-453-20210326	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-3 DU	S-467-20210324	Total/NA	Groundwater	EPA 300.0 R2.1	
410-33879-13 DU	S-453-20210326	Total/NA	Groundwater	EPA 300.0 R2.1	

Metals

Prep Batch: 108406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total Recoverable	Groundwater	3005A	
410-33879-2	S-466-20210324	Total Recoverable	Groundwater	3005A	
410-33879-3	S-467-20210324	Total Recoverable	Groundwater	3005A	
410-33879-4	S-456-20210324	Total Recoverable	Groundwater	3005A	
410-33879-5	S-472-20210324	Total Recoverable	Groundwater	3005A	
410-33879-6	S-470-20210325	Total Recoverable	Groundwater	3005A	

Metals (Continued)

Prep Batch: 108406 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-7	S-465-20210325	Total Recoverable	Groundwater	3005A	
410-33879-8	S-469-20210325	Total Recoverable	Groundwater	3005A	
410-33879-10	S-457-20210326	Total Recoverable	Groundwater	3005A	
410-33879-11	RW-1-20210326	Total Recoverable	Groundwater	3005A	
410-33879-12	S-454-20210326	Total Recoverable	Groundwater	3005A	
410-33879-13	S-453-20210326	Total Recoverable	Groundwater	3005A	
410-33879-14	S-455-20210326	Total Recoverable	Groundwater	3005A	
410-33879-15	S-452-20210326	Total Recoverable	Groundwater	3005A	
MB 410-108406/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-108406/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-33879-3 MS	S-467-20210324	Total Recoverable	Groundwater	3005A	
410-33879-3 MSD	S-467-20210324	Total Recoverable	Groundwater	3005A	
410-33879-7 MS	S-465-20210325	Total Recoverable	Groundwater	3005A	
410-33879-7 MSD	S-465-20210325	Total Recoverable	Groundwater	3005A	
410-33879-3 DU	S-467-20210324	Total Recoverable	Groundwater	3005A	
410-33879-7 DU	S-465-20210325	Total Recoverable	Groundwater	3005A	

Prep Batch: 108601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Dissolved	Groundwater	Non-Digest Prep	
410-33879-2	S-466-20210324	Dissolved	Groundwater	Non-Digest Prep	
410-33879-3	S-467-20210324	Dissolved	Groundwater	Non-Digest Prep	
410-33879-4	S-456-20210324	Dissolved	Groundwater	Non-Digest Prep	
410-33879-5	S-472-20210324	Dissolved	Groundwater	Non-Digest Prep	
410-33879-6	S-470-20210325	Dissolved	Groundwater	Non-Digest Prep	
410-33879-7	S-465-20210325	Dissolved	Groundwater	Non-Digest Prep	
410-33879-8	S-469-20210325	Dissolved	Groundwater	Non-Digest Prep	
410-33879-10	S-457-20210326	Dissolved	Groundwater	Non-Digest Prep	
410-33879-11	RW-1-20210326	Dissolved	Groundwater	Non-Digest Prep	
410-33879-12	S-454-20210326	Dissolved	Groundwater	Non-Digest Prep	
410-33879-13	S-453-20210326	Dissolved	Groundwater	Non-Digest Prep	
410-33879-14	S-455-20210326	Dissolved	Groundwater	Non-Digest Prep	
410-33879-15	S-452-20210326	Dissolved	Groundwater	Non-Digest Prep	
MB 410-108601/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-108601/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-33879-6 MS	S-470-20210325	Dissolved	Groundwater	Non-Digest Prep	
410-33879-6 MSD	S-470-20210325	Dissolved	Groundwater	Non-Digest Prep	
410-33879-6 DU	S-470-20210325	Dissolved	Groundwater	Non-Digest Prep	

Analysis Batch: 108823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total Recoverable	Groundwater	6010C	108406
410-33879-2	S-466-20210324	Total Recoverable	Groundwater	6010C	108406
410-33879-4	S-456-20210324	Total Recoverable	Groundwater	6010C	108406
410-33879-5	S-472-20210324	Total Recoverable	Groundwater	6010C	108406
410-33879-6	S-470-20210325	Total Recoverable	Groundwater	6010C	108406
410-33879-7	S-465-20210325	Total Recoverable	Groundwater	6010C	108406
410-33879-8	S-469-20210325	Total Recoverable	Groundwater	6010C	108406
410-33879-10	S-457-20210326	Total Recoverable	Groundwater	6010C	108406
410-33879-11	RW-1-20210326	Total Recoverable	Groundwater	6010C	108406
410-33879-12	S-454-20210326	Total Recoverable	Groundwater	6010C	108406

Metals (Continued)

Analysis Batch: 108823 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-13	S-453-20210326	Total Recoverable	Groundwater	6010C	108406
410-33879-14	S-455-20210326	Total Recoverable	Groundwater	6010C	108406
410-33879-15	S-452-20210326	Total Recoverable	Groundwater	6010C	108406
MB 410-108406/1-A	Method Blank	Total Recoverable	Water	6010C	108406
LCS 410-108406/2-A	Lab Control Sample	Total Recoverable	Water	6010C	108406
410-33879-7 MS	S-465-20210325	Total Recoverable	Groundwater	6010C	108406
410-33879-7 MSD	S-465-20210325	Total Recoverable	Groundwater	6010C	108406
410-33879-7 DU	S-465-20210325	Total Recoverable	Groundwater	6010C	108406

Analysis Batch: 108940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Dissolved	Groundwater	6020A	108601
410-33879-2	S-466-20210324	Dissolved	Groundwater	6020A	108601
410-33879-3	S-467-20210324	Dissolved	Groundwater	6020A	108601
410-33879-4	S-456-20210324	Dissolved	Groundwater	6020A	108601
410-33879-5	S-472-20210324	Dissolved	Groundwater	6020A	108601
410-33879-6	S-470-20210325	Dissolved	Groundwater	6020A	108601
410-33879-7	S-465-20210325	Dissolved	Groundwater	6020A	108601
410-33879-8	S-469-20210325	Dissolved	Groundwater	6020A	108601
410-33879-10	S-457-20210326	Dissolved	Groundwater	6020A	108601
410-33879-11	RW-1-20210326	Dissolved	Groundwater	6020A	108601
410-33879-12	S-454-20210326	Dissolved	Groundwater	6020A	108601
410-33879-13	S-453-20210326	Dissolved	Groundwater	6020A	108601
410-33879-14	S-455-20210326	Dissolved	Groundwater	6020A	108601
410-33879-15	S-452-20210326	Dissolved	Groundwater	6020A	108601
MB 410-108601/1-A	Method Blank	Total/NA	Water	6020A	108601
LCS 410-108601/2-A	Lab Control Sample	Total/NA	Water	6020A	108601
410-33879-6 MS	S-470-20210325	Dissolved	Groundwater	6020A	108601
410-33879-6 MSD	S-470-20210325	Dissolved	Groundwater	6020A	108601
410-33879-6 DU	S-470-20210325	Dissolved	Groundwater	6020A	108601

Analysis Batch: 109162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-3	S-467-20210324	Total Recoverable	Groundwater	6010C	108406
410-33879-3 MS	S-467-20210324	Total Recoverable	Groundwater	6010C	108406
410-33879-3 MSD	S-467-20210324	Total Recoverable	Groundwater	6010C	108406
410-33879-3 DU	S-467-20210324	Total Recoverable	Groundwater	6010C	108406

General Chemistry

Prep Batch: 108432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	351.2	
410-33879-2	S-466-20210324	Total/NA	Groundwater	351.2	
410-33879-3	S-467-20210324	Total/NA	Groundwater	351.2	
410-33879-4	S-456-20210324	Total/NA	Groundwater	351.2	
410-33879-5	S-472-20210324	Total/NA	Groundwater	351.2	
410-33879-6	S-470-20210325	Total/NA	Groundwater	351.2	
410-33879-7	S-465-20210325	Total/NA	Groundwater	351.2	
410-33879-8	S-469-20210325	Total/NA	Groundwater	351.2	
410-33879-10	S-457-20210326	Total/NA	Groundwater	351.2	

General Chemistry (Continued)

Prep Batch: 108432 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-11	RW-1-20210326	Total/NA	Groundwater	351.2	
410-33879-12	S-454-20210326	Total/NA	Groundwater	351.2	
410-33879-13	S-453-20210326	Total/NA	Groundwater	351.2	
410-33879-14	S-455-20210326	Total/NA	Groundwater	351.2	
410-33879-15	S-452-20210326	Total/NA	Groundwater	351.2	
MB 410-108432/2-A	Method Blank	Total/NA	Water	351.2	
LCS 410-108432/1-A	Lab Control Sample	Total/NA	Water	351.2	
410-33879-12 MS	S-454-20210326	Total/NA	Groundwater	351.2	
410-33879-12 DU	S-454-20210326	Total/NA	Groundwater	351.2	

Analysis Batch: 108915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	351.2	108432
410-33879-2	S-466-20210324	Total/NA	Groundwater	351.2	108432
410-33879-3	S-467-20210324	Total/NA	Groundwater	351.2	108432
410-33879-4	S-456-20210324	Total/NA	Groundwater	351.2	108432
410-33879-5	S-472-20210324	Total/NA	Groundwater	351.2	108432
410-33879-6	S-470-20210325	Total/NA	Groundwater	351.2	108432
410-33879-7	S-465-20210325	Total/NA	Groundwater	351.2	108432
410-33879-8	S-469-20210325	Total/NA	Groundwater	351.2	108432
410-33879-10	S-457-20210326	Total/NA	Groundwater	351.2	108432
410-33879-11	RW-1-20210326	Total/NA	Groundwater	351.2	108432
410-33879-12	S-454-20210326	Total/NA	Groundwater	351.2	108432
410-33879-13	S-453-20210326	Total/NA	Groundwater	351.2	108432
410-33879-14	S-455-20210326	Total/NA	Groundwater	351.2	108432
410-33879-15	S-452-20210326	Total/NA	Groundwater	351.2	108432
MB 410-108432/2-A	Method Blank	Total/NA	Water	351.2	108432
LCS 410-108432/1-A	Lab Control Sample	Total/NA	Water	351.2	108432
410-33879-12 MS	S-454-20210326	Total/NA	Groundwater	351.2	108432
410-33879-12 DU	S-454-20210326	Total/NA	Groundwater	351.2	108432

Analysis Batch: 108933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	2320B-2011	
410-33879-2	S-466-20210324	Total/NA	Groundwater	2320B-2011	
410-33879-3	S-467-20210324	Total/NA	Groundwater	2320B-2011	
410-33879-4	S-456-20210324	Total/NA	Groundwater	2320B-2011	
410-33879-5	S-472-20210324	Total/NA	Groundwater	2320B-2011	
410-33879-6	S-470-20210325	Total/NA	Groundwater	2320B-2011	
410-33879-7	S-465-20210325	Total/NA	Groundwater	2320B-2011	
410-33879-8	S-469-20210325	Total/NA	Groundwater	2320B-2011	
410-33879-10	S-457-20210326	Total/NA	Groundwater	2320B-2011	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	2320B-2011	
410-33879-12	S-454-20210326	Total/NA	Groundwater	2320B-2011	
410-33879-13	S-453-20210326	Total/NA	Groundwater	2320B-2011	
410-33879-14	S-455-20210326	Total/NA	Groundwater	2320B-2011	
410-33879-15	S-452-20210326	Total/NA	Groundwater	2320B-2011	
MB 410-108933/22	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-108933/25	Lab Control Sample	Total/NA	Water	2320B-2011	
410-33879-11 MS	RW-1-20210326	Total/NA	Groundwater	2320B-2011	
410-33879-11 DU	RW-1-20210326	Total/NA	Groundwater	2320B-2011	

General Chemistry (Continued)

Analysis Batch: 108933 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-13 DU	S-453-20210326	Total/NA	Groundwater	2320B-2011	

Analysis Batch: 109316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	5310C-2011	
410-33879-2	S-466-20210324	Total/NA	Groundwater	5310C-2011	
410-33879-3	S-467-20210324	Total/NA	Groundwater	5310C-2011	
410-33879-4	S-456-20210324	Total/NA	Groundwater	5310C-2011	
410-33879-5	S-472-20210324	Total/NA	Groundwater	5310C-2011	
410-33879-6	S-470-20210325	Total/NA	Groundwater	5310C-2011	
410-33879-7	S-465-20210325	Total/NA	Groundwater	5310C-2011	
410-33879-8	S-469-20210325	Total/NA	Groundwater	5310C-2011	
410-33879-10	S-457-20210326	Total/NA	Groundwater	5310C-2011	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	5310C-2011	
410-33879-12	S-454-20210326	Total/NA	Groundwater	5310C-2011	
410-33879-13	S-453-20210326	Total/NA	Groundwater	5310C-2011	
410-33879-14	S-455-20210326	Total/NA	Groundwater	5310C-2011	
410-33879-15	S-452-20210326	Total/NA	Groundwater	5310C-2011	
MB 410-109316/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-109316/4	Lab Control Sample	Total/NA	Water	5310C-2011	
410-33879-2 MS	S-466-20210324	Total/NA	Groundwater	5310C-2011	
410-33879-10 MS	S-457-20210326	Total/NA	Groundwater	5310C-2011	
410-33879-2 DU	S-466-20210324	Total/NA	Groundwater	5310C-2011	
410-33879-10 DU	S-457-20210326	Total/NA	Groundwater	5310C-2011	

Analysis Batch: 109858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	5310 B-2011	
410-33879-2	S-466-20210324	Total/NA	Groundwater	5310 B-2011	
410-33879-3	S-467-20210324	Total/NA	Groundwater	5310 B-2011	
410-33879-4	S-456-20210324	Total/NA	Groundwater	5310 B-2011	
410-33879-5	S-472-20210324	Total/NA	Groundwater	5310 B-2011	
410-33879-6	S-470-20210325	Total/NA	Groundwater	5310 B-2011	
410-33879-7	S-465-20210325	Total/NA	Groundwater	5310 B-2011	
410-33879-8	S-469-20210325	Total/NA	Groundwater	5310 B-2011	
410-33879-10	S-457-20210326	Total/NA	Groundwater	5310 B-2011	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	5310 B-2011	
410-33879-12	S-454-20210326	Total/NA	Groundwater	5310 B-2011	
410-33879-13	S-453-20210326	Total/NA	Groundwater	5310 B-2011	
410-33879-14	S-455-20210326	Total/NA	Groundwater	5310 B-2011	
410-33879-15	S-452-20210326	Total/NA	Groundwater	5310 B-2011	
MB 410-109858/34	Method Blank	Total/NA	Water	5310 B-2011	
MB 410-109858/5	Method Blank	Total/NA	Water	5310 B-2011	
LCS 410-109858/33	Lab Control Sample	Total/NA	Water	5310 B-2011	
LCS 410-109858/4	Lab Control Sample	Total/NA	Water	5310 B-2011	
410-33879-4 MS	S-456-20210324	Total/NA	Groundwater	5310 B-2011	
410-33879-4 DU	S-456-20210324	Total/NA	Groundwater	5310 B-2011	

Analysis Batch: 109955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-1	S-468-20210324	Total/NA	Groundwater	SM5310C	

General Chemistry (Continued)

Analysis Batch: 109955 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-33879-2	S-466-20210324	Total/NA	Groundwater	SM5310C	
410-33879-3	S-467-20210324	Total/NA	Groundwater	SM5310C	
410-33879-4	S-456-20210324	Total/NA	Groundwater	SM5310C	
410-33879-5	S-472-20210324	Total/NA	Groundwater	SM5310C	
410-33879-6	S-470-20210325	Total/NA	Groundwater	SM5310C	
410-33879-7	S-465-20210325	Total/NA	Groundwater	SM5310C	
410-33879-8	S-469-20210325	Total/NA	Groundwater	SM5310C	
410-33879-10	S-457-20210326	Total/NA	Groundwater	SM5310C	
410-33879-11	RW-1-20210326	Total/NA	Groundwater	SM5310C	
410-33879-12	S-454-20210326	Total/NA	Groundwater	SM5310C	
410-33879-13	S-453-20210326	Total/NA	Groundwater	SM5310C	
410-33879-14	S-455-20210326	Total/NA	Groundwater	SM5310C	
410-33879-15	S-452-20210326	Total/NA	Groundwater	SM5310C	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-468-20210324
Lab Sample ID: 410-33879-1
Date Collected: 03/24/21 12:00
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	110423	04/03/21 01:37	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	10	111242	04/06/21 15:53	LCW8	ELLE
Total/NA	Analysis	8260C/UST	DL2	50	111242	04/06/21 21:02	LCW8	ELLE
Total/NA	Prep	3510C			109526	03/31/21 17:30	DFX4	ELLE
Total/NA	Analysis	8270D		1	110099	04/02/21 00:18	SJ89	ELLE
Total/NA	Prep	3510C	DL		109526	03/31/21 17:30	DFX4	ELLE
Total/NA	Analysis	8270D	DL	50	110428	04/02/21 22:48	W6XI	ELLE
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	111705	04/07/21 20:52	LXF2	ELLE
Total/NA	Prep	RSK-175			111160	04/06/21 08:39	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 14:33	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/30/21 23:24	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110508	04/03/21 09:49	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:13	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:13	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 23:14	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:18	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	109858	03/31/21 17:36	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 15:55	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-466-20210324
Lab Sample ID: 410-33879-2
Date Collected: 03/24/21 10:40
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	110423	04/03/21 02:01	ULCP	ELLE
Total/NA	Prep	3510C			109526	03/31/21 17:30	DFX4	ELLE
Total/NA	Analysis	8270D		1	110099	04/02/21 00:47	SJ89	ELLE
Total/NA	Prep	RSK-175			111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	111705	04/07/21 21:10	LXF2	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/30/21 23:41	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	110508	04/03/21 09:59	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:34	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:21	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 23:38	DI9Q	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-466-20210324
Lab Sample ID: 410-33879-2
Date Collected: 03/24/21 10:40
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:26	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		2	109858	03/31/21 17:47	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 14:34	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-467-20210324
Lab Sample ID: 410-33879-3
Date Collected: 03/24/21 12:55
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	110423	04/03/21 02:25	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	10	111242	04/06/21 16:17	LCW8	ELLE
Total/NA	Prep	3510C			109526	03/31/21 17:30	DFX4	ELLE
Total/NA	Analysis	8270D		1	110099	04/02/21 01:15	SJ89	ELLE
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	111705	04/07/21 21:28	LXF2	ELLE
Total/NA	Prep	RSK-175			111165	04/06/21 08:43	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 16:25	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/30/21 23:57	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110516	04/03/21 09:02	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	109162	03/31/21 04:08	GJ35	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:19	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 23:21	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		5	108915	03/30/21 11:47	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	109858	03/31/21 17:57	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 16:11	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-456-20210324
Lab Sample ID: 410-33879-4
Date Collected: 03/24/21 12:20
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	110423	04/03/21 02:49	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	10	111242	04/06/21 16:41	LCW8	ELLE
Total/NA	Prep	3510C			109526	03/31/21 17:30	DFX4	ELLE
Total/NA	Analysis	8270D		1	110099	04/02/21 01:43	SJ89	ELLE
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	111705	04/07/21 21:47	LXF2	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-456-20210324
Lab Sample ID: 410-33879-4
Date Collected: 03/24/21 12:20
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	RSK-175			111165	04/06/21 08:43	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 16:43	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 00:14	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110516	04/03/21 10:08	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:26	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:15	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 23:45	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:15	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	109858	03/31/21 18:52	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 16:27	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-472-20210324
Lab Sample ID: 410-33879-5
Date Collected: 03/24/21 14:45
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	110423	04/03/21 03:12	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	10	111242	04/06/21 17:05	LCW8	ELLE
Total/NA	Analysis	8260C/UST	DL2	50	111242	04/06/21 21:26	LCW8	ELLE
Total/NA	Prep	3510C			109526	03/31/21 17:30	DFX4	ELLE
Total/NA	Analysis	8270D		1	110099	04/02/21 02:11	SJ89	ELLE
Total/NA	Prep	3510C	DL		109526	03/31/21 17:30	DFX4	ELLE
Total/NA	Analysis	8270D	DL	100	110428	04/02/21 23:16	W6XI	ELLE
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	111705	04/07/21 22:05	LXF2	ELLE
Total/NA	Prep	RSK-175			111165	04/06/21 08:43	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 17:01	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 00:31	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110516	04/03/21 10:24	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:32	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:17	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 23:32	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:22	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	109858	03/31/21 19:24	KGQ6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-472-20210324
Lab Sample ID: 410-33879-5
Date Collected: 03/24/21 14:45
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 17:16	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-470-20210325
Lab Sample ID: 410-33879-6
Date Collected: 03/25/21 09:00
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	110434	04/02/21 23:50	ULCP	ELLE
Total/NA	Prep	3510C			110001	04/01/21 17:00	DFX4	ELLE
Total/NA	Analysis	8270D		1	110428	04/03/21 03:00	W6XI	ELLE
Total/NA	Prep	RSK-175			111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	111705	04/07/21 22:23	LXF2	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 00:47	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	110516	04/03/21 10:41	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:16	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 13:41	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 23:09	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:34	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	109858	03/31/21 19:35	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 17:32	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-465-20210325
Lab Sample ID: 410-33879-7
Date Collected: 03/25/21 10:30
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		10	110434	04/03/21 02:36	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	500	111242	04/06/21 17:28	LCW8	ELLE
Total/NA	Prep	3510C			110001	04/01/21 17:00	DFX4	ELLE
Total/NA	Analysis	8270D		1	110428	04/03/21 03:28	W6XI	ELLE
Total/NA	Prep	RSK-175			111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	111705	04/07/21 22:42	LXF2	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 01:04	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	110516	04/03/21 10:58	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 08:56	MDP5	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-465-20210325
Lab Sample ID: 410-33879-7
Date Collected: 03/25/21 10:30
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 13:55	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 22:47	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:20	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 19:46	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 17:48	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-469-20210325
Lab Sample ID: 410-33879-8
Date Collected: 03/25/21 11:25
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	110434	04/03/21 00:14	ULCP	ELLE
Total/NA	Prep	3510C			110001	04/01/21 17:00	DFX4	ELLE
Total/NA	Analysis	8270D		1	110428	04/03/21 03:56	W6XI	ELLE
Total/NA	Prep	RSK-175			111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	111705	04/08/21 03:49	LXF2	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 01:21	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	110516	04/03/21 11:47	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:29	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:11	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 23:51	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:16	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	109858	03/31/21 19:57	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 18:04	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: TB-20210326
Lab Sample ID: 410-33879-9
Date Collected: 03/19/21 00:00
Matrix: Water
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	109783	04/01/21 19:28	LCW8	ELLE
Total/NA	Prep	8011			110041	04/01/21 18:00	QQ3P	ELLE
Total/NA	Analysis	8011		1	110184	04/02/21 11:20	AC3T	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-457-20210326
Lab Sample ID: 410-33879-10
Date Collected: 03/26/21 09:20
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		10	110434	04/03/21 03:24	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	100	110434	04/03/21 03:48	ULCP	ELLE
Total/NA	Prep	3510C			110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	111021	04/06/21 05:43	W6XI	ELLE
Total/NA	Prep	3510C	DL		110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D	DL	100	111509	04/07/21 03:40	W6XI	ELLE
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	111705	04/08/21 04:08	LXF2	ELLE
Total/NA	Prep	RSK-175			111165	04/06/21 08:43	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 18:13	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 01:38	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110516	04/03/21 12:04	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:24	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:09	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 23:27	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:24	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 20:08	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 18:21	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: RW-1-20210326
Lab Sample ID: 410-33879-11
Date Collected: 03/26/21 09:10
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	110434	04/03/21 04:11	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	50	110434	04/03/21 04:35	ULCP	ELLE
Total/NA	Prep	3510C			110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	111021	04/06/21 06:39	W6XI	ELLE
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	111705	04/08/21 04:28	LXF2	ELLE
Total/NA	Prep	RSK-175			111165	04/06/21 08:43	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 18:49	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 01:54	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110516	04/03/21 12:20	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:43	MDP5	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: RW-1-20210326
Lab Sample ID: 410-33879-11
Date Collected: 03/26/21 09:10
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 13:53	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 21:59	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		10	108915	03/30/21 11:45	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 20:41	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 19:09	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-454-20210326
Lab Sample ID: 410-33879-12
Date Collected: 03/26/21 10:20
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	110434	04/03/21 00:37	ULCP	ELLE
Total/NA	Prep	3510C			110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	111021	04/06/21 07:07	W6XI	ELLE
Total/NA	Prep	RSK-175			111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	111705	04/08/21 04:47	LXF2	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 02:11	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	110516	04/03/21 12:37	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:45	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 13:57	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 22:53	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 10:52	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		2	109858	03/31/21 20:51	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 19:26	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-453-20210326
Lab Sample ID: 410-33879-13
Date Collected: 03/26/21 11:25
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	110434	04/03/21 04:59	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	50	110434	04/03/21 05:22	ULCP	ELLE
Total/NA	Prep	3510C			110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	110727	04/05/21 13:37	W6XI	ELLE
Total/NA	Prep	3510C	DL		110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D	DL	5	111021	04/06/21 07:35	W6XI	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-453-20210326
Lab Sample ID: 410-33879-13
Date Collected: 03/26/21 11:25
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	111705	04/08/21 05:06	LXF2	ELLE
Total/NA	Prep	RSK-175			111165	04/06/21 08:43	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 19:26	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 02:28	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110516	04/03/21 12:54	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:37	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:07	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 22:21	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:03	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	109858	03/31/21 21:02	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 19:42	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-455-20210326
Lab Sample ID: 410-33879-14
Date Collected: 03/26/21 11:10
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	110434	04/03/21 05:46	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	50	110434	04/03/21 06:10	ULCP	ELLE
Total/NA	Prep	3510C			110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	110727	04/05/21 14:05	W6XI	ELLE
Total/NA	Prep	3510C	DL		110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D	DL	100	111509	04/07/21 02:45	W6XI	ELLE
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	111705	04/08/21 05:25	LXF2	ELLE
Total/NA	Prep	RSK-175			111165	04/06/21 08:43	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 19:44	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 02:44	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110516	04/03/21 13:43	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:48	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 13:59	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 22:41	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:11	JCG7	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Client Sample ID: S-455-20210326
Lab Sample ID: 410-33879-14
Date Collected: 03/26/21 11:10
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 21:13	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 20:30	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Client Sample ID: S-452-20210326
Lab Sample ID: 410-33879-15
Date Collected: 03/26/21 12:30
Matrix: Groundwater
Date Received: 03/26/21 18:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	110434	04/03/21 06:34	ULCP	ELLE
Total/NA	Analysis	8260C/UST	DL	50	110434	04/03/21 06:57	ULCP	ELLE
Total/NA	Prep	3510C			110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D		1	111021	04/06/21 08:31	W6XI	ELLE
Total/NA	Prep	3510C	DL		110187	04/02/21 10:00	R9CT	ELLE
Total/NA	Analysis	8270D	DL	20	111509	04/07/21 03:13	W6XI	ELLE
Total/NA	Prep	RSK-175	DL		111787	04/07/21 10:42	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	111705	04/08/21 05:44	LXF2	ELLE
Total/NA	Prep	RSK-175			111165	04/06/21 08:43	YUE6	ELLE
Total/NA	Analysis	RSK-175		1	111174	04/06/21 20:02	YUE6	ELLE
Total/NA	Prep	8011			108977	03/30/21 16:55	QQ3P	ELLE
Total/NA	Analysis	8011		1	109059	03/31/21 03:01	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	110516	04/03/21 14:00	GJ35	ELLE
Total Recoverable	Prep	3005A			108406	03/29/21 14:35	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	108823	03/30/21 09:40	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			108601	03/29/21 20:30	UJLA	ELLE
Dissolved	Analysis	6020A		1	108940	03/30/21 14:05	MG7H	ELLE
Total/NA	Analysis	2320B-2011		1	108933	03/29/21 22:34	DI9Q	ELLE
Total/NA	Prep	351.2			108432	03/29/21 15:08	F8AU	ELLE
Total/NA	Analysis	351.2		1	108915	03/30/21 11:05	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	109858	03/31/21 15:26	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	109316	03/30/21 20:47	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	109955	04/01/21 13:56	KGQ6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310 B-2011		Groundwater	Total Carbon
SM5310C		Groundwater	Total Inorganic Carbon

Method Summary

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Method	Method Description	Protocol	Laboratory
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
5310 B-2011	Carbon, Total and Total Inorganic	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
SM5310C	Carbon, Total Inorganic	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Job ID: 410-33879-1
Project/Site: PHL: Belmont Terminal GW Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-33879-1	S-468-20210324	Groundwater	03/24/21 12:00	03/26/21 18:18	
410-33879-2	S-466-20210324	Groundwater	03/24/21 10:40	03/26/21 18:18	
410-33879-3	S-467-20210324	Groundwater	03/24/21 12:55	03/26/21 18:18	
410-33879-4	S-456-20210324	Groundwater	03/24/21 12:20	03/26/21 18:18	
410-33879-5	S-472-20210324	Groundwater	03/24/21 14:45	03/26/21 18:18	
410-33879-6	S-470-20210325	Groundwater	03/25/21 09:00	03/26/21 18:18	
410-33879-7	S-465-20210325	Groundwater	03/25/21 10:30	03/26/21 18:18	
410-33879-8	S-469-20210325	Groundwater	03/25/21 11:25	03/26/21 18:18	
410-33879-9	TB-20210326	Water	03/19/21 00:00	03/26/21 18:18	
410-33879-10	S-457-20210326	Groundwater	03/26/21 09:20	03/26/21 18:18	
410-33879-11	RW-1-20210326	Groundwater	03/26/21 09:10	03/26/21 18:18	
410-33879-12	S-454-20210326	Groundwater	03/26/21 10:20	03/26/21 18:18	
410-33879-13	S-453-20210326	Groundwater	03/26/21 11:25	03/26/21 18:18	
410-33879-14	S-455-20210326	Groundwater	03/26/21 11:10	03/26/21 18:18	
410-33879-15	S-452-20210326	Groundwater	03/26/21 12:30	03/26/21 18:18	

Environmental Analy[illegible] of Custody

eurofins | Lancaster Laboratories Environmental

410-33879 Chain of Custody

Acct [illegible] es Environmental use only

ample # _____

COC # 616996

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name #: PHL: Belmont Terminal GW Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 213402797
Sampler: Dane Hopkins, M Ochmanowicz, Maddie Bredehoeft	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☐ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: trip blank

Analysis Requested — Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	Evergreen Petro Short List (VOC + SVOC + metals)	TBA	dissolved lead (field filtered)	TIC / Sulfate	dissolved headspace gases (methane, ethane, ethene)	total iron + total calcium	Total Kjeldahl Nitrogen	Alkalinity as $CaCO_3$	VOC 8260 / EDB 8011		Remarks
S-468-20210324	3/24/21	1200	X			X		21	X	X	X	X	X	X	X	X			* refer to A Klingbeil email for Evergreen Petro Short List analytes
S-466-20210324	3/24/21	1040	X			X		21	X	X	X	X	X	X	X	X			* field filtered dissolved lead
S-467-20210324	3/24/21	1255	X			X		21	X	X	X	X	X	X	X	X			
S-456-20210324	3/24/21	1220	X			X		21	X	X	X	X	X	X	X	X			
S-472-20210324	3/24/21	1445	X			X		20	X	X	X	X	X	X	X	X			
S-470-20210325	3/25/21	0900	X			X		21	X	X	X	X	X	X	X	X			
S-465-20210325	3/25/21	1030	X			X		21	X	X	X	X	X	X	X	X			
S-469-20210325	3/25/21	1125	X			X		21	X	X	X	X	X	X	X	X			
TB-20210326	3/19/21	—					X										X		
S-457-20210326	3/26/21	0920	X			X		21	X	X	X	X	X	X	X	X			

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Dane	3/26/21	13:30	[signature]	3/26/21	13:30
[signature]	3/26/21	17:58			
			[signature]	3-26-21	18:18

EDD Required? Yes No
If yes, format: EQuis

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.0-5.8 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

NR

4/8/2021

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only

Acct. # _____ Group # _____ Sample # _____

COC #615797

Client Information

Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: PHC-Belmont Terminal GW Sampling	PWSID #:
Project Manager: Andrew Klingbeil	P.O. #: 2134202797
Sampler: Dave Hopkins; Michael Ochmanowicz; Dalton Campbell	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☐

Matrix: Soil ☐ Sediment ☐ Tissue ☐ | Water ☒ Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: ____

Total # of Containers

Analysis Requested — Preservation and Filtration Codes

For Lab Use Only: FSC: _____ SCR#: 216035

Preservation Codes

H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks

* refer to A Klingbeil email for PETRO short list analytes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Total # of Containers	Evergreen PETRO short list (excl SVOC + Metals)	TBA	dissolved lead (field filtered)	TIC/Sulfate	dissolved headspace gases (methane, ethane, ethene)	total iron + total calcium	Total Kjeldahl Nitrogen	Alkalinity as $CaCO_3$
RW-1-20210326	3/26/21	0910	X		21	X	X	X	X	X	X	X	X
S-454-20210326	3/26/21	1020	X		21	X	X	X	X	X	X	X	X
S-453-20210326	3/26/21	1125	X		21	X	X	X	X	X	X	X	X
S-455-20210326	3/26/21	1110	X		21	X	X	X	X	X	X	X	X
S-452-20210326	3/26/21	1230	X		21	X	X	X	X	X	X	X	X

* dissolved lead was field filtered

Turnaround Time (TAT) Requested (please circle)

Standard Rush

(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: andrew.klingbeil@stantec.com

Data Package Options (circle if required)

Type I (EPA Level 3 Equivalent/non-CLP) | Type VI (Raw Data Only)

Type III (Reduced non-CLP) | NJ DKQP | TX TRRP-13

NYSDEC Category A or B | MA MCP | CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	3/26/21	1330		3/26/21	1330
	3/26/21	1738			
				3/26/2021	1818

EDD Required? Yes No

If yes, format: EQUIS

Site-Specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.0-5.8 °C

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-33879-1

Login Number: 33879

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Cyms, Carolyn M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-37142-1
Client Project/Site: Former PES Annual GWS
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Mr. Andrew Bradley

Authorized for release by:
5/24/2021 2:52:08 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
5/24/2021 2:52:08 PM

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Definitions/Glossary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-37142-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-37142-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/6/2021. The report (revision 1) is being revised due to: t-Butyl alcohol was requested after the original report was generated.

Receipt
The samples were received on 4/23/2021 3:13 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 1.5º C.

GC/MS VOA
Method 8260C/UST: The result for tert-Butyl alcohol and Naphthalene were above the upper calibration range and is reported as an Estimated ("E") value in samples: RW-26_20210422 (410-37142-1) and DUP-2_20210422 (410-37142-4). This was due to being added after the time of analysis, and is the best analytical result achievable.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 5310C: The reference method requires samples to be preserved to a pH of <2. The following sample(s) were received with insufficient preservation at a pH of 6: FB_20210423 (410-37142-6). The sample(s) were preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Client Sample ID: RW-26_20210422 — Lab Sample ID: 410-37142-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	100		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	27		25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	440		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	170		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	22	J	25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tert-butyl ether	350		5.0	1.0	ug/L	5		8260C/UST	Total/NA
tert-Butyl alcohol	18000	E	250	60	ug/L	5		8260C/UST	Total/NA
Toluene	6.7		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	170		30	7.0	ug/L	5		8260C/UST	Total/NA
Anthracene	2.0		0.53	0.11	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.11	J	0.53	0.11	ug/L	1		8270D	Total/NA
Chrysene	0.11	J	0.53	0.11	ug/L	1		8270D	Total/NA
Fluorene	13		0.53	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	12		0.53	0.12	ug/L	1		8270D	Total/NA
Pyrene	1.1		0.53	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	1900		26	5.3	ug/L	50		8270D	Total/NA
Ethane (1C)	7.1		5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	8600		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	4300	J	5000	1500	ug/L	5		EPA 300.0 R2.1	Total/NA
Calcium	110000		500	96	ug/L	1		6010C	Total Recoverable
Iron	37000		200	40	ug/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	320000		8000	8000	ug/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	2500		1000	500	ug/L	1		351.2	Total/NA
Total Carbon	98000		10000	5000	ug/L	10		5310 B-2011	Total/NA
Total Organic Carbon	14000		1000	500	ug/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	84000		2000	600	ug/L	1		SM5310C	Total/NA

Client Sample ID: MW-38_20210422 — Lab Sample ID: 410-37142-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.62	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	2.0		1.0	0.20	ug/L	1		8260C/UST	Total/NA
tert-Butyl alcohol	13	J	50	12	ug/L	1		8260C/UST	Total/NA
Naphthalene	0.96		0.51	0.10	ug/L	1		8270D	Total/NA
Pyrene	0.37	J	0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C) - DL	720		25	15	ug/L	5		RSK-175	Total/NA
Sulfate	37000		5000	1500	ug/L	5		EPA 300.0 R2.1	Total/NA
Calcium	77000		500	96	ug/L	1		6010C	Total Recoverable
Iron	7200		200	40	ug/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	390000		8000	8000	ug/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	630	J	1000	500	ug/L	1		351.2	Total/NA
Total Carbon	76000		10000	5000	ug/L	10		5310 B-2011	Total/NA
Total Organic Carbon	3500		1000	500	ug/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	73000		2000	600	ug/L	1		SM5310C	Total/NA

Client Sample ID: S-395_20210422 — Lab Sample ID: 410-37142-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.45	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: S-395_20210422 (Continued) — Lab Sample ID: 410-37142-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.52	J	0.53	0.11	ug/L	1		8270D	Total/NA
Sulfate	120000		20000	6000	ug/L	20		EPA 300.0 R2.1	Total/NA
Calcium	100000		500	96	ug/L	1		6010C	Total Recoverable
Iron	13000		200	40	ug/L	1		6010C	Total Recoverable
Lead	0.28	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	270000		8000	8000	ug/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	630	J	1000	500	ug/L	1		351.2	Total/NA
Total Carbon	61000		10000	5000	ug/L	10		5310 B-2011	Total/NA
Total Organic Carbon	2000		1000	500	ug/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	59000		2000	600	ug/L	1		SM5310C	Total/NA

Client Sample ID: DUP-2_20210422 — Lab Sample ID: 410-37142-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	100		25	5.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	28		25	1.5	ug/L	5		8260C/UST	Total/NA
Benzene	440		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Ethylbenzene	180		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	23	J	25	1.0	ug/L	5		8260C/UST	Total/NA
Methyl tert-butyl ether	350		5.0	1.0	ug/L	5		8260C/UST	Total/NA
tert-Butyl alcohol	18000	E	250	60	ug/L	5		8260C/UST	Total/NA
Toluene	6.8		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	170		30	7.0	ug/L	5		8260C/UST	Total/NA
Anthracene	1.9		0.54	0.11	ug/L	1		8270D	Total/NA
Chrysene	0.11	J	0.54	0.11	ug/L	1		8270D	Total/NA
Fluorene	13		0.54	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	12		0.54	0.12	ug/L	1		8270D	Total/NA
Pyrene	1.0		0.54	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	1800		27	5.4	ug/L	50		8270D	Total/NA
Ethane (1C)	7.0		5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	8300		250	150	ug/L	50		RSK-175	Total/NA
Sulfate	4200	J	5000	1500	ug/L	5		EPA 300.0 R2.1	Total/NA
Calcium	110000		500	96	ug/L	1		6010C	Total Recoverable
Iron	37000		200	40	ug/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	320000		8000	8000	ug/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	3100		1000	500	ug/L	1		351.2	Total/NA
Total Carbon	110000		10000	5000	ug/L	10		5310 B-2011	Total/NA
Total Organic Carbon	15000		1000	500	ug/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	95000		2000	600	ug/L	1		SM5310C	Total/NA

Client Sample ID: TB_20210423 — Lab Sample ID: 410-37142-5

No Detections.

Client Sample ID: FB_20210423 — Lab Sample ID: 410-37142-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.11	J	0.50	0.10	ug/L	1		8270D	Total/NA
Calcium	120	J	500	96	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: FB_20210423 (Continued)

Lab Sample ID: 410-37142-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Carbon	640	J	1000	500	ug/L	1		5310 B-2011	Total/NA
Total Inorganic Carbon	640	J	2000	600	ug/L	1		SM5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: RW-26_20210422

Date Collected: 04/22/21 09:10
Date Received: 04/23/21 15:13

Lab Sample ID: 410-37142-1

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**100**		25	5.0	ug/L			04/30/21 21:30	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			04/30/21 21:30	5
1,3,5-Trimethylbenzene	**27**		25	1.5	ug/L			04/30/21 21:30	5
Benzene	**440**		5.0	1.0	ug/L			04/30/21 21:30	5
Ethylbenzene	**170**		5.0	2.0	ug/L			04/30/21 21:30	5
Isopropylbenzene	**22**	**J**	25	1.0	ug/L			04/30/21 21:30	5
Methyl tert-butyl ether	**350**		5.0	1.0	ug/L			04/30/21 21:30	5
tert-Butyl alcohol	**18000**	**E**	250	60	ug/L			04/30/21 21:30	5
Toluene	**6.7**		5.0	1.0	ug/L			04/30/21 21:30	5
Xylenes, Total	**170**		30	7.0	ug/L			04/30/21 21:30	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*04/30/21 21:30*	*5*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*04/30/21 21:30*	*5*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*04/30/21 21:30*	*5*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/30/21 21:30*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**2.0**		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 00:32	1
Benzo[a]anthracene	**0.11**	**J**	0.53	0.11	ug/L		04/29/21 10:20	05/05/21 00:32	1
Benzo[a]pyrene	ND		0.53	0.12	ug/L		04/29/21 10:20	05/05/21 00:32	1
Benzo[b]fluoranthene	ND		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 00:32	1
Benzo[g,h,i]perylene	ND		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 00:32	1
Chrysene	**0.11**	**J**	0.53	0.11	ug/L		04/29/21 10:20	05/05/21 00:32	1
Fluorene	**13**		0.53	0.13	ug/L		04/29/21 10:20	05/05/21 00:32	1
Phenanthrene	**12**		0.53	0.12	ug/L		04/29/21 10:20	05/05/21 00:32	1
Pyrene	**1.1**		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 00:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*		*44 - 102*	*04/29/21 10:20*	*05/05/21 00:32*	*1*
Nitrobenzene-d5 (Surr)	*85*		*23 - 128*	*04/29/21 10:20*	*05/05/21 00:32*	*1*
p-Terphenyl-d14 (Surr)	*62*		*31 - 113*	*04/29/21 10:20*	*05/05/21 00:32*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**1900**		26	5.3	ug/L		04/29/21 10:20	05/05/21 23:28	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*100*		*44 - 102*	*04/29/21 10:20*	*05/05/21 23:28*	*50*
Nitrobenzene-d5 (Surr)	*92*		*23 - 128*	*04/29/21 10:20*	*05/05/21 23:28*	*50*
p-Terphenyl-d14 (Surr)	*68*		*31 - 113*	*04/29/21 10:20*	*05/05/21 23:28*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**7.1**		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 16:41	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*87*		*28 - 140*	*04/27/21 07:33*	*04/27/21 16:41*	*1*

Client Sample ID: RW-26_20210422

Lab Sample ID: 410-37142-1

Date Collected: 04/22/21 09:10

Matrix: Water

Date Received: 04/23/21 15:13

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**8600**		250	150	ug/L		04/28/21 08:13	04/28/21 11:42	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*103*		*28 - 140*	*04/28/21 08:13*	*04/28/21 11:42*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/27/21 16:35	04/28/21 14:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*141*	*S1+*	*46 - 136*	*04/27/21 16:35*	*04/28/21 14:19*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*98*		*46 - 136*	*04/27/21 16:35*	*04/28/21 14:19*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**4300**	**J**	5000	1500	ug/L			04/28/21 22:58	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110000**		500	96	ug/L		04/26/21 13:15	05/03/21 15:04	1
Iron	**37000**		200	40	ug/L		04/26/21 13:15	05/03/21 15:04	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		04/26/21 20:11	04/27/21 19:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**320000**		8000	8000	ug/L			04/27/21 03:13	1
Total Kjeldahl Nitrogen	**2500**		1000	500	ug/L		04/27/21 07:20	05/03/21 14:04	1
Total Carbon	**98000**		10000	5000	ug/L			04/29/21 14:40	10
Total Organic Carbon	**14000**		1000	500	ug/L			04/27/21 20:40	1
Total Inorganic Carbon	**84000**		2000	600	ug/L			05/05/21 10:15	1

Client Sample ID: MW-38_20210422

Lab Sample ID: 410-37142-2

Date Collected: 04/22/21 11:10

Matrix: Water

Date Received: 04/23/21 15:13

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/30/21 17:53	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/30/21 17:53	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/30/21 17:53	1
Benzene	**0.62**	**J**	1.0	0.20	ug/L			04/30/21 17:53	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/30/21 17:53	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/30/21 17:53	1
Methyl tert-butyl ether	**2.0**		1.0	0.20	ug/L			04/30/21 17:53	1
tert-Butyl alcohol	**13**	**J**	50	12	ug/L			04/30/21 17:53	1
Toluene	ND		1.0	0.20	ug/L			04/30/21 17:53	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/30/21 17:53	1

Client Sample ID: MW-38_20210422

Date Collected: 04/22/21 11:10
Date Received: 04/23/21 15:13

Lab Sample ID: 410-37142-2

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*04/30/21 17:53*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/30/21 17:53*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*04/30/21 17:53*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/30/21 17:53*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		04/29/21 10:20	05/05/21 01:01	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		04/29/21 10:20	05/05/21 01:01	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		04/29/21 10:20	05/05/21 01:01	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		04/29/21 10:20	05/05/21 01:01	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		04/29/21 10:20	05/05/21 01:01	1
Chrysene	ND		0.51	0.10	ug/L		04/29/21 10:20	05/05/21 01:01	1
Fluorene	ND		0.51	0.12	ug/L		04/29/21 10:20	05/05/21 01:01	1
Naphthalene	**0.96**		0.51	0.10	ug/L		04/29/21 10:20	05/05/21 01:01	1
Phenanthrene	ND		0.51	0.11	ug/L		04/29/21 10:20	05/05/21 01:01	1
Pyrene	**0.37**	**J**	0.51	0.10	ug/L		04/29/21 10:20	05/05/21 01:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	*76*		*44 - 102*	*04/29/21 10:20*	*05/05/21 01:01*	*1*
Nitrobenzene-d5 (Surr)	*80*		*23 - 128*	*04/29/21 10:20*	*05/05/21 01:01*	*1*
p-Terphenyl-d14 (Surr)	*85*		*31 - 113*	*04/29/21 10:20*	*05/05/21 01:01*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 17:00	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*83*		*28 - 140*	*04/27/21 07:33*	*04/27/21 17:00*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**720**		25	15	ug/L		04/28/21 08:13	04/28/21 12:01	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*87*		*28 - 140*	*04/28/21 08:13*	*04/28/21 12:01*	*5*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		04/27/21 16:35	04/28/21 14:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	*82*		*46 - 136*	*04/27/21 16:35*	*04/28/21 14:36*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*85*		*46 - 136*	*04/27/21 16:35*	*04/28/21 14:36*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**37000**		5000	1500	ug/L			04/28/21 23:16	5

Client Sample ID: MW-38_20210422

Date Collected: 04/22/21 11:10
Date Received: 04/23/21 15:13

Lab Sample ID: 410-37142-2
Matrix: Water

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**77000**		500	96	ug/L		04/26/21 13:15	05/03/21 15:13	1
Iron	**7200**		200	40	ug/L		04/26/21 13:15	05/03/21 15:13	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		04/26/21 20:11	04/27/21 19:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**390000**		8000	8000	ug/L			04/27/21 03:36	1
Total Kjeldahl Nitrogen	**630**	**J**	1000	500	ug/L		04/27/21 07:20	05/03/21 14:10	1
Total Carbon	**76000**		10000	5000	ug/L			04/29/21 15:12	10
Total Organic Carbon	**3500**		1000	500	ug/L			04/27/21 21:24	1
Total Inorganic Carbon	**73000**		2000	600	ug/L			05/05/21 10:15	1

Client Sample ID: S-395_20210422

Date Collected: 04/22/21 12:37
Date Received: 04/23/21 15:13

Lab Sample ID: 410-37142-3
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/30/21 18:17	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/30/21 18:17	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/30/21 18:17	1
Benzene	**0.45**	**J**	1.0	0.20	ug/L			04/30/21 18:17	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/30/21 18:17	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/30/21 18:17	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/30/21 18:17	1
tert-Butyl alcohol	ND		50	12	ug/L			04/30/21 18:17	1
Toluene	ND		1.0	0.20	ug/L			04/30/21 18:17	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/30/21 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*04/30/21 18:17*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/30/21 18:17*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/30/21 18:17*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/30/21 18:17*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 01:30	1
Benzo[a]anthracene	ND		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 01:30	1
Benzo[a]pyrene	ND		0.53	0.12	ug/L		04/29/21 10:20	05/05/21 01:30	1
Benzo[b]fluoranthene	ND		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 01:30	1
Benzo[g,h,i]perylene	ND		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 01:30	1
Chrysene	ND		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 01:30	1
Fluorene	ND		0.53	0.13	ug/L		04/29/21 10:20	05/05/21 01:30	1
Naphthalene	**0.52**	**J**	0.53	0.11	ug/L		04/29/21 10:20	05/05/21 01:30	1
Phenanthrene	ND		0.53	0.12	ug/L		04/29/21 10:20	05/05/21 01:30	1
Pyrene	ND		0.53	0.11	ug/L		04/29/21 10:20	05/05/21 01:30	1

Client Sample ID: S-395_20210422

Lab Sample ID: 410-37142-3

Date Collected: 04/22/21 12:37
Matrix: Water
Date Received: 04/23/21 15:13

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*75*		*44 - 102*	*04/29/21 10:20*	*05/05/21 01:30*	*1*
Nitrobenzene-d5 (Surr)	*78*		*23 - 128*	*04/29/21 10:20*	*05/05/21 01:30*	*1*
p-Terphenyl-d14 (Surr)	*84*		*31 - 113*	*04/29/21 10:20*	*05/05/21 01:30*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 17:19	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 17:19	1
Methane (1C)	ND		5.0	3.0	ug/L		04/27/21 07:33	04/27/21 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 140*	*04/27/21 07:33*	*04/27/21 17:19*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/27/21 16:35	04/28/21 14:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*	*04/27/21 16:35*	*04/28/21 14:53*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*86*		*46 - 136*	*04/27/21 16:35*	*04/28/21 14:53*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**120000**		20000	6000	ug/L			04/28/21 23:34	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**100000**		500	96	ug/L		04/26/21 13:15	05/03/21 15:17	1
Iron	**13000**		200	40	ug/L		04/26/21 13:15	05/03/21 15:17	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.28**	**J**	0.52	0.073	ug/L		04/26/21 20:11	04/27/21 19:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**270000**		8000	8000	ug/L			04/27/21 03:43	1
Total Kjeldahl Nitrogen	**630**	**J**	1000	500	ug/L		04/27/21 07:20	05/03/21 14:15	1
Total Carbon	**61000**		10000	5000	ug/L			04/29/21 15:23	10
Total Organic Carbon	**2000**		1000	500	ug/L			04/27/21 21:38	1
Total Inorganic Carbon	**59000**		2000	600	ug/L			05/05/21 10:15	1

Client Sample ID: DUP-2_20210422

Lab Sample ID: 410-37142-4

Date Collected: 04/22/21 09:10
Matrix: Water
Date Received: 04/23/21 15:13

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**100**		25	5.0	ug/L			04/30/21 21:54	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			04/30/21 21:54	5
1,3,5-Trimethylbenzene	**28**		25	1.5	ug/L			04/30/21 21:54	5
Benzene	**440**		5.0	1.0	ug/L			04/30/21 21:54	5

Client Sample ID: DUP-2_20210422

Date Collected: 04/22/21 09:10
Date Received: 04/23/21 15:13

Lab Sample ID: 410-37142-4

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	180		5.0	2.0	ug/L			04/30/21 21:54	5
Isopropylbenzene	23	J	25	1.0	ug/L			04/30/21 21:54	5
Methyl tert-butyl ether	350		5.0	1.0	ug/L			04/30/21 21:54	5
tert-Butyl alcohol	18000	E	250	60	ug/L			04/30/21 21:54	5
Toluene	6.8		5.0	1.0	ug/L			04/30/21 21:54	5
Xylenes, Total	170		30	7.0	ug/L			04/30/21 21:54	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*04/30/21 21:54*	*5*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*04/30/21 21:54*	*5*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*04/30/21 21:54*	*5*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/30/21 21:54*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	1.9		0.54	0.11	ug/L		04/29/21 10:20	05/05/21 01:59	1
Benzo[a]anthracene	ND		0.54	0.11	ug/L		04/29/21 10:20	05/05/21 01:59	1
Benzo[a]pyrene	ND		0.54	0.12	ug/L		04/29/21 10:20	05/05/21 01:59	1
Benzo[b]fluoranthene	ND		0.54	0.11	ug/L		04/29/21 10:20	05/05/21 01:59	1
Benzo[g,h,i]perylene	ND		0.54	0.11	ug/L		04/29/21 10:20	05/05/21 01:59	1
Chrysene	0.11	J	0.54	0.11	ug/L		04/29/21 10:20	05/05/21 01:59	1
Fluorene	13		0.54	0.13	ug/L		04/29/21 10:20	05/05/21 01:59	1
Phenanthrene	12		0.54	0.12	ug/L		04/29/21 10:20	05/05/21 01:59	1
Pyrene	1.0		0.54	0.11	ug/L		04/29/21 10:20	05/05/21 01:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*		*44 - 102*	*04/29/21 10:20*	*05/05/21 01:59*	*1*
Nitrobenzene-d5 (Surr)	*83*		*23 - 128*	*04/29/21 10:20*	*05/05/21 01:59*	*1*
p-Terphenyl-d14 (Surr)	*59*		*31 - 113*	*04/29/21 10:20*	*05/05/21 01:59*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	1800		27	5.4	ug/L		04/29/21 10:20	05/05/21 23:57	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*91*		*44 - 102*	*04/29/21 10:20*	*05/05/21 23:57*	*50*
Nitrobenzene-d5 (Surr)	*88*		*23 - 128*	*04/29/21 10:20*	*05/05/21 23:57*	*50*
p-Terphenyl-d14 (Surr)	*58*		*31 - 113*	*04/29/21 10:20*	*05/05/21 23:57*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	7.0		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 17:37	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*91*		*28 - 140*	*04/27/21 07:33*	*04/27/21 17:37*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	8300		250	150	ug/L		04/28/21 08:13	04/28/21 12:19	50

Client Sample ID: DUP-2_20210422

Lab Sample ID: 410-37142-4

Date Collected: 04/22/21 09:10

Matrix: Water

Date Received: 04/23/21 15:13

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 140*	*04/28/21 08:13*	*04/28/21 12:19*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (2C)	ND		0.029	0.0097	ug/L		04/27/21 16:35	04/28/21 15:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*127*		*46 - 136*	*04/27/21 16:35*	*04/28/21 15:10*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*92*		*46 - 136*	*04/27/21 16:35*	*04/28/21 15:10*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**4200**	**J**	5000	1500	ug/L			04/28/21 21:48	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110000**		500	96	ug/L		04/26/21 13:15	05/03/21 14:54	1
Iron	**37000**		200	40	ug/L		04/26/21 13:15	05/03/21 14:54	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		04/26/21 20:11	04/27/21 19:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**320000**		8000	8000	ug/L			04/27/21 03:19	1
Total Kjeldahl Nitrogen	**3100**		1000	500	ug/L		04/27/21 07:20	05/03/21 14:17	1
Total Carbon	**110000**		10000	5000	ug/L			04/29/21 15:34	10
Total Organic Carbon	**15000**		1000	500	ug/L			04/28/21 20:40	1
Total Inorganic Carbon	**95000**		2000	600	ug/L			05/05/21 10:15	1

Client Sample ID: TB_20210423

Lab Sample ID: 410-37142-5

Date Collected: 04/23/21 00:00

Matrix: Water

Date Received: 04/23/21 15:13

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/29/21 17:52	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/29/21 17:52	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/29/21 17:52	1
Benzene	ND		1.0	0.20	ug/L			04/29/21 17:52	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/29/21 17:52	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/29/21 17:52	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/29/21 17:52	1
tert-Butyl alcohol	ND		50	12	ug/L			04/29/21 17:52	1
Toluene	ND		1.0	0.20	ug/L			04/29/21 17:52	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/29/21 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*04/29/21 17:52*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/29/21 17:52*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*04/29/21 17:52*	*1*

Client Sample ID: TB_20210423

Lab Sample ID: 410-37142-5

Date Collected: 04/23/21 00:00
Matrix: Water
Date Received: 04/23/21 15:13

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/29/21 17:52*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/27/21 16:35	04/28/21 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*	*04/27/21 16:35*	*04/28/21 15:27*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*93*		*46 - 136*	*04/27/21 16:35*	*04/28/21 15:27*	*1*

Client Sample ID: FB_20210423

Lab Sample ID: 410-37142-6

Date Collected: 04/23/21 00:00
Matrix: Water
Date Received: 04/23/21 15:13

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/29/21 18:16	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/29/21 18:16	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/29/21 18:16	1
Benzene	ND		1.0	0.20	ug/L			04/29/21 18:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/29/21 18:16	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/29/21 18:16	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/29/21 18:16	1
tert-Butyl alcohol	ND		50	12	ug/L			04/29/21 18:16	1
Toluene	ND		1.0	0.20	ug/L			04/29/21 18:16	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/29/21 18:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*04/29/21 18:16*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*04/29/21 18:16*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*04/29/21 18:16*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/29/21 18:16*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 17:07	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 17:07	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		04/29/21 17:45	04/30/21 17:07	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 17:07	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 17:07	1
Chrysene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 17:07	1
Fluorene	ND		0.50	0.12	ug/L		04/29/21 17:45	04/30/21 17:07	1
Naphthalene	**0.11**	**J**	0.50	0.10	ug/L		04/29/21 17:45	04/30/21 17:07	1
Phenanthrene	ND		0.50	0.11	ug/L		04/29/21 17:45	04/30/21 17:07	1
Pyrene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*49*		*44 - 102*	*04/29/21 17:45*	*04/30/21 17:07*	*1*
Nitrobenzene-d5 (Surr)	*53*		*23 - 128*	*04/29/21 17:45*	*04/30/21 17:07*	*1*
p-Terphenyl-d14 (Surr)	*84*		*31 - 113*	*04/29/21 17:45*	*04/30/21 17:07*	*1*

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Client Sample ID: FB_20210423

Date Collected: 04/23/21 00:00
Date Received: 04/23/21 15:13

Lab Sample ID: 410-37142-6

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 18:14	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 18:14	1
Methane (1C)	ND		5.0	3.0	ug/L		04/27/21 07:33	04/27/21 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*04/27/21 07:33*	*04/27/21 18:14*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/27/21 16:35	04/28/21 15:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*90*		*46 - 136*	*04/27/21 16:35*	*04/28/21 15:44*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*87*		*46 - 136*	*04/27/21 16:35*	*04/28/21 15:44*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1000	300	ug/L			04/28/21 22:19	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**120**	**J**	500	96	ug/L		04/26/21 13:15	05/03/21 15:10	1
Iron	ND		200	40	ug/L		04/26/21 13:15	05/03/21 15:10	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		04/26/21 20:11	04/27/21 19:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8000	8000	ug/L			04/27/21 03:48	1
Total Kjeldahl Nitrogen	ND		1000	500	ug/L		04/27/21 07:20	05/03/21 14:19	1
Total Carbon	**640**	**J**	1000	500	ug/L			04/29/21 15:44	1
Total Organic Carbon	ND		1000	500	ug/L			04/27/21 22:08	1
Total Inorganic Carbon	**640**	**J**	2000	600	ug/L			05/05/21 10:15	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-37142-1	RW-26_20210422	97	105	97	102
410-37142-2	MW-38_20210422	97	99	99	101
410-37142-3	S-395_20210422	99	101	100	102
410-37142-4	DUP-2_20210422	96	103	95	104
410-37142-5	TB_20210423	99	99	99	104
410-37142-6	FB_20210423	99	100	96	103
LCS 410-120603/4	Lab Control Sample	102	102	98	103
LCS 410-121083/4	Lab Control Sample	100	102	95	101
LCSD 410-120603/5	Lab Control Sample Dup	102	103	97	103
LCSD 410-121083/5	Lab Control Sample Dup	101	102	95	103
MB 410-120603/6	Method Blank	99	98	97	102
MB 410-121083/6	Method Blank	97	99	96	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)
410-37142-1	RW-26_20210422	80	85	62
410-37142-1 - DL	RW-26_20210422	100	92	68
410-37142-2	MW-38_20210422	76	80	85
410-37142-3	S-395_20210422	75	78	84
410-37142-4	DUP-2_20210422	80	83	59
410-37142-4 - DL	DUP-2_20210422	91	88	58
410-37142-6	FB_20210423	49	53	84
LCS 410-120700/2-A	Lab Control Sample	83	81	95
LCSD 410-120700/3-A	Lab Control Sample Dup	74	78	94
MB 410-120700/1-A	Method Blank	82	85	98

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		Propene1
Lab Sample ID	Client Sample ID	(28-140)
410-37142-1	RW-26_20210422	87
410-37142-1 - DL	RW-26_20210422	103
410-37142-2	MW-38_20210422	83
410-37142-2 - DL	MW-38_20210422	87

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)										
Lab Sample ID	Client Sample ID	Propene1 (28-140)										
410-37142-3	S-395_20210422	89										
410-37142-4	DUP-2_20210422	91										
410-37142-4 - DL	DUP-2_20210422	105										
410-37142-6	FB_20210423	98										
LCS 410-119343/2-A	Lab Control Sample	108										
LCS 410-119931/2-A	Lab Control Sample	101										
LCSD 410-119343/3-A	Lab Control Sample Dup	104										
LCSD 410-119931/3-A	Lab Control Sample Dup	102										
MB 410-119343/1-A	Method Blank	106										
MB 410-119931/1-A	Method Blank	104										

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)										
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)									
410-37142-1	RW-26_20210422	141 S1+	98									
410-37142-2	MW-38_20210422	82	85									
410-37142-3	S-395_20210422	85	86									
410-37142-4	DUP-2_20210422	127	92									
410-37142-5	TB_20210423	88	93									
410-37142-6	FB_20210423	90	87									
LCS 410-119637/2-A	Lab Control Sample	92	87									
LCSD 410-119637/3-A	Lab Control Sample Dup	79	78									
MB 410-119637/1-A	Method Blank	90	86									

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-120603/6
Matrix: Water
Analysis Batch: 120603

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/29/21 15:03	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/29/21 15:03	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/29/21 15:03	1
Benzene	ND		1.0	0.20	ug/L			04/29/21 15:03	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/29/21 15:03	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/29/21 15:03	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/29/21 15:03	1
tert-Butyl alcohol	ND		50	12	ug/L			04/29/21 15:03	1
Toluene	ND		1.0	0.20	ug/L			04/29/21 15:03	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/29/21 15:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*04/29/21 15:03*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/29/21 15:03*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*04/29/21 15:03*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/29/21 15:03*	*1*

Lab Sample ID: LCS 410-120603/4
Matrix: Water
Analysis Batch: 120603

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,4-Trimethylbenzene			20.0	17.7		ug/L		89	75 - 120		
1,2-Dichloroethane			20.0	16.7		ug/L		84	73 - 124		
1,3,5-Trimethylbenzene			20.0	17.9		ug/L		89	75 - 120		
Benzene			20.0	18.7		ug/L		94	80 - 120		
Ethylbenzene			20.0	18.6		ug/L		93	80 - 120		
Isopropylbenzene			20.0	17.2		ug/L		86	80 - 120		
Methyl tert-butyl ether			20.0	17.6		ug/L		88	69 - 122		
tert-Butyl alcohol			200	184		ug/L		92	60 - 130		
Toluene			20.0	18.6		ug/L		93	80 - 120		
Xylenes, Total			60.0	53.8		ug/L		90	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-120603/5
Matrix: Water
Analysis Batch: 120603

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	18.7		ug/L		93	75 - 120	5	30
1,2-Dichloroethane			20.0	17.6		ug/L		88	73 - 124	5	30
1,3,5-Trimethylbenzene			20.0	18.6		ug/L		93	75 - 120	4	30
Benzene			20.0	19.8		ug/L		99	80 - 120	6	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-120603/5
Matrix: Water
Analysis Batch: 120603

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	19.8		ug/L		99	80 - 120	6	30
Isopropylbenzene			20.0	18.4		ug/L		92	80 - 120	7	30
Methyl tert-butyl ether			20.0	18.4		ug/L		92	69 - 122	5	30
tert-Butyl alcohol			200	202		ug/L		101	60 - 130	9	30
Toluene			20.0	19.7		ug/L		98	80 - 120	6	30
Xylenes, Total			60.0	56.8		ug/L		95	80 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: MB 410-121083/6
Matrix: Water
Analysis Batch: 121083

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/30/21 13:52	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/30/21 13:52	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/30/21 13:52	1
Benzene	ND		1.0	0.20	ug/L			04/30/21 13:52	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/30/21 13:52	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/30/21 13:52	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/30/21 13:52	1
tert-Butyl alcohol	ND		50	12	ug/L			04/30/21 13:52	1
Toluene	ND		1.0	0.20	ug/L			04/30/21 13:52	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/30/21 13:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*04/30/21 13:52*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/30/21 13:52*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*04/30/21 13:52*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/30/21 13:52*	*1*

Lab Sample ID: LCS 410-121083/4
Matrix: Water
Analysis Batch: 121083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene			20.0	18.3		ug/L		92	75 - 120
1,2-Dichloroethane			20.0	18.5		ug/L		92	73 - 124
1,3,5-Trimethylbenzene			20.0	18.0		ug/L		90	75 - 120
Benzene			20.0	20.3		ug/L		102	80 - 120
Ethylbenzene			20.0	20.2		ug/L		101	80 - 120
Isopropylbenzene			20.0	18.4		ug/L		92	80 - 120
Methyl tert-butyl ether			20.0	19.2		ug/L		96	69 - 122
tert-Butyl alcohol			200	199		ug/L		100	60 - 130

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-121083/4
Matrix: Water
Analysis Batch: 121083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	20.0	20.5		ug/L		103	80 - 120
Xylenes, Total	60.0	56.3		ug/L		94	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-121083/5
Matrix: Water
Analysis Batch: 121083

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene	20.0	18.5		ug/L		93	75 - 120	1	30
1,2-Dichloroethane	20.0	17.1		ug/L		86	73 - 124	7	30
1,3,5-Trimethylbenzene	20.0	18.2		ug/L		91	75 - 120	1	30
Benzene	20.0	19.9		ug/L		99	80 - 120	2	30
Ethylbenzene	20.0	19.3		ug/L		96	80 - 120	5	30
Isopropylbenzene	20.0	17.7		ug/L		89	80 - 120	4	30
Methyl tert-butyl ether	20.0	18.5		ug/L		92	69 - 122	4	30
tert-Butyl alcohol	200	194		ug/L		97	60 - 130	3	30
Toluene	20.0	19.7		ug/L		99	80 - 120	4	30
Xylenes, Total	60.0	54.8		ug/L		91	80 - 120	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-120700/1-A
Matrix: Water
Analysis Batch: 121050

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 120700

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 14:13	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 14:13	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		04/29/21 17:45	04/30/21 14:13	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 14:13	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 14:13	1
Chrysene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 14:13	1
Fluorene	ND		0.50	0.12	ug/L		04/29/21 17:45	04/30/21 14:13	1
Naphthalene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 14:13	1
Phenanthrene	ND		0.50	0.11	ug/L		04/29/21 17:45	04/30/21 14:13	1
Pyrene	ND		0.50	0.10	ug/L		04/29/21 17:45	04/30/21 14:13	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-120700/1-A
Matrix: Water
Analysis Batch: 121050

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 120700

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	82		44 - 102	04/29/21 17:45	04/30/21 14:13	1
Nitrobenzene-d5 (Surr)	85		23 - 128	04/29/21 17:45	04/30/21 14:13	1
p-Terphenyl-d14 (Surr)	98		31 - 113	04/29/21 17:45	04/30/21 14:13	1

Lab Sample ID: LCS 410-120700/2-A
Matrix: Water
Analysis Batch: 121050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 120700

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			50.0	45.1		ug/L		90	61 - 117		
Benzo[a]anthracene			50.0	47.2		ug/L		94	61 - 126		
Benzo[a]pyrene			50.0	51.4		ug/L		103	60 - 116		
Benzo[b]fluoranthene			50.0	42.6		ug/L		85	61 - 119		
Benzo[g,h,i]perylene			50.0	41.4		ug/L		83	54 - 120		
Chrysene			50.0	47.2		ug/L		94	65 - 121		
Fluorene			50.0	44.7		ug/L		89	56 - 115		
Naphthalene			50.0	39.1		ug/L		78	51 - 102		
Phenanthrene			50.0	44.4		ug/L		89	65 - 113		
Pyrene			50.0	46.0		ug/L		92	65 - 115		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	83		44 - 102
Nitrobenzene-d5 (Surr)	81		23 - 128
p-Terphenyl-d14 (Surr)	95		31 - 113

Lab Sample ID: LCSD 410-120700/3-A
Matrix: Water
Analysis Batch: 121050

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 120700

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene			50.0	43.6		ug/L		87	61 - 117	3	30
Benzo[a]anthracene			50.0	46.7		ug/L		93	61 - 126	1	30
Benzo[a]pyrene			50.0	49.5		ug/L		99	60 - 116	4	30
Benzo[b]fluoranthene			50.0	42.1		ug/L		84	61 - 119	1	30
Benzo[g,h,i]perylene			50.0	40.0		ug/L		80	54 - 120	3	30
Chrysene			50.0	46.2		ug/L		92	65 - 121	2	30
Fluorene			50.0	42.3		ug/L		85	56 - 115	6	30
Naphthalene			50.0	35.9		ug/L		72	51 - 102	9	30
Phenanthrene			50.0	43.2		ug/L		86	65 - 113	3	30
Pyrene			50.0	44.8		ug/L		90	65 - 115	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl (Surr)	74		44 - 102
Nitrobenzene-d5 (Surr)	78		23 - 128
p-Terphenyl-d14 (Surr)	94		31 - 113

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-119343/1-A
Matrix: Water
Analysis Batch: 119350

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119343

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 15:45	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 15:45	1
Methane (1C)	ND		5.0	3.0	ug/L		04/27/21 07:33	04/27/21 15:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*		*28 - 140*	*04/27/21 07:33*	*04/27/21 15:45*	*1*

Lab Sample ID: LCS 410-119343/2-A
Matrix: Water
Analysis Batch: 119350

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119343

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	60.8		ug/L		102	85 - 115		
Ethene (1C)			60.4	62.0		ug/L		103	83 - 115		
Methane (1C)			59.4	62.3		ug/L		105	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*108*		*28 - 140*

Lab Sample ID: LCSD 410-119343/3-A
Matrix: Water
Analysis Batch: 119350

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 119343

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	58.8		ug/L		99	85 - 115	3	20
Ethene (1C)			60.4	59.2		ug/L		98	83 - 115	5	20
Methane (1C)			59.4	60.7		ug/L		102	85 - 115	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*104*		*28 - 140*

Lab Sample ID: MB 410-119931/1-A
Matrix: Water
Analysis Batch: 119938

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119931

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/28/21 08:13	04/28/21 08:47	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/28/21 08:13	04/28/21 08:47	1
Methane (1C)	ND		5.0	3.0	ug/L		04/28/21 08:13	04/28/21 08:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*04/28/21 08:13*	*04/28/21 08:47*	*1*

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-119931/2-A
Matrix: Water
Analysis Batch: 119938

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119931

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	60.6		ug/L		102	85 - 115		
Ethene (1C)			60.4	61.4		ug/L		102	83 - 115		
Methane (1C)			59.4	63.0		ug/L		106	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 140*

Lab Sample ID: LCSD 410-119931/3-A
Matrix: Water
Analysis Batch: 119938

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 119931

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	60.0		ug/L		101	85 - 115	1	20
Ethene (1C)			60.4	60.9		ug/L		101	83 - 115	1	20
Methane (1C)			59.4	62.7		ug/L		105	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*102*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-119637/1-A
Matrix: Water
Analysis Batch: 120004

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119637

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		04/27/21 16:35	04/28/21 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*90*		*46 - 136*	*04/27/21 16:35*	*04/28/21 10:55*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*86*		*46 - 136*	*04/27/21 16:35*	*04/28/21 10:55*	*1*

Lab Sample ID: LCS 410-119637/2-A
Matrix: Water
Analysis Batch: 120004

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119637

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.148		ug/L		116	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*92*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*87*		*46 - 136*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCSD 410-119637/3-A
Matrix: Water
Analysis Batch: 120004

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 119637

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.153		ug/L		120	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*79*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*78*		*46 - 136*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-119951/4
Matrix: Water
Analysis Batch: 119951

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1000	300	ug/L			04/28/21 11:49	1

Lab Sample ID: LCS 410-119951/3
Matrix: Water
Analysis Batch: 119951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7500	7760		ug/L		103	90 - 110		

Lab Sample ID: MB 410-119953/4
Matrix: Water
Analysis Batch: 119953

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1000	300	ug/L			04/28/21 21:37	1

Lab Sample ID: LCS 410-119953/3
Matrix: Water
Analysis Batch: 119953

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7500	7200		ug/L		96	90 - 110		

Lab Sample ID: 410-37142-4 MS
Matrix: Water
Analysis Batch: 119953

Client Sample ID: DUP-2_20210422
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	4200	J	25000	28400		ug/L		97	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 410-37142-4 DU
Matrix: Water
Analysis Batch: 119953

Client Sample ID: DUP-2_20210422
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	4200	J	4230	J	ug/L		1	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-119033/1-A
Matrix: Water
Analysis Batch: 121847

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 119033

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		500	96	ug/L		04/26/21 13:15	05/03/21 14:20	1
Iron	ND		200	40	ug/L		04/26/21 13:15	05/03/21 14:20	1

Lab Sample ID: LCS 410-119033/2-A
Matrix: Water
Analysis Batch: 121847

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 119033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	400	385	J	ug/L		96	80 - 120
Iron	400	374		ug/L		93	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-119223/1-A
Matrix: Water
Analysis Batch: 119782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119223

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		04/26/21 20:11	04/27/21 19:16	1

Lab Sample ID: LCS 410-119223/2-A
Matrix: Water
Analysis Batch: 119782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	28.8		ug/L		96	90 - 115

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-119596/84
Matrix: Water
Analysis Batch: 119596

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8000	8000	ug/L			04/27/21 01:22	1

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: LCS 410-119596/85
Matrix: Water
Analysis Batch: 119596

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity as CaCO3 to pH 4.5			189000	185000		ug/L		98	82 - 106		

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 410-119339/2-A
Matrix: Water
Analysis Batch: 121842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119339

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1000	500	ug/L		04/27/21 07:20	05/03/21 14:02	1

Lab Sample ID: LCS 410-119339/1-A
Matrix: Water
Analysis Batch: 121842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119339

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Kjeldahl Nitrogen			4000	3810		ug/L		95	90 - 110		

Lab Sample ID: 410-37142-1 MS
Matrix: Water
Analysis Batch: 121842

Client Sample ID: RW-26_20210422
Prep Type: Total/NA
Prep Batch: 119339

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Kjeldahl Nitrogen	2500		5000	7890		ug/L		107	90 - 110		

Lab Sample ID: 410-37142-1 DU
Matrix: Water
Analysis Batch: 121842

Client Sample ID: RW-26_20210422
Prep Type: Total/NA
Prep Batch: 119339

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Kjeldahl Nitrogen	2500			3100		ug/L				20	20

Method: 5310 B-2011 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 410-121032/4
Matrix: Water
Analysis Batch: 121032

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1000	500	ug/L			04/29/21 14:30	1

Lab Sample ID: LCS 410-121032/3
Matrix: Water
Analysis Batch: 121032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon			25000	24300		ug/L		97	91 - 115		

Method: 5310 B-2011 - Carbon, Total and Total Inorganic (Continued)

Lab Sample ID: 410-37142-1 MS
Matrix: Water
Analysis Batch: 121032

Client Sample ID: RW-26_20210422
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon	98000		100000	205000		ug/L		107	91 - 115		

Lab Sample ID: 410-37142-1 DU
Matrix: Water
Analysis Batch: 121032

Client Sample ID: RW-26_20210422
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Carbon	98000			97800		ug/L				0	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-120010/5
Matrix: Water
Analysis Batch: 120010

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1000	500	ug/L			04/27/21 18:48	1

Lab Sample ID: LCS 410-120010/4
Matrix: Water
Analysis Batch: 120010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25000	24100		ug/L		96	91 - 113		

Lab Sample ID: MB 410-120555/5
Matrix: Water
Analysis Batch: 120555

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1000	500	ug/L			04/28/21 17:49	1

Lab Sample ID: LCS 410-120555/4
Matrix: Water
Analysis Batch: 120555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25000	24000		ug/L		96	91 - 113		

GC/MS VOA

Analysis Batch: 120603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-5	TB_20210423	Total/NA	Water	8260C/UST	
410-37142-6	FB_20210423	Total/NA	Water	8260C/UST	
MB 410-120603/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-120603/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-120603/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 121083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	8260C/UST	
410-37142-2	MW-38_20210422	Total/NA	Water	8260C/UST	
410-37142-3	S-395_20210422	Total/NA	Water	8260C/UST	
410-37142-4	DUP-2_20210422	Total/NA	Water	8260C/UST	
MB 410-121083/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-121083/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-121083/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 120398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1 - DL	RW-26_20210422	Total/NA	Water	3510C	
410-37142-1	RW-26_20210422	Total/NA	Water	3510C	
410-37142-2	MW-38_20210422	Total/NA	Water	3510C	
410-37142-3	S-395_20210422	Total/NA	Water	3510C	
410-37142-4 - DL	DUP-2_20210422	Total/NA	Water	3510C	
410-37142-4	DUP-2_20210422	Total/NA	Water	3510C	

Prep Batch: 120700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-6	FB_20210423	Total/NA	Water	3510C	
MB 410-120700/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-120700/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-120700/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 121050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-6	FB_20210423	Total/NA	Water	8270D	120700
MB 410-120700/1-A	Method Blank	Total/NA	Water	8270D	120700
LCS 410-120700/2-A	Lab Control Sample	Total/NA	Water	8270D	120700
LCSD 410-120700/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	120700

Analysis Batch: 122370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	8270D	120398
410-37142-2	MW-38_20210422	Total/NA	Water	8270D	120398
410-37142-3	S-395_20210422	Total/NA	Water	8270D	120398
410-37142-4	DUP-2_20210422	Total/NA	Water	8270D	120398

Analysis Batch: 122958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1 - DL	RW-26_20210422	Total/NA	Water	8270D	120398

GC/MS Semi VOA (Continued)

Analysis Batch: 122958 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-4 - DL	DUP-2_20210422	Total/NA	Water	8270D	120398

GC VOA

Prep Batch: 119343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	RSK-175	
410-37142-2	MW-38_20210422	Total/NA	Water	RSK-175	
410-37142-3	S-395_20210422	Total/NA	Water	RSK-175	
410-37142-4	DUP-2_20210422	Total/NA	Water	RSK-175	
410-37142-6	FB_20210423	Total/NA	Water	RSK-175	
MB 410-119343/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-119343/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-119343/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 119350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	RSK-175	119343
410-37142-2	MW-38_20210422	Total/NA	Water	RSK-175	119343
410-37142-3	S-395_20210422	Total/NA	Water	RSK-175	119343
410-37142-4	DUP-2_20210422	Total/NA	Water	RSK-175	119343
410-37142-6	FB_20210423	Total/NA	Water	RSK-175	119343
MB 410-119343/1-A	Method Blank	Total/NA	Water	RSK-175	119343
LCS 410-119343/2-A	Lab Control Sample	Total/NA	Water	RSK-175	119343
LCSD 410-119343/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	119343

Prep Batch: 119931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1 - DL	RW-26_20210422	Total/NA	Water	RSK-175	
410-37142-2 - DL	MW-38_20210422	Total/NA	Water	RSK-175	
410-37142-4 - DL	DUP-2_20210422	Total/NA	Water	RSK-175	
MB 410-119931/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-119931/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-119931/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 119938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1 - DL	RW-26_20210422	Total/NA	Water	RSK-175	119931
410-37142-2 - DL	MW-38_20210422	Total/NA	Water	RSK-175	119931
410-37142-4 - DL	DUP-2_20210422	Total/NA	Water	RSK-175	119931
MB 410-119931/1-A	Method Blank	Total/NA	Water	RSK-175	119931
LCS 410-119931/2-A	Lab Control Sample	Total/NA	Water	RSK-175	119931
LCSD 410-119931/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	119931

GC Semi VOA

Prep Batch: 119637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	8011	
410-37142-2	MW-38_20210422	Total/NA	Water	8011	
410-37142-3	S-395_20210422	Total/NA	Water	8011	
410-37142-4	DUP-2_20210422	Total/NA	Water	8011	

GC Semi VOA (Continued)

Prep Batch: 119637 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-5	TB_20210423	Total/NA	Water	8011	
410-37142-6	FB_20210423	Total/NA	Water	8011	
MB 410-119637/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-119637/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-119637/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 120004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	8011	119637
410-37142-2	MW-38_20210422	Total/NA	Water	8011	119637
410-37142-3	S-395_20210422	Total/NA	Water	8011	119637
410-37142-4	DUP-2_20210422	Total/NA	Water	8011	119637
410-37142-5	TB_20210423	Total/NA	Water	8011	119637
410-37142-6	FB_20210423	Total/NA	Water	8011	119637
MB 410-119637/1-A	Method Blank	Total/NA	Water	8011	119637
LCS 410-119637/2-A	Lab Control Sample	Total/NA	Water	8011	119637
LCSD 410-119637/3-A	Lab Control Sample Dup	Total/NA	Water	8011	119637

HPLC/IC

Analysis Batch: 119951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	EPA 300.0 R2.1	
410-37142-2	MW-38_20210422	Total/NA	Water	EPA 300.0 R2.1	
410-37142-3	S-395_20210422	Total/NA	Water	EPA 300.0 R2.1	
MB 410-119951/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-119951/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 119953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-4	DUP-2_20210422	Total/NA	Water	EPA 300.0 R2.1	
410-37142-6	FB_20210423	Total/NA	Water	EPA 300.0 R2.1	
MB 410-119953/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-119953/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
410-37142-4 MS	DUP-2_20210422	Total/NA	Water	EPA 300.0 R2.1	
410-37142-4 DU	DUP-2_20210422	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 119033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total Recoverable	Water	3005A	
410-37142-2	MW-38_20210422	Total Recoverable	Water	3005A	
410-37142-3	S-395_20210422	Total Recoverable	Water	3005A	
410-37142-4	DUP-2_20210422	Total Recoverable	Water	3005A	
410-37142-6	FB_20210423	Total Recoverable	Water	3005A	
MB 410-119033/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-119033/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 119223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Dissolved	Water	Non-Digest Prep	

Metals (Continued)

Prep Batch: 119223 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-2	MW-38_20210422	Dissolved	Water	Non-Digest Prep	
410-37142-3	S-395_20210422	Dissolved	Water	Non-Digest Prep	
410-37142-4	DUP-2_20210422	Dissolved	Water	Non-Digest Prep	
410-37142-6	FB_20210423	Dissolved	Water	Non-Digest Prep	
MB 410-119223/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-119223/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 119782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Dissolved	Water	6020A	119223
410-37142-2	MW-38_20210422	Dissolved	Water	6020A	119223
410-37142-3	S-395_20210422	Dissolved	Water	6020A	119223
410-37142-4	DUP-2_20210422	Dissolved	Water	6020A	119223
410-37142-6	FB_20210423	Dissolved	Water	6020A	119223
MB 410-119223/1-A	Method Blank	Total/NA	Water	6020A	119223
LCS 410-119223/2-A	Lab Control Sample	Total/NA	Water	6020A	119223

Analysis Batch: 121847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total Recoverable	Water	6010C	119033
410-37142-2	MW-38_20210422	Total Recoverable	Water	6010C	119033
410-37142-3	S-395_20210422	Total Recoverable	Water	6010C	119033
410-37142-4	DUP-2_20210422	Total Recoverable	Water	6010C	119033
410-37142-6	FB_20210423	Total Recoverable	Water	6010C	119033
MB 410-119033/1-A	Method Blank	Total Recoverable	Water	6010C	119033
LCS 410-119033/2-A	Lab Control Sample	Total Recoverable	Water	6010C	119033

General Chemistry

Prep Batch: 119339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	351.2	
410-37142-2	MW-38_20210422	Total/NA	Water	351.2	
410-37142-3	S-395_20210422	Total/NA	Water	351.2	
410-37142-4	DUP-2_20210422	Total/NA	Water	351.2	
410-37142-6	FB_20210423	Total/NA	Water	351.2	
MB 410-119339/2-A	Method Blank	Total/NA	Water	351.2	
LCS 410-119339/1-A	Lab Control Sample	Total/NA	Water	351.2	
410-37142-1 MS	RW-26_20210422	Total/NA	Water	351.2	
410-37142-1 DU	RW-26_20210422	Total/NA	Water	351.2	

Analysis Batch: 119596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	2320B-2011	
410-37142-2	MW-38_20210422	Total/NA	Water	2320B-2011	
410-37142-3	S-395_20210422	Total/NA	Water	2320B-2011	
410-37142-4	DUP-2_20210422	Total/NA	Water	2320B-2011	
410-37142-6	FB_20210423	Total/NA	Water	2320B-2011	
MB 410-119596/84	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-119596/85	Lab Control Sample	Total/NA	Water	2320B-2011	

General Chemistry

Analysis Batch: 120010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	5310C-2011	
410-37142-2	MW-38_20210422	Total/NA	Water	5310C-2011	
410-37142-3	S-395_20210422	Total/NA	Water	5310C-2011	
410-37142-6	FB_20210423	Total/NA	Water	5310C-2011	
MB 410-120010/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-120010/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 120555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-4	DUP-2_20210422	Total/NA	Water	5310C-2011	
MB 410-120555/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-120555/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 121032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	5310 B-2011	
410-37142-2	MW-38_20210422	Total/NA	Water	5310 B-2011	
410-37142-3	S-395_20210422	Total/NA	Water	5310 B-2011	
410-37142-4	DUP-2_20210422	Total/NA	Water	5310 B-2011	
410-37142-6	FB_20210423	Total/NA	Water	5310 B-2011	
MB 410-121032/4	Method Blank	Total/NA	Water	5310 B-2011	
LCS 410-121032/3	Lab Control Sample	Total/NA	Water	5310 B-2011	
410-37142-1 MS	RW-26_20210422	Total/NA	Water	5310 B-2011	
410-37142-1 DU	RW-26_20210422	Total/NA	Water	5310 B-2011	

Analysis Batch: 121842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	351.2	119339
410-37142-2	MW-38_20210422	Total/NA	Water	351.2	119339
410-37142-3	S-395_20210422	Total/NA	Water	351.2	119339
410-37142-4	DUP-2_20210422	Total/NA	Water	351.2	119339
410-37142-6	FB_20210423	Total/NA	Water	351.2	119339
MB 410-119339/2-A	Method Blank	Total/NA	Water	351.2	119339
LCS 410-119339/1-A	Lab Control Sample	Total/NA	Water	351.2	119339
410-37142-1 MS	RW-26_20210422	Total/NA	Water	351.2	119339
410-37142-1 DU	RW-26_20210422	Total/NA	Water	351.2	119339

Analysis Batch: 122713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37142-1	RW-26_20210422	Total/NA	Water	SM5310C	
410-37142-2	MW-38_20210422	Total/NA	Water	SM5310C	
410-37142-3	S-395_20210422	Total/NA	Water	SM5310C	
410-37142-4	DUP-2_20210422	Total/NA	Water	SM5310C	
410-37142-6	FB_20210423	Total/NA	Water	SM5310C	

Client Sample ID: RW-26_20210422

Lab Sample ID: 410-37142-1

Date Collected: 04/22/21 09:10

Matrix: Water

Date Received: 04/23/21 15:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	121083	04/30/21 21:30	USEJ	ELLE
Total/NA	Prep	3510C			120398	04/29/21 10:20	R9CT	ELLE
Total/NA	Analysis	8270D		1	122370	05/05/21 00:32	W6XI	ELLE
Total/NA	Prep	3510C	DL		120398	04/29/21 10:20	R9CT	ELLE
Total/NA	Analysis	8270D	DL	50	122958	05/05/21 23:28	W6XI	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 16:41	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		119931	04/28/21 08:13	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	119938	04/28/21 11:42	LXF2	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 14:19	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	119951	04/28/21 22:58	GJ35	ELLE
Total Recoverable	Prep	3005A			119033	04/26/21 13:15	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121847	05/03/21 15:04	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			119223	04/26/21 20:11	UJLA	ELLE
Dissolved	Analysis	6020A		1	119782	04/27/21 19:45	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	119596	04/27/21 03:13	DI9Q	ELLE
Total/NA	Prep	351.2			119339	04/27/21 07:20	UNJS	ELLE
Total/NA	Analysis	351.2		1	121842	05/03/21 14:04	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	121032	04/29/21 14:40	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	120010	04/27/21 20:40	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: MW-38_20210422

Lab Sample ID: 410-37142-2

Date Collected: 04/22/21 11:10

Matrix: Water

Date Received: 04/23/21 15:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	121083	04/30/21 17:53	USEJ	ELLE
Total/NA	Prep	3510C			120398	04/29/21 10:20	R9CT	ELLE
Total/NA	Analysis	8270D		1	122370	05/05/21 01:01	W6XI	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 17:00	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		119931	04/28/21 08:13	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	5	119938	04/28/21 12:01	LXF2	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 14:36	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	119951	04/28/21 23:16	GJ35	ELLE
Total Recoverable	Prep	3005A			119033	04/26/21 13:15	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121847	05/03/21 15:13	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			119223	04/26/21 20:11	UJLA	ELLE
Dissolved	Analysis	6020A		1	119782	04/27/21 19:39	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	119596	04/27/21 03:36	DI9Q	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Client Sample ID: MW-38_20210422

Lab Sample ID: 410-37142-2
Matrix: Water
Date Collected: 04/22/21 11:10
Date Received: 04/23/21 15:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			119339	04/27/21 07:20	UNJS	ELLE
Total/NA	Analysis	351.2		1	121842	05/03/21 14:10	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	121032	04/29/21 15:12	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	120010	04/27/21 21:24	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: S-395_20210422

Lab Sample ID: 410-37142-3
Matrix: Water
Date Collected: 04/22/21 12:37
Date Received: 04/23/21 15:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	121083	04/30/21 18:17	USEJ	ELLE
Total/NA	Prep	3510C			120398	04/29/21 10:20	R9CT	ELLE
Total/NA	Analysis	8270D		1	122370	05/05/21 01:30	W6XI	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 17:19	LXF2	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 14:53	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		20	119951	04/28/21 23:34	GJ35	ELLE
Total Recoverable	Prep	3005A			119033	04/26/21 13:15	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121847	05/03/21 15:17	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			119223	04/26/21 20:11	UJLA	ELLE
Dissolved	Analysis	6020A		1	119782	04/27/21 19:35	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	119596	04/27/21 03:43	DI9Q	ELLE
Total/NA	Prep	351.2			119339	04/27/21 07:20	UNJS	ELLE
Total/NA	Analysis	351.2		1	121842	05/03/21 14:15	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	121032	04/29/21 15:23	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	120010	04/27/21 21:38	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: DUP-2_20210422

Lab Sample ID: 410-37142-4
Matrix: Water
Date Collected: 04/22/21 09:10
Date Received: 04/23/21 15:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	121083	04/30/21 21:54	USEJ	ELLE
Total/NA	Prep	3510C			120398	04/29/21 10:20	R9CT	ELLE
Total/NA	Analysis	8270D		1	122370	05/05/21 01:59	W6XI	ELLE
Total/NA	Prep	3510C	DL		120398	04/29/21 10:20	R9CT	ELLE
Total/NA	Analysis	8270D	DL	50	122958	05/05/21 23:57	W6XI	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 17:37	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		119931	04/28/21 08:13	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	119938	04/28/21 12:19	LXF2	ELLE

Client Sample ID: DUP-2_20210422

Lab Sample ID: 410-37142-4

Date Collected: 04/22/21 09:10

Matrix: Water

Date Received: 04/23/21 15:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 15:10	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	119953	04/28/21 21:48	GJ35	ELLE
Total Recoverable	Prep	3005A			119033	04/26/21 13:15	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121847	05/03/21 14:54	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			119223	04/26/21 20:11	UJLA	ELLE
Dissolved	Analysis	6020A		1	119782	04/27/21 19:47	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	119596	04/27/21 03:19	DI9Q	ELLE
Total/NA	Prep	351.2			119339	04/27/21 07:20	UNJS	ELLE
Total/NA	Analysis	351.2		1	121842	05/03/21 14:17	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	121032	04/29/21 15:34	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	120555	04/28/21 20:40	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: TB_20210423

Lab Sample ID: 410-37142-5

Date Collected: 04/23/21 00:00

Matrix: Water

Date Received: 04/23/21 15:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	120603	04/29/21 17:52	UKAD	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 15:27	UAMZ	ELLE

Client Sample ID: FB_20210423

Lab Sample ID: 410-37142-6

Date Collected: 04/23/21 00:00

Matrix: Water

Date Received: 04/23/21 15:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	120603	04/29/21 18:16	UKAD	ELLE
Total/NA	Prep	3510C			120700	04/29/21 17:45	QQ3P	ELLE
Total/NA	Analysis	8270D		1	121050	04/30/21 17:07	W6XI	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 18:14	LXF2	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 15:44	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	119953	04/28/21 22:19	GJ35	ELLE
Total Recoverable	Prep	3005A			119033	04/26/21 13:15	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121847	05/03/21 15:10	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			119223	04/26/21 20:11	UJLA	ELLE
Dissolved	Analysis	6020A		1	119782	04/27/21 19:37	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	119596	04/27/21 03:48	DI9Q	ELLE
Total/NA	Prep	351.2			119339	04/27/21 07:20	UNJS	ELLE
Total/NA	Analysis	351.2		1	121842	05/03/21 14:19	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		1	121032	04/29/21 15:44	KGQ6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Client Sample ID: FB_20210423

Date Collected: 04/23/21 00:00
Date Received: 04/23/21 15:13

Lab Sample ID: 410-37142-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310C-2011		1	120010	04/27/21 22:08	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp.
Job ID: 410-37142-1
Project/Site: Former PES Annual GWS

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310 B-2011		Water	Total Carbon
SM5310C		Water	Total Inorganic Carbon

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Method	Method Description	Protocol	Laboratory
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
5310 B-2011	Carbon, Total and Total Inorganic	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
SM5310C	Carbon, Total Inorganic	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37142-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-37142-1	RW-26_20210422	Water	04/22/21 09:10	04/23/21 15:13	
410-37142-2	MW-38_20210422	Water	04/22/21 11:10	04/23/21 15:13	
410-37142-3	S-395_20210422	Water	04/22/21 12:37	04/23/21 15:13	
410-37142-4	DUP-2_20210422	Water	04/22/21 09:10	04/23/21 15:13	
410-37142-5	TB_20210423	Water	04/23/21 00:00	04/23/21 15:13	
410-37142-6	FB_20210423	Water	04/23/21 00:00	04/23/21 15:13	

Envirc Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

410-37142 Chain of Custody

Sample # _____

Client: Evergreen c/o Stantec			
Project Name/#: Former PES Annual GWS	Site ID #: 16657		
Project Manager: Andrew Bradley	P.O. #: 213403363		
Sampler: Dane Hopkins, Andrea Hill	PWSID #:		
Phone #: 610.840.2541	Quote #:		
State where sample(s) were collected: PA			

Matrix: ☐ Soil ☐ Sediment ☑ Water ☐ Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ☐ Trip Blank / Field Blank

Analyses Requested — Preservation Codes

Sample Identification	Collection Date	Collection Time	Grab	Composite	Total # of Containers	Evergreen Petroleum Short List (refer to attached list of analytes) H / NP	Dissolved Lead (field filtered) N	Total Inorganic Carbon (TIC) P/NP	Sulfate NP	Dissolved Headspace Gases (methane, ethane, ethene) H	Total Iron N	Total Calcium N	Total Kjeldahl Nitrogen (TKN) S	Alkalinity as CaCO3 NP	VOC 8260 / EDB 8011 H	Remarks
RW-26_20210422	4/22/2021	9:10	X		18	X	X	X	X	X	X	X	X	X		
MW-38_20210422	4/22/2021	11:10	X		18	X	X	X	X	X	X	X	X	X		
S-395_20210422	4/22/2021	12:37	X		18	X	X	X	X	X	X	X	X	X		
DUP-2_20210422	4/22/2021	9:10	X		18	X	X	X	X	X	X	X	X	X		
TB_20210423	4/12/2021	--	X		4										X	Trip Blank
FB_20210423	4/23/2021	0:00	X		18	X	X	X	X	X	X	X	X	X		Field Blank

Preservation Codes: H = HCl; T = Thiosulfate; N = HNO_3; B = NaOH; S = H_2SO_4; P = H_3PO_4; O = Other; NP = Non-Preserved

For Lab Use Only: SF #: _____ SCR #: _____

Turnaround Time Requested (TAT) (please check): Standard ☑ Rush ☐
(Rush TAT is subject to laboratory approval and surcharges.)

Date results are needed:

Rush results requested by (please check): E-Mail ☑ Phone ☐

E-mail Address: abradley@stantec.com

Phone: 610.840.2541

Data Package Options (please check if required)

Type I (Validation/non-CLP)	☐	MA MCP	☐
Type III (Reduced non-CLP)	☐	CT RCP	☐
Type IV (CLP SOW)	☐	TX TRRP-13	☐
Type VI (Raw Data Only)	☐		

EDD Required? Yes ☑ No ☐ If yes, format: ___ EQUIS

Relinquished by:	Date	Time	Received by:	Date	Time
	4/23/21	12:25		4.23.21	12.25
	4.23.21	15:34		Date	Time
	Date	Time		Date	Time
	Date	Time		Date	Time
	Date	Time		Date	Time

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other X

Temperature upon receipt 1.2 / 1.5 °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300

7045 0713

Evergreen Petroleum Short List (June 2016)

VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7

SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(b)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0

Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1

*Ethylene Dibromide (EDB) should be analyzed by Method 8011 instead of 8260 in soil for tank investigations and in **all groundwater samples**. EDB in all trip blank samples should be analyzed by 8260 regardless of method used for primary samples.

**Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

***Metals analysis should be total in soil and dissolved in groundwater.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-37142-1

Login Number: 37142 **List Source: Eurofins Lancaster Laboratories Env, LLC**
List Number: 1
Creator: Rivera-Santa, Julissa

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-37313-1
Client Project/Site: Former PES Annual GWS
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Mr. Andrew Bradley

Authorized for release by:
5/24/2021 3:12:09 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
5/24/2021 3:12:09 PM

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-37313-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-37313-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/10/2021. The report (revision 1) is being revised due to: t-Butyl alcohol was requested after the original report was generated.

Receipt
The samples were received on 4/26/2021 3:32 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

GC/MS VOA
Method 8260C/UST: The [QC] associated with 410-121085 is compliant under 8260C criteria for Naphthalene. The software does not display the data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the QC passes the criteria.

Method 8260C/UST: The following sample was diluted due to the abundance of non-target analytes: OW-20_20210423 (410-37313-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 8011:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Client Sample ID: MW-44_20210423 — Lab Sample ID: 410-37313-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	1500		50	10	ug/L	10		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	450		50	3.0	ug/L	10		8260C/UST	Total/NA
Ethylbenzene	1400		10	4.0	ug/L	10		8260C/UST	Total/NA
Isopropylbenzene	55		50	2.0	ug/L	10		8260C/UST	Total/NA
Methyl tert-butyl ether	160		10	2.0	ug/L	10		8260C/UST	Total/NA
tert-Butyl alcohol	1400		500	120	ug/L	10		8260C/UST	Total/NA
Toluene	390		10	2.0	ug/L	10		8260C/UST	Total/NA
Xylenes, Total	7900		60	14	ug/L	10		8260C/UST	Total/NA
Benzene - DL	11000		100	20	ug/L	100		8260C/UST	Total/NA
Anthracene	1.0		0.58	0.12	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	1.9		0.58	0.12	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	3.0		0.58	0.13	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	4.8		0.58	0.12	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	2.0		0.58	0.12	ug/L	1		8270D	Total/NA
Chrysene	4.5		0.58	0.12	ug/L	1		8270D	Total/NA
Fluorene	4.6		0.58	0.14	ug/L	1		8270D	Total/NA
Phenanthrene	8.7		0.58	0.13	ug/L	1		8270D	Total/NA
Pyrene	6.5		0.58	0.12	ug/L	1		8270D	Total/NA
Naphthalene - DL	330		5.8	1.2	ug/L	10		8270D	Total/NA
Ethane (1C)	8.4		5.0	1.0	ug/L	1		RSK-175	Total/NA
Ethene (1C)	2.3	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	15000		500	300	ug/L	100		RSK-175	Total/NA
Sulfate	6800	J	10000	3000	ug/L	10		EPA 300.0 R2.1	Total/NA
Calcium	50000		500	96	ug/L	1		6010C	Total Recoverable
Iron	77000		200	40	ug/L	1		6010C	Total Recoverable
Lead	5.4		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	150000		8000	8000	ug/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	21000	*+	10000	5000	ug/L	10		351.2	Total/NA
Total Carbon	150000		10000	5000	ug/L	10		5310 B-2011	Total/NA
Total Organic Carbon	65000		5000	2500	ug/L	5		5310C-2011	Total/NA
Total Inorganic Carbon	85000		2000	600	ug/L	1		SM5310C	Total/NA

Client Sample ID: S-394_20210423 — Lab Sample ID: 410-37313-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	1.2	J	5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	0.45	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
Benzene	19		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Ethylbenzene	1.4		1.0	0.40	ug/L	1		8260C/UST	Total/NA
Toluene	0.56	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	8.2		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Benzo[a]anthracene	0.69		0.54	0.11	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	1.6		0.54	0.12	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	2.9		0.54	0.11	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	1.3		0.54	0.11	ug/L	1		8270D	Total/NA
Chrysene	2.1		0.54	0.11	ug/L	1		8270D	Total/NA
Naphthalene	0.42	J	0.54	0.11	ug/L	1		8270D	Total/NA
Phenanthrene	1.4		0.54	0.12	ug/L	1		8270D	Total/NA
Pyrene	2.8		0.54	0.11	ug/L	1		8270D	Total/NA
Methane (1C)	21		5.0	3.0	ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-394_20210423 (Continued) — Lab Sample ID: 410-37313-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	350000		50000	15000	ug/L	50		EPA 300.0 R2.1	Total/NA
Calcium	74000		500	96	ug/L	1		6010C	Total Recoverable
Iron	34000		200	40	ug/L	1		6010C	Total Recoverable
Lead	0.99		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	91000		8000	8000	ug/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	1100	*+	1000	500	ug/L	1		351.2	Total/NA
Total Carbon	56000		10000	5000	ug/L	10		5310 B-2011	Total/NA
Total Organic Carbon	5600		1000	500	ug/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	50000		2000	600	ug/L	1		SM5310C	Total/NA

Client Sample ID: OW-20_20210423 — Lab Sample ID: 410-37313-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	2000	J	5000	1000	ug/L	1000		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	720	J	5000	300	ug/L	1000		8260C/UST	Total/NA
Benzene	19000		1000	200	ug/L	1000		8260C/UST	Total/NA
Ethylbenzene	1200		1000	400	ug/L	1000		8260C/UST	Total/NA
Isopropylbenzene	1600	J	5000	200	ug/L	1000		8260C/UST	Total/NA
Methyl tert-butyl ether	2700		1000	200	ug/L	1000		8260C/UST	Total/NA
tert-Butyl alcohol	20000	J	50000	12000	ug/L	1000		8260C/UST	Total/NA
Toluene	10000		1000	200	ug/L	1000		8260C/UST	Total/NA
Xylenes, Total	15000		6000	1400	ug/L	1000		8260C/UST	Total/NA
Anthracene	36		5.4	1.1	ug/L	10		8270D	Total/NA
Benzo[a]anthracene	25		5.4	1.1	ug/L	10		8270D	Total/NA
Benzo[a]pyrene	17		5.4	1.2	ug/L	10		8270D	Total/NA
Benzo[b]fluoranthene	21		5.4	1.1	ug/L	10		8270D	Total/NA
Benzo[g,h,i]perylene	6.8		5.4	1.1	ug/L	10		8270D	Total/NA
Chrysene	24		5.4	1.1	ug/L	10		8270D	Total/NA
Fluorene	57		5.4	1.3	ug/L	10		8270D	Total/NA
Naphthalene	1300		5.4	1.1	ug/L	10		8270D	Total/NA
Phenanthrene	130		5.4	1.2	ug/L	10		8270D	Total/NA
Pyrene	82		5.4	1.1	ug/L	10		8270D	Total/NA
Ethane (1C)	7.7		5.0	1.0	ug/L	1		RSK-175	Total/NA
Ethene (1C)	2.0	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	12000		250	150	ug/L	50		RSK-175	Total/NA
Calcium	230000		500	96	ug/L	1		6010C	Total Recoverable
Iron	540000		4000	800	ug/L	20		6010C	Total Recoverable
Lead	2.8		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	68000		8000	8000	ug/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	69000	*+	20000	10000	ug/L	20		351.2	Total/NA
Total Carbon	1100000		50000	25000	ug/L	50		5310 B-2011	Total/NA
Total Organic Carbon	470000		10000	5000	ug/L	10		5310C-2011	Total/NA
Total Inorganic Carbon	630000		2000	600	ug/L	1		SM5310C	Total/NA

Client Sample ID: S-284D_20210423 — Lab Sample ID: 410-37313-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	1.1	J	5.0	1.0	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	0.43	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Client Sample ID: S-284D_20210423 (Continued) — Lab Sample ID: 410-37313-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	10		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Ethylbenzene	0.55	J	1.0	0.40	ug/L	1		8260C/UST	Total/NA
Methyl tert-butyl ether	1.3		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Toluene	4.2		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	6.0		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Naphthalene	0.22	J	0.57	0.11	ug/L	1		8270D	Total/NA
Methane (1C)	60		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	28000		5000	1500	ug/L	5		EPA 300.0 R2.1	Total/NA
Calcium	80000		500	96	ug/L	1		6010C	Total Recoverable
Iron	1800		200	40	ug/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	280000		8000	8000	ug/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	29000	*+	10000	5000	ug/L	10		351.2	Total/NA
Total Carbon	72000		10000	5000	ug/L	10		5310 B-2011	Total/NA
Total Organic Carbon	7900		1000	500	ug/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	64000		2000	600	ug/L	1		SM5310C	Total/NA

Client Sample ID: FB_20210426 — Lab Sample ID: 410-37313-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	430	J	500	96	ug/L	1		6010C	Total Recoverable
Total Carbon	520	J	1000	500	ug/L	1		5310 B-2011	Total/NA

Client Sample ID: TB_20210426 — Lab Sample ID: 410-37313-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-44_20210423

Date Collected: 04/23/21 08:40
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-1

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**1500**		50	10	ug/L			04/30/21 22:05	10
1,2-Dichloroethane	ND		10	3.0	ug/L			04/30/21 22:05	10
1,3,5-Trimethylbenzene	**450**		50	3.0	ug/L			04/30/21 22:05	10
Ethylbenzene	**1400**		10	4.0	ug/L			04/30/21 22:05	10
Isopropylbenzene	**55**		50	2.0	ug/L			04/30/21 22:05	10
Methyl tert-butyl ether	**160**		10	2.0	ug/L			04/30/21 22:05	10
tert-Butyl alcohol	**1400**		500	120	ug/L			04/30/21 22:05	10
Toluene	**390**		10	2.0	ug/L			04/30/21 22:05	10
Xylenes, Total	**7900**		60	14	ug/L			04/30/21 22:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*04/30/21 22:05*	*10*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*04/30/21 22:05*	*10*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*04/30/21 22:05*	*10*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/30/21 22:05*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**11000**		100	20	ug/L			04/30/21 22:29	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*04/30/21 22:29*	*100*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*04/30/21 22:29*	*100*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*04/30/21 22:29*	*100*
Toluene-d8 (Surr)	*105*		*80 - 120*		*04/30/21 22:29*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**1.0**		0.58	0.12	ug/L		04/30/21 09:55	05/02/21 20:27	1
Benzo[a]anthracene	**1.9**		0.58	0.12	ug/L		04/30/21 09:55	05/02/21 20:27	1
Benzo[a]pyrene	**3.0**		0.58	0.13	ug/L		04/30/21 09:55	05/02/21 20:27	1
Benzo[b]fluoranthene	**4.8**		0.58	0.12	ug/L		04/30/21 09:55	05/02/21 20:27	1
Benzo[g,h,i]perylene	**2.0**		0.58	0.12	ug/L		04/30/21 09:55	05/02/21 20:27	1
Chrysene	**4.5**		0.58	0.12	ug/L		04/30/21 09:55	05/02/21 20:27	1
Fluorene	**4.6**		0.58	0.14	ug/L		04/30/21 09:55	05/02/21 20:27	1
Phenanthrene	**8.7**		0.58	0.13	ug/L		04/30/21 09:55	05/02/21 20:27	1
Pyrene	**6.5**		0.58	0.12	ug/L		04/30/21 09:55	05/02/21 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*44 - 102*	*04/30/21 09:55*	*05/02/21 20:27*	*1*
Nitrobenzene-d5 (Surr)	*7*	*S1-*	*23 - 128*	*04/30/21 09:55*	*05/02/21 20:27*	*1*
p-Terphenyl-d14 (Surr)	*83*		*31 - 113*	*04/30/21 09:55*	*05/02/21 20:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**330**		5.8	1.2	ug/L		04/30/21 09:55	05/07/21 19:37	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*44 - 102*	*04/30/21 09:55*	*05/07/21 19:37*	*10*
Nitrobenzene-d5 (Surr)	*7*	*S1-*	*23 - 128*	*04/30/21 09:55*	*05/07/21 19:37*	*10*
p-Terphenyl-d14 (Surr)	*87*		*31 - 113*	*04/30/21 09:55*	*05/07/21 19:37*	*10*

Client Sample ID: MW-44_20210423

Lab Sample ID: 410-37313-1

Date Collected: 04/23/21 08:40

Matrix: Water

Date Received: 04/26/21 15:32

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	8.4		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 18:33	1
Ethene (1C)	2.3	J	5.0	1.0	ug/L		04/27/21 07:33	04/27/21 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*98*		*28 - 140*	*04/27/21 07:33*	*04/27/21 18:33*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	15000		500	300	ug/L		04/28/21 08:13	04/28/21 12:37	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*04/28/21 08:13*	*04/28/21 12:37*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/27/21 16:35	04/28/21 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*151*	*S1+*	*46 - 136*	*04/27/21 16:35*	*04/28/21 16:01*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*144*	*S1+*	*46 - 136*	*04/27/21 16:35*	*04/28/21 16:01*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	6800	J	10000	3000	ug/L			04/29/21 04:10	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	50000		500	96	ug/L		04/27/21 14:36	04/30/21 16:18	1
Iron	77000		200	40	ug/L		04/27/21 14:36	04/30/21 16:18	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.4		0.52	0.073	ug/L		04/27/21 18:26	04/28/21 11:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	150000		8000	8000	ug/L			04/28/21 20:01	1
Total Kjeldahl Nitrogen	21000	*+	10000	5000	ug/L		04/27/21 13:27	05/05/21 10:59	10
Total Carbon	150000		10000	5000	ug/L			04/29/21 15:55	10
Total Organic Carbon	65000		5000	2500	ug/L			05/01/21 00:45	5
Total Inorganic Carbon	85000		2000	600	ug/L			05/05/21 10:15	1

Client Sample ID: S-394_20210423

Lab Sample ID: 410-37313-2

Date Collected: 04/23/21 10:00

Matrix: Water

Date Received: 04/26/21 15:32

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	1.2	J	5.0	1.0	ug/L			04/30/21 19:40	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/30/21 19:40	1
1,3,5-Trimethylbenzene	0.45	J	5.0	0.30	ug/L			04/30/21 19:40	1
Benzene	19		1.0	0.20	ug/L			04/30/21 19:40	1

Client Sample ID: S-394_20210423

Date Collected: 04/23/21 10:00
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-2

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1.4**		1.0	0.40	ug/L			04/30/21 19:40	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/30/21 19:40	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/30/21 19:40	1
tert-Butyl alcohol	ND		50	12	ug/L			04/30/21 19:40	1
Toluene	**0.56**	**J**	1.0	0.20	ug/L			04/30/21 19:40	1
Xylenes, Total	**8.2**		6.0	1.4	ug/L			04/30/21 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*04/30/21 19:40*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*04/30/21 19:40*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*04/30/21 19:40*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/30/21 19:40*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.54	0.11	ug/L		04/30/21 18:49	05/03/21 22:55	1
Benzo[a]anthracene	**0.69**		0.54	0.11	ug/L		04/30/21 18:49	05/03/21 22:55	1
Benzo[a]pyrene	**1.6**		0.54	0.12	ug/L		04/30/21 18:49	05/03/21 22:55	1
Benzo[b]fluoranthene	**2.9**		0.54	0.11	ug/L		04/30/21 18:49	05/03/21 22:55	1
Benzo[g,h,i]perylene	**1.3**		0.54	0.11	ug/L		04/30/21 18:49	05/03/21 22:55	1
Chrysene	**2.1**		0.54	0.11	ug/L		04/30/21 18:49	05/03/21 22:55	1
Fluorene	ND		0.54	0.13	ug/L		04/30/21 18:49	05/03/21 22:55	1
Naphthalene	**0.42**	**J**	0.54	0.11	ug/L		04/30/21 18:49	05/03/21 22:55	1
Phenanthrene	**1.4**		0.54	0.12	ug/L		04/30/21 18:49	05/03/21 22:55	1
Pyrene	**2.8**		0.54	0.11	ug/L		04/30/21 18:49	05/03/21 22:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*44 - 102*	*04/30/21 18:49*	*05/03/21 22:55*	*1*
Nitrobenzene-d5 (Surr)	*70*		*23 - 128*	*04/30/21 18:49*	*05/03/21 22:55*	*1*
p-Terphenyl-d14 (Surr)	*65*		*31 - 113*	*04/30/21 18:49*	*05/03/21 22:55*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 18:52	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 18:52	1
Methane (1C)	**21**		5.0	3.0	ug/L		04/27/21 07:33	04/27/21 18:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*95*		*28 - 140*	*04/27/21 07:33*	*04/27/21 18:52*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		04/27/21 16:35	04/28/21 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*96*		*46 - 136*	*04/27/21 16:35*	*04/28/21 16:18*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*93*		*46 - 136*	*04/27/21 16:35*	*04/28/21 16:18*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**350000**		50000	15000	ug/L			04/29/21 13:48	50

Client Sample ID: S-394_20210423

Lab Sample ID: 410-37313-2

Date Collected: 04/23/21 10:00

Matrix: Water

Date Received: 04/26/21 15:32

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	74000		500	96	ug/L		04/27/21 14:36	04/30/21 15:22	1
Iron	34000		200	40	ug/L		04/27/21 14:36	04/30/21 15:22	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.99		0.52	0.073	ug/L		04/27/21 18:26	04/28/21 11:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	91000		8000	8000	ug/L			04/28/21 20:23	1
Total Kjeldahl Nitrogen	1100	*+	1000	500	ug/L		04/27/21 13:27	05/05/21 10:17	1
Total Carbon	56000		10000	5000	ug/L			04/29/21 16:28	10
Total Organic Carbon	5600		1000	500	ug/L			05/05/21 13:12	1
Total Inorganic Carbon	50000		2000	600	ug/L			05/05/21 10:15	1

Client Sample ID: OW-20_20210423

Lab Sample ID: 410-37313-3

Date Collected: 04/23/21 12:00

Matrix: Water

Date Received: 04/26/21 15:32

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	2000	J	5000	1000	ug/L			05/05/21 15:33	1000
1,2-Dichloroethane	ND		1000	300	ug/L			05/05/21 15:33	1000
1,3,5-Trimethylbenzene	720	J	5000	300	ug/L			05/05/21 15:33	1000
Benzene	19000		1000	200	ug/L			05/05/21 15:33	1000
Ethylbenzene	1200		1000	400	ug/L			05/05/21 15:33	1000
Isopropylbenzene	1600	J	5000	200	ug/L			05/05/21 15:33	1000
Methyl tert-butyl ether	2700		1000	200	ug/L			05/05/21 15:33	1000
tert-Butyl alcohol	20000	J	50000	12000	ug/L			05/05/21 15:33	1000
Toluene	10000		1000	200	ug/L			05/05/21 15:33	1000
Xylenes, Total	15000		6000	1400	ug/L			05/05/21 15:33	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 120*		*05/05/21 15:33*	*1000*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*05/05/21 15:33*	*1000*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*05/05/21 15:33*	*1000*
Toluene-d8 (Surr)	*99*		*80 - 120*		*05/05/21 15:33*	*1000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	36		5.4	1.1	ug/L		04/30/21 18:49	05/03/21 23:24	10
Benzo[a]anthracene	25		5.4	1.1	ug/L		04/30/21 18:49	05/03/21 23:24	10
Benzo[a]pyrene	17		5.4	1.2	ug/L		04/30/21 18:49	05/03/21 23:24	10
Benzo[b]fluoranthene	21		5.4	1.1	ug/L		04/30/21 18:49	05/03/21 23:24	10
Benzo[g,h,i]perylene	6.8		5.4	1.1	ug/L		04/30/21 18:49	05/03/21 23:24	10
Chrysene	24		5.4	1.1	ug/L		04/30/21 18:49	05/03/21 23:24	10
Fluorene	57		5.4	1.3	ug/L		04/30/21 18:49	05/03/21 23:24	10
Naphthalene	1300		5.4	1.1	ug/L		04/30/21 18:49	05/03/21 23:24	10
Phenanthrene	130		5.4	1.2	ug/L		04/30/21 18:49	05/03/21 23:24	10
Pyrene	82		5.4	1.1	ug/L		04/30/21 18:49	05/03/21 23:24	10

Client Sample ID: OW-20_20210423

Date Collected: 04/23/21 12:00
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-3

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	84		44 - 102	04/30/21 18:49	05/03/21 23:24	10
Nitrobenzene-d5 (Surr)	6	S1-	23 - 128	04/30/21 18:49	05/03/21 23:24	10
p-Terphenyl-d14 (Surr)	93		31 - 113	04/30/21 18:49	05/03/21 23:24	10

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	7.7		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 19:10	1
Ethene (1C)	2.0	J	5.0	1.0	ug/L		04/27/21 07:33	04/27/21 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	109		28 - 140	04/27/21 07:33	04/27/21 19:10	1

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	12000		250	150	ug/L		04/28/21 08:13	04/28/21 12:56	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	104		28 - 140	04/28/21 08:13	04/28/21 12:56	50

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		04/27/21 16:35	04/28/21 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	58		46 - 136	04/27/21 16:35	04/28/21 16:35	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	609	S1+	46 - 136	04/27/21 16:35	04/28/21 16:35	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5000	1500	ug/L			04/30/21 20:35	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	230000		500	96	ug/L		04/27/21 14:36	04/30/21 16:21	1
Iron	540000		4000	800	ug/L		04/27/21 14:36	05/06/21 22:53	20

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2.8		0.52	0.073	ug/L		04/27/21 18:26	04/28/21 11:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	68000		8000	8000	ug/L			04/28/21 20:17	1
Total Kjeldahl Nitrogen	69000	*+	20000	10000	ug/L		04/27/21 13:27	05/05/21 10:15	20
Total Carbon	1100000		50000	25000	ug/L			04/29/21 16:39	50
Total Organic Carbon	470000		10000	5000	ug/L			05/01/21 01:13	10
Total Inorganic Carbon	630000		2000	600	ug/L			05/05/21 10:15	1

Client Sample ID: S-284D_20210423

Date Collected: 04/23/21 13:50
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-4

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	**1.1**	**J**	5.0	1.0	ug/L			04/30/21 20:04	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/30/21 20:04	1
1,3,5-Trimethylbenzene	**0.43**	**J**	5.0	0.30	ug/L			04/30/21 20:04	1
Benzene	**10**		1.0	0.20	ug/L			04/30/21 20:04	1
Ethylbenzene	**0.55**	**J**	1.0	0.40	ug/L			04/30/21 20:04	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/30/21 20:04	1
Methyl tert-butyl ether	**1.3**		1.0	0.20	ug/L			04/30/21 20:04	1
tert-Butyl alcohol	ND		50	12	ug/L			04/30/21 20:04	1
Toluene	**4.2**		1.0	0.20	ug/L			04/30/21 20:04	1
Xylenes, Total	**6.0**		6.0	1.4	ug/L			04/30/21 20:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*04/30/21 20:04*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*04/30/21 20:04*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*04/30/21 20:04*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/30/21 20:04*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.57	0.11	ug/L		04/30/21 18:49	05/04/21 14:27	1
Benzo[a]anthracene	ND		0.57	0.11	ug/L		04/30/21 18:49	05/04/21 14:27	1
Benzo[a]pyrene	ND		0.57	0.12	ug/L		04/30/21 18:49	05/04/21 14:27	1
Benzo[b]fluoranthene	ND		0.57	0.11	ug/L		04/30/21 18:49	05/04/21 14:27	1
Benzo[g,h,i]perylene	ND		0.57	0.11	ug/L		04/30/21 18:49	05/04/21 14:27	1
Chrysene	ND		0.57	0.11	ug/L		04/30/21 18:49	05/04/21 14:27	1
Fluorene	ND		0.57	0.14	ug/L		04/30/21 18:49	05/04/21 14:27	1
Naphthalene	**0.22**	**J**	0.57	0.11	ug/L		04/30/21 18:49	05/04/21 14:27	1
Phenanthrene	ND		0.57	0.12	ug/L		04/30/21 18:49	05/04/21 14:27	1
Pyrene	ND		0.57	0.11	ug/L		04/30/21 18:49	05/04/21 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*44 - 102*	*04/30/21 18:49*	*05/04/21 14:27*	*1*
Nitrobenzene-d5 (Surr)	*81*		*23 - 128*	*04/30/21 18:49*	*05/04/21 14:27*	*1*
p-Terphenyl-d14 (Surr)	*93*		*31 - 113*	*04/30/21 18:49*	*05/04/21 14:27*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 19:29	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 19:29	1
Methane (1C)	**60**		5.0	3.0	ug/L		04/27/21 07:33	04/27/21 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*87*		*28 - 140*	*04/27/21 07:33*	*04/27/21 19:29*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		04/27/21 16:35	04/28/21 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*70*		*46 - 136*	*04/27/21 16:35*	*04/28/21 16:52*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*82*		*46 - 136*	*04/27/21 16:35*	*04/28/21 16:52*	*1*

Client Sample ID: S-284D_20210423

Lab Sample ID: 410-37313-4

Date Collected: 04/23/21 13:50
Matrix: Water
Date Received: 04/26/21 15:32

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**28000**		5000	1500	ug/L			04/29/21 04:43	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**80000**		500	96	ug/L		04/27/21 14:36	04/30/21 16:12	1
Iron	**1800**		200	40	ug/L		04/27/21 14:36	04/30/21 16:12	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		04/27/21 18:26	04/28/21 11:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**280000**		8000	8000	ug/L			04/28/21 20:30	1
Total Kjeldahl Nitrogen	**29000**	***+**	10000	5000	ug/L		04/27/21 13:27	05/05/21 10:21	10
Total Carbon	**72000**		10000	5000	ug/L			04/29/21 16:49	10
Total Organic Carbon	**7900**		1000	500	ug/L			04/30/21 23:06	1
Total Inorganic Carbon	**64000**		2000	600	ug/L			05/05/21 10:15	1

Client Sample ID: FB_20210426

Lab Sample ID: 410-37313-5

Date Collected: 04/26/21 09:00
Matrix: Water
Date Received: 04/26/21 15:32

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/30/21 14:27	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/30/21 14:27	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/30/21 14:27	1
Benzene	ND		1.0	0.20	ug/L			04/30/21 14:27	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/30/21 14:27	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/30/21 14:27	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/30/21 14:27	1
tert-Butyl alcohol	ND		50	12	ug/L			04/30/21 14:27	1
Toluene	ND		1.0	0.20	ug/L			04/30/21 14:27	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/30/21 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*04/30/21 14:27*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/30/21 14:27*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*04/30/21 14:27*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/30/21 14:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		05/01/21 01:14	05/04/21 13:19	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		05/01/21 01:14	05/04/21 13:19	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		05/01/21 01:14	05/04/21 13:19	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		05/01/21 01:14	05/04/21 13:19	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		05/01/21 01:14	05/04/21 13:19	1
Chrysene	ND		0.51	0.10	ug/L		05/01/21 01:14	05/04/21 13:19	1
Fluorene	ND		0.51	0.12	ug/L		05/01/21 01:14	05/04/21 13:19	1

Client Sample ID: FB_20210426
Date Collected: 04/26/21 09:00
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-5
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.51	0.10	ug/L		05/01/21 01:14	05/04/21 13:19	1
Phenanthrene	ND		0.51	0.11	ug/L		05/01/21 01:14	05/04/21 13:19	1
Pyrene	ND		0.51	0.10	ug/L		05/01/21 01:14	05/04/21 13:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*44 - 102*	*05/01/21 01:14*	*05/04/21 13:19*	*1*
Nitrobenzene-d5 (Surr)	*59*		*23 - 128*	*05/01/21 01:14*	*05/04/21 13:19*	*1*
p-Terphenyl-d14 (Surr)	*87*		*31 - 113*	*05/01/21 01:14*	*05/04/21 13:19*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 19:48	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 19:48	1
Methane (1C)	ND		5.0	3.0	ug/L		04/27/21 07:33	04/27/21 19:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*102*		*28 - 140*	*04/27/21 07:33*	*04/27/21 19:48*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/27/21 16:35	04/28/21 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*99*		*46 - 136*	*04/27/21 16:35*	*04/28/21 17:09*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*99*		*46 - 136*	*04/27/21 16:35*	*04/28/21 17:09*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1000	300	ug/L			04/29/21 06:55	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**430**	**J**	500	96	ug/L		04/27/21 14:36	04/30/21 16:00	1
Iron	ND		200	40	ug/L		04/27/21 14:36	04/30/21 16:00	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		04/27/21 18:26	04/28/21 11:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8000	8000	ug/L			04/28/21 20:37	1
Total Kjeldahl Nitrogen	ND	*+	1000	500	ug/L		04/27/21 13:27	05/05/21 10:38	1
Total Carbon	**520**	**J**	1000	500	ug/L			04/29/21 17:00	1
Total Organic Carbon	ND		1000	500	ug/L			04/30/21 23:20	1
Total Inorganic Carbon	ND		2000	600	ug/L			05/05/21 10:15	1

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Client Sample ID: TB_20210426
Date Collected: 04/12/21 00:00
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-6
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/27/21 21:12	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/27/21 21:12	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/27/21 21:12	1
Benzene	ND		1.0	0.20	ug/L			04/27/21 21:12	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/27/21 21:12	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/27/21 21:12	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/27/21 21:12	1
tert-Butyl alcohol	ND		50	12	ug/L			04/27/21 21:12	1
Toluene	ND		1.0	0.20	ug/L			04/27/21 21:12	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/27/21 21:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*04/27/21 21:12*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/27/21 21:12*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*04/27/21 21:12*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/27/21 21:12*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		04/27/21 16:35	04/28/21 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*94*		*46 - 136*	*04/27/21 16:35*	*04/28/21 17:26*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*91*		*46 - 136*	*04/27/21 16:35*	*04/28/21 17:26*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-37313-1	MW-44_20210423	95	103	96	103
410-37313-1 - DL	MW-44_20210423	96	105	97	105
410-37313-2	S-394_20210423	97	102	99	102
410-37313-3	OW-20_20210423	86	93	105	99
410-37313-4	S-284D_20210423	98	102	99	100
410-37313-5	FB_20210426	98	99	98	101
410-37313-6	TB_20210426	101	98	103	101
LCS 410-119662/4	Lab Control Sample	102	102	98	101
LCS 410-121085/4	Lab Control Sample	102	104	96	105
LCS 410-122605/4	Lab Control Sample	87	92	103	101
LCSD 410-119662/5	Lab Control Sample Dup	105	101	99	102
LCSD 410-121085/5	Lab Control Sample Dup	100	103	96	102
LCSD 410-122605/5	Lab Control Sample Dup	87	93	101	102
MB 410-119662/6	Method Blank	100	98	100	103
MB 410-121085/6	Method Blank	101	101	99	102
MB 410-122605/6	Method Blank	86	91	102	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(44-102)	(23-128)	(31-113)
410-37313-1	MW-44_20210423	68	7 S1-	83
410-37313-1 - DL	MW-44_20210423	72	7 S1-	87
410-37313-2	S-394_20210423	69	70	65
410-37313-3	OW-20_20210423	84	6 S1-	93
410-37313-4	S-284D_20210423	82	81	93
410-37313-5	FB_20210426	64	59	87
LCS 410-120901/2-A	Lab Control Sample	75	76	97
LCS 410-121223/2-A	Lab Control Sample	78	78	90
LCS 410-121280/2-A	Lab Control Sample	75	75	94
LCSD 410-121223/3-A	Lab Control Sample Dup	79	80	94
MB 410-120901/1-A	Method Blank	79	83	99
MB 410-121223/1-A	Method Blank	76	76	90
MB 410-121280/1-A	Method Blank	62	59	84

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	Propene1 (28-140)						
410-37313-1	MW-44_20210423	98						
410-37313-1 - DL	MW-44_20210423	104						
410-37313-2	S-394_20210423	95						
410-37313-3	OW-20_20210423	109						
410-37313-3 - DL	OW-20_20210423	104						
410-37313-4	S-284D_20210423	87						
410-37313-5	FB_20210426	102						
LCS 410-119343/2-A	Lab Control Sample	108						
LCS 410-119931/2-A	Lab Control Sample	101						
LCSD 410-119343/3-A	Lab Control Sample Dup	104						
LCSD 410-119931/3-A	Lab Control Sample Dup	102						
MB 410-119343/1-A	Method Blank	106						
MB 410-119931/1-A	Method Blank	104						

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)					
410-37313-1	MW-44_20210423	151 S1+	144 S1+					
410-37313-2	S-394_20210423	96	93					
410-37313-3	OW-20_20210423	58	609 S1+					
410-37313-4	S-284D_20210423	70	82					
410-37313-5	FB_20210426	99	99					
410-37313-6	TB_20210426	94	91					
LCS 410-119637/2-A	Lab Control Sample	92	87					
LCSD 410-119637/3-A	Lab Control Sample Dup	79	78					
MB 410-119637/1-A	Method Blank	90	86					

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-119662/6
Matrix: Water
Analysis Batch: 119662

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/27/21 20:48	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/27/21 20:48	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/27/21 20:48	1
Benzene	ND		1.0	0.20	ug/L			04/27/21 20:48	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/27/21 20:48	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/27/21 20:48	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/27/21 20:48	1
tert-Butyl alcohol	ND		50	12	ug/L			04/27/21 20:48	1
Toluene	ND		1.0	0.20	ug/L			04/27/21 20:48	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/27/21 20:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*04/27/21 20:48*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/27/21 20:48*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*04/27/21 20:48*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/27/21 20:48*	*1*

Lab Sample ID: LCS 410-119662/4
Matrix: Water
Analysis Batch: 119662

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,4-Trimethylbenzene			20.0	17.2		ug/L		86	75 - 120		
1,2-Dichloroethane			20.0	16.9		ug/L		85	73 - 124		
1,3,5-Trimethylbenzene			20.0	16.8		ug/L		84	75 - 120		
Benzene			20.0	18.0		ug/L		90	80 - 120		
Ethylbenzene			20.0	17.6		ug/L		88	80 - 120		
Isopropylbenzene			20.0	16.5		ug/L		82	80 - 120		
Methyl tert-butyl ether			20.0	18.4		ug/L		92	69 - 122		
Naphthalene			20.0	17.5		ug/L		88	53 - 124		
tert-Butyl alcohol			200	180		ug/L		90	60 - 130		
Toluene			20.0	18.0		ug/L		90	80 - 120		
Xylenes, Total			60.0	49.8		ug/L		83	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-119662/5
Matrix: Water
Analysis Batch: 119662

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	18.7		ug/L		94	75 - 120	9	30
1,2-Dichloroethane			20.0	19.2		ug/L		96	73 - 124	13	30
1,3,5-Trimethylbenzene			20.0	18.3		ug/L		91	75 - 120	9	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-119662/5
Matrix: Water
Analysis Batch: 119662

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	20.8		ug/L		104	80 - 120	14	30
Ethylbenzene			20.0	20.1		ug/L		100	80 - 120	13	30
Isopropylbenzene			20.0	18.7		ug/L		94	80 - 120	13	30
Methyl tert-butyl ether			20.0	20.3		ug/L		102	69 - 122	10	30
Naphthalene			20.0	18.2		ug/L		91	53 - 124	4	30
tert-Butyl alcohol			200	195		ug/L		98	60 - 130	8	30
Toluene			20.0	20.2		ug/L		101	80 - 120	12	30
Xylenes, Total			60.0	56.8		ug/L		95	80 - 120	13	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: MB 410-121085/6
Matrix: Water
Analysis Batch: 121085

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			04/30/21 14:03	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			04/30/21 14:03	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			04/30/21 14:03	1
Benzene	ND		1.0	0.20	ug/L			04/30/21 14:03	1
Ethylbenzene	ND		1.0	0.40	ug/L			04/30/21 14:03	1
Isopropylbenzene	ND		5.0	0.20	ug/L			04/30/21 14:03	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			04/30/21 14:03	1
tert-Butyl alcohol	ND		50	12	ug/L			04/30/21 14:03	1
Toluene	ND		1.0	0.20	ug/L			04/30/21 14:03	1
Xylenes, Total	ND		6.0	1.4	ug/L			04/30/21 14:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*04/30/21 14:03*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/30/21 14:03*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*04/30/21 14:03*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/30/21 14:03*	*1*

Lab Sample ID: LCS 410-121085/4
Matrix: Water
Analysis Batch: 121085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene			20.0	19.3		ug/L		97	75 - 120
1,2-Dichloroethane			20.0	18.2		ug/L		91	73 - 124
1,3,5-Trimethylbenzene			20.0	19.6		ug/L		98	75 - 120
Benzene			20.0	20.6		ug/L		103	80 - 120
Ethylbenzene			20.0	20.7		ug/L		104	80 - 120
Isopropylbenzene			20.0	18.9		ug/L		94	80 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-121085/4
Matrix: Water
Analysis Batch: 121085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methyl tert-butyl ether			20.0	19.1		ug/L		95	69 - 122		
Naphthalene			20.0	16.5		ug/L		82	53 - 124		
tert-Butyl alcohol			200	197		ug/L		98	60 - 130		
Toluene			20.0	20.6		ug/L		103	80 - 120		
Xylenes, Total			60.0	58.6		ug/L		98	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Lab Sample ID: LCSD 410-121085/5
Matrix: Water
Analysis Batch: 121085

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene			20.0	18.9		ug/L		95	75 - 120	2	30
1,2-Dichloroethane			20.0	17.2		ug/L		86	73 - 124	6	30
1,3,5-Trimethylbenzene			20.0	18.8		ug/L		94	75 - 120	4	30
Benzene			20.0	20.1		ug/L		100	80 - 120	2	30
Ethylbenzene			20.0	20.0		ug/L		100	80 - 120	4	30
Isopropylbenzene			20.0	18.0		ug/L		90	80 - 120	5	30
Methyl tert-butyl ether			20.0	18.3		ug/L		92	69 - 122	4	30
Naphthalene			20.0	15.4		ug/L		77	53 - 124	7	30
tert-Butyl alcohol			200	190		ug/L		95	60 - 130	3	30
Toluene			20.0	19.8		ug/L		99	80 - 120	4	30
Xylenes, Total			60.0	55.9		ug/L		93	80 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: MB 410-122605/6
Matrix: Water
Analysis Batch: 122605

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			05/05/21 10:57	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			05/05/21 10:57	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			05/05/21 10:57	1
Benzene	ND		1.0	0.20	ug/L			05/05/21 10:57	1
Ethylbenzene	ND		1.0	0.40	ug/L			05/05/21 10:57	1
Isopropylbenzene	ND		5.0	0.20	ug/L			05/05/21 10:57	1
Methyl tert-butyl ether	ND		1.0	0.20	ug/L			05/05/21 10:57	1
tert-Butyl alcohol	ND		50	12	ug/L			05/05/21 10:57	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-122605/6
Matrix: Water
Analysis Batch: 122605

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0	0.20	ug/L			05/05/21 10:57	1
Xylenes, Total	ND		6.0	1.4	ug/L			05/05/21 10:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 120*		*05/05/21 10:57*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*05/05/21 10:57*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*05/05/21 10:57*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*05/05/21 10:57*	*1*

Lab Sample ID: LCS 410-122605/4
Matrix: Water
Analysis Batch: 122605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.1		ug/L		95	75 - 120
1,2-Dichloroethane	20.0	16.6		ug/L		83	73 - 124
1,3,5-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 120
Benzene	20.0	20.0		ug/L		100	80 - 120
Ethylbenzene	20.0	19.2		ug/L		96	80 - 120
Isopropylbenzene	20.0	19.8		ug/L		99	80 - 120
Methyl tert-butyl ether	20.0	16.7		ug/L		84	69 - 122
Naphthalene	20.0	18.0		ug/L		90	53 - 124
tert-Butyl alcohol	200	201		ug/L		100	60 - 130
Toluene	20.0	20.3		ug/L		101	80 - 120
Xylenes, Total	60.0	59.6		ug/L		99	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-122605/5
Matrix: Water
Analysis Batch: 122605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trimethylbenzene	20.0	19.5		ug/L		97	75 - 120	2	30
1,2-Dichloroethane	20.0	17.0		ug/L		85	73 - 124	2	30
1,3,5-Trimethylbenzene	20.0	19.4		ug/L		97	75 - 120	1	30
Benzene	20.0	20.5		ug/L		102	80 - 120	2	30
Ethylbenzene	20.0	19.6		ug/L		98	80 - 120	2	30
Isopropylbenzene	20.0	20.2		ug/L		101	80 - 120	2	30
Methyl tert-butyl ether	20.0	16.8		ug/L		84	69 - 122	1	30
Naphthalene	20.0	17.2		ug/L		86	53 - 124	5	30
tert-Butyl alcohol	200	204		ug/L		102	60 - 130	2	30
Toluene	20.0	20.7		ug/L		103	80 - 120	2	30
Xylenes, Total	60.0	61.3		ug/L		102	80 - 120	3	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-122605/5
Matrix: Water
Analysis Batch: 122605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		80 - 120
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-120901/1-A
Matrix: Water
Analysis Batch: 121413

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 120901

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		04/30/21 09:55	05/02/21 13:41	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		04/30/21 09:55	05/02/21 13:41	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		04/30/21 09:55	05/02/21 13:41	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		04/30/21 09:55	05/02/21 13:41	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		04/30/21 09:55	05/02/21 13:41	1
Chrysene	ND		0.50	0.10	ug/L		04/30/21 09:55	05/02/21 13:41	1
Fluorene	ND		0.50	0.12	ug/L		04/30/21 09:55	05/02/21 13:41	1
Naphthalene	ND		0.50	0.10	ug/L		04/30/21 09:55	05/02/21 13:41	1
Phenanthrene	ND		0.50	0.11	ug/L		04/30/21 09:55	05/02/21 13:41	1
Pyrene	ND		0.50	0.10	ug/L		04/30/21 09:55	05/02/21 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	79		44 - 102	04/30/21 09:55	05/02/21 13:41	1
Nitrobenzene-d5 (Surr)	83		23 - 128	04/30/21 09:55	05/02/21 13:41	1
p-Terphenyl-d14 (Surr)	99		31 - 113	04/30/21 09:55	05/02/21 13:41	1

Lab Sample ID: LCS 410-120901/2-A
Matrix: Water
Analysis Batch: 121413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 120901

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	45.6		ug/L		91	61 - 117
Benzo[a]anthracene	50.0	49.5		ug/L		99	61 - 126
Benzo[a]pyrene	50.0	52.1		ug/L		104	60 - 116
Benzo[b]fluoranthene	50.0	44.9		ug/L		90	61 - 119
Benzo[g,h,i]perylene	50.0	40.4		ug/L		81	54 - 120
Chrysene	50.0	49.6		ug/L		99	65 - 121
Fluorene	50.0	43.9		ug/L		88	56 - 115
Naphthalene	50.0	37.3		ug/L		75	51 - 102
Phenanthrene	50.0	45.4		ug/L		91	65 - 113
Pyrene	50.0	47.8		ug/L		96	65 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	75		44 - 102
Nitrobenzene-d5 (Surr)	76		23 - 128
p-Terphenyl-d14 (Surr)	97		31 - 113

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-121223/1-A
Matrix: Water
Analysis Batch: 121650

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 121223

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		04/30/21 18:49	05/03/21 16:38	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		04/30/21 18:49	05/03/21 16:38	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		04/30/21 18:49	05/03/21 16:38	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		04/30/21 18:49	05/03/21 16:38	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		04/30/21 18:49	05/03/21 16:38	1
Chrysene	ND		0.50	0.10	ug/L		04/30/21 18:49	05/03/21 16:38	1
Fluorene	ND		0.50	0.12	ug/L		04/30/21 18:49	05/03/21 16:38	1
Naphthalene	ND		0.50	0.10	ug/L		04/30/21 18:49	05/03/21 16:38	1
Phenanthrene	ND		0.50	0.11	ug/L		04/30/21 18:49	05/03/21 16:38	1
Pyrene	ND		0.50	0.10	ug/L		04/30/21 18:49	05/03/21 16:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*44 - 102*	*04/30/21 18:49*	*05/03/21 16:38*	*1*
Nitrobenzene-d5 (Surr)	*76*		*23 - 128*	*04/30/21 18:49*	*05/03/21 16:38*	*1*
p-Terphenyl-d14 (Surr)	*90*		*31 - 113*	*04/30/21 18:49*	*05/03/21 16:38*	*1*

Lab Sample ID: LCS 410-121223/2-A
Matrix: Water
Analysis Batch: 121650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 121223

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	44.2		ug/L		88	61 - 117
Benzo[a]anthracene	50.0	48.3		ug/L		97	61 - 126
Benzo[a]pyrene	50.0	50.2		ug/L		100	60 - 116
Benzo[b]fluoranthene	50.0	41.9		ug/L		84	61 - 119
Benzo[g,h,i]perylene	50.0	45.5		ug/L		91	54 - 120
Chrysene	50.0	47.4		ug/L		95	65 - 121
Fluorene	50.0	43.0		ug/L		86	56 - 115
Naphthalene	50.0	39.1		ug/L		78	51 - 102
Phenanthrene	50.0	43.4		ug/L		87	65 - 113
Pyrene	50.0	44.3		ug/L		89	65 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*78*		*44 - 102*
Nitrobenzene-d5 (Surr)	*78*		*23 - 128*
p-Terphenyl-d14 (Surr)	*90*		*31 - 113*

Lab Sample ID: LCSD 410-121223/3-A
Matrix: Water
Analysis Batch: 121650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 121223

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene	50.0	44.4		ug/L		89	61 - 117	0	30
Benzo[a]anthracene	50.0	50.9		ug/L		102	61 - 126	5	30
Benzo[a]pyrene	50.0	52.1		ug/L		104	60 - 116	4	30
Benzo[b]fluoranthene	50.0	42.8		ug/L		86	61 - 119	2	30
Benzo[g,h,i]perylene	50.0	46.8		ug/L		94	54 - 120	3	30
Chrysene	50.0	49.8		ug/L		100	65 - 121	5	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-121223/3-A
Matrix: Water
Analysis Batch: 121650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 121223

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluorene			50.0	43.9		ug/L		88	56 - 115	2	30
Naphthalene			50.0	40.8		ug/L		82	51 - 102	4	30
Phenanthrene			50.0	43.9		ug/L		88	65 - 113	1	30
Pyrene			50.0	45.9		ug/L		92	65 - 115	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*79*		*44 - 102*
Nitrobenzene-d5 (Surr)	*80*		*23 - 128*
p-Terphenyl-d14 (Surr)	*94*		*31 - 113*

Lab Sample ID: MB 410-121280/1-A
Matrix: Water
Analysis Batch: 122149

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 121280

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		05/01/21 01:14	05/04/21 11:19	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		05/01/21 01:14	05/04/21 11:19	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		05/01/21 01:14	05/04/21 11:19	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		05/01/21 01:14	05/04/21 11:19	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		05/01/21 01:14	05/04/21 11:19	1
Chrysene	ND		0.50	0.10	ug/L		05/01/21 01:14	05/04/21 11:19	1
Fluorene	ND		0.50	0.12	ug/L		05/01/21 01:14	05/04/21 11:19	1
Naphthalene	ND		0.50	0.10	ug/L		05/01/21 01:14	05/04/21 11:19	1
Phenanthrene	ND		0.50	0.11	ug/L		05/01/21 01:14	05/04/21 11:19	1
Pyrene	ND		0.50	0.10	ug/L		05/01/21 01:14	05/04/21 11:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*62*		*44 - 102*	*05/01/21 01:14*	*05/04/21 11:19*	*1*
Nitrobenzene-d5 (Surr)	*59*		*23 - 128*	*05/01/21 01:14*	*05/04/21 11:19*	*1*
p-Terphenyl-d14 (Surr)	*84*		*31 - 113*	*05/01/21 01:14*	*05/04/21 11:19*	*1*

Lab Sample ID: LCS 410-121280/2-A
Matrix: Water
Analysis Batch: 122149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 121280

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene			50.0	47.2		ug/L		94	61 - 117
Benzo[a]anthracene			50.0	48.5		ug/L		97	61 - 126
Benzo[a]pyrene			50.0	49.9		ug/L		100	60 - 116
Benzo[b]fluoranthene			50.0	46.2		ug/L		92	61 - 119
Benzo[g,h,i]perylene			50.0	54.3		ug/L		109	54 - 120
Chrysene			50.0	48.6		ug/L		97	65 - 121
Fluorene			50.0	44.4		ug/L		89	56 - 115
Naphthalene			50.0	41.1		ug/L		82	51 - 102
Phenanthrene			50.0	47.3		ug/L		95	65 - 113
Pyrene			50.0	47.8		ug/L		96	65 - 115

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-121280/2-A
Matrix: Water
Analysis Batch: 122149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 121280

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*75*		*44 - 102*
Nitrobenzene-d5 (Surr)	*75*		*23 - 128*
p-Terphenyl-d14 (Surr)	*94*		*31 - 113*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-119343/1-A
Matrix: Water
Analysis Batch: 119350

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119343

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 15:45	1
Ethene (1C)	ND		5.0	1.0	ug/L		04/27/21 07:33	04/27/21 15:45	1
Methane (1C)	ND		5.0	3.0	ug/L		04/27/21 07:33	04/27/21 15:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*		*28 - 140*	*04/27/21 07:33*	*04/27/21 15:45*	*1*

Lab Sample ID: LCS 410-119343/2-A
Matrix: Water
Analysis Batch: 119350

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119343

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	60.8		ug/L		102	85 - 115		
Ethene (1C)			60.4	62.0		ug/L		103	83 - 115		
Methane (1C)			59.4	62.3		ug/L		105	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*108*		*28 - 140*

Lab Sample ID: LCSD 410-119343/3-A
Matrix: Water
Analysis Batch: 119350

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 119343

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	58.8		ug/L		99	85 - 115	3	20
Ethene (1C)			60.4	59.2		ug/L		98	83 - 115	5	20
Methane (1C)			59.4	60.7		ug/L		102	85 - 115	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*104*		*28 - 140*

Lab Sample ID: MB 410-119931/1-A
Matrix: Water
Analysis Batch: 119938

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119931

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		04/28/21 08:13	04/28/21 08:47	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-119931/1-A
Matrix: Water
Analysis Batch: 119938

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119931

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethene (1C)	ND		5.0	1.0	ug/L		04/28/21 08:13	04/28/21 08:47	1
Methane (1C)	ND		5.0	3.0	ug/L		04/28/21 08:13	04/28/21 08:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 140*	*04/28/21 08:13*	*04/28/21 08:47*	*1*

Lab Sample ID: LCS 410-119931/2-A
Matrix: Water
Analysis Batch: 119938

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119931

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	60.6		ug/L		102	85 - 115		
Ethene (1C)			60.4	61.4		ug/L		102	83 - 115		
Methane (1C)			59.4	63.0		ug/L		106	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 140*

Lab Sample ID: LCSD 410-119931/3-A
Matrix: Water
Analysis Batch: 119938

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 119931

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	60.0		ug/L		101	85 - 115	1	20
Ethene (1C)			60.4	60.9		ug/L		101	83 - 115	1	20
Methane (1C)			59.4	62.7		ug/L		105	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*102*		*28 - 140*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-119637/1-A
Matrix: Water
Analysis Batch: 120004

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119637

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		04/27/21 16:35	04/28/21 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*90*		*46 - 136*	*04/27/21 16:35*	*04/28/21 10:55*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*86*		*46 - 136*	*04/27/21 16:35*	*04/28/21 10:55*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-119637/2-A
Matrix: Water
Analysis Batch: 120004

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119637

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.148		ug/L		116	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*92*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*87*		*46 - 136*

Lab Sample ID: LCSD 410-119637/3-A
Matrix: Water
Analysis Batch: 120004

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 119637

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.153		ug/L		120	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*79*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*78*		*46 - 136*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-120107/4
Matrix: Water
Analysis Batch: 120107

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1000	300	ug/L			04/29/21 02:30	1

Lab Sample ID: LCS 410-120107/3
Matrix: Water
Analysis Batch: 120107

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7500	7530		ug/L		100	90 - 110		

Lab Sample ID: MB 410-120349/4
Matrix: Water
Analysis Batch: 120349

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1000	300	ug/L			04/29/21 10:17	1

Lab Sample ID: LCS 410-120349/3
Matrix: Water
Analysis Batch: 120349

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			7500	7330		ug/L		98	90 - 110		

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-121172/4
Matrix: Water
Analysis Batch: 121172

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1000	300	ug/L			04/30/21 19:11	1

Lab Sample ID: LCS 410-121172/3
Matrix: Water
Analysis Batch: 121172

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	7500	7480		ug/L		100	90 - 110

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-119612/1-A
Matrix: Water
Analysis Batch: 121187

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 119612

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		500	96	ug/L		04/27/21 14:36	04/30/21 15:16	1
Iron	ND		200	40	ug/L		04/27/21 14:36	04/30/21 15:16	1

Lab Sample ID: LCS 410-119612/2-A
Matrix: Water
Analysis Batch: 121187

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 119612

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	400	451	J	ug/L		113	80 - 120
Iron	400	400		ug/L		100	80 - 120

Lab Sample ID: 410-37313-2 MS
Matrix: Water
Analysis Batch: 121187

Client Sample ID: S-394_20210423
Prep Type: Total Recoverable
Prep Batch: 119612

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	72000		400	73200	4	ug/L		249	75 - 125
Iron	31000		400	32800	4	ug/L		396	75 - 125

Lab Sample ID: 410-37313-2 MSD
Matrix: Water
Analysis Batch: 121187

Client Sample ID: S-394_20210423
Prep Type: Total Recoverable
Prep Batch: 119612

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	72000		400	72000	4	ug/L		-47	75 - 125	2	20
Iron	31000		400	32000	4	ug/L		187	75 - 125	3	20

Lab Sample ID: 410-37313-2 DU
Matrix: Water
Analysis Batch: 121187

Client Sample ID: S-394_20210423
Prep Type: Total Recoverable
Prep Batch: 119612

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Calcium	72000		77000		ug/L		7	20
Iron	31000		33800		ug/L		8	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-119714/1-A
Matrix: Water
Analysis Batch: 120100

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119714

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		04/27/21 18:26	04/28/21 10:49	1

Lab Sample ID: LCS 410-119714/2-A
Matrix: Water
Analysis Batch: 120100

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119714

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	30.0	30.4		ug/L		101	90 - 115

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-120654/22
Matrix: Water
Analysis Batch: 120654

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8000	8000	ug/L			04/28/21 18:41	1

Lab Sample ID: LCS 410-120654/25
Matrix: Water
Analysis Batch: 120654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189000	183000		ug/L		97	82 - 106

Method: 5310 B-2011 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 410-121032/4
Matrix: Water
Analysis Batch: 121032

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1000	500	ug/L			04/29/21 14:30	1

Lab Sample ID: LCS 410-121032/3
Matrix: Water
Analysis Batch: 121032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	25000	24300		ug/L		97	91 - 115

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-121341/5
Matrix: Water
Analysis Batch: 121341

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1000	500	ug/L			04/30/21 18:43	1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: LCS 410-121341/4
Matrix: Water
Analysis Batch: 121341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25000	25900		ug/L		104	91 - 113		

Lab Sample ID: MB 410-122812/5
Matrix: Water
Analysis Batch: 122812

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1000	500	ug/L			05/05/21 12:30	1

Lab Sample ID: LCS 410-122812/4
Matrix: Water
Analysis Batch: 122812

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25000	24500		ug/L		98	91 - 113		

Lab Sample ID: LCSD 410-122812/6
Matrix: Water
Analysis Batch: 122812

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon			25000	24300		ug/L		97	91 - 113	1	20

GC/MS VOA

Analysis Batch: 119662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-6	TB_20210426	Total/NA	Water	8260C/UST	
MB 410-119662/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-119662/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-119662/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 121085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	8260C/UST	
410-37313-1 - DL	MW-44_20210423	Total/NA	Water	8260C/UST	
410-37313-2	S-394_20210423	Total/NA	Water	8260C/UST	
410-37313-4	S-284D_20210423	Total/NA	Water	8260C/UST	
410-37313-5	FB_20210426	Total/NA	Water	8260C/UST	
MB 410-121085/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-121085/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-121085/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 122605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-3	OW-20_20210423	Total/NA	Water	8260C/UST	
MB 410-122605/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-122605/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-122605/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 120901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1 - DL	MW-44_20210423	Total/NA	Water	3510C	
410-37313-1	MW-44_20210423	Total/NA	Water	3510C	
MB 410-120901/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-120901/2-A	Lab Control Sample	Total/NA	Water	3510C	

Prep Batch: 121223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-2	S-394_20210423	Total/NA	Water	3510C	
410-37313-3	OW-20_20210423	Total/NA	Water	3510C	
410-37313-4	S-284D_20210423	Total/NA	Water	3510C	
MB 410-121223/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-121223/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-121223/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 121280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-5	FB_20210426	Total/NA	Water	3510C	
MB 410-121280/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-121280/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 121413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	8270D	120901
MB 410-120901/1-A	Method Blank	Total/NA	Water	8270D	120901

GC/MS Semi VOA (Continued)

Analysis Batch: 121413 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-120901/2-A	Lab Control Sample	Total/NA	Water	8270D	120901

Analysis Batch: 121650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-2	S-394_20210423	Total/NA	Water	8270D	121223
410-37313-3	OW-20_20210423	Total/NA	Water	8270D	121223
MB 410-121223/1-A	Method Blank	Total/NA	Water	8270D	121223
LCS 410-121223/2-A	Lab Control Sample	Total/NA	Water	8270D	121223
LCSD 410-121223/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	121223

Analysis Batch: 121996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-4	S-284D_20210423	Total/NA	Water	8270D	121223

Analysis Batch: 122149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-5	FB_20210426	Total/NA	Water	8270D	121280
MB 410-121280/1-A	Method Blank	Total/NA	Water	8270D	121280
LCS 410-121280/2-A	Lab Control Sample	Total/NA	Water	8270D	121280

Analysis Batch: 123874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1 - DL	MW-44_20210423	Total/NA	Water	8270D	120901

GC VOA

Prep Batch: 119343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	RSK-175	
410-37313-2	S-394_20210423	Total/NA	Water	RSK-175	
410-37313-3	OW-20_20210423	Total/NA	Water	RSK-175	
410-37313-4	S-284D_20210423	Total/NA	Water	RSK-175	
410-37313-5	FB_20210426	Total/NA	Water	RSK-175	
MB 410-119343/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-119343/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-119343/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 119350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	RSK-175	119343
410-37313-2	S-394_20210423	Total/NA	Water	RSK-175	119343
410-37313-3	OW-20_20210423	Total/NA	Water	RSK-175	119343
410-37313-4	S-284D_20210423	Total/NA	Water	RSK-175	119343
410-37313-5	FB_20210426	Total/NA	Water	RSK-175	119343
MB 410-119343/1-A	Method Blank	Total/NA	Water	RSK-175	119343
LCS 410-119343/2-A	Lab Control Sample	Total/NA	Water	RSK-175	119343
LCSD 410-119343/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	119343

Prep Batch: 119931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1 - DL	MW-44_20210423	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 119931 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-3 - DL	OW-20_20210423	Total/NA	Water	RSK-175	
MB 410-119931/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-119931/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-119931/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 119938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1 - DL	MW-44_20210423	Total/NA	Water	RSK-175	119931
410-37313-3 - DL	OW-20_20210423	Total/NA	Water	RSK-175	119931
MB 410-119931/1-A	Method Blank	Total/NA	Water	RSK-175	119931
LCS 410-119931/2-A	Lab Control Sample	Total/NA	Water	RSK-175	119931
LCSD 410-119931/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	119931

GC Semi VOA

Prep Batch: 119637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	8011	
410-37313-2	S-394_20210423	Total/NA	Water	8011	
410-37313-3	OW-20_20210423	Total/NA	Water	8011	
410-37313-4	S-284D_20210423	Total/NA	Water	8011	
410-37313-5	FB_20210426	Total/NA	Water	8011	
410-37313-6	TB_20210426	Total/NA	Water	8011	
MB 410-119637/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-119637/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-119637/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 120004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	8011	119637
410-37313-2	S-394_20210423	Total/NA	Water	8011	119637
410-37313-3	OW-20_20210423	Total/NA	Water	8011	119637
410-37313-4	S-284D_20210423	Total/NA	Water	8011	119637
410-37313-5	FB_20210426	Total/NA	Water	8011	119637
410-37313-6	TB_20210426	Total/NA	Water	8011	119637
MB 410-119637/1-A	Method Blank	Total/NA	Water	8011	119637
LCS 410-119637/2-A	Lab Control Sample	Total/NA	Water	8011	119637
LCSD 410-119637/3-A	Lab Control Sample Dup	Total/NA	Water	8011	119637

HPLC/IC

Analysis Batch: 120107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	EPA 300.0 R2.1	
410-37313-4	S-284D_20210423	Total/NA	Water	EPA 300.0 R2.1	
410-37313-5	FB_20210426	Total/NA	Water	EPA 300.0 R2.1	
MB 410-120107/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-120107/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 120349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-2	S-394_20210423	Total/NA	Water	EPA 300.0 R2.1	

HPLC/IC (Continued)

Analysis Batch: 120349 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-120349/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-120349/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 121172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-3	OW-20_20210423	Total/NA	Water	EPA 300.0 R2.1	
MB 410-121172/4	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-121172/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 119612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total Recoverable	Water	3005A	
410-37313-2	S-394_20210423	Total Recoverable	Water	3005A	
410-37313-3	OW-20_20210423	Total Recoverable	Water	3005A	
410-37313-4	S-284D_20210423	Total Recoverable	Water	3005A	
410-37313-5	FB_20210426	Total Recoverable	Water	3005A	
MB 410-119612/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-119612/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-37313-2 MS	S-394_20210423	Total Recoverable	Water	3005A	
410-37313-2 MSD	S-394_20210423	Total Recoverable	Water	3005A	
410-37313-2 DU	S-394_20210423	Total Recoverable	Water	3005A	

Prep Batch: 119714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Dissolved	Water	Non-Digest Prep	
410-37313-2	S-394_20210423	Dissolved	Water	Non-Digest Prep	
410-37313-3	OW-20_20210423	Dissolved	Water	Non-Digest Prep	
410-37313-4	S-284D_20210423	Dissolved	Water	Non-Digest Prep	
410-37313-5	FB_20210426	Dissolved	Water	Non-Digest Prep	
MB 410-119714/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-119714/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 120100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Dissolved	Water	6020A	119714
410-37313-2	S-394_20210423	Dissolved	Water	6020A	119714
410-37313-3	OW-20_20210423	Dissolved	Water	6020A	119714
410-37313-4	S-284D_20210423	Dissolved	Water	6020A	119714
410-37313-5	FB_20210426	Dissolved	Water	6020A	119714
MB 410-119714/1-A	Method Blank	Total/NA	Water	6020A	119714
LCS 410-119714/2-A	Lab Control Sample	Total/NA	Water	6020A	119714

Analysis Batch: 121187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total Recoverable	Water	6010C	119612
410-37313-2	S-394_20210423	Total Recoverable	Water	6010C	119612
410-37313-3	OW-20_20210423	Total Recoverable	Water	6010C	119612
410-37313-4	S-284D_20210423	Total Recoverable	Water	6010C	119612
410-37313-5	FB_20210426	Total Recoverable	Water	6010C	119612

Metals (Continued)

Analysis Batch: 121187 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-119612/1-A	Method Blank	Total Recoverable	Water	6010C	119612
LCS 410-119612/2-A	Lab Control Sample	Total Recoverable	Water	6010C	119612
410-37313-2 MS	S-394_20210423	Total Recoverable	Water	6010C	119612
410-37313-2 MSD	S-394_20210423	Total Recoverable	Water	6010C	119612
410-37313-2 DU	S-394_20210423	Total Recoverable	Water	6010C	119612

Analysis Batch: 123589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-3	OW-20_20210423	Total Recoverable	Water	6010C	119612

General Chemistry

Prep Batch: 119572

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	351.2	
410-37313-2	S-394_20210423	Total/NA	Water	351.2	
410-37313-3	OW-20_20210423	Total/NA	Water	351.2	
410-37313-4	S-284D_20210423	Total/NA	Water	351.2	
410-37313-5	FB_20210426	Total/NA	Water	351.2	

Analysis Batch: 120654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	2320B-2011	
410-37313-2	S-394_20210423	Total/NA	Water	2320B-2011	
410-37313-3	OW-20_20210423	Total/NA	Water	2320B-2011	
410-37313-4	S-284D_20210423	Total/NA	Water	2320B-2011	
410-37313-5	FB_20210426	Total/NA	Water	2320B-2011	
MB 410-120654/22	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-120654/25	Lab Control Sample	Total/NA	Water	2320B-2011	

Analysis Batch: 121032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	5310 B-2011	
410-37313-2	S-394_20210423	Total/NA	Water	5310 B-2011	
410-37313-3	OW-20_20210423	Total/NA	Water	5310 B-2011	
410-37313-4	S-284D_20210423	Total/NA	Water	5310 B-2011	
410-37313-5	FB_20210426	Total/NA	Water	5310 B-2011	
MB 410-121032/4	Method Blank	Total/NA	Water	5310 B-2011	
LCS 410-121032/3	Lab Control Sample	Total/NA	Water	5310 B-2011	

Analysis Batch: 121341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	5310C-2011	
410-37313-3	OW-20_20210423	Total/NA	Water	5310C-2011	
410-37313-4	S-284D_20210423	Total/NA	Water	5310C-2011	
410-37313-5	FB_20210426	Total/NA	Water	5310C-2011	
MB 410-121341/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-121341/4	Lab Control Sample	Total/NA	Water	5310C-2011	

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

General Chemistry

Analysis Batch: 122713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	SM5310C	
410-37313-2	S-394_20210423	Total/NA	Water	SM5310C	
410-37313-3	OW-20_20210423	Total/NA	Water	SM5310C	
410-37313-4	S-284D_20210423	Total/NA	Water	SM5310C	
410-37313-5	FB_20210426	Total/NA	Water	SM5310C	

Analysis Batch: 122812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-2	S-394_20210423	Total/NA	Water	5310C-2011	
MB 410-122812/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-122812/4	Lab Control Sample	Total/NA	Water	5310C-2011	
LCSD 410-122812/6	Lab Control Sample Dup	Total/NA	Water	5310C-2011	

Analysis Batch: 122847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-37313-1	MW-44_20210423	Total/NA	Water	351.2	119572
410-37313-2	S-394_20210423	Total/NA	Water	351.2	119572
410-37313-3	OW-20_20210423	Total/NA	Water	351.2	119572
410-37313-4	S-284D_20210423	Total/NA	Water	351.2	119572
410-37313-5	FB_20210426	Total/NA	Water	351.2	119572

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Client Sample ID: MW-44_20210423

Lab Sample ID: 410-37313-1

Date Collected: 04/23/21 08:40

Matrix: Water

Date Received: 04/26/21 15:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		10	121085	04/30/21 22:05	USEJ	ELLE
Total/NA	Analysis	8260C/UST	DL	100	121085	04/30/21 22:29	USEJ	ELLE
Total/NA	Prep	3510C			120901	04/30/21 09:55	QTH7	ELLE
Total/NA	Analysis	8270D		1	121413	05/02/21 20:27	W6XI	ELLE
Total/NA	Prep	3510C	DL		120901	04/30/21 09:55	QTH7	ELLE
Total/NA	Analysis	8270D	DL	10	123874	05/07/21 19:37	SJ89	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 18:33	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		119931	04/28/21 08:13	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	100	119938	04/28/21 12:37	LXF2	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 16:01	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		10	120107	04/29/21 04:10	GJ35	ELLE
Total Recoverable	Prep	3005A			119612	04/27/21 14:36	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121187	04/30/21 16:18	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			119714	04/27/21 18:26	UJLA	ELLE
Dissolved	Analysis	6020A		1	120100	04/28/21 11:15	S4PD	ELLE
Total/NA	Analysis	2320B-2011		1	120654	04/28/21 20:01	DI9Q	ELLE
Total/NA	Prep	351.2			119572	04/27/21 13:27	F8AU	ELLE
Total/NA	Analysis	351.2		10	122847	05/05/21 10:59	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	121032	04/29/21 15:55	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		5	121341	05/01/21 00:45	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: S-394_20210423

Lab Sample ID: 410-37313-2

Date Collected: 04/23/21 10:00

Matrix: Water

Date Received: 04/26/21 15:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	121085	04/30/21 19:40	USEJ	ELLE
Total/NA	Prep	3510C			121223	04/30/21 18:49	K2IL	ELLE
Total/NA	Analysis	8270D		1	121650	05/03/21 22:55	WKV3	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 18:52	LXF2	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 16:18	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		50	120349	04/29/21 13:48	W5UX	ELLE
Total Recoverable	Prep	3005A			119612	04/27/21 14:36	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121187	04/30/21 15:22	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			119714	04/27/21 18:26	UJLA	ELLE
Dissolved	Analysis	6020A		1	120100	04/28/21 11:19	S4PD	ELLE
Total/NA	Analysis	2320B-2011		1	120654	04/28/21 20:23	DI9Q	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Client Sample ID: S-394_20210423
Date Collected: 04/23/21 10:00
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			119572	04/27/21 13:27	F8AU	ELLE
Total/NA	Analysis	351.2		1	122847	05/05/21 10:17	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	121032	04/29/21 16:28	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	122812	05/05/21 13:12	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: OW-20_20210423
Date Collected: 04/23/21 12:00
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1000	122605	05/05/21 15:33	USEJ	ELLE
Total/NA	Prep	3510C			121223	04/30/21 18:49	K2IL	ELLE
Total/NA	Analysis	8270D		10	121650	05/03/21 23:24	WKV3	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 19:10	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		119931	04/28/21 08:13	LXF2	ELLE
Total/NA	Analysis	RSK-175	DL	50	119938	04/28/21 12:56	LXF2	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 16:35	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	121172	04/30/21 20:35	GJ35	ELLE
Total Recoverable	Prep	3005A			119612	04/27/21 14:36	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121187	04/30/21 16:21	MDP5	ELLE
Total Recoverable	Prep	3005A			119612	04/27/21 14:36	UJLA	ELLE
Total Recoverable	Analysis	6010C		20	123589	05/06/21 22:53	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			119714	04/27/21 18:26	UJLA	ELLE
Dissolved	Analysis	6020A		1	120100	04/28/21 11:07	S4PD	ELLE
Total/NA	Analysis	2320B-2011		1	120654	04/28/21 20:17	DI9Q	ELLE
Total/NA	Prep	351.2			119572	04/27/21 13:27	F8AU	ELLE
Total/NA	Analysis	351.2		20	122847	05/05/21 10:15	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		50	121032	04/29/21 16:39	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		10	121341	05/01/21 01:13	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: S-284D_20210423
Date Collected: 04/23/21 13:50
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	121085	04/30/21 20:04	USEJ	ELLE
Total/NA	Prep	3510C			121223	04/30/21 18:49	K2IL	ELLE
Total/NA	Analysis	8270D		1	121996	05/04/21 14:27	W6XI	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 19:29	LXF2	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Client Sample ID: S-284D_20210423

Lab Sample ID: 410-37313-4

Date Collected: 04/23/21 13:50

Matrix: Water

Date Received: 04/26/21 15:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 16:52	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		5	120107	04/29/21 04:43	GJ35	ELLE
Total Recoverable	Prep	3005A			119612	04/27/21 14:36	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121187	04/30/21 16:12	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			119714	04/27/21 18:26	UJLA	ELLE
Dissolved	Analysis	6020A		1	120100	04/28/21 11:21	S4PD	ELLE
Total/NA	Analysis	2320B-2011		1	120654	04/28/21 20:30	DI9Q	ELLE
Total/NA	Prep	351.2			119572	04/27/21 13:27	F8AU	ELLE
Total/NA	Analysis	351.2		10	122847	05/05/21 10:21	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	121032	04/29/21 16:49	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	121341	04/30/21 23:06	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: FB_20210426

Lab Sample ID: 410-37313-5

Date Collected: 04/26/21 09:00

Matrix: Water

Date Received: 04/26/21 15:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	121085	04/30/21 14:27	USEJ	ELLE
Total/NA	Prep	3510C			121280	05/01/21 01:14	UKQ8	ELLE
Total/NA	Analysis	8270D		1	122149	05/04/21 13:19	SJ89	ELLE
Total/NA	Prep	RSK-175			119343	04/27/21 07:33	LXF2	ELLE
Total/NA	Analysis	RSK-175		1	119350	04/27/21 19:48	LXF2	ELLE
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 17:09	UAMZ	ELLE
Total/NA	Analysis	EPA 300.0 R2.1		1	120107	04/29/21 06:55	GJ35	ELLE
Total Recoverable	Prep	3005A			119612	04/27/21 14:36	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	121187	04/30/21 16:00	MDP5	ELLE
Dissolved	Prep	Non-Digest Prep			119714	04/27/21 18:26	UJLA	ELLE
Dissolved	Analysis	6020A		1	120100	04/28/21 11:17	S4PD	ELLE
Total/NA	Analysis	2320B-2011		1	120654	04/28/21 20:37	DI9Q	ELLE
Total/NA	Prep	351.2			119572	04/27/21 13:27	F8AU	ELLE
Total/NA	Analysis	351.2		1	122847	05/05/21 10:38	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		1	121032	04/29/21 17:00	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	121341	04/30/21 23:20	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	122713	05/05/21 10:15	KGQ6	ELLE

Client Sample ID: TB_20210426

Lab Sample ID: 410-37313-6

Date Collected: 04/12/21 00:00

Matrix: Water

Date Received: 04/26/21 15:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	119662	04/27/21 21:12	HDS6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Client Sample ID: TB_20210426

Date Collected: 04/12/21 00:00
Date Received: 04/26/21 15:32

Lab Sample ID: 410-37313-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8011			119637	04/27/21 16:35	QQ3P	ELLE
Total/NA	Analysis	8011		1	120004	04/28/21 17:26	UAMZ	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-37313-1
Project/Site: Former PES Annual GWS

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310 B-2011		Water	Total Carbon
SM5310C		Water	Total Inorganic Carbon

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Method	Method Description	Protocol	Laboratory
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
5310 B-2011	Carbon, Total and Total Inorganic	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
SM5310C	Carbon, Total Inorganic	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Former PES Annual GWS

Job ID: 410-37313-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-37313-1	MW-44_20210423	Water	04/23/21 08:40	04/26/21 15:32	
410-37313-2	S-394_20210423	Water	04/23/21 10:00	04/26/21 15:32	
410-37313-3	OW-20_20210423	Water	04/23/21 12:00	04/26/21 15:32	
410-37313-4	S-284D_20210423	Water	04/23/21 13:50	04/26/21 15:32	
410-37313-5	FB_20210426	Water	04/26/21 09:00	04/26/21 15:32	
410-37313-6	TB_20210426	Water	04/12/21 00:00	04/26/21 15:32	

En sis Request/Chain of Custody

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410-37313-01 Chain of Custody

Sample #

Client: Evergreen c/o Stantec			
Project Name/#: Former PES Annual GWS	Site ID #: 16657		
Project Manager: Andrew Bradley	P.O. #: 213403363		
Sampler: Dane Hopkins, Andrea Hill	PWSID #:		
Phone #: 610.840.2541	Quote #:		
State where sample(s) were collected: PA			

Matrix: Soil ☐ Sediment ☐ | Water ☑ Potable ☐ Ground ☐ NPDES ☐ Surface ☐ | Other: ☐ Trip Blank / Field Blank ☐

Analyses Requested — Preservation Codes

For Lab Use Only: SF #: _____ SCR #: _____

Sample Identification	Collection Date	Collection Time	Grab	Composite	Total # of Containers	Evergreen Petroleum Short List (refer to attached list of analytes)	Dissolved Lead (field filtered)	Total Inorganic Carbon (TIC)	Sulfate	Dissolved Headspace Gases (methane, ethane, ethene)	Total Iron	Total Calcium	Total Kjeldahl Nitrogen (TKN)	Alkalinity as CaCO3	VOC 8260 / EDB 8011	Remarks
						H / NP	N	P/NP	NP	H	N	N	S	NP	H	
MW-44_20210423	4/23/2021	8:40	X		18	X	X	X	X	X	X	X	X	X		
S-394_20210423	4/23/2021	10:00	X		18	X	X	X	X	X	X	X	X	X		
OW-20_202104223	4/23/2021	12:00	X		18	X	X	X	X	X	X	X	X	X		
S-284D_20210423	4/23/2021	13:50	X		18	X	X	X	X	X	X	X	X	X		
FB_20210426	4/26/2021	9:00	X		18	X	X	X	X	X	X	X	X	X		Field Blank
TB_20220426	4/12/2021	--	X		4										X	Trip Blank

Preservation Codes: H = HCl; T = Thiosulfate; N = HNO_3; B = NaOH; S = H_2SO_4; P = H_3PO_4; O = Other; NP = Non-Preserved

Turnaround Time Requested (TAT) (please check): Standard ☑ Rush ☐
(Rush TAT is subject to laboratory approval and surcharges.)

Date results are needed:

Rush results requested by (please check): E-Mail ☑ Phone ☐

E-mail Address: abradley@stantec.com

Phone: 610.840.2541

Data Package Options (please check if required)

Type I (Validation/non-CLP) ☐ MA MCP ☐
Type III (Reduced non-CLP) ☐ CT RCP ☐
Type IV (CLP SOW) ☐ TX TRRP-13 ☐
Type VI (Raw Data Only) ☐

EDD Required? Yes ☑ No ☐ If yes, format: EQUIS

Relinquished by:	Date	Time	Received by:	Date	Time
	4/20/21	1250		4/26/21	1250
	4/26	1445		Date	Time
	Date	Time		Date	Time
	Date	Time		Date	Time
	Date	Time		Date	Time

Relinquished by Commercial Carrier:

UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.7-2.4 °C

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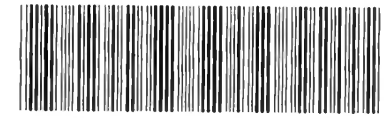
7045 0713



Evergreen Petroleum Short List (June 2016)

VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7

SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(b)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0

Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1

*Ethylene Dibromide (EDB) should be analyzed by Method 8011 instead of 8260 in soil for tank investigations and in **all groundwater samples**. EDB in all trip blank samples should be analyzed by 8260 regardless of method used for primary samples.

**Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

***Metals analysis should be total in soil and dissolved in groundwater.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-37313-1

Login Number: 37313 **List Source: Eurofins Lancaster Laboratories Env, LLC**
List Number: 1
Creator: Jeremiah, Cory T

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-60816-1
Client Project/Site: Belmont Terminal GW Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Jenny Kachel

Authorized for release by:
11/11/2021 9:37:59 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
11/11/2021 9:37:59 AM

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
!	Laboratory is not accredited for this parameter.
FL	MS and/or MSD recovery below control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-60816-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-60816-1

Receipt
The samples were received on 10/27/2021 5:29 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 4.3°C, 7.6°C and 8.3°C

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: S-454_20211026 (410-60816-1), MW-38_20211026 (410-60816-2), S-458_20211026 (410-60816-3), S-459_20211026 (410-60816-4), S-460_20211026 (410-60816-5), S-467_20211026 (410-60816-6) and TB21288 (410-60816-10). The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

The following samples were received inside the acceptable temperature criteria

S-394_20211026 (410-60816-7), S-468_20211026 (410-60816-8) and S-462_20211026 (410-60816-9)

One Amber 40 mL vial was received without a completed container label on it.

MW-38_20211026 (410-60816-2)

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: The following samples were diluted due to high conductivity: S-454_20211026 (410-60816-1), MW-38_20211026 (410-60816-2), S-458_20211026 (410-60816-3) and S-459_20211026 (410-60816-4). Elevated reporting limits (RL) are provided.

Method 300_ORGFM_28D: The following sample was diluted due to the abundance of non-target analytes: S-467_20211026 (410-60816-6). Elevated reporting limits (RLs) are provided.

Method 300_ORGFM_28D: The following samples were diluted to bring the concentration of target analytes within the calibration range: S-460_20211026 (410-60816-5), S-394_20211026 (410-60816-7) and S-462_20211026 (410-60816-9). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6010C: The ending low level check standard (CRI) associated with batch 410-191651 was outside of acceptance criteria high. The reported results for the associated samples were above the continuing calibration verification (CCV). The results for the beginning CRI and the Laboratory Control Standard (LCS) were within acceptance criteria; therefore, the data including the LCS. have been reported.
Associated Samples: S-454_20211026 (410-60816-1), S-458_20211026 (410-60816-3), S-459_20211026 (410-60816-4), S-460_20211026 (410-60816-5), S-467_20211026 (410-60816-6), S-468_20211026 (410-60816-8) and S-462_20211026 (410-60816-9)

Job ID: 410-60816-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Client Sample ID: S-454_20211026 — Lab Sample ID: 410-60816-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tertiary butyl ether	0.74	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Naphthalene	0.12	J	0.52	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	3.9	J	5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	230		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	55	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	11		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.24	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	120		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	47	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	1.4		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	46	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: MW-38_20211026 — Lab Sample ID: 410-60816-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tertiary butyl ether	150		1.0	0.20	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	820		50	12	ug/L	1		8260C/UST	Total/NA
Pyrene	0.32	J	0.53	0.11	ug/L	1		8270D	Total/NA
Methane (1C) - DL	700		25	15	ug/L	5		RSK-175	Total/NA
Sulfate	53		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	96		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	5.2		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	390		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	110	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	6.2		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	100	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-458_20211026 — Lab Sample ID: 410-60816-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	560		5.0	1.5	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	2.1	J	25	1.5	ug/L	5		8260C/UST	Total/NA
Methane (1C)	40		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	110		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	110	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	2.5		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	370		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	93	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	2.4		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	91	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-459_20211026 — Lab Sample ID: 410-60816-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	2.9		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,2-Dichloroethane	0.62	J	1.0	0.30	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	2.8	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
Methyl tertiary butyl ether	0.40	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: S-459_20211026 (Continued)

Lab Sample ID: 410-60816-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.3		1.0	0.30	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	6.6		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	1.3	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	120		50	12	ug/L	1		8260C/UST	Total/NA
Naphthalene	1.4		0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.78		0.51	0.12	ug/L	1		8270D	Total/NA
Phenanthrene	0.43	J	0.51	0.11	ug/L	1		8270D	Total/NA
Anthracene	0.11	J	0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	40		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	240		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	54	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	37		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	130		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	59	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	4.7		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	54	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-460_20211026

Lab Sample ID: 410-60816-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3,5-Trimethylbenzene	1.3	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
Methyl tertiary butyl ether	0.31	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	2.4		1.0	0.30	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	51		50	12	ug/L	1		8260C/UST	Total/NA
Naphthalene	0.11	J	0.50	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.87		0.50	0.12	ug/L	1		8270D	Total/NA
Phenanthrene	1.5		0.50	0.11	ug/L	1		8270D	Total/NA
Anthracene	0.31	J	0.50	0.10	ug/L	1		8270D	Total/NA
Pyrene	0.11	J	0.50	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	27		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	280		10	3.7	mg/L	10		300.0	Total/NA
Calcium	49	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	46		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	100		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.66	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	44	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	2.3		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	42	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-467_20211026

Lab Sample ID: 410-60816-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	33		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	29		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	21		1.0	0.30	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	51		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tertiary butyl ether	160		1.0	0.20	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	39		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	87		5.0	0.30	ug/L	1		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-467_20211026 (Continued)

Lab Sample ID: 410-60816-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
t-Butyl alcohol	900		50	12	ug/L	1		8260C/UST	Total/NA
Benzene - DL	500		10	3.0	ug/L	10		8260C/UST	Total/NA
Naphthalene	86		0.53	0.11	ug/L	1		8270D	Total/NA
Fluorene	15		0.53	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	13		0.53	0.12	ug/L	1		8270D	Total/NA
Anthracene	2.5		0.53	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.85		0.53	0.11	ug/L	1		8270D	Total/NA
Ethane (1C)	3.2	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	16000		500	300	ug/L	100		RSK-175	Total/NA
Calcium	39	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	53		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.45	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	180		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	4.9		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	72	!	25	13	mg/L	25		5310 B-2011	Total/NA
Total Organic Carbon	19		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	53	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-394_20211026

Lab Sample ID: 410-60816-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.21	J	0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.35	J	0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.27	J	0.52	0.11	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.34	J	0.52	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.56		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.13	J	0.52	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.40	J	0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.63		0.52	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	10		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	370		10	3.7	mg/L	10		300.0	Total/NA
Calcium	68		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	25		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.082	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	100		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.57	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	58	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	5.2		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	53	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-468_20211026

Lab Sample ID: 410-60816-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	370		5.0	2.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	76		25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	17		5.0	1.5	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	170		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	10		5.0	1.0	ug/L	5		8260C/UST	Total/NA
Benzene	360		5.0	1.5	ug/L	5		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-468_20211026 (Continued)

Lab Sample ID: 410-60816-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	260		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	130		25	1.5	ug/L	5		8260C/UST	Total/NA
Fluorene	63		0.54	0.13	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.65		0.54	0.11	ug/L	1		8270D	Total/NA
Phenanthrene	76		0.54	0.12	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	1.7		0.54	0.12	ug/L	1		8270D	Total/NA
Anthracene	13		0.54	0.11	ug/L	1		8270D	Total/NA
Pyrene	11		0.54	0.11	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	3.1		0.54	0.11	ug/L	1		8270D	Total/NA
Chrysene	3.2		0.54	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	2.0		0.54	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	2400		27	5.4	ug/L	50		8270D	Total/NA
Ethane (1C)	1.9	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	19000		1000	600	ug/L	200		RSK-175	Total/NA
Calcium	53	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	67		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	170		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	5.8		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	71	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	15		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	56	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-462_20211026

Lab Sample ID: 410-60816-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.35	J	0.66	0.13	ug/L	1		8270D	Total/NA
Methane (1C)	8.6		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	280		10	3.7	mg/L	10		300.0	Total/NA
Calcium	96	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	41		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	160		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.75	J FL	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	49	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	2.5		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	47	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: TB21288

Lab Sample ID: 410-60816-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-454_20211026
Date Collected: 10/26/21 10:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-1
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/03/21 14:40	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 14:40	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/03/21 14:40	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 14:40	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 14:40	1
Methyl tertiary butyl ether	**0.74**	**J**	1.0	0.20	ug/L			11/03/21 14:40	1
Benzene	ND		1.0	0.30	ug/L			11/03/21 14:40	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/03/21 14:40	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/03/21 14:40	1
t-Butyl alcohol	ND		50	12	ug/L			11/03/21 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/03/21 14:40*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/03/21 14:40*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*11/03/21 14:40*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/03/21 14:40*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**0.12**	**J**	0.52	0.10	ug/L		11/02/21 10:57	11/02/21 23:20	1
Fluorene	ND		0.52	0.12	ug/L		11/02/21 10:57	11/02/21 23:20	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		11/02/21 10:57	11/02/21 23:20	1
Phenanthrene	ND		0.52	0.11	ug/L		11/02/21 10:57	11/02/21 23:20	1
Benzo[a]pyrene	ND		0.52	0.11	ug/L		11/02/21 10:57	11/02/21 23:20	1
Anthracene	ND		0.52	0.10	ug/L		11/02/21 10:57	11/02/21 23:20	1
Pyrene	ND		0.52	0.10	ug/L		11/02/21 10:57	11/02/21 23:20	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		11/02/21 10:57	11/02/21 23:20	1
Chrysene	ND		0.52	0.10	ug/L		11/02/21 10:57	11/02/21 23:20	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		11/02/21 10:57	11/02/21 23:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*91*		*35 - 100*	*11/02/21 10:57*	*11/02/21 23:20*	*1*
Nitrobenzene-d5 (Surr)	*94*		*22 - 117*	*11/02/21 10:57*	*11/02/21 23:20*	*1*
p-Terphenyl-d14 (Surr)	*67*		*31 - 119*	*11/02/21 10:57*	*11/02/21 23:20*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 22:14	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 22:14	1
Methane (1C)	**3.9**	**J**	5.0	3.0	ug/L		11/02/21 10:52	11/02/21 22:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*74*		*28 - 130*	*11/02/21 10:52*	*11/02/21 22:14*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/06/21 04:07	11/06/21 13:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*86*		*46 - 136*	*11/06/21 04:07*	*11/06/21 13:35*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*11/06/21 04:07*	*11/06/21 13:35*	*1*

Client Sample ID: S-454_20211026 — Lab Sample ID: 410-60816-1

Date Collected: 10/26/21 10:00 — **Matrix: Water**
Date Received: 10/27/21 17:29

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**230**		5.0	1.9	mg/L			11/02/21 22:35	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**55**	**^3+**	0.50	0.096	mg/L		11/04/21 16:02	11/06/21 14:46	1
Iron	**11**		0.20	0.040	mg/L		11/04/21 16:02	11/06/21 14:46	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.24**	**J**	0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**120**		8.0	8.0	mg/L			11/04/21 21:57	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/08/21 11:24	11/09/21 10:54	1
Total Carbon	**47**	**!**	5.0	2.5	mg/L			11/05/21 18:13	5
Total Organic Carbon	**1.4**		1.0	0.50	mg/L			11/04/21 04:32	1
Total Inorganic Carbon	**46**	**!**	2.0	0.60	mg/L			11/06/21 12:56	1

Client Sample ID: MW-38_20211026 — Lab Sample ID: 410-60816-2

Date Collected: 10/26/21 10:00 — **Matrix: Water**
Date Received: 10/27/21 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/03/21 15:07	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 15:07	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/03/21 15:07	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 15:07	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 15:07	1
Methyl tertiary butyl ether	**150**		1.0	0.20	ug/L			11/03/21 15:07	1
Benzene	ND		1.0	0.30	ug/L			11/03/21 15:07	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/03/21 15:07	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/03/21 15:07	1
t-Butyl alcohol	**820**		50	12	ug/L			11/03/21 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/03/21 15:07*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/03/21 15:07*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/03/21 15:07*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/03/21 15:07*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 00:50	1
Fluorene	ND		0.53	0.13	ug/L		11/02/21 10:57	11/03/21 00:50	1
Benzo[g,h,i]perylene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 00:50	1
Phenanthrene	ND		0.53	0.12	ug/L		11/02/21 10:57	11/03/21 00:50	1
Benzo[a]pyrene	ND		0.53	0.12	ug/L		11/02/21 10:57	11/03/21 00:50	1
Anthracene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 00:50	1

Client Sample ID: MW-38_20211026
Date Collected: 10/26/21 10:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-2
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	**0.32**	**J**	0.53	0.11	ug/L		11/02/21 10:57	11/03/21 00:50	1
Benzo[a]anthracene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 00:50	1
Chrysene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 00:50	1
Benzo[b]fluoranthene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 00:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*88*		*35 - 100*	*11/02/21 10:57*	*11/03/21 00:50*	*1*
Nitrobenzene-d5 (Surr)	*93*		*22 - 117*	*11/02/21 10:57*	*11/03/21 00:50*	*1*
p-Terphenyl-d14 (Surr)	*87*		*31 - 119*	*11/02/21 10:57*	*11/03/21 00:50*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 22:31	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 22:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 130*	*11/02/21 10:52*	*11/02/21 22:31*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**700**		25	15	ug/L		11/03/21 10:29	11/03/21 18:47	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*87*		*28 - 130*	*11/03/21 10:29*	*11/03/21 18:47*	*5*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/06/21 04:07	11/06/21 13:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*87*		*46 - 136*	*11/06/21 04:07*	*11/06/21 13:52*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*108*		*46 - 136*	*11/06/21 04:07*	*11/06/21 13:52*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**53**		5.0	1.9	mg/L			11/02/21 23:00	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**96**		0.50	0.096	mg/L		11/04/21 16:04	11/06/21 17:18	1
Iron	**5.2**		0.20	0.040	mg/L		11/04/21 16:04	11/06/21 17:18	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**390**		8.0	8.0	mg/L			11/04/21 22:17	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/08/21 11:24	11/09/21 10:56	1
Total Carbon	**110**	**!**	5.0	2.5	mg/L			11/05/21 18:45	5

Client Sample ID: MW-38_20211026

Lab Sample ID: 410-60816-2

Date Collected: 10/26/21 10:00

Matrix: Water

Date Received: 10/27/21 17:29

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**6.2**		1.0	0.50	mg/L			11/04/21 06:10	1
Total Inorganic Carbon	**100**	!	2.0	0.60	mg/L			11/06/21 12:56	1

Client Sample ID: S-458_20211026

Lab Sample ID: 410-60816-3

Date Collected: 10/26/21 11:10

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	2.0	ug/L			11/03/21 20:44	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			11/03/21 20:44	5
1,3,5-Trimethylbenzene	ND		25	1.5	ug/L			11/03/21 20:44	5
Toluene	ND		5.0	1.5	ug/L			11/03/21 20:44	5
Xylenes, Total	ND		30	7.0	ug/L			11/03/21 20:44	5
Methyl tertiary butyl ether	ND		5.0	1.0	ug/L			11/03/21 20:44	5
Benzene	**560**		5.0	1.5	ug/L			11/03/21 20:44	5
1,2,4-Trimethylbenzene	ND		25	5.0	ug/L			11/03/21 20:44	5
Isopropylbenzene	**2.1**	J	25	1.5	ug/L			11/03/21 20:44	5
t-Butyl alcohol	ND		250	60	ug/L			11/03/21 20:44	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/03/21 20:44*	*5*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/03/21 20:44*	*5*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/03/21 20:44*	*5*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/03/21 20:44*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:20	1
Fluorene	ND		0.51	0.12	ug/L		11/02/21 10:57	11/03/21 01:20	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:20	1
Phenanthrene	ND		0.51	0.11	ug/L		11/02/21 10:57	11/03/21 01:20	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		11/02/21 10:57	11/03/21 01:20	1
Anthracene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:20	1
Pyrene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:20	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:20	1
Chrysene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:20	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*90*		*35 - 100*	*11/02/21 10:57*	*11/03/21 01:20*	*1*
Nitrobenzene-d5 (Surr)	*91*		*22 - 117*	*11/02/21 10:57*	*11/03/21 01:20*	*1*
p-Terphenyl-d14 (Surr)	*88*		*31 - 119*	*11/02/21 10:57*	*11/03/21 01:20*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 22:48	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 22:48	1
Methane (1C)	**40**		5.0	3.0	ug/L		11/02/21 10:52	11/02/21 22:48	1

Client Sample ID: S-458_20211026

Date Collected: 10/26/21 11:10
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*81*		*28 - 130*	*11/02/21 10:52*	*11/02/21 22:48*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		11/06/21 04:07	11/06/21 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*86*		*46 - 136*	*11/06/21 04:07*	*11/06/21 14:09*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*109*		*46 - 136*	*11/06/21 04:07*	*11/06/21 14:09*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**110**		5.0	1.9	mg/L			11/02/21 23:25	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**	**^3+**	0.50	0.096	mg/L		11/04/21 16:02	11/06/21 14:36	1
Iron	**2.5**		0.20	0.040	mg/L		11/04/21 16:02	11/06/21 14:36	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**370**		8.0	8.0	mg/L			11/04/21 22:39	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/08/21 11:24	11/09/21 11:02	1
Total Carbon	**93**	**!**	5.0	2.5	mg/L			11/05/21 18:56	5
Total Organic Carbon	**2.4**		1.0	0.50	mg/L			11/04/21 06:27	1
Total Inorganic Carbon	**91**	**!**	2.0	0.60	mg/L			11/06/21 12:56	1

Client Sample ID: S-459_20211026

Date Collected: 10/26/21 11:10
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-4

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**2.9**		1.0	0.40	ug/L			11/03/21 15:33	1
1,2-Dichloroethane	**0.62**	**J**	1.0	0.30	ug/L			11/03/21 15:33	1
1,3,5-Trimethylbenzene	**2.8**	**J**	5.0	0.30	ug/L			11/03/21 15:33	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 15:33	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 15:33	1
Methyl tertiary butyl ether	**0.40**	**J**	1.0	0.20	ug/L			11/03/21 15:33	1
Benzene	**2.3**		1.0	0.30	ug/L			11/03/21 15:33	1
1,2,4-Trimethylbenzene	**6.6**		5.0	1.0	ug/L			11/03/21 15:33	1
Isopropylbenzene	**1.3**	**J**	5.0	0.30	ug/L			11/03/21 15:33	1
t-Butyl alcohol	**120**		50	12	ug/L			11/03/21 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/03/21 15:33*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/03/21 15:33*	*1*

Client Sample ID: S-459_20211026
Date Collected: 10/26/21 11:10
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-4
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/03/21 15:33*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/03/21 15:33*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**1.4**		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:51	1
Fluorene	**0.78**		0.51	0.12	ug/L		11/02/21 10:57	11/03/21 01:51	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:51	1
Phenanthrene	**0.43**	**J**	0.51	0.11	ug/L		11/02/21 10:57	11/03/21 01:51	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		11/02/21 10:57	11/03/21 01:51	1
Anthracene	**0.11**	**J**	0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:51	1
Pyrene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:51	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:51	1
Chrysene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:51	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		11/02/21 10:57	11/03/21 01:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*88*		*35 - 100*	*11/02/21 10:57*	*11/03/21 01:51*	*1*
Nitrobenzene-d5 (Surr)	*34*		*22 - 117*	*11/02/21 10:57*	*11/03/21 01:51*	*1*
p-Terphenyl-d14 (Surr)	*91*		*31 - 119*	*11/02/21 10:57*	*11/03/21 01:51*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 23:05	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 23:05	1
Methane (1C)	**40**		5.0	3.0	ug/L		11/02/21 10:52	11/02/21 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 130*	*11/02/21 10:52*	*11/02/21 23:05*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/06/21 04:07	11/06/21 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*	*11/06/21 04:07*	*11/06/21 14:26*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*110*		*46 - 136*	*11/06/21 04:07*	*11/06/21 14:26*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**240**		5.0	1.9	mg/L			11/02/21 23:49	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**54**	**^3+**	0.50	0.096	mg/L		11/04/21 16:02	11/06/21 14:40	1
Iron	**37**		0.20	0.040	mg/L		11/04/21 16:02	11/06/21 14:40	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:12	1

Client Sample ID: S-459_20211026
Lab Sample ID: 410-60816-4

Date Collected: 10/26/21 11:10
Matrix: Water
Date Received: 10/27/21 17:29

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**130**		8.0	8.0	mg/L			11/05/21 04:25	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/08/21 11:24	11/09/21 11:04	1
Total Carbon	**59**	**!**	5.0	2.5	mg/L			11/05/21 19:07	5
Total Organic Carbon	**4.7**		1.0	0.50	mg/L			11/04/21 06:43	1
Total Inorganic Carbon	**54**	**!**	2.0	0.60	mg/L			11/06/21 12:56	1

Client Sample ID: S-460_20211026
Lab Sample ID: 410-60816-5

Date Collected: 10/26/21 12:05
Matrix: Water
Date Received: 10/27/21 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/03/21 15:58	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 15:58	1
1,3,5-Trimethylbenzene	**1.3**	**J**	5.0	0.30	ug/L			11/03/21 15:58	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 15:58	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 15:58	1
Methyl tertiary butyl ether	**0.31**	**J**	1.0	0.20	ug/L			11/03/21 15:58	1
Benzene	**2.4**		1.0	0.30	ug/L			11/03/21 15:58	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/03/21 15:58	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/03/21 15:58	1
t-Butyl alcohol	**51**		50	12	ug/L			11/03/21 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/03/21 15:58*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/03/21 15:58*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/03/21 15:58*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/03/21 15:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**0.11**	**J**	0.50	0.10	ug/L		11/02/21 10:57	11/03/21 02:21	1
Fluorene	**0.87**		0.50	0.12	ug/L		11/02/21 10:57	11/03/21 02:21	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/03/21 02:21	1
Phenanthrene	**1.5**		0.50	0.11	ug/L		11/02/21 10:57	11/03/21 02:21	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		11/02/21 10:57	11/03/21 02:21	1
Anthracene	**0.31**	**J**	0.50	0.10	ug/L		11/02/21 10:57	11/03/21 02:21	1
Pyrene	**0.11**	**J**	0.50	0.10	ug/L		11/02/21 10:57	11/03/21 02:21	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/03/21 02:21	1
Chrysene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/03/21 02:21	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/03/21 02:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*90*		*35 - 100*	*11/02/21 10:57*	*11/03/21 02:21*	*1*
Nitrobenzene-d5 (Surr)	*62*		*22 - 117*	*11/02/21 10:57*	*11/03/21 02:21*	*1*
p-Terphenyl-d14 (Surr)	*89*		*31 - 119*	*11/02/21 10:57*	*11/03/21 02:21*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 23:21	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 23:21	1

Client Sample ID: S-460_20211026

Lab Sample ID: 410-60816-5

Date Collected: 10/26/21 12:05

Matrix: Water

Date Received: 10/27/21 17:29

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**27**		5.0	3.0	ug/L		11/02/21 10:52	11/02/21 23:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*73*		*28 - 130*	*11/02/21 10:52*	*11/02/21 23:21*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/06/21 04:07	11/06/21 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*	*11/06/21 04:07*	*11/06/21 14:42*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*112*		*46 - 136*	*11/06/21 04:07*	*11/06/21 14:42*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**280**		10	3.7	mg/L			11/04/21 09:58	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**49**	**^3+**	0.50	0.096	mg/L		11/04/21 16:02	11/06/21 14:43	1
Iron	**46**		0.20	0.040	mg/L		11/04/21 16:02	11/06/21 14:43	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**100**		8.0	8.0	mg/L			11/05/21 04:43	1
Total Kjeldahl Nitrogen	**0.66**	**J**	1.0	0.50	mg/L		11/08/21 14:09	11/09/21 11:29	1
Total Carbon	**44**	**!**	5.0	2.5	mg/L			11/05/21 19:18	5
Total Organic Carbon	**2.3**		1.0	0.50	mg/L			11/04/21 06:59	1
Total Inorganic Carbon	**42**	**!**	2.0	0.60	mg/L			11/06/21 12:56	1

Client Sample ID: S-467_20211026

Lab Sample ID: 410-60816-6

Date Collected: 10/26/21 12:25

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**33**		1.0	0.40	ug/L			11/03/21 21:10	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 21:10	1
1,3,5-Trimethylbenzene	**29**		5.0	0.30	ug/L			11/03/21 21:10	1
Toluene	**21**		1.0	0.30	ug/L			11/03/21 21:10	1
Xylenes, Total	**51**		6.0	1.4	ug/L			11/03/21 21:10	1
Methyl tertiary butyl ether	**160**		1.0	0.20	ug/L			11/03/21 21:10	1
1,2,4-Trimethylbenzene	**39**		5.0	1.0	ug/L			11/03/21 21:10	1
Isopropylbenzene	**87**		5.0	0.30	ug/L			11/03/21 21:10	1
t-Butyl alcohol	**900**		50	12	ug/L			11/03/21 21:10	1

Client Sample ID: S-467_20211026

Date Collected: 10/26/21 12:25
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*80 - 120*		*11/03/21 21:10*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*11/03/21 21:10*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/03/21 21:10*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/03/21 21:10*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**500**		10	3.0	ug/L			11/05/21 20:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/05/21 20:20*	*10*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/05/21 20:20*	*10*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/05/21 20:20*	*10*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/05/21 20:20*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**86**		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 02:51	1
Fluorene	**15**		0.53	0.13	ug/L		11/02/21 10:57	11/03/21 02:51	1
Benzo[g,h,i]perylene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 02:51	1
Phenanthrene	**13**		0.53	0.12	ug/L		11/02/21 10:57	11/03/21 02:51	1
Benzo[a]pyrene	ND		0.53	0.12	ug/L		11/02/21 10:57	11/03/21 02:51	1
Anthracene	**2.5**		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 02:51	1
Pyrene	**0.85**		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 02:51	1
Benzo[a]anthracene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 02:51	1
Chrysene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 02:51	1
Benzo[b]fluoranthene	ND		0.53	0.11	ug/L		11/02/21 10:57	11/03/21 02:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*79*		*35 - 100*	*11/02/21 10:57*	*11/03/21 02:51*	*1*
Nitrobenzene-d5 (Surr)	*81*		*22 - 117*	*11/02/21 10:57*	*11/03/21 02:51*	*1*
p-Terphenyl-d14 (Surr)	*81*		*31 - 119*	*11/02/21 10:57*	*11/03/21 02:51*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**3.2**	**J**	5.0	1.0	ug/L		11/02/21 10:52	11/02/21 23:38	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 23:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 130*	*11/02/21 10:52*	*11/02/21 23:38*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**16000**		500	300	ug/L		11/03/21 10:29	11/03/21 19:05	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 130*	*11/03/21 10:29*	*11/03/21 19:05*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		11/06/21 04:07	11/06/21 14:59	1

Client Sample ID: S-467_20211026 — Lab Sample ID: 410-60816-6

Date Collected: 10/26/21 12:25 — **Matrix: Water**
Date Received: 10/27/21 17:29

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*83*		*46 - 136*	*11/06/21 04:07*	*11/06/21 14:59*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*114*		*46 - 136*	*11/06/21 04:07*	*11/06/21 14:59*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.9	mg/L			11/03/21 04:48	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**39**	**^3+**	0.50	0.096	mg/L		11/04/21 16:02	11/06/21 14:33	1
Iron	**53**		0.20	0.040	mg/L		11/04/21 16:02	11/06/21 14:33	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.45**	**J**	0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**180**		8.0	8.0	mg/L			11/04/21 22:45	1
Total Kjeldahl Nitrogen	**4.9**		1.0	0.50	mg/L		11/08/21 14:09	11/09/21 11:32	1
Total Carbon	**72**	**!**	25	13	mg/L			11/05/21 19:29	25
Total Organic Carbon	**19**		1.0	0.50	mg/L			11/04/21 07:49	1
Total Inorganic Carbon	**53**	**!**	2.0	0.60	mg/L			11/06/21 12:56	1

Client Sample ID: S-394_20211026 — Lab Sample ID: 410-60816-7

Date Collected: 10/26/21 13:20 — **Matrix: Water**
Date Received: 10/27/21 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/03/21 16:24	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 16:24	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/03/21 16:24	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 16:24	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 16:24	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/03/21 16:24	1
Benzene	ND		1.0	0.30	ug/L			11/03/21 16:24	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/03/21 16:24	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/03/21 16:24	1
t-Butyl alcohol	ND		50	12	ug/L			11/03/21 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/03/21 16:24*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/03/21 16:24*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/03/21 16:24*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/03/21 16:24*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**0.21**	**J**	0.52	0.10	ug/L		11/02/21 10:57	11/03/21 03:21	1
Fluorene	ND		0.52	0.12	ug/L		11/02/21 10:57	11/03/21 03:21	1

Client Sample ID: S-394_20211026
Date Collected: 10/26/21 13:20
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-7
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	0.35	J	0.52	0.10	ug/L		11/02/21 10:57	11/03/21 03:21	1
Phenanthrene	0.27	J	0.52	0.11	ug/L		11/02/21 10:57	11/03/21 03:21	1
Benzo[a]pyrene	0.34	J	0.52	0.11	ug/L		11/02/21 10:57	11/03/21 03:21	1
Anthracene	ND		0.52	0.10	ug/L		11/02/21 10:57	11/03/21 03:21	1
Pyrene	0.56		0.52	0.10	ug/L		11/02/21 10:57	11/03/21 03:21	1
Benzo[a]anthracene	0.13	J	0.52	0.10	ug/L		11/02/21 10:57	11/03/21 03:21	1
Chrysene	0.40	J	0.52	0.10	ug/L		11/02/21 10:57	11/03/21 03:21	1
Benzo[b]fluoranthene	0.63		0.52	0.10	ug/L		11/02/21 10:57	11/03/21 03:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*89*		*35 - 100*	*11/02/21 10:57*	*11/03/21 03:21*	*1*
Nitrobenzene-d5 (Surr)	*93*		*22 - 117*	*11/02/21 10:57*	*11/03/21 03:21*	*1*
p-Terphenyl-d14 (Surr)	*91*		*31 - 119*	*11/02/21 10:57*	*11/03/21 03:21*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 07:18	11/02/21 11:51	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 07:18	11/02/21 11:51	1
Methane (1C)	10		5.0	3.0	ug/L		11/02/21 07:18	11/02/21 11:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*83*		*28 - 130*	*11/02/21 07:18*	*11/02/21 11:51*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/06/21 04:07	11/06/21 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*	*11/06/21 04:07*	*11/06/21 15:16*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*109*		*46 - 136*	*11/06/21 04:07*	*11/06/21 15:16*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	370		10	3.7	mg/L			11/04/21 11:40	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	68		0.50	0.096	mg/L		11/04/21 16:04	11/06/21 17:24	1
Iron	25		0.20	0.040	mg/L		11/04/21 16:04	11/06/21 17:24	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.082	J	0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	100		8.0	8.0	mg/L			11/02/21 08:18	1
Total Kjeldahl Nitrogen	0.57	J	1.0	0.50	mg/L		11/08/21 14:09	11/09/21 11:34	1
Total Carbon	58	!	5.0	2.5	mg/L			11/05/21 20:02	5
Total Organic Carbon	5.2		1.0	0.50	mg/L			11/04/21 08:05	1
Total Inorganic Carbon	53	!	2.0	0.60	mg/L			11/06/21 12:56	1

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Client Sample ID: S-468_20211026
Date Collected: 10/26/21 13:50
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-8
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**370**		5.0	2.0	ug/L			11/03/21 22:02	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			11/03/21 22:02	5
1,3,5-Trimethylbenzene	**76**		25	1.5	ug/L			11/03/21 22:02	5
Toluene	**17**		5.0	1.5	ug/L			11/03/21 22:02	5
Xylenes, Total	**170**		30	7.0	ug/L			11/03/21 22:02	5
Methyl tertiary butyl ether	**10**		5.0	1.0	ug/L			11/03/21 22:02	5
Benzene	**360**		5.0	1.5	ug/L			11/03/21 22:02	5
1,2,4-Trimethylbenzene	**260**		25	5.0	ug/L			11/03/21 22:02	5
Isopropylbenzene	**130**		25	1.5	ug/L			11/03/21 22:02	5
t-Butyl alcohol	ND		250	60	ug/L			11/03/21 22:02	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/03/21 22:02*	*5*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/03/21 22:02*	*5*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/03/21 22:02*	*5*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/03/21 22:02*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**63**		0.54	0.13	ug/L		11/02/21 10:57	11/03/21 03:51	1
Benzo[g,h,i]perylene	**0.65**		0.54	0.11	ug/L		11/02/21 10:57	11/03/21 03:51	1
Phenanthrene	**76**		0.54	0.12	ug/L		11/02/21 10:57	11/03/21 03:51	1
Benzo[a]pyrene	**1.7**		0.54	0.12	ug/L		11/02/21 10:57	11/03/21 03:51	1
Anthracene	**13**		0.54	0.11	ug/L		11/02/21 10:57	11/03/21 03:51	1
Pyrene	**11**		0.54	0.11	ug/L		11/02/21 10:57	11/03/21 03:51	1
Benzo[a]anthracene	**3.1**		0.54	0.11	ug/L		11/02/21 10:57	11/03/21 03:51	1
Chrysene	**3.2**		0.54	0.11	ug/L		11/02/21 10:57	11/03/21 03:51	1
Benzo[b]fluoranthene	**2.0**		0.54	0.11	ug/L		11/02/21 10:57	11/03/21 03:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*35 - 100*	*11/02/21 10:57*	*11/03/21 03:51*	*1*
Nitrobenzene-d5 (Surr)	*93*		*22 - 117*	*11/02/21 10:57*	*11/03/21 03:51*	*1*
p-Terphenyl-d14 (Surr)	*99*		*31 - 119*	*11/02/21 10:57*	*11/03/21 03:51*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**2400**		27	5.4	ug/L		11/02/21 10:57	11/03/21 15:33	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*86*		*35 - 100*	*11/02/21 10:57*	*11/03/21 15:33*	*50*
Nitrobenzene-d5 (Surr)	*80*		*22 - 117*	*11/02/21 10:57*	*11/03/21 15:33*	*50*
p-Terphenyl-d14 (Surr)	*86*		*31 - 119*	*11/02/21 10:57*	*11/03/21 15:33*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**1.9**	**J**	5.0	1.0	ug/L		11/01/21 10:00	11/01/21 15:37	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 10:00	11/01/21 15:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*93*		*28 - 130*	*11/01/21 10:00*	*11/01/21 15:37*	*1*

Client Sample ID: S-468_20211026

Lab Sample ID: 410-60816-8

Date Collected: 10/26/21 13:50

Matrix: Water

Date Received: 10/27/21 17:29

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**19000**		1000	600	ug/L		11/02/21 07:18	11/02/21 12:06	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*99*		*28 - 130*	*11/02/21 07:18*	*11/02/21 12:06*	*200*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/06/21 04:07	11/06/21 15:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*105*		*46 - 136*	*11/06/21 04:07*	*11/06/21 15:32*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*132*		*46 - 136*	*11/06/21 04:07*	*11/06/21 15:32*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/04/21 12:30	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**53**	**^3+**	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 14:27	1
Iron	**67**		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 14:27	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**170**		8.0	8.0	mg/L			11/02/21 08:24	1
Total Kjeldahl Nitrogen	**5.8**		1.0	0.50	mg/L		11/08/21 14:09	11/09/21 11:36	1
Total Carbon	**71**	**!**	10	5.0	mg/L			11/05/21 20:13	10
Total Organic Carbon	**15**		1.0	0.50	mg/L			11/04/21 08:22	1
Total Inorganic Carbon	**56**	**!**	2.0	0.60	mg/L			11/06/21 12:56	1

Client Sample ID: S-462_20211026

Lab Sample ID: 410-60816-9

Date Collected: 10/26/21 14:25

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/03/21 16:50	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 16:50	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/03/21 16:50	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 16:50	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 16:50	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/03/21 16:50	1
Benzene	ND		1.0	0.30	ug/L			11/03/21 16:50	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/03/21 16:50	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/03/21 16:50	1
t-Butyl alcohol	ND		50	12	ug/L			11/03/21 16:50	1

Client Sample ID: S-462_20211026
Date Collected: 10/26/21 14:25
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60816-9
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/03/21 16:50*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/03/21 16:50*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/03/21 16:50*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/03/21 16:50*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**0.35**	**J**	0.66	0.13	ug/L		11/02/21 10:57	11/03/21 04:21	1
Fluorene	ND		0.66	0.16	ug/L		11/02/21 10:57	11/03/21 04:21	1
Benzo[g,h,i]perylene	ND		0.66	0.13	ug/L		11/02/21 10:57	11/03/21 04:21	1
Phenanthrene	ND		0.66	0.15	ug/L		11/02/21 10:57	11/03/21 04:21	1
Benzo[a]pyrene	ND		0.66	0.15	ug/L		11/02/21 10:57	11/03/21 04:21	1
Anthracene	ND		0.66	0.13	ug/L		11/02/21 10:57	11/03/21 04:21	1
Pyrene	ND		0.66	0.13	ug/L		11/02/21 10:57	11/03/21 04:21	1
Benzo[a]anthracene	ND		0.66	0.13	ug/L		11/02/21 10:57	11/03/21 04:21	1
Chrysene	ND		0.66	0.13	ug/L		11/02/21 10:57	11/03/21 04:21	1
Benzo[b]fluoranthene	ND		0.66	0.13	ug/L		11/02/21 10:57	11/03/21 04:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	*88*		*35 - 100*	*11/02/21 10:57*	*11/03/21 04:21*	*1*
Nitrobenzene-d5 (Surr)	*93*		*22 - 117*	*11/02/21 10:57*	*11/03/21 04:21*	*1*
p-Terphenyl-d14 (Surr)	*83*		*31 - 119*	*11/02/21 10:57*	*11/03/21 04:21*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 07:18	11/02/21 12:22	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 07:18	11/02/21 12:22	1
Methane (1C)	**8.6**		5.0	3.0	ug/L		11/02/21 07:18	11/02/21 12:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*83*		*28 - 130*	*11/02/21 07:18*	*11/02/21 12:22*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		11/06/21 04:07	11/06/21 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	*90*		*46 - 136*	*11/06/21 04:07*	*11/06/21 15:49*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*113*		*46 - 136*	*11/06/21 04:07*	*11/06/21 15:49*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**280**		10	3.7	mg/L			11/04/21 12:56	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**96**	**^3+**	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 14:30	1
Iron	**41**		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 14:30	1

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Client Sample ID: S-462_20211026

Lab Sample ID: 410-60816-9

Date Collected: 10/26/21 14:25

Matrix: Water

Date Received: 10/27/21 17:29

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**160**		8.0	8.0	mg/L			11/02/21 08:30	1
Total Kjeldahl Nitrogen	**0.75**	**J FL**	1.0	0.50	mg/L		11/08/21 14:09	11/09/21 11:15	1
Total Carbon	**49**	**!**	5.0	2.5	mg/L			11/05/21 20:24	5
Total Organic Carbon	**2.5**		1.0	0.50	mg/L			11/04/21 09:11	1
Total Inorganic Carbon	**47**	**!**	2.0	0.60	mg/L			11/06/21 12:56	1

Client Sample ID: TB21288

Lab Sample ID: 410-60816-10

Date Collected: 10/21/21 00:00

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/04/21 16:20	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 16:20	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/04/21 16:20	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 16:20	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 16:20	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/04/21 16:20	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/04/21 16:20	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 16:20	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 16:20	1
t-Butyl alcohol	ND		50	12	ug/L			11/04/21 16:20	1
Ethylene Dibromide	ND		1.0	0.30	ug/L			11/04/21 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/04/21 16:20*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/04/21 16:20*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/04/21 16:20*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/04/21 16:20*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-60816-1	S-454_20211026	99	97	102	100
410-60816-2	MW-38_20211026	98	99	101	101
410-60816-3	S-458_20211026	96	98	99	101
410-60816-4	S-459_20211026	97	98	101	100
410-60816-5	S-460_20211026	97	99	100	100
410-60816-6	S-467_20211026	92	106	99	102
410-60816-6 - DL	S-467_20211026	96	99	100	101
410-60816-7	S-394_20211026	97	98	100	100
410-60816-8	S-468_20211026	96	102	98	101
410-60816-9	S-462_20211026	97	100	99	102
410-60816-10	TB21288	97	99	100	100
LCS 410-190200/4	Lab Control Sample	100	100	100	100
LCS 410-190808/5	Lab Control Sample	100	102	99	101
LCS 410-191312/4	Lab Control Sample	100	100	100	101
LCSD 410-190200/5	Lab Control Sample Dup	98	100	99	101
LCSD 410-190808/6	Lab Control Sample Dup	100	100	99	101
LCSD 410-191312/5	Lab Control Sample Dup	100	102	101	101
MB 410-190200/6	Method Blank	97	97	100	100
MB 410-190808/9	Method Blank	98	98	101	100
MB 410-191312/6	Method Blank	98	99	101	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(35-100)	(22-117)	(31-119)
410-60816-1	S-454_20211026	91	94	67
410-60816-2	MW-38_20211026	88	93	87
410-60816-3	S-458_20211026	90	91	88
410-60816-4	S-459_20211026	88	34	91
410-60816-5	S-460_20211026	90	62	89
410-60816-6	S-467_20211026	79	81	81
410-60816-7	S-394_20211026	89	93	91
410-60816-8	S-468_20211026	82	93	99
410-60816-8 - DL	S-468_20211026	86	80	86
410-60816-9	S-462_20211026	88	93	83
LCS 410-189623/2-A	Lab Control Sample	87	90	103
LCSD 410-189623/3-A	Lab Control Sample Dup	90	95	104
MB 410-189623/1-A	Method Blank	87	92	101

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Propene1 (28-130)							
410-60816-1	S-454_20211026	74							
410-60816-2	MW-38_20211026	80							
410-60816-2 - DL	MW-38_20211026	87							
410-60816-3	S-458_20211026	81							
410-60816-4	S-459_20211026	80							
410-60816-5	S-460_20211026	73							
410-60816-6	S-467_20211026	80							
410-60816-6 - DL	S-467_20211026	105							
410-60816-7	S-394_20211026	83							
410-60816-8	S-468_20211026	93							
410-60816-8 - DL	S-468_20211026	99							
410-60816-9	S-462_20211026	83							
LCS 410-189277/2-A	Lab Control Sample	103							
LCS 410-189588/2-A	Lab Control Sample	109							
LCS 410-189736/2-A	Lab Control Sample	103							
LCS 410-190237/2-A	Lab Control Sample	111							
LCSD 410-189277/3-A	Lab Control Sample Dup	107							
LCSD 410-189736/3-A	Lab Control Sample Dup	98							
LCSD 410-190237/3-A	Lab Control Sample Dup	111							
MB 410-189277/1-A	Method Blank	105							
MB 410-189588/1-A	Method Blank	106							
MB 410-189736/1-A	Method Blank	104							
MB 410-190237/1-A	Method Blank	113							

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)						
410-60816-1	S-454_20211026	86	106						
410-60816-2	MW-38_20211026	87	108						
410-60816-3	S-458_20211026	86	109						
410-60816-4	S-459_20211026	88	110						
410-60816-5	S-460_20211026	88	112						
410-60816-6	S-467_20211026	83	114						
410-60816-7	S-394_20211026	85	109						
410-60816-8	S-468_20211026	105	132						
410-60816-9	S-462_20211026	90	113						
LCS 410-191573/2-A	Lab Control Sample	89	105						
LCSD 410-191573/3-A	Lab Control Sample Dup	89	106						
MB 410-191573/1-A	Method Blank	91	106						

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-190200/6
Matrix: Water
Analysis Batch: 190200

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 13:23	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/03/21 13:23	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/03/21 13:23	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/03/21 13:23	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 13:23	1
Benzene	ND		1.0	0.30	ug/L			11/03/21 13:23	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 13:23	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/03/21 13:23	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/03/21 13:23	1
t-Butyl alcohol	ND		50	12	ug/L			11/03/21 13:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/03/21 13:23*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/03/21 13:23*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/03/21 13:23*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/03/21 13:23*	*1*

Lab Sample ID: LCS 410-190200/4
Matrix: Water
Analysis Batch: 190200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dichloroethane			20.0	18.6		ug/L		93	73 - 124		
Ethylbenzene			20.0	21.5		ug/L		107	80 - 120		
1,3,5-Trimethylbenzene			20.0	20.7		ug/L		104	75 - 120		
Methyl tertiary butyl ether			20.0	15.7		ug/L		78	69 - 122		
Toluene			20.0	18.6		ug/L		93	80 - 120		
Benzene			20.0	19.7		ug/L		99	80 - 120		
Xylenes, Total			60.0	58.0		ug/L		97	80 - 120		
1,2,4-Trimethylbenzene			20.0	20.8		ug/L		104	75 - 120		
Isopropylbenzene			20.0	18.5		ug/L		93	80 - 120		
t-Butyl alcohol			200	206		ug/L		103	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-190200/5
Matrix: Water
Analysis Batch: 190200

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloroethane			20.0	18.7		ug/L		93	73 - 124	0	30
Ethylbenzene			20.0	22.1		ug/L		110	80 - 120	3	30
1,3,5-Trimethylbenzene			20.0	20.9		ug/L		104	75 - 120	1	30
Methyl tertiary butyl ether			20.0	15.5		ug/L		77	69 - 122	1	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-190200/5
Matrix: Water
Analysis Batch: 190200

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene			20.0	19.3		ug/L		96	80 - 120	3	30
Benzene			20.0	19.9		ug/L		99	80 - 120	1	30
Xylenes, Total			60.0	59.2		ug/L		99	80 - 120	2	30
1,2,4-Trimethylbenzene			20.0	21.2		ug/L		106	75 - 120	2	30
Isopropylbenzene			20.0	19.1		ug/L		95	80 - 120	3	30
t-Butyl alcohol			200	208		ug/L		104	60 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 410-190808/9
Matrix: Water
Analysis Batch: 190808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 15:54	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 15:54	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/04/21 15:54	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/04/21 15:54	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 15:54	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 15:54	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 15:54	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/04/21 15:54	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/04/21 15:54	1
t-Butyl alcohol	ND		50	12	ug/L			11/04/21 15:54	1
Ethylene Dibromide	ND		1.0	0.30	ug/L			11/04/21 15:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/04/21 15:54*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/04/21 15:54*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/04/21 15:54*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/04/21 15:54*	*1*

Lab Sample ID: LCS 410-190808/5
Matrix: Water
Analysis Batch: 190808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane			20.0	17.6		ug/L		88	73 - 124
Ethylbenzene			20.0	20.8		ug/L		104	80 - 120
1,3,5-Trimethylbenzene			20.0	19.9		ug/L		99	75 - 120
Methyl tertiary butyl ether			20.0	15.3		ug/L		77	69 - 122
Toluene			20.0	18.0		ug/L		90	80 - 120
Benzene			20.0	18.8		ug/L		94	80 - 120
Xylenes, Total			60.0	56.3		ug/L		94	80 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-190808/5
Matrix: Water
Analysis Batch: 190808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2,4-Trimethylbenzene			20.0	20.1		ug/L		101	75 - 120		
Isopropylbenzene			20.0	18.0		ug/L		90	80 - 120		
t-Butyl alcohol			200	199		ug/L		99	60 - 130		
Ethylene Dibromide			20.0	18.7		ug/L		94	77 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-190808/6
Matrix: Water
Analysis Batch: 190808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloroethane			20.0	18.5		ug/L		92	73 - 124	5	30
Ethylbenzene			20.0	21.3		ug/L		107	80 - 120	2	30
1,3,5-Trimethylbenzene			20.0	20.2		ug/L		101	75 - 120	2	30
Methyl tertiary butyl ether			20.0	16.0		ug/L		80	69 - 122	5	30
Toluene			20.0	18.3		ug/L		92	80 - 120	2	30
Benzene			20.0	19.5		ug/L		98	80 - 120	4	30
Xylenes, Total			60.0	57.6		ug/L		96	80 - 120	2	30
1,2,4-Trimethylbenzene			20.0	20.5		ug/L		103	75 - 120	2	30
Isopropylbenzene			20.0	18.3		ug/L		91	80 - 120	1	30
t-Butyl alcohol			200	206		ug/L		103	60 - 130	4	30
Ethylene Dibromide			20.0	19.1		ug/L		95	77 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 410-191312/6
Matrix: Water
Analysis Batch: 191312

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/05/21 14:21	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/05/21 14:21	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/05/21 14:21	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/05/21 14:21	1
Toluene	ND		1.0	0.30	ug/L			11/05/21 14:21	1
Benzene	ND		1.0	0.30	ug/L			11/05/21 14:21	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/05/21 14:21	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/05/21 14:21	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/05/21 14:21	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-191312/6
Matrix: Water
Analysis Batch: 191312

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butyl alcohol	ND		50	12	ug/L			11/05/21 14:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/05/21 14:21*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/05/21 14:21*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/05/21 14:21*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/05/21 14:21*	*1*

Lab Sample ID: LCS 410-191312/4
Matrix: Water
Analysis Batch: 191312

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dichloroethane			20.0	18.5		ug/L		93	73 - 124		
Ethylbenzene			20.0	20.9		ug/L		105	80 - 120		
1,3,5-Trimethylbenzene			20.0	19.8		ug/L		99	75 - 120		
Methyl tertiary butyl ether			20.0	20.0		ug/L		100	69 - 122		
Toluene			20.0	18.4		ug/L		92	80 - 120		
Benzene			20.0	19.3		ug/L		97	80 - 120		
Xylenes, Total			60.0	56.5		ug/L		94	80 - 120		
1,2,4-Trimethylbenzene			20.0	19.8		ug/L		99	75 - 120		
Isopropylbenzene			20.0	18.3		ug/L		92	80 - 120		
t-Butyl alcohol			200	200		ug/L		100	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-191312/5
Matrix: Water
Analysis Batch: 191312

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloroethane			20.0	18.1		ug/L		90	73 - 124	3	30
Ethylbenzene			20.0	20.9		ug/L		104	80 - 120	0	30
1,3,5-Trimethylbenzene			20.0	19.6		ug/L		98	75 - 120	1	30
Methyl tertiary butyl ether			20.0	19.3		ug/L		97	69 - 122	3	30
Toluene			20.0	18.4		ug/L		92	80 - 120	0	30
Benzene			20.0	19.1		ug/L		95	80 - 120	1	30
Xylenes, Total			60.0	56.4		ug/L		94	80 - 120	0	30
1,2,4-Trimethylbenzene			20.0	19.5		ug/L		98	75 - 120	2	30
Isopropylbenzene			20.0	18.5		ug/L		92	80 - 120	1	30
t-Butyl alcohol			200	196		ug/L		98	60 - 130	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-191312/5
Matrix: Water
Analysis Batch: 191312

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-189623/1-A
Matrix: Water
Analysis Batch: 189938

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189623

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/02/21 18:47	1
Fluorene	ND		0.50	0.12	ug/L		11/02/21 10:57	11/02/21 18:47	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/02/21 18:47	1
Phenanthrene	ND		0.50	0.11	ug/L		11/02/21 10:57	11/02/21 18:47	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		11/02/21 10:57	11/02/21 18:47	1
Anthracene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/02/21 18:47	1
Pyrene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/02/21 18:47	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/02/21 18:47	1
Chrysene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/02/21 18:47	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		11/02/21 10:57	11/02/21 18:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	87		35 - 100	11/02/21 10:57	11/02/21 18:47	1
Nitrobenzene-d5 (Surr)	92		22 - 117	11/02/21 10:57	11/02/21 18:47	1
p-Terphenyl-d14 (Surr)	101		31 - 119	11/02/21 10:57	11/02/21 18:47	1

Lab Sample ID: LCS 410-189623/2-A
Matrix: Water
Analysis Batch: 189938

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189623

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	50.0	39.3		ug/L		79	51 - 102
Fluorene	50.0	42.2		ug/L		84	64 - 120
Benzo[g,h,i]perylene	50.0	46.9		ug/L		94	60 - 120
Phenanthrene	50.0	43.5		ug/L		87	72 - 120
Benzo[a]pyrene	50.0	44.8		ug/L		90	60 - 116
Anthracene	50.0	43.6		ug/L		87	73 - 120
Pyrene	50.0	45.8		ug/L		92	73 - 120
Benzo[a]anthracene	50.0	45.9		ug/L		92	74 - 120
Chrysene	50.0	44.3		ug/L		89	76 - 120
Benzo[b]fluoranthene	50.0	45.9		ug/L		92	71 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	87		35 - 100
Nitrobenzene-d5 (Surr)	90		22 - 117
p-Terphenyl-d14 (Surr)	103		31 - 119

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-189623/3-A
Matrix: Water
Analysis Batch: 189938

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189623

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene			50.0	41.9		ug/L		84	51 - 102	6	30
Fluorene			50.0	43.1		ug/L		86	64 - 120	2	30
Benzo[g,h,i]perylene			50.0	48.2		ug/L		96	60 - 120	3	30
Phenanthrene			50.0	45.3		ug/L		91	72 - 120	4	30
Benzo[a]pyrene			50.0	45.5		ug/L		91	60 - 116	1	30
Anthracene			50.0	46.9		ug/L		94	73 - 120	7	30
Pyrene			50.0	46.2		ug/L		92	73 - 120	1	30
Benzo[a]anthracene			50.0	47.5		ug/L		95	74 - 120	3	30
Chrysene			50.0	46.0		ug/L		92	76 - 120	4	30
Benzo[b]fluoranthene			50.0	45.5		ug/L		91	71 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*90*		*35 - 100*
Nitrobenzene-d5 (Surr)	*95*		*22 - 117*
p-Terphenyl-d14 (Surr)	*104*		*31 - 119*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-189277/1-A
Matrix: Water
Analysis Batch: 189281

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189277

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 10:00	11/01/21 10:13	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 10:00	11/01/21 10:13	1
Methane (1C)	ND		5.0	3.0	ug/L		11/01/21 10:00	11/01/21 10:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 130*	*11/01/21 10:00*	*11/01/21 10:13*	*1*

Lab Sample ID: LCS 410-189277/2-A
Matrix: Water
Analysis Batch: 189281

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189277

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	59.9		ug/L		101	85 - 115
Ethene (1C)			60.4	59.6		ug/L		99	83 - 115
Methane (1C)			59.4	61.5		ug/L		104	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*103*		*28 - 130*

Lab Sample ID: LCSD 410-189277/3-A
Matrix: Water
Analysis Batch: 189281

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189277

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	60.3		ug/L		102	85 - 115	1	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-189277/3-A
Matrix: Water
Analysis Batch: 189281

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189277

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethene (1C)			60.4	60.3		ug/L		100	83 - 115	1	20
Methane (1C)			59.4	63.9		ug/L		108	85 - 115	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*107*		*28 - 130*

Lab Sample ID: MB 410-189588/1-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189588

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 07:18	11/02/21 07:31	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 07:18	11/02/21 07:31	1
Methane (1C)	ND		5.0	3.0	ug/L		11/02/21 07:18	11/02/21 07:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*		*28 - 130*	*11/02/21 07:18*	*11/02/21 07:31*	*1*

Lab Sample ID: LCS 410-189588/2-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189588

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	60.8		ug/L		102	85 - 115
Ethene (1C)			60.4	61.0		ug/L		101	83 - 115
Methane (1C)			59.4	60.2		ug/L		101	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*109*		*28 - 130*

Lab Sample ID: MB 410-189736/1-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189736

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 18:52	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:52	11/02/21 18:52	1
Methane (1C)	ND		5.0	3.0	ug/L		11/02/21 10:52	11/02/21 18:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*104*		*28 - 130*	*11/02/21 10:52*	*11/02/21 18:52*	*1*

Lab Sample ID: LCS 410-189736/2-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189736

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	60.2		ug/L		101	85 - 115

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-189736/2-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189736

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethene (1C)			60.4	60.4		ug/L		100	83 - 115		
Methane (1C)			59.4	57.4		ug/L		97	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*103*		*28 - 130*

Lab Sample ID: LCSD 410-189736/3-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189736

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	59.8		ug/L		101	85 - 115	1	20
Ethene (1C)			60.4	59.5		ug/L		99	83 - 115	1	20
Methane (1C)			59.4	55.9		ug/L		94	85 - 115	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*98*		*28 - 130*

Lab Sample ID: MB 410-190237/1-A
Matrix: Water
Analysis Batch: 190075

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190237

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/03/21 10:29	11/03/21 13:54	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/03/21 10:29	11/03/21 13:54	1
Methane (1C)	ND		5.0	3.0	ug/L		11/03/21 10:29	11/03/21 13:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*113*		*28 - 130*	*11/03/21 10:29*	*11/03/21 13:54*	*1*

Lab Sample ID: LCS 410-190237/2-A
Matrix: Water
Analysis Batch: 190075

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190237

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	61.9		ug/L		104	85 - 115		
Ethene (1C)			60.4	61.5		ug/L		102	83 - 115		
Methane (1C)			59.4	63.8		ug/L		107	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*111*		*28 - 130*

Lab Sample ID: LCSD 410-190237/3-A
Matrix: Water
Analysis Batch: 190075

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 190237

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	61.9		ug/L		104	85 - 115	0	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-190237/3-A
Matrix: Water
Analysis Batch: 190075

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 190237

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethene (1C)			60.4	61.7		ug/L		102	83 - 115	0	20
Methane (1C)			59.4	64.4		ug/L		108	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*111*		*28 - 130*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-191573/1-A
Matrix: Water
Analysis Batch: 191637

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191573

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		11/06/21 04:07	11/06/21 11:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*91*		*46 - 136*	*11/06/21 04:07*	*11/06/21 11:39*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*11/06/21 04:07*	*11/06/21 11:39*	*1*

Lab Sample ID: LCS 410-191573/2-A
Matrix: Water
Analysis Batch: 191637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191573

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.121		ug/L		94	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*

Lab Sample ID: LCSD 410-191573/3-A
Matrix: Water
Analysis Batch: 191637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 191573

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.124		ug/L		97	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*89*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-554233/15
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/02/21 13:04	1

Lab Sample ID: MB 400-554233/72
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/03/21 03:58	1

Lab Sample ID: LCS 400-554233/13
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.4		mg/L		104	90 - 110

Lab Sample ID: LCS 400-554233/70
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.8		mg/L		108	90 - 110

Lab Sample ID: LCSD 400-554233/14
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.5		mg/L		105	90 - 110	1	15

Lab Sample ID: LCSD 400-554233/71
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.4		mg/L		104	90 - 110	3	15

Lab Sample ID: MRL 400-554233/16
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.00	1.15		mg/L		115	50 - 150

Lab Sample ID: MRL 400-554233/73
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.00	1.25		mg/L		125	50 - 150

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 410-60816-6 MS
Matrix: Water
Analysis Batch: 554233

Client Sample ID: S-467_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	ND		50.0	59.5		mg/L		119	80 - 120

Lab Sample ID: 410-60816-6 MSD
Matrix: Water
Analysis Batch: 554233

Client Sample ID: S-467_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	ND		50.0	59.8		mg/L		120	80 - 120	0	20

Lab Sample ID: MB 400-554421/6
Matrix: Water
Analysis Batch: 554421

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/04/21 07:01	1

Lab Sample ID: LCS 400-554421/4
Matrix: Water
Analysis Batch: 554421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: LCSD 400-554421/5
Matrix: Water
Analysis Batch: 554421

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.1		mg/L		101	90 - 110	1	15

Lab Sample ID: MRL 400-554421/7
Matrix: Water
Analysis Batch: 554421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.00	1.20		mg/L		120	50 - 150

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-190958/1-A
Matrix: Water
Analysis Batch: 191651

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND	^3+	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 13:11	1
Iron	ND		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 13:11	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-190958/2-A
Matrix: Water
Analysis Batch: 191651

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5.00	5.06	^3+	mg/L		101	80 - 120
Iron	5.00	5.04		mg/L		101	80 - 120

Lab Sample ID: MB 410-190960/1-A
Matrix: Water
Analysis Batch: 191664

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190960

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		11/04/21 16:04	11/06/21 16:29	1
Iron	ND		0.20	0.040	mg/L		11/04/21 16:04	11/06/21 16:29	1

Lab Sample ID: LCS 410-190960/2-A
Matrix: Water
Analysis Batch: 191664

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190960

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5.00	4.87		mg/L		97	80 - 120
Iron	5.00	4.83		mg/L		97	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-190987/1-A
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190987

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 13:42	1

Lab Sample ID: LCS 410-190987/2-A
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	52.8		ug/L		106	90 - 115

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-189864/108
Matrix: Water
Analysis Batch: 189864

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/02/21 07:20	1

Lab Sample ID: LCS 410-189864/111
Matrix: Water
Analysis Batch: 189864

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	183		mg/L		97	82 - 106

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-191374/102
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/05/21 04:12	1

Lab Sample ID: MB 410-191374/42
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/04/21 21:45	1

Lab Sample ID: LCS 410-191374/103
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity as CaCO3 to pH 4.5			189	182		mg/L		96	82 - 106		

Lab Sample ID: LCS 410-191374/43
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity as CaCO3 to pH 4.5			189	182		mg/L		96	82 - 106		

Lab Sample ID: 410-60816-1 MS
Matrix: Water
Analysis Batch: 191374

Client Sample ID: S-454_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity as CaCO3 to pH 4.5	120		189	298		mg/L		94	82 - 106		

Lab Sample ID: 410-60816-4 MS
Matrix: Water
Analysis Batch: 191374

Client Sample ID: S-459_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity as CaCO3 to pH 4.5	130		189	302		mg/L		90	82 - 106		

Lab Sample ID: 410-60816-1 DU
Matrix: Water
Analysis Batch: 191374

Client Sample ID: S-454_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	120			121		mg/L				0.1	5

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: 410-60816-2 DU
Matrix: Water
Analysis Batch: 191374

Client Sample ID: MW-38_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	390		390		mg/L		0.6	5

Lab Sample ID: 410-60816-4 DU
Matrix: Water
Analysis Batch: 191374

Client Sample ID: S-459_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	130		134		mg/L		1	5

Lab Sample ID: 410-60816-5 DU
Matrix: Water
Analysis Batch: 191374

Client Sample ID: S-460_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	100		100		mg/L		0.1	5

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 410-191987/2-A
Matrix: Water
Analysis Batch: 192607

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191987

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/08/21 11:24	11/09/21 09:49	1

Lab Sample ID: LCS 410-191987/1-A
Matrix: Water
Analysis Batch: 192607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	5.01	4.65		mg/L		93	90 - 110

Lab Sample ID: MB 410-192097/2-A
Matrix: Water
Analysis Batch: 192607

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 192097

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/08/21 14:09	11/09/21 11:09	1

Lab Sample ID: 410-60816-9 MS
Matrix: Water
Analysis Batch: 192607

Client Sample ID: S-462_20211026
Prep Type: Total/NA
Prep Batch: 192097

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	0.75	J FL	5.01	3.32	FL	mg/L		51	90 - 110

Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: 410-60816-9 DU
Matrix: Water
Analysis Batch: 192607

Client Sample ID: S-462_20211026
Prep Type: Total/NA
Prep Batch: 192097

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Kjeldahl Nitrogen	0.75	J FL	ND		mg/L		NC	20

Method: 5310 B-2011 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 410-191617/5
Matrix: Water
Analysis Batch: 191617

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1.0	0.50	mg/L			11/05/21 18:02	1

Lab Sample ID: LCS 410-191617/4
Matrix: Water
Analysis Batch: 191617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	25.0	24.5		mg/L		98	91 - 115

Lab Sample ID: 410-60816-1 MS
Matrix: Water
Analysis Batch: 191617

Client Sample ID: S-454_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	47	!	50.0	94.9		mg/L		96	91 - 115

Lab Sample ID: 410-60816-1 DU
Matrix: Water
Analysis Batch: 191617

Client Sample ID: S-454_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Carbon	47	!	50.8		mg/L		9	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-190994/35
Matrix: Water
Analysis Batch: 190994

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			11/04/21 03:43	1

Lab Sample ID: LCS 410-190994/34
Matrix: Water
Analysis Batch: 190994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	26.2		mg/L		105	91 - 113

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: 410-60816-1 MS
Matrix: Water
Analysis Batch: 190994

Client Sample ID: S-454_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	1.4		10.0	11.2		mg/L		98	91 - 113		

Lab Sample ID: 410-60816-8 MS
Matrix: Water
Analysis Batch: 190994

Client Sample ID: S-468_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	15		10.0	24.3		mg/L		92	91 - 113		

Lab Sample ID: 410-60816-1 DU
Matrix: Water
Analysis Batch: 190994

Client Sample ID: S-454_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	1.4			1.39		mg/L				3	3

Lab Sample ID: 410-60816-8 DU
Matrix: Water
Analysis Batch: 190994

Client Sample ID: S-468_20211026
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	15			15.5		mg/L				2	3

GC/MS VOA

Analysis Batch: 190200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	8260C/UST	
410-60816-2	MW-38_20211026	Total/NA	Water	8260C/UST	
410-60816-3	S-458_20211026	Total/NA	Water	8260C/UST	
410-60816-4	S-459_20211026	Total/NA	Water	8260C/UST	
410-60816-5	S-460_20211026	Total/NA	Water	8260C/UST	
410-60816-6	S-467_20211026	Total/NA	Water	8260C/UST	
410-60816-7	S-394_20211026	Total/NA	Water	8260C/UST	
410-60816-8	S-468_20211026	Total/NA	Water	8260C/UST	
410-60816-9	S-462_20211026	Total/NA	Water	8260C/UST	
MB 410-190200/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-190200/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-190200/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 190808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-10	TB21288	Total/NA	Water	8260C/UST	
MB 410-190808/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-190808/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-190808/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 191312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-6 - DL	S-467_20211026	Total/NA	Water	8260C/UST	
MB 410-191312/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-191312/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-191312/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 189623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	3510C	
410-60816-2	MW-38_20211026	Total/NA	Water	3510C	
410-60816-3	S-458_20211026	Total/NA	Water	3510C	
410-60816-4	S-459_20211026	Total/NA	Water	3510C	
410-60816-5	S-460_20211026	Total/NA	Water	3510C	
410-60816-6	S-467_20211026	Total/NA	Water	3510C	
410-60816-7	S-394_20211026	Total/NA	Water	3510C	
410-60816-8 - DL	S-468_20211026	Total/NA	Water	3510C	
410-60816-8	S-468_20211026	Total/NA	Water	3510C	
410-60816-9	S-462_20211026	Total/NA	Water	3510C	
MB 410-189623/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-189623/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-189623/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 189938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	8270D	189623
410-60816-2	MW-38_20211026	Total/NA	Water	8270D	189623
410-60816-3	S-458_20211026	Total/NA	Water	8270D	189623
410-60816-4	S-459_20211026	Total/NA	Water	8270D	189623

GC/MS Semi VOA (Continued)

Analysis Batch: 189938 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-5	S-460_20211026	Total/NA	Water	8270D	189623
410-60816-6	S-467_20211026	Total/NA	Water	8270D	189623
410-60816-7	S-394_20211026	Total/NA	Water	8270D	189623
410-60816-8	S-468_20211026	Total/NA	Water	8270D	189623
410-60816-9	S-462_20211026	Total/NA	Water	8270D	189623
MB 410-189623/1-A	Method Blank	Total/NA	Water	8270D	189623
LCS 410-189623/2-A	Lab Control Sample	Total/NA	Water	8270D	189623
LCSD 410-189623/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	189623

Analysis Batch: 190082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-8 - DL	S-468_20211026	Total/NA	Water	8270D	189623

GC VOA

Prep Batch: 189277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-8	S-468_20211026	Total/NA	Water	RSK-175	
MB 410-189277/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-189277/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-189277/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 189281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-8	S-468_20211026	Total/NA	Water	RSK-175	189277
MB 410-189277/1-A	Method Blank	Total/NA	Water	RSK-175	189277
LCS 410-189277/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189277
LCSD 410-189277/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	189277

Prep Batch: 189588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-7	S-394_20211026	Total/NA	Water	RSK-175	
410-60816-8 - DL	S-468_20211026	Total/NA	Water	RSK-175	
410-60816-9	S-462_20211026	Total/NA	Water	RSK-175	
MB 410-189588/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-189588/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 189611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	RSK-175	189736
410-60816-2	MW-38_20211026	Total/NA	Water	RSK-175	189736
410-60816-3	S-458_20211026	Total/NA	Water	RSK-175	189736
410-60816-4	S-459_20211026	Total/NA	Water	RSK-175	189736
410-60816-5	S-460_20211026	Total/NA	Water	RSK-175	189736
410-60816-6	S-467_20211026	Total/NA	Water	RSK-175	189736
410-60816-7	S-394_20211026	Total/NA	Water	RSK-175	189588
410-60816-8 - DL	S-468_20211026	Total/NA	Water	RSK-175	189588
410-60816-9	S-462_20211026	Total/NA	Water	RSK-175	189588
MB 410-189588/1-A	Method Blank	Total/NA	Water	RSK-175	189588
MB 410-189736/1-A	Method Blank	Total/NA	Water	RSK-175	189736
LCS 410-189588/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189588

GC VOA (Continued)

Analysis Batch: 189611 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-189736/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189736
LCSD 410-189736/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	189736

Prep Batch: 189736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	RSK-175	
410-60816-2	MW-38_20211026	Total/NA	Water	RSK-175	
410-60816-3	S-458_20211026	Total/NA	Water	RSK-175	
410-60816-4	S-459_20211026	Total/NA	Water	RSK-175	
410-60816-5	S-460_20211026	Total/NA	Water	RSK-175	
410-60816-6	S-467_20211026	Total/NA	Water	RSK-175	
MB 410-189736/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-189736/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-189736/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 190075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-2 - DL	MW-38_20211026	Total/NA	Water	RSK-175	190237
410-60816-6 - DL	S-467_20211026	Total/NA	Water	RSK-175	190237
MB 410-190237/1-A	Method Blank	Total/NA	Water	RSK-175	190237
LCS 410-190237/2-A	Lab Control Sample	Total/NA	Water	RSK-175	190237
LCSD 410-190237/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	190237

Prep Batch: 190237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-2 - DL	MW-38_20211026	Total/NA	Water	RSK-175	
410-60816-6 - DL	S-467_20211026	Total/NA	Water	RSK-175	
MB 410-190237/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-190237/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-190237/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 191573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	8011	
410-60816-2	MW-38_20211026	Total/NA	Water	8011	
410-60816-3	S-458_20211026	Total/NA	Water	8011	
410-60816-4	S-459_20211026	Total/NA	Water	8011	
410-60816-5	S-460_20211026	Total/NA	Water	8011	
410-60816-6	S-467_20211026	Total/NA	Water	8011	
410-60816-7	S-394_20211026	Total/NA	Water	8011	
410-60816-8	S-468_20211026	Total/NA	Water	8011	
410-60816-9	S-462_20211026	Total/NA	Water	8011	
MB 410-191573/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-191573/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-191573/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 191637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	8011	191573

GC Semi VOA (Continued)

Analysis Batch: 191637 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-2	MW-38_20211026	Total/NA	Water	8011	191573
410-60816-3	S-458_20211026	Total/NA	Water	8011	191573
410-60816-4	S-459_20211026	Total/NA	Water	8011	191573
410-60816-5	S-460_20211026	Total/NA	Water	8011	191573
410-60816-6	S-467_20211026	Total/NA	Water	8011	191573
410-60816-7	S-394_20211026	Total/NA	Water	8011	191573
410-60816-8	S-468_20211026	Total/NA	Water	8011	191573
410-60816-9	S-462_20211026	Total/NA	Water	8011	191573
MB 410-191573/1-A	Method Blank	Total/NA	Water	8011	191573
LCS 410-191573/2-A	Lab Control Sample	Total/NA	Water	8011	191573
LCSD 410-191573/3-A	Lab Control Sample Dup	Total/NA	Water	8011	191573

HPLC/IC

Analysis Batch: 554233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	300.0	
410-60816-2	MW-38_20211026	Total/NA	Water	300.0	
410-60816-3	S-458_20211026	Total/NA	Water	300.0	
410-60816-4	S-459_20211026	Total/NA	Water	300.0	
410-60816-6	S-467_20211026	Total/NA	Water	300.0	
MB 400-554233/15	Method Blank	Total/NA	Water	300.0	
MB 400-554233/72	Method Blank	Total/NA	Water	300.0	
LCS 400-554233/13	Lab Control Sample	Total/NA	Water	300.0	
LCS 400-554233/70	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-554233/14	Lab Control Sample Dup	Total/NA	Water	300.0	
LCSD 400-554233/71	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 400-554233/16	Lab Control Sample	Total/NA	Water	300.0	
MRL 400-554233/73	Lab Control Sample	Total/NA	Water	300.0	
410-60816-6 MS	S-467_20211026	Total/NA	Water	300.0	
410-60816-6 MSD	S-467_20211026	Total/NA	Water	300.0	

Analysis Batch: 554421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-5	S-460_20211026	Total/NA	Water	300.0	
410-60816-7	S-394_20211026	Total/NA	Water	300.0	
410-60816-8	S-468_20211026	Total/NA	Water	300.0	
410-60816-9	S-462_20211026	Total/NA	Water	300.0	
MB 400-554421/6	Method Blank	Total/NA	Water	300.0	
LCS 400-554421/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-554421/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 400-554421/7	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 190958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total Recoverable	Water	3005A	
410-60816-3	S-458_20211026	Total Recoverable	Water	3005A	
410-60816-4	S-459_20211026	Total Recoverable	Water	3005A	
410-60816-5	S-460_20211026	Total Recoverable	Water	3005A	
410-60816-6	S-467_20211026	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 190958 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-8	S-468_20211026	Total Recoverable	Water	3005A	
410-60816-9	S-462_20211026	Total Recoverable	Water	3005A	
MB 410-190958/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190958/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 190960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-2	MW-38_20211026	Total Recoverable	Water	3005A	
410-60816-7	S-394_20211026	Total Recoverable	Water	3005A	
MB 410-190960/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190960/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 190987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Dissolved	Water	Non-Digest Prep	
410-60816-2	MW-38_20211026	Dissolved	Water	Non-Digest Prep	
410-60816-3	S-458_20211026	Dissolved	Water	Non-Digest Prep	
410-60816-4	S-459_20211026	Dissolved	Water	Non-Digest Prep	
410-60816-5	S-460_20211026	Dissolved	Water	Non-Digest Prep	
410-60816-6	S-467_20211026	Dissolved	Water	Non-Digest Prep	
410-60816-7	S-394_20211026	Dissolved	Water	Non-Digest Prep	
410-60816-8	S-468_20211026	Dissolved	Water	Non-Digest Prep	
410-60816-9	S-462_20211026	Dissolved	Water	Non-Digest Prep	
MB 410-190987/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-190987/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 191445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Dissolved	Water	6020A	190987
410-60816-2	MW-38_20211026	Dissolved	Water	6020A	190987
410-60816-3	S-458_20211026	Dissolved	Water	6020A	190987
410-60816-4	S-459_20211026	Dissolved	Water	6020A	190987
410-60816-5	S-460_20211026	Dissolved	Water	6020A	190987
410-60816-6	S-467_20211026	Dissolved	Water	6020A	190987
410-60816-7	S-394_20211026	Dissolved	Water	6020A	190987
410-60816-8	S-468_20211026	Dissolved	Water	6020A	190987
410-60816-9	S-462_20211026	Dissolved	Water	6020A	190987
MB 410-190987/1-A	Method Blank	Total/NA	Water	6020A	190987
LCS 410-190987/2-A	Lab Control Sample	Total/NA	Water	6020A	190987

Analysis Batch: 191651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total Recoverable	Water	6010C	190958
410-60816-3	S-458_20211026	Total Recoverable	Water	6010C	190958
410-60816-4	S-459_20211026	Total Recoverable	Water	6010C	190958
410-60816-5	S-460_20211026	Total Recoverable	Water	6010C	190958
410-60816-6	S-467_20211026	Total Recoverable	Water	6010C	190958
410-60816-8	S-468_20211026	Total Recoverable	Water	6010C	190958
410-60816-9	S-462_20211026	Total Recoverable	Water	6010C	190958
MB 410-190958/1-A	Method Blank	Total Recoverable	Water	6010C	190958
LCS 410-190958/2-A	Lab Control Sample	Total Recoverable	Water	6010C	190958

Metals

Analysis Batch: 191664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-2	MW-38_20211026	Total Recoverable	Water	6010C	190960
410-60816-7	S-394_20211026	Total Recoverable	Water	6010C	190960
MB 410-190960/1-A	Method Blank	Total Recoverable	Water	6010C	190960
LCS 410-190960/2-A	Lab Control Sample	Total Recoverable	Water	6010C	190960

General Chemistry

Analysis Batch: 189864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-7	S-394_20211026	Total/NA	Water	2320B-2011	
410-60816-8	S-468_20211026	Total/NA	Water	2320B-2011	
410-60816-9	S-462_20211026	Total/NA	Water	2320B-2011	
MB 410-189864/108	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-189864/111	Lab Control Sample	Total/NA	Water	2320B-2011	

Analysis Batch: 190994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	5310C-2011	
410-60816-2	MW-38_20211026	Total/NA	Water	5310C-2011	
410-60816-3	S-458_20211026	Total/NA	Water	5310C-2011	
410-60816-4	S-459_20211026	Total/NA	Water	5310C-2011	
410-60816-5	S-460_20211026	Total/NA	Water	5310C-2011	
410-60816-6	S-467_20211026	Total/NA	Water	5310C-2011	
410-60816-7	S-394_20211026	Total/NA	Water	5310C-2011	
410-60816-8	S-468_20211026	Total/NA	Water	5310C-2011	
410-60816-9	S-462_20211026	Total/NA	Water	5310C-2011	
MB 410-190994/35	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-190994/34	Lab Control Sample	Total/NA	Water	5310C-2011	
410-60816-1 MS	S-454_20211026	Total/NA	Water	5310C-2011	
410-60816-8 MS	S-468_20211026	Total/NA	Water	5310C-2011	
410-60816-1 DU	S-454_20211026	Total/NA	Water	5310C-2011	
410-60816-8 DU	S-468_20211026	Total/NA	Water	5310C-2011	

Analysis Batch: 191374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	2320B-2011	
410-60816-2	MW-38_20211026	Total/NA	Water	2320B-2011	
410-60816-3	S-458_20211026	Total/NA	Water	2320B-2011	
410-60816-4	S-459_20211026	Total/NA	Water	2320B-2011	
410-60816-5	S-460_20211026	Total/NA	Water	2320B-2011	
410-60816-6	S-467_20211026	Total/NA	Water	2320B-2011	
MB 410-191374/102	Method Blank	Total/NA	Water	2320B-2011	
MB 410-191374/42	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-191374/103	Lab Control Sample	Total/NA	Water	2320B-2011	
LCS 410-191374/43	Lab Control Sample	Total/NA	Water	2320B-2011	
410-60816-1 MS	S-454_20211026	Total/NA	Water	2320B-2011	
410-60816-4 MS	S-459_20211026	Total/NA	Water	2320B-2011	
410-60816-1 DU	S-454_20211026	Total/NA	Water	2320B-2011	
410-60816-2 DU	MW-38_20211026	Total/NA	Water	2320B-2011	
410-60816-4 DU	S-459_20211026	Total/NA	Water	2320B-2011	
410-60816-5 DU	S-460_20211026	Total/NA	Water	2320B-2011	

General Chemistry

Analysis Batch: 191617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	5310 B-2011	
410-60816-2	MW-38_20211026	Total/NA	Water	5310 B-2011	
410-60816-3	S-458_20211026	Total/NA	Water	5310 B-2011	
410-60816-4	S-459_20211026	Total/NA	Water	5310 B-2011	
410-60816-5	S-460_20211026	Total/NA	Water	5310 B-2011	
410-60816-6	S-467_20211026	Total/NA	Water	5310 B-2011	
410-60816-7	S-394_20211026	Total/NA	Water	5310 B-2011	
410-60816-8	S-468_20211026	Total/NA	Water	5310 B-2011	
410-60816-9	S-462_20211026	Total/NA	Water	5310 B-2011	
MB 410-191617/5	Method Blank	Total/NA	Water	5310 B-2011	
LCS 410-191617/4	Lab Control Sample	Total/NA	Water	5310 B-2011	
410-60816-1 MS	S-454_20211026	Total/NA	Water	5310 B-2011	
410-60816-1 DU	S-454_20211026	Total/NA	Water	5310 B-2011	

Analysis Batch: 191662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	SM5310C	
410-60816-2	MW-38_20211026	Total/NA	Water	SM5310C	
410-60816-3	S-458_20211026	Total/NA	Water	SM5310C	
410-60816-4	S-459_20211026	Total/NA	Water	SM5310C	
410-60816-5	S-460_20211026	Total/NA	Water	SM5310C	
410-60816-6	S-467_20211026	Total/NA	Water	SM5310C	
410-60816-7	S-394_20211026	Total/NA	Water	SM5310C	
410-60816-8	S-468_20211026	Total/NA	Water	SM5310C	
410-60816-9	S-462_20211026	Total/NA	Water	SM5310C	

Prep Batch: 191987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	351.2	
410-60816-2	MW-38_20211026	Total/NA	Water	351.2	
410-60816-3	S-458_20211026	Total/NA	Water	351.2	
410-60816-4	S-459_20211026	Total/NA	Water	351.2	
MB 410-191987/2-A	Method Blank	Total/NA	Water	351.2	
LCS 410-191987/1-A	Lab Control Sample	Total/NA	Water	351.2	

Prep Batch: 192097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-5	S-460_20211026	Total/NA	Water	351.2	
410-60816-6	S-467_20211026	Total/NA	Water	351.2	
410-60816-7	S-394_20211026	Total/NA	Water	351.2	
410-60816-8	S-468_20211026	Total/NA	Water	351.2	
410-60816-9	S-462_20211026	Total/NA	Water	351.2	
MB 410-192097/2-A	Method Blank	Total/NA	Water	351.2	
410-60816-9 MS	S-462_20211026	Total/NA	Water	351.2	
410-60816-9 DU	S-462_20211026	Total/NA	Water	351.2	

Analysis Batch: 192607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-1	S-454_20211026	Total/NA	Water	351.2	191987
410-60816-2	MW-38_20211026	Total/NA	Water	351.2	191987
410-60816-3	S-458_20211026	Total/NA	Water	351.2	191987

General Chemistry (Continued)

Analysis Batch: 192607 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60816-4	S-459_20211026	Total/NA	Water	351.2	191987
410-60816-5	S-460_20211026	Total/NA	Water	351.2	192097
410-60816-6	S-467_20211026	Total/NA	Water	351.2	192097
410-60816-7	S-394_20211026	Total/NA	Water	351.2	192097
410-60816-8	S-468_20211026	Total/NA	Water	351.2	192097
410-60816-9	S-462_20211026	Total/NA	Water	351.2	192097
MB 410-191987/2-A	Method Blank	Total/NA	Water	351.2	191987
MB 410-192097/2-A	Method Blank	Total/NA	Water	351.2	192097
LCS 410-191987/1-A	Lab Control Sample	Total/NA	Water	351.2	191987
410-60816-9 MS	S-462_20211026	Total/NA	Water	351.2	192097
410-60816-9 DU	S-462_20211026	Total/NA	Water	351.2	192097

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Client Sample ID: S-454_20211026

Lab Sample ID: 410-60816-1

Date Collected: 10/26/21 10:00
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190200	11/03/21 14:40	MXX6	ELLE
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/02/21 23:20	DZ6A	ELLE
Total/NA	Prep	RSK-175			189736	11/02/21 10:52	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 22:14	LXF2	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 13:35	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/02/21 22:35	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:02	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:46	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:26	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/04/21 21:57	DI9Q	ELLE
Total/NA	Prep	351.2			191987	11/08/21 11:24	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 10:54	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 18:13	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 04:32	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: MW-38_20211026

Lab Sample ID: 410-60816-2

Date Collected: 10/26/21 10:00
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190200	11/03/21 15:07	MXX6	ELLE
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/03/21 00:50	DZ6A	ELLE
Total/NA	Prep	RSK-175			189736	11/02/21 10:52	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 22:31	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	5	190075	11/03/21 18:47	LXF2	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 13:52	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/02/21 23:00	KIS	TAL PEN
Total Recoverable	Prep	3005A			190960	11/04/21 16:04	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191664	11/06/21 17:18	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:22	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/04/21 22:17	DI9Q	ELLE
Total/NA	Prep	351.2			191987	11/08/21 11:24	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 10:56	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 18:45	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 06:10	KGQ6	ELLE

Client Sample ID: MW-38_20211026

Lab Sample ID: 410-60816-2

Date Collected: 10/26/21 10:00

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: S-458_20211026

Lab Sample ID: 410-60816-3

Date Collected: 10/26/21 11:10

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	190200	11/03/21 20:44	MXX6	ELLE
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/03/21 01:20	DZ6A	ELLE
Total/NA	Prep	RSK-175			189736	11/02/21 10:52	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 22:48	LXF2	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 14:09	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/02/21 23:25	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:02	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:36	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:32	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/04/21 22:39	DI9Q	ELLE
Total/NA	Prep	351.2			191987	11/08/21 11:24	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 11:02	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 18:56	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 06:27	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: S-459_20211026

Lab Sample ID: 410-60816-4

Date Collected: 10/26/21 11:10

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190200	11/03/21 15:33	MXX6	ELLE
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/03/21 01:51	DZ6A	ELLE
Total/NA	Prep	RSK-175			189736	11/02/21 10:52	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 23:05	LXF2	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 14:26	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/02/21 23:49	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:02	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:40	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:12	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 04:25	DI9Q	ELLE

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Client Sample ID: S-459_20211026

Lab Sample ID: 410-60816-4

Date Collected: 10/26/21 11:10

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			191987	11/08/21 11:24	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 11:04	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 19:07	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 06:43	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: S-460_20211026

Lab Sample ID: 410-60816-5

Date Collected: 10/26/21 12:05

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190200	11/03/21 15:58	MXX6	ELLE
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/03/21 02:21	DZ6A	ELLE
Total/NA	Prep	RSK-175			189736	11/02/21 10:52	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 23:21	LXF2	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 14:42	MB4Z	ELLE
Total/NA	Analysis	300.0		10	554421	11/04/21 09:58	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:02	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:43	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:28	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 04:43	DI9Q	ELLE
Total/NA	Prep	351.2			192097	11/08/21 14:09	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 11:29	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 19:18	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 06:59	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: S-467_20211026

Lab Sample ID: 410-60816-6

Date Collected: 10/26/21 12:25

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190200	11/03/21 21:10	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	10	191312	11/05/21 20:20	K4WN	ELLE
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/03/21 02:51	DZ6A	ELLE
Total/NA	Prep	RSK-175			189736	11/02/21 10:52	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 23:38	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	100	190075	11/03/21 19:05	LXF2	ELLE

Client Sample ID: S-467_20211026

Lab Sample ID: 410-60816-6

Date Collected: 10/26/21 12:25

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 14:59	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/03/21 04:48	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:02	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:33	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:30	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/04/21 22:45	DI9Q	ELLE
Total/NA	Prep	351.2			192097	11/08/21 14:09	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 11:32	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		25	191617	11/05/21 19:29	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 07:49	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: S-394_20211026

Lab Sample ID: 410-60816-7

Date Collected: 10/26/21 13:20

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190200	11/03/21 16:24	MXX6	ELLE
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/03/21 03:21	DZ6A	ELLE
Total/NA	Prep	RSK-175			189588	11/02/21 07:18	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 11:51	LXF2	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 15:16	MB4Z	ELLE
Total/NA	Analysis	300.0		10	554421	11/04/21 11:40	KIS	TAL PEN
Total Recoverable	Prep	3005A			190960	11/04/21 16:04	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191664	11/06/21 17:24	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:24	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 08:18	DI9Q	ELLE
Total/NA	Prep	351.2			192097	11/08/21 14:09	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 11:34	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 20:02	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 08:05	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: S-468_20211026

Lab Sample ID: 410-60816-8

Date Collected: 10/26/21 13:50

Matrix: Water

Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	190200	11/03/21 22:02	MXX6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-60816-1
Project/Site: Belmont Terminal GW Sampling

Client Sample ID: S-468_20211026
Lab Sample ID: 410-60816-8

Date Collected: 10/26/21 13:50
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/03/21 03:51	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D	DL	50	190082	11/03/21 15:33	P7EB	ELLE
Total/NA	Prep	RSK-175	DL		189588	11/02/21 07:18	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	200	189611	11/02/21 12:06	LXF2	ELLE
Total/NA	Prep	RSK-175			189277	11/01/21 10:00	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189281	11/01/21 15:37	LXF2	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 15:32	MB4Z	ELLE
Total/NA	Analysis	300.0		1	554421	11/04/21 12:30	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:27	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:20	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 08:24	DI9Q	ELLE
Total/NA	Prep	351.2			192097	11/08/21 14:09	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 11:36	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	191617	11/05/21 20:13	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 08:22	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: S-462_20211026
Lab Sample ID: 410-60816-9

Date Collected: 10/26/21 14:25
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190200	11/03/21 16:50	MXX6	ELLE
Total/NA	Prep	3510C			189623	11/02/21 10:57	BLX5	ELLE
Total/NA	Analysis	8270D		1	189938	11/03/21 04:21	DZ6A	ELLE
Total/NA	Prep	RSK-175			189588	11/02/21 07:18	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 12:22	LXF2	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 15:49	MB4Z	ELLE
Total/NA	Analysis	300.0		10	554421	11/04/21 12:56	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:30	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:14	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 08:30	DI9Q	ELLE
Total/NA	Prep	351.2			192097	11/08/21 14:09	UJE2	ELLE
Total/NA	Analysis	351.2		1	192607	11/09/21 11:15	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 20:24	KGQ6	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-60816-1
Project/Site: Belmont Terminal GW Sampling

Client Sample ID: S-462_20211026
Lab Sample ID: 410-60816-9

Date Collected: 10/26/21 14:25
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 09:11	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	191662	11/06/21 12:56	KGQ6	ELLE

Client Sample ID: TB21288
Lab Sample ID: 410-60816-10

Date Collected: 10/21/21 00:00
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190808	11/04/21 16:20	UKAD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-60816-1
Project/Site: Belmont Terminal GW Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310 B-2011		Water	Total Carbon
SM5310C		Water	Total Inorganic Carbon

Laboratory: Eurofins TestAmerica, Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-22
ANAB	ISO/IEC 17025	L2471	02-23-23
Arizona	State	AZ0710	01-12-22
Arkansas DEQ	State	88-0689	09-01-22
California	State	2510	06-30-22
Florida	NELAP	E81010	06-30-22
Georgia	State	E81010(FL)	06-30-22
Illinois	NELAP	200041	10-09-22
Iowa	State	367	08-01-22
Kansas	NELAP	E-10253	11-30-21
Kentucky (UST)	State	53	06-30-22
Kentucky (WW)	State	KY98030	12-31-21
Louisiana	NELAP	30976	06-30-22
Louisiana (DW)	State	LA017	12-31-21
Maryland	State	233	09-30-22
Massachusetts	State	M-FL094	06-30-22
Michigan	State	9912	06-30-22
New Jersey	NELAP	FL006	06-30-22
North Carolina (WW/SW)	State	314	12-31-21
Oklahoma	State	9810	08-31-22
Pennsylvania	NELAP	68-00467	01-31-22
Rhode Island	State	LAO00307	12-30-21
South Carolina	State	96026	06-30-22
Tennessee	State	TN02907	06-30-22
Texas	NELAP	T104704286	09-30-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-22
Washington	State	C915	05-15-22
West Virginia DEP	State	136	12-31-21

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Method	Method Description	Protocol	Laboratory
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
5310 B-2011	Carbon, Total and Total Inorganic	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
SM5310C	Carbon, Total Inorganic	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-60816-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-60816-1	S-454_20211026	Water	10/26/21 10:00	10/27/21 17:29
410-60816-2	MW-38_20211026	Water	10/26/21 10:00	10/27/21 17:29
410-60816-3	S-458_20211026	Water	10/26/21 11:10	10/27/21 17:29
410-60816-4	S-459_20211026	Water	10/26/21 11:10	10/27/21 17:29
410-60816-5	S-460_20211026	Water	10/26/21 12:05	10/27/21 17:29
410-60816-6	S-467_20211026	Water	10/26/21 12:25	10/27/21 17:29
410-60816-7	S-394_20211026	Water	10/26/21 13:20	10/27/21 17:29
410-60816-8	S-468_20211026	Water	10/26/21 13:50	10/27/21 17:29
410-60816-9	S-462_20211026	Water	10/26/21 14:25	10/27/21 17:29
410-60816-10	TB21288	Water	10/21/21 00:00	10/27/21 17:29

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custod

410-60816 Chain of Custody

eurofins Environment Testing America

Client Information	Sampler: ANDREA HILL, JIM CRAFT, JOHN GORCYCA		lab No(s):	COC No: 410-36664-11480.1
Client Contact: Ms. ~~Jennifer Menges~~ Jenny Rachel	Phone: 484 757 7890			Page: Page 1 of 4
Company: Stantec Consulting Corp Services Inc.	PWSID:			Job #:
Address: 1060 Andrew Drive Suite 140	Due Date Requested:			
City: West Chester	TAT Requested (days): STANDARD			
State, Zip: PA, 19380	Compliance Project: Δ Yes Δ No			
Phone: 610-840-2501(Tel)	PO #: 213402797			
Email: Jenny.Rachel jennifer.menges@stantec.com	WO#: Acct #: 166657			
Project Name: Belmont Terminal GW Sampling	Project #: 41004761			
Site: Former Philadelphia Refinery	SSOW#:			

Refer to 10/20/21 email to Amek Carter for requested analytes

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

* only Most Evergreen Short List Compounds plus TBA

Special Instructions/Note:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Evergreen Petroleum short List	Dissolved lead (Field filtered)	Dissolved headspace gases (ethane, methane, ethene)	EDB 8011	Naphthalene 8270	VOCs 8260 including TBA *	Total inorganic carbon (TIC)	alkalinity as CaCO3	Total Kjeldahl Nitrogen (TKN)	Total iron, total calcium, sulfate	Total carbon, total organic carbon	Total # of containers
S-454_20211026	10/26/21	1000	G	W			X	X	X	X	X	X	X	X	X	X	X	
MW-38_20211026	10/26/21	1000	G	W			X	X	X	X	X	X	X	X	X	X	X	
S-458_20211026	10/26/21	1110	G	W			X	X	X	X	X	X	X	X	X	X	X	
S-459_20211026	10/26/21	1110	G	W			X	X	X	X	X	X	X	X	X	X	X	
S-460_20211026	10/26/21	1205	G	W			X	X	X	X	X	X	X	X	X	X	X	
S-467_20211026	10/26/21	1225	G	W			X	X	X	X	X	X	X	X	X	X	X	
S-394_20211026	10/26/21	1320	G	W			X	X	X	X	X	X	X	X	X	X	X	
S-468_20211026	10/26/21	1350	G	W			X	X	X	X	X	X	X	X	X	X	X	
S-462_20211026	10/26/21	1425	G	W			X	X	X	X	X	X	X	X	X	X	X	
TB21288 (TRIP BLANK)	10/21/21	—	—	W								X						

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify): EQuIS EDD

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	10/22/21 0900	ELLE		10/24/21 1830	STANTEC
	10/27/21 1345	STANTEC		10/27/21 0346	
	10/27/21 17:10			10-27-21 1729	ELLE

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: not present

Cooler Temperature(s) °C and Other Remarks: 4.3°-8.3°C

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-60816-1

Login Number: 60816

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Renner, Melissa

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	False	Received same day of collection; chilling process has begun.
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-60816-1

Login Number: 60816
List Number: 2
Creator: Johnson, Avery D

List Source: Eurofins TestAmerica, Pensacola
List Creation: 11/02/21 11:25 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9 °C IR7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-61053-1
Client Project/Site: Belmont Terminal GW Sampling
Revision: 1

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Jenny Kachel

Authorized for release by:
12/9/2021 5:09:04 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
12/9/2021 5:09:04 PM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-61053-1
Project/Site: Belmont Terminal GW Sampling

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Analyte was found in the blank.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
!	Laboratory is not accredited for this parameter.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-61053-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-61053-1

Revision
The report being provided is a revision of the original report sent on 11/16/2021. The report (revision 1) is being revised due to: Update sample ID (S-393D_20211027).

Receipt
The samples were received on 10/28/2021 3:57 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.3°C, 2.3°C and 2.4°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: Surrogate recovery for the following samples were outside control limits: RW-1_20211027 (410-61053-6) and S-470_20211027 (410-61053-11). Re-extraction and/or re-analysis was performed outside of holding time with acceptable results.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
Method RSK_175: The software does not display the % Drift data to the whole number as is listed in the method (i.e. limit of 15 %). When applying the evaluation to whole number, the check passes the criteria with a value of 15.4 % Drift for Propene bracketing the method blank, lcs/lcsd for analytical batch 410-189614.MW-44_20211027 (410-61053-4), RW-26_20211027 (410-61053-5), RW-1_20211027 (410-61053-6), MW-35_20211027 (410-61053-7), S-461_20211027 (410-61053-8) and S-453_20211027 (410-61053-10)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8011: The 1,1,2,2-Tetrachloroethane surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: S-453_20211027 (410-61053-10). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method 8011: Surrogate recovery for the following samples were outside control limits: MW-44_20211027 (410-61053-4) and RW-1_20211027 (410-61053-6). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 400-554084 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 300_ORGFM_28D: The following samples were diluted due to high conductivity: S-456_20211027 (410-61053-1), MW-393D_20211027 (410-61053-2), S-466_20211027 (410-61053-3), MW-44_20211027 (410-61053-4), RW-26_20211027 (410-61053-5), RW-1_20211027 (410-61053-6), MW-35_20211027 (410-61053-7), S-461_20211027 (410-61053-8), S-469_20211027 (410-61053-9), S-453_20211027 (410-61053-10), S-470_20211027 (410-61053-11), (410-61053-L-1 MS) and (410-61053-L-1 MSD). Elevated reporting limits (RL) are provided.

Method 300_ORGFM_28D: The following samples were diluted to bring the concentration of target analytes within the calibration range: S-456_20211027 (410-61053-1), MW-393D_20211027 (410-61053-2), S-466_20211027 (410-61053-3), MW-44_20211027 (410-61053-4), RW-26_20211027 (410-61053-5), RW-1_20211027 (410-61053-6), MW-35_20211027 (410-61053-7), S-461_20211027 (410-61053-8), S-453_20211027 (410-61053-10) and S-470_20211027 (410-61053-11). Elevated reporting limits (RLs) are provided.

Job ID: 410-61053-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Conti

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Client Sample ID: S-456_20211027 — Lab Sample ID: 410-61053-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	23		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	11		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	10		1.0	0.30	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	19		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tertiary butyl ether	100		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	160		1.0	0.30	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	12		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	86		5.0	0.30	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol - DL	3900		500	120	ug/L	10		8260C/UST	Total/NA
Anthracene	5.0		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.36	J	0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.24	J	0.52	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.38	J	0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.17	J	0.52	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.45	J	0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	29		0.52	0.12	ug/L	1		8270D	Total/NA
Naphthalene	25		0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	19		0.52	0.11	ug/L	1		8270D	Total/NA
Pyrene	2.5		0.52	0.10	ug/L	1		8270D	Total/NA
Ethane (1C)	2.0	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	18000		500	300	ug/L	100		RSK-175	Total/NA
Sulfate	0.93	J cn	2.0	0.74	mg/L	2		300.0	Total/NA
Calcium	51		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	60		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.36	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	170		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	2.9		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	77	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	14		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	63	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-393D_20211027 — Lab Sample ID: 410-61053-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.38	J	0.52	0.10	ug/L	1		8270D	Total/NA
Pyrene	0.11	J	0.52	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	5.8		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate - DL	260	cn	20	7.4	mg/L	20		300.0	Total/NA
Calcium	56		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	22		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	110		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.59	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	34	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	1.6		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	32	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Client Sample ID: S-466_20211027 — Lab Sample ID: 410-61053-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3,5-Trimethylbenzene	1.5	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
Methyl tertiary butyl ether	0.75	J	1.0	0.20	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	1.3	J	5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	0.31	J	5.0	0.30	ug/L	1		8260C/UST	Total/NA
Anthracene	0.21	J	0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.96		0.52	0.13	ug/L	1		8270D	Total/NA
Naphthalene	1.9		0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	1.4		0.52	0.12	ug/L	1		8270D	Total/NA
Methane (1C)	11		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate - DL	240	cn	20	7.4	mg/L	20		300.0	Total/NA
Calcium	50		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	28		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	120		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	39	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	1.8		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	37	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: MW-44_20211027 — Lab Sample ID: 410-61053-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1300		10	4.0	ug/L	10		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	410		50	3.0	ug/L	10		8260C/UST	Total/NA
Toluene	200		10	3.0	ug/L	10		8260C/UST	Total/NA
Methyl tertiary butyl ether	480		10	2.0	ug/L	10		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	1300		50	10	ug/L	10		8260C/UST	Total/NA
Isopropylbenzene	54		50	3.0	ug/L	10		8260C/UST	Total/NA
t-Butyl alcohol	9200		500	120	ug/L	10		8260C/UST	Total/NA
Xylenes, Total - DL	5200		600	140	ug/L	100		8260C/UST	Total/NA
Benzene - DL	12000		100	30	ug/L	100		8260C/UST	Total/NA
Anthracene	0.88		0.54	0.11	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.33	J	0.54	0.11	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.43	J	0.54	0.12	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.73		0.54	0.11	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.42	J	0.54	0.11	ug/L	1		8270D	Total/NA
Chrysene	0.57		0.54	0.11	ug/L	1		8270D	Total/NA
Fluorene	5.3		0.54	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	6.5		0.54	0.12	ug/L	1		8270D	Total/NA
Pyrene	1.3		0.54	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	320		2.7	0.54	ug/L	5		8270D	Total/NA
Ethane (1C)	6.3		5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	19000	cn	500	300	ug/L	100		RSK-175	Total/NA
Ethylene Dibromide (1C)	0.021	J cn	0.028	0.0094	ug/L	1		8011	Total/NA
Calcium	44		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	72		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	4.0		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	140		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	3.9		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	110	!	10	5.0	mg/L	10		5310 B-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: MW-44_20211027 (Continued) — Lab Sample ID: 410-61053-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	28		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	82	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: RW-26_20211027 — Lab Sample ID: 410-61053-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	5.1		1.0	0.40	ug/L	1		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	6.7		5.0	0.30	ug/L	1		8260C/UST	Total/NA
Toluene	5.3		1.0	0.30	ug/L	1		8260C/UST	Total/NA
Xylenes, Total	42		6.0	1.4	ug/L	1		8260C/UST	Total/NA
Methyl tertiary butyl ether	390		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	130		1.0	0.30	ug/L	1		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	27		5.0	1.0	ug/L	1		8260C/UST	Total/NA
Isopropylbenzene	8.5		5.0	0.30	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol - DL	22000		2500	600	ug/L	50		8260C/UST	Total/NA
Anthracene	0.33	J	0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	2.4		0.52	0.12	ug/L	1		8270D	Total/NA
Naphthalene	97		0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	1.9		0.52	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.18	J	0.52	0.10	ug/L	1		8270D	Total/NA
Ethane (1C)	4.1	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	16000	cn	500	300	ug/L	100		RSK-175	Total/NA
Calcium	110		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	54		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	320		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	11		5.0	2.5	mg/L	5		351.2	Total/NA
Total Carbon	120	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	18		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	100	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: RW-1_20211027 — Lab Sample ID: 410-61053-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	68		5.0	2.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	210		25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	180		5.0	1.5	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	1400		30	7.0	ug/L	5		8260C/UST	Total/NA
Benzene	250		5.0	1.5	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	890		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	89		25	1.5	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether - DL	6500		50	10	ug/L	50		8260C/UST	Total/NA
t-Butyl alcohol - DL	26000		2500	600	ug/L	50		8260C/UST	Total/NA
Anthracene	4.9	cn	0.50	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	1.5	cn	0.50	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.72	cn	0.50	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.76	cn	0.50	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.38	J cn	0.50	0.10	ug/L	1		8270D	Total/NA
Chrysene	1.4	cn	0.50	0.10	ug/L	1		8270D	Total/NA
Fluorene	16	cn	0.50	0.12	ug/L	1		8270D	Total/NA
Naphthalene	79	cn	0.50	0.10	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: RW-1_20211027 (Continued) — Lab Sample ID: 410-61053-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	18	cn	0.50	0.11	ug/L	1		8270D	Total/NA
Pyrene	7.2	cn	0.50	0.10	ug/L	1		8270D	Total/NA
Methane (1C) - DL	19000	cn	500	300	ug/L	100		RSK-175	Total/NA
Calcium	130		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	60	B	0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	1.1		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	310		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	12		5.0	2.5	mg/L	5		351.2	Total/NA
Total Carbon	140	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	24		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	120	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: MW-35_20211027 — Lab Sample ID: 410-61053-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	150		5.0	2.0	ug/L	5		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	69		25	1.5	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	64		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	2.1	J	5.0	1.0	ug/L	5		8260C/UST	Total/NA
Benzene	16		5.0	1.5	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	180		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	120		25	1.5	ug/L	5		8260C/UST	Total/NA
Anthracene	5.3		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.38	J	0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.26	J	0.52	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.31	J	0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.12	J	0.52	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.43	J	0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	48		0.52	0.12	ug/L	1		8270D	Total/NA
Phenanthrene	32		0.52	0.11	ug/L	1		8270D	Total/NA
Pyrene	2.1		0.52	0.10	ug/L	1		8270D	Total/NA
Naphthalene - DL	730		5.2	1.0	ug/L	10		8270D	Total/NA
Methane (1C) - DL	18000	cn	500	300	ug/L	100		RSK-175	Total/NA
Sulfate	2.3	J cn	5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	60		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	38		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	290		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.73	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	88	!	2.0	1.0	mg/L	2		5310 B-2011	Total/NA
Total Organic Carbon	7.3		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	81	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-461_20211027 — Lab Sample ID: 410-61053-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	5.7		5.0	2.0	ug/L	5		8260C/UST	Total/NA
Toluene	8.9		5.0	1.5	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	45		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	140		5.0	1.0	ug/L	5		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-461_20211027 (Continued) — Lab Sample ID: 410-61053-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	30		5.0	1.5	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	14	J	25	1.5	ug/L	5		8260C/UST	Total/NA
t-Butyl alcohol	820		250	60	ug/L	5		8260C/UST	Total/NA
Benzo[a]anthracene	0.11	J	0.52	0.10	ug/L	1		8270D	Total/NA
Naphthalene	0.79		0.52	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.13	J	0.52	0.11	ug/L	1		8270D	Total/NA
Pyrene	1.1		0.52	0.10	ug/L	1		8270D	Total/NA
Methane (1C) - DL	10000	cn	250	150	ug/L	50		RSK-175	Total/NA
Sulfate	20	cn	5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	130		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	37		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	400		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	2.1		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	120	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	14		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	110	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-469_20211027 — Lab Sample ID: 410-61053-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.4		1.0	0.30	ug/L	1		8260C/UST	Total/NA
Naphthalene	0.56		0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	7.1		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	96	cn	5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	88		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	0.54	B	0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	350		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	79	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	2.2		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	77	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-453_20211027 — Lab Sample ID: 410-61053-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3,5-Trimethylbenzene	200		25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	51		5.0	1.5	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	2000		30	7.0	ug/L	5		8260C/UST	Total/NA
Methyl tertiary butyl ether	90		5.0	1.0	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	670		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	75		25	1.5	ug/L	5		8260C/UST	Total/NA
Ethylbenzene - DL	1300		50	20	ug/L	50		8260C/UST	Total/NA
Benzene - DL	3900		50	15	ug/L	50		8260C/UST	Total/NA
t-Butyl alcohol - DL	5400		2500	600	ug/L	50		8260C/UST	Total/NA
Benzo[a]anthracene	0.18	J	0.57	0.11	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.15	J	0.57	0.13	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.20	J	0.57	0.11	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.12	J	0.57	0.11	ug/L	1		8270D	Total/NA
Chrysene	0.21	J	0.57	0.11	ug/L	1		8270D	Total/NA
Fluorene	1.9		0.57	0.14	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-453_20211027 (Continued) — Lab Sample ID: 410-61053-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	1.9		0.57	0.13	ug/L	1		8270D	Total/NA
Pyrene	0.43	J	0.57	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	270		2.9	0.57	ug/L	5		8270D	Total/NA
Ethane (1C)	2.7	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	14000	cn	500	300	ug/L	100		RSK-175	Total/NA
Calcium	49		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	100		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	9.1		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	110		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.60	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	82	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	21		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	61	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-470_20211027 — Lab Sample ID: 410-61053-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tertiary butyl ether	2.0		1.0	0.20	ug/L	1		8260C/UST	Total/NA
Benzene	4.3		1.0	0.30	ug/L	1		8260C/UST	Total/NA
t-Butyl alcohol	28	J	50	12	ug/L	1		8260C/UST	Total/NA
Phenanthrene	0.11	J cn	0.52	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.14	J cn	0.52	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	58		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate - DL	290	cn	20	7.4	mg/L	20		300.0	Total/NA
Calcium	51		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	78		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	73		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.62	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	62	!	2.0	1.0	mg/L	2		5310 B-2011	Total/NA
Total Organic Carbon	10		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	52	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: TB21288 — Lab Sample ID: 410-61053-12

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-456_20211027

Date Collected: 10/27/21 09:50
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-1

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**23**		1.0	0.40	ug/L			11/04/21 20:03	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 20:03	1
1,3,5-Trimethylbenzene	**11**		5.0	0.30	ug/L			11/04/21 20:03	1
Toluene	**10**		1.0	0.30	ug/L			11/04/21 20:03	1
Xylenes, Total	**19**		6.0	1.4	ug/L			11/04/21 20:03	1
Methyl tertiary butyl ether	**100**		1.0	0.20	ug/L			11/04/21 20:03	1
Benzene	**160**		1.0	0.30	ug/L			11/04/21 20:03	1
1,2,4-Trimethylbenzene	**12**		5.0	1.0	ug/L			11/04/21 20:03	1
Isopropylbenzene	**86**		5.0	0.30	ug/L			11/04/21 20:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*11/04/21 20:03*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/04/21 20:03*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/04/21 20:03*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/04/21 20:03*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butyl alcohol	**3900**		500	120	ug/L			11/04/21 20:29	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/04/21 20:29*	*10*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/04/21 20:29*	*10*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/04/21 20:29*	*10*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/04/21 20:29*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**5.0**		0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:12	1
Benzo[a]anthracene	**0.36**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:12	1
Benzo[a]pyrene	**0.24**	**J**	0.52	0.11	ug/L		11/02/21 08:35	11/11/21 15:12	1
Benzo[b]fluoranthene	**0.38**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:12	1
Benzo[g,h,i]perylene	**0.17**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:12	1
Chrysene	**0.45**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:12	1
Fluorene	**29**		0.52	0.12	ug/L		11/02/21 08:35	11/11/21 15:12	1
Naphthalene	**25**		0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:12	1
Phenanthrene	**19**		0.52	0.11	ug/L		11/02/21 08:35	11/11/21 15:12	1
Pyrene	**2.5**		0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*35 - 100*	*11/02/21 08:35*	*11/11/21 15:12*	*1*
Nitrobenzene-d5 (Surr)	*74*		*22 - 117*	*11/02/21 08:35*	*11/11/21 15:12*	*1*
p-Terphenyl-d14 (Surr)	*65*		*31 - 119*	*11/02/21 08:35*	*11/11/21 15:12*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**2.0**	**J**	5.0	1.0	ug/L		11/01/21 10:00	11/01/21 16:14	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 10:00	11/01/21 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*84*		*28 - 130*	*11/01/21 10:00*	*11/01/21 16:14*	*1*

Client Sample ID: S-456_20211027

Date Collected: 10/27/21 09:50
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-1
Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	18000		500	300	ug/L		11/02/21 07:18	11/02/21 12:37	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 130*	*11/02/21 07:18*	*11/02/21 12:37*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+	0.029	0.0095	ug/L		11/01/21 03:21	11/01/21 21:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*134*		*46 - 136*	*11/01/21 03:21*	*11/01/21 21:42*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*116*		*46 - 136*	*11/01/21 03:21*	*11/01/21 21:42*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.93	J cn	2.0	0.74	mg/L			11/01/21 13:47	2

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	51		0.50	0.096	mg/L		11/03/21 19:43	11/09/21 15:22	1
Iron	60		0.20	0.040	mg/L		11/03/21 19:43	11/09/21 15:22	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.36	J	0.52	0.073	ug/L		11/04/21 08:30	11/04/21 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	170		8.0	8.0	mg/L			11/02/21 02:41	1
Total Kjeldahl Nitrogen	2.9		1.0	0.50	mg/L		11/11/21 09:15	11/15/21 10:27	1
Total Carbon	77	!	5.0	2.5	mg/L			11/03/21 14:20	5
Total Organic Carbon	14		1.0	0.50	mg/L			11/02/21 18:34	1
Total Inorganic Carbon	63	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-393D_20211027

Date Collected: 10/27/21 09:55
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-2
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 16:05	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 16:05	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/04/21 16:05	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 16:05	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 16:05	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/04/21 16:05	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 16:05	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/04/21 16:05	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/04/21 16:05	1
t-Butyl alcohol	ND		50	12	ug/L			11/04/21 16:05	1

Client Sample ID: S-393D_20211027

Date Collected: 10/27/21 09:55
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/04/21 16:05*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/04/21 16:05*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/04/21 16:05*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/04/21 16:05*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:40	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:40	1
Benzo[a]pyrene	ND		0.52	0.11	ug/L		11/02/21 08:35	11/11/21 15:40	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:40	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:40	1
Chrysene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:40	1
Fluorene	ND		0.52	0.12	ug/L		11/02/21 08:35	11/11/21 15:40	1
Naphthalene	**0.38**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:40	1
Phenanthrene	ND		0.52	0.11	ug/L		11/02/21 08:35	11/11/21 15:40	1
Pyrene	**0.11**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/11/21 15:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*35 - 100*	*11/02/21 08:35*	*11/11/21 15:40*	*1*
Nitrobenzene-d5 (Surr)	*76*		*22 - 117*	*11/02/21 08:35*	*11/11/21 15:40*	*1*
p-Terphenyl-d14 (Surr)	*54*		*31 - 119*	*11/02/21 08:35*	*11/11/21 15:40*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 19:48	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 19:48	1
Methane (1C)	**5.8**		5.0	3.0	ug/L		11/01/21 12:33	11/01/21 19:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*86*		*28 - 130*	*11/01/21 12:33*	*11/01/21 19:48*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+	0.028	0.0095	ug/L		11/01/21 03:21	11/01/21 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*128*		*46 - 136*	*11/01/21 03:21*	*11/01/21 21:58*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*111*		*46 - 136*	*11/01/21 03:21*	*11/01/21 21:58*	*1*

Method: 300.0 - Anions, Ion Chromatography - DL
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**260**	**cn**	20	7.4	mg/L			11/02/21 18:02	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**56**		0.50	0.096	mg/L		11/04/21 06:14	11/09/21 15:42	1
Iron	**22**		0.20	0.040	mg/L		11/04/21 06:14	11/09/21 15:42	1

Client Sample ID: S-393D_20211027

Lab Sample ID: 410-61053-2

Date Collected: 10/27/21 09:55
Matrix: Water
Date Received: 10/28/21 15:57

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 17:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	110		8.0	8.0	mg/L			11/02/21 05:21	1
Total Kjeldahl Nitrogen	0.59	J	1.0	0.50	mg/L		11/11/21 09:15	11/15/21 10:30	1
Total Carbon	34	!	10	5.0	mg/L			11/03/21 17:15	10
Total Organic Carbon	1.6		1.0	0.50	mg/L			11/02/21 19:55	1
Total Inorganic Carbon	32	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-466_20211027

Lab Sample ID: 410-61053-3

Date Collected: 10/27/21 10:50
Matrix: Water
Date Received: 10/28/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 16:32	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 16:32	1
1,3,5-Trimethylbenzene	1.5	J	5.0	0.30	ug/L			11/04/21 16:32	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 16:32	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 16:32	1
Methyl tertiary butyl ether	0.75	J	1.0	0.20	ug/L			11/04/21 16:32	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 16:32	1
1,2,4-Trimethylbenzene	1.3	J	5.0	1.0	ug/L			11/04/21 16:32	1
Isopropylbenzene	0.31	J	5.0	0.30	ug/L			11/04/21 16:32	1
t-Butyl alcohol	ND		50	12	ug/L			11/04/21 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*11/04/21 16:32*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/04/21 16:32*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/04/21 16:32*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/04/21 16:32*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	0.21	J	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 12:15	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 12:15	1
Benzo[a]pyrene	ND		0.52	0.12	ug/L		11/02/21 08:35	11/08/21 12:15	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 12:15	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 12:15	1
Chrysene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 12:15	1
Fluorene	0.96		0.52	0.13	ug/L		11/02/21 08:35	11/08/21 12:15	1
Naphthalene	1.9		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 12:15	1
Phenanthrene	1.4		0.52	0.12	ug/L		11/02/21 08:35	11/08/21 12:15	1
Pyrene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 12:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*60*		*35 - 100*	*11/02/21 08:35*	*11/08/21 12:15*	*1*
Nitrobenzene-d5 (Surr)	*61*		*22 - 117*	*11/02/21 08:35*	*11/08/21 12:15*	*1*
p-Terphenyl-d14 (Surr)	*55*		*31 - 119*	*11/02/21 08:35*	*11/08/21 12:15*	*1*

Client Sample ID: S-466_20211027

Date Collected: 10/27/21 10:50
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-3
Matrix: Water

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 20:05	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 20:05	1
Methane (1C)	**11**		5.0	3.0	ug/L		11/01/21 12:33	11/01/21 20:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*79*		*28 - 130*	*11/01/21 12:33*	*11/01/21 20:05*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+	0.029	0.0095	ug/L		11/01/21 03:21	11/01/21 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*120*		*46 - 136*	*11/01/21 03:21*	*11/01/21 23:05*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*	*11/01/21 03:21*	*11/01/21 23:05*	*1*

Method: 300.0 - Anions, Ion Chromatography - DL
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**240**	**cn**	20	7.4	mg/L			11/02/21 18:27	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**50**		0.50	0.096	mg/L		11/03/21 19:43	11/09/21 15:25	1
Iron	**28**		0.20	0.040	mg/L		11/03/21 19:43	11/09/21 15:25	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**120**		8.0	8.0	mg/L			11/02/21 03:31	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/11/21 09:15	11/15/21 10:07	1
Total Carbon	**39**	**!**	10	5.0	mg/L			11/03/21 17:47	10
Total Organic Carbon	**1.8**		1.0	0.50	mg/L			11/02/21 20:11	1
Total Inorganic Carbon	**37**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: MW-44_20211027

Date Collected: 10/27/21 12:15
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-4
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1300**		10	4.0	ug/L			11/04/21 20:55	10
1,2-Dichloroethane	ND		10	3.0	ug/L			11/04/21 20:55	10
1,3,5-Trimethylbenzene	**410**		50	3.0	ug/L			11/04/21 20:55	10
Toluene	**200**		10	3.0	ug/L			11/04/21 20:55	10
Methyl tertiary butyl ether	**480**		10	2.0	ug/L			11/04/21 20:55	10
1,2,4-Trimethylbenzene	**1300**		50	10	ug/L			11/04/21 20:55	10
Isopropylbenzene	**54**		50	3.0	ug/L			11/04/21 20:55	10
t-Butyl alcohol	**9200**		500	120	ug/L			11/04/21 20:55	10

Client Sample ID: MW-44_20211027

Date Collected: 10/27/21 12:15
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*11/04/21 20:55*	*10*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/04/21 20:55*	*10*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/04/21 20:55*	*10*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/04/21 20:55*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**5200**		600	140	ug/L			11/04/21 21:21	100
Benzene	**12000**		100	30	ug/L			11/04/21 21:21	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/04/21 21:21*	*100*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/04/21 21:21*	*100*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/04/21 21:21*	*100*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/04/21 21:21*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.88**		0.54	0.11	ug/L		11/02/21 08:35	11/08/21 12:45	1
Benzo[a]anthracene	**0.33**	**J**	0.54	0.11	ug/L		11/02/21 08:35	11/08/21 12:45	1
Benzo[a]pyrene	**0.43**	**J**	0.54	0.12	ug/L		11/02/21 08:35	11/08/21 12:45	1
Benzo[b]fluoranthene	**0.73**		0.54	0.11	ug/L		11/02/21 08:35	11/08/21 12:45	1
Benzo[g,h,i]perylene	**0.42**	**J**	0.54	0.11	ug/L		11/02/21 08:35	11/08/21 12:45	1
Chrysene	**0.57**		0.54	0.11	ug/L		11/02/21 08:35	11/08/21 12:45	1
Fluorene	**5.3**		0.54	0.13	ug/L		11/02/21 08:35	11/08/21 12:45	1
Phenanthrene	**6.5**		0.54	0.12	ug/L		11/02/21 08:35	11/08/21 12:45	1
Pyrene	**1.3**		0.54	0.11	ug/L		11/02/21 08:35	11/08/21 12:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*35 - 100*	*11/02/21 08:35*	*11/08/21 12:45*	*1*
Nitrobenzene-d5 (Surr)	*77*		*22 - 117*	*11/02/21 08:35*	*11/08/21 12:45*	*1*
p-Terphenyl-d14 (Surr)	*71*		*31 - 119*	*11/02/21 08:35*	*11/08/21 12:45*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**320**		2.7	0.54	ug/L		11/02/21 08:35	11/08/21 13:15	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*81*		*35 - 100*	*11/02/21 08:35*	*11/08/21 13:15*	*5*
Nitrobenzene-d5 (Surr)	*83*		*22 - 117*	*11/02/21 08:35*	*11/08/21 13:15*	*5*
p-Terphenyl-d14 (Surr)	*72*		*31 - 119*	*11/02/21 08:35*	*11/08/21 13:15*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**6.3**		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 20:22	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 20:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*85*		*28 - 130*	*11/01/21 12:33*	*11/01/21 20:22*	*1*

Client Sample ID: MW-44_20211027

Date Collected: 10/27/21 12:15
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-4

Matrix: Water

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	19000	cn	500	300	ug/L		11/02/21 07:25	11/02/21 11:27	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*103*	*cn*	*28 - 130*	*11/02/21 07:25*	*11/02/21 11:27*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	0.021	J cn	0.028	0.0094	ug/L		11/06/21 04:07	11/06/21 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*148*	*S1+ cn*	*46 - 136*	*11/06/21 04:07*	*11/06/21 16:56*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND	cn	5.0	1.9	mg/L			11/01/21 15:51	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	44		0.50	0.096	mg/L		11/03/21 19:43	11/09/21 15:09	1
Iron	72		0.20	0.040	mg/L		11/03/21 19:43	11/09/21 15:09	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.0		0.52	0.073	ug/L		11/04/21 08:32	11/04/21 18:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	140		8.0	8.0	mg/L			11/02/21 03:00	1
Total Kjeldahl Nitrogen	3.9		1.0	0.50	mg/L		11/11/21 09:15	11/15/21 10:02	1
Total Carbon	110	!	10	5.0	mg/L			11/03/21 14:31	10
Total Organic Carbon	28		1.0	0.50	mg/L			11/02/21 20:28	1
Total Inorganic Carbon	82	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: RW-26_20211027

Date Collected: 10/27/21 12:18
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-5

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	5.1		1.0	0.40	ug/L			11/04/21 16:59	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 16:59	1
1,3,5-Trimethylbenzene	6.7		5.0	0.30	ug/L			11/04/21 16:59	1
Toluene	5.3		1.0	0.30	ug/L			11/04/21 16:59	1
Xylenes, Total	42		6.0	1.4	ug/L			11/04/21 16:59	1
Methyl tertiary butyl ether	390		1.0	0.20	ug/L			11/04/21 16:59	1
Benzene	130		1.0	0.30	ug/L			11/04/21 16:59	1
1,2,4-Trimethylbenzene	27		5.0	1.0	ug/L			11/04/21 16:59	1
Isopropylbenzene	8.5		5.0	0.30	ug/L			11/04/21 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/04/21 16:59*	*1*

Client Sample ID: RW-26_20211027

Date Collected: 10/27/21 12:18
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-5

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/04/21 16:59*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*11/04/21 16:59*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/04/21 16:59*	*1*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butyl alcohol	**22000**		2500	600	ug/L			11/06/21 20:26	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*80 - 120*		*11/06/21 20:26*	*50*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/06/21 20:26*	*50*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/06/21 20:26*	*50*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/06/21 20:26*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.33**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 13:45	1
Benzo[a]anthracene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 13:45	1
Benzo[a]pyrene	ND		0.52	0.11	ug/L		11/02/21 08:35	11/08/21 13:45	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 13:45	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 13:45	1
Chrysene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 13:45	1
Fluorene	**2.4**		0.52	0.12	ug/L		11/02/21 08:35	11/08/21 13:45	1
Naphthalene	**97**		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 13:45	1
Phenanthrene	**1.9**		0.52	0.11	ug/L		11/02/21 08:35	11/08/21 13:45	1
Pyrene	**0.18**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*35 - 100*	*11/02/21 08:35*	*11/08/21 13:45*	*1*
Nitrobenzene-d5 (Surr)	*81*		*22 - 117*	*11/02/21 08:35*	*11/08/21 13:45*	*1*
p-Terphenyl-d14 (Surr)	*75*		*31 - 119*	*11/02/21 08:35*	*11/08/21 13:45*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**4.1**	**J**	5.0	1.0	ug/L		11/01/21 12:33	11/01/21 20:39	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 20:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*77*		*28 - 130*	*11/01/21 12:33*	*11/01/21 20:39*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**16000**	**cn**	500	300	ug/L		11/02/21 07:25	11/02/21 11:45	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*	*cn*	*28 - 130*	*11/02/21 07:25*	*11/02/21 11:45*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+	0.029	0.0096	ug/L		11/01/21 03:21	11/01/21 23:38	1

Client Sample ID: RW-26_20211027

Lab Sample ID: 410-61053-5

Date Collected: 10/27/21 12:18

Matrix: Water

Date Received: 10/28/21 15:57

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*123*		*46 - 136*	*11/01/21 03:21*	*11/01/21 23:38*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*117*		*46 - 136*	*11/01/21 03:21*	*11/01/21 23:38*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND	cn	5.0	1.9	mg/L			11/01/21 17:06	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**		0.50	0.096	mg/L		11/04/21 06:14	11/09/21 15:32	1
Iron	**54**		0.20	0.040	mg/L		11/04/21 06:14	11/09/21 15:32	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 17:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**320**		8.0	8.0	mg/L			11/02/21 03:07	1
Total Kjeldahl Nitrogen	**11**		5.0	2.5	mg/L		11/11/21 09:15	11/15/21 10:50	5
Total Carbon	**120**	!	5.0	2.5	mg/L			11/03/21 14:41	5
Total Organic Carbon	**18**		1.0	0.50	mg/L			11/02/21 21:17	1
Total Inorganic Carbon	**100**	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: RW-1_20211027

Lab Sample ID: 410-61053-6

Date Collected: 10/27/21 11:00

Matrix: Water

Date Received: 10/28/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**68**		5.0	2.0	ug/L			11/04/21 21:46	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			11/04/21 21:46	5
1,3,5-Trimethylbenzene	**210**		25	1.5	ug/L			11/04/21 21:46	5
Toluene	**180**		5.0	1.5	ug/L			11/04/21 21:46	5
Xylenes, Total	**1400**		30	7.0	ug/L			11/04/21 21:46	5
Benzene	**250**		5.0	1.5	ug/L			11/04/21 21:46	5
1,2,4-Trimethylbenzene	**890**		25	5.0	ug/L			11/04/21 21:46	5
Isopropylbenzene	**89**		25	1.5	ug/L			11/04/21 21:46	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/04/21 21:46*	*5*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*11/04/21 21:46*	*5*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/04/21 21:46*	*5*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/04/21 21:46*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tertiary butyl ether	**6500**		50	10	ug/L			11/04/21 22:13	50
t-Butyl alcohol	**26000**		2500	600	ug/L			11/04/21 22:13	50

Client Sample ID: RW-1_20211027

Date Collected: 10/27/21 11:00
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/04/21 22:13*	*50*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/04/21 22:13*	*50*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/04/21 22:13*	*50*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/04/21 22:13*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**4.9**	**cn**	0.50	0.10	ug/L		11/02/21 08:35	11/08/21 14:15	1
Benzo[a]anthracene	**1.5**	**cn**	0.50	0.10	ug/L		11/02/21 08:35	11/08/21 14:15	1
Benzo[a]pyrene	**0.72**	**cn**	0.50	0.11	ug/L		11/02/21 08:35	11/08/21 14:15	1
Benzo[b]fluoranthene	**0.76**	**cn**	0.50	0.10	ug/L		11/02/21 08:35	11/08/21 14:15	1
Benzo[g,h,i]perylene	**0.38**	**J cn**	0.50	0.10	ug/L		11/02/21 08:35	11/08/21 14:15	1
Chrysene	**1.4**	**cn**	0.50	0.10	ug/L		11/02/21 08:35	11/08/21 14:15	1
Fluorene	**16**	**cn**	0.50	0.12	ug/L		11/02/21 08:35	11/08/21 14:15	1
Naphthalene	**79**	**cn**	0.50	0.10	ug/L		11/02/21 08:35	11/08/21 14:15	1
Phenanthrene	**18**	**cn**	0.50	0.11	ug/L		11/02/21 08:35	11/08/21 14:15	1
Pyrene	**7.2**	**cn**	0.50	0.10	ug/L		11/02/21 08:35	11/08/21 14:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*80*	*cn*	*35 - 100*	*11/02/21 08:35*	*11/08/21 14:15*	*1*
Nitrobenzene-d5 (Surr)	*1*	*S1- cn*	*22 - 117*	*11/02/21 08:35*	*11/08/21 14:15*	*1*
p-Terphenyl-d14 (Surr)	*85*	*cn*	*31 - 119*	*11/02/21 08:35*	*11/08/21 14:15*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 20:55	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 20:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*76*		*28 - 130*	*11/01/21 12:33*	*11/01/21 20:55*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**19000**	**cn**	500	300	ug/L		11/02/21 07:25	11/02/21 12:03	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*108*	*cn*	*28 - 130*	*11/02/21 07:25*	*11/02/21 12:03*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	cn	0.028	0.0095	ug/L		11/06/21 04:07	11/06/21 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*123*	*cn*	*46 - 136*	*11/06/21 04:07*	*11/06/21 17:13*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND	cn	5.0	1.9	mg/L			11/01/21 17:31	5

Client Sample ID: RW-1_20211027

Lab Sample ID: 410-61053-6

Date Collected: 10/27/21 11:00

Matrix: Water

Date Received: 10/28/21 15:57

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	130		0.50	0.096	mg/L		11/04/21 13:21	11/10/21 14:33	1
Iron	60	B	0.20	0.040	mg/L		11/04/21 13:21	11/10/21 16:58	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	1.1		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 17:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	310		8.0	8.0	mg/L			11/02/21 03:20	1
Total Kjeldahl Nitrogen	12		5.0	2.5	mg/L		11/11/21 09:15	11/15/21 10:48	5
Total Carbon	140	!	10	5.0	mg/L			11/03/21 14:52	10
Total Organic Carbon	24		1.0	0.50	mg/L			11/02/21 21:33	1
Total Inorganic Carbon	120	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: MW-35_20211027

Lab Sample ID: 410-61053-7

Date Collected: 10/27/21 13:25

Matrix: Water

Date Received: 10/28/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	150		5.0	2.0	ug/L			11/04/21 22:39	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			11/04/21 22:39	5
1,3,5-Trimethylbenzene	69		25	1.5	ug/L			11/04/21 22:39	5
Toluene	ND		5.0	1.5	ug/L			11/04/21 22:39	5
Xylenes, Total	64		30	7.0	ug/L			11/04/21 22:39	5
Methyl tertiary butyl ether	2.1	J	5.0	1.0	ug/L			11/04/21 22:39	5
Benzene	16		5.0	1.5	ug/L			11/04/21 22:39	5
1,2,4-Trimethylbenzene	180		25	5.0	ug/L			11/04/21 22:39	5
Isopropylbenzene	120		25	1.5	ug/L			11/04/21 22:39	5
t-Butyl alcohol	ND		250	60	ug/L			11/04/21 22:39	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/04/21 22:39*	*5*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*11/04/21 22:39*	*5*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/04/21 22:39*	*5*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/04/21 22:39*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	5.3		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 14:45	1
Benzo[a]anthracene	0.38	J	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 14:45	1
Benzo[a]pyrene	0.26	J	0.52	0.11	ug/L		11/02/21 08:35	11/08/21 14:45	1
Benzo[b]fluoranthene	0.31	J	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 14:45	1
Benzo[g,h,i]perylene	0.12	J	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 14:45	1
Chrysene	0.43	J	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 14:45	1
Fluorene	48		0.52	0.12	ug/L		11/02/21 08:35	11/08/21 14:45	1
Phenanthrene	32		0.52	0.11	ug/L		11/02/21 08:35	11/08/21 14:45	1
Pyrene	2.1		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 14:45	1

Client Sample ID: MW-35_20211027

Date Collected: 10/27/21 13:25
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-7

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*		*35 - 100*	*11/02/21 08:35*	*11/08/21 14:45*	*1*
Nitrobenzene-d5 (Surr)	*77*		*22 - 117*	*11/02/21 08:35*	*11/08/21 14:45*	*1*
p-Terphenyl-d14 (Surr)	*89*		*31 - 119*	*11/02/21 08:35*	*11/08/21 14:45*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**730**		5.2	1.0	ug/L		11/02/21 08:35	11/08/21 15:15	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*35 - 100*	*11/02/21 08:35*	*11/08/21 15:15*	*10*
Nitrobenzene-d5 (Surr)	*83*		*22 - 117*	*11/02/21 08:35*	*11/08/21 15:15*	*10*
p-Terphenyl-d14 (Surr)	*95*		*31 - 119*	*11/02/21 08:35*	*11/08/21 15:15*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 22:20	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 22:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 130*	*11/01/21 12:40*	*11/01/21 22:20*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**18000**	**cn**	500	300	ug/L		11/02/21 07:25	11/02/21 12:21	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*	*cn*	*28 - 130*	*11/02/21 07:25*	*11/02/21 12:21*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+	0.028	0.0095	ug/L		11/01/21 03:21	11/02/21 00:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*114*		*46 - 136*	*11/01/21 03:21*	*11/02/21 00:12*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*107*		*46 - 136*	*11/01/21 03:21*	*11/02/21 00:12*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**2.3**	**J cn**	5.0	1.9	mg/L			11/01/21 17:56	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**60**		0.50	0.096	mg/L		11/04/21 06:14	11/09/21 15:35	1
Iron	**38**		0.20	0.040	mg/L		11/04/21 06:14	11/09/21 15:35	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 17:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**290**		8.0	8.0	mg/L			11/02/21 03:13	1

Client Sample ID: MW-35_20211027

Lab Sample ID: 410-61053-7

Date Collected: 10/27/21 13:25
Matrix: Water
Date Received: 10/28/21 15:57

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	**0.73**	**J**	1.0	0.50	mg/L		11/11/21 09:15	11/15/21 09:58	1
Total Carbon	**88**	**!**	2.0	1.0	mg/L			11/03/21 15:25	2
Total Organic Carbon	**7.3**		1.0	0.50	mg/L			11/02/21 21:49	1
Total Inorganic Carbon	**81**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-461_20211027

Lab Sample ID: 410-61053-8

Date Collected: 10/27/21 13:35
Matrix: Water
Date Received: 10/28/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**5.7**		5.0	2.0	ug/L			11/04/21 23:30	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			11/04/21 23:30	5
1,3,5-Trimethylbenzene	ND		25	1.5	ug/L			11/04/21 23:30	5
Toluene	**8.9**		5.0	1.5	ug/L			11/04/21 23:30	5
Xylenes, Total	**45**		30	7.0	ug/L			11/04/21 23:30	5
Methyl tertiary butyl ether	**140**		5.0	1.0	ug/L			11/04/21 23:30	5
Benzene	**30**		5.0	1.5	ug/L			11/04/21 23:30	5
1,2,4-Trimethylbenzene	ND		25	5.0	ug/L			11/04/21 23:30	5
Isopropylbenzene	**14**	**J**	25	1.5	ug/L			11/04/21 23:30	5
t-Butyl alcohol	**820**		250	60	ug/L			11/04/21 23:30	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/04/21 23:30*	*5*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/04/21 23:30*	*5*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/04/21 23:30*	*5*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/04/21 23:30*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 15:45	1
Benzo[a]anthracene	**0.11**	**J**	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 15:45	1
Benzo[a]pyrene	ND		0.52	0.11	ug/L		11/02/21 08:35	11/08/21 15:45	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 15:45	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 15:45	1
Chrysene	ND		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 15:45	1
Fluorene	ND		0.52	0.13	ug/L		11/02/21 08:35	11/08/21 15:45	1
Naphthalene	**0.79**		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 15:45	1
Phenanthrene	**0.13**	**J**	0.52	0.11	ug/L		11/02/21 08:35	11/08/21 15:45	1
Pyrene	**1.1**		0.52	0.10	ug/L		11/02/21 08:35	11/08/21 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*83*		*35 - 100*	*11/02/21 08:35*	*11/08/21 15:45*	*1*
Nitrobenzene-d5 (Surr)	*86*		*22 - 117*	*11/02/21 08:35*	*11/08/21 15:45*	*1*
p-Terphenyl-d14 (Surr)	*89*		*31 - 119*	*11/02/21 08:35*	*11/08/21 15:45*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 22:37	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 22:37	1

Client Sample ID: S-461_20211027

Date Collected: 10/27/21 13:35
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-8
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*80*		*28 - 130*	*11/01/21 12:40*	*11/01/21 22:37*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**10000**	**cn**	250	150	ug/L		11/02/21 07:25	11/02/21 12:40	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*	*cn*	*28 - 130*	*11/02/21 07:25*	*11/02/21 12:40*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+	0.029	0.0095	ug/L		11/01/21 03:21	11/02/21 00:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*118*		*46 - 136*	*11/01/21 03:21*	*11/02/21 00:29*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*113*		*46 - 136*	*11/01/21 03:21*	*11/02/21 00:29*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**20**	**cn**	5.0	1.9	mg/L			11/01/21 18:20	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**130**		0.50	0.096	mg/L		11/04/21 06:14	11/09/21 15:28	1
Iron	**37**		0.20	0.040	mg/L		11/04/21 06:14	11/09/21 15:28	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 17:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**400**		8.0	8.0	mg/L			11/02/21 02:54	1
Total Kjeldahl Nitrogen	**2.1**		1.0	0.50	mg/L		11/11/21 09:15	11/15/21 10:23	1
Total Carbon	**120**	**!**	5.0	2.5	mg/L			11/03/21 15:36	5
Total Organic Carbon	**14**		1.0	0.50	mg/L			11/02/21 22:05	1
Total Inorganic Carbon	**110**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-469_20211027

Date Collected: 10/27/21 14:20
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-9
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 17:25	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 17:25	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/04/21 17:25	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 17:25	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 17:25	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/04/21 17:25	1
Benzene	**3.4**		1.0	0.30	ug/L			11/04/21 17:25	1

Client Sample ID: S-469_20211027

Date Collected: 10/27/21 14:20
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-9

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/04/21 17:25	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/04/21 17:25	1
t-Butyl alcohol	ND		50	12	ug/L			11/04/21 17:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/04/21 17:25*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/04/21 17:25*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/04/21 17:25*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/04/21 17:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		11/02/21 08:35	11/08/21 16:15	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		11/02/21 08:35	11/08/21 16:15	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		11/02/21 08:35	11/08/21 16:15	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		11/02/21 08:35	11/08/21 16:15	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		11/02/21 08:35	11/08/21 16:15	1
Chrysene	ND		0.51	0.10	ug/L		11/02/21 08:35	11/08/21 16:15	1
Fluorene	ND		0.51	0.12	ug/L		11/02/21 08:35	11/08/21 16:15	1
Naphthalene	**0.56**		0.51	0.10	ug/L		11/02/21 08:35	11/08/21 16:15	1
Phenanthrene	ND		0.51	0.11	ug/L		11/02/21 08:35	11/08/21 16:15	1
Pyrene	ND		0.51	0.10	ug/L		11/02/21 08:35	11/08/21 16:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*35 - 100*	*11/02/21 08:35*	*11/08/21 16:15*	*1*
Nitrobenzene-d5 (Surr)	*84*		*22 - 117*	*11/02/21 08:35*	*11/08/21 16:15*	*1*
p-Terphenyl-d14 (Surr)	*85*		*31 - 119*	*11/02/21 08:35*	*11/08/21 16:15*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 22:54	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 22:54	1
Methane (1C)	**7.1**		5.0	3.0	ug/L		11/01/21 12:40	11/01/21 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*78*		*28 - 130*	*11/01/21 12:40*	*11/01/21 22:54*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+	0.028	0.0095	ug/L		11/01/21 03:25	11/02/21 02:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*116*		*46 - 136*	*11/01/21 03:25*	*11/02/21 02:09*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*11/01/21 03:25*	*11/02/21 02:09*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**96**	**cn**	5.0	1.9	mg/L			11/01/21 18:45	5

Client Sample ID: S-469_20211027

Lab Sample ID: 410-61053-9

Date Collected: 10/27/21 14:20
Matrix: Water
Date Received: 10/28/21 15:57

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	88		0.50	0.096	mg/L		11/04/21 13:21	11/10/21 14:13	1
Iron	0.54	B	0.20	0.040	mg/L		11/04/21 13:21	11/10/21 16:43	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 18:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	350		8.0	8.0	mg/L			11/02/21 05:28	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/11/21 09:15	11/15/21 10:00	1
Total Carbon	79	!	10	5.0	mg/L			11/03/21 17:58	10
Total Organic Carbon	2.2		1.0	0.50	mg/L			11/02/21 22:21	1
Total Inorganic Carbon	77	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-453_20211027

Lab Sample ID: 410-61053-10

Date Collected: 10/27/21 14:45
Matrix: Water
Date Received: 10/28/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		5.0	1.5	ug/L			11/05/21 00:22	5
1,3,5-Trimethylbenzene	200		25	1.5	ug/L			11/05/21 00:22	5
Toluene	51		5.0	1.5	ug/L			11/05/21 00:22	5
Xylenes, Total	2000		30	7.0	ug/L			11/05/21 00:22	5
Methyl tertiary butyl ether	90		5.0	1.0	ug/L			11/05/21 00:22	5
1,2,4-Trimethylbenzene	670		25	5.0	ug/L			11/05/21 00:22	5
Isopropylbenzene	75		25	1.5	ug/L			11/05/21 00:22	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*11/05/21 00:22*	*5*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*11/05/21 00:22*	*5*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/05/21 00:22*	*5*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/05/21 00:22*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	1300		50	20	ug/L			11/05/21 00:48	50
Benzene	3900		50	15	ug/L			11/05/21 00:48	50
t-Butyl alcohol	5400		2500	600	ug/L			11/05/21 00:48	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/05/21 00:48*	*50*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/05/21 00:48*	*50*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/05/21 00:48*	*50*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/05/21 00:48*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.57	0.11	ug/L		11/02/21 08:35	11/08/21 16:45	1
Benzo[a]anthracene	0.18	J	0.57	0.11	ug/L		11/02/21 08:35	11/08/21 16:45	1

Client Sample ID: S-453_20211027
Date Collected: 10/27/21 14:45
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-10
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	0.15	J	0.57	0.13	ug/L		11/02/21 08:35	11/08/21 16:45	1
Benzo[b]fluoranthene	0.20	J	0.57	0.11	ug/L		11/02/21 08:35	11/08/21 16:45	1
Benzo[g,h,i]perylene	0.12	J	0.57	0.11	ug/L		11/02/21 08:35	11/08/21 16:45	1
Chrysene	0.21	J	0.57	0.11	ug/L		11/02/21 08:35	11/08/21 16:45	1
Fluorene	1.9		0.57	0.14	ug/L		11/02/21 08:35	11/08/21 16:45	1
Phenanthrene	1.9		0.57	0.13	ug/L		11/02/21 08:35	11/08/21 16:45	1
Pyrene	0.43	J	0.57	0.11	ug/L		11/02/21 08:35	11/08/21 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*35 - 100*	*11/02/21 08:35*	*11/08/21 16:45*	*1*
Nitrobenzene-d5 (Surr)	*69*		*22 - 117*	*11/02/21 08:35*	*11/08/21 16:45*	*1*
p-Terphenyl-d14 (Surr)	*80*		*31 - 119*	*11/02/21 08:35*	*11/08/21 16:45*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	270		2.9	0.57	ug/L		11/02/21 08:35	11/08/21 17:14	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*82*		*35 - 100*	*11/02/21 08:35*	*11/08/21 17:14*	*5*
Nitrobenzene-d5 (Surr)	*77*		*22 - 117*	*11/02/21 08:35*	*11/08/21 17:14*	*5*
p-Terphenyl-d14 (Surr)	*87*		*31 - 119*	*11/02/21 08:35*	*11/08/21 17:14*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	2.7	J	5.0	1.0	ug/L		11/01/21 12:40	11/01/21 23:10	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 23:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*88*		*28 - 130*	*11/01/21 12:40*	*11/01/21 23:10*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	14000	cn	500	300	ug/L		11/02/21 07:25	11/02/21 12:58	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*	*cn*	*28 - 130*	*11/02/21 07:25*	*11/02/21 12:58*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+ cn	0.028	0.0094	ug/L		11/01/21 03:25	11/02/21 02:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*173*	*S1+ cn*	*46 - 136*	*11/01/21 03:25*	*11/02/21 02:26*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*116*	*cn*	*46 - 136*	*11/01/21 03:25*	*11/02/21 02:26*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND	cn	2.0	0.74	mg/L			11/01/21 19:10	2

Client Sample ID: S-453_20211027

Lab Sample ID: 410-61053-10

Date Collected: 10/27/21 14:45

Matrix: Water

Date Received: 10/28/21 15:57

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	49		0.50	0.096	mg/L		11/04/21 06:14	11/09/21 15:38	1
Iron	100		0.20	0.040	mg/L		11/04/21 06:14	11/09/21 15:38	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	9.1		0.52	0.073	ug/L		11/04/21 08:32	11/04/21 18:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	110		8.0	8.0	mg/L			11/02/21 02:47	1
Total Kjeldahl Nitrogen	0.60	J	1.0	0.50	mg/L		11/11/21 09:15	11/15/21 10:21	1
Total Carbon	82	!	10	5.0	mg/L			11/03/21 15:47	10
Total Organic Carbon	21		1.0	0.50	mg/L			11/02/21 23:10	1
Total Inorganic Carbon	61	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-470_20211027

Lab Sample ID: 410-61053-11

Date Collected: 10/27/21 13:20

Matrix: Water

Date Received: 10/28/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 17:50	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 17:50	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/04/21 17:50	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 17:50	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 17:50	1
Methyl tertiary butyl ether	2.0		1.0	0.20	ug/L			11/04/21 17:50	1
Benzene	4.3		1.0	0.30	ug/L			11/04/21 17:50	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/04/21 17:50	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/04/21 17:50	1
t-Butyl alcohol	28	J	50	12	ug/L			11/04/21 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/04/21 17:50*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/04/21 17:50*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*11/04/21 17:50*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/04/21 17:50*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND	cn	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 17:44	1
Benzo[a]anthracene	ND	cn	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 17:44	1
Benzo[a]pyrene	ND	cn	0.52	0.11	ug/L		11/02/21 08:35	11/08/21 17:44	1
Benzo[b]fluoranthene	ND	cn	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 17:44	1
Benzo[g,h,i]perylene	ND	cn	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 17:44	1
Chrysene	ND	cn	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 17:44	1
Fluorene	ND	cn	0.52	0.12	ug/L		11/02/21 08:35	11/08/21 17:44	1
Naphthalene	ND	cn	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 17:44	1
Phenanthrene	0.11	J cn	0.52	0.11	ug/L		11/02/21 08:35	11/08/21 17:44	1
Pyrene	0.14	J cn	0.52	0.10	ug/L		11/02/21 08:35	11/08/21 17:44	1

Client Sample ID: S-470_20211027

Lab Sample ID: 410-61053-11

Date Collected: 10/27/21 13:20

Matrix: Water

Date Received: 10/28/21 15:57

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*76*	*cn*	*35 - 100*	*11/02/21 08:35*	*11/08/21 17:44*	*1*
Nitrobenzene-d5 (Surr)	*2*	*S1- cn*	*22 - 117*	*11/02/21 08:35*	*11/08/21 17:44*	*1*
p-Terphenyl-d14 (Surr)	*54*	*cn*	*31 - 119*	*11/02/21 08:35*	*11/08/21 17:44*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 23:27	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 23:27	1
Methane (1C)	**58**		5.0	3.0	ug/L		11/01/21 12:40	11/01/21 23:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*81*		*28 - 130*	*11/01/21 12:40*	*11/01/21 23:27*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND	*+	0.029	0.0095	ug/L		11/01/21 03:25	11/02/21 02:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*133*		*46 - 136*	*11/01/21 03:25*	*11/02/21 02:42*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*112*		*46 - 136*	*11/01/21 03:25*	*11/02/21 02:42*	*1*

Method: 300.0 - Anions, Ion Chromatography - DL
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**290**	**cn**	20	7.4	mg/L			11/02/21 22:10	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**51**		0.50	0.096	mg/L		11/03/21 19:43	11/09/21 15:12	1
Iron	**78**		0.20	0.040	mg/L		11/03/21 19:43	11/09/21 15:12	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 18:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**73**		8.0	8.0	mg/L			11/02/21 03:26	1
Total Kjeldahl Nitrogen	**0.62**	**J**	1.0	0.50	mg/L		11/11/21 09:15	11/15/21 10:25	1
Total Carbon	**62**	**!**	2.0	1.0	mg/L			11/03/21 15:58	2
Total Organic Carbon	**10**		1.0	0.50	mg/L			11/02/21 23:26	1
Total Inorganic Carbon	**52**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: TB21288

Lab Sample ID: 410-61053-12

Date Collected: 10/21/21 00:00

Matrix: Water

Date Received: 10/28/21 15:57

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/04/21 16:48	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 16:48	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/04/21 16:48	1

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Client Sample ID: TB21288
Date Collected: 10/21/21 00:00
Date Received: 10/28/21 15:57

Lab Sample ID: 410-61053-12
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			11/04/21 16:48	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 16:48	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/04/21 16:48	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/04/21 16:48	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 16:48	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 16:48	1
t-Butyl alcohol	ND		50	12	ug/L			11/04/21 16:48	1
Ethylene Dibromide	ND		1.0	0.30	ug/L			11/04/21 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/04/21 16:48*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/04/21 16:48*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/04/21 16:48*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/04/21 16:48*	*1*

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-61053-1	S-456_20211027	95	102	101	102
410-61053-1 - DL	S-456_20211027	97	102	100	101
410-61053-2	S-393D_20211027	99	100	101	101
410-61053-3	S-466_20211027	100	100	100	101
410-61053-4	MW-44_20211027	95	102	97	102
410-61053-4 - DL	MW-44_20211027	98	101	100	102
410-61053-5	RW-26_20211027	98	101	102	102
410-61053-5 - DL	RW-26_20211027	80	98	98	100
410-61053-6	RW-1_20211027	98	103	101	103
410-61053-6 - DL	RW-1_20211027	99	101	100	100
410-61053-7	MW-35_20211027	98	103	100	102
410-61053-8	S-461_20211027	99	101	101	101
410-61053-9	S-469_20211027	98	100	101	101
410-61053-10	S-453_20211027	94	103	97	102
410-61053-10 - DL	S-453_20211027	97	101	99	102
410-61053-11	S-470_20211027	98	101	102	101
410-61053-12	TB21288	97	98	99	99
LCS 410-190806/5	Lab Control Sample	101	101	100	100
LCS 410-190808/5	Lab Control Sample	100	102	99	101
LCS 410-191647/4	Lab Control Sample	85	99	97	102
LCSD 410-190806/6	Lab Control Sample Dup	101	101	101	101
LCSD 410-190808/6	Lab Control Sample Dup	100	100	99	101
LCSD 410-191647/5	Lab Control Sample Dup	85	99	97	101
MB 410-190806/9	Method Blank	99	100	101	102
MB 410-190808/9	Method Blank	98	98	101	100
MB 410-191647/6	Method Blank	83	98	96	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(35-100)	(22-117)	(31-119)
410-61053-1	S-456_20211027	71	74	65
410-61053-2	S-393D_20211027	73	76	54
410-61053-3	S-466_20211027	60	61	55
410-61053-4	MW-44_20211027	70	77	71
410-61053-4 - DL	MW-44_20211027	81	83	72
410-61053-5	RW-26_20211027	71	81	75
410-61053-6	RW-1_20211027	80 cn	1 S1- cn	85 cn
410-61053-7	MW-35_20211027	76	77	89
410-61053-7 - DL	MW-35_20211027	83	83	95
410-61053-8	S-461_20211027	83	86	89
410-61053-9	S-469_20211027	82	84	85

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	FBP (35-100)	NBZ (22-117)	TPHd14 (31-119)
410-61053-10	S-453_20211027	69	69	80
410-61053-10 - DL	S-453_20211027	82	77	87
410-61053-11	S-470_20211027	76 cn	2 S1- cn	54 cn
LCS 410-189582/2-A	Lab Control Sample	84	89	95
LCSD 410-189582/3-A	Lab Control Sample Dup	83	85	102
MB 410-189582/1-A	Method Blank	81	83	94

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	Propene1 (28-130)
410-61053-1	S-456_20211027	84
410-61053-1 - DL	S-456_20211027	105
410-61053-2	S-393D_20211027	86
410-61053-3	S-466_20211027	79
410-61053-4	MW-44_20211027	85
410-61053-4 - DL	MW-44_20211027	103 cn
410-61053-5	RW-26_20211027	77
410-61053-5 - DL	RW-26_20211027	106 cn
410-61053-6	RW-1_20211027	76
410-61053-6 - DL	RW-1_20211027	108 cn
410-61053-7	MW-35_20211027	89
410-61053-7 - DL	MW-35_20211027	106 cn
410-61053-8	S-461_20211027	80
410-61053-8 - DL	S-461_20211027	106 cn
410-61053-9	S-469_20211027	78
410-61053-10	S-453_20211027	88
410-61053-10 - DL	S-453_20211027	106 cn
410-61053-11	S-470_20211027	81
LCS 410-189277/2-A	Lab Control Sample	103
LCS 410-189324/2-A	Lab Control Sample	103
LCS 410-189335/2-A	Lab Control Sample	101
LCS 410-189588/2-A	Lab Control Sample	109
LCS 410-189595/2-A	Lab Control Sample	109
LCSD 410-189277/3-A	Lab Control Sample Dup	107
LCSD 410-189324/3-A	Lab Control Sample Dup	101
LCSD 410-189335/3-A	Lab Control Sample Dup	98
LCSD 410-189595/3-A	Lab Control Sample Dup	111
MB 410-189277/1-A	Method Blank	105
MB 410-189324/1-A	Method Blank	100
MB 410-189335/1-A	Method Blank	97
MB 410-189588/1-A	Method Blank	106
MB 410-189595/1-A	Method Blank	109

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	**Client Sample ID**	**1122TCA1 (46-136)**	**1122TCA2 (46-136)**
410-61053-1	S-456_20211027	134	116
410-61053-2	S-393D_20211027	128	111
410-61053-3	S-466_20211027	120	105
410-61053-4	MW-44_20211027		148 S1+ cn
410-61053-5	RW-26_20211027	123	117
410-61053-6	RW-1_20211027		123 cn
410-61053-7	MW-35_20211027	114	107
410-61053-8	S-461_20211027	118	113
410-61053-9	S-469_20211027	116	106
410-61053-9 MS	S-469_20211027	120	107
410-61053-9 MSD	S-469_20211027	121	106
410-61053-10	S-453_20211027	173 S1+ cn	116 cn
410-61053-11	S-470_20211027	133	112
LCS 410-189102/2-A	Lab Control Sample	129	110
LCS 410-189103/2-A	Lab Control Sample	126	111
LCS 410-191573/2-A	Lab Control Sample		105
LCSD 410-189102/3-A	Lab Control Sample Dup	127	109
LCSD 410-189103/3-A	Lab Control Sample Dup	121	110
LCSD 410-191573/3-A	Lab Control Sample Dup		106
MB 410-189102/1-A	Method Blank	121	108
MB 410-189103/1-A	Method Blank	124	111
MB 410-191573/1-A	Method Blank		106

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-190806/9
Matrix: Water
Analysis Batch: 190806

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 15:39	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 15:39	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/04/21 15:39	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/04/21 15:39	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 15:39	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 15:39	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 15:39	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/04/21 15:39	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/04/21 15:39	1
t-Butyl alcohol	ND		50	12	ug/L			11/04/21 15:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*11/04/21 15:39*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/04/21 15:39*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/04/21 15:39*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/04/21 15:39*	*1*

Lab Sample ID: LCS 410-190806/5
Matrix: Water
Analysis Batch: 190806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dichloroethane			20.0	18.8		ug/L		94	73 - 124		
Ethylbenzene			20.0	21.2		ug/L		106	80 - 120		
1,3,5-Trimethylbenzene			20.0	19.7		ug/L		99	75 - 120		
Methyl tertiary butyl ether			20.0	20.0		ug/L		100	69 - 122		
Toluene			20.0	18.7		ug/L		94	80 - 120		
Benzene			20.0	20.0		ug/L		100	80 - 120		
Xylenes, Total			60.0	57.5		ug/L		96	80 - 120		
1,2,4-Trimethylbenzene			20.0	19.7		ug/L		98	75 - 120		
Isopropylbenzene			20.0	18.5		ug/L		93	80 - 120		
t-Butyl alcohol			200	198		ug/L		99	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-190806/6
Matrix: Water
Analysis Batch: 190806

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloroethane			20.0	18.9		ug/L		95	73 - 124	1	30
Ethylbenzene			20.0	21.7		ug/L		108	80 - 120	2	30
1,3,5-Trimethylbenzene			20.0	19.9		ug/L		100	75 - 120	1	30
Methyl tertiary butyl ether			20.0	20.0		ug/L		100	69 - 122	0	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-190806/6
Matrix: Water
Analysis Batch: 190806

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene			20.0	19.1		ug/L		95	80 - 120	2	30
Benzene			20.0	20.2		ug/L		101	80 - 120	1	30
Xylenes, Total			60.0	58.3		ug/L		97	80 - 120	1	30
1,2,4-Trimethylbenzene			20.0	20.0		ug/L		100	75 - 120	2	30
Isopropylbenzene			20.0	18.9		ug/L		95	80 - 120	2	30
t-Butyl alcohol			200	200		ug/L		100	60 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 410-190808/9
Matrix: Water
Analysis Batch: 190808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/04/21 15:54	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/04/21 15:54	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/04/21 15:54	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/04/21 15:54	1
Toluene	ND		1.0	0.30	ug/L			11/04/21 15:54	1
Benzene	ND		1.0	0.30	ug/L			11/04/21 15:54	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/04/21 15:54	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/04/21 15:54	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/04/21 15:54	1
t-Butyl alcohol	ND		50	12	ug/L			11/04/21 15:54	1
Ethylene Dibromide	ND		1.0	0.30	ug/L			11/04/21 15:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/04/21 15:54*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/04/21 15:54*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/04/21 15:54*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/04/21 15:54*	*1*

Lab Sample ID: LCS 410-190808/5
Matrix: Water
Analysis Batch: 190808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane			20.0	17.6		ug/L		88	73 - 124
Ethylbenzene			20.0	20.8		ug/L		104	80 - 120
1,3,5-Trimethylbenzene			20.0	19.9		ug/L		99	75 - 120
Methyl tertiary butyl ether			20.0	15.3		ug/L		77	69 - 122
Toluene			20.0	18.0		ug/L		90	80 - 120
Benzene			20.0	18.8		ug/L		94	80 - 120
Xylenes, Total			60.0	56.3		ug/L		94	80 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-190808/5
Matrix: Water
Analysis Batch: 190808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	20.1		ug/L		101	75 - 120
Isopropylbenzene	20.0	18.0		ug/L		90	80 - 120
t-Butyl alcohol	200	199		ug/L		99	60 - 130
Ethylene Dibromide	20.0	18.7		ug/L		94	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-190808/6
Matrix: Water
Analysis Batch: 190808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloroethane	20.0	18.5		ug/L		92	73 - 124	5	30
Ethylbenzene	20.0	21.3		ug/L		107	80 - 120	2	30
1,3,5-Trimethylbenzene	20.0	20.2		ug/L		101	75 - 120	2	30
Methyl tertiary butyl ether	20.0	16.0		ug/L		80	69 - 122	5	30
Toluene	20.0	18.3		ug/L		92	80 - 120	2	30
Benzene	20.0	19.5		ug/L		98	80 - 120	4	30
Xylenes, Total	60.0	57.6		ug/L		96	80 - 120	2	30
1,2,4-Trimethylbenzene	20.0	20.5		ug/L		103	75 - 120	2	30
Isopropylbenzene	20.0	18.3		ug/L		91	80 - 120	1	30
t-Butyl alcohol	200	206		ug/L		103	60 - 130	4	30
Ethylene Dibromide	20.0	19.1		ug/L		95	77 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 410-191647/6
Matrix: Water
Analysis Batch: 191647

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/06/21 14:30	1
Ethylbenzene	ND		1.0	0.40	ug/L			11/06/21 14:30	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/06/21 14:30	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/06/21 14:30	1
Toluene	ND		1.0	0.30	ug/L			11/06/21 14:30	1
Benzene	ND		1.0	0.30	ug/L			11/06/21 14:30	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/06/21 14:30	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/06/21 14:30	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/06/21 14:30	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-191647/6
Matrix: Water
Analysis Batch: 191647

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butyl alcohol	ND		50	12	ug/L			11/06/21 14:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*80 - 120*		*11/06/21 14:30*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/06/21 14:30*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/06/21 14:30*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/06/21 14:30*	*1*

Lab Sample ID: LCS 410-191647/4
Matrix: Water
Analysis Batch: 191647

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dichloroethane			20.0	17.0		ug/L		85	73 - 124		
Ethylbenzene			20.0	20.2		ug/L		101	80 - 120		
1,3,5-Trimethylbenzene			20.0	20.1		ug/L		100	75 - 120		
Methyl tertiary butyl ether			20.0	19.0		ug/L		95	69 - 122		
Toluene			20.0	20.2		ug/L		101	80 - 120		
Benzene			20.0	20.3		ug/L		101	80 - 120		
Xylenes, Total			60.0	60.6		ug/L		101	80 - 120		
1,2,4-Trimethylbenzene			20.0	20.2		ug/L		101	75 - 120		
Isopropylbenzene			20.0	19.3		ug/L		96	80 - 120		
t-Butyl alcohol			200	190		ug/L		95	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-191647/5
Matrix: Water
Analysis Batch: 191647

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloroethane			20.0	15.6		ug/L		78	73 - 124	8	30
Ethylbenzene			20.0	18.9		ug/L		94	80 - 120	7	30
1,3,5-Trimethylbenzene			20.0	18.1		ug/L		90	75 - 120	10	30
Methyl tertiary butyl ether			20.0	17.5		ug/L		87	69 - 122	9	30
Toluene			20.0	18.8		ug/L		94	80 - 120	7	30
Benzene			20.0	19.0		ug/L		95	80 - 120	7	30
Xylenes, Total			60.0	55.3		ug/L		92	80 - 120	9	30
1,2,4-Trimethylbenzene			20.0	18.0		ug/L		90	75 - 120	11	30
Isopropylbenzene			20.0	17.6		ug/L		88	80 - 120	9	30
t-Butyl alcohol			200	177		ug/L		89	60 - 130	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-191647/5
Matrix: Water
Analysis Batch: 191647

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-189582/1-A
Matrix: Water
Analysis Batch: 191826

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189582

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		11/02/21 08:35	11/08/21 10:14	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		11/02/21 08:35	11/08/21 10:14	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		11/02/21 08:35	11/08/21 10:14	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		11/02/21 08:35	11/08/21 10:14	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		11/02/21 08:35	11/08/21 10:14	1
Chrysene	ND		0.50	0.10	ug/L		11/02/21 08:35	11/08/21 10:14	1
Fluorene	ND		0.50	0.12	ug/L		11/02/21 08:35	11/08/21 10:14	1
Naphthalene	ND		0.50	0.10	ug/L		11/02/21 08:35	11/08/21 10:14	1
Phenanthrene	ND		0.50	0.11	ug/L		11/02/21 08:35	11/08/21 10:14	1
Pyrene	ND		0.50	0.10	ug/L		11/02/21 08:35	11/08/21 10:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	81		35 - 100	11/02/21 08:35	11/08/21 10:14	1
Nitrobenzene-d5 (Surr)	83		22 - 117	11/02/21 08:35	11/08/21 10:14	1
p-Terphenyl-d14 (Surr)	94		31 - 119	11/02/21 08:35	11/08/21 10:14	1

Lab Sample ID: LCS 410-189582/2-A
Matrix: Water
Analysis Batch: 191392

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189582

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	44.8		ug/L		90	73 - 120
Benzo[a]anthracene	50.0	46.2		ug/L		92	74 - 120
Benzo[a]pyrene	50.0	42.7		ug/L		85	60 - 116
Benzo[b]fluoranthene	50.0	42.9		ug/L		86	71 - 120
Benzo[g,h,i]perylene	50.0	34.7		ug/L		69	60 - 120
Chrysene	50.0	43.3		ug/L		87	76 - 120
Fluorene	50.0	43.4		ug/L		87	64 - 120
Naphthalene	50.0	39.7		ug/L		79	51 - 102
Phenanthrene	50.0	43.7		ug/L		87	72 - 120
Pyrene	50.0	43.5		ug/L		87	73 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	84		35 - 100
Nitrobenzene-d5 (Surr)	89		22 - 117
p-Terphenyl-d14 (Surr)	95		31 - 119

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-189582/3-A
Matrix: Water
Analysis Batch: 191392

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189582

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene			50.0	44.9		ug/L		90	73 - 120	0	30
Benzo[a]anthracene			50.0	47.3		ug/L		95	74 - 120	2	30
Benzo[a]pyrene			50.0	44.2		ug/L		88	60 - 116	3	30
Benzo[b]fluoranthene			50.0	45.3		ug/L		91	71 - 120	5	30
Benzo[g,h,i]perylene			50.0	35.9		ug/L		72	60 - 120	4	30
Chrysene			50.0	45.8		ug/L		92	76 - 120	6	30
Fluorene			50.0	43.1		ug/L		86	64 - 120	1	30
Naphthalene			50.0	38.4		ug/L		77	51 - 102	3	30
Phenanthrene			50.0	42.0		ug/L		84	72 - 120	4	30
Pyrene			50.0	44.6		ug/L		89	73 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*83*		*35 - 100*
Nitrobenzene-d5 (Surr)	*85*		*22 - 117*
p-Terphenyl-d14 (Surr)	*102*		*31 - 119*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-189277/1-A
Matrix: Water
Analysis Batch: 189281

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189277

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 10:00	11/01/21 10:13	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 10:00	11/01/21 10:13	1
Methane (1C)	ND		5.0	3.0	ug/L		11/01/21 10:00	11/01/21 10:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 130*	*11/01/21 10:00*	*11/01/21 10:13*	*1*

Lab Sample ID: LCS 410-189277/2-A
Matrix: Water
Analysis Batch: 189281

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189277

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	59.9		ug/L		101	85 - 115
Ethene (1C)			60.4	59.6		ug/L		99	83 - 115
Methane (1C)			59.4	61.5		ug/L		104	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*103*		*28 - 130*

Lab Sample ID: LCSD 410-189277/3-A
Matrix: Water
Analysis Batch: 189281

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189277

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	60.3		ug/L		102	85 - 115	1	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-189277/3-A
Matrix: Water
Analysis Batch: 189281

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189277

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethene (1C)			60.4	60.3		ug/L		100	83 - 115	1	20
Methane (1C)			59.4	63.9		ug/L		108	85 - 115	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*107*		*28 - 130*

Lab Sample ID: MB 410-189324/1-A
Matrix: Water
Analysis Batch: 189292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189324

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 16:00	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:33	11/01/21 16:00	1
Methane (1C)	ND		5.0	3.0	ug/L		11/01/21 12:33	11/01/21 16:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*100*		*28 - 130*	*11/01/21 12:33*	*11/01/21 16:00*	*1*

Lab Sample ID: LCS 410-189324/2-A
Matrix: Water
Analysis Batch: 189292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189324

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	60.7		ug/L		102	85 - 115
Ethene (1C)			60.4	60.0		ug/L		99	83 - 115
Methane (1C)			59.4	57.5		ug/L		97	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*103*		*28 - 130*

Lab Sample ID: LCSD 410-189324/3-A
Matrix: Water
Analysis Batch: 189292

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189324

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	61.7		ug/L		104	85 - 115	2	20
Ethene (1C)			60.4	60.9		ug/L		101	83 - 115	1	20
Methane (1C)			59.4	58.5		ug/L		98	85 - 115	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 130*

Lab Sample ID: MB 410-189335/1-A
Matrix: Water
Analysis Batch: 189292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 21:29	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 410-189335/1-A
Matrix: Water
Analysis Batch: 189292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethene (1C)	ND		5.0	1.0	ug/L		11/01/21 12:40	11/01/21 21:29	1
Methane (1C)	ND		5.0	3.0	ug/L		11/01/21 12:40	11/01/21 21:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*97*		*28 - 130*	*11/01/21 12:40*	*11/01/21 21:29*	*1*

Lab Sample ID: LCS 410-189335/2-A
Matrix: Water
Analysis Batch: 189292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189335

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	60.9		ug/L		103	85 - 115		
Ethene (1C)			60.4	60.6		ug/L		100	83 - 115		
Methane (1C)			59.4	57.9		ug/L		98	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*101*		*28 - 130*

Lab Sample ID: LCSD 410-189335/3-A
Matrix: Water
Analysis Batch: 189292

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189335

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	59.7		ug/L		101	85 - 115	2	20
Ethene (1C)			60.4	59.7		ug/L		99	83 - 115	2	20
Methane (1C)			59.4	57.6		ug/L		97	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*98*		*28 - 130*

Lab Sample ID: MB 410-189588/1-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189588

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 07:18	11/02/21 07:31	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 07:18	11/02/21 07:31	1
Methane (1C)	ND		5.0	3.0	ug/L		11/02/21 07:18	11/02/21 07:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*		*28 - 130*	*11/02/21 07:18*	*11/02/21 07:31*	*1*

Lab Sample ID: LCS 410-189588/2-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189588

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	60.8		ug/L		102	85 - 115		

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-189588/2-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189588

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethene (1C)			60.4	61.0		ug/L		101	83 - 115		
Methane (1C)			59.4	60.2		ug/L		101	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*109*		*28 - 130*

Lab Sample ID: MB 410-189595/1-A
Matrix: Water
Analysis Batch: 189614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189595

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 07:25	11/02/21 07:34	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 07:25	11/02/21 07:34	1
Methane (1C)	ND		5.0	3.0	ug/L		11/02/21 07:25	11/02/21 07:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*109*		*28 - 130*	*11/02/21 07:25*	*11/02/21 07:34*	*1*

Lab Sample ID: LCS 410-189595/2-A
Matrix: Water
Analysis Batch: 189614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189595

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	60.5		ug/L		102	85 - 115		
Ethene (1C)			60.4	60.5		ug/L		100	83 - 115		
Methane (1C)			59.4	64.6		ug/L		109	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*109*		*28 - 130*

Lab Sample ID: LCSD 410-189595/3-A
Matrix: Water
Analysis Batch: 189614

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189595

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	60.5		ug/L		102	85 - 115	0	20
Ethene (1C)			60.4	60.9		ug/L		101	83 - 115	1	20
Methane (1C)			59.4	65.0		ug/L		109	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*111*		*28 - 130*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-189102/1-A
Matrix: Water
Analysis Batch: 189265

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189102

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		11/01/21 03:21	11/01/21 17:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*121*		*46 - 136*	*11/01/21 03:21*	*11/01/21 17:15*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*108*		*46 - 136*	*11/01/21 03:21*	*11/01/21 17:15*	*1*

Lab Sample ID: LCS 410-189102/2-A
Matrix: Water
Analysis Batch: 189265

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189102

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.185	*+	ug/L		144	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*129*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*110*		*46 - 136*

Lab Sample ID: LCSD 410-189102/3-A
Matrix: Water
Analysis Batch: 189265

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189102

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.193	*+	ug/L		151	60 - 140	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*127*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*109*		*46 - 136*

Lab Sample ID: MB 410-189103/1-A
Matrix: Water
Analysis Batch: 189265

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		11/01/21 03:25	11/02/21 00:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*124*		*46 - 136*	*11/01/21 03:25*	*11/02/21 00:45*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*111*		*46 - 136*	*11/01/21 03:25*	*11/02/21 00:45*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: LCS 410-189103/2-A
Matrix: Water
Analysis Batch: 189265

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189103

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.182	*+	ug/L		142	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*126*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*111*		*46 - 136*

Lab Sample ID: LCSD 410-189103/3-A
Matrix: Water
Analysis Batch: 189265

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189103

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.171		ug/L		133	60 - 140	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*121*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*110*		*46 - 136*

Lab Sample ID: 410-61053-9 MS
Matrix: Water
Analysis Batch: 189265

Client Sample ID: S-469_20211027
Prep Type: Total/NA
Prep Batch: 189103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)	ND	*+	0.121	0.156		ug/L		129	60 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*120*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*107*		*46 - 136*

Lab Sample ID: 410-61053-9 MSD
Matrix: Water
Analysis Batch: 189265

Client Sample ID: S-469_20211027
Prep Type: Total/NA
Prep Batch: 189103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)	ND	*+	0.121	0.170		ug/L		140	60 - 140	8	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*121*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: MB 410-191573/1-A
Matrix: Water
Analysis Batch: 191637

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191573

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		11/06/21 04:07	11/06/21 11:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*11/06/21 04:07*	*11/06/21 11:39*	*1*

Lab Sample ID: LCS 410-191573/2-A
Matrix: Water
Analysis Batch: 191637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191573

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.121		ug/L		94	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*

Lab Sample ID: LCSD 410-191573/3-A
Matrix: Water
Analysis Batch: 191637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 191573

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)	0.128	0.124		ug/L		97	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-554084/45
Matrix: Water
Analysis Batch: 554084

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/01/21 12:58	1

Lab Sample ID: LCS 400-554084/4
Matrix: Water
Analysis Batch: 554084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.2		mg/L		102	90 - 110

Lab Sample ID: LCSD 400-554084/5
Matrix: Water
Analysis Batch: 554084

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.1		mg/L		101	90 - 110	2	15

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MRL 400-554084/46
Matrix: Water
Analysis Batch: 554084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			1.00	1.11		mg/L		111	50 - 150		

Lab Sample ID: 410-61053-1 MS
Matrix: Water
Analysis Batch: 554084

Client Sample ID: S-456_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	0.93	J cn	20.0	25.0	cn	mg/L		120	80 - 120		

Lab Sample ID: 410-61053-1 MSD
Matrix: Water
Analysis Batch: 554084

Client Sample ID: S-456_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	0.93	J cn	20.0	24.6	cn	mg/L		118	80 - 120	2	20

Lab Sample ID: MB 400-554233/15
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/02/21 13:04	1

Lab Sample ID: LCS 400-554233/13
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			10.0	10.4		mg/L		104	90 - 110		

Lab Sample ID: LCSD 400-554233/14
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate			10.0	10.5		mg/L		105	90 - 110	1	15

Lab Sample ID: MRL 400-554233/16
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			1.00	1.15		mg/L		115	50 - 150		

Lab Sample ID: 410-61053-1 MS
Matrix: Water
Analysis Batch: 554233

Client Sample ID: S-456_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	ND	cn	200	238		mg/L		119	80 - 120		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 410-61053-1 MSD
Matrix: Water
Analysis Batch: 554233

Client Sample ID: S-456_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	ND	cn	200	233		mg/L		117	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-190519/1-A
Matrix: Water
Analysis Batch: 192688

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190519

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		11/03/21 19:43	11/09/21 14:03	1
Iron	ND		0.20	0.040	mg/L		11/03/21 19:43	11/09/21 14:03	1

Lab Sample ID: LCS 410-190519/2-A
Matrix: Water
Analysis Batch: 192688

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190519

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5.00	4.92		mg/L		98	80 - 120
Iron	5.00	5.02		mg/L		100	80 - 120

Lab Sample ID: MB 410-190878/1-A
Matrix: Water
Analysis Batch: 193201

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		11/04/21 13:21	11/10/21 14:07	1

Lab Sample ID: MB 410-190878/1-A
Matrix: Water
Analysis Batch: 193265

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.0609	J B	0.20	0.040	mg/L		11/04/21 13:21	11/10/21 16:30	1

Lab Sample ID: LCS 410-190878/2-A
Matrix: Water
Analysis Batch: 193201

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5.00	4.83		mg/L		97	80 - 120

Lab Sample ID: LCS 410-190878/2-A
Matrix: Water
Analysis Batch: 193265

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	4.92		mg/L		98	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 410-61053-9 MS
Matrix: Water
Analysis Batch: 193201

Client Sample ID: S-469_20211027
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	88		5.00	93.1	4	mg/L		103	75 - 125

Lab Sample ID: 410-61053-9 MS
Matrix: Water
Analysis Batch: 193265

Client Sample ID: S-469_20211027
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.54	B	5.00	5.41		mg/L		97	75 - 125

Lab Sample ID: 410-61053-9 MSD
Matrix: Water
Analysis Batch: 193201

Client Sample ID: S-469_20211027
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	88		5.00	94.0	4	mg/L		120	75 - 125	1	20

Lab Sample ID: 410-61053-9 MSD
Matrix: Water
Analysis Batch: 193265

Client Sample ID: S-469_20211027
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	0.54	B	5.00	5.59		mg/L		101	75 - 125	3	20

Lab Sample ID: 410-61053-9 DU
Matrix: Water
Analysis Batch: 193201

Client Sample ID: S-469_20211027
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Calcium	88		87.9		mg/L		0.1	20

Lab Sample ID: 410-61053-9 DU
Matrix: Water
Analysis Batch: 193265

Client Sample ID: S-469_20211027
Prep Type: Total Recoverable
Prep Batch: 190878

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iron	0.54	B	0.645	B	mg/L		17	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-190668/1-A
Matrix: Water
Analysis Batch: 191087

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190668

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 08:30	11/04/21 17:24	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 410-190668/2-A
Matrix: Water
Analysis Batch: 191087

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190668

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			50.0	50.4		ug/L		101	90 - 115		

Lab Sample ID: 410-61053-2 MS
Matrix: Water
Analysis Batch: 191087

Client Sample ID: S-393D_20211027
Prep Type: Dissolved
Prep Batch: 190668

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead	ND		50.0	51.1		ug/L		102	75 - 125		

Lab Sample ID: 410-61053-2 MSD
Matrix: Water
Analysis Batch: 191087

Client Sample ID: S-393D_20211027
Prep Type: Dissolved
Prep Batch: 190668

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		50.0	52.5		ug/L		105	75 - 125	3	20

Lab Sample ID: 410-61053-2 DU
Matrix: Water
Analysis Batch: 191087

Client Sample ID: S-393D_20211027
Prep Type: Dissolved
Prep Batch: 190668

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		ug/L		NC	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-189864/56
Matrix: Water
Analysis Batch: 189864

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/01/21 23:49	1

Lab Sample ID: MB 410-189864/87
Matrix: Water
Analysis Batch: 189864

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/02/21 03:47	1

Lab Sample ID: LCS 410-189864/57
Matrix: Water
Analysis Batch: 189864

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity as CaCO3 to pH 4.5			189	181		mg/L		96	82 - 106		

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: LCS 410-189864/88
Matrix: Water
Analysis Batch: 189864

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	182		mg/L		96	82 - 106

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 410-193545/2-A
Matrix: Water
Analysis Batch: 194920

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 193545

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/11/21 09:15	11/15/21 09:33	1

Lab Sample ID: LCS 410-193545/1-A
Matrix: Water
Analysis Batch: 194920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 193545

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	4.00	4.20		mg/L		105	90 - 110

Method: 5310 B-2011 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 410-190803/5
Matrix: Water
Analysis Batch: 190803

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1.0	0.50	mg/L			11/03/21 13:26	1

Lab Sample ID: LCS 410-190803/4
Matrix: Water
Analysis Batch: 190803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	25.0	24.5		mg/L		98	91 - 115

Lab Sample ID: 410-61053-2 MS
Matrix: Water
Analysis Batch: 190803

Client Sample ID: S-393D_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	34	!	100	141		mg/L		107	91 - 115

Lab Sample ID: 410-61053-9 MS
Matrix: Water
Analysis Batch: 190803

Client Sample ID: S-469_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Carbon	79	!	100	190		mg/L		111	91 - 115

Method: 5310 B-2011 - Carbon, Total and Total Inorganic (Continued)

Lab Sample ID: 410-61053-2 DU
Matrix: Water
Analysis Batch: 190803

Client Sample ID: S-393D_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Carbon	34	!		34.2		mg/L				2	20

Lab Sample ID: 410-61053-9 DU
Matrix: Water
Analysis Batch: 190803

Client Sample ID: S-469_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Carbon	79	!		84.0		mg/L				6	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-190421/5
Matrix: Water
Analysis Batch: 190421

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			11/02/21 18:17	1

Lab Sample ID: LCS 410-190421/4
Matrix: Water
Analysis Batch: 190421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.2		mg/L		101	91 - 113		

Lab Sample ID: 410-61053-1 MS
Matrix: Water
Analysis Batch: 190421

Client Sample ID: S-456_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	14		10.0	23.9		mg/L		98	91 - 113		

Lab Sample ID: 410-61053-9 MS
Matrix: Water
Analysis Batch: 190421

Client Sample ID: S-469_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	2.2		10.0	11.4		mg/L		92	91 - 113		

Lab Sample ID: 410-61053-1 DU
Matrix: Water
Analysis Batch: 190421

Client Sample ID: S-456_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	14			14.4		mg/L				2	3

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: 410-61053-9 DU
Matrix: Water
Analysis Batch: 190421

Client Sample ID: S-469_20211027
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	2.2			2.04	F5	mg/L				8	3

GC/MS VOA

Analysis Batch: 190806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	8260C/UST	
410-61053-1 - DL	S-456_20211027	Total/NA	Water	8260C/UST	
410-61053-2	S-393D_20211027	Total/NA	Water	8260C/UST	
410-61053-3	S-466_20211027	Total/NA	Water	8260C/UST	
410-61053-4	MW-44_20211027	Total/NA	Water	8260C/UST	
410-61053-4 - DL	MW-44_20211027	Total/NA	Water	8260C/UST	
410-61053-5	RW-26_20211027	Total/NA	Water	8260C/UST	
410-61053-6	RW-1_20211027	Total/NA	Water	8260C/UST	
410-61053-6 - DL	RW-1_20211027	Total/NA	Water	8260C/UST	
410-61053-7	MW-35_20211027	Total/NA	Water	8260C/UST	
410-61053-8	S-461_20211027	Total/NA	Water	8260C/UST	
410-61053-9	S-469_20211027	Total/NA	Water	8260C/UST	
410-61053-10	S-453_20211027	Total/NA	Water	8260C/UST	
410-61053-10 - DL	S-453_20211027	Total/NA	Water	8260C/UST	
410-61053-11	S-470_20211027	Total/NA	Water	8260C/UST	
MB 410-190806/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-190806/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-190806/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 190808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-12	TB21288	Total/NA	Water	8260C/UST	
MB 410-190808/9	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-190808/5	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-190808/6	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 191647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-5 - DL	RW-26_20211027	Total/NA	Water	8260C/UST	
MB 410-191647/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-191647/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-191647/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

GC/MS Semi VOA

Prep Batch: 189582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	3510C	
410-61053-2	S-393D_20211027	Total/NA	Water	3510C	
410-61053-3	S-466_20211027	Total/NA	Water	3510C	
410-61053-4	MW-44_20211027	Total/NA	Water	3510C	
410-61053-4 - DL	MW-44_20211027	Total/NA	Water	3510C	
410-61053-5	RW-26_20211027	Total/NA	Water	3510C	
410-61053-6	RW-1_20211027	Total/NA	Water	3510C	
410-61053-7	MW-35_20211027	Total/NA	Water	3510C	
410-61053-7 - DL	MW-35_20211027	Total/NA	Water	3510C	
410-61053-8	S-461_20211027	Total/NA	Water	3510C	
410-61053-9	S-469_20211027	Total/NA	Water	3510C	
410-61053-10 - DL	S-453_20211027	Total/NA	Water	3510C	
410-61053-10	S-453_20211027	Total/NA	Water	3510C	
410-61053-11	S-470_20211027	Total/NA	Water	3510C	

GC/MS Semi VOA (Continued)

Prep Batch: 189582 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-189582/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-189582/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-189582/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 191392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-189582/2-A	Lab Control Sample	Total/NA	Water	8270D	189582
LCSD 410-189582/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	189582

Analysis Batch: 191826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-3	S-466_20211027	Total/NA	Water	8270D	189582
410-61053-4	MW-44_20211027	Total/NA	Water	8270D	189582
410-61053-4 - DL	MW-44_20211027	Total/NA	Water	8270D	189582
410-61053-5	RW-26_20211027	Total/NA	Water	8270D	189582
410-61053-6	RW-1_20211027	Total/NA	Water	8270D	189582
410-61053-7	MW-35_20211027	Total/NA	Water	8270D	189582
410-61053-7 - DL	MW-35_20211027	Total/NA	Water	8270D	189582
410-61053-8	S-461_20211027	Total/NA	Water	8270D	189582
410-61053-9	S-469_20211027	Total/NA	Water	8270D	189582
410-61053-10	S-453_20211027	Total/NA	Water	8270D	189582
410-61053-10 - DL	S-453_20211027	Total/NA	Water	8270D	189582
410-61053-11	S-470_20211027	Total/NA	Water	8270D	189582
MB 410-189582/1-A	Method Blank	Total/NA	Water	8270D	189582

Analysis Batch: 193509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	8270D	189582
410-61053-2	S-393D_20211027	Total/NA	Water	8270D	189582

GC VOA

Prep Batch: 189277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	RSK-175	
MB 410-189277/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-189277/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-189277/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 189281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	RSK-175	189277
MB 410-189277/1-A	Method Blank	Total/NA	Water	RSK-175	189277
LCS 410-189277/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189277
LCSD 410-189277/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	189277

Analysis Batch: 189292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-2	S-393D_20211027	Total/NA	Water	RSK-175	189324
410-61053-3	S-466_20211027	Total/NA	Water	RSK-175	189324
410-61053-4	MW-44_20211027	Total/NA	Water	RSK-175	189324

GC VOA (Continued)

Analysis Batch: 189292 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-5	RW-26_20211027	Total/NA	Water	RSK-175	189324
410-61053-6	RW-1_20211027	Total/NA	Water	RSK-175	189324
410-61053-7	MW-35_20211027	Total/NA	Water	RSK-175	189335
410-61053-8	S-461_20211027	Total/NA	Water	RSK-175	189335
410-61053-9	S-469_20211027	Total/NA	Water	RSK-175	189335
410-61053-10	S-453_20211027	Total/NA	Water	RSK-175	189335
410-61053-11	S-470_20211027	Total/NA	Water	RSK-175	189335
MB 410-189324/1-A	Method Blank	Total/NA	Water	RSK-175	189324
MB 410-189335/1-A	Method Blank	Total/NA	Water	RSK-175	189335
LCS 410-189324/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189324
LCS 410-189335/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189335
LCSD 410-189324/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	189324
LCSD 410-189335/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	189335

Prep Batch: 189324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-2	S-393D_20211027	Total/NA	Water	RSK-175	
410-61053-3	S-466_20211027	Total/NA	Water	RSK-175	
410-61053-4	MW-44_20211027	Total/NA	Water	RSK-175	
410-61053-5	RW-26_20211027	Total/NA	Water	RSK-175	
410-61053-6	RW-1_20211027	Total/NA	Water	RSK-175	
MB 410-189324/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-189324/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-189324/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Prep Batch: 189335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-7	MW-35_20211027	Total/NA	Water	RSK-175	
410-61053-8	S-461_20211027	Total/NA	Water	RSK-175	
410-61053-9	S-469_20211027	Total/NA	Water	RSK-175	
410-61053-10	S-453_20211027	Total/NA	Water	RSK-175	
410-61053-11	S-470_20211027	Total/NA	Water	RSK-175	
MB 410-189335/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-189335/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-189335/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Prep Batch: 189588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1 - DL	S-456_20211027	Total/NA	Water	RSK-175	
MB 410-189588/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-189588/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Prep Batch: 189595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-4 - DL	MW-44_20211027	Total/NA	Water	RSK-175	
410-61053-5 - DL	RW-26_20211027	Total/NA	Water	RSK-175	
410-61053-6 - DL	RW-1_20211027	Total/NA	Water	RSK-175	
410-61053-7 - DL	MW-35_20211027	Total/NA	Water	RSK-175	
410-61053-8 - DL	S-461_20211027	Total/NA	Water	RSK-175	
410-61053-10 - DL	S-453_20211027	Total/NA	Water	RSK-175	
MB 410-189595/1-A	Method Blank	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 189595 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-189595/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-189595/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 189611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1 - DL	S-456_20211027	Total/NA	Water	RSK-175	189588
MB 410-189588/1-A	Method Blank	Total/NA	Water	RSK-175	189588
LCS 410-189588/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189588

Analysis Batch: 189614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-4 - DL	MW-44_20211027	Total/NA	Water	RSK-175	189595
410-61053-5 - DL	RW-26_20211027	Total/NA	Water	RSK-175	189595
410-61053-6 - DL	RW-1_20211027	Total/NA	Water	RSK-175	189595
410-61053-7 - DL	MW-35_20211027	Total/NA	Water	RSK-175	189595
410-61053-8 - DL	S-461_20211027	Total/NA	Water	RSK-175	189595
410-61053-10 - DL	S-453_20211027	Total/NA	Water	RSK-175	189595
MB 410-189595/1-A	Method Blank	Total/NA	Water	RSK-175	189595
LCS 410-189595/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189595
LCSD 410-189595/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	189595

GC Semi VOA

Prep Batch: 189102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	8011	
410-61053-2	S-393D_20211027	Total/NA	Water	8011	
410-61053-3	S-466_20211027	Total/NA	Water	8011	
410-61053-5	RW-26_20211027	Total/NA	Water	8011	
410-61053-7	MW-35_20211027	Total/NA	Water	8011	
410-61053-8	S-461_20211027	Total/NA	Water	8011	
MB 410-189102/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-189102/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-189102/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Prep Batch: 189103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-9	S-469_20211027	Total/NA	Water	8011	
410-61053-10	S-453_20211027	Total/NA	Water	8011	
410-61053-11	S-470_20211027	Total/NA	Water	8011	
MB 410-189103/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-189103/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-189103/3-A	Lab Control Sample Dup	Total/NA	Water	8011	
410-61053-9 MS	S-469_20211027	Total/NA	Water	8011	
410-61053-9 MSD	S-469_20211027	Total/NA	Water	8011	

Analysis Batch: 189265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	8011	189102
410-61053-2	S-393D_20211027	Total/NA	Water	8011	189102
410-61053-3	S-466_20211027	Total/NA	Water	8011	189102

GC Semi VOA (Continued)

Analysis Batch: 189265 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-5	RW-26_20211027	Total/NA	Water	8011	189102
410-61053-7	MW-35_20211027	Total/NA	Water	8011	189102
410-61053-8	S-461_20211027	Total/NA	Water	8011	189102
410-61053-9	S-469_20211027	Total/NA	Water	8011	189103
410-61053-10	S-453_20211027	Total/NA	Water	8011	189103
410-61053-11	S-470_20211027	Total/NA	Water	8011	189103
MB 410-189102/1-A	Method Blank	Total/NA	Water	8011	189102
MB 410-189103/1-A	Method Blank	Total/NA	Water	8011	189103
LCS 410-189102/2-A	Lab Control Sample	Total/NA	Water	8011	189102
LCS 410-189103/2-A	Lab Control Sample	Total/NA	Water	8011	189103
LCSD 410-189102/3-A	Lab Control Sample Dup	Total/NA	Water	8011	189102
LCSD 410-189103/3-A	Lab Control Sample Dup	Total/NA	Water	8011	189103
410-61053-9 MS	S-469_20211027	Total/NA	Water	8011	189103
410-61053-9 MSD	S-469_20211027	Total/NA	Water	8011	189103

Prep Batch: 191573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-4	MW-44_20211027	Total/NA	Water	8011	
410-61053-6	RW-1_20211027	Total/NA	Water	8011	
MB 410-191573/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-191573/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-191573/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 191637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-4	MW-44_20211027	Total/NA	Water	8011	191573
410-61053-6	RW-1_20211027	Total/NA	Water	8011	191573
MB 410-191573/1-A	Method Blank	Total/NA	Water	8011	191573
LCS 410-191573/2-A	Lab Control Sample	Total/NA	Water	8011	191573
LCSD 410-191573/3-A	Lab Control Sample Dup	Total/NA	Water	8011	191573

HPLC/IC

Analysis Batch: 554084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	300.0	
410-61053-4	MW-44_20211027	Total/NA	Water	300.0	
410-61053-5	RW-26_20211027	Total/NA	Water	300.0	
410-61053-6	RW-1_20211027	Total/NA	Water	300.0	
410-61053-7	MW-35_20211027	Total/NA	Water	300.0	
410-61053-8	S-461_20211027	Total/NA	Water	300.0	
410-61053-9	S-469_20211027	Total/NA	Water	300.0	
410-61053-10	S-453_20211027	Total/NA	Water	300.0	
MB 400-554084/45	Method Blank	Total/NA	Water	300.0	
LCS 400-554084/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-554084/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 400-554084/46	Lab Control Sample	Total/NA	Water	300.0	
410-61053-1 MS	S-456_20211027	Total/NA	Water	300.0	
410-61053-1 MSD	S-456_20211027	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 554233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-2 - DL	S-393D_20211027	Total/NA	Water	300.0	
410-61053-3 - DL	S-466_20211027	Total/NA	Water	300.0	
410-61053-11 - DL	S-470_20211027	Total/NA	Water	300.0	
MB 400-554233/15	Method Blank	Total/NA	Water	300.0	
LCS 400-554233/13	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-554233/14	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 400-554233/16	Lab Control Sample	Total/NA	Water	300.0	
410-61053-1 MS	S-456_20211027	Total/NA	Water	300.0	
410-61053-1 MSD	S-456_20211027	Total/NA	Water	300.0	

Metals

Prep Batch: 190519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total Recoverable	Water	3005A	
410-61053-2	S-393D_20211027	Total Recoverable	Water	3005A	
410-61053-3	S-466_20211027	Total Recoverable	Water	3005A	
410-61053-4	MW-44_20211027	Total Recoverable	Water	3005A	
410-61053-5	RW-26_20211027	Total Recoverable	Water	3005A	
410-61053-7	MW-35_20211027	Total Recoverable	Water	3005A	
410-61053-8	S-461_20211027	Total Recoverable	Water	3005A	
410-61053-10	S-453_20211027	Total Recoverable	Water	3005A	
410-61053-11	S-470_20211027	Total Recoverable	Water	3005A	
MB 410-190519/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190519/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 190668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-2	S-393D_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-3	S-466_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-4	MW-44_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-5	RW-26_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-6	RW-1_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-7	MW-35_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-8	S-461_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-9	S-469_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-10	S-453_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-11	S-470_20211027	Dissolved	Water	Non-Digest Prep	
MB 410-190668/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-190668/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-61053-2 MS	S-393D_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-2 MSD	S-393D_20211027	Dissolved	Water	Non-Digest Prep	
410-61053-2 DU	S-393D_20211027	Dissolved	Water	Non-Digest Prep	

Prep Batch: 190878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-6	RW-1_20211027	Total Recoverable	Water	3005A	
410-61053-9	S-469_20211027	Total Recoverable	Water	3005A	
MB 410-190878/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190878/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 190878 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-9 MS	S-469_20211027	Total Recoverable	Water	3005A	
410-61053-9 MSD	S-469_20211027	Total Recoverable	Water	3005A	
410-61053-9 DU	S-469_20211027	Total Recoverable	Water	3005A	

Analysis Batch: 191087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Dissolved	Water	6020A	190668
410-61053-2	S-393D_20211027	Dissolved	Water	6020A	190668
410-61053-3	S-466_20211027	Dissolved	Water	6020A	190668
410-61053-4	MW-44_20211027	Dissolved	Water	6020A	190668
410-61053-5	RW-26_20211027	Dissolved	Water	6020A	190668
410-61053-6	RW-1_20211027	Dissolved	Water	6020A	190668
410-61053-7	MW-35_20211027	Dissolved	Water	6020A	190668
410-61053-8	S-461_20211027	Dissolved	Water	6020A	190668
410-61053-9	S-469_20211027	Dissolved	Water	6020A	190668
410-61053-10	S-453_20211027	Dissolved	Water	6020A	190668
410-61053-11	S-470_20211027	Dissolved	Water	6020A	190668
MB 410-190668/1-A	Method Blank	Total/NA	Water	6020A	190668
LCS 410-190668/2-A	Lab Control Sample	Total/NA	Water	6020A	190668
410-61053-2 MS	S-393D_20211027	Dissolved	Water	6020A	190668
410-61053-2 MSD	S-393D_20211027	Dissolved	Water	6020A	190668
410-61053-2 DU	S-393D_20211027	Dissolved	Water	6020A	190668

Analysis Batch: 192688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total Recoverable	Water	6010C	190519
410-61053-2	S-393D_20211027	Total Recoverable	Water	6010C	190519
410-61053-3	S-466_20211027	Total Recoverable	Water	6010C	190519
410-61053-4	MW-44_20211027	Total Recoverable	Water	6010C	190519
410-61053-5	RW-26_20211027	Total Recoverable	Water	6010C	190519
410-61053-7	MW-35_20211027	Total Recoverable	Water	6010C	190519
410-61053-8	S-461_20211027	Total Recoverable	Water	6010C	190519
410-61053-10	S-453_20211027	Total Recoverable	Water	6010C	190519
410-61053-11	S-470_20211027	Total Recoverable	Water	6010C	190519
MB 410-190519/1-A	Method Blank	Total Recoverable	Water	6010C	190519
LCS 410-190519/2-A	Lab Control Sample	Total Recoverable	Water	6010C	190519

Analysis Batch: 193201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-6	RW-1_20211027	Total Recoverable	Water	6010C	190878
410-61053-9	S-469_20211027	Total Recoverable	Water	6010C	190878
MB 410-190878/1-A	Method Blank	Total Recoverable	Water	6010C	190878
LCS 410-190878/2-A	Lab Control Sample	Total Recoverable	Water	6010C	190878
410-61053-9 MS	S-469_20211027	Total Recoverable	Water	6010C	190878
410-61053-9 MSD	S-469_20211027	Total Recoverable	Water	6010C	190878
410-61053-9 DU	S-469_20211027	Total Recoverable	Water	6010C	190878

Analysis Batch: 193265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-6	RW-1_20211027	Total Recoverable	Water	6010C	190878
410-61053-9	S-469_20211027	Total Recoverable	Water	6010C	190878

Metals (Continued)

Analysis Batch: 193265 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-190878/1-A	Method Blank	Total Recoverable	Water	6010C	190878
LCS 410-190878/2-A	Lab Control Sample	Total Recoverable	Water	6010C	190878
410-61053-9 MS	S-469_20211027	Total Recoverable	Water	6010C	190878
410-61053-9 MSD	S-469_20211027	Total Recoverable	Water	6010C	190878
410-61053-9 DU	S-469_20211027	Total Recoverable	Water	6010C	190878

General Chemistry

Analysis Batch: 189864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	2320B-2011	
410-61053-2	S-393D_20211027	Total/NA	Water	2320B-2011	
410-61053-3	S-466_20211027	Total/NA	Water	2320B-2011	
410-61053-4	MW-44_20211027	Total/NA	Water	2320B-2011	
410-61053-5	RW-26_20211027	Total/NA	Water	2320B-2011	
410-61053-6	RW-1_20211027	Total/NA	Water	2320B-2011	
410-61053-7	MW-35_20211027	Total/NA	Water	2320B-2011	
410-61053-8	S-461_20211027	Total/NA	Water	2320B-2011	
410-61053-9	S-469_20211027	Total/NA	Water	2320B-2011	
410-61053-10	S-453_20211027	Total/NA	Water	2320B-2011	
410-61053-11	S-470_20211027	Total/NA	Water	2320B-2011	
MB 410-189864/56	Method Blank	Total/NA	Water	2320B-2011	
MB 410-189864/87	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-189864/57	Lab Control Sample	Total/NA	Water	2320B-2011	
LCS 410-189864/88	Lab Control Sample	Total/NA	Water	2320B-2011	

Analysis Batch: 190421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	5310C-2011	
410-61053-2	S-393D_20211027	Total/NA	Water	5310C-2011	
410-61053-3	S-466_20211027	Total/NA	Water	5310C-2011	
410-61053-4	MW-44_20211027	Total/NA	Water	5310C-2011	
410-61053-5	RW-26_20211027	Total/NA	Water	5310C-2011	
410-61053-6	RW-1_20211027	Total/NA	Water	5310C-2011	
410-61053-7	MW-35_20211027	Total/NA	Water	5310C-2011	
410-61053-8	S-461_20211027	Total/NA	Water	5310C-2011	
410-61053-9	S-469_20211027	Total/NA	Water	5310C-2011	
410-61053-10	S-453_20211027	Total/NA	Water	5310C-2011	
410-61053-11	S-470_20211027	Total/NA	Water	5310C-2011	
MB 410-190421/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-190421/4	Lab Control Sample	Total/NA	Water	5310C-2011	
410-61053-1 MS	S-456_20211027	Total/NA	Water	5310C-2011	
410-61053-9 MS	S-469_20211027	Total/NA	Water	5310C-2011	
410-61053-1 DU	S-456_20211027	Total/NA	Water	5310C-2011	
410-61053-9 DU	S-469_20211027	Total/NA	Water	5310C-2011	

Analysis Batch: 190803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	5310 B-2011	
410-61053-2	S-393D_20211027	Total/NA	Water	5310 B-2011	
410-61053-3	S-466_20211027	Total/NA	Water	5310 B-2011	

General Chemistry (Continued)

Analysis Batch: 190803 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-4	MW-44_20211027	Total/NA	Water	5310 B-2011	
410-61053-5	RW-26_20211027	Total/NA	Water	5310 B-2011	
410-61053-6	RW-1_20211027	Total/NA	Water	5310 B-2011	
410-61053-7	MW-35_20211027	Total/NA	Water	5310 B-2011	
410-61053-8	S-461_20211027	Total/NA	Water	5310 B-2011	
410-61053-9	S-469_20211027	Total/NA	Water	5310 B-2011	
410-61053-10	S-453_20211027	Total/NA	Water	5310 B-2011	
410-61053-11	S-470_20211027	Total/NA	Water	5310 B-2011	
MB 410-190803/5	Method Blank	Total/NA	Water	5310 B-2011	
LCS 410-190803/4	Lab Control Sample	Total/NA	Water	5310 B-2011	
410-61053-2 MS	S-393D_20211027	Total/NA	Water	5310 B-2011	
410-61053-9 MS	S-469_20211027	Total/NA	Water	5310 B-2011	
410-61053-2 DU	S-393D_20211027	Total/NA	Water	5310 B-2011	
410-61053-9 DU	S-469_20211027	Total/NA	Water	5310 B-2011	

Prep Batch: 193545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	351.2	
410-61053-2	S-393D_20211027	Total/NA	Water	351.2	
410-61053-3	S-466_20211027	Total/NA	Water	351.2	
410-61053-4	MW-44_20211027	Total/NA	Water	351.2	
410-61053-5	RW-26_20211027	Total/NA	Water	351.2	
410-61053-6	RW-1_20211027	Total/NA	Water	351.2	
410-61053-7	MW-35_20211027	Total/NA	Water	351.2	
410-61053-8	S-461_20211027	Total/NA	Water	351.2	
410-61053-9	S-469_20211027	Total/NA	Water	351.2	
410-61053-10	S-453_20211027	Total/NA	Water	351.2	
410-61053-11	S-470_20211027	Total/NA	Water	351.2	
MB 410-193545/2-A	Method Blank	Total/NA	Water	351.2	
LCS 410-193545/1-A	Lab Control Sample	Total/NA	Water	351.2	

Analysis Batch: 193654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	SM5310C	
410-61053-2	S-393D_20211027	Total/NA	Water	SM5310C	
410-61053-3	S-466_20211027	Total/NA	Water	SM5310C	
410-61053-4	MW-44_20211027	Total/NA	Water	SM5310C	
410-61053-5	RW-26_20211027	Total/NA	Water	SM5310C	
410-61053-6	RW-1_20211027	Total/NA	Water	SM5310C	
410-61053-7	MW-35_20211027	Total/NA	Water	SM5310C	
410-61053-8	S-461_20211027	Total/NA	Water	SM5310C	
410-61053-9	S-469_20211027	Total/NA	Water	SM5310C	
410-61053-10	S-453_20211027	Total/NA	Water	SM5310C	
410-61053-11	S-470_20211027	Total/NA	Water	SM5310C	

Analysis Batch: 194920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-1	S-456_20211027	Total/NA	Water	351.2	193545
410-61053-2	S-393D_20211027	Total/NA	Water	351.2	193545
410-61053-3	S-466_20211027	Total/NA	Water	351.2	193545
410-61053-4	MW-44_20211027	Total/NA	Water	351.2	193545

General Chemistry (Continued)

Analysis Batch: 194920 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61053-5	RW-26_20211027	Total/NA	Water	351.2	193545
410-61053-6	RW-1_20211027	Total/NA	Water	351.2	193545
410-61053-7	MW-35_20211027	Total/NA	Water	351.2	193545
410-61053-8	S-461_20211027	Total/NA	Water	351.2	193545
410-61053-9	S-469_20211027	Total/NA	Water	351.2	193545
410-61053-10	S-453_20211027	Total/NA	Water	351.2	193545
410-61053-11	S-470_20211027	Total/NA	Water	351.2	193545
MB 410-193545/2-A	Method Blank	Total/NA	Water	351.2	193545
LCS 410-193545/1-A	Lab Control Sample	Total/NA	Water	351.2	193545

Client Sample ID: S-456_20211027

Lab Sample ID: 410-61053-1

Date Collected: 10/27/21 09:50

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190806	11/04/21 20:03	UKAD	ELLE
Total/NA	Analysis	8260C/UST	DL	10	190806	11/04/21 20:29	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	193509	11/11/21 15:12	P7EB	ELLE
Total/NA	Prep	RSK-175	DL		189588	11/02/21 07:18	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	100	189611	11/02/21 12:37	LXF2	ELLE
Total/NA	Prep	RSK-175			189277	11/01/21 10:00	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189281	11/01/21 16:14	LXF2	ELLE
Total/NA	Prep	8011			189102	11/01/21 03:21	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/01/21 21:42	JC94	ELLE
Total/NA	Analysis	300.0		2	554084	11/01/21 13:47	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/03/21 19:43	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:22	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 17:44	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 02:41	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 10:27	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	190803	11/03/21 14:20	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 18:34	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-393D_20211027

Lab Sample ID: 410-61053-2

Date Collected: 10/27/21 09:55

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190806	11/04/21 16:05	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	193509	11/11/21 15:40	P7EB	ELLE
Total/NA	Prep	RSK-175			189324	11/01/21 12:33	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 19:48	LXF2	ELLE
Total/NA	Prep	8011			189102	11/01/21 03:21	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/01/21 21:58	JC94	ELLE
Total/NA	Analysis	300.0	DL	20	554233	11/02/21 18:02	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/04/21 06:14	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:42	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 17:32	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 05:21	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 10:30	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	190803	11/03/21 17:15	KGQ6	ELLE

Client Sample ID: S-393D_20211027

Lab Sample ID: 410-61053-2

Date Collected: 10/27/21 09:55

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 19:55	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-466_20211027

Lab Sample ID: 410-61053-3

Date Collected: 10/27/21 10:50

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190806	11/04/21 16:32	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 12:15	DZ6A	ELLE
Total/NA	Prep	RSK-175			189324	11/01/21 12:33	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 20:05	LXF2	ELLE
Total/NA	Prep	8011			189102	11/01/21 03:21	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/01/21 23:05	JC94	ELLE
Total/NA	Analysis	300.0	DL	20	554233	11/02/21 18:27	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/03/21 19:43	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:25	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 17:46	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 03:31	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 10:07	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	190803	11/03/21 17:47	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 20:11	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: MW-44_20211027

Lab Sample ID: 410-61053-4

Date Collected: 10/27/21 12:15

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		10	190806	11/04/21 20:55	UKAD	ELLE
Total/NA	Analysis	8260C/UST	DL	100	190806	11/04/21 21:21	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 12:45	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D	DL	5	191826	11/08/21 13:15	DZ6A	ELLE
Total/NA	Prep	RSK-175			189324	11/01/21 12:33	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 20:22	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		189595	11/02/21 07:25	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	100	189614	11/02/21 11:27	SE2A	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 16:56	MB4Z	ELLE

Client Sample ID: MW-44_20211027

Lab Sample ID: 410-61053-4

Date Collected: 10/27/21 12:15

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	554084	11/01/21 15:51	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/03/21 19:43	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:09	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:32	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 18:04	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 03:00	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 10:02	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	190803	11/03/21 14:31	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 20:28	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: RW-26_20211027

Lab Sample ID: 410-61053-5

Date Collected: 10/27/21 12:18

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST	DL	50	191647	11/06/21 20:26	UCB5	ELLE
Total/NA	Analysis	8260C/UST		1	190806	11/04/21 16:59	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 13:45	DZ6A	ELLE
Total/NA	Prep	RSK-175			189324	11/01/21 12:33	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 20:39	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		189595	11/02/21 07:25	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	100	189614	11/02/21 11:45	SE2A	ELLE
Total/NA	Prep	8011			189102	11/01/21 03:21	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/01/21 23:38	JC94	ELLE
Total/NA	Analysis	300.0		5	554084	11/01/21 17:06	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/04/21 06:14	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:32	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 17:58	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 03:07	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		5	194920	11/15/21 10:50	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	190803	11/03/21 14:41	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 21:17	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: RW-1_20211027

Lab Sample ID: 410-61053-6

Date Collected: 10/27/21 11:00

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	190806	11/04/21 21:46	UKAD	ELLE
Total/NA	Analysis	8260C/UST	DL	50	190806	11/04/21 22:13	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 14:15	DZ6A	ELLE
Total/NA	Prep	RSK-175			189324	11/01/21 12:33	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 20:55	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		189595	11/02/21 07:25	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	100	189614	11/02/21 12:03	SE2A	ELLE
Total/NA	Prep	8011			191573	11/06/21 04:07	UKQ8	ELLE
Total/NA	Analysis	8011		1	191637	11/06/21 17:13	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554084	11/01/21 17:31	KIS	TAL PEN
Total Recoverable	Prep	3005A			190878	11/04/21 13:21	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193265	11/10/21 16:58	UCIG	ELLE
Total Recoverable	Prep	3005A			190878	11/04/21 13:21	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193201	11/10/21 14:33	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 17:54	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 03:20	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		5	194920	11/15/21 10:48	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	190803	11/03/21 14:52	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 21:33	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: MW-35_20211027

Lab Sample ID: 410-61053-7

Date Collected: 10/27/21 13:25

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	190806	11/04/21 22:39	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 14:45	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D	DL	10	191826	11/08/21 15:15	DZ6A	ELLE
Total/NA	Prep	RSK-175			189335	11/01/21 12:40	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 22:20	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		189595	11/02/21 07:25	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	100	189614	11/02/21 12:21	SE2A	ELLE
Total/NA	Prep	8011			189102	11/01/21 03:21	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/02/21 00:12	JC94	ELLE
Total/NA	Analysis	300.0		5	554084	11/01/21 17:56	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/04/21 06:14	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:35	WJM9	ELLE

Client Sample ID: MW-35_20211027

Lab Sample ID: 410-61053-7

Date Collected: 10/27/21 13:25

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 17:52	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 03:13	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 09:58	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		2	190803	11/03/21 15:25	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 21:49	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-461_20211027

Lab Sample ID: 410-61053-8

Date Collected: 10/27/21 13:35

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	190806	11/04/21 23:30	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 15:45	DZ6A	ELLE
Total/NA	Prep	RSK-175			189335	11/01/21 12:40	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 22:37	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		189595	11/02/21 07:25	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	50	189614	11/02/21 12:40	SE2A	ELLE
Total/NA	Prep	8011			189102	11/01/21 03:21	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/02/21 00:29	JC94	ELLE
Total/NA	Analysis	300.0		5	554084	11/01/21 18:20	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/04/21 06:14	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:28	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 17:56	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 02:54	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 10:23	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	190803	11/03/21 15:36	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 22:05	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-469_20211027

Lab Sample ID: 410-61053-9

Date Collected: 10/27/21 14:20

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190806	11/04/21 17:25	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 16:15	DZ6A	ELLE

Client Sample ID: S-469_20211027

Lab Sample ID: 410-61053-9

Date Collected: 10/27/21 14:20

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	RSK-175			189335	11/01/21 12:40	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 22:54	LXF2	ELLE
Total/NA	Prep	8011			189103	11/01/21 03:25	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/02/21 02:09	JC94	ELLE
Total/NA	Analysis	300.0		5	554084	11/01/21 18:45	KIS	TAL PEN
Total Recoverable	Prep	3005A			190878	11/04/21 13:21	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193265	11/10/21 16:43	UCIG	ELLE
Total Recoverable	Prep	3005A			190878	11/04/21 13:21	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193201	11/10/21 14:13	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 18:02	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 05:28	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 10:00	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	190803	11/03/21 17:58	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 22:21	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-453_20211027

Lab Sample ID: 410-61053-10

Date Collected: 10/27/21 14:45

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	190806	11/05/21 00:22	UKAD	ELLE
Total/NA	Analysis	8260C/UST	DL	50	190806	11/05/21 00:48	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 16:45	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D	DL	5	191826	11/08/21 17:14	DZ6A	ELLE
Total/NA	Prep	RSK-175			189335	11/01/21 12:40	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 23:10	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		189595	11/02/21 07:25	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	100	189614	11/02/21 12:58	SE2A	ELLE
Total/NA	Prep	8011			189103	11/01/21 03:25	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/02/21 02:26	JC94	ELLE
Total/NA	Analysis	300.0		2	554084	11/01/21 19:10	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/04/21 06:14	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:38	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:32	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 18:06	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 02:47	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 10:21	JCG7	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Client Sample ID: S-453_20211027

Lab Sample ID: 410-61053-10

Date Collected: 10/27/21 14:45

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	5310 B-2011		10	190803	11/03/21 15:47	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 23:10	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-470_20211027

Lab Sample ID: 410-61053-11

Date Collected: 10/27/21 13:20

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190806	11/04/21 17:50	UKAD	ELLE
Total/NA	Prep	3510C			189582	11/02/21 08:35	BLX5	ELLE
Total/NA	Analysis	8270D		1	191826	11/08/21 17:44	DZ6A	ELLE
Total/NA	Prep	RSK-175			189335	11/01/21 12:40	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189292	11/01/21 23:27	LXF2	ELLE
Total/NA	Prep	8011			189103	11/01/21 03:25	UKQ8	ELLE
Total/NA	Analysis	8011		1	189265	11/02/21 02:42	JC94	ELLE
Total/NA	Analysis	300.0	DL	20	554233	11/02/21 22:10	KIS	TAL PEN
Total Recoverable	Prep	3005A			190519	11/03/21 19:43	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	192688	11/09/21 15:12	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			190668	11/04/21 08:30	UAMX	ELLE
Dissolved	Analysis	6020A		1	191087	11/04/21 18:00	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	189864	11/02/21 03:26	DI9Q	ELLE
Total/NA	Prep	351.2			193545	11/11/21 09:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	194920	11/15/21 10:25	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		2	190803	11/03/21 15:58	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190421	11/02/21 23:26	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: TB21288

Lab Sample ID: 410-61053-12

Date Collected: 10/21/21 00:00

Matrix: Water

Date Received: 10/28/21 15:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190808	11/04/21 16:48	UKAD	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Stantec Consulting Corp.
Job ID: 410-61053-1
Project/Site: Belmont Terminal GW Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310 B-2011		Water	Total Carbon
SM5310C		Water	Total Inorganic Carbon

Laboratory: Eurofins TestAmerica, Pensacola

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	68-00467	01-31-22

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Method	Method Description	Protocol	Laboratory
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
5310 B-2011	Carbon, Total and Total Inorganic	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
SM5310C	Carbon, Total Inorganic	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61053-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-61053-1	S-456_20211027	Water	10/27/21 09:50	10/28/21 15:57
410-61053-2	S-393D_20211027	Water	10/27/21 09:55	10/28/21 15:57
410-61053-3	S-466_20211027	Water	10/27/21 10:50	10/28/21 15:57
410-61053-4	MW-44_20211027	Water	10/27/21 12:15	10/28/21 15:57
410-61053-5	RW-26_20211027	Water	10/27/21 12:18	10/28/21 15:57
410-61053-6	RW-1_20211027	Water	10/27/21 11:00	10/28/21 15:57
410-61053-7	MW-35_20211027	Water	10/27/21 13:25	10/28/21 15:57
410-61053-8	S-461_20211027	Water	10/27/21 13:35	10/28/21 15:57
410-61053-9	S-469_20211027	Water	10/27/21 14:20	10/28/21 15:57
410-61053-10	S-453_20211027	Water	10/27/21 14:45	10/28/21 15:57
410-61053-11	S-470_20211027	Water	10/27/21 13:20	10/28/21 15:57
410-61053-12	TB21288	Water	10/21/21 00:00	10/28/21 15:57

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone 717-656-2300 Fax 717-656-2681

Chain of Custody

410-61053 Chain of Custody

eurofins Environment Testing America

COC No: 410-36664-11480.2
Page: Page 1 of 2
Job #:

Client Information	Sampler: JOHN GORCYCA, ANDREA HILL, JIM CRAFT, IAN ANDRES	Lab PM:
Client Contact: Ms Jennifer Menges / Jenny Kachel	Phone: 484 757 7890	E-Mail:
Company: Evergreen Yo Stantec Consulting Corp Services Inc.	PWSID:	
Address: 1060 Andrew Drive Suite 140	Due Date Requested:	
City: West Chester	TAT Requested (days): STANDARD	
State, Zip: PA, 19380	Compliance Project: Δ Yes Δ No	
Phone: 610-840-2541(Tel)	PO #: 213402797	
Email: jennifer.menges@stantec.com / Jenny.Kachel	WO #: ACT # 164657	
Project Name: Belmont Terminal GW Sampling	Project #: 41004761	
Site: Former Philadelphia Refinery	SSOW#:	

Refer to 10/20/21 email to Amek Carter for requested analytes

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

*Evergreen Petroleum Short List Analytes Plus TBA

Special Instructions/Note:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code	VOCs 8260 *	SVOCs 8270 *	EDB 8011	Dissolved headspace gases (Ethane, Ethene, Methane)	Total carbon, Total organic carbon, Total inorganic carbon	Alkalinity as $CaCO_3$	Total Kjeldahl Nitrogen (TKN)	Total calcium, Total calcium sulfate	Dissolved lead (field filtered)						
S-456_20211027	10/27/21	0950	G	W		X	X	X	X	X	X	X	X	X						
MW-393D_20211027	10/27/21	0955	G	W		X	X	X	X	X	X	X	X	X						
S-466_20211027	10/27/21	1050	G	W		X	X	X	X	X	X	X	X	X						
MW-44_20211027	10/27/21	1215	G	W		X	X	X	X	X	X	X	X	X						
RW-26_20211027	10/27/21	1218	G	W		X	X	X	X	X	X	X	X	X						
RW-1_20211027	10/27/21	1100	G	W		X	X	X	X	X	X	X	X	X						
MW-35_20211027	10/27/21	1325	G	W		X	X	X	X	X	X	X	X	X						
S-461_20211027	10/27/21	1335	G	W		X	X	X	X	X	X	X	X	X						
S-469_20211027	10/27/21	1420	G	W		X	X	X	X	X	X	X	X	X						
S-453_20211027	10/27/21	1445	G	W		X	X	X	X	X	X	X	X	X						
S-470_20211027	10/27/21	1320	G	W		X	X	X	X	X	X	X	X	X						

AH 12/3/2021

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify): EQUIS EDD

Special Instructions/QC Requirements:

Empty Kit Relinquished by	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Andrea Hill	10/28/21 1235	STANTEC	Pierre	10/28/21 12:25	
Pierre	10/28/21 1537				
				10/28/21 15:57	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.3, 1.3, 2.4 0.8 (3) IR32891

Ver 06/08/2021

LL

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Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Carter, Amek A	Carrier Tracking No(s):	COC No: 410-1044305.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Loran.Carter@eurofinset.com	State of Origin: Pennsylvania	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Pennsylvania		Job #: 410-61053-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 11/10/2021			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: Former Philadelphia Refinery	Project #: 41004761			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D/ Sulfate/Chloride 300.0	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
S-456_20211027 (410-61053-1)	10/27/21	09:50 Eastern		Water			X	1	
MW-393D_20211027 (410-61053-2)	10/27/21	09:55 Eastern		Water			X	1	
S-466_20211027 (410-61053-3)	10/27/21	10:50 Eastern		Water			X	1	
MW-44_20211027 (410-61053-4)	10/27/21	12:15 Eastern		Water			X	1	
RW-26_20211027 (410-61053-5)	10/27/21	12:18 Eastern		Water			X	1	
RW-1_20211027 (410-61053-6)	10/27/21	11:00 Eastern		Water			X	1	
MW-35_20211027 (410-61053-7)	10/27/21	13:25 Eastern		Water			X	1	
S-461_20211027 (410-61053-8)	10/27/21	13:35 Eastern		Water			X	1	
S-469_20211027 (410-61053-9)	10/27/21	14:20 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Lancaster Laboratories Env places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Lancaster Laboratories Env laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Lancaster Laboratories Env attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Lancaster Laboratories Env.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Hannah L Gatt	10-29-2021 1521	ELLE	Kathy R Avery	10-30-21 941	ETA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.0°C IR7

Ver: 06/08/2021

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Carter, Amek A	Carrier Tracking No(s):	COC No: 410-1044305.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Loran.Carter@eurofinset.com	State of Origin: Pennsylvania	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Pennsylvania		Job #: 410-61053-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 11/10/2021			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: Former Philadelphia Refinery	Project #: 41004761			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D/ Sulfate/Chloride 300.0	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
S-453_20211027 (410-61053-10)	10/27/21	14:45 Eastern		Water			X	1	
S-470_20211027 (410-61053-11)	10/27/21	13:20 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Lancaster Laboratories Env places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Lancaster Laboratories Env laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Lancaster Laboratories Env attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Lancaster Laboratories Env.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Hank Hartt	10-29-2021 1521	ELLE	Kathy Raney	10.30.21 941	ETA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.0° C IR7

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-61053-1

Login Number: 61053 **List Source: Eurofins Lancaster Laboratories Env, LLC**
List Number: 1
Creator: Leakway, Christian

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	

Login Sample Receipt Checklist

Client: Stantec Consulting Corp. Job Number: 410-61053-1

Login Number: 61053
List Number: 2
Creator: Avery, Kathy R

List Source: Eurofins TestAmerica, Pensacola
List Creation: 10/30/21 10:56 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C IR 7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-61302-1
Client Project/Site: Belmont Terminal GW Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Jenny Kachel

Authorized for release by:
11/23/2021 2:48:28 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
11/23/2021 2:48:28 PM

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
FH	MS and/or MSD recovery above control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^3+	Reporting Limit Check Standard is outside acceptance limits, high biased
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
!	Laboratory is not accredited for this parameter.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
FH	MS and/or MSD recovery above control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-61302-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-61302-1

Receipt
The samples were received on 10/29/2021 6:42 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 3.3°C, 4.2°C, 5.1°C and 5.2°C

Receipt Exceptions
The following samples have seventeen total containers on the COC but eighteen total containers were received.

TW-5_20211029 (410-61302-12) and N-82_20211029 (410-61302-15)

The following sample has four total containers on the COC but six total containers were received.

Trip Blank (410-61302-16)

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): S-455_20211028 (410-61302-2). The container labels list time of 12:10, while the COC lists time of 12:05.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): DUP-1_20211028 (410-61302-3). The container labels list time of 12:05, while the COC lists time of 12:10.

Insufficient sample volume was provided for the following sample for the Alkalinity analysis: Volume was subbed out of another unpreserved container from sample.
S-472_20211029 (410-61302-14).

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D: The laboratory control sample duplicate (LCSD) for preparation batch 410-189870 and analytical batch 410-192240 recovered outside control limits for the following analytes: Chrysene. The associated sample(s) was re-prepared and/or re-analyzed outside holding time. The first sets of data have been reported.

Method 8270D: The laboratory control sample duplicate (LCSD) for preparation batch 410-189870 and analytical batch 410-192768 recovered outside control limits for the following analytes: Chrysene. The associated sample(s) was re-prepared and/or re-analyzed outside holding time. The first sets of data have been reported.

Method 8270D: The laboratory control sample duplicate (LCSD) for preparation batch 410-189870 and analytical batch 410-192363 recovered outside control limits for the following analytes: Chrysene. The associated sample(s) was re-prepared and/or re-analyzed outside holding time. The first sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
Method RSK_175: The method requirement for no headspace was not met. The following volatile sample was analyzed for Methane with significant headspace in the sample container(s): N-82_20211029 (410-61302-15). Significant headspace is defined as a bubble greater than 6 mm in diameter.

Method RSK_175: The method requirement for no headspace was not met. The following volatile sample was analyzed with significant headspace in the sample container(s): S-395_20211028 (410-61302-4). Significant headspace is defined as a bubble greater than 6 mm in diameter.

Job ID: 410-61302-1 (Continued)

Laboratory: Eurofins Lancaster Laboratories Env, LLC (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method 8011: Surrogate recovery for the following samples were outside control limits: S-457_20211029 (410-61302-8) and OW-20_20211029 (410-61302-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8011: The 1,1,2,2-Tetrachloroethane surrogate recovery for the following samples was outside acceptance limits (high biased) on the confirmation column due to matrix interference: OW-19_20211029 (410-61302-13). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 300_ORGFM_28D: The following samples were diluted due to high conductivity: S-465_20211028 (410-61302-1), S-395_20211028 (410-61302-4), S-463_20211028 (410-61302-5), S-464_20211028 (410-61302-7) and TW-5_20211029 (410-61302-12). Elevated reporting limits (RL) are provided.

Method 300_ORGFM_28D: The following samples were diluted due to the abundance of non-target analytes: S-457_20211029 (410-61302-8) and OW-20_20211029 (410-61302-9). Elevated reporting limits (RLs) are provided.

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 400-554421 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300_ORGFM_28D: The following samples were diluted due to the abundance of non-target analytes: MW-36_20211029 (410-61302-10) and S-472_20211029 (410-61302-14). Elevated reporting limits (RLs) are provided.

Method 300_ORGFM_28D: The following sample was diluted due to the abundance of non-target analytes: OW-20_20211029 (410-61302-9). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

Method 6010C: The ending low level check standard (CRI) associated with batch 410-191651 was outside of acceptance criteria high. The reported results for the associated samples were above the continuing calibration verification (CCV). The results for the beginning CRI and the Laboratory Control Standard (LCS) were within acceptance criteria; therefore, the data including the LCS. have been reported.
Associated Samples: S-395_20211028 (410-61302-4), S-452_20211028 (410-61302-6), S-457_20211029 (410-61302-8), MW-37_20211029 (410-61302-11), TW-5_20211029 (410-61302-12), S-472_20211029 (410-61302-14) and N-82_20211029 (410-61302-15)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Client Sample ID: S-465_20211028 — Lab Sample ID: 410-61302-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	86		50	20	ug/L	50		8260C/UST	Total/NA
Toluene	520		50	15	ug/L	50		8260C/UST	Total/NA
Xylenes, Total	450		300	70	ug/L	50		8260C/UST	Total/NA
Isopropylbenzene	23	J	250	15	ug/L	50		8260C/UST	Total/NA
Benzene - DL	32000		500	150	ug/L	500		8260C/UST	Total/NA
Anthracene	0.14	J	0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.38	J	0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	19		0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.48	J	0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.19	J	0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C)	260		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	87		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	110		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	25		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	320		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	1.4		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	120	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	23		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	97	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-455_20211028 — Lab Sample ID: 410-61302-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	700		10	4.0	ug/L	10		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	190		50	3.0	ug/L	10		8260C/UST	Total/NA
Toluene	550		10	3.0	ug/L	10		8260C/UST	Total/NA
Xylenes, Total	960		60	14	ug/L	10		8260C/UST	Total/NA
Methyl tertiary butyl ether	360		10	2.0	ug/L	10		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	300		50	10	ug/L	10		8260C/UST	Total/NA
Isopropylbenzene	130		50	3.0	ug/L	10		8260C/UST	Total/NA
t-Butyl alcohol	3200		500	120	ug/L	10		8260C/UST	Total/NA
Benzene - DL	7700		100	30	ug/L	100		8260C/UST	Total/NA
Anthracene	6.9		0.52	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.20	J	0.52	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.28	J *-	0.52	0.10	ug/L	1		8270D	Total/NA
Fluorene	37		0.52	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	37		0.52	0.12	ug/L	1		8270D	Total/NA
Pyrene	2.7		0.52	0.10	ug/L	1		8270D	Total/NA
Naphthalene - DL	2900		52	10	ug/L	100		8270D	Total/NA
Ethane (1C)	3.0	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	23000		1000	600	ug/L	200		RSK-175	Total/NA
Calcium	70		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	41		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	3.0		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	390		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	6.4		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	110	! FH	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	14		1.0	0.50	mg/L	1		5310C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Client Sample ID: S-455_20211028 (Continued) — Lab Sample ID: 410-61302-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Inorganic Carbon	96	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: DUP-1_20211028 — Lab Sample ID: 410-61302-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	700		10	4.0	ug/L	10		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	190		50	3.0	ug/L	10		8260C/UST	Total/NA
Toluene	590		10	3.0	ug/L	10		8260C/UST	Total/NA
Xylenes, Total	1000		60	14	ug/L	10		8260C/UST	Total/NA
Methyl tertiary butyl ether	380		10	2.0	ug/L	10		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	300		50	10	ug/L	10		8260C/UST	Total/NA
Isopropylbenzene	130		50	3.0	ug/L	10		8260C/UST	Total/NA
t-Butyl alcohol	3200		500	120	ug/L	10		8260C/UST	Total/NA
Benzene - DL	7700		100	30	ug/L	100		8260C/UST	Total/NA
Anthracene	7.4		0.54	0.11	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.22	J	0.54	0.11	ug/L	1		8270D	Total/NA
Chrysene	0.27	J *-	0.54	0.11	ug/L	1		8270D	Total/NA
Fluorene	46		0.54	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	36		0.54	0.12	ug/L	1		8270D	Total/NA
Pyrene	2.7		0.54	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	2900		54	11	ug/L	100		8270D	Total/NA
Ethane (1C)	3.1	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	22000		1000	600	ug/L	200		RSK-175	Total/NA
Calcium	70		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	41		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	3.0		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	390		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	6.8		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	130	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	14		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	120	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-395_20211028 — Lab Sample ID: 410-61302-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	0.59		0.51	0.10	ug/L	1		8270D	Total/NA
Sulfate	140		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	100	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	11		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	260		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	66	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	2.3		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	64	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-463_20211028 — Lab Sample ID: 410-61302-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	6.7		5.0	1.5	ug/L	5		8260C/UST	Total/NA
Benzene - DL	2300		50	15	ug/L	50		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample ID: S-463_20211028 (Continued)

Lab Sample ID: 410-61302-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluorene	0.13	J	0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	0.35	J	0.51	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.19	J	0.51	0.11	ug/L	1		8270D	Total/NA
Methane (1C)	29		5.0	3.0	ug/L	1		RSK-175	Total/NA
Sulfate	130		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	95		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	5.5		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	250		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Carbon	60	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	1.8		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	58	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-452_20211028

Lab Sample ID: 410-61302-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1100		10	4.0	ug/L	10		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	160		50	3.0	ug/L	10		8260C/UST	Total/NA
Toluene	97		10	3.0	ug/L	10		8260C/UST	Total/NA
Xylenes, Total	2200		60	14	ug/L	10		8260C/UST	Total/NA
Methyl tertiary butyl ether	2000		10	2.0	ug/L	10		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	430		50	10	ug/L	10		8260C/UST	Total/NA
Isopropylbenzene	110		50	3.0	ug/L	10		8260C/UST	Total/NA
Benzene - DL	6400		100	30	ug/L	100		8260C/UST	Total/NA
t-Butyl alcohol - DL	44000		5000	1200	ug/L	100		8260C/UST	Total/NA
Anthracene	6.1		0.53	0.11	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	1.2		0.53	0.11	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.72		0.53	0.12	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.84		0.53	0.11	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.27	J	0.53	0.11	ug/L	1		8270D	Total/NA
Chrysene	1.2	*-	0.53	0.11	ug/L	1		8270D	Total/NA
Fluorene	17		0.53	0.13	ug/L	1		8270D	Total/NA
Phenanthrene	31		0.53	0.12	ug/L	1		8270D	Total/NA
Pyrene	4.6		0.53	0.11	ug/L	1		8270D	Total/NA
Naphthalene - DL	1700		53	11	ug/L	100		8270D	Total/NA
Ethane (1C)	3.4	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	19000		1000	600	ug/L	200		RSK-175	Total/NA
Ethylene Dibromide (1C)	0.019	J	0.028	0.0094	ug/L	1		8011	Total/NA
Calcium	46	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	55		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	2.9		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	260		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	2.8		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	140	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	38		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	100	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Client Sample ID: S-464_20211028 — Lab Sample ID: 410-61302-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	69		20	8.0	ug/L	20		8260C/UST	Total/NA
Toluene	1000		20	6.0	ug/L	20		8260C/UST	Total/NA
Xylenes, Total	270		120	28	ug/L	20		8260C/UST	Total/NA
Benzene	170000		5000	1500	ug/L	5000		8260C/UST	Total/NA
Isopropylbenzene	84	J	100	6.0	ug/L	20		8260C/UST	Total/NA
Fluorene	0.24	J	0.57	0.14	ug/L	1		8270D	Total/NA
Naphthalene	7.2		0.57	0.11	ug/L	1		8270D	Total/NA
Phenanthrene	0.31	J	0.57	0.13	ug/L	1		8270D	Total/NA
Methane (1C) - DL	3200		100	60	ug/L	20		RSK-175	Total/NA
Sulfate	49		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	83		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	23		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	250		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.84	J	1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	130	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	19		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	110	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: S-457_20211029 — Lab Sample ID: 410-61302-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1800		50	20	ug/L	50		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	210	J	250	15	ug/L	50		8260C/UST	Total/NA
Toluene	1100		50	15	ug/L	50		8260C/UST	Total/NA
Xylenes, Total	5200		300	70	ug/L	50		8260C/UST	Total/NA
Methyl tertiary butyl ether	4400		50	10	ug/L	50		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	770		250	50	ug/L	50		8260C/UST	Total/NA
Isopropylbenzene	63	J	250	15	ug/L	50		8260C/UST	Total/NA
t-Butyl alcohol	22000		2500	600	ug/L	50		8260C/UST	Total/NA
Benzene - DL	20000		500	150	ug/L	500		8260C/UST	Total/NA
Anthracene	2.3		0.58	0.12	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.81		0.58	0.12	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.35	J	0.58	0.13	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.44	J	0.58	0.12	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.16	J	0.58	0.12	ug/L	1		8270D	Total/NA
Chrysene	0.79	*-	0.58	0.12	ug/L	1		8270D	Total/NA
Fluorene	10		0.58	0.14	ug/L	1		8270D	Total/NA
Phenanthrene	15		0.58	0.13	ug/L	1		8270D	Total/NA
Pyrene	2.4		0.58	0.12	ug/L	1		8270D	Total/NA
Naphthalene - DL	2500		58	12	ug/L	100		8270D	Total/NA
Ethane (1C)	8.0		5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	18000		500	300	ug/L	100		RSK-175	Total/NA
Ethylene Dibromide (1C)	0.017	J	0.028	0.0094	ug/L	1		8011	Total/NA
Calcium	120	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	73		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	5.2		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	180		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	0.98	J	1.0	0.50	mg/L	1		351.2	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-457_20211029 (Continued) — Lab Sample ID: 410-61302-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Carbon	120	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	28		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	92	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: OW-20_20211029 — Lab Sample ID: 410-61302-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	890		50	20	ug/L	50		8260C/UST	Total/NA
1,2-Dichloroethane	150		50	15	ug/L	50		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	660		250	15	ug/L	50		8260C/UST	Total/NA
Toluene	7800		50	15	ug/L	50		8260C/UST	Total/NA
Xylenes, Total	11000		300	70	ug/L	50		8260C/UST	Total/NA
Methyl tertiary butyl ether	4200		50	10	ug/L	50		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	1800		250	50	ug/L	50		8260C/UST	Total/NA
Isopropylbenzene	67	J	250	15	ug/L	50		8260C/UST	Total/NA
t-Butyl alcohol	19000		2500	600	ug/L	50		8260C/UST	Total/NA
Benzene - DL	25000		500	150	ug/L	500		8260C/UST	Total/NA
Anthracene	7.0		5.0	1.0	ug/L	10		8270D	Total/NA
Benzo[a]anthracene	4.1	J	5.0	1.0	ug/L	10		8270D	Total/NA
Benzo[a]pyrene	3.6	J	5.0	1.1	ug/L	10		8270D	Total/NA
Benzo[b]fluoranthene	3.1	J	5.0	1.0	ug/L	10		8270D	Total/NA
Benzo[g,h,i]perylene	1.6	J	5.0	1.0	ug/L	10		8270D	Total/NA
Chrysene	3.7	J *-	5.0	1.0	ug/L	10		8270D	Total/NA
Fluorene	11		5.0	1.2	ug/L	10		8270D	Total/NA
Naphthalene	290		5.0	1.0	ug/L	10		8270D	Total/NA
Phenanthrene	26		5.0	1.1	ug/L	10		8270D	Total/NA
Pyrene	17		5.0	1.0	ug/L	10		8270D	Total/NA
Ethane (1C)	4.1	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Ethene (1C)	1.2	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	12000		250	150	ug/L	50		RSK-175	Total/NA
Ethylene Dibromide (1C)	0.013	J	0.028	0.0094	ug/L	1		8011	Total/NA
Sulfate	7.7		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	240		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	500	^3+	2.0	0.40	mg/L	10		6010C	Total Recoverable
Lead	25		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	91		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	24		10	5.0	mg/L	10		351.2	Total/NA
Total Carbon	830	!	25	13	mg/L	25		5310 B-2011	Total/NA
Total Organic Carbon	540		25	13	mg/L	25		5310C-2011	Total/NA
Total Inorganic Carbon	290	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: MW-36_20211029 — Lab Sample ID: 410-61302-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	500		500	200	ug/L	500		8260C/UST	Total/NA
1,2-Dichloroethane	1100		500	150	ug/L	500		8260C/UST	Total/NA
Toluene	9200		500	150	ug/L	500		8260C/UST	Total/NA
Xylenes, Total	1700	J	3000	700	ug/L	500		8260C/UST	Total/NA
Benzene - DL	490000		5000	1500	ug/L	5000		8260C/UST	Total/NA
Anthracene	1.2		0.58	0.12	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-36_20211029 (Continued)

Lab Sample ID: 410-61302-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluorene	5.1		0.58	0.14	ug/L	1		8270D	Total/NA
Phenanthrene	6.2		0.58	0.13	ug/L	1		8270D	Total/NA
Pyrene	0.40	J	0.58	0.12	ug/L	1		8270D	Total/NA
Naphthalene - DL	770		5.8	1.2	ug/L	10		8270D	Total/NA
Ethane (1C)	10		5.0	1.0	ug/L	1		RSK-175	Total/NA
Ethene (1C)	11		5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	11000		250	150	ug/L	50		RSK-175	Total/NA
Ethylene Dibromide (1C)	0.022	J	0.029	0.0096	ug/L	1		8011	Total/NA
Calcium	200		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	53		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.091	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	490		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	8.5		5.0	2.5	mg/L	5		351.2	Total/NA
Total Carbon	380	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	120		10	5.0	mg/L	10		5310C-2011	Total/NA
Total Inorganic Carbon	260	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: MW-37_20211029

Lab Sample ID: 410-61302-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	1200		100	30	ug/L	100		8260C/UST	Total/NA
Benzene - DL	160000		1000	300	ug/L	1000		8260C/UST	Total/NA
Anthracene	0.14	J	0.50	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.35	J	0.50	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.38	J	0.50	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.62		0.50	0.10	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.26	J	0.50	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.45	J *-	0.50	0.10	ug/L	1		8270D	Total/NA
Fluorene	0.28	J	0.50	0.12	ug/L	1		8270D	Total/NA
Naphthalene	2.1		0.50	0.10	ug/L	1		8270D	Total/NA
Phenanthrene	0.73		0.50	0.11	ug/L	1		8270D	Total/NA
Pyrene	0.84		0.50	0.10	ug/L	1		8270D	Total/NA
Methane (1C) - DL	4800		100	60	ug/L	20		RSK-175	Total/NA
Sulfate	2.5		1.0	0.37	mg/L	1		300.0	Total/NA
Calcium	40	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	25		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.85		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	160		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	3.2		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	130	!	5.0	2.5	mg/L	5		5310 B-2011	Total/NA
Total Organic Carbon	45		5.0	2.5	mg/L	5		5310C-2011	Total/NA
Total Inorganic Carbon	85	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: TW-5_20211029

Lab Sample ID: 410-61302-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	480	J	500	200	ug/L	500		8260C/UST	Total/NA
Toluene	8100		500	150	ug/L	500		8260C/UST	Total/NA
Xylenes, Total	1900	J	3000	700	ug/L	500		8260C/UST	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: TW-5_20211029 (Continued)

Lab Sample ID: 410-61302-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene - DL	680000		5000	1500	ug/L	5000		8260C/UST	Total/NA
Anthracene	0.19	J	0.57	0.11	ug/L	1		8270D	Total/NA
Fluorene	0.36	J	0.57	0.14	ug/L	1		8270D	Total/NA
Naphthalene	9.7		0.57	0.11	ug/L	1		8270D	Total/NA
Phenanthrene	0.57		0.57	0.12	ug/L	1		8270D	Total/NA
Pyrene	0.11	J	0.57	0.11	ug/L	1		8270D	Total/NA
Methane (1C) - DL	6300		100	60	ug/L	20		RSK-175	Total/NA
Ethylene Dibromide (1C)	0.022	J	0.028	0.0095	ug/L	1		8011	Total/NA
Sulfate	120		5.0	1.9	mg/L	5		300.0	Total/NA
Calcium	240	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	25		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	620		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	13		5.0	2.5	mg/L	5		351.2	Total/NA
Total Carbon	450	!	25	13	mg/L	25		5310 B-2011	Total/NA
Total Organic Carbon	120		5.0	2.5	mg/L	5		5310C-2011	Total/NA
Total Inorganic Carbon	330	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: OW-19_20211029

Lab Sample ID: 410-61302-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	3500		50	20	ug/L	50		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	4800		250	15	ug/L	50		8260C/UST	Total/NA
Methyl tertiary butyl ether	22000		50	10	ug/L	50		8260C/UST	Total/NA
Benzene	7300		50	15	ug/L	50		8260C/UST	Total/NA
Isopropylbenzene	400		250	15	ug/L	50		8260C/UST	Total/NA
t-Butyl alcohol	36000		2500	600	ug/L	50		8260C/UST	Total/NA
Toluene - DL	18000		500	150	ug/L	500		8260C/UST	Total/NA
Xylenes, Total - DL	50000		3000	700	ug/L	500		8260C/UST	Total/NA
1,2,4-Trimethylbenzene - DL	22000		2500	500	ug/L	500		8260C/UST	Total/NA
Ethane (1C)	2.1	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	12000		250	150	ug/L	50		RSK-175	Total/NA
Ethylene Dibromide (1C)	0.011	J	0.029	0.0095	ug/L	1		8011	Total/NA

Client Sample ID: S-472_20211029

Lab Sample ID: 410-61302-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3,5-Trimethylbenzene	210		25	1.5	ug/L	5		8260C/UST	Total/NA
Toluene	7.2		5.0	1.5	ug/L	5		8260C/UST	Total/NA
Xylenes, Total	480		30	7.0	ug/L	5		8260C/UST	Total/NA
Benzene	190		5.0	1.5	ug/L	5		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	750		25	5.0	ug/L	5		8260C/UST	Total/NA
Isopropylbenzene	160		25	1.5	ug/L	5		8260C/UST	Total/NA
Ethylbenzene - DL	1500		50	20	ug/L	50		8260C/UST	Total/NA
Anthracene	7.7		0.60	0.12	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.93		0.60	0.12	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.52	J	0.60	0.13	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.57	J	0.60	0.12	ug/L	1		8270D	Total/NA
Benzo[g,h,i]perylene	0.20	J	0.60	0.12	ug/L	1		8270D	Total/NA
Chrysene	1.1	*-	0.60	0.12	ug/L	1		8270D	Total/NA
Fluorene	41		0.60	0.14	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-472_20211029 (Continued)

Lab Sample ID: 410-61302-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	41		0.60	0.13	ug/L	1		8270D	Total/NA
Pyrene	4.3		0.60	0.12	ug/L	1		8270D	Total/NA
Naphthalene - DL	5500		60	12	ug/L	100		8270D	Total/NA
Ethane (1C)	2.0	J	5.0	1.0	ug/L	1		RSK-175	Total/NA
Methane (1C) - DL	23000		1000	600	ug/L	200		RSK-175	Total/NA
Calcium	71	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	110		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	0.32	J	0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	33		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	3.1		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	60	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	9.1		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	51	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: N-82_20211029

Lab Sample ID: 410-61302-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	5200		50	20	ug/L	50		8260C/UST	Total/NA
1,3,5-Trimethylbenzene	200	J	250	15	ug/L	50		8260C/UST	Total/NA
Toluene	8300		50	15	ug/L	50		8260C/UST	Total/NA
Xylenes, Total	3700		300	70	ug/L	50		8260C/UST	Total/NA
1,2,4-Trimethylbenzene	700		250	50	ug/L	50		8260C/UST	Total/NA
Isopropylbenzene	180	J	250	15	ug/L	50		8260C/UST	Total/NA
Benzene - DL	19000		500	150	ug/L	500		8260C/UST	Total/NA
Anthracene	4.1		0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.42	J	0.51	0.10	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.26	J	0.51	0.11	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.30	J	0.51	0.10	ug/L	1		8270D	Total/NA
Chrysene	0.41	J	0.51	0.10	ug/L	1		8270D	Total/NA
Fluorene	30		0.51	0.12	ug/L	1		8270D	Total/NA
Naphthalene	6600		51	10	ug/L	100		8270D	Total/NA
Phenanthrene	24		0.51	0.11	ug/L	1		8270D	Total/NA
Pyrene	2.1		0.51	0.10	ug/L	1		8270D	Total/NA
Methane (1C) - DL	14000		250	150	ug/L	50		RSK-175	Total/NA
Calcium	85	^3+	0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	55		0.20	0.040	mg/L	1		6010C	Total Recoverable
Total Alkalinity as CaCO3 to pH 4.5	340		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	2.8		1.0	0.50	mg/L	1		351.2	Total/NA
Total Carbon	150	!	10	5.0	mg/L	10		5310 B-2011	Total/NA
Total Organic Carbon	29		1.0	0.50	mg/L	1		5310C-2011	Total/NA
Total Inorganic Carbon	120	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 410-61302-16

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: S-465_20211028

Date Collected: 10/28/21 10:25
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-1

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**86**		50	20	ug/L			11/08/21 19:06	50
1,2-Dichloroethane	ND		50	15	ug/L			11/08/21 19:06	50
1,3,5-Trimethylbenzene	ND		250	15	ug/L			11/08/21 19:06	50
Toluene	**520**		50	15	ug/L			11/08/21 19:06	50
Xylenes, Total	**450**		300	70	ug/L			11/08/21 19:06	50
Methyl tertiary butyl ether	ND		50	10	ug/L			11/08/21 19:06	50
1,2,4-Trimethylbenzene	ND		250	50	ug/L			11/08/21 19:06	50
Isopropylbenzene	**23**	**J**	250	15	ug/L			11/08/21 19:06	50
t-Butyl alcohol	ND		2500	600	ug/L			11/08/21 19:06	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*11/08/21 19:06*	*50*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/08/21 19:06*	*50*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/08/21 19:06*	*50*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/08/21 19:06*	*50*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**32000**		500	150	ug/L			11/08/21 19:31	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/08/21 19:31*	*500*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/08/21 19:31*	*500*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/08/21 19:31*	*500*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/08/21 19:31*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.14**	**J**	0.51	0.10	ug/L		11/02/21 15:01	11/09/21 00:57	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 00:57	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		11/02/21 15:01	11/09/21 00:57	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 00:57	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 00:57	1
Chrysene	ND	*-	0.51	0.10	ug/L		11/02/21 15:01	11/09/21 00:57	1
Fluorene	**0.38**	**J**	0.51	0.12	ug/L		11/02/21 15:01	11/09/21 00:57	1
Naphthalene	**19**		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 00:57	1
Phenanthrene	**0.48**	**J**	0.51	0.11	ug/L		11/02/21 15:01	11/09/21 00:57	1
Pyrene	**0.19**	**J**	0.51	0.10	ug/L		11/02/21 15:01	11/09/21 00:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*35 - 100*	*11/02/21 15:01*	*11/09/21 00:57*	*1*
Nitrobenzene-d5 (Surr)	*82*		*22 - 117*	*11/02/21 15:01*	*11/09/21 00:57*	*1*
p-Terphenyl-d14 (Surr)	*95*		*31 - 119*	*11/02/21 15:01*	*11/09/21 00:57*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 14:08	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 14:08	1
Methane (1C)	**260**		5.0	3.0	ug/L		11/02/21 10:50	11/02/21 14:08	1

Client Sample ID: S-465_20211028

Date Collected: 10/28/21 10:25
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*82*		*28 - 130*	*11/02/21 10:50*	*11/02/21 14:08*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/10/21 02:39	11/10/21 19:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*86*		*46 - 136*	*11/10/21 02:39*	*11/10/21 19:39*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*111*		*46 - 136*	*11/10/21 02:39*	*11/10/21 19:39*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**87**		5.0	1.9	mg/L			11/03/21 08:07	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110**		0.50	0.096	mg/L		11/06/21 10:09	11/10/21 20:37	1
Iron	**25**		0.20	0.040	mg/L		11/06/21 10:09	11/10/21 20:37	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 19:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**320**		8.0	8.0	mg/L			11/05/21 03:47	1
Total Kjeldahl Nitrogen	**1.4**		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 17:00	1
Total Carbon	**120**	!	5.0	2.5	mg/L			11/05/21 20:35	5
Total Organic Carbon	**23**		1.0	0.50	mg/L			11/04/21 11:06	1
Total Inorganic Carbon	**97**	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-455_20211028

Date Collected: 10/28/21 12:05
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-2

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**700**		10	4.0	ug/L			11/08/21 19:57	10
1,2-Dichloroethane	ND		10	3.0	ug/L			11/08/21 19:57	10
1,3,5-Trimethylbenzene	**190**		50	3.0	ug/L			11/08/21 19:57	10
Toluene	**550**		10	3.0	ug/L			11/08/21 19:57	10
Xylenes, Total	**960**		60	14	ug/L			11/08/21 19:57	10
Methyl tertiary butyl ether	**360**		10	2.0	ug/L			11/08/21 19:57	10
1,2,4-Trimethylbenzene	**300**		50	10	ug/L			11/08/21 19:57	10
Isopropylbenzene	**130**		50	3.0	ug/L			11/08/21 19:57	10
t-Butyl alcohol	**3200**		500	120	ug/L			11/08/21 19:57	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*11/08/21 19:57*	*10*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/08/21 19:57*	*10*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/08/21 19:57*	*10*

Client Sample ID: S-455_20211028
Lab Sample ID: 410-61302-2

Date Collected: 10/28/21 12:05
Matrix: Water
Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/08/21 19:57*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**7700**		100	30	ug/L			11/08/21 20:23	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/08/21 20:23*	*100*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/08/21 20:23*	*100*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/08/21 20:23*	*100*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/08/21 20:23*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**6.9**		0.52	0.10	ug/L		11/02/21 15:01	11/09/21 01:27	1
Benzo[a]anthracene	**0.20**	**J**	0.52	0.10	ug/L		11/02/21 15:01	11/09/21 01:27	1
Benzo[a]pyrene	ND		0.52	0.12	ug/L		11/02/21 15:01	11/09/21 01:27	1
Benzo[b]fluoranthene	ND		0.52	0.10	ug/L		11/02/21 15:01	11/09/21 01:27	1
Benzo[g,h,i]perylene	ND		0.52	0.10	ug/L		11/02/21 15:01	11/09/21 01:27	1
Chrysene	**0.28**	**J *-**	0.52	0.10	ug/L		11/02/21 15:01	11/09/21 01:27	1
Fluorene	**37**		0.52	0.13	ug/L		11/02/21 15:01	11/09/21 01:27	1
Phenanthrene	**37**		0.52	0.12	ug/L		11/02/21 15:01	11/09/21 01:27	1
Pyrene	**2.7**		0.52	0.10	ug/L		11/02/21 15:01	11/09/21 01:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	*74*		*35 - 100*	*11/02/21 15:01*	*11/09/21 01:27*	*1*
Nitrobenzene-d5 (Surr)	*85*		*22 - 117*	*11/02/21 15:01*	*11/09/21 01:27*	*1*
p-Terphenyl-d14 (Surr)	*98*		*31 - 119*	*11/02/21 15:01*	*11/09/21 01:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**2900**		52	10	ug/L		11/02/21 15:01	11/09/21 17:51	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	*71*		*35 - 100*	*11/02/21 15:01*	*11/09/21 17:51*	*100*
Nitrobenzene-d5 (Surr)	*74*		*22 - 117*	*11/02/21 15:01*	*11/09/21 17:51*	*100*
p-Terphenyl-d14 (Surr)	*93*		*31 - 119*	*11/02/21 15:01*	*11/09/21 17:51*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**3.0**	**J**	5.0	1.0	ug/L		11/02/21 10:50	11/02/21 14:24	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 14:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	*86*		*28 - 130*	*11/02/21 10:50*	*11/02/21 14:24*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**23000**		1000	600	ug/L		11/03/21 10:29	11/03/21 14:49	200

Client Sample ID: S-455_20211028

Lab Sample ID: 410-61302-2

Date Collected: 10/28/21 12:05

Matrix: Water

Date Received: 10/29/21 18:42

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*111*		*28 - 130*	*11/03/21 10:29*	*11/03/21 14:49*	*200*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		11/10/21 02:39	11/10/21 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*118*		*46 - 136*	*11/10/21 02:39*	*11/10/21 19:56*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*118*		*46 - 136*	*11/10/21 02:39*	*11/10/21 19:56*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND	FH	1.0	0.37	mg/L			11/04/21 07:51	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**70**		0.50	0.096	mg/L		11/06/21 10:09	11/10/21 20:14	1
Iron	**41**		0.20	0.040	mg/L		11/06/21 10:09	11/10/21 20:14	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.0**		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 19:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**390**		8.0	8.0	mg/L			11/05/21 05:38	1
Total Kjeldahl Nitrogen	**6.4**		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 16:23	1
Total Carbon	**110**	**! FH**	10	5.0	mg/L			11/05/21 20:46	10
Total Organic Carbon	**14**		1.0	0.50	mg/L			11/04/21 11:23	1
Total Inorganic Carbon	**96**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: DUP-1_20211028

Lab Sample ID: 410-61302-3

Date Collected: 10/28/21 12:10

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**700**		10	4.0	ug/L			11/08/21 20:49	10
1,2-Dichloroethane	ND		10	3.0	ug/L			11/08/21 20:49	10
1,3,5-Trimethylbenzene	**190**		50	3.0	ug/L			11/08/21 20:49	10
Toluene	**590**		10	3.0	ug/L			11/08/21 20:49	10
Xylenes, Total	**1000**		60	14	ug/L			11/08/21 20:49	10
Methyl tertiary butyl ether	**380**		10	2.0	ug/L			11/08/21 20:49	10
1,2,4-Trimethylbenzene	**300**		50	10	ug/L			11/08/21 20:49	10
Isopropylbenzene	**130**		50	3.0	ug/L			11/08/21 20:49	10
t-Butyl alcohol	**3200**		500	120	ug/L			11/08/21 20:49	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*11/08/21 20:49*	*10*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/08/21 20:49*	*10*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*11/08/21 20:49*	*10*

Client Sample ID: DUP-1_20211028

Date Collected: 10/28/21 12:10
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-3

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/08/21 20:49*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**7700**		100	30	ug/L			11/08/21 21:15	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/08/21 21:15*	*100*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/08/21 21:15*	*100*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/08/21 21:15*	*100*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/08/21 21:15*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**7.4**		0.54	0.11	ug/L		11/02/21 15:01	11/09/21 01:57	1
Benzo[a]anthracene	**0.22**	**J**	0.54	0.11	ug/L		11/02/21 15:01	11/09/21 01:57	1
Benzo[a]pyrene	ND		0.54	0.12	ug/L		11/02/21 15:01	11/09/21 01:57	1
Benzo[b]fluoranthene	ND		0.54	0.11	ug/L		11/02/21 15:01	11/09/21 01:57	1
Benzo[g,h,i]perylene	ND		0.54	0.11	ug/L		11/02/21 15:01	11/09/21 01:57	1
Chrysene	**0.27**	**J *-**	0.54	0.11	ug/L		11/02/21 15:01	11/09/21 01:57	1
Fluorene	**46**		0.54	0.13	ug/L		11/02/21 15:01	11/09/21 01:57	1
Phenanthrene	**36**		0.54	0.12	ug/L		11/02/21 15:01	11/09/21 01:57	1
Pyrene	**2.7**		0.54	0.11	ug/L		11/02/21 15:01	11/09/21 01:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*73*		*35 - 100*	*11/02/21 15:01*	*11/09/21 01:57*	*1*
Nitrobenzene-d5 (Surr)	*84*		*22 - 117*	*11/02/21 15:01*	*11/09/21 01:57*	*1*
p-Terphenyl-d14 (Surr)	*101*		*31 - 119*	*11/02/21 15:01*	*11/09/21 01:57*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**2900**		54	11	ug/L		11/02/21 15:01	11/09/21 18:21	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*35 - 100*	*11/02/21 15:01*	*11/09/21 18:21*	*100*
Nitrobenzene-d5 (Surr)	*74*		*22 - 117*	*11/02/21 15:01*	*11/09/21 18:21*	*100*
p-Terphenyl-d14 (Surr)	*86*		*31 - 119*	*11/02/21 15:01*	*11/09/21 18:21*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**3.1**	**J**	5.0	1.0	ug/L		11/02/21 10:50	11/02/21 14:39	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*82*		*28 - 130*	*11/02/21 10:50*	*11/02/21 14:39*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**22000**		1000	600	ug/L		11/03/21 10:29	11/03/21 15:07	200

Client Sample ID: DUP-1_20211028

Lab Sample ID: 410-61302-3

Date Collected: 10/28/21 12:10

Matrix: Water

Date Received: 10/29/21 18:42

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*111*		*28 - 130*	*11/03/21 10:29*	*11/03/21 15:07*	*200*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/10/21 02:39	11/10/21 20:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*119*		*46 - 136*	*11/10/21 02:39*	*11/10/21 20:13*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*109*		*46 - 136*	*11/10/21 02:39*	*11/10/21 20:13*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/04/21 09:08	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**70**		0.50	0.096	mg/L		11/06/21 10:09	11/10/21 20:27	1
Iron	**41**		0.20	0.040	mg/L		11/06/21 10:09	11/10/21 20:27	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.0**		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 18:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**390**		8.0	8.0	mg/L			11/05/21 05:19	1
Total Kjeldahl Nitrogen	**6.8**		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 16:37	1
Total Carbon	**130**	!	5.0	2.5	mg/L			11/05/21 21:19	5
Total Organic Carbon	**14**		1.0	0.50	mg/L			11/04/21 11:40	1
Total Inorganic Carbon	**120**	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-395_20211028

Lab Sample ID: 410-61302-4

Date Collected: 10/28/21 11:20

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/08/21 16:30	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/08/21 16:30	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/08/21 16:30	1
Toluene	ND		1.0	0.30	ug/L			11/08/21 16:30	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/08/21 16:30	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/08/21 16:30	1
Benzene	ND		1.0	0.30	ug/L			11/08/21 16:30	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/08/21 16:30	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/08/21 16:30	1
t-Butyl alcohol	ND		50	12	ug/L			11/08/21 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/08/21 16:30*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/08/21 16:30*	*1*

Client Sample ID: S-395_20211028

Date Collected: 10/28/21 11:20
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-4

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/08/21 16:30*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/08/21 16:30*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:27	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:27	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		11/02/21 15:01	11/09/21 02:27	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:27	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:27	1
Chrysene	ND	*-	0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:27	1
Fluorene	ND		0.51	0.12	ug/L		11/02/21 15:01	11/09/21 02:27	1
Naphthalene	**0.59**		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:27	1
Phenanthrene	ND		0.51	0.11	ug/L		11/02/21 15:01	11/09/21 02:27	1
Pyrene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*35 - 100*	*11/02/21 15:01*	*11/09/21 02:27*	*1*
Nitrobenzene-d5 (Surr)	*73*		*22 - 117*	*11/02/21 15:01*	*11/09/21 02:27*	*1*
p-Terphenyl-d14 (Surr)	*75*		*31 - 119*	*11/02/21 15:01*	*11/09/21 02:27*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/03/21 10:38	11/03/21 13:16	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/03/21 10:38	11/03/21 13:16	1
Methane (1C)	ND		5.0	3.0	ug/L		11/03/21 10:38	11/03/21 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*81*		*28 - 130*	*11/03/21 10:38*	*11/03/21 13:16*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0095	ug/L		11/10/21 02:39	11/10/21 21:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*	*11/10/21 02:39*	*11/10/21 21:19*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*106*		*46 - 136*	*11/10/21 02:39*	*11/10/21 21:19*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**140**		5.0	1.9	mg/L			11/03/21 09:22	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**100**	**^3+**	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 13:56	1
Iron	**11**		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 13:56	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 19:04	1

Client Sample ID: S-395_20211028

Lab Sample ID: 410-61302-4

Date Collected: 10/28/21 11:20

Matrix: Water

Date Received: 10/29/21 18:42

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**260**		8.0	8.0	mg/L			11/05/21 05:06	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 16:39	1
Total Carbon	**66**	**!**	5.0	2.5	mg/L			11/05/21 21:30	5
Total Organic Carbon	**2.3**		1.0	0.50	mg/L			11/04/21 11:55	1
Total Inorganic Carbon	**64**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-463_20211028

Lab Sample ID: 410-61302-5

Date Collected: 10/28/21 13:20

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		5.0	2.0	ug/L			11/08/21 21:40	5
1,2-Dichloroethane	ND		5.0	1.5	ug/L			11/08/21 21:40	5
1,3,5-Trimethylbenzene	ND		25	1.5	ug/L			11/08/21 21:40	5
Toluene	**6.7**		5.0	1.5	ug/L			11/08/21 21:40	5
Xylenes, Total	ND		30	7.0	ug/L			11/08/21 21:40	5
Methyl tertiary butyl ether	ND		5.0	1.0	ug/L			11/08/21 21:40	5
1,2,4-Trimethylbenzene	ND		25	5.0	ug/L			11/08/21 21:40	5
Isopropylbenzene	ND		25	1.5	ug/L			11/08/21 21:40	5
t-Butyl alcohol	ND		250	60	ug/L			11/08/21 21:40	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*11/08/21 21:40*	*5*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/08/21 21:40*	*5*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/08/21 21:40*	*5*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/08/21 21:40*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**2300**		50	15	ug/L			11/10/21 15:07	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/10/21 15:07*	*50*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/10/21 15:07*	*50*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/10/21 15:07*	*50*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/10/21 15:07*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:56	1
Benzo[a]anthracene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:56	1
Benzo[a]pyrene	ND		0.51	0.11	ug/L		11/02/21 15:01	11/09/21 02:56	1
Benzo[b]fluoranthene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:56	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:56	1
Chrysene	ND	*-	0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:56	1
Fluorene	**0.13**	**J**	0.51	0.12	ug/L		11/02/21 15:01	11/09/21 02:56	1
Naphthalene	**0.35**	**J**	0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:56	1
Phenanthrene	**0.19**	**J**	0.51	0.11	ug/L		11/02/21 15:01	11/09/21 02:56	1
Pyrene	ND		0.51	0.10	ug/L		11/02/21 15:01	11/09/21 02:56	1

Client Sample ID: S-463_20211028

Date Collected: 10/28/21 13:20
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*35 - 100*	*11/02/21 15:01*	*11/09/21 02:56*	*1*
Nitrobenzene-d5 (Surr)	*74*		*22 - 117*	*11/02/21 15:01*	*11/09/21 02:56*	*1*
p-Terphenyl-d14 (Surr)	*90*		*31 - 119*	*11/02/21 15:01*	*11/09/21 02:56*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 15:09	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 15:09	1
Methane (1C)	**29**		5.0	3.0	ug/L		11/02/21 10:50	11/02/21 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*85*		*28 - 130*	*11/02/21 10:50*	*11/02/21 15:09*	*1*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0095	ug/L		11/10/21 02:39	11/10/21 21:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*84*		*46 - 136*	*11/10/21 02:39*	*11/10/21 21:36*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*108*		*46 - 136*	*11/10/21 02:39*	*11/10/21 21:36*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**130**		5.0	1.9	mg/L			11/03/21 09:47	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**95**		0.50	0.096	mg/L		11/06/21 10:09	11/10/21 20:48	1
Iron	**5.5**		0.20	0.040	mg/L		11/06/21 10:09	11/10/21 20:48	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 19:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**250**		8.0	8.0	mg/L			11/05/21 05:50	1
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 16:41	1
Total Carbon	**60**	**!**	5.0	2.5	mg/L			11/05/21 21:41	5
Total Organic Carbon	**1.8**		1.0	0.50	mg/L			11/04/21 12:45	1
Total Inorganic Carbon	**58**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-452_20211028

Date Collected: 10/28/21 13:40
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-6

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1100**		10	4.0	ug/L			11/08/21 22:31	10
1,2-Dichloroethane	ND		10	3.0	ug/L			11/08/21 22:31	10
1,3,5-Trimethylbenzene	**160**		50	3.0	ug/L			11/08/21 22:31	10

Client Sample ID: S-452_20211028
Date Collected: 10/28/21 13:40
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-6
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	97		10	3.0	ug/L			11/08/21 22:31	10
Xylenes, Total	2200		60	14	ug/L			11/08/21 22:31	10
Methyl tertiary butyl ether	2000		10	2.0	ug/L			11/08/21 22:31	10
1,2,4-Trimethylbenzene	430		50	10	ug/L			11/08/21 22:31	10
Isopropylbenzene	110		50	3.0	ug/L			11/08/21 22:31	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*11/08/21 22:31*	*10*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/08/21 22:31*	*10*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/08/21 22:31*	*10*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/08/21 22:31*	*10*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	6400		100	30	ug/L			11/08/21 22:58	100
t-Butyl alcohol	44000		5000	1200	ug/L			11/08/21 22:58	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*11/08/21 22:58*	*100*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/08/21 22:58*	*100*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/08/21 22:58*	*100*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/08/21 22:58*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	6.1		0.53	0.11	ug/L		11/02/21 15:01	11/09/21 03:26	1
Benzo[a]anthracene	1.2		0.53	0.11	ug/L		11/02/21 15:01	11/09/21 03:26	1
Benzo[a]pyrene	0.72		0.53	0.12	ug/L		11/02/21 15:01	11/09/21 03:26	1
Benzo[b]fluoranthene	0.84		0.53	0.11	ug/L		11/02/21 15:01	11/09/21 03:26	1
Benzo[g,h,i]perylene	0.27	J	0.53	0.11	ug/L		11/02/21 15:01	11/09/21 03:26	1
Chrysene	1.2	*-	0.53	0.11	ug/L		11/02/21 15:01	11/09/21 03:26	1
Fluorene	17		0.53	0.13	ug/L		11/02/21 15:01	11/09/21 03:26	1
Phenanthrene	31		0.53	0.12	ug/L		11/02/21 15:01	11/09/21 03:26	1
Pyrene	4.6		0.53	0.11	ug/L		11/02/21 15:01	11/09/21 03:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*35 - 100*	*11/02/21 15:01*	*11/09/21 03:26*	*1*
Nitrobenzene-d5 (Surr)	*82*		*22 - 117*	*11/02/21 15:01*	*11/09/21 03:26*	*1*
p-Terphenyl-d14 (Surr)	*99*		*31 - 119*	*11/02/21 15:01*	*11/09/21 03:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	1700		53	11	ug/L		11/02/21 15:01	11/09/21 18:51	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*74*		*35 - 100*	*11/02/21 15:01*	*11/09/21 18:51*	*100*
Nitrobenzene-d5 (Surr)	*75*		*22 - 117*	*11/02/21 15:01*	*11/09/21 18:51*	*100*
p-Terphenyl-d14 (Surr)	*90*		*31 - 119*	*11/02/21 15:01*	*11/09/21 18:51*	*100*

Client Sample ID: S-452_20211028

Lab Sample ID: 410-61302-6

Date Collected: 10/28/21 13:40

Matrix: Water

Date Received: 10/29/21 18:42

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**3.4**	**J**	5.0	1.0	ug/L		11/02/21 10:50	11/02/21 15:30	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 15:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*86*		*28 - 130*	*11/02/21 10:50*	*11/02/21 15:30*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**19000**		1000	600	ug/L		11/03/21 10:29	11/03/21 15:26	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*110*		*28 - 130*	*11/03/21 10:29*	*11/03/21 15:26*	*200*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	**0.019**	**J**	0.028	0.0094	ug/L		11/10/21 02:39	11/10/21 21:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*134*		*46 - 136*	*11/10/21 02:39*	*11/10/21 21:53*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*110*		*46 - 136*	*11/10/21 02:39*	*11/10/21 21:53*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/04/21 09:33	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**46**	**^3+**	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 13:59	1
Iron	**55**		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 13:59	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**2.9**		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 19:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**260**		8.0	8.0	mg/L			11/05/21 05:12	1
Total Kjeldahl Nitrogen	**2.8**		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 16:44	1
Total Carbon	**140**	**!**	10	5.0	mg/L			11/05/21 22:14	10
Total Organic Carbon	**38**		1.0	0.50	mg/L			11/04/21 13:35	1
Total Inorganic Carbon	**100**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-464_20211028

Lab Sample ID: 410-61302-7

Date Collected: 10/28/21 14:50

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**69**		20	8.0	ug/L			11/09/21 15:07	20
1,2-Dichloroethane	ND		20	6.0	ug/L			11/09/21 15:07	20
1,3,5-Trimethylbenzene	ND		100	6.0	ug/L			11/09/21 15:07	20

Client Sample ID: S-464_20211028
Date Collected: 10/28/21 14:50
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-7
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**1000**		20	6.0	ug/L			11/09/21 15:07	20
Xylenes, Total	**270**		120	28	ug/L			11/09/21 15:07	20
Methyl tertiary butyl ether	ND		20	4.0	ug/L			11/09/21 15:07	20
Benzene	**170000**		5000	1500	ug/L			11/08/21 23:24	5000
1,2,4-Trimethylbenzene	ND		100	20	ug/L			11/09/21 15:07	20
Isopropylbenzene	**84**	**J**	100	6.0	ug/L			11/09/21 15:07	20
t-Butyl alcohol	ND		1000	240	ug/L			11/09/21 15:07	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/08/21 23:24*	*5000*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 120*		*11/09/21 15:07*	*20*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/08/21 23:24*	*5000*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/09/21 15:07*	*20*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/08/21 23:24*	*5000*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*11/09/21 15:07*	*20*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/08/21 23:24*	*5000*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 15:07*	*20*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 03:56	1
Benzo[a]anthracene	ND		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 03:56	1
Benzo[a]pyrene	ND		0.57	0.13	ug/L		11/02/21 15:01	11/09/21 03:56	1
Benzo[b]fluoranthene	ND		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 03:56	1
Benzo[g,h,i]perylene	ND		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 03:56	1
Chrysene	ND	*-	0.57	0.11	ug/L		11/02/21 15:01	11/09/21 03:56	1
Fluorene	**0.24**	**J**	0.57	0.14	ug/L		11/02/21 15:01	11/09/21 03:56	1
Naphthalene	**7.2**		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 03:56	1
Phenanthrene	**0.31**	**J**	0.57	0.13	ug/L		11/02/21 15:01	11/09/21 03:56	1
Pyrene	ND		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 03:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*70*		*35 - 100*	*11/02/21 15:01*	*11/09/21 03:56*	*1*
Nitrobenzene-d5 (Surr)	*76*		*22 - 117*	*11/02/21 15:01*	*11/09/21 03:56*	*1*
p-Terphenyl-d14 (Surr)	*90*		*31 - 119*	*11/02/21 15:01*	*11/09/21 03:56*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 15:46	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 15:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*82*		*28 - 130*	*11/02/21 10:50*	*11/02/21 15:46*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**3200**		100	60	ug/L		11/03/21 10:29	11/03/21 15:44	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*		*28 - 130*	*11/03/21 10:29*	*11/03/21 15:44*	*20*

Client Sample ID: S-464_20211028

Lab Sample ID: 410-61302-7

Date Collected: 10/28/21 14:50

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		11/10/21 02:39	11/10/21 22:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*77*		*46 - 136*	*11/10/21 02:39*	*11/10/21 22:09*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*105*		*46 - 136*	*11/10/21 02:39*	*11/10/21 22:09*	*1*

Method: 300.0 - Anions, Ion Chromatography

Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**49**		5.0	1.9	mg/L			11/03/21 10:36	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**83**		0.50	0.096	mg/L		11/06/21 10:09	11/10/21 20:34	1
Iron	**23**		0.20	0.040	mg/L		11/06/21 10:09	11/10/21 20:34	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 19:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**250**		8.0	8.0	mg/L			11/05/21 03:53	1
Total Kjeldahl Nitrogen	**0.84**	**J**	1.0	0.50	mg/L		11/18/21 12:15	11/22/21 11:33	1
Total Carbon	**130**	**!**	5.0	2.5	mg/L			11/05/21 22:25	5
Total Organic Carbon	**19**		1.0	0.50	mg/L			11/04/21 14:24	1
Total Inorganic Carbon	**110**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: S-457_20211029

Lab Sample ID: 410-61302-8

Date Collected: 10/29/21 09:15

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1800**		50	20	ug/L			11/09/21 15:33	50
1,2-Dichloroethane	ND		50	15	ug/L			11/09/21 15:33	50
1,3,5-Trimethylbenzene	**210**	**J**	250	15	ug/L			11/09/21 15:33	50
Toluene	**1100**		50	15	ug/L			11/09/21 15:33	50
Xylenes, Total	**5200**		300	70	ug/L			11/09/21 15:33	50
Methyl tertiary butyl ether	**4400**		50	10	ug/L			11/09/21 15:33	50
1,2,4-Trimethylbenzene	**770**		250	50	ug/L			11/09/21 15:33	50
Isopropylbenzene	**63**	**J**	250	15	ug/L			11/09/21 15:33	50
t-Butyl alcohol	**22000**		2500	600	ug/L			11/09/21 15:33	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*11/09/21 15:33*	*50*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/09/21 15:33*	*50*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/09/21 15:33*	*50*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 15:33*	*50*

Client Sample ID: S-457_20211029
Date Collected: 10/29/21 09:15
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-8
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20000		500	150	ug/L			11/09/21 15:59	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/09/21 15:59*	*500*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/09/21 15:59*	*500*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/09/21 15:59*	*500*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/09/21 15:59*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	2.3		0.58	0.12	ug/L		11/02/21 15:01	11/09/21 04:25	1
Benzo[a]anthracene	0.81		0.58	0.12	ug/L		11/02/21 15:01	11/09/21 04:25	1
Benzo[a]pyrene	0.35	J	0.58	0.13	ug/L		11/02/21 15:01	11/09/21 04:25	1
Benzo[b]fluoranthene	0.44	J	0.58	0.12	ug/L		11/02/21 15:01	11/09/21 04:25	1
Benzo[g,h,i]perylene	0.16	J	0.58	0.12	ug/L		11/02/21 15:01	11/09/21 04:25	1
Chrysene	0.79	*-	0.58	0.12	ug/L		11/02/21 15:01	11/09/21 04:25	1
Fluorene	10		0.58	0.14	ug/L		11/02/21 15:01	11/09/21 04:25	1
Phenanthrene	15		0.58	0.13	ug/L		11/02/21 15:01	11/09/21 04:25	1
Pyrene	2.4		0.58	0.12	ug/L		11/02/21 15:01	11/09/21 04:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*35 - 100*	*11/02/21 15:01*	*11/09/21 04:25*	*1*
Nitrobenzene-d5 (Surr)	*81*		*22 - 117*	*11/02/21 15:01*	*11/09/21 04:25*	*1*
p-Terphenyl-d14 (Surr)	*95*		*31 - 119*	*11/02/21 15:01*	*11/09/21 04:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2500		58	12	ug/L		11/02/21 15:01	11/10/21 01:14	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*64*		*35 - 100*	*11/02/21 15:01*	*11/10/21 01:14*	*100*
Nitrobenzene-d5 (Surr)	*78*		*22 - 117*	*11/02/21 15:01*	*11/10/21 01:14*	*100*
p-Terphenyl-d14 (Surr)	*86*		*31 - 119*	*11/02/21 15:01*	*11/10/21 01:14*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	8.0		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 16:20	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*96*		*28 - 130*	*11/02/21 10:50*	*11/02/21 16:20*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	18000		500	300	ug/L		11/03/21 10:29	11/03/21 16:02	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 130*	*11/03/21 10:29*	*11/03/21 16:02*	*100*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	0.017	J	0.028	0.0094	ug/L		11/10/21 02:39	11/10/21 22:26	1

Client Sample ID: S-457_20211029

Lab Sample ID: 410-61302-8

Date Collected: 10/29/21 09:15
Matrix: Water
Date Received: 10/29/21 18:42

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*146*	*S1+*	*46 - 136*	*11/10/21 02:39*	*11/10/21 22:26*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*115*		*46 - 136*	*11/10/21 02:39*	*11/10/21 22:26*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.9	mg/L			11/03/21 11:26	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**120**	**^3+**	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 13:53	1
Iron	**73**		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 13:53	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**5.2**		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**180**		8.0	8.0	mg/L			11/05/21 04:06	1
Total Kjeldahl Nitrogen	**0.98**	**J**	1.0	0.50	mg/L		11/18/21 12:15	11/22/21 11:35	1
Total Carbon	**120**	**!**	10	5.0	mg/L			11/05/21 22:36	10
Total Organic Carbon	**28**		1.0	0.50	mg/L			11/04/21 14:41	1
Total Inorganic Carbon	**92**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: OW-20_20211029

Lab Sample ID: 410-61302-9

Date Collected: 10/29/21 09:30
Matrix: Water
Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**890**		50	20	ug/L			11/09/21 16:24	50
1,2-Dichloroethane	**150**		50	15	ug/L			11/09/21 16:24	50
1,3,5-Trimethylbenzene	**660**		250	15	ug/L			11/09/21 16:24	50
Toluene	**7800**		50	15	ug/L			11/09/21 16:24	50
Xylenes, Total	**11000**		300	70	ug/L			11/09/21 16:24	50
Methyl tertiary butyl ether	**4200**		50	10	ug/L			11/09/21 16:24	50
1,2,4-Trimethylbenzene	**1800**		250	50	ug/L			11/09/21 16:24	50
Isopropylbenzene	**67**	**J**	250	15	ug/L			11/09/21 16:24	50
t-Butyl alcohol	**19000**		2500	600	ug/L			11/09/21 16:24	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/09/21 16:24*	*50*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*11/09/21 16:24*	*50*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*11/09/21 16:24*	*50*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 16:24*	*50*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**25000**		500	150	ug/L			11/09/21 16:50	500

Client Sample ID: OW-20_20211029

Date Collected: 10/29/21 09:30
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-9

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		11/09/21 16:50	500
4-Bromofluorobenzene (Surr)	100		80 - 120		11/09/21 16:50	500
Dibromofluoromethane (Surr)	101		80 - 120		11/09/21 16:50	500
Toluene-d8 (Surr)	101		80 - 120		11/09/21 16:50	500

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	7.0		5.0	1.0	ug/L		11/02/21 15:01	11/10/21 01:44	10
Benzo[a]anthracene	4.1	J	5.0	1.0	ug/L		11/02/21 15:01	11/10/21 01:44	10
Benzo[a]pyrene	3.6	J	5.0	1.1	ug/L		11/02/21 15:01	11/10/21 01:44	10
Benzo[b]fluoranthene	3.1	J	5.0	1.0	ug/L		11/02/21 15:01	11/10/21 01:44	10
Benzo[g,h,i]perylene	1.6	J	5.0	1.0	ug/L		11/02/21 15:01	11/10/21 01:44	10
Chrysene	3.7	J *-	5.0	1.0	ug/L		11/02/21 15:01	11/10/21 01:44	10
Fluorene	11		5.0	1.2	ug/L		11/02/21 15:01	11/10/21 01:44	10
Naphthalene	290		5.0	1.0	ug/L		11/02/21 15:01	11/10/21 01:44	10
Phenanthrene	26		5.0	1.1	ug/L		11/02/21 15:01	11/10/21 01:44	10
Pyrene	17		5.0	1.0	ug/L		11/02/21 15:01	11/10/21 01:44	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	62		35 - 100	11/02/21 15:01	11/10/21 01:44	10
Nitrobenzene-d5 (Surr)	12	S1-	22 - 117	11/02/21 15:01	11/10/21 01:44	10
p-Terphenyl-d14 (Surr)	67		31 - 119	11/02/21 15:01	11/10/21 01:44	10

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	4.1	J	5.0	1.0	ug/L		11/02/21 10:50	11/02/21 16:37	1
Ethene (1C)	1.2	J	5.0	1.0	ug/L		11/02/21 10:50	11/02/21 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	84		28 - 130	11/02/21 10:50	11/02/21 16:37	1

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	12000		250	150	ug/L		11/03/21 10:29	11/03/21 16:20	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Propene (1C)	107		28 - 130	11/03/21 10:29	11/03/21 16:20	50

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	0.013	J	0.028	0.0094	ug/L		11/10/21 02:39	11/10/21 22:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane (Surr) (1C)	78		46 - 136	11/10/21 02:39	11/10/21 22:43	1
1,1,2,2-Tetrachloroethane (Surr) (2C)	142	S1+	46 - 136	11/10/21 02:39	11/10/21 22:43	1

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	7.7		5.0	1.9	mg/L			11/09/21 12:24	5

Client Sample ID: OW-20_20211029

Lab Sample ID: 410-61302-9

Date Collected: 10/29/21 09:30

Matrix: Water

Date Received: 10/29/21 18:42

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	240		0.50	0.096	mg/L		11/06/21 10:09	11/10/21 20:44	1
Iron	500	^3+	2.0	0.40	mg/L		11/06/21 10:09	11/11/21 09:56	10

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	25		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 19:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	91		8.0	8.0	mg/L			11/06/21 07:15	1
Total Kjeldahl Nitrogen	24		10	5.0	mg/L		11/19/21 13:48	11/22/21 16:58	10
Total Carbon	830	!	25	13	mg/L			11/05/21 22:47	25
Total Organic Carbon	540		25	13	mg/L			11/04/21 14:57	25
Total Inorganic Carbon	290	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: MW-36_20211029

Lab Sample ID: 410-61302-10

Date Collected: 10/29/21 10:20

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	500		500	200	ug/L			11/09/21 17:16	500
1,2-Dichloroethane	1100		500	150	ug/L			11/09/21 17:16	500
1,3,5-Trimethylbenzene	ND		2500	150	ug/L			11/09/21 17:16	500
Toluene	9200		500	150	ug/L			11/09/21 17:16	500
Xylenes, Total	1700	J	3000	700	ug/L			11/09/21 17:16	500
Methyl tertiary butyl ether	ND		500	100	ug/L			11/09/21 17:16	500
1,2,4-Trimethylbenzene	ND		2500	500	ug/L			11/09/21 17:16	500
Isopropylbenzene	ND		2500	150	ug/L			11/09/21 17:16	500
t-Butyl alcohol	ND		25000	6000	ug/L			11/09/21 17:16	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*11/09/21 17:16*	*500*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/09/21 17:16*	*500*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/09/21 17:16*	*500*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 17:16*	*500*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	490000		5000	1500	ug/L			11/09/21 17:41	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/09/21 17:41*	*5000*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/09/21 17:41*	*5000*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/09/21 17:41*	*5000*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/09/21 17:41*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	1.2		0.58	0.12	ug/L		11/02/21 15:01	11/09/21 05:25	1
Benzo[a]anthracene	ND		0.58	0.12	ug/L		11/02/21 15:01	11/09/21 05:25	1

Client Sample ID: MW-36_20211029

Date Collected: 10/29/21 10:20
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-10

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	ND		0.58	0.13	ug/L		11/02/21 15:01	11/09/21 05:25	1
Benzo[b]fluoranthene	ND		0.58	0.12	ug/L		11/02/21 15:01	11/09/21 05:25	1
Benzo[g,h,i]perylene	ND		0.58	0.12	ug/L		11/02/21 15:01	11/09/21 05:25	1
Chrysene	ND	*-	0.58	0.12	ug/L		11/02/21 15:01	11/09/21 05:25	1
Fluorene	**5.1**		0.58	0.14	ug/L		11/02/21 15:01	11/09/21 05:25	1
Phenanthrene	**6.2**		0.58	0.13	ug/L		11/02/21 15:01	11/09/21 05:25	1
Pyrene	**0.40**	**J**	0.58	0.12	ug/L		11/02/21 15:01	11/09/21 05:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*62*		*35 - 100*	*11/02/21 15:01*	*11/09/21 05:25*	*1*
Nitrobenzene-d5 (Surr)	*75*		*22 - 117*	*11/02/21 15:01*	*11/09/21 05:25*	*1*
p-Terphenyl-d14 (Surr)	*95*		*31 - 119*	*11/02/21 15:01*	*11/09/21 05:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**770**		5.8	1.2	ug/L		11/02/21 15:01	11/10/21 02:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*69*		*35 - 100*	*11/02/21 15:01*	*11/10/21 02:14*	*10*
Nitrobenzene-d5 (Surr)	*78*		*22 - 117*	*11/02/21 15:01*	*11/10/21 02:14*	*10*
p-Terphenyl-d14 (Surr)	*100*		*31 - 119*	*11/02/21 15:01*	*11/10/21 02:14*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**10**		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 16:54	1
Ethene (1C)	**11**		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 16:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*76*		*28 - 130*	*11/02/21 10:50*	*11/02/21 16:54*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**11000**		250	150	ug/L		11/03/21 10:29	11/03/21 16:39	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*110*		*28 - 130*	*11/03/21 10:29*	*11/03/21 16:39*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	**0.022**	**J**	0.029	0.0096	ug/L		11/10/21 02:39	11/10/21 22:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*106*		*46 - 136*	*11/10/21 02:39*	*11/10/21 22:59*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*110*		*46 - 136*	*11/10/21 02:39*	*11/10/21 22:59*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.9	mg/L			11/04/21 15:02	5

Client Sample ID: MW-36_20211029
Lab Sample ID: 410-61302-10

Date Collected: 10/29/21 10:20
Matrix: Water
Date Received: 10/29/21 18:42

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	200		0.50	0.096	mg/L		11/06/21 10:09	11/10/21 20:31	1
Iron	53		0.20	0.040	mg/L		11/06/21 10:09	11/10/21 20:31	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.091	J	0.52	0.073	ug/L		11/07/21 10:01	11/08/21 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	490		8.0	8.0	mg/L			11/06/21 07:24	1
Total Kjeldahl Nitrogen	8.5		5.0	2.5	mg/L		11/19/21 13:48	11/23/21 11:07	5
Total Carbon	380	!	10	5.0	mg/L			11/06/21 11:30	10
Total Organic Carbon	120		10	5.0	mg/L			11/06/21 01:11	10
Total Inorganic Carbon	260	!	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: MW-37_20211029
Lab Sample ID: 410-61302-11

Date Collected: 10/29/21 10:40
Matrix: Water
Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		100	40	ug/L			11/09/21 18:07	100
1,2-Dichloroethane	ND		100	30	ug/L			11/09/21 18:07	100
1,3,5-Trimethylbenzene	ND		500	30	ug/L			11/09/21 18:07	100
Toluene	1200		100	30	ug/L			11/09/21 18:07	100
Xylenes, Total	ND		600	140	ug/L			11/09/21 18:07	100
Methyl tertiary butyl ether	ND		100	20	ug/L			11/09/21 18:07	100
1,2,4-Trimethylbenzene	ND		500	100	ug/L			11/09/21 18:07	100
Isopropylbenzene	ND		500	30	ug/L			11/09/21 18:07	100
t-Butyl alcohol	ND		5000	1200	ug/L			11/09/21 18:07	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*11/09/21 18:07*	*100*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/09/21 18:07*	*100*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*11/09/21 18:07*	*100*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 18:07*	*100*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	160000		1000	300	ug/L			11/09/21 18:33	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/09/21 18:33*	*1000*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/09/21 18:33*	*1000*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/09/21 18:33*	*1000*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/09/21 18:33*	*1000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	0.14	J	0.50	0.10	ug/L		11/02/21 15:01	11/09/21 05:55	1
Benzo[a]anthracene	0.35	J	0.50	0.10	ug/L		11/02/21 15:01	11/09/21 05:55	1

Client Sample ID: MW-37_20211029

Date Collected: 10/29/21 10:40
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-11

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	0.38	J	0.50	0.11	ug/L		11/02/21 15:01	11/09/21 05:55	1
Benzo[b]fluoranthene	0.62		0.50	0.10	ug/L		11/02/21 15:01	11/09/21 05:55	1
Benzo[g,h,i]perylene	0.26	J	0.50	0.10	ug/L		11/02/21 15:01	11/09/21 05:55	1
Chrysene	0.45	J *-	0.50	0.10	ug/L		11/02/21 15:01	11/09/21 05:55	1
Fluorene	0.28	J	0.50	0.12	ug/L		11/02/21 15:01	11/09/21 05:55	1
Naphthalene	2.1		0.50	0.10	ug/L		11/02/21 15:01	11/09/21 05:55	1
Phenanthrene	0.73		0.50	0.11	ug/L		11/02/21 15:01	11/09/21 05:55	1
Pyrene	0.84		0.50	0.10	ug/L		11/02/21 15:01	11/09/21 05:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*71*		*35 - 100*	*11/02/21 15:01*	*11/09/21 05:55*	*1*
Nitrobenzene-d5 (Surr)	*70*		*22 - 117*	*11/02/21 15:01*	*11/09/21 05:55*	*1*
p-Terphenyl-d14 (Surr)	*85*		*31 - 119*	*11/02/21 15:01*	*11/09/21 05:55*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 17:10	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 17:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*90*		*28 - 130*	*11/02/21 10:50*	*11/02/21 17:10*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	4800		100	60	ug/L		11/03/21 10:29	11/03/21 17:16	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*110*		*28 - 130*	*11/03/21 10:29*	*11/03/21 17:16*	*20*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		11/10/21 02:39	11/10/21 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*66*		*46 - 136*	*11/10/21 02:39*	*11/10/21 23:16*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*116*		*46 - 136*	*11/10/21 02:39*	*11/10/21 23:16*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.5		1.0	0.37	mg/L			11/04/21 16:18	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	40	^3+	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 14:03	1
Iron	25		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 14:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.85		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:06	1

Client Sample ID: MW-37_20211029

Lab Sample ID: 410-61302-11

Date Collected: 10/29/21 10:40

Matrix: Water

Date Received: 10/29/21 18:42

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**160**		8.0	8.0	mg/L			11/05/21 03:31	1
Total Kjeldahl Nitrogen	**3.2**		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 16:50	1
Total Carbon	**130**	**!**	5.0	2.5	mg/L			11/05/21 23:09	5
Total Organic Carbon	**45**		5.0	2.5	mg/L			11/04/21 15:29	5
Total Inorganic Carbon	**85**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: TW-5_20211029

Lab Sample ID: 410-61302-12

Date Collected: 10/29/21 12:00

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**480**	**J**	500	200	ug/L			11/09/21 18:58	500
1,2-Dichloroethane	ND		500	150	ug/L			11/09/21 18:58	500
1,3,5-Trimethylbenzene	ND		2500	150	ug/L			11/09/21 18:58	500
Toluene	**8100**		500	150	ug/L			11/09/21 18:58	500
Xylenes, Total	**1900**	**J**	3000	700	ug/L			11/09/21 18:58	500
Methyl tertiary butyl ether	ND		500	100	ug/L			11/09/21 18:58	500
1,2,4-Trimethylbenzene	ND		2500	500	ug/L			11/09/21 18:58	500
Isopropylbenzene	ND		2500	150	ug/L			11/09/21 18:58	500
t-Butyl alcohol	ND		25000	6000	ug/L			11/09/21 18:58	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*11/09/21 18:58*	*500*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/09/21 18:58*	*500*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*11/09/21 18:58*	*500*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 18:58*	*500*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**680000**		5000	1500	ug/L			11/09/21 19:24	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/09/21 19:24*	*5000*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/09/21 19:24*	*5000*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/09/21 19:24*	*5000*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/09/21 19:24*	*5000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**0.19**	**J**	0.57	0.11	ug/L		11/02/21 15:01	11/09/21 16:51	1
Benzo[a]anthracene	ND		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 16:51	1
Benzo[a]pyrene	ND		0.57	0.12	ug/L		11/02/21 15:01	11/09/21 16:51	1
Benzo[b]fluoranthene	ND		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 16:51	1
Benzo[g,h,i]perylene	ND		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 16:51	1
Chrysene	ND	*-	0.57	0.11	ug/L		11/02/21 15:01	11/09/21 16:51	1
Fluorene	**0.36**	**J**	0.57	0.14	ug/L		11/02/21 15:01	11/09/21 16:51	1
Naphthalene	**9.7**		0.57	0.11	ug/L		11/02/21 15:01	11/09/21 16:51	1
Phenanthrene	**0.57**		0.57	0.12	ug/L		11/02/21 15:01	11/09/21 16:51	1
Pyrene	**0.11**	**J**	0.57	0.11	ug/L		11/02/21 15:01	11/09/21 16:51	1

Client Sample ID: TW-5_20211029

Date Collected: 10/29/21 12:00
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-12

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*41*		*35 - 100*	*11/02/21 15:01*	*11/09/21 16:51*	*1*
Nitrobenzene-d5 (Surr)	*50*		*22 - 117*	*11/02/21 15:01*	*11/09/21 16:51*	*1*
p-Terphenyl-d14 (Surr)	*60*		*31 - 119*	*11/02/21 15:01*	*11/09/21 16:51*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 17:27	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 17:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*69*		*28 - 130*	*11/02/21 10:50*	*11/02/21 17:27*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**6300**		100	60	ug/L		11/03/21 10:29	11/03/21 17:34	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*106*		*28 - 130*	*11/03/21 10:29*	*11/03/21 17:34*	*20*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	**0.022**	**J**	0.028	0.0095	ug/L		11/10/21 02:39	11/10/21 23:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*81*		*46 - 136*	*11/10/21 02:39*	*11/10/21 23:33*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*103*		*46 - 136*	*11/10/21 02:39*	*11/10/21 23:33*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**120**		5.0	1.9	mg/L			11/03/21 17:15	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**240**	**^3+**	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 13:41	1
Iron	**25**		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 13:41	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 13:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**620**		8.0	8.0	mg/L			11/05/21 03:24	1
Total Kjeldahl Nitrogen	**13**		5.0	2.5	mg/L		11/19/21 13:48	11/22/21 16:56	5
Total Carbon	**450**	**!**	25	13	mg/L			11/06/21 11:41	25
Total Organic Carbon	**120**		5.0	2.5	mg/L			11/04/21 15:46	5
Total Inorganic Carbon	**330**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: OW-19_20211029

Date Collected: 10/29/21 11:45
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-13

Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**3500**		50	20	ug/L			11/09/21 19:50	50
1,2-Dichloroethane	ND		50	15	ug/L			11/09/21 19:50	50
1,3,5-Trimethylbenzene	**4800**		250	15	ug/L			11/09/21 19:50	50
Methyl tertiary butyl ether	**22000**		50	10	ug/L			11/09/21 19:50	50
Benzene	**7300**		50	15	ug/L			11/09/21 19:50	50
Isopropylbenzene	**400**		250	15	ug/L			11/09/21 19:50	50
t-Butyl alcohol	**36000**		2500	600	ug/L			11/09/21 19:50	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/09/21 19:50*	*50*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*11/09/21 19:50*	*50*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/09/21 19:50*	*50*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/09/21 19:50*	*50*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**18000**		500	150	ug/L			11/09/21 20:16	500
Xylenes, Total	**50000**		3000	700	ug/L			11/09/21 20:16	500
1,2,4-Trimethylbenzene	**22000**		2500	500	ug/L			11/09/21 20:16	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/09/21 20:16*	*500*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/09/21 20:16*	*500*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/09/21 20:16*	*500*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/09/21 20:16*	*500*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**2.1**	**J**	5.0	1.0	ug/L		11/02/21 10:50	11/02/21 17:44	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 17:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*76*		*28 - 130*	*11/02/21 10:50*	*11/02/21 17:44*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**12000**		250	150	ug/L		11/03/21 10:29	11/03/21 17:52	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*105*		*28 - 130*	*11/03/21 10:29*	*11/03/21 17:52*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	**0.011**	**J**	0.029	0.0095	ug/L		11/12/21 10:35	11/13/21 00:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*257*	*S1+*	*46 - 136*	*11/12/21 10:35*	*11/13/21 00:56*	*1*

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Client Sample ID: S-472_20211029
Date Collected: 10/29/21 13:40
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-14
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		5.0	1.5	ug/L			11/09/21 20:43	5
1,3,5-Trimethylbenzene	**210**		25	1.5	ug/L			11/09/21 20:43	5
Toluene	**7.2**		5.0	1.5	ug/L			11/09/21 20:43	5
Xylenes, Total	**480**		30	7.0	ug/L			11/09/21 20:43	5
Methyl tertiary butyl ether	ND		5.0	1.0	ug/L			11/09/21 20:43	5
Benzene	**190**		5.0	1.5	ug/L			11/09/21 20:43	5
1,2,4-Trimethylbenzene	**750**		25	5.0	ug/L			11/09/21 20:43	5
Isopropylbenzene	**160**		25	1.5	ug/L			11/09/21 20:43	5
t-Butyl alcohol	ND		250	60	ug/L			11/09/21 20:43	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/09/21 20:43*	*5*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*11/09/21 20:43*	*5*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/09/21 20:43*	*5*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 20:43*	*5*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1500**		50	20	ug/L			11/09/21 21:09	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/09/21 21:09*	*50*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/09/21 21:09*	*50*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/09/21 21:09*	*50*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/09/21 21:09*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	**7.7**		0.60	0.12	ug/L		11/02/21 15:01	11/09/21 17:21	1
Benzo[a]anthracene	**0.93**		0.60	0.12	ug/L		11/02/21 15:01	11/09/21 17:21	1
Benzo[a]pyrene	**0.52**	**J**	0.60	0.13	ug/L		11/02/21 15:01	11/09/21 17:21	1
Benzo[b]fluoranthene	**0.57**	**J**	0.60	0.12	ug/L		11/02/21 15:01	11/09/21 17:21	1
Benzo[g,h,i]perylene	**0.20**	**J**	0.60	0.12	ug/L		11/02/21 15:01	11/09/21 17:21	1
Chrysene	**1.1**	***-**	0.60	0.12	ug/L		11/02/21 15:01	11/09/21 17:21	1
Fluorene	**41**		0.60	0.14	ug/L		11/02/21 15:01	11/09/21 17:21	1
Phenanthrene	**41**		0.60	0.13	ug/L		11/02/21 15:01	11/09/21 17:21	1
Pyrene	**4.3**		0.60	0.12	ug/L		11/02/21 15:01	11/09/21 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*68*		*35 - 100*	*11/02/21 15:01*	*11/09/21 17:21*	*1*
Nitrobenzene-d5 (Surr)	*84*		*22 - 117*	*11/02/21 15:01*	*11/09/21 17:21*	*1*
p-Terphenyl-d14 (Surr)	*84*		*31 - 119*	*11/02/21 15:01*	*11/09/21 17:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**5500**		60	12	ug/L		11/02/21 15:01	11/10/21 02:43	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*35 - 100*	*11/02/21 15:01*	*11/10/21 02:43*	*100*
Nitrobenzene-d5 (Surr)	*73*		*22 - 117*	*11/02/21 15:01*	*11/10/21 02:43*	*100*
p-Terphenyl-d14 (Surr)	*81*		*31 - 119*	*11/02/21 15:01*	*11/10/21 02:43*	*100*

Client Sample ID: S-472_20211029
Lab Sample ID: 410-61302-14

Date Collected: 10/29/21 13:40
Matrix: Water
Date Received: 10/29/21 18:42

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	**2.0**	**J**	5.0	1.0	ug/L		11/02/21 10:50	11/02/21 18:01	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 18:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*89*		*28 - 130*	*11/02/21 10:50*	*11/02/21 18:01*	*1*

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**23000**		1000	600	ug/L		11/03/21 10:29	11/03/21 18:10	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*108*		*28 - 130*	*11/03/21 10:29*	*11/03/21 18:10*	*200*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.028	0.0094	ug/L		11/10/21 02:39	11/10/21 23:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*125*		*46 - 136*	*11/10/21 02:39*	*11/10/21 23:49*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*120*		*46 - 136*	*11/10/21 02:39*	*11/10/21 23:49*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		2.0	0.74	mg/L			11/04/21 16:44	2

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**71**	**^3+**	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 13:50	1
Iron	**110**		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 13:50	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.32**	**J**	0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**33**		8.0	8.0	mg/L			11/05/21 05:31	1
Total Kjeldahl Nitrogen	**3.1**		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 16:16	1
Total Carbon	**60**	**!**	10	5.0	mg/L			11/06/21 00:38	10
Total Organic Carbon	**9.1**		1.0	0.50	mg/L			11/04/21 16:02	1
Total Inorganic Carbon	**51**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: N-82_20211029
Lab Sample ID: 410-61302-15

Date Collected: 10/29/21 14:00
Matrix: Water
Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**5200**		50	20	ug/L			11/09/21 21:34	50
1,2-Dichloroethane	ND		50	15	ug/L			11/09/21 21:34	50
1,3,5-Trimethylbenzene	**200**	**J**	250	15	ug/L			11/09/21 21:34	50

Client Sample ID: N-82_20211029
Date Collected: 10/29/21 14:00
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-15
Matrix: Water

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	8300		50	15	ug/L			11/09/21 21:34	50
Xylenes, Total	3700		300	70	ug/L			11/09/21 21:34	50
Methyl tertiary butyl ether	ND		50	10	ug/L			11/09/21 21:34	50
1,2,4-Trimethylbenzene	700		250	50	ug/L			11/09/21 21:34	50
Isopropylbenzene	180	J	250	15	ug/L			11/09/21 21:34	50
t-Butyl alcohol	ND		2500	600	ug/L			11/09/21 21:34	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/09/21 21:34*	*50*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/09/21 21:34*	*50*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*11/09/21 21:34*	*50*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/09/21 21:34*	*50*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	19000		500	150	ug/L			11/09/21 22:00	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/09/21 22:00*	*500*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/09/21 22:00*	*500*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/09/21 22:00*	*500*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 22:00*	*500*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	4.1		0.51	0.10	ug/L		11/03/21 09:11	11/05/21 00:54	1
Benzo[a]anthracene	0.42	J	0.51	0.10	ug/L		11/03/21 09:11	11/05/21 00:54	1
Benzo[a]pyrene	0.26	J	0.51	0.11	ug/L		11/03/21 09:11	11/05/21 00:54	1
Benzo[b]fluoranthene	0.30	J	0.51	0.10	ug/L		11/03/21 09:11	11/05/21 00:54	1
Benzo[g,h,i]perylene	ND		0.51	0.10	ug/L		11/03/21 09:11	11/05/21 00:54	1
Chrysene	0.41	J	0.51	0.10	ug/L		11/03/21 09:11	11/05/21 00:54	1
Fluorene	30		0.51	0.12	ug/L		11/03/21 09:11	11/05/21 00:54	1
Naphthalene	6600		51	10	ug/L		11/03/21 09:11	11/08/21 15:07	100
Phenanthrene	24		0.51	0.11	ug/L		11/03/21 09:11	11/05/21 00:54	1
Pyrene	2.1		0.51	0.10	ug/L		11/03/21 09:11	11/05/21 00:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*63*		*35 - 100*	*11/03/21 09:11*	*11/05/21 00:54*	*1*
2-Fluorobiphenyl (Surr)	*74*		*35 - 100*	*11/03/21 09:11*	*11/08/21 15:07*	*100*
Nitrobenzene-d5 (Surr)	*64*		*22 - 117*	*11/03/21 09:11*	*11/05/21 00:54*	*1*
Nitrobenzene-d5 (Surr)	*56*		*22 - 117*	*11/03/21 09:11*	*11/08/21 15:07*	*100*
p-Terphenyl-d14 (Surr)	*63*		*31 - 119*	*11/03/21 09:11*	*11/05/21 00:54*	*1*
p-Terphenyl-d14 (Surr)	*65*		*31 - 119*	*11/03/21 09:11*	*11/08/21 15:07*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 18:18	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 18:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*77*		*28 - 130*	*11/02/21 10:50*	*11/02/21 18:18*	*1*

Client Sample ID: N-82_20211029

Lab Sample ID: 410-61302-15

Date Collected: 10/29/21 14:00

Matrix: Water

Date Received: 10/29/21 18:42

Method: RSK-175 - Dissolved Gases (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (1C)	**14000**		250	150	ug/L		11/03/21 10:29	11/03/21 18:29	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*109*		*28 - 130*	*11/03/21 10:29*	*11/03/21 18:29*	*50*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.029	0.0096	ug/L		11/10/21 02:39	11/11/21 00:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*150*	*S1+*	*46 - 136*	*11/10/21 02:39*	*11/11/21 00:06*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*114*		*46 - 136*	*11/10/21 02:39*	*11/11/21 00:06*	*1*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/04/21 17:09	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**85**	**^3+**	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 14:06	1
Iron	**55**		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 14:06	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 14:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	**340**		8.0	8.0	mg/L			11/05/21 04:00	1
Total Kjeldahl Nitrogen	**2.8**		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 17:02	1
Total Carbon	**150**	**!**	10	5.0	mg/L			11/06/21 00:49	10
Total Organic Carbon	**29**		1.0	0.50	mg/L			11/04/21 16:19	1
Total Inorganic Carbon	**120**	**!**	2.0	0.60	mg/L			11/11/21 11:28	1

Client Sample ID: Trip Blank

Lab Sample ID: 410-61302-16

Date Collected: 10/21/21 00:00

Matrix: Water

Date Received: 10/29/21 18:42

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/03/21 13:48	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 13:48	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/03/21 13:48	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 13:48	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 13:48	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/03/21 13:48	1
Benzene	ND		1.0	0.30	ug/L			11/03/21 13:48	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/03/21 13:48	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/03/21 13:48	1
t-Butyl alcohol	ND		50	12	ug/L			11/03/21 13:48	1
Ethylene Dibromide	ND		1.0	0.30	ug/L			11/03/21 13:48	1

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Client Sample ID: Trip Blank
Date Collected: 10/21/21 00:00
Date Received: 10/29/21 18:42

Lab Sample ID: 410-61302-16
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		11/03/21 13:48	1
4-Bromofluorobenzene (Surr)	96		80 - 120		11/03/21 13:48	1
Dibromofluoromethane (Surr)	100		80 - 120		11/03/21 13:48	1
Toluene-d8 (Surr)	100		80 - 120		11/03/21 13:48	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-61302-1	S-465_20211028	94	99	96	101
410-61302-1 - DL	S-465_20211028	96	98	99	100
410-61302-2	S-455_20211028	93	100	96	101
410-61302-2 - DL	S-455_20211028	96	99	98	101
410-61302-3	DUP-1_20211028	93	101	95	102
410-61302-3 - DL	DUP-1_20211028	96	100	98	101
410-61302-4	S-395_20211028	98	98	100	100
410-61302-5	S-463_20211028	95	99	96	101
410-61302-5 - DL	S-463_20211028	96	100	99	100
410-61302-6	S-452_20211028	93	101	96	101
410-61302-6 - DL	S-452_20211028	94	100	98	100
410-61302-7	S-464_20211028	96	100	98	102
410-61302-7	S-464_20211028	91	100	92	102
410-61302-8	S-457_20211029	95	100	98	102
410-61302-8 - DL	S-457_20211029	98	100	100	101
410-61302-9	OW-20_20211029	96	102	98	102
410-61302-9 - DL	OW-20_20211029	98	100	101	101
410-61302-10	MW-36_20211029	95	100	97	102
410-61302-10 - DL	MW-36_20211029	98	100	100	101
410-61302-11	MW-37_20211029	93	99	95	102
410-61302-11 - DL	MW-37_20211029	96	99	100	101
410-61302-12	TW-5_20211029	94	99	96	102
410-61302-12 - DL	TW-5_20211029	97	99	100	101
410-61302-13	OW-19_20211029	97	104	99	103
410-61302-13 - DL	OW-19_20211029	97	100	101	101
410-61302-14	S-472_20211029	97	103	101	102
410-61302-14 - DL	S-472_20211029	98	101	101	101
410-61302-15	N-82_20211029	96	100	97	100
410-61302-15 - DL	N-82_20211029	98	101	100	102
410-61302-16	Trip Blank	98	96	100	100
LCS 410-190200/4	Lab Control Sample	100	100	100	100
LCS 410-191977/4	Lab Control Sample	100	101	99	99
LCS 410-192554/4	Lab Control Sample	100	101	101	101
LCS 410-193050/4	Lab Control Sample	99	101	99	101
LCSD 410-190200/5	Lab Control Sample Dup	98	100	99	101
LCSD 410-191977/5	Lab Control Sample Dup	99	101	99	100
LCSD 410-192554/5	Lab Control Sample Dup	101	102	101	102
LCSD 410-193050/5	Lab Control Sample Dup	99	102	98	100
MB 410-190200/6	Method Blank	97	97	100	100
MB 410-191977/6	Method Blank	98	99	101	100
MB 410-192554/6	Method Blank	98	100	100	102
MB 410-193050/6	Method Blank	96	99	99	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-61302-1
Project/Site: Belmont Terminal GW Sampling

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	FBP (35-100)	NBZ (22-117)	TPHd14 (31-119)
410-61302-1	S-465_20211028	73	82	95
410-61302-2	S-455_20211028	74	85	98
410-61302-2 - DL	S-455_20211028	71	74	93
410-61302-3	DUP-1_20211028	73	84	101
410-61302-3 - DL	DUP-1_20211028	67	74	86
410-61302-4	S-395_20211028	64	73	75
410-61302-5	S-463_20211028	67	74	90
410-61302-6	S-452_20211028	68	82	99
410-61302-6 - DL	S-452_20211028	74	75	90
410-61302-7	S-464_20211028	70	76	90
410-61302-8	S-457_20211029	69	81	95
410-61302-8 - DL	S-457_20211029	64	78	86
410-61302-9	OW-20_20211029	62	12 S1-	67
410-61302-10	MW-36_20211029	62	75	95
410-61302-10 - DL	MW-36_20211029	69	78	100
410-61302-11	MW-37_20211029	71	70	85
410-61302-12	TW-5_20211029	41	50	60
410-61302-14	S-472_20211029	68	84	84
410-61302-14 - DL	S-472_20211029	63	73	81
410-61302-15	N-82_20211029	63	64	63
410-61302-15	N-82_20211029	74	56	65
LCS 410-189870/2-A	Lab Control Sample	74	87	99
LCS 410-190103/2-A	Lab Control Sample	72	76	84
LCSD 410-189870/3-A	Lab Control Sample Dup	66	71	80
MB 410-189870/1-A	Method Blank	53	60	78
MB 410-190103/1-A	Method Blank	72	81	91

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	Propene1 (28-130)
410-61302-1	S-465_20211028	82
410-61302-2	S-455_20211028	86
410-61302-2 - DL	S-455_20211028	111
410-61302-3	DUP-1_20211028	82
410-61302-3 - DL	DUP-1_20211028	111
410-61302-4	S-395_20211028	81
410-61302-5	S-463_20211028	85
410-61302-6	S-452_20211028	86
410-61302-6 - DL	S-452_20211028	110
410-61302-7	S-464_20211028	82
410-61302-7 - DL	S-464_20211028	106
410-61302-8	S-457_20211029	96
410-61302-8 - DL	S-457_20211029	105

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	Propene1 (28-130)								
410-61302-9	OW-20_20211029	84								
410-61302-9 - DL	OW-20_20211029	107								
410-61302-10	MW-36_20211029	76								
410-61302-10 - DL	MW-36_20211029	110								
410-61302-11	MW-37_20211029	90								
410-61302-11 - DL	MW-37_20211029	110								
410-61302-12	TW-5_20211029	69								
410-61302-12 - DL	TW-5_20211029	106								
410-61302-13	OW-19_20211029	76								
410-61302-13 - DL	OW-19_20211029	105								
410-61302-14	S-472_20211029	89								
410-61302-14 - DL	S-472_20211029	108								
410-61302-15	N-82_20211029	77								
410-61302-15 - DL	N-82_20211029	109								
LCS 410-189353/2-A	Lab Control Sample	110								
LCS 410-190237/2-A	Lab Control Sample	111								
LCS 410-190240/2-A	Lab Control Sample	107								
LCSD 410-189353/3-A	Lab Control Sample Dup	109								
LCSD 410-190237/3-A	Lab Control Sample Dup	111								
LCSD 410-190240/3-A	Lab Control Sample Dup	105								
MB 410-189353/1-A	Method Blank	108								
MB 410-190237/1-A	Method Blank	113								
MB 410-190240/1-A	Method Blank	103								

Surrogate Legend

Propene = Propene

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	1122TCA1 (46-136)	1122TCA2 (46-136)							
410-61302-1	S-465_20211028	86	111							
410-61302-2	S-455_20211028	118	118							
410-61302-3	DUP-1_20211028	119	109							
410-61302-4	S-395_20211028	85	106							
410-61302-5	S-463_20211028	84	108							
410-61302-6	S-452_20211028	134	110							
410-61302-7	S-464_20211028	77	105							
410-61302-8	S-457_20211029	146 S1+	115							
410-61302-9	OW-20_20211029	78	142 S1+							
410-61302-9 DU	OW-20_20211029	78	107							
410-61302-10	MW-36_20211029	106	110							
410-61302-11	MW-37_20211029	66	116							
410-61302-12	TW-5_20211029	81	103							
410-61302-13	OW-19_20211029		257 S1+							
410-61302-14	S-472_20211029	125	120							
410-61302-15	N-82_20211029	150 S1+	114							
LCS 410-192843/2-A	Lab Control Sample	86	114							
LCS 410-193941/2-A	Lab Control Sample		110							

Surrogate Summary

Client: Stantec Consulting Corp. Job ID: 410-61302-1
Project/Site: Belmont Terminal GW Sampling

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		1122TCA1	1122TCA2								
Lab Sample ID	Client Sample ID	(46-136)	(46-136)								
LCSD 410-192843/3-A	Lab Control Sample Dup	85	113								
LCSD 410-193941/3-A	Lab Control Sample Dup		111								
MB 410-192843/1-A	Method Blank	88	116								
MB 410-193941/1-A	Method Blank		117								

Surrogate Legend

1122TCA = 1,1,2,2-Tetrachloroethane (Surr)

Method: 8260C/UST - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-190200/6
Matrix: Water
Analysis Batch: 190200

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/03/21 13:23	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/03/21 13:23	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/03/21 13:23	1
Toluene	ND		1.0	0.30	ug/L			11/03/21 13:23	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/03/21 13:23	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/03/21 13:23	1
Benzene	ND		1.0	0.30	ug/L			11/03/21 13:23	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/03/21 13:23	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/03/21 13:23	1
t-Butyl alcohol	ND		50	12	ug/L			11/03/21 13:23	1
Ethylene Dibromide	ND		1.0	0.30	ug/L			11/03/21 13:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*11/03/21 13:23*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*11/03/21 13:23*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/03/21 13:23*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/03/21 13:23*	*1*

Lab Sample ID: LCS 410-190200/4
Matrix: Water
Analysis Batch: 190200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	21.5		ug/L		107	80 - 120
1,2-Dichloroethane	20.0	18.6		ug/L		93	73 - 124
1,3,5-Trimethylbenzene	20.0	20.7		ug/L		104	75 - 120
Toluene	20.0	18.6		ug/L		93	80 - 120
Xylenes, Total	60.0	58.0		ug/L		97	80 - 120
Methyl tertiary butyl ether	20.0	15.7		ug/L		78	69 - 122
Benzene	20.0	19.7		ug/L		99	80 - 120
1,2,4-Trimethylbenzene	20.0	20.8		ug/L		104	75 - 120
Isopropylbenzene	20.0	18.5		ug/L		93	80 - 120
t-Butyl alcohol	200	206		ug/L		103	60 - 130
Ethylene Dibromide	20.0	18.9		ug/L		95	77 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-190200/5
Matrix: Water
Analysis Batch: 190200

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	20.0	22.1		ug/L		110	80 - 120	3	30
1,2-Dichloroethane	20.0	18.7		ug/L		93	73 - 124	0	30

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-190200/5
Matrix: Water
Analysis Batch: 190200

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene			20.0	20.9		ug/L		104	75 - 120	1	30
Toluene			20.0	19.3		ug/L		96	80 - 120	3	30
Xylenes, Total			60.0	59.2		ug/L		99	80 - 120	2	30
Methyl tertiary butyl ether			20.0	15.5		ug/L		77	69 - 122	1	30
Benzene			20.0	19.9		ug/L		99	80 - 120	1	30
1,2,4-Trimethylbenzene			20.0	21.2		ug/L		106	75 - 120	2	30
Isopropylbenzene			20.0	19.1		ug/L		95	80 - 120	3	30
t-Butyl alcohol			200	208		ug/L		104	60 - 130	1	30
Ethylene Dibromide			20.0	19.3		ug/L		97	77 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 410-191977/6
Matrix: Water
Analysis Batch: 191977

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/08/21 14:21	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/08/21 14:21	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/08/21 14:21	1
Toluene	ND		1.0	0.30	ug/L			11/08/21 14:21	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/08/21 14:21	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/08/21 14:21	1
Benzene	ND		1.0	0.30	ug/L			11/08/21 14:21	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/08/21 14:21	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/08/21 14:21	1
t-Butyl alcohol	ND		50	12	ug/L			11/08/21 14:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/08/21 14:21*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/08/21 14:21*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/08/21 14:21*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/08/21 14:21*	*1*

Lab Sample ID: LCS 410-191977/4
Matrix: Water
Analysis Batch: 191977

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene			20.0	20.7		ug/L		104	80 - 120
1,2-Dichloroethane			20.0	17.8		ug/L		89	73 - 124
1,3,5-Trimethylbenzene			20.0	19.7		ug/L		99	75 - 120
Toluene			20.0	18.1		ug/L		90	80 - 120
Xylenes, Total			60.0	56.0		ug/L		93	80 - 120

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-191977/4
Matrix: Water
Analysis Batch: 191977

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tertiary butyl ether	20.0	15.0		ug/L		75	69 - 122
Benzene	20.0	18.9		ug/L		95	80 - 120
1,2,4-Trimethylbenzene	20.0	19.7		ug/L		99	75 - 120
Isopropylbenzene	20.0	18.0		ug/L		90	80 - 120
t-Butyl alcohol	200	207		ug/L		103	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-191977/5
Matrix: Water
Analysis Batch: 191977

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	20.0	20.9		ug/L		104	80 - 120	1	30
1,2-Dichloroethane	20.0	18.0		ug/L		90	73 - 124	1	30
1,3,5-Trimethylbenzene	20.0	19.7		ug/L		98	75 - 120	0	30
Toluene	20.0	18.0		ug/L		90	80 - 120	0	30
Xylenes, Total	60.0	56.1		ug/L		94	80 - 120	0	30
Methyl tertiary butyl ether	20.0	15.2		ug/L		76	69 - 122	1	30
Benzene	20.0	19.0		ug/L		95	80 - 120	0	30
1,2,4-Trimethylbenzene	20.0	19.8		ug/L		99	75 - 120	0	30
Isopropylbenzene	20.0	17.9		ug/L		90	80 - 120	0	30
t-Butyl alcohol	200	208		ug/L		104	60 - 130	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 410-192554/6
Matrix: Water
Analysis Batch: 192554

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/09/21 14:41	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/09/21 14:41	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/09/21 14:41	1
Toluene	ND		1.0	0.30	ug/L			11/09/21 14:41	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/09/21 14:41	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/09/21 14:41	1
Benzene	ND		1.0	0.30	ug/L			11/09/21 14:41	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/09/21 14:41	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/09/21 14:41	1

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-192554/6
Matrix: Water
Analysis Batch: 192554

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t-Butyl alcohol	ND		50	12	ug/L			11/09/21 14:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*11/09/21 14:41*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*11/09/21 14:41*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*11/09/21 14:41*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/09/21 14:41*	*1*

Lab Sample ID: LCS 410-192554/4
Matrix: Water
Analysis Batch: 192554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			20.0	21.8		ug/L		109	80 - 120		
1,2-Dichloroethane			20.0	18.8		ug/L		94	73 - 124		
1,3,5-Trimethylbenzene			20.0	20.3		ug/L		101	75 - 120		
Toluene			20.0	19.4		ug/L		97	80 - 120		
Xylenes, Total			60.0	58.7		ug/L		98	80 - 120		
Methyl tertiary butyl ether			20.0	20.2		ug/L		101	69 - 122		
Benzene			20.0	20.1		ug/L		100	80 - 120		
1,2,4-Trimethylbenzene			20.0	20.1		ug/L		100	75 - 120		
Isopropylbenzene			20.0	19.2		ug/L		96	80 - 120		
t-Butyl alcohol			200	206		ug/L		103	60 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 410-192554/5
Matrix: Water
Analysis Batch: 192554

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	21.4		ug/L		107	80 - 120	2	30
1,2-Dichloroethane			20.0	18.8		ug/L		94	73 - 124	0	30
1,3,5-Trimethylbenzene			20.0	20.1		ug/L		100	75 - 120	1	30
Toluene			20.0	19.0		ug/L		95	80 - 120	2	30
Xylenes, Total			60.0	58.0		ug/L		97	80 - 120	1	30
Methyl tertiary butyl ether			20.0	19.8		ug/L		99	69 - 122	2	30
Benzene			20.0	20.0		ug/L		100	80 - 120	0	30
1,2,4-Trimethylbenzene			20.0	19.8		ug/L		99	75 - 120	1	30
Isopropylbenzene			20.0	19.0		ug/L		95	80 - 120	1	30
t-Butyl alcohol			200	202		ug/L		101	60 - 130	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-192554/5
Matrix: Water
Analysis Batch: 192554

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: MB 410-193050/6
Matrix: Water
Analysis Batch: 193050

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.40	ug/L			11/10/21 14:14	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			11/10/21 14:14	1
1,3,5-Trimethylbenzene	ND		5.0	0.30	ug/L			11/10/21 14:14	1
Toluene	ND		1.0	0.30	ug/L			11/10/21 14:14	1
Xylenes, Total	ND		6.0	1.4	ug/L			11/10/21 14:14	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			11/10/21 14:14	1
Benzene	ND		1.0	0.30	ug/L			11/10/21 14:14	1
1,2,4-Trimethylbenzene	ND		5.0	1.0	ug/L			11/10/21 14:14	1
Isopropylbenzene	ND		5.0	0.30	ug/L			11/10/21 14:14	1
t-Butyl alcohol	ND		50	12	ug/L			11/10/21 14:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*11/10/21 14:14*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*11/10/21 14:14*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*11/10/21 14:14*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/10/21 14:14*	*1*

Lab Sample ID: LCS 410-193050/4
Matrix: Water
Analysis Batch: 193050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	20.0	22.1		ug/L		110	80 - 120
1,2-Dichloroethane	20.0	18.7		ug/L		93	73 - 124
1,3,5-Trimethylbenzene	20.0	20.8		ug/L		104	75 - 120
Toluene	20.0	19.3		ug/L		96	80 - 120
Xylenes, Total	60.0	58.8		ug/L		98	80 - 120
Methyl tertiary butyl ether	20.0	16.0		ug/L		80	69 - 122
Benzene	20.0	20.1		ug/L		100	80 - 120
1,2,4-Trimethylbenzene	20.0	20.8		ug/L		104	75 - 120
Isopropylbenzene	20.0	18.9		ug/L		94	80 - 120
t-Butyl alcohol	200	214		ug/L		107	60 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 8260C/UST - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 410-193050/5
Matrix: Water
Analysis Batch: 193050

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene			20.0	21.6		ug/L		108	80 - 120	2	30
1,2-Dichloroethane			20.0	18.4		ug/L		92	73 - 124	2	30
1,3,5-Trimethylbenzene			20.0	20.2		ug/L		101	75 - 120	3	30
Toluene			20.0	18.6		ug/L		93	80 - 120	3	30
Xylenes, Total			60.0	58.4		ug/L		97	80 - 120	1	30
Methyl tertiary butyl ether			20.0	15.5		ug/L		78	69 - 122	3	30
Benzene			20.0	19.5		ug/L		98	80 - 120	3	30
1,2,4-Trimethylbenzene			20.0	20.4		ug/L		102	75 - 120	2	30
Isopropylbenzene			20.0	18.8		ug/L		94	80 - 120	0	30
t-Butyl alcohol			200	208		ug/L		104	60 - 130	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-189870/1-A
Matrix: Water
Analysis Batch: 192240

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189870

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		11/02/21 15:01	11/08/21 19:24	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		11/02/21 15:01	11/08/21 19:24	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		11/02/21 15:01	11/08/21 19:24	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		11/02/21 15:01	11/08/21 19:24	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		11/02/21 15:01	11/08/21 19:24	1
Chrysene	ND		0.50	0.10	ug/L		11/02/21 15:01	11/08/21 19:24	1
Fluorene	ND		0.50	0.12	ug/L		11/02/21 15:01	11/08/21 19:24	1
Naphthalene	ND		0.50	0.10	ug/L		11/02/21 15:01	11/08/21 19:24	1
Phenanthrene	ND		0.50	0.11	ug/L		11/02/21 15:01	11/08/21 19:24	1
Pyrene	ND		0.50	0.10	ug/L		11/02/21 15:01	11/08/21 19:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*53*		*35 - 100*	*11/02/21 15:01*	*11/08/21 19:24*	*1*
Nitrobenzene-d5 (Surr)	*60*		*22 - 117*	*11/02/21 15:01*	*11/08/21 19:24*	*1*
p-Terphenyl-d14 (Surr)	*78*		*31 - 119*	*11/02/21 15:01*	*11/08/21 19:24*	*1*

Lab Sample ID: LCS 410-189870/2-A
Matrix: Water
Analysis Batch: 192240

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189870

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Anthracene			50.0	45.8		ug/L		92	73 - 120		
Benzo[a]anthracene			50.0	48.1		ug/L		96	74 - 120		
Benzo[a]pyrene			50.0	44.9		ug/L		90	60 - 116		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-189870/2-A
Matrix: Water
Analysis Batch: 192240

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189870

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzo[b]fluoranthene			50.0	46.5		ug/L		93	71 - 120		
Benzo[g,h,i]perylene			50.0	47.9		ug/L		96	60 - 120		
Chrysene			50.0	45.3		ug/L		91	76 - 120		
Fluorene			50.0	43.1		ug/L		86	64 - 120		
Naphthalene			50.0	38.4		ug/L		77	51 - 102		
Phenanthrene			50.0	44.6		ug/L		89	72 - 120		
Pyrene			50.0	44.6		ug/L		89	73 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*74*		*35 - 100*
Nitrobenzene-d5 (Surr)	*87*		*22 - 117*
p-Terphenyl-d14 (Surr)	*99*		*31 - 119*

Lab Sample ID: LCSD 410-189870/3-A
Matrix: Water
Analysis Batch: 192240

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189870

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Anthracene			50.0	36.9		ug/L		74	73 - 120	22	30
Benzo[a]anthracene			50.0	39.5		ug/L		79	74 - 120	20	30
Benzo[a]pyrene			50.0	36.8		ug/L		74	60 - 116	20	30
Benzo[b]fluoranthene			50.0	38.6		ug/L		77	71 - 120	19	30
Benzo[g,h,i]perylene			50.0	39.2		ug/L		78	60 - 120	20	30
Chrysene			50.0	37.5	*-	ug/L		75	76 - 120	19	30
Fluorene			50.0	38.3		ug/L		77	64 - 120	12	30
Naphthalene			50.0	33.2		ug/L		66	51 - 102	14	30
Phenanthrene			50.0	36.2		ug/L		72	72 - 120	21	30
Pyrene			50.0	39.2		ug/L		78	73 - 120	13	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*66*		*35 - 100*
Nitrobenzene-d5 (Surr)	*71*		*22 - 117*
p-Terphenyl-d14 (Surr)	*80*		*31 - 119*

Lab Sample ID: MB 410-190103/1-A
Matrix: Water
Analysis Batch: 191028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		11/03/21 09:11	11/04/21 19:45	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Chrysene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Fluorene	ND		0.50	0.12	ug/L		11/03/21 09:11	11/04/21 19:45	1
Naphthalene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Phenanthrene	ND		0.50	0.11	ug/L		11/03/21 09:11	11/04/21 19:45	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-190103/1-A
Matrix: Water
Analysis Batch: 191028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*35 - 100*	*11/03/21 09:11*	*11/04/21 19:45*	*1*
Nitrobenzene-d5 (Surr)	*81*		*22 - 117*	*11/03/21 09:11*	*11/04/21 19:45*	*1*
p-Terphenyl-d14 (Surr)	*91*		*31 - 119*	*11/03/21 09:11*	*11/04/21 19:45*	*1*

Lab Sample ID: LCS 410-190103/2-A
Matrix: Water
Analysis Batch: 191028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	42.4		ug/L		85	73 - 120
Benzo[a]anthracene	50.0	46.3		ug/L		93	74 - 120
Benzo[a]pyrene	50.0	39.5		ug/L		79	60 - 116
Benzo[b]fluoranthene	50.0	41.4		ug/L		83	71 - 120
Benzo[g,h,i]perylene	50.0	32.7		ug/L		65	60 - 120
Chrysene	50.0	43.8		ug/L		88	76 - 120
Fluorene	50.0	40.7		ug/L		81	64 - 120
Naphthalene	50.0	35.2		ug/L		70	51 - 102
Phenanthrene	50.0	41.4		ug/L		83	72 - 120
Pyrene	50.0	42.7		ug/L		85	73 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*35 - 100*
Nitrobenzene-d5 (Surr)	*76*		*22 - 117*
p-Terphenyl-d14 (Surr)	*84*		*31 - 119*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-189353/1-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 189353

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 13:23	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/02/21 10:50	11/02/21 13:23	1
Methane (1C)	ND		5.0	3.0	ug/L		11/02/21 10:50	11/02/21 13:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*108*		*28 - 130*	*11/02/21 10:50*	*11/02/21 13:23*	*1*

Lab Sample ID: LCS 410-189353/2-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189353

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)	59.4	62.2		ug/L		105	85 - 115

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 410-189353/2-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 189353

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethene (1C)			60.4	61.5		ug/L		102	83 - 115		
Methane (1C)			59.4	59.2		ug/L		100	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*110*		*28 - 130*

Lab Sample ID: LCSD 410-189353/3-A
Matrix: Water
Analysis Batch: 189611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 189353

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	62.5		ug/L		105	85 - 115	1	20
Ethene (1C)			60.4	62.0		ug/L		103	83 - 115	1	20
Methane (1C)			59.4	59.6		ug/L		100	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*109*		*28 - 130*

Lab Sample ID: MB 410-190237/1-A
Matrix: Water
Analysis Batch: 190075

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190237

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/03/21 10:29	11/03/21 13:54	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/03/21 10:29	11/03/21 13:54	1
Methane (1C)	ND		5.0	3.0	ug/L		11/03/21 10:29	11/03/21 13:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*113*		*28 - 130*	*11/03/21 10:29*	*11/03/21 13:54*	*1*

Lab Sample ID: LCS 410-190237/2-A
Matrix: Water
Analysis Batch: 190075

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190237

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane (1C)			59.4	61.9		ug/L		104	85 - 115		
Ethene (1C)			60.4	61.5		ug/L		102	83 - 115		
Methane (1C)			59.4	63.8		ug/L		107	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*111*		*28 - 130*

Lab Sample ID: LCSD 410-190237/3-A
Matrix: Water
Analysis Batch: 190075

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 190237

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	61.9		ug/L		104	85 - 115	0	20

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 410-190237/3-A
Matrix: Water
Analysis Batch: 190075

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 190237

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethene (1C)			60.4	61.7		ug/L		102	83 - 115	0	20
Methane (1C)			59.4	64.4		ug/L		108	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*111*		*28 - 130*

Lab Sample ID: MB 410-190240/1-A
Matrix: Water
Analysis Batch: 190257

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190240

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane (1C)	ND		5.0	1.0	ug/L		11/03/21 10:38	11/03/21 11:34	1
Ethene (1C)	ND		5.0	1.0	ug/L		11/03/21 10:38	11/03/21 11:34	1
Methane (1C)	ND		5.0	3.0	ug/L		11/03/21 10:38	11/03/21 11:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Propene (1C)	*103*		*28 - 130*	*11/03/21 10:38*	*11/03/21 11:34*	*1*

Lab Sample ID: LCS 410-190240/2-A
Matrix: Water
Analysis Batch: 190257

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190240

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane (1C)			59.4	62.9		ug/L		106	85 - 115
Ethene (1C)			60.4	62.6		ug/L		104	83 - 115
Methane (1C)			59.4	59.9		ug/L		101	85 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Propene (1C)	*107*		*28 - 130*

Lab Sample ID: LCSD 410-190240/3-A
Matrix: Water
Analysis Batch: 190257

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 190240

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane (1C)			59.4	61.6		ug/L		104	85 - 115	2	20
Ethene (1C)			60.4	61.7		ug/L		102	83 - 115	1	20
Methane (1C)			59.4	59.0		ug/L		99	85 - 115	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Propene (1C)	*105*		*28 - 130*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC)

Lab Sample ID: MB 410-192843/1-A
Matrix: Water
Analysis Batch: 193028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 192843

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		11/10/21 02:39	11/10/21 17:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*88*		*46 - 136*	*11/10/21 02:39*	*11/10/21 17:09*	*1*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*116*		*46 - 136*	*11/10/21 02:39*	*11/10/21 17:09*	*1*

Lab Sample ID: LCS 410-192843/2-A
Matrix: Water
Analysis Batch: 193028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 192843

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylene Dibromide (1C)			0.128	0.120		ug/L		94	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*86*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*114*		*46 - 136*

Lab Sample ID: LCSD 410-192843/3-A
Matrix: Water
Analysis Batch: 193028

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 192843

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)			0.128	0.120		ug/L		93	60 - 140	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*85*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*113*		*46 - 136*

Lab Sample ID: 410-61302-9 DU
Matrix: Water
Analysis Batch: 193028

Client Sample ID: OW-20_20211029
Prep Type: Total/NA
Prep Batch: 192843

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Ethylene Dibromide (1C)	0.013	J		ND		ug/L				NC	30

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (1C)	*78*		*46 - 136*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*107*		*46 - 136*

Method: 8011 - EDB, DBCP, and 1,2,3-TCP (GC) (Continued)

Lab Sample ID: MB 410-193941/1-A
Matrix: Water
Analysis Batch: 194128

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 193941

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide (1C)	ND		0.030	0.010	ug/L		11/12/21 04:03	11/12/21 17:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*117*		*46 - 136*	*11/12/21 04:03*	*11/12/21 17:58*	*1*

Lab Sample ID: LCS 410-193941/2-A
Matrix: Water
Analysis Batch: 194128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 193941

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide (1C)	0.128	0.124		ug/L		97	60 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*110*		*46 - 136*

Lab Sample ID: LCSD 410-193941/3-A
Matrix: Water
Analysis Batch: 194128

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 193941

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide (1C)	0.128	0.128		ug/L		100	60 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,1,2,2-Tetrachloroethane (Surr) (2C)	*111*		*46 - 136*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-554233/72
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/03/21 03:58	1

Lab Sample ID: LCS 400-554233/70
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.8		mg/L		108	90 - 110

Lab Sample ID: LCSD 400-554233/71
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.4		mg/L		104	90 - 110	3	15

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MRL 400-554233/73
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.00	1.25		mg/L		125	50 - 150

Lab Sample ID: MB 400-554421/6
Matrix: Water
Analysis Batch: 554421

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/04/21 07:01	1

Lab Sample ID: LCS 400-554421/4
Matrix: Water
Analysis Batch: 554421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.1		mg/L		101	90 - 110

Lab Sample ID: LCSD 400-554421/5
Matrix: Water
Analysis Batch: 554421

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.1		mg/L		101	90 - 110	1	15

Lab Sample ID: MRL 400-554421/7
Matrix: Water
Analysis Batch: 554421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.00	1.20		mg/L		120	50 - 150

Lab Sample ID: 410-61302-2 MS
Matrix: Water
Analysis Batch: 554421

Client Sample ID: S-455_20211028
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	ND	FH	10.0	12.3	FH	mg/L		123	80 - 120

Lab Sample ID: 410-61302-2 MSD
Matrix: Water
Analysis Batch: 554421

Client Sample ID: S-455_20211028
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	ND	FH	10.0	12.3	FH	mg/L		123	80 - 120	0	20

Lab Sample ID: MB 400-555020/46
Matrix: Water
Analysis Batch: 555020

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/09/21 06:58	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-555020/7
Matrix: Water
Analysis Batch: 555020

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/08/21 14:49	1

Lab Sample ID: LCS 400-555020/44
Matrix: Water
Analysis Batch: 555020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	9.84		mg/L		98	90 - 110

Lab Sample ID: LCSD 400-555020/45
Matrix: Water
Analysis Batch: 555020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	9.89		mg/L		99	90 - 110	0	15

Lab Sample ID: MRL 400-555020/47
Matrix: Water
Analysis Batch: 555020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.00	0.793	J	mg/L		79	50 - 150

Lab Sample ID: MRL 400-555020/8
Matrix: Water
Analysis Batch: 555020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.00	0.777	J	mg/L		78	50 - 150

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-190958/1-A
Matrix: Water
Analysis Batch: 191651

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND	^3+	0.50	0.096	mg/L		11/04/21 16:00	11/06/21 13:11	1
Iron	ND		0.20	0.040	mg/L		11/04/21 16:00	11/06/21 13:11	1

Lab Sample ID: LCS 410-190958/2-A
Matrix: Water
Analysis Batch: 191651

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5.00	5.06	^3+	mg/L		101	80 - 120
Iron	5.00	5.04		mg/L		101	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 410-191621/1-A
Matrix: Water
Analysis Batch: 193355

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 191621

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		11/06/21 10:09	11/10/21 19:39	1
Iron	ND		0.20	0.040	mg/L		11/06/21 10:09	11/10/21 19:39	1

Lab Sample ID: LCS 410-191621/2-A
Matrix: Water
Analysis Batch: 193355

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 191621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5.00	5.14		mg/L		103	80 - 120
Iron	5.00	5.14		mg/L		103	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-190987/1-A
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190987

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/04/21 16:55	11/05/21 13:42	1

Lab Sample ID: LCS 410-190987/2-A
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	52.8		ug/L		106	90 - 115

Lab Sample ID: MB 410-191738/1-A
Matrix: Water
Analysis Batch: 192277

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 191738

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/07/21 10:01	11/08/21 18:13	1

Lab Sample ID: LCS 410-191738/2-A
Matrix: Water
Analysis Batch: 192277

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 191738

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	48.6		ug/L		97	90 - 115

Lab Sample ID: 410-61302-12 MS
Matrix: Water
Analysis Batch: 191445

Client Sample ID: TW-5_20211029
Prep Type: Dissolved
Prep Batch: 190987

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		50.0	52.0		ug/L		104	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 410-61302-12 MSD
Matrix: Water
Analysis Batch: 191445

Client Sample ID: TW-5_20211029
Prep Type: Dissolved
Prep Batch: 190987

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		50.0	50.5		ug/L		101	75 - 125	3	20

Lab Sample ID: 410-61302-12 DU
Matrix: Water
Analysis Batch: 191445

Client Sample ID: TW-5_20211029
Prep Type: Dissolved
Prep Batch: 190987

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		ug/L		NC	20

Lab Sample ID: 410-61302-3 MS
Matrix: Water
Analysis Batch: 192277

Client Sample ID: DUP-1_20211028
Prep Type: Dissolved
Prep Batch: 191738

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	3.0		50.0	50.7		ug/L		95	75 - 125

Lab Sample ID: 410-61302-3 MSD
Matrix: Water
Analysis Batch: 192277

Client Sample ID: DUP-1_20211028
Prep Type: Dissolved
Prep Batch: 191738

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	3.0		50.0	51.6		ug/L		97	75 - 125	2	20

Lab Sample ID: 410-61302-3 DU
Matrix: Water
Analysis Batch: 192277

Client Sample ID: DUP-1_20211028
Prep Type: Dissolved
Prep Batch: 191738

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	3.0		3.04		ug/L		0.8	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-191374/102
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/05/21 04:12	1

Lab Sample ID: MB 410-191374/71
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/05/21 00:54	1

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: LCS 410-191374/103
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	182		mg/L		96	82 - 106

Lab Sample ID: LCS 410-191374/74
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	181		mg/L		96	82 - 106

Lab Sample ID: MB 410-192078/79
Matrix: Water
Analysis Batch: 192078

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/06/21 05:21	1

Lab Sample ID: LCS 410-192078/80
Matrix: Water
Analysis Batch: 192078

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	189	182		mg/L		96	82 - 106

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 410-196484/2-A
Matrix: Water
Analysis Batch: 196825

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 196484

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/18/21 12:15	11/19/21 07:35	1

Lab Sample ID: LCS 410-196484/1-A
Matrix: Water
Analysis Batch: 196825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196484

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	4.00	4.10		mg/L		102	90 - 110

Lab Sample ID: LCS 410-196484/1-A
Matrix: Water
Analysis Batch: 196825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196484

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	4.00	4.33		mg/L		108	90 - 110

Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: MB 410-196935/2-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 197777 — **Prep Batch: 196935**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/19/21 13:48	11/22/21 16:14	1

Lab Sample ID: LCS 410-196935/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 197777 — **Prep Batch: 196935**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	3.60	3.67		mg/L		102	90 - 110

Lab Sample ID: 410-61302-2 MS — **Client Sample ID: S-455_20211028**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 197777 — **Prep Batch: 196935**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	6.4		5.01	11.4		mg/L		100	90 - 110

Lab Sample ID: 410-61302-14 MS — **Client Sample ID: S-472_20211029**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 197777 — **Prep Batch: 196935**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Kjeldahl Nitrogen	3.1		5.01	8.59		mg/L		109	90 - 110

Lab Sample ID: 410-61302-2 DU — **Client Sample ID: S-455_20211028**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 197777 — **Prep Batch: 196935**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Kjeldahl Nitrogen	6.4		6.59		mg/L		3	20

Lab Sample ID: 410-61302-14 DU — **Client Sample ID: S-472_20211029**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 197777 — **Prep Batch: 196935**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Kjeldahl Nitrogen	3.1		3.21		mg/L		3	20

Method: 5310 B-2011 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 410-191617/35 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 191617

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1.0	0.50	mg/L			11/05/21 23:32	1

Method: 5310 B-2011 - Carbon, Total and Total Inorganic (Continued)

Lab Sample ID: MB 410-191617/5
Matrix: Water
Analysis Batch: 191617

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1.0	0.50	mg/L			11/05/21 18:02	1

Lab Sample ID: LCS 410-191617/34
Matrix: Water
Analysis Batch: 191617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon			25.0	24.5		mg/L		98	91 - 115		

Lab Sample ID: LCS 410-191617/4
Matrix: Water
Analysis Batch: 191617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon			25.0	24.5		mg/L		98	91 - 115		

Lab Sample ID: 410-61302-2 MS
Matrix: Water
Analysis Batch: 191617

Client Sample ID: S-455_20211028
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon	110	! FH	100	226	FH	mg/L		117	91 - 115		

Lab Sample ID: 410-61302-2 DU
Matrix: Water
Analysis Batch: 191617

Client Sample ID: S-455_20211028
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Carbon	110	! FH		123		mg/L				11	20

Lab Sample ID: 410-61302-12 MS
Matrix: Water
Analysis Batch: 191659

Client Sample ID: TW-5_20211029
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon	450	!	250	716		mg/L		108	91 - 115		

Lab Sample ID: 410-61302-12 DU
Matrix: Water
Analysis Batch: 191659

Client Sample ID: TW-5_20211029
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Carbon	450	!		430		mg/L				4	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-190994/35
Matrix: Water
Analysis Batch: 190994

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			11/04/21 03:43	1

Lab Sample ID: MB 410-190994/67
Matrix: Water
Analysis Batch: 190994

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			11/04/21 12:29	1

Lab Sample ID: LCS 410-190994/34
Matrix: Water
Analysis Batch: 190994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	26.2		mg/L		105	91 - 113

Lab Sample ID: LCS 410-190994/66
Matrix: Water
Analysis Batch: 190994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	26.1		mg/L		104	91 - 113

Lab Sample ID: 410-61302-5 MS
Matrix: Water
Analysis Batch: 190994

Client Sample ID: S-463_20211028
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.8		10.0	11.5		mg/L		97	91 - 113

Lab Sample ID: 410-61302-5 DU
Matrix: Water
Analysis Batch: 190994

Client Sample ID: S-463_20211028
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	1.8		1.69	F5	mg/L		5	3

Lab Sample ID: MB 410-191656/35
Matrix: Water
Analysis Batch: 191656

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			11/05/21 23:33	1

Lab Sample ID: LCS 410-191656/34
Matrix: Water
Analysis Batch: 191656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	25.3		mg/L		101	91 - 113

GC/MS VOA

Analysis Batch: 190200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-16	Trip Blank	Total/NA	Water	8260C/UST	
MB 410-190200/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-190200/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-190200/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 191977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	8260C/UST	
410-61302-1 - DL	S-465_20211028	Total/NA	Water	8260C/UST	
410-61302-2	S-455_20211028	Total/NA	Water	8260C/UST	
410-61302-2 - DL	S-455_20211028	Total/NA	Water	8260C/UST	
410-61302-3	DUP-1_20211028	Total/NA	Water	8260C/UST	
410-61302-3 - DL	DUP-1_20211028	Total/NA	Water	8260C/UST	
410-61302-4	S-395_20211028	Total/NA	Water	8260C/UST	
410-61302-5	S-463_20211028	Total/NA	Water	8260C/UST	
410-61302-6	S-452_20211028	Total/NA	Water	8260C/UST	
410-61302-6 - DL	S-452_20211028	Total/NA	Water	8260C/UST	
410-61302-7	S-464_20211028	Total/NA	Water	8260C/UST	
MB 410-191977/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-191977/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-191977/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 192554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-7	S-464_20211028	Total/NA	Water	8260C/UST	
410-61302-8	S-457_20211029	Total/NA	Water	8260C/UST	
410-61302-8 - DL	S-457_20211029	Total/NA	Water	8260C/UST	
410-61302-9	OW-20_20211029	Total/NA	Water	8260C/UST	
410-61302-9 - DL	OW-20_20211029	Total/NA	Water	8260C/UST	
410-61302-10	MW-36_20211029	Total/NA	Water	8260C/UST	
410-61302-10 - DL	MW-36_20211029	Total/NA	Water	8260C/UST	
410-61302-11	MW-37_20211029	Total/NA	Water	8260C/UST	
410-61302-11 - DL	MW-37_20211029	Total/NA	Water	8260C/UST	
410-61302-12	TW-5_20211029	Total/NA	Water	8260C/UST	
410-61302-12 - DL	TW-5_20211029	Total/NA	Water	8260C/UST	
410-61302-13	OW-19_20211029	Total/NA	Water	8260C/UST	
410-61302-13 - DL	OW-19_20211029	Total/NA	Water	8260C/UST	
410-61302-14	S-472_20211029	Total/NA	Water	8260C/UST	
410-61302-14 - DL	S-472_20211029	Total/NA	Water	8260C/UST	
410-61302-15	N-82_20211029	Total/NA	Water	8260C/UST	
410-61302-15 - DL	N-82_20211029	Total/NA	Water	8260C/UST	
MB 410-192554/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-192554/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-192554/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

Analysis Batch: 193050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-5 - DL	S-463_20211028	Total/NA	Water	8260C/UST	
MB 410-193050/6	Method Blank	Total/NA	Water	8260C/UST	
LCS 410-193050/4	Lab Control Sample	Total/NA	Water	8260C/UST	
LCSD 410-193050/5	Lab Control Sample Dup	Total/NA	Water	8260C/UST	

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Prep Batch: 189870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	3510C	
410-61302-2	S-455_20211028	Total/NA	Water	3510C	
410-61302-2 - DL	S-455_20211028	Total/NA	Water	3510C	
410-61302-3	DUP-1_20211028	Total/NA	Water	3510C	
410-61302-3 - DL	DUP-1_20211028	Total/NA	Water	3510C	
410-61302-4	S-395_20211028	Total/NA	Water	3510C	
410-61302-5	S-463_20211028	Total/NA	Water	3510C	
410-61302-6 - DL	S-452_20211028	Total/NA	Water	3510C	
410-61302-6	S-452_20211028	Total/NA	Water	3510C	
410-61302-7	S-464_20211028	Total/NA	Water	3510C	
410-61302-8	S-457_20211029	Total/NA	Water	3510C	
410-61302-8 - DL	S-457_20211029	Total/NA	Water	3510C	
410-61302-9	OW-20_20211029	Total/NA	Water	3510C	
410-61302-10 - DL	MW-36_20211029	Total/NA	Water	3510C	
410-61302-10	MW-36_20211029	Total/NA	Water	3510C	
410-61302-11	MW-37_20211029	Total/NA	Water	3510C	
410-61302-12	TW-5_20211029	Total/NA	Water	3510C	
410-61302-14 - DL	S-472_20211029	Total/NA	Water	3510C	
410-61302-14	S-472_20211029	Total/NA	Water	3510C	
MB 410-189870/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-189870/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-189870/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 190103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-15	N-82_20211029	Total/NA	Water	3510C	
MB 410-190103/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-190103/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 191028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-15	N-82_20211029	Total/NA	Water	8270D	190103
MB 410-190103/1-A	Method Blank	Total/NA	Water	8270D	190103
LCS 410-190103/2-A	Lab Control Sample	Total/NA	Water	8270D	190103

Analysis Batch: 191892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-15	N-82_20211029	Total/NA	Water	8270D	190103

Analysis Batch: 192240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	8270D	189870
410-61302-2	S-455_20211028	Total/NA	Water	8270D	189870
410-61302-3	DUP-1_20211028	Total/NA	Water	8270D	189870
410-61302-4	S-395_20211028	Total/NA	Water	8270D	189870
410-61302-5	S-463_20211028	Total/NA	Water	8270D	189870
410-61302-6	S-452_20211028	Total/NA	Water	8270D	189870
410-61302-7	S-464_20211028	Total/NA	Water	8270D	189870
410-61302-8	S-457_20211029	Total/NA	Water	8270D	189870
410-61302-10	MW-36_20211029	Total/NA	Water	8270D	189870
410-61302-11	MW-37_20211029	Total/NA	Water	8270D	189870

GC/MS Semi VOA (Continued)

Analysis Batch: 192240 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-189870/1-A	Method Blank	Total/NA	Water	8270D	189870
LCS 410-189870/2-A	Lab Control Sample	Total/NA	Water	8270D	189870
LCSD 410-189870/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	189870

Analysis Batch: 192363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-2 - DL	S-455_20211028	Total/NA	Water	8270D	189870
410-61302-3 - DL	DUP-1_20211028	Total/NA	Water	8270D	189870
410-61302-6 - DL	S-452_20211028	Total/NA	Water	8270D	189870
410-61302-12	TW-5_20211029	Total/NA	Water	8270D	189870
410-61302-14	S-472_20211029	Total/NA	Water	8270D	189870

Analysis Batch: 192768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-8 - DL	S-457_20211029	Total/NA	Water	8270D	189870
410-61302-9	OW-20_20211029	Total/NA	Water	8270D	189870
410-61302-10 - DL	MW-36_20211029	Total/NA	Water	8270D	189870
410-61302-14 - DL	S-472_20211029	Total/NA	Water	8270D	189870

GC VOA

Prep Batch: 189353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	RSK-175	
410-61302-2	S-455_20211028	Total/NA	Water	RSK-175	
410-61302-3	DUP-1_20211028	Total/NA	Water	RSK-175	
410-61302-5	S-463_20211028	Total/NA	Water	RSK-175	
410-61302-6	S-452_20211028	Total/NA	Water	RSK-175	
410-61302-7	S-464_20211028	Total/NA	Water	RSK-175	
410-61302-8	S-457_20211029	Total/NA	Water	RSK-175	
410-61302-9	OW-20_20211029	Total/NA	Water	RSK-175	
410-61302-10	MW-36_20211029	Total/NA	Water	RSK-175	
410-61302-11	MW-37_20211029	Total/NA	Water	RSK-175	
410-61302-12	TW-5_20211029	Total/NA	Water	RSK-175	
410-61302-13	OW-19_20211029	Total/NA	Water	RSK-175	
410-61302-14	S-472_20211029	Total/NA	Water	RSK-175	
410-61302-15	N-82_20211029	Total/NA	Water	RSK-175	
MB 410-189353/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-189353/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-189353/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 189611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	RSK-175	189353
410-61302-2	S-455_20211028	Total/NA	Water	RSK-175	189353
410-61302-3	DUP-1_20211028	Total/NA	Water	RSK-175	189353
410-61302-5	S-463_20211028	Total/NA	Water	RSK-175	189353
410-61302-6	S-452_20211028	Total/NA	Water	RSK-175	189353
410-61302-7	S-464_20211028	Total/NA	Water	RSK-175	189353
410-61302-8	S-457_20211029	Total/NA	Water	RSK-175	189353
410-61302-9	OW-20_20211029	Total/NA	Water	RSK-175	189353

GC VOA (Continued)

Analysis Batch: 189611 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-10	MW-36_20211029	Total/NA	Water	RSK-175	189353
410-61302-11	MW-37_20211029	Total/NA	Water	RSK-175	189353
410-61302-12	TW-5_20211029	Total/NA	Water	RSK-175	189353
410-61302-13	OW-19_20211029	Total/NA	Water	RSK-175	189353
410-61302-14	S-472_20211029	Total/NA	Water	RSK-175	189353
410-61302-15	N-82_20211029	Total/NA	Water	RSK-175	189353
MB 410-189353/1-A	Method Blank	Total/NA	Water	RSK-175	189353
LCS 410-189353/2-A	Lab Control Sample	Total/NA	Water	RSK-175	189353
LCSD 410-189353/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	189353

Analysis Batch: 190075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-2 - DL	S-455_20211028	Total/NA	Water	RSK-175	190237
410-61302-3 - DL	DUP-1_20211028	Total/NA	Water	RSK-175	190237
410-61302-6 - DL	S-452_20211028	Total/NA	Water	RSK-175	190237
410-61302-7 - DL	S-464_20211028	Total/NA	Water	RSK-175	190237
410-61302-8 - DL	S-457_20211029	Total/NA	Water	RSK-175	190237
410-61302-9 - DL	OW-20_20211029	Total/NA	Water	RSK-175	190237
410-61302-10 - DL	MW-36_20211029	Total/NA	Water	RSK-175	190237
410-61302-11 - DL	MW-37_20211029	Total/NA	Water	RSK-175	190237
410-61302-12 - DL	TW-5_20211029	Total/NA	Water	RSK-175	190237
410-61302-13 - DL	OW-19_20211029	Total/NA	Water	RSK-175	190237
410-61302-14 - DL	S-472_20211029	Total/NA	Water	RSK-175	190237
410-61302-15 - DL	N-82_20211029	Total/NA	Water	RSK-175	190237
MB 410-190237/1-A	Method Blank	Total/NA	Water	RSK-175	190237
LCS 410-190237/2-A	Lab Control Sample	Total/NA	Water	RSK-175	190237
LCSD 410-190237/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	190237

Prep Batch: 190237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-2 - DL	S-455_20211028	Total/NA	Water	RSK-175	
410-61302-3 - DL	DUP-1_20211028	Total/NA	Water	RSK-175	
410-61302-6 - DL	S-452_20211028	Total/NA	Water	RSK-175	
410-61302-7 - DL	S-464_20211028	Total/NA	Water	RSK-175	
410-61302-8 - DL	S-457_20211029	Total/NA	Water	RSK-175	
410-61302-9 - DL	OW-20_20211029	Total/NA	Water	RSK-175	
410-61302-10 - DL	MW-36_20211029	Total/NA	Water	RSK-175	
410-61302-11 - DL	MW-37_20211029	Total/NA	Water	RSK-175	
410-61302-12 - DL	TW-5_20211029	Total/NA	Water	RSK-175	
410-61302-13 - DL	OW-19_20211029	Total/NA	Water	RSK-175	
410-61302-14 - DL	S-472_20211029	Total/NA	Water	RSK-175	
410-61302-15 - DL	N-82_20211029	Total/NA	Water	RSK-175	
MB 410-190237/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-190237/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-190237/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Prep Batch: 190240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-4	S-395_20211028	Total/NA	Water	RSK-175	
MB 410-190240/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-190240/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

GC VOA (Continued)

Prep Batch: 190240 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 410-190240/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 190257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-4	S-395_20211028	Total/NA	Water	RSK-175	190240
MB 410-190240/1-A	Method Blank	Total/NA	Water	RSK-175	190240
LCS 410-190240/2-A	Lab Control Sample	Total/NA	Water	RSK-175	190240
LCSD 410-190240/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	190240

GC Semi VOA

Prep Batch: 192843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	8011	
410-61302-2	S-455_20211028	Total/NA	Water	8011	
410-61302-3	DUP-1_20211028	Total/NA	Water	8011	
410-61302-4	S-395_20211028	Total/NA	Water	8011	
410-61302-5	S-463_20211028	Total/NA	Water	8011	
410-61302-6	S-452_20211028	Total/NA	Water	8011	
410-61302-7	S-464_20211028	Total/NA	Water	8011	
410-61302-8	S-457_20211029	Total/NA	Water	8011	
410-61302-9	OW-20_20211029	Total/NA	Water	8011	
410-61302-10	MW-36_20211029	Total/NA	Water	8011	
410-61302-11	MW-37_20211029	Total/NA	Water	8011	
410-61302-12	TW-5_20211029	Total/NA	Water	8011	
410-61302-14	S-472_20211029	Total/NA	Water	8011	
410-61302-15	N-82_20211029	Total/NA	Water	8011	
MB 410-192843/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-192843/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-192843/3-A	Lab Control Sample Dup	Total/NA	Water	8011	
410-61302-9 DU	OW-20_20211029	Total/NA	Water	8011	

Analysis Batch: 193028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	8011	192843
410-61302-2	S-455_20211028	Total/NA	Water	8011	192843
410-61302-3	DUP-1_20211028	Total/NA	Water	8011	192843
410-61302-4	S-395_20211028	Total/NA	Water	8011	192843
410-61302-5	S-463_20211028	Total/NA	Water	8011	192843
410-61302-6	S-452_20211028	Total/NA	Water	8011	192843
410-61302-7	S-464_20211028	Total/NA	Water	8011	192843
410-61302-8	S-457_20211029	Total/NA	Water	8011	192843
410-61302-9	OW-20_20211029	Total/NA	Water	8011	192843
410-61302-10	MW-36_20211029	Total/NA	Water	8011	192843
410-61302-11	MW-37_20211029	Total/NA	Water	8011	192843
410-61302-12	TW-5_20211029	Total/NA	Water	8011	192843
410-61302-14	S-472_20211029	Total/NA	Water	8011	192843
410-61302-15	N-82_20211029	Total/NA	Water	8011	192843
MB 410-192843/1-A	Method Blank	Total/NA	Water	8011	192843
LCS 410-192843/2-A	Lab Control Sample	Total/NA	Water	8011	192843
LCSD 410-192843/3-A	Lab Control Sample Dup	Total/NA	Water	8011	192843

GC Semi VOA (Continued)

Analysis Batch: 193028 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-9 DU	OW-20_20211029	Total/NA	Water	8011	192843

Prep Batch: 193941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-13	OW-19_20211029	Total/NA	Water	8011	
MB 410-193941/1-A	Method Blank	Total/NA	Water	8011	
LCS 410-193941/2-A	Lab Control Sample	Total/NA	Water	8011	
LCSD 410-193941/3-A	Lab Control Sample Dup	Total/NA	Water	8011	

Analysis Batch: 194128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-13	OW-19_20211029	Total/NA	Water	8011	193941
MB 410-193941/1-A	Method Blank	Total/NA	Water	8011	193941
LCS 410-193941/2-A	Lab Control Sample	Total/NA	Water	8011	193941
LCSD 410-193941/3-A	Lab Control Sample Dup	Total/NA	Water	8011	193941

HPLC/IC

Analysis Batch: 554233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	300.0	
410-61302-4	S-395_20211028	Total/NA	Water	300.0	
410-61302-5	S-463_20211028	Total/NA	Water	300.0	
410-61302-7	S-464_20211028	Total/NA	Water	300.0	
410-61302-8	S-457_20211029	Total/NA	Water	300.0	
410-61302-12	TW-5_20211029	Total/NA	Water	300.0	
MB 400-554233/72	Method Blank	Total/NA	Water	300.0	
LCS 400-554233/70	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-554233/71	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 400-554233/73	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 554421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-2	S-455_20211028	Total/NA	Water	300.0	
410-61302-3	DUP-1_20211028	Total/NA	Water	300.0	
410-61302-6	S-452_20211028	Total/NA	Water	300.0	
410-61302-10	MW-36_20211029	Total/NA	Water	300.0	
410-61302-11	MW-37_20211029	Total/NA	Water	300.0	
410-61302-14	S-472_20211029	Total/NA	Water	300.0	
410-61302-15	N-82_20211029	Total/NA	Water	300.0	
MB 400-554421/6	Method Blank	Total/NA	Water	300.0	
LCS 400-554421/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-554421/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 400-554421/7	Lab Control Sample	Total/NA	Water	300.0	
410-61302-2 MS	S-455_20211028	Total/NA	Water	300.0	
410-61302-2 MSD	S-455_20211028	Total/NA	Water	300.0	

Analysis Batch: 555020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-9	OW-20_20211029	Total/NA	Water	300.0	
MB 400-555020/46	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 555020 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-555020/7	Method Blank	Total/NA	Water	300.0	
LCS 400-555020/44	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-555020/45	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 400-555020/47	Lab Control Sample	Total/NA	Water	300.0	
MRL 400-555020/8	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 190958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-4	S-395_20211028	Total Recoverable	Water	3005A	
410-61302-6	S-452_20211028	Total Recoverable	Water	3005A	
410-61302-8	S-457_20211029	Total Recoverable	Water	3005A	
410-61302-11	MW-37_20211029	Total Recoverable	Water	3005A	
410-61302-12	TW-5_20211029	Total Recoverable	Water	3005A	
410-61302-14	S-472_20211029	Total Recoverable	Water	3005A	
410-61302-15	N-82_20211029	Total Recoverable	Water	3005A	
MB 410-190958/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190958/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 190987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-8	S-457_20211029	Dissolved	Water	Non-Digest Prep	
410-61302-11	MW-37_20211029	Dissolved	Water	Non-Digest Prep	
410-61302-12	TW-5_20211029	Dissolved	Water	Non-Digest Prep	
410-61302-14	S-472_20211029	Dissolved	Water	Non-Digest Prep	
410-61302-15	N-82_20211029	Dissolved	Water	Non-Digest Prep	
MB 410-190987/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-190987/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-61302-12 MS	TW-5_20211029	Dissolved	Water	Non-Digest Prep	
410-61302-12 MSD	TW-5_20211029	Dissolved	Water	Non-Digest Prep	
410-61302-12 DU	TW-5_20211029	Dissolved	Water	Non-Digest Prep	

Analysis Batch: 191445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-8	S-457_20211029	Dissolved	Water	6020A	190987
410-61302-11	MW-37_20211029	Dissolved	Water	6020A	190987
410-61302-12	TW-5_20211029	Dissolved	Water	6020A	190987
410-61302-14	S-472_20211029	Dissolved	Water	6020A	190987
410-61302-15	N-82_20211029	Dissolved	Water	6020A	190987
MB 410-190987/1-A	Method Blank	Total/NA	Water	6020A	190987
LCS 410-190987/2-A	Lab Control Sample	Total/NA	Water	6020A	190987
410-61302-12 MS	TW-5_20211029	Dissolved	Water	6020A	190987
410-61302-12 MSD	TW-5_20211029	Dissolved	Water	6020A	190987
410-61302-12 DU	TW-5_20211029	Dissolved	Water	6020A	190987

Prep Batch: 191621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total Recoverable	Water	3005A	
410-61302-2	S-455_20211028	Total Recoverable	Water	3005A	
410-61302-3	DUP-1_20211028	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 191621 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-5	S-463_20211028	Total Recoverable	Water	3005A	
410-61302-7	S-464_20211028	Total Recoverable	Water	3005A	
410-61302-9	OW-20_20211029	Total Recoverable	Water	3005A	
410-61302-10	MW-36_20211029	Total Recoverable	Water	3005A	
MB 410-191621/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-191621/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 191651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-4	S-395_20211028	Total Recoverable	Water	6010C	190958
410-61302-6	S-452_20211028	Total Recoverable	Water	6010C	190958
410-61302-8	S-457_20211029	Total Recoverable	Water	6010C	190958
410-61302-11	MW-37_20211029	Total Recoverable	Water	6010C	190958
410-61302-12	TW-5_20211029	Total Recoverable	Water	6010C	190958
410-61302-14	S-472_20211029	Total Recoverable	Water	6010C	190958
410-61302-15	N-82_20211029	Total Recoverable	Water	6010C	190958
MB 410-190958/1-A	Method Blank	Total Recoverable	Water	6010C	190958
LCS 410-190958/2-A	Lab Control Sample	Total Recoverable	Water	6010C	190958

Prep Batch: 191738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-2	S-455_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-3	DUP-1_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-4	S-395_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-5	S-463_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-6	S-452_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-7	S-464_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-9	OW-20_20211029	Dissolved	Water	Non-Digest Prep	
410-61302-10	MW-36_20211029	Dissolved	Water	Non-Digest Prep	
MB 410-191738/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-191738/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
410-61302-3 MS	DUP-1_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-3 MSD	DUP-1_20211028	Dissolved	Water	Non-Digest Prep	
410-61302-3 DU	DUP-1_20211028	Dissolved	Water	Non-Digest Prep	

Analysis Batch: 192277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Dissolved	Water	6020A	191738
410-61302-2	S-455_20211028	Dissolved	Water	6020A	191738
410-61302-3	DUP-1_20211028	Dissolved	Water	6020A	191738
410-61302-4	S-395_20211028	Dissolved	Water	6020A	191738
410-61302-5	S-463_20211028	Dissolved	Water	6020A	191738
410-61302-6	S-452_20211028	Dissolved	Water	6020A	191738
410-61302-7	S-464_20211028	Dissolved	Water	6020A	191738
410-61302-9	OW-20_20211029	Dissolved	Water	6020A	191738
410-61302-10	MW-36_20211029	Dissolved	Water	6020A	191738
MB 410-191738/1-A	Method Blank	Total/NA	Water	6020A	191738
LCS 410-191738/2-A	Lab Control Sample	Total/NA	Water	6020A	191738
410-61302-3 MS	DUP-1_20211028	Dissolved	Water	6020A	191738
410-61302-3 MSD	DUP-1_20211028	Dissolved	Water	6020A	191738

Metals (Continued)

Analysis Batch: 192277 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-3 DU	DUP-1_20211028	Dissolved	Water	6020A	191738

Analysis Batch: 193355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total Recoverable	Water	6010C	191621
410-61302-2	S-455_20211028	Total Recoverable	Water	6010C	191621
410-61302-3	DUP-1_20211028	Total Recoverable	Water	6010C	191621
410-61302-5	S-463_20211028	Total Recoverable	Water	6010C	191621
410-61302-7	S-464_20211028	Total Recoverable	Water	6010C	191621
410-61302-9	OW-20_20211029	Total Recoverable	Water	6010C	191621
410-61302-10	MW-36_20211029	Total Recoverable	Water	6010C	191621
MB 410-191621/1-A	Method Blank	Total Recoverable	Water	6010C	191621
LCS 410-191621/2-A	Lab Control Sample	Total Recoverable	Water	6010C	191621

Analysis Batch: 193673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-9	OW-20_20211029	Total Recoverable	Water	6010C	191621

General Chemistry

Analysis Batch: 190994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	5310C-2011	
410-61302-2	S-455_20211028	Total/NA	Water	5310C-2011	
410-61302-3	DUP-1_20211028	Total/NA	Water	5310C-2011	
410-61302-4	S-395_20211028	Total/NA	Water	5310C-2011	
410-61302-5	S-463_20211028	Total/NA	Water	5310C-2011	
410-61302-6	S-452_20211028	Total/NA	Water	5310C-2011	
410-61302-7	S-464_20211028	Total/NA	Water	5310C-2011	
410-61302-8	S-457_20211029	Total/NA	Water	5310C-2011	
410-61302-9	OW-20_20211029	Total/NA	Water	5310C-2011	
410-61302-11	MW-37_20211029	Total/NA	Water	5310C-2011	
410-61302-12	TW-5_20211029	Total/NA	Water	5310C-2011	
410-61302-14	S-472_20211029	Total/NA	Water	5310C-2011	
410-61302-15	N-82_20211029	Total/NA	Water	5310C-2011	
MB 410-190994/35	Method Blank	Total/NA	Water	5310C-2011	
MB 410-190994/67	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-190994/34	Lab Control Sample	Total/NA	Water	5310C-2011	
LCS 410-190994/66	Lab Control Sample	Total/NA	Water	5310C-2011	
410-61302-5 MS	S-463_20211028	Total/NA	Water	5310C-2011	
410-61302-5 DU	S-463_20211028	Total/NA	Water	5310C-2011	

Analysis Batch: 191374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	2320B-2011	
410-61302-2	S-455_20211028	Total/NA	Water	2320B-2011	
410-61302-3	DUP-1_20211028	Total/NA	Water	2320B-2011	
410-61302-4	S-395_20211028	Total/NA	Water	2320B-2011	
410-61302-5	S-463_20211028	Total/NA	Water	2320B-2011	
410-61302-6	S-452_20211028	Total/NA	Water	2320B-2011	
410-61302-7	S-464_20211028	Total/NA	Water	2320B-2011	

General Chemistry (Continued)

Analysis Batch: 191374 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-8	S-457_20211029	Total/NA	Water	2320B-2011	
410-61302-11	MW-37_20211029	Total/NA	Water	2320B-2011	
410-61302-12	TW-5_20211029	Total/NA	Water	2320B-2011	
410-61302-14	S-472_20211029	Total/NA	Water	2320B-2011	
410-61302-15	N-82_20211029	Total/NA	Water	2320B-2011	
MB 410-191374/102	Method Blank	Total/NA	Water	2320B-2011	
MB 410-191374/71	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-191374/103	Lab Control Sample	Total/NA	Water	2320B-2011	
LCS 410-191374/74	Lab Control Sample	Total/NA	Water	2320B-2011	

Analysis Batch: 191617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	5310 B-2011	
410-61302-2	S-455_20211028	Total/NA	Water	5310 B-2011	
410-61302-3	DUP-1_20211028	Total/NA	Water	5310 B-2011	
410-61302-4	S-395_20211028	Total/NA	Water	5310 B-2011	
410-61302-5	S-463_20211028	Total/NA	Water	5310 B-2011	
410-61302-6	S-452_20211028	Total/NA	Water	5310 B-2011	
410-61302-7	S-464_20211028	Total/NA	Water	5310 B-2011	
410-61302-8	S-457_20211029	Total/NA	Water	5310 B-2011	
410-61302-9	OW-20_20211029	Total/NA	Water	5310 B-2011	
410-61302-11	MW-37_20211029	Total/NA	Water	5310 B-2011	
410-61302-14	S-472_20211029	Total/NA	Water	5310 B-2011	
410-61302-15	N-82_20211029	Total/NA	Water	5310 B-2011	
MB 410-191617/35	Method Blank	Total/NA	Water	5310 B-2011	
MB 410-191617/5	Method Blank	Total/NA	Water	5310 B-2011	
LCS 410-191617/34	Lab Control Sample	Total/NA	Water	5310 B-2011	
LCS 410-191617/4	Lab Control Sample	Total/NA	Water	5310 B-2011	
410-61302-2 MS	S-455_20211028	Total/NA	Water	5310 B-2011	
410-61302-2 DU	S-455_20211028	Total/NA	Water	5310 B-2011	

Analysis Batch: 191656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-10	MW-36_20211029	Total/NA	Water	5310C-2011	
MB 410-191656/35	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-191656/34	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 191659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-10	MW-36_20211029	Total/NA	Water	5310 B-2011	
410-61302-12	TW-5_20211029	Total/NA	Water	5310 B-2011	
410-61302-12 MS	TW-5_20211029	Total/NA	Water	5310 B-2011	
410-61302-12 DU	TW-5_20211029	Total/NA	Water	5310 B-2011	

Analysis Batch: 192078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-9	OW-20_20211029	Total/NA	Water	2320B-2011	
410-61302-10	MW-36_20211029	Total/NA	Water	2320B-2011	
MB 410-192078/79	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-192078/80	Lab Control Sample	Total/NA	Water	2320B-2011	

General Chemistry

Analysis Batch: 193654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	SM5310C	
410-61302-2	S-455_20211028	Total/NA	Water	SM5310C	
410-61302-3	DUP-1_20211028	Total/NA	Water	SM5310C	
410-61302-4	S-395_20211028	Total/NA	Water	SM5310C	
410-61302-5	S-463_20211028	Total/NA	Water	SM5310C	
410-61302-6	S-452_20211028	Total/NA	Water	SM5310C	
410-61302-7	S-464_20211028	Total/NA	Water	SM5310C	
410-61302-8	S-457_20211029	Total/NA	Water	SM5310C	
410-61302-9	OW-20_20211029	Total/NA	Water	SM5310C	
410-61302-10	MW-36_20211029	Total/NA	Water	SM5310C	
410-61302-11	MW-37_20211029	Total/NA	Water	SM5310C	
410-61302-12	TW-5_20211029	Total/NA	Water	SM5310C	
410-61302-14	S-472_20211029	Total/NA	Water	SM5310C	
410-61302-15	N-82_20211029	Total/NA	Water	SM5310C	

Prep Batch: 196484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-7	S-464_20211028	Total/NA	Water	351.2	
410-61302-8	S-457_20211029	Total/NA	Water	351.2	
MB 410-196484/2-A	Method Blank	Total/NA	Water	351.2	
LCS 410-196484/1-A	Lab Control Sample	Total/NA	Water	351.2	

Analysis Batch: 196825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-196484/2-A	Method Blank	Total/NA	Water	351.2	196484
LCS 410-196484/1-A	Lab Control Sample	Total/NA	Water	351.2	196484
LCS 410-196484/1-A	Lab Control Sample	Total/NA	Water	351.2	196484

Prep Batch: 196935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	351.2	
410-61302-2	S-455_20211028	Total/NA	Water	351.2	
410-61302-3	DUP-1_20211028	Total/NA	Water	351.2	
410-61302-4	S-395_20211028	Total/NA	Water	351.2	
410-61302-5	S-463_20211028	Total/NA	Water	351.2	
410-61302-6	S-452_20211028	Total/NA	Water	351.2	
410-61302-9	OW-20_20211029	Total/NA	Water	351.2	
410-61302-10	MW-36_20211029	Total/NA	Water	351.2	
410-61302-11	MW-37_20211029	Total/NA	Water	351.2	
410-61302-12	TW-5_20211029	Total/NA	Water	351.2	
410-61302-14	S-472_20211029	Total/NA	Water	351.2	
410-61302-15	N-82_20211029	Total/NA	Water	351.2	
MB 410-196935/2-A	Method Blank	Total/NA	Water	351.2	
LCS 410-196935/1-A	Lab Control Sample	Total/NA	Water	351.2	
410-61302-2 MS	S-455_20211028	Total/NA	Water	351.2	
410-61302-14 MS	S-472_20211029	Total/NA	Water	351.2	
410-61302-2 DU	S-455_20211028	Total/NA	Water	351.2	
410-61302-14 DU	S-472_20211029	Total/NA	Water	351.2	

Client: Stantec Consulting Corp.
Job ID: 410-61302-1
Project/Site: Belmont Terminal GW Sampling

General Chemistry

Analysis Batch: 197719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-7	S-464_20211028	Total/NA	Water	351.2	196484
410-61302-8	S-457_20211029	Total/NA	Water	351.2	196484

Analysis Batch: 197777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-1	S-465_20211028	Total/NA	Water	351.2	196935
410-61302-2	S-455_20211028	Total/NA	Water	351.2	196935
410-61302-3	DUP-1_20211028	Total/NA	Water	351.2	196935
410-61302-4	S-395_20211028	Total/NA	Water	351.2	196935
410-61302-5	S-463_20211028	Total/NA	Water	351.2	196935
410-61302-6	S-452_20211028	Total/NA	Water	351.2	196935
410-61302-9	OW-20_20211029	Total/NA	Water	351.2	196935
410-61302-11	MW-37_20211029	Total/NA	Water	351.2	196935
410-61302-12	TW-5_20211029	Total/NA	Water	351.2	196935
410-61302-14	S-472_20211029	Total/NA	Water	351.2	196935
410-61302-15	N-82_20211029	Total/NA	Water	351.2	196935
MB 410-196935/2-A	Method Blank	Total/NA	Water	351.2	196935
LCS 410-196935/1-A	Lab Control Sample	Total/NA	Water	351.2	196935
410-61302-2 MS	S-455_20211028	Total/NA	Water	351.2	196935
410-61302-14 MS	S-472_20211029	Total/NA	Water	351.2	196935
410-61302-2 DU	S-455_20211028	Total/NA	Water	351.2	196935
410-61302-14 DU	S-472_20211029	Total/NA	Water	351.2	196935

Analysis Batch: 198119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61302-10	MW-36_20211029	Total/NA	Water	351.2	196935

Client Sample ID: S-465_20211028

Lab Sample ID: 410-61302-1

Date Collected: 10/28/21 10:25

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		50	191977	11/08/21 19:06	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	500	191977	11/08/21 19:31	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 00:57	DZ6A	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 14:08	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 19:39	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/03/21 08:07	KIS	TAL PEN
Total Recoverable	Prep	3005A			191621	11/06/21 10:09	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193355	11/10/21 20:37	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 19:14	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 03:47	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 17:00	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 20:35	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 11:06	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-455_20211028

Lab Sample ID: 410-61302-2

Date Collected: 10/28/21 12:05

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		10	191977	11/08/21 19:57	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	100	191977	11/08/21 20:23	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 01:27	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D	DL	100	192363	11/09/21 17:51	P7EB	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 14:24	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	200	190075	11/03/21 14:49	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 19:56	MB4Z	ELLE
Total/NA	Analysis	300.0		1	554421	11/04/21 07:51	KIS	TAL PEN
Total Recoverable	Prep	3005A			191621	11/06/21 10:09	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193355	11/10/21 20:14	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 19:10	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 05:38	DI9Q	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-61302-1
Project/Site: Belmont Terminal GW Sampling

Client Sample ID: S-455_20211028
Lab Sample ID: 410-61302-2
Date Collected: 10/28/21 12:05
Matrix: Water
Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 16:23	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	191617	11/05/21 20:46	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 11:23	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: DUP-1_20211028
Lab Sample ID: 410-61302-3
Date Collected: 10/28/21 12:10
Matrix: Water
Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		10	191977	11/08/21 20:49	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	100	191977	11/08/21 21:15	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 01:57	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D	DL	100	192363	11/09/21 18:21	P7EB	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 14:39	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	200	190075	11/03/21 15:07	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 20:13	MB4Z	ELLE
Total/NA	Analysis	300.0		1	554421	11/04/21 09:08	KIS	TAL PEN
Total Recoverable	Prep	3005A			191621	11/06/21 10:09	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193355	11/10/21 20:27	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 18:21	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 05:19	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 16:37	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 21:19	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 11:40	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-395_20211028
Lab Sample ID: 410-61302-4
Date Collected: 10/28/21 11:20
Matrix: Water
Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	191977	11/08/21 16:30	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 02:27	DZ6A	ELLE

Client Sample ID: S-395_20211028

Lab Sample ID: 410-61302-4

Date Collected: 10/28/21 11:20

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	RSK-175			190240	11/03/21 10:38	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	190257	11/03/21 13:16	SE2A	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 21:19	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/03/21 09:22	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 13:56	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 19:04	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 05:06	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 16:39	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 21:30	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 11:55	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-463_20211028

Lab Sample ID: 410-61302-5

Date Collected: 10/28/21 13:20

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	191977	11/08/21 21:40	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	50	193050	11/10/21 15:07	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 02:56	DZ6A	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 15:09	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 21:36	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/03/21 09:47	KIS	TAL PEN
Total Recoverable	Prep	3005A			191621	11/06/21 10:09	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193355	11/10/21 20:48	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 19:12	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 05:50	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 16:41	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 21:41	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 12:45	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-452_20211028

Lab Sample ID: 410-61302-6

Date Collected: 10/28/21 13:40

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		10	191977	11/08/21 22:31	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	100	191977	11/08/21 22:58	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 03:26	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D	DL	100	192363	11/09/21 18:51	P7EB	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 15:30	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	200	190075	11/03/21 15:26	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 21:53	MB4Z	ELLE
Total/NA	Analysis	300.0		1	554421	11/04/21 09:33	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 13:59	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 19:16	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 05:12	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 16:44	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	191617	11/05/21 22:14	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 13:35	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-464_20211028

Lab Sample ID: 410-61302-7

Date Collected: 10/28/21 14:50

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5000	191977	11/08/21 23:24	MXX6	ELLE
Total/NA	Analysis	8260C/UST		20	192554	11/09/21 15:07	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 03:56	DZ6A	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 15:46	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	20	190075	11/03/21 15:44	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 22:09	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/03/21 10:36	KIS	TAL PEN
Total Recoverable	Prep	3005A			191621	11/06/21 10:09	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193355	11/10/21 20:34	UCIG	ELLE

Client Sample ID: S-464_20211028

Lab Sample ID: 410-61302-7

Date Collected: 10/28/21 14:50

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 19:08	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 03:53	DI9Q	ELLE
Total/NA	Prep	351.2			196484	11/18/21 12:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	197719	11/22/21 11:33	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 22:25	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 14:24	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: S-457_20211029

Lab Sample ID: 410-61302-8

Date Collected: 10/29/21 09:15

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		50	192554	11/09/21 15:33	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	500	192554	11/09/21 15:59	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 04:25	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D	DL	100	192768	11/10/21 01:14	DZ6A	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 16:20	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	100	190075	11/03/21 16:02	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 22:26	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/03/21 11:26	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 13:53	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:08	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 04:06	DI9Q	ELLE
Total/NA	Prep	351.2			196484	11/18/21 12:15	UJE2	ELLE
Total/NA	Analysis	351.2		1	197719	11/22/21 11:35	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	191617	11/05/21 22:36	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 14:41	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: OW-20_20211029

Lab Sample ID: 410-61302-9

Date Collected: 10/29/21 09:30

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		50	192554	11/09/21 16:24	MXX6	ELLE

Client Sample ID: OW-20_20211029

Lab Sample ID: 410-61302-9

Date Collected: 10/29/21 09:30

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST	DL	500	192554	11/09/21 16:50	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		10	192768	11/10/21 01:44	DZ6A	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 16:37	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	50	190075	11/03/21 16:20	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 22:43	MB4Z	ELLE
Total/NA	Analysis	300.0		5	555020	11/09/21 12:24	KIS	TAL PEN
Total Recoverable	Prep	3005A			191621	11/06/21 10:09	UJLA	ELLE
Total Recoverable	Analysis	6010C		10	193673	11/11/21 09:56	WJM9	ELLE
Total Recoverable	Prep	3005A			191621	11/06/21 10:09	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193355	11/10/21 20:44	UCIG	ELLE
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 19:18	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	192078	11/06/21 07:15	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		10	197777	11/22/21 16:58	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		25	191617	11/05/21 22:47	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		25	190994	11/04/21 14:57	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: MW-36_20211029

Lab Sample ID: 410-61302-10

Date Collected: 10/29/21 10:20

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		500	192554	11/09/21 17:16	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	5000	192554	11/09/21 17:41	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 05:25	DZ6A	ELLE
Total/NA	Prep	3510C	DL		189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D	DL	10	192768	11/10/21 02:14	DZ6A	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 16:54	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	50	190075	11/03/21 16:39	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 22:59	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554421	11/04/21 15:02	KIS	TAL PEN
Total Recoverable	Prep	3005A			191621	11/06/21 10:09	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	193355	11/10/21 20:31	UCIG	ELLE

Client Sample ID: MW-36_20211029

Lab Sample ID: 410-61302-10

Date Collected: 10/29/21 10:20

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	Non-Digest Prep			191738	11/07/21 10:01	UJLA	ELLE
Dissolved	Analysis	6020A		1	192277	11/08/21 19:06	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	192078	11/06/21 07:24	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		5	198119	11/23/21 11:07	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	191659	11/06/21 11:30	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		10	191656	11/06/21 01:11	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: MW-37_20211029

Lab Sample ID: 410-61302-11

Date Collected: 10/29/21 10:40

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		100	192554	11/09/21 18:07	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	1000	192554	11/09/21 18:33	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192240	11/09/21 05:55	DZ6A	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 17:10	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	20	190075	11/03/21 17:16	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 23:16	MB4Z	ELLE
Total/NA	Analysis	300.0		1	554421	11/04/21 16:18	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:03	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:06	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 03:31	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 16:50	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		5	191617	11/05/21 23:09	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		5	190994	11/04/21 15:29	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: TW-5_20211029

Lab Sample ID: 410-61302-12

Date Collected: 10/29/21 12:00

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		500	192554	11/09/21 18:58	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	5000	192554	11/09/21 19:24	MXX6	ELLE

Client Sample ID: TW-5_20211029

Lab Sample ID: 410-61302-12

Date Collected: 10/29/21 12:00

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192363	11/09/21 16:51	P7EB	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 17:27	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	20	190075	11/03/21 17:34	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 23:33	MB4Z	ELLE
Total/NA	Analysis	300.0		5	554233	11/03/21 17:15	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 13:41	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 13:46	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 03:24	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		5	197777	11/22/21 16:56	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		25	191659	11/06/21 11:41	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		5	190994	11/04/21 15:46	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: OW-19_20211029

Lab Sample ID: 410-61302-13

Date Collected: 10/29/21 11:45

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		50	192554	11/09/21 19:50	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	500	192554	11/09/21 20:16	MXX6	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 17:44	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	50	190075	11/03/21 17:52	LXF2	ELLE
Total/NA	Prep	8011			193941	11/12/21 10:35	UKQ8	ELLE
Total/NA	Analysis	8011		1	194128	11/13/21 00:56	MB4Z	ELLE

Client Sample ID: S-472_20211029

Lab Sample ID: 410-61302-14

Date Collected: 10/29/21 13:40

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		5	192554	11/09/21 20:43	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	50	192554	11/09/21 21:09	MXX6	ELLE
Total/NA	Prep	3510C			189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D		1	192363	11/09/21 17:21	P7EB	ELLE

Client Sample ID: S-472_20211029

Lab Sample ID: 410-61302-14

Date Collected: 10/29/21 13:40

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C	DL		189870	11/02/21 15:01	QQ3P	ELLE
Total/NA	Analysis	8270D	DL	100	192768	11/10/21 02:43	DZ6A	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 18:01	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	200	190075	11/03/21 18:10	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/10/21 23:49	MB4Z	ELLE
Total/NA	Analysis	300.0		2	554421	11/04/21 16:44	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 13:50	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:02	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 05:31	DI9Q	ELLE
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 16:16	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	191617	11/06/21 00:38	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 16:02	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: N-82_20211029

Lab Sample ID: 410-61302-15

Date Collected: 10/29/21 14:00

Matrix: Water

Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		50	192554	11/09/21 21:34	MXX6	ELLE
Total/NA	Analysis	8260C/UST	DL	500	192554	11/09/21 22:00	MXX6	ELLE
Total/NA	Prep	3510C			190103	11/03/21 09:11	YDF5	ELLE
Total/NA	Analysis	8270D		1	191028	11/05/21 00:54	W6XI	ELLE
Total/NA	Prep	3510C			190103	11/03/21 09:11	YDF5	ELLE
Total/NA	Analysis	8270D		100	191892	11/08/21 15:07	W6XI	ELLE
Total/NA	Prep	RSK-175			189353	11/02/21 10:50	SE2A	ELLE
Total/NA	Analysis	RSK-175		1	189611	11/02/21 18:18	LXF2	ELLE
Total/NA	Prep	RSK-175	DL		190237	11/03/21 10:29	SE2A	ELLE
Total/NA	Analysis	RSK-175	DL	50	190075	11/03/21 18:29	LXF2	ELLE
Total/NA	Prep	8011			192843	11/10/21 02:39	UKQ8	ELLE
Total/NA	Analysis	8011		1	193028	11/11/21 00:06	MB4Z	ELLE
Total/NA	Analysis	300.0		1	554421	11/04/21 17:09	KIS	TAL PEN
Total Recoverable	Prep	3005A			190958	11/04/21 16:00	UAMX	ELLE
Total Recoverable	Analysis	6010C		1	191651	11/06/21 14:06	UPJE	ELLE
Dissolved	Prep	Non-Digest Prep			190987	11/04/21 16:55	UJLA	ELLE
Dissolved	Analysis	6020A		1	191445	11/05/21 14:04	S8DY	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 04:00	DI9Q	ELLE

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-61302-1
Project/Site: Belmont Terminal GW Sampling

Client Sample ID: N-82_20211029
Lab Sample ID: 410-61302-15

Date Collected: 10/29/21 14:00
Matrix: Water
Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			196935	11/19/21 13:48	F8AU	ELLE
Total/NA	Analysis	351.2		1	197777	11/22/21 17:02	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		10	191617	11/06/21 00:49	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	190994	11/04/21 16:19	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	193654	11/11/21 11:28	KGQ6	ELLE

Client Sample ID: Trip Blank
Lab Sample ID: 410-61302-16

Date Collected: 10/21/21 00:00
Matrix: Water
Date Received: 10/29/21 18:42

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C/UST		1	190200	11/03/21 13:48	MXX6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-61302-1
Project/Site: Belmont Terminal GW Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310 B-2011		Water	Total Carbon
SM5310C		Water	Total Inorganic Carbon

Laboratory: Eurofins TestAmerica, Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-22
ANAB	ISO/IEC 17025	L2471	02-23-23
Arizona	State	AZ0710	01-12-22
Arkansas DEQ	State	88-0689	09-01-22
California	State	2510	06-30-22
Florida	NELAP	E81010	06-30-22
Georgia	State	E81010(FL)	06-30-22
Illinois	NELAP	200041	10-09-22
Iowa	State	367	08-01-22
Kansas	NELAP	E-10253	11-30-21
Kentucky (UST)	State	53	06-30-22
Kentucky (WW)	State	KY98030	12-31-21
Louisiana	NELAP	30976	06-30-22
Louisiana (DW)	State	LA017	12-31-21
Maryland	State	233	09-30-22
Massachusetts	State	M-FL094	06-30-22
Michigan	State	9912	06-30-22
New Jersey	NELAP	FL006	06-30-22
North Carolina (WW/SW)	State	314	12-31-21
Oklahoma	State	9810	08-31-22
Pennsylvania	NELAP	68-00467	01-31-22
Rhode Island	State	LAO00307	12-30-21
South Carolina	State	96026	06-30-22
Tennessee	State	TN02907	06-30-22
Texas	NELAP	T104704286	09-30-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-22
Washington	State	C915	05-15-22
West Virginia DEP	State	136	12-31-21

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Method	Method Description	Protocol	Laboratory
8260C/UST	Volatile Organic Compounds (GC/MS)	SW846	ELLE
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
RSK-175	Dissolved Gases (GC)	RSK	ELLE
8011	EDB, DBCP, and 1,2,3-TCP (GC)	SW846	ELLE
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
5310 B-2011	Carbon, Total and Total Inorganic	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
SM5310C	Carbon, Total Inorganic	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
8011	Microextraction	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE
RSK-175	Dissolved Gases Prep	RSK	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique , RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61302-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-61302-1	S-465_20211028	Water	10/28/21 10:25	10/29/21 18:42
410-61302-2	S-455_20211028	Water	10/28/21 12:05	10/29/21 18:42
410-61302-3	DUP-1_20211028	Water	10/28/21 12:10	10/29/21 18:42
410-61302-4	S-395_20211028	Water	10/28/21 11:20	10/29/21 18:42
410-61302-5	S-463_20211028	Water	10/28/21 13:20	10/29/21 18:42
410-61302-6	S-452_20211028	Water	10/28/21 13:40	10/29/21 18:42
410-61302-7	S-464_20211028	Water	10/28/21 14:50	10/29/21 18:42
410-61302-8	S-457_20211029	Water	10/29/21 09:15	10/29/21 18:42
410-61302-9	OW-20_20211029	Water	10/29/21 09:30	10/29/21 18:42
410-61302-10	MW-36_20211029	Water	10/29/21 10:20	10/29/21 18:42
410-61302-11	MW-37_20211029	Water	10/29/21 10:40	10/29/21 18:42
410-61302-12	TW-5_20211029	Water	10/29/21 12:00	10/29/21 18:42
410-61302-13	OW-19_20211029	Water	10/29/21 11:45	10/29/21 18:42
410-61302-14	S-472_20211029	Water	10/29/21 13:40	10/29/21 18:42
410-61302-15	N-82_20211029	Water	10/29/21 14:00	10/29/21 18:42
410-61302-16	Trip Blank	Water	10/21/21 00:00	10/29/21 18:42

410-61302 Chain of Custody

v, LLC

Chain of Custody Record

eurofins Environmental Testing America

Sampler: ANDREA HILL, JIM CRAFT, DANE HOPKINS, JOHN GARCYCA	Lab PM: Carter, Amek A	Carrier Tracking No(s):	COC No: 410-36664-11480.4
Client Contact: Ms. ~~Jennifer Menges~~ Jenny Kachel	Phone: 484 757 7890	E-Mail: Loran.Carter@eurofinset.com	State of Origin: PA
Company: Stantec Consulting ~~Corp.~~ Evergreen c/o services Inc	PWSID:		Page: ~~Page 4 of 4~~ 1 of 2
Address: 1060 Andrew Drive Suite 140	Due Date Requested:		Job #:
City: West Chester	TAT Requested (days): STANDARD		
State, Zip: PA, 19380	Compliance Project: ☑ Yes Δ No		
Phone: 610-840-2561(Tel)	PO #: 213402797		
Email: ~~jennifer.menges@stantec.com~~ Jenny.Kachel	~~WO#~~ ACCT #: 16657		
Project Name: Belmont Terminal GW Sampling	Project #: 41004761		
Site: Former Philadelphia Refinery	SSOW#:		

Refer to 10/20/21 email to Amek Carter for requested analytes

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

* Report Evergreen Petroleum short list analytes plus TBA

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	VOCs 8260 *	SVOCs 8270 *	EDB 8011	Dissolved lead (field filtered)	Dissolved headspace gases (methane, ethane, ethene)	Total carbon, total organic carbon, total inorganic carbon	Alkalinity as CaCO3	Total Kjeldahl Nitrogen	Total iron, total calcium, sulfate	Special Instructions/Note:
S-465_20211028	10/28/21	1025	G	W	X	X	X	X	X	X	X	X	X	
S-455_20211028	10/28/21	1205	G	W	X	X	X	X	X	X	X	X	X	
DUP-1_20211028	10/28/21	1210	G	W	X	X	X	X	X	X	X	X	X	
S-395_20211028	10/28/21	1120	G	W	X	X	X	X	X	X	X	X	X	
S-463_20211028	10/28/21	1320	G	W	X	X	X	X	X	X	X	X	X	
S-452-20211028	10/28/21	1340	G	W	X	X	X	X	X	X	X	X	X	
S-464_20211028	10/28/21	1450	G	W	X	X	X	X	X	X	X	X	X	
S-457_20211029	10/29/21	0915	G	W	X	X	X	X	X	X	X	X	X	
OW-20_20211029	10/29/21	0930	G	W	X	X	X	X	X	X	X	X	X	
MW-36_20211029	10/29/21	1020	G	W	X	X	X	X	X	X	X	X	X	
MW-37_20211029	10/29/21	1040	G	W	X	X	X	X	X	X	X	X	X	

Possible Hazard Identification

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) EQUIS EDD

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10/29/21 1545	Stantec	[signature]	10/29/21 1546	
[signature]	10/29/21 1825				
			[signature]	10/29/21 18:42	ELL

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.3, 5.1, 4.2, 5.2

Ver: 06/08/2021

11/23/2021

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only

Acct. # _____ Group # _____ Sample # _____

Page 2 of 2

COC # 615420

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: Belmont Terminal GW Sampling	PWSID #:
Project Manager: Jenny Kachel	P.O. #: 213402797
Sampler: ANDREA HILL, DANE HOPKINS	Quote #:
State where samples were collected: PA	For Compliance: Yes ☒ No ☐

Matrix: ☐ Tissue ☐ Sediment ☐ Soil ☒ Ground ☐ Surface ☐ Potable ☐ NPDES ☐ Water ☐ Other: QAQC

Analysis Requested — Preservation and Filtration Codes

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Remarks
* Evergreen Petroleum Short List analytes plus TBA

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	VOCs 8260 *	SVOCs 8270 *	EDB 8011	Dissolved Lead (field filtered)	Dissolved gases (methane, ethane, ethene)	Total carbon, Total inorganic carbon, carbon	Alkalinity as $CaCO_3$	Total Kjeldahl Nitrogen	Total iron, total calcium, sulfate		
TW-5-20211029	10/29/21	1200	X			X		17	X	X	X	X	X	X	X	X	X		
GW-19-20211029	10/29/21	1145	X			X		7	X	[illegible]			X						
S-472-20211029	10/29/21	1340	X			X		17	X	X	X	X	X	X	X	X	X		
N-82-20211029	10/29/21	1400	X			X		17	X	X	X	X	X	X	X	X	X		
TRIP BLANK	10/21/21	—	X				X	4	X										

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: Jenny.Kachel@Stantec.com

Relinquished by	Date	Time	Received by	Date	Time
[signature]	10/29/21	1545	[signature]	10/29/21	1546
[signature]	10/29/21	1825			
			[signature]	10/29/21	16:42

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

EDD Required? Yes No
If yes, format: EQUIS EDD

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS _____ FedEx _____ Other _____
3.3, 5.1, 4.2, 5.2
Temperature upon receipt _____ °C

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

CL

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-61302-1

Login Number: 61302

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Leakway, Christian

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	False	Refer to Job Narrative for details.
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-61302-1

Login Number: 61302
List Number: 2
Creator: Johnson, Avery D

List Source: Eurofins TestAmerica, Pensacola
List Creation: 11/02/21 11:23 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9°C IR7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-61414-1
Client Project/Site: Belmont Terminal GW Sampling

For:
Stantec Consulting Corp.
1060 Andrew Drive
Suite 140
West Chester, Pennsylvania 19380

Attn: Jenny Kachel

Authorized for release by:
11/19/2021 7:55:24 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Amek Carter
Project Manager
11/19/2021 7:55:24 AM

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Definitions/Glossary

Client: Stantec Consulting Corp. Job ID: 410-61414-1
Project/Site: Belmont Terminal GW Sampling

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
!	Laboratory is not accredited for this parameter.
FL	MS and/or MSD recovery below control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-61414-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-61414-1

Receipt
The sample was received on 11/1/2021 3:55 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.3°C

Receipt Exceptions
A trip blank was not submitted for analysis with this sample shipment; and was not listed on the Chain of Custody (COC).

GC/MS Semi VOA
Method 8270D: The following sample was diluted due to the nature of the sample matrix: OW-19_20211101 (410-61414-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: The following sample was diluted due to the abundance of non-target analytes: OW-19_20211101 (410-61414-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 5310C: The reference method requires samples to be preserved to a pH of <2. The following sample(s) were received with insufficient preservation at a pH of 5: OW-19_20211101 (410-61414-1). The sample(s) were preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Stantec Consulting Corp.
Job ID: 410-61414-1
Project/Site: Belmont Terminal GW Sampling

Client Sample ID: OW-19_20211101
Lab Sample ID: 410-61414-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Anthracene	6.2		3.0	0.60	ug/L	5		8270D	Total/NA
Benzo[a]anthracene	7.7		3.0	0.60	ug/L	5		8270D	Total/NA
Benzo[a]pyrene	5.6		3.0	0.65	ug/L	5		8270D	Total/NA
Benzo[b]fluoranthene	6.4		3.0	0.60	ug/L	5		8270D	Total/NA
Benzo[g,h,i]perylene	2.8	J	3.0	0.60	ug/L	5		8270D	Total/NA
Chrysene	7.9		3.0	0.60	ug/L	5		8270D	Total/NA
Fluorene	18		3.0	0.71	ug/L	5		8270D	Total/NA
Naphthalene	370		3.0	0.60	ug/L	5		8270D	Total/NA
Phenanthrene	28		3.0	0.65	ug/L	5		8270D	Total/NA
Pyrene	21		3.0	0.60	ug/L	5		8270D	Total/NA
Calcium	120		0.50	0.096	mg/L	1		6010C	Total Recoverable
Iron	120		0.20	0.040	mg/L	1		6010C	Total Recoverable
Lead	11		0.52	0.073	ug/L	1		6020A	Dissolved
Total Alkalinity as CaCO3 to pH 4.5	370		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Total Kjeldahl Nitrogen	21		10	5.0	mg/L	10		351.2	Total/NA
Total Carbon	280	! FL	100	50	mg/L	100		5310 B-2011	Total/NA
Total Organic Carbon	87		50	25	mg/L	50		5310C-2011	Total/NA
Total Inorganic Carbon	190	!	2.0	0.60	mg/L	1		SM5310C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61414-1

Client Sample ID: OW-19_20211101
Date Collected: 11/01/21 10:50
Date Received: 11/01/21 15:55

Lab Sample ID: 410-61414-1
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	6.2		3.0	0.60	ug/L		11/03/21 09:11	11/05/21 04:39	5
Benzo[a]anthracene	7.7		3.0	0.60	ug/L		11/03/21 09:11	11/05/21 04:39	5
Benzo[a]pyrene	5.6		3.0	0.65	ug/L		11/03/21 09:11	11/05/21 04:39	5
Benzo[b]fluoranthene	6.4		3.0	0.60	ug/L		11/03/21 09:11	11/05/21 04:39	5
Benzo[g,h,i]perylene	2.8	J	3.0	0.60	ug/L		11/03/21 09:11	11/05/21 04:39	5
Chrysene	7.9		3.0	0.60	ug/L		11/03/21 09:11	11/05/21 04:39	5
Fluorene	18		3.0	0.71	ug/L		11/03/21 09:11	11/05/21 04:39	5
Naphthalene	370		3.0	0.60	ug/L		11/03/21 09:11	11/05/21 04:39	5
Phenanthrene	28		3.0	0.65	ug/L		11/03/21 09:11	11/05/21 04:39	5
Pyrene	21		3.0	0.60	ug/L		11/03/21 09:11	11/05/21 04:39	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*67*		*35 - 100*	*11/03/21 09:11*	*11/05/21 04:39*	*5*
Nitrobenzene-d5 (Surr)	*87*		*22 - 117*	*11/03/21 09:11*	*11/05/21 04:39*	*5*
p-Terphenyl-d14 (Surr)	*86*		*31 - 119*	*11/03/21 09:11*	*11/05/21 04:39*	*5*

Method: 300.0 - Anions, Ion Chromatography
Lab: Eurofins TestAmerica, Pensacola

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.9	mg/L			11/03/21 18:29	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	120		0.50	0.096	mg/L		11/16/21 13:55	11/17/21 09:54	1
Iron	120		0.20	0.040	mg/L		11/16/21 13:55	11/17/21 09:54	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	11		0.52	0.073	ug/L		11/16/21 14:42	11/16/21 21:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	370		8.0	8.0	mg/L			11/05/21 00:00	1
Total Kjeldahl Nitrogen	21		10	5.0	mg/L		11/16/21 14:43	11/17/21 11:28	10
Total Carbon	280	! FL	100	50	mg/L			11/18/21 14:51	100
Total Organic Carbon	87		50	25	mg/L			11/09/21 17:32	50
Total Inorganic Carbon	190	!	2.0	0.60	mg/L			11/19/21 09:33	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61414-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
		FBP	NBZ	TPHd14					
Lab Sample ID	Client Sample ID	(35-100)	(22-117)	(31-119)					
410-61414-1	OW-19_20211101	67	87	86					
LCS 410-190103/2-A	Lab Control Sample	72	76	84					
MB 410-190103/1-A	Method Blank	72	81	91					

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

NBZ = Nitrobenzene-d5 (Surr)

TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-190103/1-A
Matrix: Water
Analysis Batch: 191028

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 190103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Benzo[a]anthracene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Benzo[a]pyrene	ND		0.50	0.11	ug/L		11/03/21 09:11	11/04/21 19:45	1
Benzo[b]fluoranthene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Benzo[g,h,i]perylene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Chrysene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Fluorene	ND		0.50	0.12	ug/L		11/03/21 09:11	11/04/21 19:45	1
Naphthalene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1
Phenanthrene	ND		0.50	0.11	ug/L		11/03/21 09:11	11/04/21 19:45	1
Pyrene	ND		0.50	0.10	ug/L		11/03/21 09:11	11/04/21 19:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*72*		*35 - 100*	*11/03/21 09:11*	*11/04/21 19:45*	*1*
Nitrobenzene-d5 (Surr)	*81*		*22 - 117*	*11/03/21 09:11*	*11/04/21 19:45*	*1*
p-Terphenyl-d14 (Surr)	*91*		*31 - 119*	*11/03/21 09:11*	*11/04/21 19:45*	*1*

Lab Sample ID: LCS 410-190103/2-A
Matrix: Water
Analysis Batch: 191028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 190103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	50.0	42.4		ug/L		85	73 - 120
Benzo[a]anthracene	50.0	46.3		ug/L		93	74 - 120
Benzo[a]pyrene	50.0	39.5		ug/L		79	60 - 116
Benzo[b]fluoranthene	50.0	41.4		ug/L		83	71 - 120
Benzo[g,h,i]perylene	50.0	32.7		ug/L		65	60 - 120
Chrysene	50.0	43.8		ug/L		88	76 - 120
Fluorene	50.0	40.7		ug/L		81	64 - 120
Naphthalene	50.0	35.2		ug/L		70	51 - 102
Phenanthrene	50.0	41.4		ug/L		83	72 - 120
Pyrene	50.0	42.7		ug/L		85	73 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*72*		*35 - 100*
Nitrobenzene-d5 (Surr)	*76*		*22 - 117*
p-Terphenyl-d14 (Surr)	*84*		*31 - 119*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-554233/72
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.37	mg/L			11/03/21 03:58	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 400-554233/70
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			10.0	10.8		mg/L		108	90 - 110		

Lab Sample ID: LCSD 400-554233/71
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate			10.0	10.4		mg/L		104	90 - 110	3	15

Lab Sample ID: MRL 400-554233/73
Matrix: Water
Analysis Batch: 554233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			1.00	1.25		mg/L		125	50 - 150		

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 410-195388/1-A
Matrix: Water
Analysis Batch: 195819

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 195388

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.50	0.096	mg/L		11/16/21 13:55	11/17/21 09:35	1
Iron	ND		0.20	0.040	mg/L		11/16/21 13:55	11/17/21 09:35	1

Lab Sample ID: LCS 410-195388/2-A
Matrix: Water
Analysis Batch: 195819

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 195388

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Calcium			5.00	4.98		mg/L		100	80 - 120		
Iron			5.00	5.11		mg/L		102	80 - 120		

Lab Sample ID: LCSD 410-195388/3-A
Matrix: Water
Analysis Batch: 195819

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 195388

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium			5.00	4.93		mg/L		99	80 - 120	1	20
Iron			5.00	5.07		mg/L		101	80 - 120	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 410-195407/1-A
Matrix: Water
Analysis Batch: 195601

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 195407

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.52	0.073	ug/L		11/16/21 14:42	11/16/21 21:42	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 410-195407/2-A
Matrix: Water
Analysis Batch: 195601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 195407

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			50.0	50.7		ug/L		101	90 - 115		

Lab Sample ID: LCSD 410-195407/3-A
Matrix: Water
Analysis Batch: 195601

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 195407

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead			50.0	51.8		ug/L		104	90 - 115	2	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-191374/42
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			11/04/21 21:45	1

Lab Sample ID: LCS 410-191374/43
Matrix: Water
Analysis Batch: 191374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Alkalinity as CaCO3 to pH 4.5			189	182		mg/L		96	82 - 106		

Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 410-195409/2-A
Matrix: Water
Analysis Batch: 195862

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 195409

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Kjeldahl Nitrogen	ND		1.0	0.50	mg/L		11/16/21 14:43	11/17/21 10:01	1

Lab Sample ID: LCS 410-195409/1-A
Matrix: Water
Analysis Batch: 195862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 195409

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Kjeldahl Nitrogen			3.60	3.96		mg/L		110	90 - 110		

Method: 5310 B-2011 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 410-196504/5
Matrix: Water
Analysis Batch: 196504

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Carbon	ND		1.0	0.50	mg/L			11/18/21 14:40	1

Method: 5310 B-2011 - Carbon, Total and Total Inorganic (Continued)

Lab Sample ID: LCS 410-196504/4
Matrix: Water
Analysis Batch: 196504

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon			25.0	23.5		mg/L		94	91 - 115		

Lab Sample ID: 410-61414-1 MS
Matrix: Water
Analysis Batch: 196504

Client Sample ID: OW-19_20211101
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Carbon	280	! FL	1000	1180	FL	mg/L		90	91 - 115		

Lab Sample ID: 410-61414-1 DU
Matrix: Water
Analysis Batch: 196504

Client Sample ID: OW-19_20211101
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Carbon	280	! FL		287		mg/L				3	20

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-193626/5
Matrix: Water
Analysis Batch: 193626

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			11/09/21 16:28	1

Lab Sample ID: LCS 410-193626/4
Matrix: Water
Analysis Batch: 193626

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.2		mg/L		101	91 - 113		

Lab Sample ID: MB 410-194124/5
Matrix: Water
Analysis Batch: 194124

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.50	mg/L			11/11/21 15:35	1

Lab Sample ID: LCS 410-194124/4
Matrix: Water
Analysis Batch: 194124

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			25.0	25.6		mg/L		102	91 - 113		

GC/MS Semi VOA

Prep Batch: 190103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	3510C	
MB 410-190103/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-190103/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 191028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	8270D	190103
MB 410-190103/1-A	Method Blank	Total/NA	Water	8270D	190103
LCS 410-190103/2-A	Lab Control Sample	Total/NA	Water	8270D	190103

HPLC/IC

Analysis Batch: 554233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	300.0	
MB 400-554233/72	Method Blank	Total/NA	Water	300.0	
LCS 400-554233/70	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-554233/71	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 400-554233/73	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 195388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total Recoverable	Water	3005A	
MB 410-195388/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-195388/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 410-195388/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

Prep Batch: 195407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Dissolved	Water	Non-Digest Prep	
MB 410-195407/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-195407/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	
LCSD 410-195407/3-A	Lab Control Sample Dup	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 195601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Dissolved	Water	6020A	195407
MB 410-195407/1-A	Method Blank	Total/NA	Water	6020A	195407
LCS 410-195407/2-A	Lab Control Sample	Total/NA	Water	6020A	195407
LCSD 410-195407/3-A	Lab Control Sample Dup	Total/NA	Water	6020A	195407

Analysis Batch: 195819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total Recoverable	Water	6010C	195388
MB 410-195388/1-A	Method Blank	Total Recoverable	Water	6010C	195388
LCS 410-195388/2-A	Lab Control Sample	Total Recoverable	Water	6010C	195388
LCSD 410-195388/3-A	Lab Control Sample Dup	Total Recoverable	Water	6010C	195388

General Chemistry

Analysis Batch: 191374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	2320B-2011	
MB 410-191374/42	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-191374/43	Lab Control Sample	Total/NA	Water	2320B-2011	

Analysis Batch: 193626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	5310C-2011	
MB 410-193626/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-193626/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 194124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-194124/5	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-194124/4	Lab Control Sample	Total/NA	Water	5310C-2011	

Prep Batch: 195409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	351.2	
MB 410-195409/2-A	Method Blank	Total/NA	Water	351.2	
LCS 410-195409/1-A	Lab Control Sample	Total/NA	Water	351.2	

Analysis Batch: 195862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	351.2	195409
MB 410-195409/2-A	Method Blank	Total/NA	Water	351.2	195409
LCS 410-195409/1-A	Lab Control Sample	Total/NA	Water	351.2	195409

Analysis Batch: 196504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	5310 B-2011	
MB 410-196504/5	Method Blank	Total/NA	Water	5310 B-2011	
LCS 410-196504/4	Lab Control Sample	Total/NA	Water	5310 B-2011	
410-61414-1 MS	OW-19_20211101	Total/NA	Water	5310 B-2011	
410-61414-1 DU	OW-19_20211101	Total/NA	Water	5310 B-2011	

Analysis Batch: 196801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61414-1	OW-19_20211101	Total/NA	Water	SM5310C	

Lab Chronicle

Client: Stantec Consulting Corp.
Job ID: 410-61414-1
Project/Site: Belmont Terminal GW Sampling

Client Sample ID: OW-19_20211101
Lab Sample ID: 410-61414-1
Date Collected: 11/01/21 10:50
Matrix: Water
Date Received: 11/01/21 15:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			190103	11/03/21 09:11	YDF5	ELLE
Total/NA	Analysis	8270D		5	191028	11/05/21 04:39	W6XI	ELLE
Total/NA	Analysis	300.0		5	554233	11/03/21 18:29	KIS	TAL PEN
Total Recoverable	Prep	3005A			195388	11/16/21 13:55	UJLA	ELLE
Total Recoverable	Analysis	6010C		1	195819	11/17/21 09:54	WJM9	ELLE
Dissolved	Prep	Non-Digest Prep			195407	11/16/21 14:42	UJLA	ELLE
Dissolved	Analysis	6020A		1	195601	11/16/21 21:52	UCIG	ELLE
Total/NA	Analysis	2320B-2011		1	191374	11/05/21 00:00	DI9Q	ELLE
Total/NA	Prep	351.2			195409	11/16/21 14:43	F8AU	ELLE
Total/NA	Analysis	351.2		10	195862	11/17/21 11:28	JCG7	ELLE
Total/NA	Analysis	5310 B-2011		100	196504	11/18/21 14:51	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		50	193626	11/09/21 17:32	KGQ6	ELLE
Total/NA	Analysis	SM5310C		1	196801	11/19/21 09:33	KGQ6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Stantec Consulting Corp. Job ID: 410-61414-1
Project/Site: Belmont Terminal GW Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
5310 B-2011		Water	Total Carbon
SM5310C		Water	Total Inorganic Carbon

Laboratory: Eurofins TestAmerica, Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-22
ANAB	ISO/IEC 17025	L2471	02-23-23
Arizona	State	AZ0710	01-12-22
Arkansas DEQ	State	88-0689	09-01-22
California	State	2510	06-30-22
Florida	NELAP	E81010	06-30-22
Georgia	State	E81010(FL)	06-30-22
Illinois	NELAP	200041	10-09-22
Iowa	State	367	08-01-22
Kansas	NELAP	E-10253	11-30-21
Kentucky (UST)	State	53	06-30-22
Kentucky (WW)	State	KY98030	12-31-21
Louisiana	NELAP	30976	06-30-22
Louisiana (DW)	State	LA017	12-31-21
Maryland	State	233	09-30-22
Massachusetts	State	M-FL094	06-30-22
Michigan	State	9912	06-30-22
New Jersey	NELAP	FL006	06-30-22
North Carolina (WW/SW)	State	314	12-31-21
Oklahoma	State	9810	08-31-22
Pennsylvania	NELAP	68-00467	01-31-22
Rhode Island	State	LAO00307	12-30-21
South Carolina	State	96026	06-30-22
Tennessee	State	TN02907	06-30-22
Texas	NELAP	T104704286	09-30-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-22
Washington	State	C915	05-15-22
West Virginia DEP	State	136	12-31-21

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61414-1

Method	Method Description	Protocol	Laboratory
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6010C	Metals (ICP)	SW846	ELLE
6020A	Metals (ICP/MS)	SW846	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
5310 B-2011	Carbon, Total and Total Inorganic	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
SM5310C	Carbon, Total Inorganic	SM	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
351.2	Nitrogen, Total Kjeldahl	MCAWW	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Belmont Terminal GW Sampling

Job ID: 410-61414-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-61414-1	OW-19_20211101	Water	11/01/21 10:50	11/01/21 15:55

Environmental Analysis Request/Chai

eurofins | Lancaster Laboratories Environmental

For Eurofins Lancaster Laborat

Acct. # _____ Group # _____

410-61414 Chain of Custody

[redacted]

COC # 615421

Client Information	
Client: Evergreen c/o Stantec	Acct. #: 16657
Project Name/#: Belmont Terminal GW Sampling	PWSID #:
Project Manager: Jenny Kachel	P.O. #: 213402797
Sampler: Andrea Hill	Quote #:
State where samples were collected: PA	For Compliance: Yes ☐ No ☒

Matrix: Soil ☐ Sediment ☐ Tissue ☐ | Water: Potable ☐ Ground ☒ NPDES ☐ Surface ☐ | Other: _____

Analysis Requested — Preservation and Filtration Codes

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other	Total # of Containers	SVOCs 8270*	EDB 8011	Dissolved lead (field filtered)	Total carbon, total inorganic carbon, total organic carbon	Alkalinity as $CaCO_3$	TKN	Total iron, total calcium, sulfate				Remarks
OW-19_20211101	11/1/21	1050	X			X		10	X	X	X	X	X	X	X				* Evergreen Petroleum Short List analytes

For Lab Use Only
FSC: _____
SCR#: _____

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 P=H_3PO_4
F=Field Filtered O=Other

Turnaround Time (TAT) Requested (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: _____

E-mail address: jenny.Kachel@stantec.com

Data Package Options (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
Andrea Hill	11/1/21	1555			

EDD Required? Yes No
If yes, format: EQuis EDD

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier: UPS _____ FedEx _____ Other _____

Temperature upon receipt 1.8 raw IRLOWS °C 2.3 adj

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • FOR HELP COMPLETING FORM CHECK OUT https://www.eurofinsus.com/coc
The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7044 0919

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custody Record

eurofins Environment America

11/19/2021

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Carter, Amek A	Carrier Tracking No(s):	COC No: 410-1051745.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Loran.Carter@eurofinset.com	State of Origin: Pennsylvania	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Pennsylvania		Job #: 410-61414-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 11/14/2021			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: Belmont Terminal GW Sampling	Project #: 41004761			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecal
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D/ Sulfate	Total Number of containers	Special Instructions/No
			Preservation Code:						
OW-19_20211101 (410-61414-1)	11/1/21	10:50 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Lancaster Laboratories Env places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Lancaster Laboratories Env laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Lancaster Laboratories Env attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Lancaster Laboratories Env.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Howard Platt	1547 11-2-2021	EUE			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				11/3/21 09:00	
				1.3°C. ID 7	

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-61414-1

Login Number: 61414

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Cyms, Carolyn M

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-61414-1

Login Number: 61414
List Number: 2
Creator: Johnson, Avery D

List Source: Eurofins TestAmerica, Pensacola
List Creation: 11/03/21 11:21 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.3°C IR7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ULTRA-TRACE ANALYSIS OF SUCRALOSE IN MULTI-MATRIX AQUEOUS SAMPLES BY ONLINE SPE HPLC-HIGH RESOLUTION MASS SPECTROMETRY

FINAL REPORT

M2105B

Submitted to

Mark Cejas & Andrew Klingbeil
ChemQuants, LLC
1338 Kenwood Rd. Santa Barbara, CA 93109

Performing Laboratory

Environmental Analysis Research Laboratory (EARL)
Southeast Environmental Research Center and
Department of Chemistry & Biochemistry
Florida International University
North Miami, Florida 33181

Study Completed on

June 10, 2021

SIGNATURES AND APPROVAL

M2105B

Submitted by: Environmental Analysis Research Laboratory (EARL)
Southeast Environmental Research Center and
Department of Chemistry & Biochemistry
Florida International University
North Miami, Florida 33181

QC Reviewer — Date: 06/10/2021

Ingrid M. Ley, MSc
Organic Analyst — Date: 06/10/2021

The above results relate only to the samples.

Environmental Analysis Research Laboratory (EARL)
Southeast Environmental Research Center and
Department of Chemistry & Biochemistry
Florida International University, Marine Science Building MSB 230/232,
North Miami, Florida 33181
(305) 348-6354 – (305) 348-6249

Southeast Environmental Research Center
Environmental Analysis Research Laboratory
Biscayne Bay Campus, MSB 232
Miami, Florida 33181 (305) 348-6249

EARL CHAIN OF CUSTODY RECORD

MATRIX CODE	SDG #
1 WATER 2 SEDIMENT/SOIL 3 TISSUE 4 OTHER	M2105B

PROJECT/ASR #:	PROJECT NAME (COC ID): 20210504_STANTEC
SAMPLERS NAME/SIGNATURE:	CLIENT PI: Mark Cejas STANTEC

ITEM #	SAMPLE ID (CLIENT SAMPLE ID):	DATE	TIME	STATION LOCATION		TOTAL # of CONTAINERS	MATRIX	SAMPLE TYPE	COLLECTION TYPE	SAMPLE CONDITION	REQUESTED PARAMETERS: SUCRALOSE						FIU ID
1	RW-26_20210422	4/22/2021	9:10			2	1				X						21-00386
2	MW-38_20210422	4/22/2021	11:10			2	1				X						21-00387
3	S-395_20210422	4/22/2021	12:37			2	1				X						21-00388
4	MW-44_20210423	4/23/2021	08:40			2	1				X						21-00389
5	S-394_20210423	4/23/2021	10:00			2	1				X						21-00390
6	OW-20_202104223	4/23/2021	12:00			2	1				X						21-00391
7	S-277_SL_20210426	4/26/2021	12:50			2	1				X						21-00392
8	S-276_SL_20210427	4/27/2021	09:25			2	1				X						21-00393
9	S-354_20210428	4/28/2021	10:57			2	1				X						21-00394
10	S-306_20210429	4/29/2021	09:20			2	1				X						21-00395
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

PAGE 1 of 1

Samples Arrived:	Thawed	In:	Airbill Present:	Shipping Company:	Fedex
Temperature upon Arrival:	23 °C	Therm. ID:	Airbill #:		
# of Shipping Containers:	1	Description:	No ice present	Custody Seals Present:	No
Custody Seals Intact:	NA				

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Dane Hopkins/ Stantec	5/1/2021	16:00	Ingrid Ley	5/4/2021	14:00

COMMENTS:

Florida International University
Environmental Analysis Research Laboratory
3000 NE 151st Street
North Miami, FL 33181

Case Narrative

Project: 20210504_STANTEC

Client Project ID: CQ#0139_Former Philadelphia Refinery Annual GWS

Client: Evergreen c/o Stantec

FIU QC Batch No: M2486

SDG #: M2105B

Date: June 10, 2021

General Information:
10 samples arrived on 05/04/2021 and were analyzed for Sucralose using EARL SOP-2014-O-130.1.

Samples were received in acceptable condition with any exceptions noted below.

Sample Receipt:

Samples were received at room temperature.

Holding Time:

Samples were analyzed within the allowable holding time of 30 days as specified in EARL SOP-2014-O-130.1.

Sample Storage:

Samples were stored in a freezer at < -20°C until sample preparation / analysis.

Initial Calibrations:

All criteria were within EARL SOP-2014-O-130.1 method requirements (r^2>0.99).

Continuing Calibration Verification:

All criteria were within method requirements (the measured concentration should not deviate more than 30% from the assigned value, for all analytes). With any exceptions noted below.

Laboratory Reagent Blank (LRB):

All analytes were below the method detection limit in the LRB with any exceptions noted below.

Laboratory Fortified Blank (LFB) and LFB Duplicate:

All Laboratory Fortified Blank compounds were within EARL SOP-2014-O-130.1 method requirements (70%-130% recovery), with any exceptions noted below.

All Laboratory Fortified Blank RPD were within EARL SOP-2014-O-130.1 method requirements (≤ 30% RPD) with any exceptions noted below.

Laboratory Fortified Matrix (LFM):

All Laboratory Fortified Matrix compounds were within EARL SOP-2014-O-130.1 method requirements (70%-130% recovery), with any exceptions noted below.

Sample Duplicate:

All Duplicate Samples above MDL were within EARL SOP-2014-O-130.1 method requirements (<30% RPD) with any exceptions noted below.

ICVS:

Analysis of ICVS was within EARL SOP-2014-O-130.1 method requirements (Recovery within 70-130%) with any exceptions noted below.

Additional Comments:

NA

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2486 QC REPORT

Client Sample ID	**LRB**
Sample Descriptor	
Sample ID	Q9258
FIU ID	
Sample Type	*LRB*
SDG	

Pre-analysis Dilution Factor	1.00
Analysis Dilution Factor	1.10
Total Dilution Factor	1.10
Actual Sample Volume (uL)	10000
Final Volume (uL)	11000
Matrix	
Reporting Units	ng/L
Volume Units	uL
Data File	39953

QC Batch ID	M2105
Method	Online SPE LC-HRMS
Collection Date	NA
Receive Date	NA
Sample Prep	06/02/2021
Analysis Date	06/02/2021 16:30

COMPOUND	**Conc.**	**FLAG**	**DF**	**MDL**	**RL**
SUCRALOSE		ND	1.10	12.1	36.3

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2486 QC REPORT

Client Sample ID	LFB	LFB-D
Sample Descriptor		
Sample ID	Q9259	Q9260
FIU ID		
Sample Type	*LFB*	*LFBD*
SDG		
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	1.10	1.10
Total Dilution Factor	1.10	1.10
Actual Sample Volume (uL)	10000	10000
Final Volume (uL)	11000	11000
Matrix		
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	39954	39955
QC Batch ID	M2105	M2105
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	NA	NA
Receive Date	NA	NA
Sample Prep	06/02/2021	06/02/2021
Analysis Date	06/02/2021 16:47	06/02/2021 17:03

COMPOUND	Conc.	FLAG	DF	MDL	RL	%Rec	FLAG	Conc.	FLAG	DF	MDL	RL	%Rec	FLAG	RPD%	FLAG
SUCRALOSE	114		1.10	12.1	36.3	104		111		1.10	12.1	36.3	100		3.3	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2486 QC REPORT

Client Sample ID	MW-38_20210422	MW-38_20210422 MS
Sample Descriptor		
Sample ID	W19433	Q9262
FIU ID	21-00387	21-00387
Sample Type	*ORIGINAL*	*LFM*
SDG	M2104B	M2104B
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	22.0	22.0
Total Dilution Factor	22.0	22.0
Actual Sample Volume (uL)	500	500
Final Volume (uL)	11000	11000
Matrix	Water	Water
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	39958	39959
QC Batch ID	M2105	M2105
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	04/22/2021 11:10	04/22/2021 11:10
Receive Date	05/04/2021	05/04/2021
Sample Prep	06/02/2021	06/02/2021
Analysis Date	06/02/2021 17:53	06/02/2021 18:09

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	%Rec	FLAG
SUCRALOSE	D	J	22.0	242	726	D		22.0	242	726	96.8	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2486 QC REPORT

Client Sample ID	RW-26_20210422	RW-26_20210422 DUP
Sample Descriptor		
Sample ID	W19432	Q9261
FIU ID	21-00386	21-00386
Sample Type	*ORIGINAL*	*DUPLICATE*
SDG	M2104A	M2104A
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	22.0	22.0
Total Dilution Factor	22.0	22.0
Actual Sample Volume (uL)	500	500
Final Volume (uL)	11000	11000
Matrix	Water	Water
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	39956	39957
QC Batch ID	M2105	M2105
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	04/22/2021 9:10	04/22/2021 9:10
Receive Date	05/04/2021	05/04/2021
Sample Prep	06/02/2021	06/02/2021
Analysis Date	06/02/2021 17:20	06/02/2021 17:36

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	RPD%	FLAG
SUCRALOSE	66.9	J	22.0	242	726	50.3	J	22.0	242	726	28.3	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105B_M2486 SAMPLE REPORT

Client Sample ID	RW-26_20210422	MW-38_20210422	S-395_20210422
Sample Descriptor			
Sample ID	W19432	W19433	W19434
FIU ID	21-00386	21-00387	21-00388
Sample Type	*N*	*N*	*N*
SDG	M2104B	M2105B	M2105B
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	22.0	22.0	22.0
Total Dilution Factor	22.0	22.0	22.0
Actual Sample Volume (uL)	500	500	500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	39956	39958	39960
QC Batch ID	M2486	M2486	M2486
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	04/22/2021 9:10	04/22/2021 11:10	04/22/2021 12:37
Receive Date	05/04/2021	05/04/2021	05/04/2021
Sample Prep	06/02/2021	06/02/2021	06/02/2021
Analysis Date	06/02/2021 17:20	06/02/2021 17:53	06/02/2021 18:26

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	66.9	J	22.0	242	726	90.0	J	22.0	242	726	117	J	22.0	242	726

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105B_M2486 SAMPLE REPORT

Client Sample ID	MW-44_20210423	S-394_20210423	OW-20_202104223
Sample Descriptor			
Sample ID	W19435	W19436	W19437
FIU ID	21-00389	21-00390	21-00391
Sample Type	*N*	*N*	*N*
SDG	M2105B	M2105B	M2104D
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	55.0	22.0	110
Total Dilution Factor	55.0	22.0	110
Actual Sample Volume (uL)	200	500	100
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	39961	39962	39986
QC Batch ID	M2486	M2486	M2486
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	04/23/2021 8:40	04/23/2021 10:00	04/23/2021 12:00
Receive Date	05/04/2021	05/04/2021	05/04/2021
Sample Prep	06/02/2021	06/02/2021	06/02/2021
Analysis Date	06/02/2021 18:42	06/02/2021 18:59	06/03/2021 10:49

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	325	J	55.0	605	1815		ND	22.0	242	726		ND	110	1210	3630

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105B_M2486 SAMPLE REPORT

Client Sample ID	S-277_SL_20210426	S-276_SL_20210427	S-354_20210428
Sample Descriptor			
Sample ID	W19438	W19439	W19440
FIU ID	21-00392	21-00393	21-00394
Sample Type	*N*	*N*	*N*
SDG	M2105B	M2105B	M2105B
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	22.0	22.0	22.0
Total Dilution Factor	22.0	22.0	22.0
Actual Sample Volume (uL)	500	500	500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	39966	39967	39968
QC Batch ID	M2486	M2486	M2486
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	04/23/2021 12:50	04/23/2021 9:25	04/23/2021 10:57
Receive Date	05/04/2021	05/04/2021	05/04/2021
Sample Prep	06/02/2021	06/02/2021	06/02/2021
Analysis Date	06/02/2021 20:05	06/02/2021 20:22	06/02/2021 20:38

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE		ND	22.0	242	726		ND	22.0	242	726		ND	22.0	242	726

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105B_M2486 SAMPLE REPORT

Client Sample ID	**S-306_20210429**
Sample Descriptor	
Sample ID	W19441
FIU ID	21-00395
Sample Type	*N*
SDG	M2105B

Pre-analysis Dilution Factor	1.00
Analysis Dilution Factor	11.0
Total Dilution Factor	11.0
Actual Sample Volume (uL)	1000
Final Volume (uL)	11000
Matrix	Water
Reporting Units	ng/L
Volume Units	uL
Data File	39987

QC Batch ID	M2486
Method	Online SPE LC-HRMS
Collection Date	04/23/2021 9:20
Receive Date	05/04/2021
Sample Prep	06/02/2021
Analysis Date	06/03/2021 11:06

COMPOUND	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	345		11.0	121	363

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

Miscellaneous Laboratory Sample Logbook

MATRIX			
WATER ☒	PROJECT: SUCRALOSE	PI:	
SEDIMENT ☐	ANALYSIS: PAH ☐ ALIPHATICS ☐ OCPEST ☐ PCB ☐ N-PEST ☐ OP ☐ PHARMA ☐		
TISSUE: _____	PHENOXY ☐ FLUORESCENCE ☐ DOSS ☐ ANTIBIOTICS ☐ Other: _____		
OTHER: _____	FINAL SOLVENT: LC WATER	FINAL VOLUME: 11 mL	Amber ☐ Clear ☒

FIU EAR Environmental Analysis Research Laboratory

Surrogates	Vol. (uL)	Fortification	Vol. (uL)	Internal Standard	Vol. (uL)
		SU-CAL 210602	100	SUC-D6 210519 IZL	100

COMMENTS:
M2105B
M2105D

	Sample ID	Client Descriptor	Vol. (uL) ~~Wet Wt. (g)~~	Dry Wt (%)	Dry Wt (g)	FIU ID	Comments
1	Q9258	LRB	10000				
2	Q9259	LFB					
3	Q9260	LFB-D					
4	Q9261	1A Backcountry DUP				21-00429	
5	Q9262	1B Backcountry MS				21-00430	
6	W19442	1A Backcountry				21-00431	
7	W19443	1B Backcountry				21-00432	
8	W19444	1C Backcountry				21-00433	
9	W19445	1A Middle bird				21-00434	
10	W19446	1B Middle bird				21-00435	
11	W19447	2A Middle bird				21-00436	
12	W19448	2B Middle bird				21-00437	
13	W19432	RW-26 20210422	500			21-00386	
14	W19433	MW-38				21-00387	
15	W19434	S-395				21-00388	
16	W19435	MW-44 20210423	200			21-00389	
17	W19436	S-395	500			21-00390	

Process	Date	Initials
Received	5/4/21 5/18/21	
Sample Prep		
Spike Witness		
Extraction		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
GC/_____ Prep		
GC/_____ Prep		
LC/HR MS Prep	5/19/21	IZL
~~Quant/Audit~~ HR MS	6/2/21	IZL
Final Report		
Final Report		

Lab Manager	QC Auditor	Sample Storage Information	Miscellaneous Information
Initials: Date:	Initials: Date:		

M 2486

Continue →

Miscellaneous Laboratory Sample Logbook

MATRIX

WATER ☐
SEDIMENT ☐
TISSUE: _____
OTHER: _____

PROJECT: PI:

ANALYSIS: PAH ☐ ALIPHATICS ☐ OCPEST ☐ PCB ☐ N-PEST ☐ OP ☐ PHARMA ☐
PHENOXY ☐ FLUORESCENCE ☐ DOSS ☐ ANTIBIOTICS ☐ Other: _____

FINAL SOLVENT: _____ FINAL VOLUME: _____ Amber ☐ Clear ☐

FIU EARL Environmental Analysis Research Laboratory

Surrogates	Vol. (uL)	Fortification	Vol. (uL)	Internal Standard	Vol. (uL)	COMMENTS:

	Sample ID	Client Descriptor	Vol. (uL) ~~Wet Wt. (g)~~	Dry Wt (%)	Dry Wt (g)	FIU ID	Comments
1	W19437	DW-20 20210423	100			21-00391	
2	W19438	S-277 20210426	500			21-00392	
3	W19439	S-276	↓			21-00393	
4	W19440	S-354	↓			21-00394	
5	W19441	S-306	1000			21-00395	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							

Process	Date	Initials
Received		
Sample Prep.		
Spike Witness		
Extraction		
Concentration		
_____Cleanup		
Concentration		
_____Cleanup		
Concentration		
_____Cleanup		
Concentration		
GC/_____ Prep		
GC/_____ Prep		
LC/_____ Prep		
Quant/Audit		
Final Report		
Final Report		

Lab Manager	QC Auditor	Sample Storage Information	Miscellaneous Information
Initials: Date:	Initials: Date:		

M 2487

Cont. from M2486

ULTRA-TRACE ANALYSIS OF SUCRALOSE IN MULTI-MATRIX AQUEOUS SAMPLES BY ONLINE SPE HPLC-HIGH RESOLUTION MASS SPECTROMETRY

FINAL REPORT

M2105C M2105F

Submitted to

Mark Cejas & Andrew Klingbeil
ChemQuants, LLC
1338 Kenwood Rd. Santa Barbara, CA 93109

Performing Laboratory

Environmental Analysis Research Laboratory (EARL)
Southeast Environmental Research Center and
Department of Chemistry & Biochemistry
Florida International University
North Miami, Florida 33181

Study Completed on

July 1st, 2021

SIGNATURES AND APPROVAL

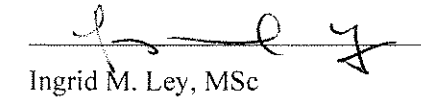
M2105C M2105F

Submitted by: Environmental Analysis Research Laboratory (EARL)
Southeast Environmental Research Center and
Department of Chemistry & Biochemistry
Florida International University
North Miami, Florida 33181



QC Reviewer

07/01/21
Date



Ingrid M. Ley, MSc
Organic Analyst

07/01/2021
Date

The above results relate only to the samples.

Environmental Analysis Research Laboratory (EARL)
Southeast Environmental Research Center and
Department of Chemistry & Biochemistry
Florida International University, Marine Science Building MSB 230/232,
North Miami, Florida 33181
(305) 348-6354 – (305) 348-6249

Florida International University
Environmental Analysis Research Laboratory
3000 NE 151st Street
North Miami, FL 33181

Case Narrative

Project: 20210514_STANTEC

Client Project ID: CQ#0139_Former Philadelphia Refinery Annual GWS

Client: Evergreen c/o Stantec

FIU QC Batch No: M2489-M2491

SDG #: M2105C, M2105D

Date: June 25, 2021

General Information:

23 samples arrived on 05/14/21 and 14 samples arrived on 05/20/2021. They were analyzed for Sucralose using EARL SOP-2014-O-130.1.

Samples were received in acceptable condition with any exceptions noted below.

Sample Receipt:

Samples were received at frozen.

Holding Time:

Samples were analyzed within the allowable holding time of 30 days as specified in EARL SOP-2014-O-130.1.

Sample Storage:

Samples were stored in a freezer at < -20°C until sample preparation / analysis.

Initial Calibrations:

All criteria were within EARL SOP-2014-O-130.1 method requirements (r^2>0.99).

Continuing Calibration Verification:

All criteria were within method requirements (the measured concentration should not deviate more than 30% from the assigned value, for all analytes). With any exceptions noted below.

Laboratory Reagent Blank (LRB):

All analytes were below the method detection limit in the LRB with any exceptions noted below.

Laboratory Fortified Blank (LFB) and LFB Duplicate:

All Laboratory Fortified Blank compounds were within EARL SOP-2014-O-130.1 method requirements (70%-130% recovery), with any exceptions noted below.

All Laboratory Fortified Blank RPD were within EARL SOP-2014-O-130.1 method requirements (≤ 30% RPD) with any exceptions noted below.

Laboratory Fortified Matrix (LFM):

All Laboratory Fortified Matrix compounds were within EARL SOP-2014-O-130.1 method requirements (70%-130% recovery), with any exceptions noted below.

Matrix spike was not analyzed for batch M2491 due to a miss-spike. Instrument malfunctioned afterwards and sample re-run was not acquired.

Sample Duplicate:

All Duplicate Samples above MDL were within EARL SOP-2014-O-130.1 method requirements (<30% RPD) with any exceptions noted below.

RPD for duplicate samples S-115SRTF was outside the quality control criteria but sample results were below the MDL.

ICVS:

Analysis of ICVS was within EARL SOP-2014-O-130.1 method requirements (Recovery within 70-130%) with any exceptions noted below.

Additional Comments:

Recovery of the internal standard for all samples was low when analyzed at full strenghth; therefore, different dilutions were used in order to get an acceptable percent recovery.

Southeast Environmental Research Center
Environmental Analysis Research Laboratory
Biscayne Bay Campus, MSB 232
Miami, Florida 33181 (305) 348-6249

EARL CHAIN OF CUSTODY RECORD

MATRIX CODE	SDG #
1 WATER 2 SEDIMENT/SOIL 3 TISSUE 4 OTHER	M2105C

PROJECT/ASR #:	PROJECT NAME (COC ID):
CQ #0139	Former Philadelphia Refinery Annual GWS

SAMPLERS NAME/SIGNATURE:	CLIENT PI:
Dane Hopkins, Andrea Hill, Maddie Bredehoeft	Evergreen c/o Stantec
Doulton Campbell	

ITEM #	SAMPLE ID (CLIENT SAMPLE ID):	DATE	TIME	STATION LOCATION		TOTAL # of CONTAINERS	MATRIX	SAMPLE TYPE	COLLECTION TYPE	SAMPLE CONDITION	REQUESTED PARAMETERS: SUCRALOSE						FIU ID
1	S-442_20210505	5/5/2021	8:55			2	1	GW	Grab		X						21-00396
2	S-446_20210505	5/5/2021	10:00			2	1	GW	Grab		X						21-00397
3	S-44_20210505	5/5/2021	10:35			2	1	GW	Grab		X						21-00398
4	S-445_20210505	5/5/2021	11:35			2	1	GW	Grab		X						21-00399
5	S-50_20210505	5/5/2021	13:00			2	1	GW	Grab		X						21-00400
6	S-396_20210505	5/5/2021	14:15			2	1	GW	Grab		X						21-00401
7	S-441_20210505	5/5/2021	14:45			2	1	GW	Grab		X						21-00402
8	S-444_20210506	5/6/2021	08:55			2	1	GW	Grab		X						21-00403
9	S-42I_20210506	5/6/2021	08:25			2	1	GW	Grab		X						21-00404
10	S-87I_20210506	5/6/2021	11:55			2	1	GW	Grab		X						21-00405
11	S-449_20210506	5/6/2021	12:20			2	1	GW	Grab		X						21-00406
12	S-378_20210506	5/6/2021	15:20			2	1	GW	Grab		X						21-00407
13	S-273_20210506	5/6/2021	14:00			2	1	GW	Grab		X						21-00408
14	S-271_20210507	5/7/2021	08:35			2	1	GW	Grab		X						21-00409
15	ARCO-1D_20210507	5/7/2021	08:40			2	1	GW	Grab		X						21-00410
16	ARCO-2_20210507	5/7/2021	10:00			2	1	GW	Grab		X						21-00411
17	S-230_20210507	5/7/2021	10:55			2	1	GW	Grab		X						21-00412
18	ARCO-1_20210507	5/7/2021	11:00			2	1	GW	Grab		X						21-00413
19	S-418_20210507	5/7/2021	12:30			2	1	GW	Grab		X						21-00414
20	ARCO-3_20210507	5/7/2021	12:30			2	1	GW	Grab		X						21-00415

Samples Arrived: **Frozen** **In:** **Airbill Present:** **Shipping Company:**

Temperature upon Arrival: **Therm. ID:** **Airbill #:**

# of Shipping Containers: **Description:** **Custody Seals Present:** **Custody Seals Intact:**

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Dane Hopkins / Stantec			Kassidy Troxell	5/14/2021	11:00

COMMENTS:

Southeast Environmental Research Center
Environmental Analysis Research Laboratory
Biscayne Bay Campus, MSB 232
Miami, Florida 33181 (305) 348-6249

EARL CHAIN OF CUSTODY RECORD

MATRIX CODE	SDG #
1 WATER 2 SEDIMENT/SOIL 3 TISSUE 4 OTHER	M2105C

PROJECT/ASR #:	PROJECT NAME (COC ID):
CQ #0139	Former Philadelphia Refinery Annual GWS

SAMPLERS NAME/SIGNATURE:	CLIENT PI:
Dane Hopkins, Andrea Hill, Maddie Bredehoeft	Evergreen c/o Stantec
Doulton Campbell	

ITEM #	SAMPLE ID (CLIENT SAMPLE ID):	DATE	TIME	STATION LOCATION		TOTAL # of CONTAINERS	MATRIX	SAMPLE TYPE	COLLECTION TYPE	SAMPLE CONDITION	REQUESTED PARAMETERS: SUCRALOSE						FIU ID
1	S-39D_20210507	5/7/2021	14:15			2	1	GW	Grab		X						21-00416
2	S-369_20210510	5/10/2021	09:10			2	1	GW	Grab		X						21-00417
3	** RW-701_20210510	5/10/2021	12:25			2	1	GW	Grab		X						21-00418
4	S-110DSRTF_20210511	5/11/2021	09:20			2	1	GW	Grab		X						21-00419
5	S-115SRTF_20210511	5/11/2021	10:28			2	1	GW	Grab		X						21-00420
6	S-143SRTF_20210511	5/11/2021	13:50			2	1	GW	Grab		X						21-00421
7	S-440_20210512	5/12/2021	9:25			2	1	GW	Grab		X						21-00422
8	S-78SRTF_20210512	5/12/2021	8:35			2	1	GW	Grab		X						21-00423
9	S-142SRTF_20210512	5/12/2021	10:05			2	1	GW	Grab		X						21-00424
10	S-376_SL_20210512	5/12/2021	11:30			2	1	GW	Grab		X						21-00425
11	S-193_20210512	5/12/2021	14:00			2	1	GW	Grab		X						21-00426
12	S-149SRTF_20210513	5/13/2021	11:30			2	1	GW	Grab		X						21-00427
13	S-150SRTF_20210513	5/13/2021	10:15			2	1	GW	Grab		X						21-00428
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Samples Arrived:	**In:**	**Airbill Present:**	**Shipping Company:**
Temperature upon Arrival:	**Therm. ID:**	**Airbill #:**	
# of Shipping Containers:	**Description:**	**Custody Seals Present:**	**Custody Seals Intact:**

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Dane Hopkins / Stantec			Kassidy Troxell	5/14/2021	11:00

COMMENTS: ** RW-701_20210510 sample was labeled RW-703_20210510 in the sample bottle.

Southeast Environmental Research Center
Environmental Analysis Research Laboratory
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Miami, Florida 33181 (305) 348-6249

EARL CHAIN OF CUSTODY RECORD

MATRIX CODE				SDG #
1 WATER	2 SEDIMENT/SOIL	3 TISSUE	4 OTHER	M2105F

PROJECT/ASR #:	PROJECT NAME (COC ID):
CQ #0139	Former Philadelphia Refinery Annual GWS

SAMPLERS NAME/SIGNATURE:	CLIENT PI:
Dane Hopkins, Andrea Hil	Evergreen c/o Stantec

ITEM #	SAMPLE ID (CLIENT SAMPLE ID):	DATE	TIME	STATION LOCATION		TOTAL # of CONTAINERS	MATRIX	SAMPLE TYPE	COLLECTION TYPE	SAMPLE CONDITION	REQUESTED PARAMETERS: SUCRALOSE						FIU ID
1	S-472_20210514	5/14/2021	10:55			2	1	GW	Grab		X						21-00469
2	S-458_20210514	5/14/2021	12:45			2	1	GW	Grab		X						21-00470
3	MW-37_20210514	5/14/2021	13:20			2	1	GW	Grab		X						21-00471
4	S-463_20210514	5/14/2021	14:25			2	1	GW	Grab		X						21-00472
5	MW-36_20210517	5/17/2021	9:15			2	1	GW	Grab		X						21-00473
6	TW-5_20210517	5/17/2021	9:59			2	1	GW	Grab		X						21-00474
7	S-461_20210517	5/17/2021	11:12			2	1	GW	Grab		X						21-00475
8	S-75_20210517	5/17/2021	11:54			2	1	GW	Grab		X						21-00476
9	S-460_20210517	5/17/2021	13:00			2	1	GW	Grab		X						21-00477
10	S-456_20210517	5/17/2021	14:14			2	1	GW	Grab		X						21-00478
11	S-464_20210518	5/18/2021	10:10			2	1	GW	Grab		X						21-00479
12	S-466_20210518	5/18/2021	14:40			2	1	GW	Grab		X						21-00480
13	S-469_20210519	5/19/2021	8:00			2	1	GW	Grab		X						21-00481
14	S-465_20210519	5/19/2021	13:41			2	1	GW	Grab		X						21-00482
15																	
16																	
17																	
18																	
19																	
20																	

Samples Arrived: **Frozen** **In:** **Airbill Present:** **Shipping Company:**

Temperature upon Arrival: **Therm. ID:** **Airbill #:**

# of Shipping Containers: **Description:** red/white cooler **Custody Seals Present:** **Custody Seals Intact:**

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Dane Hopkins / Stantec	5/19/2021		Ingrid Ley	5/20/2021	13:45

COMMENTS:

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2489 QC REPORT

Client Sample ID	**LRB**
Sample Descriptor	
Sample ID	Q9267
FIU ID	
Sample Type	*LRB*
SDG	

Pre-analysis Dilution Factor	1.00
Analysis Dilution Factor	1.10
Total Dilution Factor	1.10
Actual Sample Volume (uL)	10000
Final Volume (uL)	11000
Matrix	
Reporting Units	ng/L
Volume Units	uL
Data File	40246

QC Batch ID	M2489
Method	Online SPE LC-HRMS
Collection Date	NA
Receive Date	NA
Sample Prep	06/17/2021
Analysis Date	06/17/2021 14:49

COMPOUND	**Conc.**	**FLAG**	**DF**	**MDL**	**RL**
SUCRALOSE		ND	1.10	12.1	36.3

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2489 QC REPORT

Client Sample ID	LFB	LFB-D
Sample Descriptor		
Sample ID	Q9268	Q9269
FIU ID		
Sample Type	*LFB*	*LFBD*
SDG		
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	1.10	1.10
Total Dilution Factor	1.10	1.10
Actual Sample Volume (uL)	10000	10000
Final Volume (uL)	11000	11000
Matrix		
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	40247	40248
QC Batch ID	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	NA	NA
Receive Date	NA	NA
Sample Prep	06/17/2021	06/17/2021
Analysis Date	06/17/2021 15:05	06/17/2021 15:22

COMPOUND	Conc.	FLAG	DF	MDL	RL	%Rec	FLAG	Conc.	FLAG	DF	MDL	RL	%Rec	FLAG	RPD%	FLAG
SUCRALOSE	104		1.10	12.1	36.3	94.9		103		1.10	12.1	36.3	94.1		0.836	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2489 QC REPORT

Client Sample ID	S-446_20210505	S-446_20210505 MS
Sample Descriptor		
Sample ID	W19450	Q9271
FIU ID	21-00397	21-00397
Sample Type	*ORIGINAL*	*LFM*
SDG	M2007A	M2007A
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	4.40	4.40
Total Dilution Factor	4.40	4.40
Actual Sample Volume (uL)	2500	2500
Final Volume (uL)	11000	11000
Matrix	Water	Water
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	40251	40252
QC Batch ID	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/05/2021 10:00 AM	05/05/2021 10:00 AM
Receive Date	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021
Analysis Date	06/17/2021 16:12	06/17/2021 16:28

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	%Rec	FLAG
SUCRALOSE	103		4.40	48.4	145	549		4.40	48.4	145	101.44	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2489 QC REPORT

Client Sample ID	S-442_20210505	S-442_20210505 DUP
Sample Descriptor		
Sample ID	W19449	Q9270
FIU ID	21-00396	21-00396
Sample Type	*ORIGINAL*	*DUPLICATE*
SDG	M2007A	M2007A
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	4.40	4.40
Total Dilution Factor	4.40	4.40
Actual Sample Volume (uL)	2500	2500
Final Volume (uL)	11000	11000
Matrix	Water	Water
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	40249	40250
QC Batch ID	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/05/2021 8:55 AM	05/05/2021 8:55 AM
Receive Date	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021
Analysis Date	06/17/2021 15:38	06/17/2021 15:55

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	RPD%	FLAG
SUCRALOSE	363		4.40	48.4	145	349		4.40	48.4	145	3.95	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105C_M2489 SAMPLE REPORT

Client Sample ID	S-442_20210505	S-446_20210505	S-44_20210505
Sample Descriptor			
Sample ID	W19449	W19450	W19451
FIU ID	21-00396	21-00397	21-00398
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40249	40251	40253
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/05/2021 8:55 AM	05/05/2021 10:00 AM	05/05/2021 10:35 AM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/17/2021 15:38	06/17/2021 16:12	06/17/2021 16:45

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	363		4.40	48.4	145	103		4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105C_M2489 SAMPLE REPORT

Client Sample ID	S-445_20210505	S-50_20210505	S-396_20210505
Sample Descriptor			
Sample ID	W19452	W19453	W19454
FIU ID	21-00399	21-00400	21-00401
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40254	40255	40258
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/05/2021 11:35 AM	05/05/2021 1:00 PM	05/05/2021 2:15 PM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/17/2021 17:01	06/17/2021 17:18	06/17/2021 18:07

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	218		4.40	48.4	145	81.3		4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105C_M2489 SAMPLE REPORT

Client Sample ID	S-441_20210505	S-444_20210506	S-42I_20210506
Sample Descriptor			
Sample ID	W19455	W19456	W19457
FIU ID	21-00402	21-00403	21-00404
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40259	40260	40261
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/05/2021 2:45 PM	05/06/2021 8:55 AM	05/06/2021 8:25 AM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/17/2021 18:24	06/17/2021 18:41	06/17/2021 18:57

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	55.4		4.40	48.4	145	29.3	J	4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105C_M2489 SAMPLE REPORT

Client Sample ID	S-87I_20210506	S-449_20210506	S-378_20210506
Sample Descriptor			
Sample ID	W19458	W19459	W19460
FIU ID	21-00405	21-00406	21-00407
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	11.0	4.40	4.40
Total Dilution Factor	11.0	4.40	4.40
Actual Sample Volume (uL)	1000	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40311	40263	40264
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/06/2021 11:55 AM	05/06/2021 12:20 PM	05/06/2021 3:20 PM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/18/2021 15:39	06/17/2021 19:30	06/17/2021 19:47

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE		ND	11.0	121	363		ND	4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105C_M2489 SAMPLE REPORT

Client Sample ID	S-273_20210506	S-271_20210507	ARCO-1D_20210507
Sample Descriptor			
Sample ID	W19461	W19462	W19463
FIU ID	21-00408	21-00409	21-00410
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40265	40266	40267
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/06/2021 2:00 PM	05/07/2021 8:35 AM	05/07/2021 8:40 AM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/17/2021 20:03	06/17/2021 20:20	06/17/2021 20:36

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	74.5		4.40	48.4	145		ND	4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105C_M2489 SAMPLE REPORT

Client Sample ID	ARCO-2_20210507	S-230_20210507	ARCO-1_20210507
Sample Descriptor			
Sample ID	W19464	W19465	W19466
FIU ID	21-00411	21-00412	21-00413
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	11.0	4.40
Total Dilution Factor	4.40	11.0	4.40
Actual Sample Volume (uL)	2500	1000	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40270	40312_210618164420	40272
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/07/2021 10:00 AM	05/07/2021 10:55 AM	05/07/2021 11:00 AM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/17/2021 21:26	06/18/2021 16:44	06/17/2021 21:59

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	36.2	J	4.40	48.4	145		ND	11.0	121	363	63.5		4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105C_M2489 SAMPLE REPORT

Client Sample ID	S-418_20210507	ARCO-3_20210507	S-39D_20210507
Sample Descriptor			
Sample ID	W19467	W19468	W19469
FIU ID	21-00414	21-00415	21-00416
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40273	40274	40275
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/07/2021 12:30 PM	05/07/2021 12:30 PM	05/07/2021 2:15 PM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/17/2021 22:16	06/17/2021 22:32	06/17/2021 22:49

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE		ND	4.40	48.4	145	31.1	J	4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105C_M2489 SAMPLE REPORT

Client Sample ID	S-369_20210510	RW-703_20210510	S-110DSRTF_20210511
Sample Descriptor			
Sample ID	W19470	W19471	W19472
FIU ID	21-00417	21-00418	21-00419
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40276	40277	40278
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/10/2021 9:10 AM	05/10/2021 12:25 PM	05/11/2021 9:20 AM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/17/2021 23:05	06/17/2021 23:22	06/17/2021 23:39

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE		ND	4.40	48.4	145	1389		4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2491 QC REPORT

Client Sample ID	**LRB**
Sample Descriptor	
Sample ID	Q9272
FIU ID	
Sample Type	*LRB*
SDG	
Pre-analysis Dilution Factor	1.00
Analysis Dilution Factor	1.10
Total Dilution Factor	1.10
Actual Sample Volume (uL)	10000
Final Volume (uL)	11000
Matrix	
Reporting Units	ng/L
Volume Units	uL
Data File	40281
QC Batch ID	M2491
Method	Online SPE LC-HRMS
Collection Date	NA
Receive Date	NA
Sample Prep	6/17/2021
Analysis Date	06/18/2021 0:28

COMPOUND	**Conc.**	**FLAG**	**DF**	**MDL**	**RL**
SUCRALOSE	9.45	J	1.10	12.1	36.3

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2491 QC REPORT

Client Sample ID	LFB	LFB-D
Sample Descriptor		
Sample ID	Q9273	Q9274
FIU ID		
Sample Type	*LFB*	*LFBD*
SDG		
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	1.10	1.10
Total Dilution Factor	1.10	1.10
Actual Sample Volume (uL)	10000	10000
Final Volume (uL)	11000	11000
Matrix		
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	40282	40283
QC Batch ID	M2491	M2491
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	NA	NA
Receive Date	NA	NA
Sample Prep	6/17/2021	6/17/2021
Analysis Date	06/18/2021 0:45	06/18/2021 1:01

COMPOUND	Conc.	FLAG	DF	MDL	RL	%Rec	FLAG	Conc.	FLAG	DF	MDL	RL	%Rec	FLAG	RPD%	FLAG
SUCRALOSE	104		1.10	12.1	36.3	85.7		101		1.10	12.1	36.3	83.3		2.544	

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2491 QC REPORT

Client Sample ID	S-115SRTF_20210511	S-115SRTF_20210511 DUP
Sample Descriptor		
Sample ID	W19473	Q9475
FIU ID	21-00420	21-00420
Sample Type	*ORIGINAL*	*DUPLICATE*
SDG	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	4.40	4.40
Total Dilution Factor	4.40	4.40
Actual Sample Volume (uL)	2500	2500
Final Volume (uL)	11000	11000
Matrix	Water	Water
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	40284	40285
QC Batch ID	M2491	M2491
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/11/2021 10:28 AM	05/11/2021 10:28 AM
Receive Date	05/14/2021	05/14/2021
Sample Prep	6/17/2021	6/17/2021
Analysis Date	06/18/2021 1:18	06/18/2021 1:35

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	RPD%	FLAG
SUCRALOSE	22.6	J	4.40	48.4	145	34.7	J	4.40	48.4	145	41.93	Q

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination > MDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105F_M2491 SAMPLE REPORT

Client Sample ID	S-115SRTF_20210511	S-143SRTF_20210511	S-440_20210512
Sample Descriptor			
Sample ID	W19473	W19474	W19475
FIU ID	21-00420	21-00421	21-00422
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40284	40286	40288
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/11/2021 10:28 AM	05/11/2021 1:50 PM	05/12/2021 9:25 AM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/18/2021 1:18	06/18/2021 1:51	06/18/2021 2:24

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	22.6	J	4.40	48.4	145		ND	4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105F_M2491 SAMPLE REPORT

Client Sample ID	S-78SRTF_20210512	S-142SRTF_20210512	S-376_SL_20210512
Sample Descriptor			
Sample ID	W19476	W19477	W19478
FIU ID	21-00423	21-00424	21-00425
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40289	40290	40291
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/12/2021 8:35 AM	05/12/2021 10:05 AM	05/12/2021 11:30 AM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/18/2021 2:41	06/18/2021 2:57	06/18/2021 3:14

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	133		4.40	48.4	145		ND	4.40	48.4	145	59.4		4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105F_M2491 SAMPLE REPORT

Client Sample ID	S-193_20210512	S-149SRTF_20210513	S-150SRTF_20210513
Sample Descriptor			
Sample ID	W19479	W19480	W19481
FIU ID	21-00426	21-00427	21-00428
Sample Type	*N*	*N*	*N*
SDG	M2105C	M2105C	M2105C
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40294	40295	40296
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/12/2021 2:00 PM	05/13/2021 11:30 AM	05/13/2021 10:15 AM
Receive Date	05/14/2021	05/14/2021	05/14/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/18/2021 10:25	06/18/2021 10:41	06/18/2021 10:58

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE		ND	4.40	48.4	145	89.7		4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105F_M2491 SAMPLE REPORT

Client Sample ID	S-472_20210514	S-458_20210514	MW-37_20210514
Sample Descriptor			
Sample ID	W19487	W19488	W19489
FIU ID	21-00469	21-00470	21-00471
Sample Type	*N*	*N*	*N*
SDG	M2105F	M2105F	M2105F
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	11.0	4.40	4.40
Total Dilution Factor	11.0	4.40	4.40
Actual Sample Volume (uL)	1000	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40296_210618111451	40296_210618113125	40297
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/14/2021 10:55 AM	05/14/2021 12:45 PM	05/14/2021 1:20 PM
Receive Date	05/20/2021	05/20/2021	05/20/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/18/2021 11:14	06/18/2021 11:31	06/18/2021 11:47

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	129		11.0	121	363	84.1		4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105F_M2491 SAMPLE REPORT

Client Sample ID	S-463_20210514	MW-36_20210517	TW-5_20210517
Sample Descriptor			
Sample ID	W19490	W19491	W19492
FIU ID	21-00472	21-00473	21-00474
Sample Type	*N*	*N*	*N*
SDG	M2105F	M2105F	M2105F
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	11.0	4.40	4.40
Total Dilution Factor	11.0	4.40	4.40
Actual Sample Volume (uL)	1000	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40313	40299	40300
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/14/2021 2:25 PM	05/17/2021 9:15 AM	05/17/2021 9:59 AM
Receive Date	05/20/2021	05/20/2021	05/20/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/18/2021 16:27	06/18/2021 12:21	06/18/2021 12:37

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE		ND	11.0	121	363		ND	4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105F_M2491 SAMPLE REPORT

Client Sample ID	S-461_20210517	S-75_20210517	S-460_20210517
Sample Descriptor			
Sample ID	W19493	W19494	W19495
FIU ID	21-00475	21-00476	21-00477
Sample Type	*N*	*N*	*N*
SDG	M2105F	M2105F	M2105F
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40301	40304	40305
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/17/2021 11:12 AM	05/17/2021 11:54 AM	05/17/2021 1:00 PM
Receive Date	05/20/2021	05/20/2021	05/20/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/18/2021 12:54	06/18/2021 13:43	06/18/2021 14:00

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE		ND	4.40	48.4	145	172		4.40	48.4	145	43.2	J	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105F_M2491 SAMPLE REPORT

Client Sample ID	S-456_20210517	S-464_20210518	S-466_20210518
Sample Descriptor			
Sample ID	W19496	W19497	W19498
FIU ID	21-00478	21-00479	21-00480
Sample Type	*N*	*N*	*N*
SDG	M2105F	M2105F	M2105F
Pre-analysis Dilution Factor	1.00	1.00	1.00
Analysis Dilution Factor	4.40	4.40	4.40
Total Dilution Factor	4.40	4.40	4.40
Actual Sample Volume (uL)	2500	2500	2500
Final Volume (uL)	11000	11000	11000
Matrix	Water	Water	Water
Reporting Units	ng/L	ng/L	ng/L
Volume Units	uL	uL	uL
Data File	40306	40307	40308
QC Batch ID	M2489	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/17/2021 2:14 PM	05/18/2021 10:10 AM	05/18/2021 2:40 PM
Receive Date	05/20/2021	05/20/2021	05/20/2021
Sample Prep	06/17/2021	06/17/2021	06/17/2021
Analysis Date	06/18/2021 14:16	06/18/2021 14:33	06/18/2021 14:50

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	833		4.40	48.4	145		ND	4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

SUCRALOSE by ONLINE SPE LC-HRMS ANALYSIS
M2105F_M2491 SAMPLE REPORT

Client Sample ID	S-469_20210519	S-465_20210519
Sample Descriptor		
Sample ID	W19499	W19500
FIU ID	21-00481	21-00482
Sample Type	*N*	*N*
SDG	M2105F	M2105F
Pre-analysis Dilution Factor	1.00	1.00
Analysis Dilution Factor	4.40	4.40
Total Dilution Factor	4.40	4.40
Actual Sample Volume (uL)	2500	2500
Final Volume (uL)	11000	11000
Matrix	Water	Water
Reporting Units	ng/L	ng/L
Volume Units	uL	uL
Data File	40309	40310
QC Batch ID	M2489	M2489
Method	Online SPE LC-HRMS	Online SPE LC-HRMS
Collection Date	05/19/2021 8:00 AM	05/19/2021 1:41 PM
Receive Date	05/20/2021	05/20/2021
Sample Prep	06/17/2021	06/17/2021
Analysis Date	06/18/2021 15:06	06/18/2021 15:23

COMPOUND	Concentration	FLAG	DF	MDL	RL	Concentration	FLAG	DF	MDL	RL
SUCRALOSE	150		4.40	48.4	145		ND	4.40	48.4	145

ND Not Detected
J <MDL
NA Not Applicable
Q Results Outside QC
I Interference
B Blank Contamination>3xMDL
D Dilution
EC Exceeds Calibration

Miscellaneous Laboratory Sample Logbook

MATRIX: WATER ☑ SEDIMENT ☐ TISSUE: _____ OTHER: _____

PROJECT: SUCRALOSE PI:

ANALYSIS: PAH ☐ ALIPHATICS ☐ OCPEST ☐ PCB ☐ N-PEST ☐ OP ☐ PHARMA ☐
PHENOXY ☐ FLUORESCENCE ☐ DOSS ☐ ANTIBIOTICS ☐ Other: _____

FINAL SOLVENT: LC WATER FINAL VOLUME: 11 mL Amber ☐ Clear ☑

FIU EARL Environmental Analysis Research Laboratory

Surrogates	Vol. (uL)	Fortification	Vol. (uL)	Internal Standard	Vol. (uL)
		SUC-CAL 210602	100	SUC-DB 210519	100

COMMENTS: M2105C

	Sample ID	Client Descriptor	Vol. (uL) ~~Wet Wt. (g)~~	Dry Wt (%)	Dry Wt (g)	FIU ID	Comments
1	Q9267	LRB	10000				
2	Q9268	LFB	↓				
3	Q9269	LFB-D	↓				
4	Q9270	S-442 DUP	2500				
5	Q9271	S-446 MS	↓				*Failed
6	W19449	S-442	↓			21-00396	"
7	W19450	S-446	↓			397	
8	W19451	S-44	↓			398	
9	W19452	S-445	↓			399	
10	W19453	S-50	↓			400	
11	W19454	S-396	↓			401	
12	W19455	S-441	↓			402	
13	W19456	S-444	↓			403	
14	W19457	S-421	↓			404	
15	W19458	S-871	1000			405	
16	W19459	S-449	2500			406	
17	W19460	S-378	↓			407	

Process	Date	Initials
Received	5/14/21	IZL
Sample Prep.		
Spike Witness		
Extraction		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
GC/_____ Prep		
GC/_____ Prep		
LC/~~MS~~ HR Prep	6/18/21	IZL
Quant/Audit		
Final Report		
Final Report		

Lab Manager	QC Auditor	Sample Storage Information	Miscellaneous Information
Initials: Date:	Initials: Date:		

M 2489

Continue →

Miscellaneous Laboratory Sample Logbook

MATRIX			
WATER ☐	PROJECT:	PI:	FIU EARL Environmental Analysis Research Laboratory
SEDIMENT ☐	ANALYSIS: PAH ☐ ALIPHATICS ☐ OCPEST ☐ PCB ☐ N-PEST ☐ OP ☐ PHARMA ☐		
TISSUE: _____	PHENOXY ☐ FLUORESCENCE ☐ DOSS ☐ ANTIBIOTICS ☐ Other: _____		
OTHER: _____	FINAL SOLVENT: _____	FINAL VOLUME: _____	Amber ☐ Clear ☐

Surrogates	Vol. (uL)	Fortification	Vol. (uL)	Internal Standard	Vol. (uL)	COMMENTS:

	Sample ID	Client Descriptor	Vol. (uL) Wet Wt. (g)	Dry Wt (%)	Dry Wt (g)	FIU ID	Comments
1	W19461	S-273	2500			21-00408	
2	W19462	S-271	↓			409	
3	W19463	ARCO-1D				410	
4	W19464	ARCO-2	↓			411	
5	W19465	S-230	1000			412	
6	W19466	ARCO-1	2500			413	
7	W19467	S-418	↓			414	
8	W19468	ARCO-3				415	
9	W19469	S-39D				416	
10	W19470	S-369				417	
11	W19471	RW-701				418	
12	W19472	S-110DSRTF	↓			↓ 419	
13							
14							
15							
16							
17							

Process	Date	Initials
Received		
Sample Prep.		
Spike Witness		
Extraction		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
GC/_____ Prep		
GC/_____ Prep		
LC/_____ Prep		
Quant/Audit		
Final Report		
Final Report		

Lab Manager	QC Auditor	Sample Storage Information	Miscellaneous Information
Initials: Date:	Initials: Date:		

M 2490

Cont. from M2489

Miscellaneous Laboratory Sample Logbook

MATRIX: WATER ☑ SEDIMENT ☐ TISSUE: _____ OTHER: _____

PROJECT: SUCRALOSE - STANTEC PI:

ANALYSIS: PAH ☐ ALIPHATICS ☐ OCPEST ☐ PCB ☐ N-PEST ☐ OP ☐ PHARMA ☐
PHENOXY ☐ FLUORESCENCE ☐ DOSS ☐ ANTIBIOTICS ☐ Other: _____

FINAL SOLVENT: LC WATER FINAL VOLUME: 11 mL Amber ☐ Clear ☒

FIU EARL Environmental Analysis Research Laboratory

Surrogates	Vol. (uL)	Fortification	Vol. (uL)	Internal Standard	Vol. (uL)
		SUC-CAL 210682	100	SUC-D6 210519	100

COMMENTS: M2105C M2105F

	Sample ID	Client Descriptor	Vol. (uL) ~~Wet Wt. (g)~~	Dry Wt (%)	Dry Wt (g)	FIU ID	Comments
1	Q9272	LRB	10000				
2	Q9273	LFB	↓				
3	Q9274	LFB-D	↓				
4	Q9275	S-115SRTF DUP	2500				
5	Q9276	——— MS	NA				Failed
6	W19473	S-115SRTF	2500			21-00420	
7	W19474	S-143SRTF	↓			421	
8	W19475	S-440	↓			422	
9	W19476	S-78SRTF	↓			423	
10	W19477	S-142SRTF	↓			424	
11	W19478	S-376	↓			425	
12	W19479	S-193	↓			426	
13	W19480	S-149SRTF	↓			427	
14	W19481	S-150SRTF	↓			428	
15	W19487*	S-472-~~20~~ 80	1000			429	
16	W19488	S-458	2500			470	
17	W19489	MW-37	↓			471	

Process	Date	Initials
Received	5/14/21 ~~5/20/21~~	KS
Sample Prep.		
Spike Witness		
Extraction		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
GC/_____ Prep		
GC/_____ Prep		
LC/ HR MS Prep	6/17/21	JRL
Quant/Audit		
Final Report		
Final Report		

Lab Manager	QC Auditor	Sample Storage Information	Miscellaneous Information
Initials: Date:	Initials: Date:		

M 2491

Continue →

Miscellaneous Laboratory Sample Logbook

MATRIX			
WATER ☐	PROJECT:	PI:	FIU EARL Environmental Analysis Research Laboratory
SEDIMENT ☐	ANALYSIS: PAH ☐ ALIPHATICS ☐ OCPEST ☐ PCB ☐ N-PEST ☐ OP ☐ PHARMA ☐		
TISSUE: _____	PHENOXY ☐ FLUORESCENCE ☐ DOSS ☐ ANTIBIOTICS ☐ Other: _____		
OTHER: _____	FINAL SOLVENT: _____	FINAL VOLUME: _____	Amber ☐ Clear ☐

Surrogates	Vol. (uL)	Fortification	Vol. (uL)	Internal Standard	Vol. (uL)	COMMENTS:

	Sample ID	Client Descriptor	Vol. (uL) ~~Wet Wt. (g)~~	Dry Wt (%)	Dry Wt (g)	FIU ID	Comments
1	W19490	S-463	1000			21-00472	
2	W19491	~~TW-5~~ MW-36	2500			473	
3	W19492	~~S-461~~ TW-5				474	
4	W19493	~~S-75~~ S-461				475	
5	W19494	~~S-460~~ S-75				476	
6	W19495	S-460				477	
7	W19496	S-456				478	
8	W19497	S-464				479	
9	W19498	S-466				480	
10	W19499	S-469				481	
11	W19500	S-465				482	
12	~~W19501~~	~~S-465~~					
13							
14							
15							
16							
17							

Process	Date	Initials
Received		
Sample Prep.		
Spike Wittness		
Extraction		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
_____ Cleanup		
Concentration		
GC/_____ Prep		
GC/_____ Prep		
LC/_____ Prep		
Quant/Audit		
Final Report		
Final Report		

Lab Manager	QC Auditor	Sample Storage Information	Miscellaneous Information
Initials: Date:	Initials: Date:		

07/01/12

M 2492

Continue from M2491

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CERTIFICATE OF ANALYSIS

Z1B0085

Stantec

Andrew Klingbeil
35055 W12 Mile Rd. Suite 140
Farmington Hills, MI 48331

Project Name: DHc- Belmont Terminal Drilling Sampling
Project / PO Number: N/A
Received: 02/11/2021
Reported: 03/17/2021

Analytical Testing Parameters

Client Sample ID: BT-11A-W-29-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0085-01 **Collection Date:** 02/10/2021 10:20

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
PCR								
Metagenomic Analysis	**Complete**		NA	1		02/17/21 1512	03/17/21 1709	MNC
QPCR								
Estimated Bacterial Biomass	**2500000000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Client Sample ID: BT-17A-W-83-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0085-02 **Collection Date:** 02/10/2021 11:50

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
PCR								
Metagenomic Analysis	**Complete**		NA	1		02/17/21 1512	03/17/21 1709	MNC
QPCR								
Estimated Bacterial Biomass	**3400000000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Client Sample ID: BT-17B-W-43-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0085-03 **Collection Date:** 02/10/2021 12:20

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
PCR								
Metagenomic Analysis	**Complete**		NA	1		02/17/21 1512	03/17/21 1709	MNC
QPCR								
Estimated Bacterial Biomass	**4700000000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Definitions

NA: Not Applicable

Report Comments

Reviewed and Approved By:



Maraea Clark
Project Manager
Reported: 03/17/2021 17:13

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Oak Ridge Division
800 Oak Ridge Turnpike, Suite A-702
Oak Ridge, TN 37830
PHONE: (865) 687-4887 FAX: (703) 925-9366

CHAIN OF CUSTODY

Page 1 of 1

Z 1 B 0 0 8 5

Stantec Consulting Services Inc.
PM: Maraea Clark

Project ID: BHL-Belmont Terminal Drilling Sampling
Permit #:
If drinking water, State Reported?: ☐ Yes ☒ No N/A

Report To: Andrew Klingbeil (Stantec)
Address: 10160 Andrew Drive, Ste 140 West Chester, PA 19380
Phone: 610-850-1420 Fax 610-840-2501
E-mail: andrew.klingbeil@stantec.com

Invoice To: Same
Address:
P.O. #:
Quote #:

(1) Sample Matrix codes
AR = Air OL = Oil SW = Storm Water
DW = Dr. Water PC = Paint Chip WP = Wipe
FO = Food SB = Swab WW = Waste Water
FT = Filter SD = Soil/Solid FB = Field Blank
GW = Gr. Water SL = Sludge TB = Trip Blank

(2) Sample Type codes
G = Grab C = Composite

Sample Identification	Sample Date	Sample Time	(1) Sample Matrix	(2) Sample Type	# of Containers	ANALYSIS REQUIRED: Metagenomic Analysis
BT-11A-W-29-20210210	2/10/21	1020	GW	G	1	X
BT-17A-W-83-20210210	2/10/21	1150	GW	G	1	X
BT-17B-W-43-20210210	2/10/21	1220	GW	G	1	X

Please Mark Testing Required Below (X)

FOR LAB CHECK-IN ONLY
Temp Rec'd: 5 °C
Prop. Preserved: Y N
Customer #:
Project: Product Analysis
Proj. Mgr:
Special instructions / notes:

Samples collected by [please print]: Dane Hopkins

PRIORITY (addl. fee)
☐ Same Day (+200%)
☒ Next Day (+100%)
☐ 2 Day (+50%)
☐ 3 Day (+25%)
☐ 4 Day (+10%)
All rush priority orders require prior approval.

Relinquished By:	Date:	Time:	Received By:
Dane	2/10/2021	0956	2/11/21
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

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Microbac Laboratories, Inc., Oak Ridge

CERTIFICATE OF ANALYSIS

Z1B0085

Stantec

Andrew Klingbeil
35055 W12 Mile Rd. Suite 140
Farmington Hills, MI 48331

Project Name: DHc- Belmont Terminal Drilling Sampling
Project / PO Number: N/A
Received: 02/11/2021
Reported: 03/17/2021

Analytical Testing Parameters

Client Sample ID: BT-11A-W-29-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0085-01 **Collection Date:** 02/10/2021 10:20

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
PCR								
Metagenomic Analysis	**Complete**		NA	1		02/17/21 1512	03/17/21 1709	MNC
QPCR								
Estimated Bacterial Biomass	**2500000000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Client Sample ID: BT-17A-W-83-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0085-02 **Collection Date:** 02/10/2021 11:50

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
PCR								
Metagenomic Analysis	**Complete**		NA	1		02/17/21 1512	03/17/21 1709	MNC
QPCR								
Estimated Bacterial Biomass	**3400000000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Client Sample ID: BT-17B-W-43-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0085-03 **Collection Date:** 02/10/2021 12:20

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
PCR								
Metagenomic Analysis	**Complete**		NA	1		02/17/21 1512	03/17/21 1709	MNC
QPCR								
Estimated Bacterial Biomass	**4700000000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Definitions

NA: Not Applicable

Report Comments

Reviewed and Approved By:



Maraea Clark
Project Manager
Reported: 03/17/2021 17:13

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Oak Ridge, TN 37830
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CHAIN OF CUSTODY

Page 1 of 1

Z 1 B 0 0 8 5

Stantec Consulting Services Inc.
PM: Maraea Clark

Project ID: BHL-Belmont Terminal Drilling Sampling
Permit #:
If drinking water, State Reported?: ☐ Yes ☒ No N/A

Report To: Andrew Klingbeil (Stantec)
Address: 10160 Andrew Drive, Ste 140 West Chester, PA 19380
Phone: 610-850-1420 Fax 610-840-2501
E-mail: andrew.klingbeil@stantec.com

Invoice To: Same
Address:
P.O. #:
Quote #:

(1) Sample Matrix codes
AR = Air OL = Oil SW = Storm Water
DW = Dr. Water PC = Paint Chip WP = Wipe
FO = Food SB = Swab WW = Waste Water
FT = Filter SD = Soil/Solid FB = Field Blank
GW = Gr. Water SL = Sludge TB = Trip Blank

(2) Sample Type codes
G = Grab C = Composite

Sample Identification	Sample Date	Sample Time	(1) Sample Matrix	(2) Sample Type	# of Containers	ANALYSIS REQUIRED: Metagenomic Analysis
BT-11A-W-29-20210210	2/10/21	1020	GW	G	1	X
BT-17A-W-83-20210210	2/10/21	1150	GW	G	1	X
BT-17B-W-43-20210210	2/10/21	1220	GW	G	1	X

Please Mark Testing Required Below (X)

FOR LAB CHECK-IN ONLY
Temp Rec'd: 5 °C
Prop. Preserved: Y N
Customer #:
Project: Product Analysis
Proj. Mgr:
Special instructions / notes:

Samples collected by [please print]: Dane Hopkins

PRIORITY (addl. fee)
☐ Same Day (+200%)
☒ Next Day (+100%)
☐ 2 Day (+50%)
☐ 3 Day (+25%)
☐ 4 Day (+10%)
All rush priority orders require prior approval.

Relinquished By:	Date:	Time:	Received By:
Dane	2/10/2021	0956	2/11/21
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

MICROBAC®

Genomic Sequencing Report

Microbac Oak Ridge WO# Z1B0085-01 **3/17/2021**

Client: Stantec

Sample Project: PHL-Belmont Terminal Drilling Sampling

Sample ID: BT-11A-W-29-20210210

Summary:

- There were 5.812 Million reads for this sample and the file size was 1.15 GiB.
- There were 73 identifications (ID's) in the bacterial data set.
- There was 1 identification in the antibiotic resistance data set.
- There were 6 identifications in the fungal data set.
- There were 2 identifications in the protists data set.
- There were 174 identifications in the Dark Matter data set.
- There was 1 identification in the phages data set.
- There was 1 identification in the virus data set.
- There were 4 virulence factors identified in the data set.

The Oak Ridge Microbac laboratory uses the CosmosID bioinformatics pipeline and cloud computing platform for analysis and report generation. The report consists of tables and figures for bacteria, antibiotic resistance genes, fungi, protists, phages, viruses, and virulence genes.

Report Definitions

- **Name:** The name for the organism or taxonomic level or the name of the antibiotic resistance gene or virulence factor.
- **Calls at different taxonomic levels:** In the results there may be some calls at sub-species or strain level and others at species or genus level or higher. CosmosID calls the lowest level possible based on the identification of unique kmers that match the reference genomes. If identification was not possible at strain level, for example, there will be a try to make an identification at species level etc.
- **Tax ID:** The tax id is the NCBI taxonomic id for the organism.
- **Frequency:** The number of unique kmer occurrences in the queried sample. This is roughly equivalent to the number of reads that matched to the organism identified.

- **Unique Matches:** Unique matches percent is the amount of unique kmers that were found in the sample for an organism out of the total possible number of kmers in the database that are unique to that organism.
- **Total Matches:** The shared plus unique matches divided by the pre-calculated shared plus unique matches possible in the reference database.
- **Relative Abundance:** Relative abundance is calculated based on the number of organism specific kmers and their observed frequency in the sample and then normalized to represent the abundance of each organism.

Bacteria

1B-85-1_MBPO210215-A

Fasta/q details

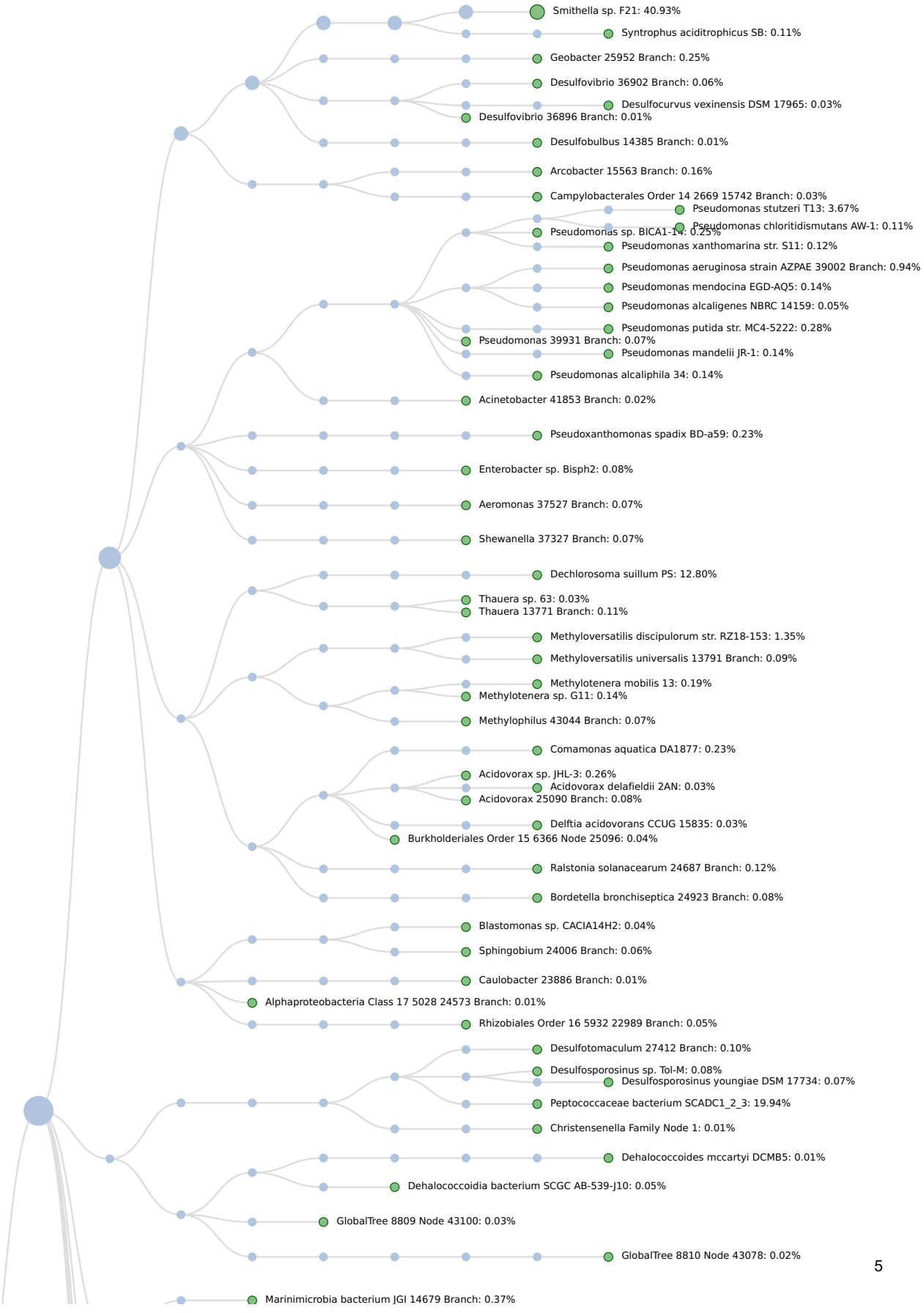
Total results

Metric	Value
Hit	0.210M

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Smithella sp. F21	1538640	7910.90	40.93	53.82	53.84	139854
Peptococcaceae bacterium SCADC1_2_3	1487582	3854.50	19.94	27.26	27.26	98415
Dechlorosoma suillum PS	640081	2473.93	12.80	21.04	21.24	53932
Methanothrix soehngenii GP6	990316	1839.12	9.52	15.01	15.02	42068
Pseudomonas stutzeri T13	1210443	709.39	3.67	4.20	24.74	2882
Methanocella paludicola SANAE	304371	676.83	3.50	2.40	2.43	46704
Methanocella conradii HZ254	1041930	280.24	1.45	0.76	0.79	21110
Methyloversatilis discipulorum	1119528	261.22	1.35	2.34	2.80	5312
Pseudomonas aeruginosa	287	182.25	0.94	6.08	6.08	16
Candidatus Marinimicrobia	62680	70.68	0.37	1.49	0.88	126
Pseudomonas putida	303	53.65	0.28	0.76	1.72	795
Acidovorax sp. JHL-3	1276755	50.47	0.26	0.65	0.75	1596
Geobacter	28231	48.75	0.25	0.89	0.89	50
Pseudomonas sp. BICA1-14	1619235	47.72	0.25	0.63	1.34	1236
Pseudoxanthomonas spadix BD-a59	1045855	45.14	0.23	0.60	0.60	1291
Comamonas aquatica DA1877	1457173	44.96	0.23	0.60	1.03	1222
Methanolinea tarda NOBI-1	882090	43.41	0.22	0.50	0.50	1719
Methylotenera mobilis 13	1132855	36.37	0.19	0.50	0.53	989
Latescibacteria bacterium JGI 0000059-A10	1047067	35.09	0.18	0.79	0.79	65
Caldisericum exile AZM16c01	511051	32.59	0.17	0.27	0.27	1287
Arcobacter	28196	31.22	0.16	2.06	2.06	4
Methanocella arvoryzae MRE50	351160	27.10	0.14	0.12	0.14	2946
Pseudomonas mandelii JR-1	1147786	26.83	0.14	0.38	0.39	889
Pseudomonas alcaliphila 34	1248438	26.80	0.14	0.40	0.84	554
Methylotenera sp. G11	1506585	26.51	0.14	0.38	0.38	721
Pseudomonas mendocina EGD-AQ5	1390370	26.37	0.14	0.39	0.84	562
Methanoregula formicica SMSP	593750	26.35	0.14	0.34	0.38	1125
Pseudomonas xanthomarina	271420	22.92	0.12	0.38	1.58	294
Ralstonia solanacearum	305	22.55	0.12	0.41	0.41	3
Pseudomonas chloritidismutans AW-1	1263865	21.53	0.11	0.36	1.48	314
Syntrophus aciditrophicus SB	56780	21.16	0.11	0.29	0.29	876
Thauera	33057	20.39	0.10	0.22	0.24	33
Desulfotomaculum	1562	19.59	0.10	0.88	0.88	4
Methyloversatilis universalis	378211	17.39	0.09	0.27	0.67	136
Acidovorax	12916	16.30	0.08	0.13	0.13	221
Desulfosporosinus sp. Tol-M	1536651	16.32	0.08	0.23	0.23	641
Bordetella bronchiseptica	518	15.17	0.08	0.46	0.33	22
Enterobacter sp. Bisph2	1274400	14.54	0.07	0.22	0.22	531
Pseudomonas	286	13.74	0.07	0.13	0.17	132
Aeromonas	642	13.40	0.07	0.22	0.22	9
Desulfosporosinus youngiae DSM 17734	768710	13.35	0.07	0.19	0.19	593
Methanoregula boonei 6A8	456442	13.29	0.07	0.17	0.22	712
Shewanella	22	13.15	0.07	0.14	0.14	192
Methylophilus	16	12.82	0.07	0.50	0.50	4
Sphingobium	165695	10.97	0.06	0.94	0.94	2
Desulfovibrio	872	10.80	0.06	0.15	0.15	55
Pseudomonas alcaligenes NBRC 14159	1215092	9.39	0.05	0.15	0.15	361

Rhizobium/Agrobacterium group	227290	9.48	0.05	0.58	0.58	4
Comamonadaceae	80864	8.62	0.04	0.80	0.80	2
Dehalococcoidia bacterium SCGC AB-539-J10	1318599	8.75	0.04	0.12	0.12	295
Blastomonas sp. CACIA14H2	1419876	7.07	0.04	0.12	0.14	272
Sulfuricurvum	286130	6.65	0.03	2.05	2.59	39
Acidovorax delafieldii 2AN	573060	6.18	0.03	0.11	0.17	243
Caldiserica bacterium JGI 0000059-M03	1047012	6.14	0.03	0.14	0.14	60
Thauera sp. 63	497321	6.04	0.03	0.10	0.12	244
Fervidobacterium	2422	6.08	0.03	0.37	0.36	4
Desulfocurvus vexinensis DSM 17965	1121406	5.74	0.03	0.10	0.10	219
Delftia acidovorans CCUG 15835	883100	5.54	0.03	0.12	0.11	83
Ktedonobacteria	388447	5.46	0.03	8.89	8.89	23
euryarchaeote SCGC AAA261-G15	1130318	5.36	0.03	0.10	0.10	77
Ignavibacteriales	795748	5.19	0.03	10.47	10.47	11
Sphaerobacteraceae	85002	4.29	0.02	7.69	7.14	15
Methanomassiliicoccus	1080709	3.85	0.02	5.41	5.37	8
Acinetobacter	469	3.48	0.02	3.08	3.08	8
Methanosarcina	2207	2.81	0.01	2.08	2.05	8
Dehalococcoides mccartyi DCMB5	1193807	2.72	0.01	0.12	0.40	15
Thermanaerovibrio	81461	2.80	0.01	0.17	0.17	3
Desulfobulbus	893	2.29	0.01	0.53	0.53	23
Caulobacter	75	1.64	<0.01	4.08	4.08	2
Desulfovibrionaceae	194924	1.30	<0.01	0.68	0.68	12
Christensenella	990721	1.33	<0.01	0.56	0.56	75
Dictyoglomus	13	1.35	<0.01	0.78	0.78	51
Alphaproteobacteria	28211	1.18	<0.01	0.12	0.07	2


Smithella sp. F21: 40.93%
Syntrophus aciditrophicus SB: 0.11%
Geobacter 25952 Branch: 0.25%
Desulfovibrio 36902 Branch: 0.06%
Desulfocurvus vexinensis DSM 17965: 0.03%
Desulfovibrio 36896 Branch: 0.01%
Desulfobulbus 14385 Branch: 0.01%
Arcobacter 15563 Branch: 0.16%
Campylobacterales Order 14 2669 15742 Branch: 0.03%
Pseudomonas stutzeri T13: 3.67%
Pseudomonas chloritidismutans AW-1: 0.11%
Pseudomonas sp. BICA1-14: 0.25%
Pseudomonas xanthomarina str. S11: 0.12%
Pseudomonas aeruginosa strain AZPAE 39002 Branch: 0.94%
Pseudomonas mendocina EGD-AQ5: 0.14%
Pseudomonas alcaligenes NBRC 14159: 0.05%
Pseudomonas putida str. MC4-5222: 0.28%
Pseudomonas 39931 Branch: 0.07%
Pseudomonas mandelii JR-1: 0.14%
Pseudomonas alcaliphila 34: 0.14%
Acinetobacter 41853 Branch: 0.02%
Pseudoxanthomonas spadix BD-a59: 0.23%
Enterobacter sp. Bisph2: 0.08%
Aeromonas 37527 Branch: 0.07%
Shewanella 37327 Branch: 0.07%
Dechlorosoma suillum PS: 12.80%
Thauera sp. 63: 0.03%
Thauera 13771 Branch: 0.11%
Methyloversatilis discipulorum str. RZ18-153: 1.35%
Methyloversatilis universalis 13791 Branch: 0.09%
Methylotenera mobilis 13: 0.19%
Methylotenera sp. G11: 0.14%
Methylophilus 43044 Branch: 0.07%
Comamonas aquatica DA1877: 0.23%
Acidovorax sp. JHL-3: 0.26%
Acidovorax delafieldii 2AN: 0.03%
Acidovorax 25090 Branch: 0.08%
Delftia acidovorans CCUG 15835: 0.03%
Burkholderiales Order 15 6366 Node 25096: 0.04%
Ralstonia solanacearum 24687 Branch: 0.12%
Bordetella bronchiseptica 24923 Branch: 0.08%
Blastomonas sp. CACIA14H2: 0.04%
Sphingobium 24006 Branch: 0.06%
Caulobacter 23886 Branch: 0.01%
Alphaproteobacteria Class 17 5028 24573 Branch: 0.01%
Rhizobiales Order 16 5932 22989 Branch: 0.05%
Desulfotomaculum 27412 Branch: 0.10%
Desulfosporosinus sp. Tol-M: 0.08%
Desulfosporosinus youngiae DSM 17734: 0.07%
Peptococcaceae bacterium SCADC1_2_3: 19.94%
Christensenella Family Node 1: 0.01%
Dehalococcoides mccartyi DCMB5: 0.01%
Dehalococcoidia bacterium SCGC AB-539-J10: 0.05%
GlobalTree 8809 Node 43100: 0.03%
GlobalTree 8810 Node 43078: 0.02%
Marinimicrobia bacterium JGI 14679 Branch: 0.37%


Latescibacteria bacterium JGI 0000059-A10: 0.18%
GlobalTree 8253 Node 42729: 0.03%
Caldisericum exile AZM16c01: 0.17%
Caldiserica bacterium JGI 0000059-M03: 0.03%
Fervidobacterium 26452 Branch: 0.03%
Thermanaerovibrio 36820 Branch: 0.01%
Dictyoglomus t 14133 Branch: 0.01%
Methanothrix soehngenii GP6: 9.52%
Methanosarcina 1659 Branch: 0.01%
Methanocella paludicola SANAE: 3.50%
Methanocella conradii HZ254: 1.45%
Methanocella arvoryzae MRE50: 0.14%
Methanoregula formicica SMSP: 0.14%
Methanoregula boonei 6A8: 0.07%
Methanolinea tarda NOBI-1: 0.22%
GlobalTree 8836 Node 1637: 0.02%
euryarchaeote SCGC AAA261-G15: 0.03%


Smithella sp. F21: 40.93%
Syntrophus aciditrophicus SB: 0.11%
Geobacter 25952 Branch: 0.25%
Desulfovibrio 36902 Branch: 0.06%
Desulfocurvus vexinensis DSM 17965: 0.03%
Desulfovibrio 36896 Branch: 0.01%
Desulfobulbus 14385 Branch: 0.01%
Arcobacter 15563 Branch: 0.16%
Campylobacterales Order 14 2669 15742 Branch: 0.03%
Pseudomonas stutzeri T13: 3.67%
Pseudomonas chlororaphis subsp. chlororaphis str. PCL1391: 0.25%
Pseudomonas sp. BICA1-14: 0.11%
Pseudomonas xanthomarina str. S11: 0.12%
Pseudomonas aeruginosa strain AZPAE 39002 Branch: 0.94%
Pseudomonas mendocina EGD-AQ5: 0.14%
Pseudomonas alcaligenes NBRC 14159: 0.05%
Pseudomonas putida str. MC4-5222: 0.28%
Pseudomonas 39931 Branch: 0.07%
Pseudomonas mandelii JR-1: 0.14%
Pseudomonas alcaliphila 34: 0.14%
Acinetobacter 41853 Branch: 0.02%
Pseudoxanthomonas spadix BD-a59: 0.23%
Enterobacter sp. Bisph2: 0.08%
Aeromonas 37527 Branch: 0.07%
Shewanella 37327 Branch: 0.07%
Dechlorosoma suillum PS: 12.80%
Thauera sp. 63: 0.03%
Thauera 13771 Branch: 0.11%
Methyloversatilis discipulorum str. RZ18-153: 1.35%
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Methylotenera sp. G11: 0.14%
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Blastomonas sp. CACIA14H2: 0.04%
Sphingobium 24006 Branch: 0.06%
Caulobacter 23886 Branch: 0.01%
Alphaproteobacteria Class 17 5028 24573 Branch: 0.01%
Rhizobiales Order 16 5932 22989 Branch: 0.05%
Desulfotomaculum 27412 Branch: 0.10%
Desulfosporosinus sp. Tol-M: 0.08%
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Peptococcaceae bacterium SCADC1_2_3: 19.94%
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Dehalococcoides mccartyi DCMB5: 0.01%
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GlobalTree 8809 Node 43100: 0.03%
GlobalTree 8810 Node 43078: 0.02%
Marinimicrobia bacterium JGI 14679 Branch: 0.37%
Latescibacteria bacterium JGI 0000059-A10: 0.18%
GlobalTree 8253 Node 42729: 0.03%
Caldisericum exile AZM16c01: 0.17%
Caldiserica bacterium JGI 0000059-M03: 0.03%
Fervidobacterium 26452 Branch: 0.03%
Thermanaerovibrio 36820 Branch: 0.01%
Dictyoglomus t 14133 Branch: 0.01%
Methanothrix soehngenii GP6: 9.52%
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Methanoregula formicica SMSP: 0.14%
Methanoregula boonei 6A8: 0.07%
Methanolinea tarda NOBI-1: 0.22%
GlobalTree 8836 Node 1637: 0.02%
euryarchaeote SCGC AAA261-G15: 0.03%

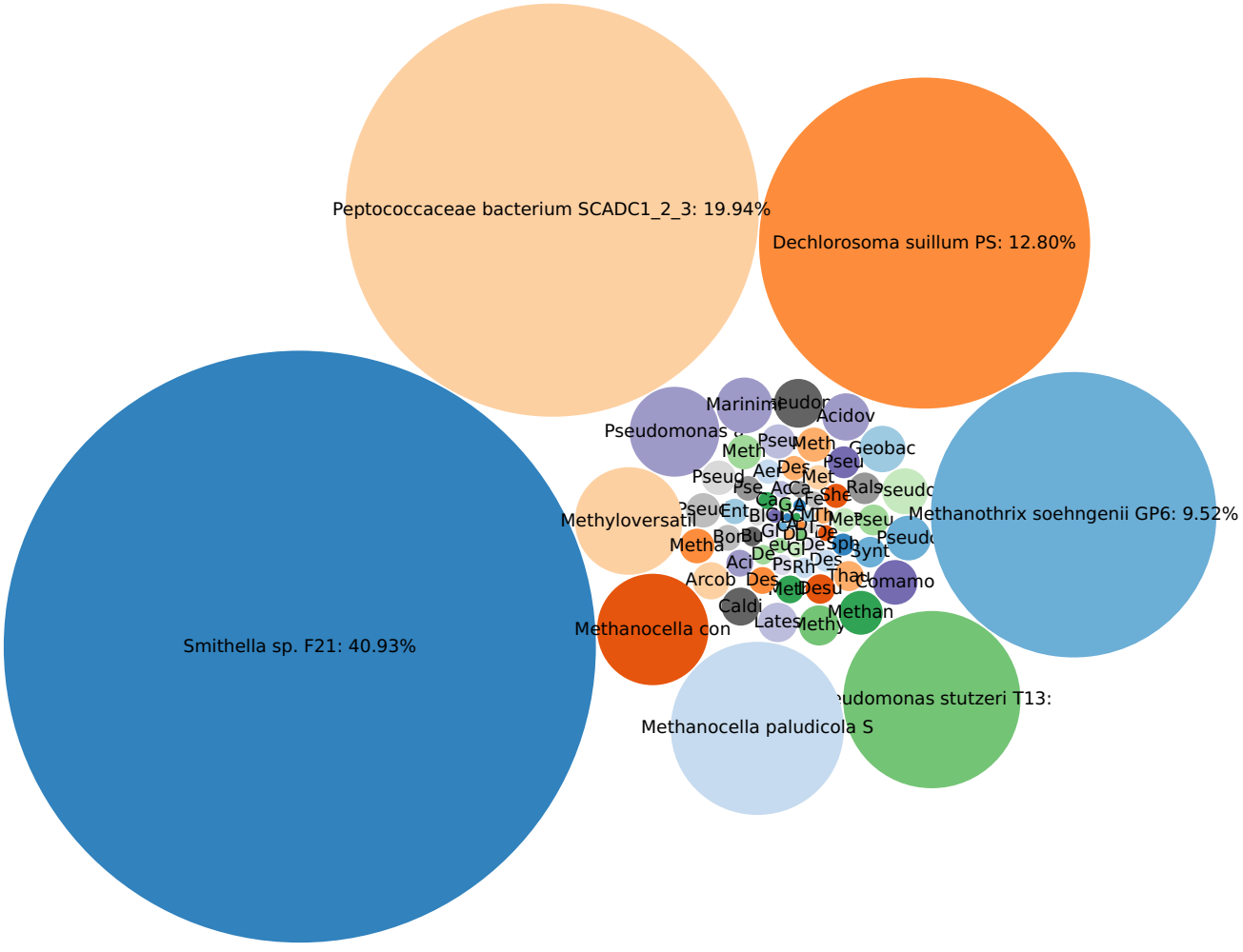
Bacteria

Sunburst Chart Taxonomy

1B-85-1_MBPO210215-A

Total results




Peptococcaceae bacterium SCADC1_2_3: 19.94%
Dechlorosoma suillum PS: 12.80%
Smithella sp. F21: 40.93%
Methanothrix soehngenii GP6: 9.52%
Methanocella con
Methanocella paludicola S

Antibiotic Resistance

1B-85-1_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	45

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Tetracycline tetR	-	1747.15	100.00	37.50	37.50	83

Fungi

1B-85-1_MBPO210215-A

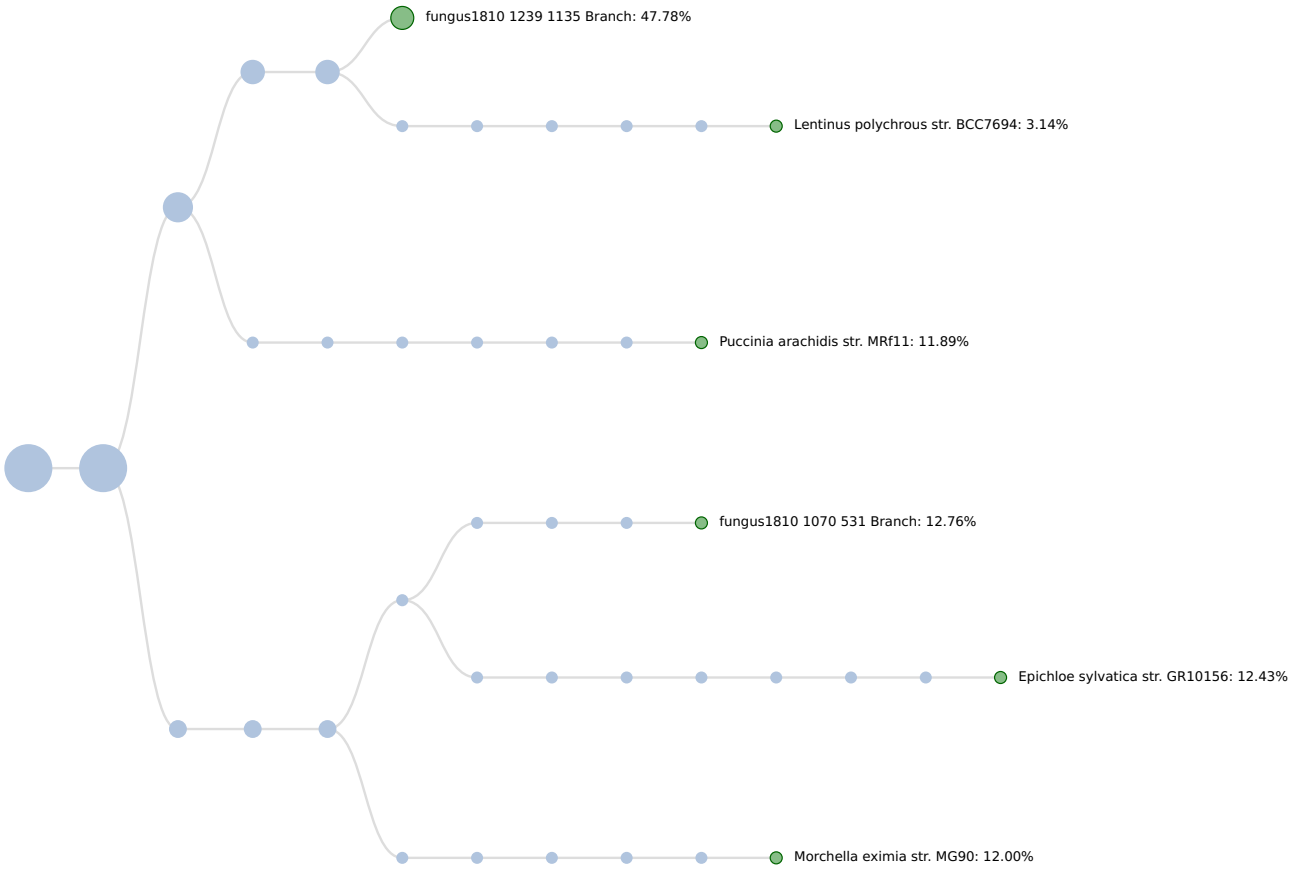
Fasta/q details

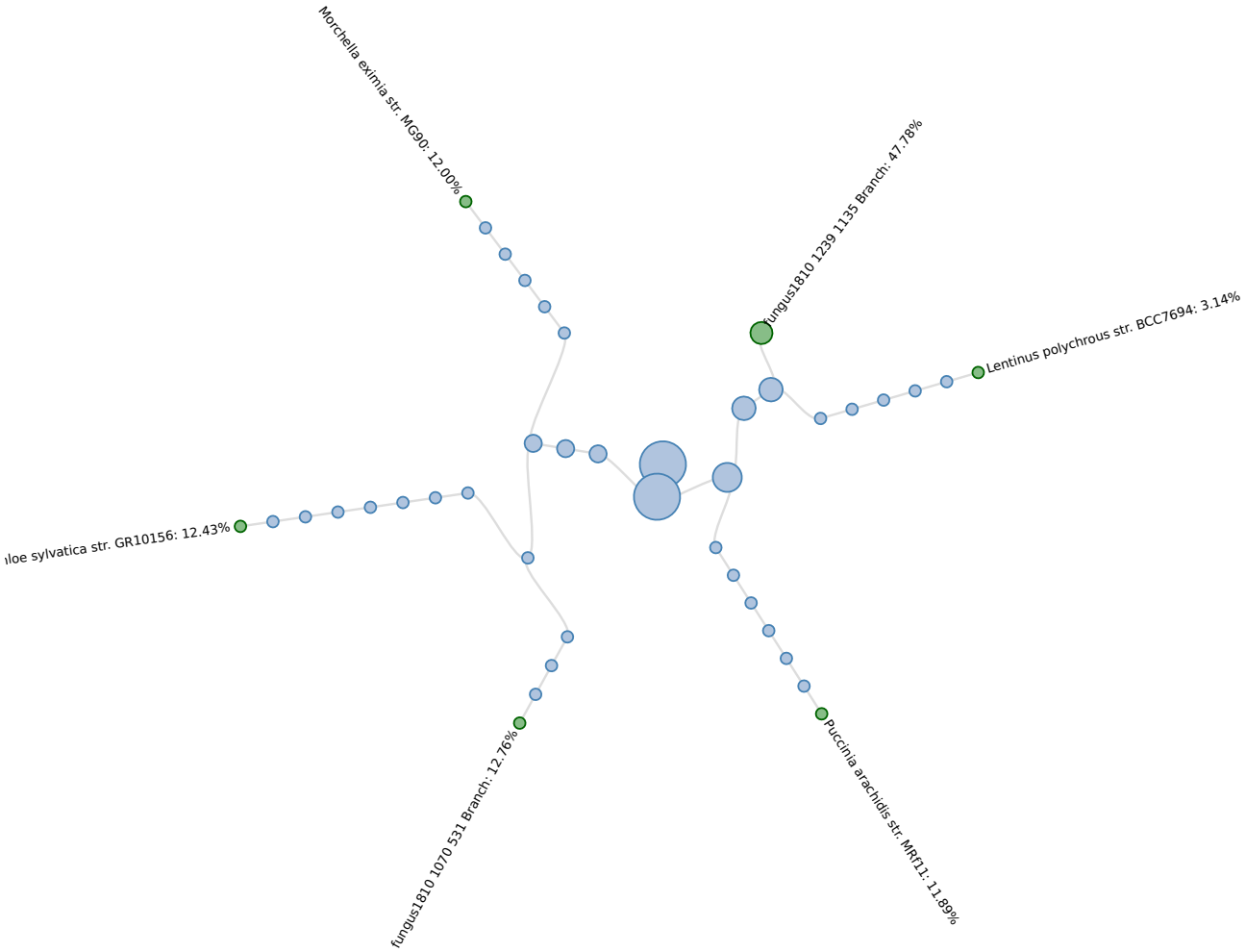
Total results

Metric	Value
Hit	620

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Agaricomycetes	155619	4.42	47.78	0.11	0.14	26
Onygenales	33183	1.18	12.76	0.03	0.03	43
Epichloe sylvatica	79593	1.15	12.43	0.03	0.02	50
Morchella eximia	1582338	1.11	12.00	0.03	0.02	49
Puccinia arachidis	333523	1.10	11.89	0.03	0.05	47
Lentinus polychrous	292559	0.29	3.14	0.01	0.01	18


fungus1810 1239 1135 Branch: 47.78%
Lentinus polychrous str. BCC7694: 3.14%
Puccinia arachidis str. MRf11: 11.89%
fungus1810 1070 531 Branch: 12.76%
Epichloe sylvatica str. GR10156: 12.43%
Morchella eximia str. MG90: 12.00%


Morchella eximia str. MG90: 12.00%
fungus1810 1239 1135 Branch: 47.78%
Lentinus polychrous str. BCC7694: 3.14%
loe sylvatica str. GR10156: 12.43%
fungus1810 1070 531 Branch: 12.76%
Puccinia arachidis str. MRI11: 11.89%

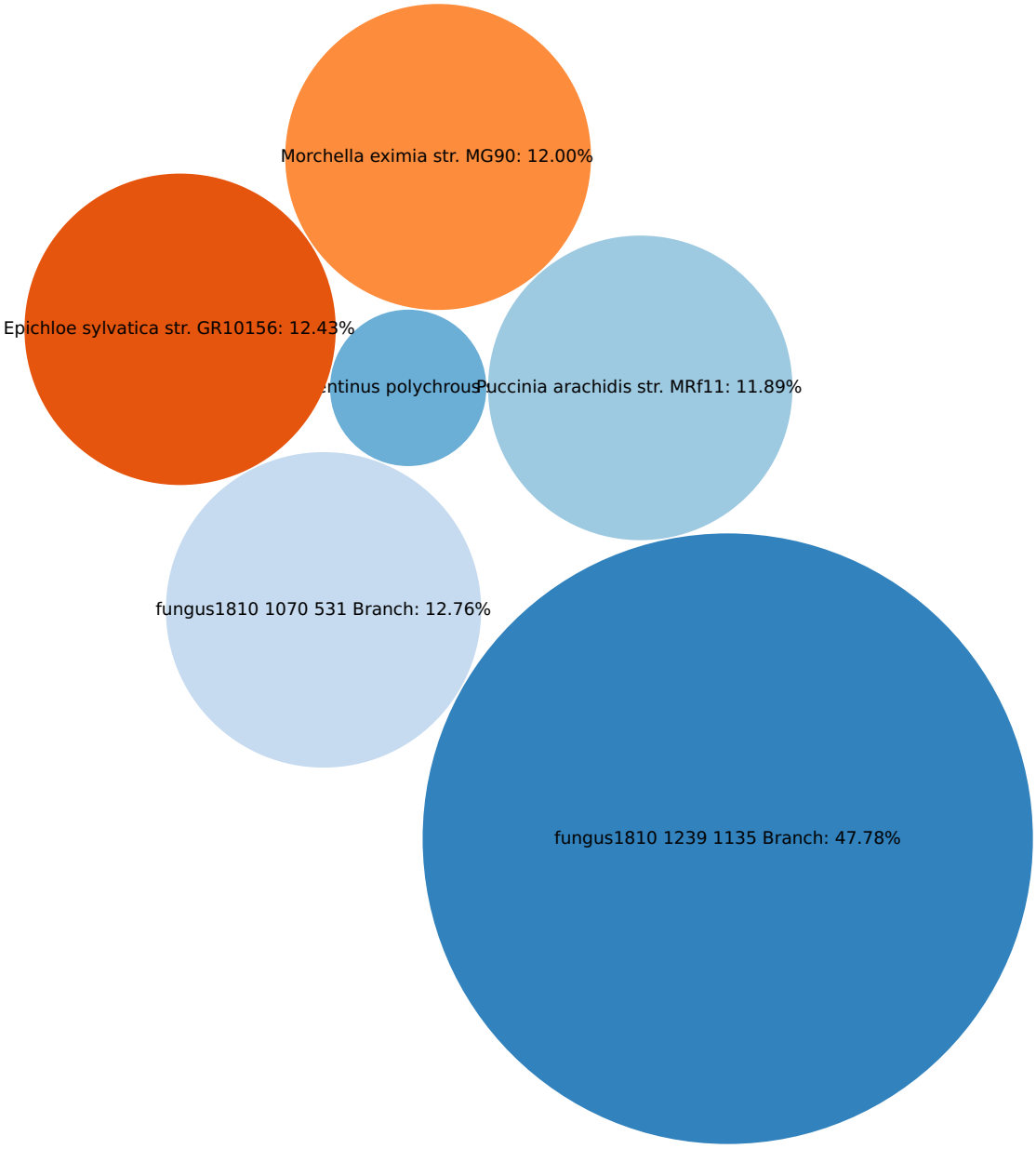
Fungi

Sunburst Chart Taxonomy

1B-85-1_MBPO210215-A

Total results




Morchella eximia str. MG90: 12.00%
Epichloe sylvatica str. GR10156: 12.43%
ntinus polychrous
Puccinia arachidis str. MRf11: 11.89%
fungus1810 1070 531 Branch: 12.76%
fungus1810 1239 1135 Branch: 47.78%

Fasta/q details

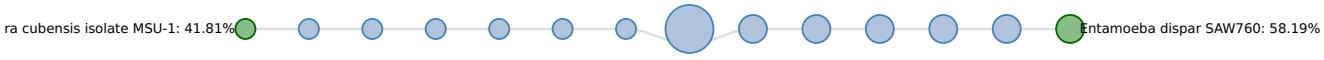
Total results

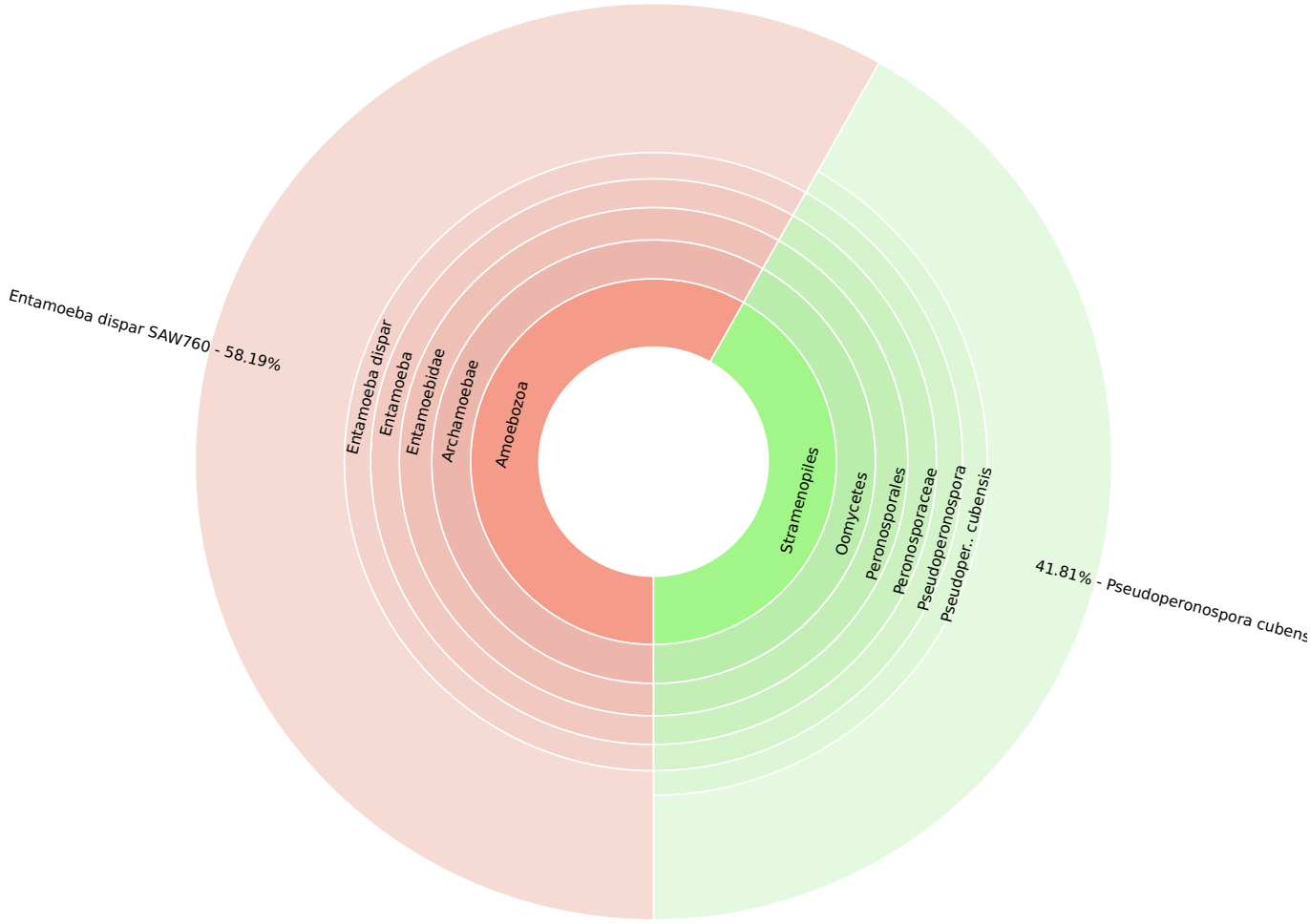
Metric	Value
Hit	374

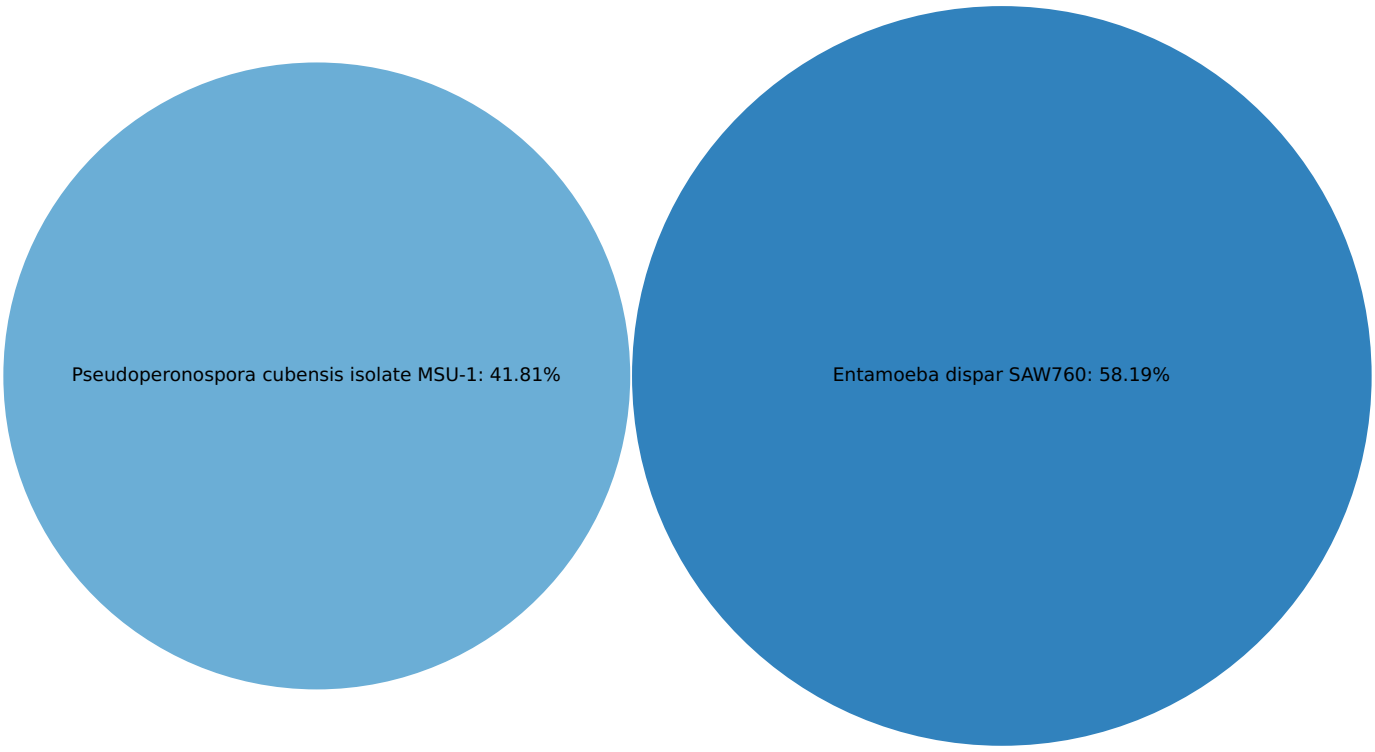
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Entamoeba dispar SAW760	370354	1.74	58.19	0.04	0.04	40
Pseudoperonospora cubensis	143453	1.25	41.81	0.03	0.04	52


Entamoeba dispar SAW760: 58.19%
Pseudoperonospora cubensis isolate MSU-1: 41.81


ra cubensis isolate MSU-1: 41.81%
Entamoeba dispar SAW760: 58.19%


Entamoeba dispar SAW760 - 58.19%
Entamoeba dispar
Entamoeba
Entamoebidae
Archamoebae
Amoebozoa
Stramenopiles
Oomycetes
Peronosporales
Peronosporaceae
Pseudoperonospora
Pseudoper.. cubensis
41.81% - Pseudoperonospora cubens


Pseudoperonospora cubensis isolate MSU-1: 41.81%
Entamoeba dispar SAW760: 58.19%

Dark Matter (Beta)

1B-85-1_MBPO210215-A

Fasta/q details

Total results

Metric	Value
Hit	0.368M

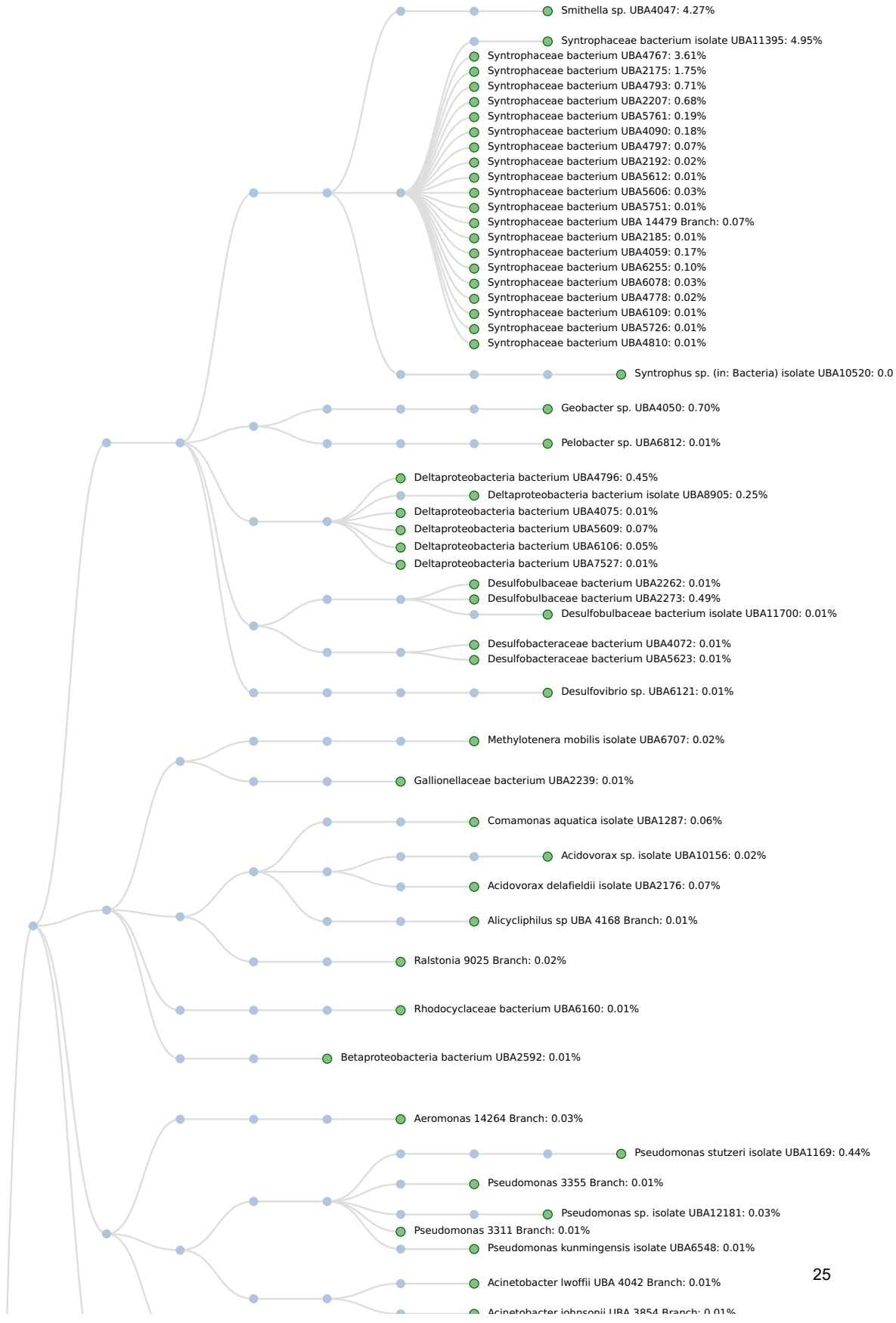
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Desulfotomaculum sp.	41211	7367.71	6.94	58.49	64.02	20672
Firmicutes bacterium UBA4053	1948000	6207.35	5.85	50.66	59.80	17473
Candidatus Marinimicrobia bacterium UBA2242	1953229	5666.54	5.33	58.03	68.98	4554
Candidatus Marinimicrobia bacterium UBA4786	1953235	5475.52	5.16	40.42	69.83	230
Syntrophaceae bacterium	2052184	5258.44	4.95	36.80	62.33	9848
Candidatus Omnitrophica bacterium UBA6233	1953269	4668.40	4.40	41.90	41.90	16743
Smithella sp. UBA4047	1961383	4537.73	4.27	50.81	53.40	7285
Syntrophaceae bacterium UBA4767	1961433	3834.14	3.61	50.57	49.76	2001
Caldiserica bacterium UBA4770	1953180	3382.66	3.19	30.79	33.25	2810
Candidatus Marinimicrobia bacterium UBA2216	1953228	3308.48	3.12	38.36	69.57	434
Candidatus Omnitrophica bacterium UBA6210	1953267	3166.00	2.98	28.50	28.50	23667
Spirochaetaceae bacterium UBA6243	1952898	3071.69	2.89	34.62	48.87	2803
Candidatus Aminicenantes bacterium UBA4085	1953194	2925.63	2.76	26.02	26.02	35747
Spirochaetaceae bacterium UBA6809	1952899	2818.74	2.65	31.54	47.90	3560
Spirochaetaceae bacterium UBA5556	1952892	2729.84	2.57	23.11	24.26	22186
Firmicutes bacterium UBA5766	1948079	2685.31	2.53	34.86	30.16	4169
Pelotomaculum sp. UBA4789	1947067	2314.79	2.18	23.46	23.46	9323
Firmicutes bacterium UBA6155	1948089	2009.78	1.89	22.12	23.69	5035
Spirochaetaceae bacterium UBA6089	1952897	2002.71	1.89	20.30	25.29	5676
Syntrophaceae bacterium UBA2175	1961419	1858.77	1.75	26.52	48.82	775
Methanosaeta sp. UBA533	1915562	1565.31	1.47	12.18	16.47	2799
Spirochaetaceae bacterium	1898206	1560.64	1.47	17.85	25.52	2064
Dehalococcoidia bacterium	2026734	1551.06	1.46	16.86	16.89	4498
Spirochaetaceae bacterium UBA5743	1952894	1540.78	1.45	18.96	25.20	1917
Caldiserica bacterium UBA2182	1953179	1220.11	1.15	13.11	33.41	217
Bacteroidales bacterium UBA6254	1950674	1190.80	1.12	9.30	27.67	789
Spirochaetaceae bacterium UBA4077	1952887	1003.38	0.95	14.20	18.63	1676
Firmicutes bacterium UBA4061	1948001	987.85	0.93	13.21	22.17	814
Spirochaetaceae bacterium UBA2256	1952886	934.00	0.88	13.98	19.11	806
Bacteroidales bacterium UBA5762	1950652	923.89	0.87	7.55	25.26	1595
Dehalococcoidia bacterium UBA2243	1948483	844.08	0.80	17.22	15.58	742
Dehalococcoidia bacterium UBA4060	1948499	776.05	0.73	13.37	14.66	1573
Syntrophaceae bacterium UBA4793	1961435	758.05	0.71	8.35	12.80	498
Geobacter sp. UBA4050	1961391	738.29	0.69	7.54	10.74	152
Syntrophaceae bacterium UBA2207	1961423	726.11	0.68	7.67	12.36	901
Candidatus Omnitrophica bacterium UBA5776	1953266	702.01	0.66	10.29	11.56	1855
Firmicutes bacterium UBA5625	1948077	678.87	0.64	9.03	23.10	2269
candidate division WOR-3 bacterium UBA5618	1948313	666.03	0.63	5.66	8.60	27
candidate division WOR-3 bacterium	2052148	662.75	0.62	6.94	8.56	74
candidate division WOR-3 bacterium UBA2202	1948307	656.33	0.62	7.99	8.15	77
candidate division WOR-3 bacterium UBA4773	1948312	627.30	0.59	3.13	7.80	58
Candidatus Omnitrophica bacterium UBA6797	1953272	594.95	0.56	9.28	11.39	1250
Anaerolineaceae bacterium	2024896	533.30	0.50	6.50	6.50	2460
Desulfobulbaceae bacterium UBA2273	1961547	525.49	0.50	4.57	4.57	7484
Deltaproteobacteria bacterium UBA4796	1948548	477.27	0.45	7.44	8.43	617
Pseudomonas stutzeri	316	471.31	0.44	5.30	5.31	4494
Bacteroidales bacterium	2030927	471.90	0.44	4.54	19.96	1085

Firmicutes bacterium UBA6813	1948101	453.19	0.43	5.18	3.78	3830
Candidatus Aminicenantes bacterium UBA2191	1953192	411.53	0.39	3.28	6.53	536
Firmicutes bacterium UBA6800	1948098	401.90	0.38	14.15	3.34	3499
Paludibacter sp. UBA5753	1947025	372.30	0.35	3.76	7.89	270
Spirochaetaceae bacterium UBA5630	1952893	369.54	0.35	2.62	4.65	164
Candidatus Aminicenantes bacterium UBA6228	1953197	337.50	0.32	2.94	6.64	212
Fervidobacterium sp.	1871331	327.59	0.31	4.24	4.53	959
Spirochaetaceae bacterium UBA4785	1952888	307.70	0.29	2.34	4.27	76
Patescibacteria group bacterium UBA6102	1948843	272.19	0.26	3.24	3.28	1146
Deltaproteobacteria bacterium	2026735	270.00	0.25	4.86	8.41	156
Firmicutes bacterium UBA2269	1947949	254.13	0.24	10.89	3.57	706
Firmicutes bacterium UBA6245	1948092	200.55	0.19	7.58	2.52	1556
Syntrophaceae bacterium UBA5761	1961446	197.16	0.19	2.78	7.00	409
Syntrophaceae bacterium UBA4090	1961432	195.40	0.18	2.90	7.22	271
Candidatus Verstraetearchaeota archaeon UBA156	1916019	187.13	0.18	2.50	2.55	997
Syntrophaceae bacterium UBA4059	1961430	180.86	0.17	2.08	2.10	2244
Leptolinea sp. UBA2195	1946751	145.17	0.14	2.26	2.86	49
Methanobacterium sp. UBA279	1915425	129.67	0.12	1.79	2.07	412
unclassified Patescibacteria group	1948766	123.52	0.12	0.69	0.69	66
Syntrophaceae bacterium UBA6255	1961454	103.17	0.10	1.27	1.27	1367
Acetobacterium sp. UBA6819	1945908	92.05	0.09	0.75	0.75	1893
Firmicutes bacterium UBA4795	1948006	85.15	0.08	0.87	1.51	877
Firmicutes bacterium UBA4091	1948002	80.20	0.08	2.23	2.23	29
Patescibacteria group bacterium UBA5738	1948834	80.77	0.08	0.99	1.08	464
Deltaproteobacteria bacterium UBA5609	1948553	78.60	0.07	1.16	1.00	906
Candidatus Omnitrophica bacterium UBA6253	1953271	78.24	0.07	1.19	1.19	375
Syntrophaceae bacterium UBA4797	1961436	77.47	0.07	1.12	1.27	154
Acidovorax delafieldii	47920	72.77	0.07	1.03	1.05	710
unclassified Syntrophaceae	1510979	69.20	0.07	0.30	0.34	153
Comamonas aquatica	225991	58.65	0.06	0.84	0.85	798
Candidatus Shapirobacteria bacterium UBA4809	1953385	55.00	0.05	1.21	1.21	73
Blastomonas sp. UBA7677	1946117	52.54	0.05	0.79	0.79	545
Dehalococcoidia bacterium UBA2247	1948484	50.03	0.05	1.32	1.32	137
Dehalococcoidia bacterium UBA4086	1948500	50.02	0.05	1.51	1.36	79
Deltaproteobacteria bacterium UBA6106	1948560	48.61	0.05	0.72	0.73	521
unclassified Spirochaetaceae	38780	48.96	0.05	0.20	0.13	44
Dehalococcoidia bacterium UBA5629	1948506	48.14	0.04	0.76	0.86	318
Syntrophaceae bacterium UBA6078	1961449	33.74	0.03	0.64	0.64	661
Pseudomonas sp.	306	33.53	0.03	0.63	0.63	145
Firmicutes bacterium UBA2203	1947946	32.78	0.03	1.98	1.10	46
Aeromonas	642	31.30	0.03	2.22	2.22	2
Clostridiales bacterium UBA4821	1950892	31.26	0.03	0.42	0.42	335
Patescibacteria group bacterium UBA6257	1948850	30.74	0.03	0.47	0.47	106
Syntrophaceae bacterium UBA5606	1961440	27.62	0.03	0.80	0.70	73
Methanocellaceae archaeon UBA148	1915626	27.24	0.03	0.49	0.49	171
Anaerolineaceae bacterium UBA4781	1951412	26.10	0.03	0.48	0.48	164
Bacteroidales bacterium UBA4805	1950592	25.31	0.02	0.54	0.34	70
Elusimicrobia bacterium	2030800	25.71	0.02	0.40	0.45	434
Anaerolineaceae bacterium UBA5823	1951435	24.00	0.02	0.43	0.45	172
unclassified Methanoregula	2649730	24.19	0.02	0.11	0.09	37
Syntrophaceae bacterium UBA4778	1961434	23.79	0.02	0.33	0.33	423
Dehalococcoidia bacterium UBA6808	1948517	21.94	0.02	0.50	0.39	59
Candidatus Aminicenantes bacterium UBA1061	1953190	21.46	0.02	0.40	0.43	142
Candidatus Woesebacteria bacterium	2026804	21.23	0.02	0.20	0.20	20
Methylotenera mobilis	359408	20.14	0.02	0.40	0.50	114

Acidovorax sp.	1872122	20.51	0.02	0.32	0.33	485
Ralstonia	48736	18.97	0.02	0.53	0.53	19
Syntrophaceae bacterium UBA2192	1961422	18.50	0.02	0.42	1.16	61
Anaerolineaceae bacterium UBA6105	1951439	17.56	0.02	0.31	0.31	198
Bacteroidales bacterium UBA4073	1950537	17.68	0.02	0.37	0.52	91
Candidatus Verstraetearchaeota archaeon UBA76	1916020	18.47	0.02	0.34	0.39	163
Firmicutes bacterium UBA6226	1948091	17.05	0.02	0.24	0.24	281
Methanolinea sp. UBA245	1915518	16.54	0.02	0.56	0.40	29
Pelobacter sp. UBA6812	1961381	15.28	0.01	0.27	0.27	976
Desulfobulbaceae bacterium	2053307	14.73	0.01	0.23	0.23	225
Peptococcaceae bacterium UBA6129	1952720	14.63	0.01	0.21	0.21	268
Dehalococcoides mccartyi	61435	14.62	0.01	0.33	0.32	68
Methanoregula sp. UBA278	1915548	14.71	0.01	0.28	0.28	137
Methanoregulaceae archaeon UBA288	1915693	14.43	0.01	0.24	0.24	264
Candidatus Aminicenantes bacterium UBA4820	1953195	13.37	0.01	0.31	0.31	56
Rhodocyclaceae bacterium UBA6160	1952847	13.21	0.01	0.26	0.26	123
Porphyromonadaceae bacterium	2049046	13.02	0.01	0.26	0.26	106
Syntrophaceae bacterium UBA5751	1961445	11.74	0.01	0.75	0.68	24
Desulfobacteraceae bacterium UBA5623	1961539	11.70	0.01	0.21	0.73	184
Gallionellaceae bacterium UBA2239	1953084	12.19	0.01	0.22	0.22	198
unclassified Alicycliphilus	2646048	12.00	0.01	0.18	0.10	15
Trichococcus sp.	1985464	11.17	0.01	0.26	0.23	34
Caldiserica bacterium UBA6126	1953182	11.52	0.01	0.25	0.25	82
Deltaproteobacteria bacterium UBA7527	1948564	10.91	0.01	0.19	0.19	176
Desulfobulbaceae bacterium UBA2262	1961545	10.34	0.01	0.16	0.15	127
Betaproteobacteria bacterium UBA2592	1948455	10.88	0.01	0.20	0.20	147
Pseudomonas aeruginosa group	136841	10.40	0.01	0.34	0.46	4
Acinetobacter lwoffii	28090	10.57	0.01	0.32	0.27	10
Acinetobacter johnsonii	40214	11.14	0.01	0.14	0.12	12
Deferribacterales bacterium UBA2228	1950941	10.68	0.01	0.24	0.15	59
Patescibacteria group bacterium UBA4067	1948816	10.39	0.01	0.32	0.32	19
Deltaproteobacteria bacterium UBA4075	1948546	9.61	<0.01	0.23	0.17	48
Pseudomonas kunmingensis	1211807	9.12	<0.01	0.32	0.32	14
Syntrophaceae bacterium UBA5612	1961441	8.70	<0.01	0.29	1.20	17
Syntrophaceae bacterium UBA6109	1961451	8.10	<0.01	0.14	0.14	216
Desulfovibrio sp. UBA6121	1961409	8.67	<0.01	0.16	0.16	180
Pseudomonas	286	8.10	<0.01	0.36	0.66	3
Firmicutes bacterium UBA4049	1947999	8.82	<0.01	2.72	1.72	68
Candidatus Atribacteria bacterium UBA4082	1953204	8.80	<0.01	0.37	0.81	9
Candidatus Pacearchaeota archaeon UBA284	1916005	9.00	<0.01	0.30	0.30	17
Syntrophaceae bacterium UBA2185	1961420	7.24	<0.01	0.17	0.14	53
Syntrophaceae bacterium UBA5726	1961443	7.44	<0.01	0.12	0.14	175
Desulfobacteraceae bacterium UBA4072	1961535	7.39	<0.01	0.21	0.13	250
Novosphingobium sp. UBA6722	1946985	7.06	<0.01	0.15	0.15	99
Peptococcaceae bacterium UBA6116	1952719	7.61	<0.01	0.18	0.18	53
Moorella sp. UBA4076	1946960	7.29	<0.01	0.16	0.16	79
unclassified Actinobacteria	1752188	7.35	<0.01	4.40	4.40	9
Ignavibacteria bacterium UBA2268	1948663	7.87	<0.01	0.23	0.13	25
Methanomassiliicoccaceae archaeon UBA248	1915631	7.31	<0.01	0.16	0.26	80
unclassified Enterobacteriaceae (miscellaneous)	36866	6.60	<0.01	0.16	0.19	51
Spirochaetaceae bacterium UBA6076	1952896	6.19	<0.01	0.12	0.12	107
Desulfosporosinus sp. UBA6075	1946414	6.84	<0.01	0.17	0.19	32
Thermoleophilia bacterium UBA2241	1948763	5.97	<0.01	0.11	0.11	176
Candidatus Moranbacteria bacterium UBA2206	1953299	6.05	<0.01	0.24	0.23	29
Syntrophaceae bacterium UBA4810	1961438	5.63	<0.01	0.12	0.12	80

Syntrophomonas sp. UBA4807	1947618	5.70	<0.01	0.13	0.13	62
Anaerolineaceae bacterium UBA6107	1951440	5.84	<0.01	0.12	0.12	80
Anaerolineaceae bacterium UBA2260	1951405	4.89	<0.01	0.11	0.11	74
Actinobacteria bacterium UBA6100	1953128	5.70	<0.01	0.11	0.11	130
Caldiserica bacterium UBA4822	1953181	4.92	<0.01	0.12	0.12	45
Syntrophus sp. (in: Bacteria)	48412	4.04	<0.01	0.10	0.31	37
Dehalococcoidia bacterium UBA4087	1948501	4.02	<0.01	0.13	0.13	19
Anaerolineaceae bacterium UBA4081	1951410	4.67	<0.01	0.12	0.12	38
Nitrospiraceae bacterium	2026770	4.37	<0.01	0.12	0.12	29
Candidatus Omnitrophica bacterium UBA6249	1953270	4.45	<0.01	0.13	0.13	116
Rikenellaceae bacterium	2049048	3.68	<0.01	0.10	0.10	25
Bacteroidales bacterium UBA6117	1950668	2.80	<0.01	0.15	0.32	6
Candidatus Atribacteria bacterium UBA6794	1953207	2.91	<0.01	0.11	0.11	12
Coprothermobacter sp.	55509	2.74	<0.01	0.11	0.11	43
unclassified Flavobacterium	196869	2.50	<0.01	0.13	0.12	6
Candidatus Atribacteria bacterium UBA5772	1953205	2.32	<0.01	0.26	0.84	3
Patescibacteria group bacterium UBA2558	1948802	1.64	<0.01	0.12	0.34	3


Smithella sp. UBA4047: 4.27%
Syntrophaceae bacterium isolate UBA11395: 4.95%
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Syntrophaceae bacterium UBA2192: 0.02%
Syntrophaceae bacterium UBA5612: 0.01%
Syntrophaceae bacterium UBA5606: 0.03%
Syntrophaceae bacterium UBA5751: 0.01%
Syntrophaceae bacterium UBA 14479 Branch: 0.07%
Syntrophaceae bacterium UBA2185: 0.01%
Syntrophaceae bacterium UBA4059: 0.17%
Syntrophaceae bacterium UBA6255: 0.10%
Syntrophaceae bacterium UBA6078: 0.03%
Syntrophaceae bacterium UBA4778: 0.02%
Syntrophaceae bacterium UBA6109: 0.01%
Syntrophaceae bacterium UBA5726: 0.01%
Syntrophaceae bacterium UBA4810: 0.01%
Syntrophus sp. (in: Bacteria) isolate UBA10520: 0.0
Geobacter sp. UBA4050: 0.70%
Pelobacter sp. UBA6812: 0.01%
Deltaproteobacteria bacterium UBA4796: 0.45%
Deltaproteobacteria bacterium isolate UBA8905: 0.25%
Deltaproteobacteria bacterium UBA4075: 0.01%
Deltaproteobacteria bacterium UBA5609: 0.07%
Deltaproteobacteria bacterium UBA6106: 0.05%
Deltaproteobacteria bacterium UBA7527: 0.01%
Desulfobulbaceae bacterium UBA2262: 0.01%
Desulfobulbaceae bacterium UBA2273: 0.49%
Desulfobulbaceae bacterium isolate UBA11700: 0.01%
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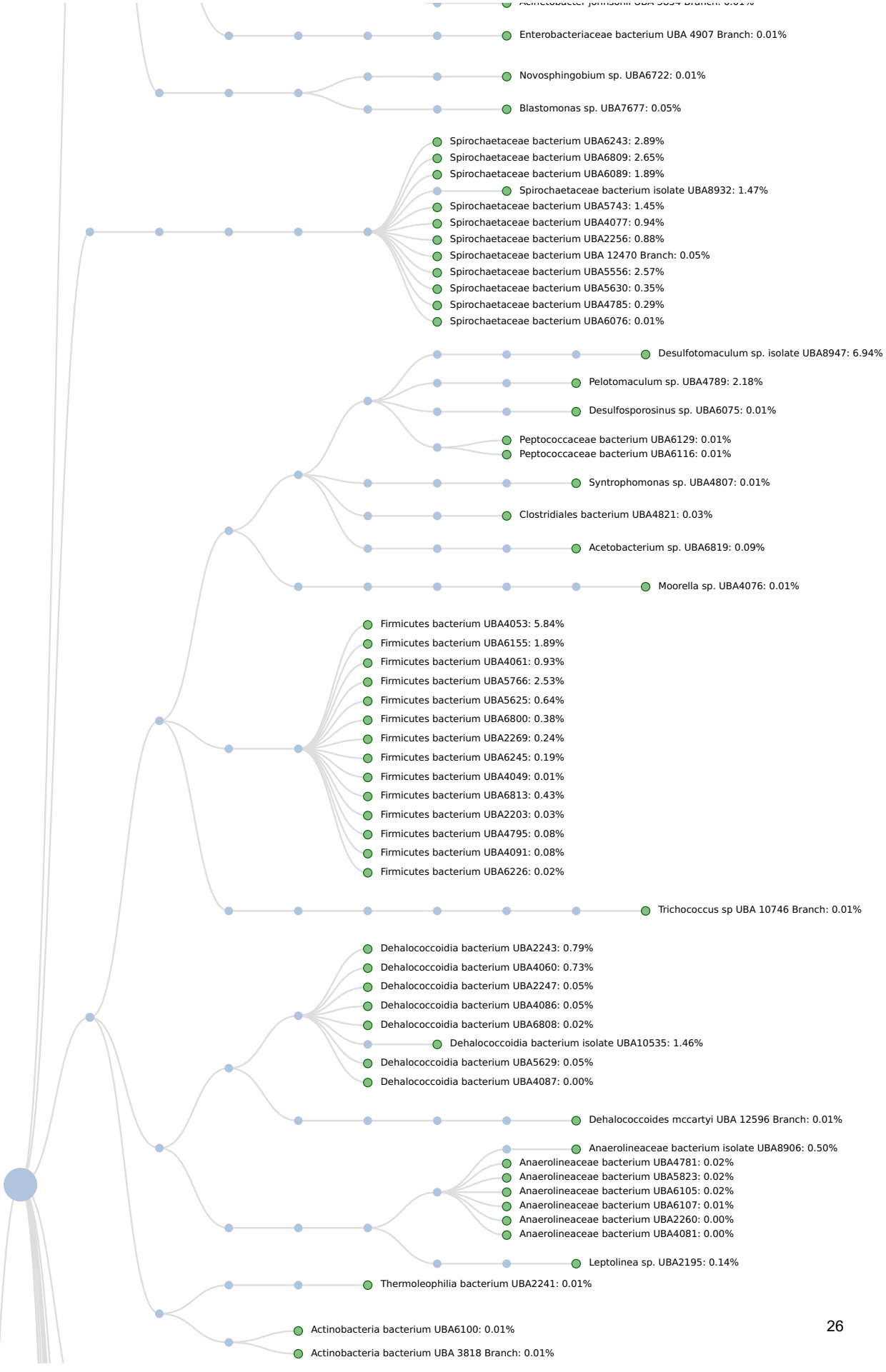
Desulfobacteraceae bacterium UBA5623: 0.01%
Desulfovibrio sp. UBA6121: 0.01%
Methylotenera mobilis isolate UBA6707: 0.02%
Gallionellaceae bacterium UBA2239: 0.01%
Comamonas aquatica isolate UBA1287: 0.06%
Acidovorax sp. isolate UBA10156: 0.02%
Acidovorax delafieldii isolate UBA2176: 0.07%
Alicycliphilus sp UBA 4168 Branch: 0.01%
Ralstonia 9025 Branch: 0.02%
Rhodocyclaceae bacterium UBA6160: 0.01%
Betaproteobacteria bacterium UBA2592: 0.01%
Aeromonas 14264 Branch: 0.03%
Pseudomonas stutzeri isolate UBA1169: 0.44%
Pseudomonas 3355 Branch: 0.01%
Pseudomonas sp. isolate UBA12181: 0.03%
Pseudomonas 3311 Branch: 0.01%
Pseudomonas kunmingensis isolate UBA6548: 0.01%
Acinetobacter lwoffii UBA 4042 Branch: 0.01%


Enterobacteriaceae bacterium UBA 4907 Branch: 0.01%
Novosphingobium sp. UBA6722: 0.01%
Blastomonas sp. UBA7677: 0.05%
Spirochaetaceae bacterium UBA6243: 2.89%
Spirochaetaceae bacterium UBA6809: 2.65%
Spirochaetaceae bacterium UBA6089: 1.89%
Spirochaetaceae bacterium isolate UBA8932: 1.47%
Spirochaetaceae bacterium UBA5743: 1.45%
Spirochaetaceae bacterium UBA4077: 0.94%
Spirochaetaceae bacterium UBA2256: 0.88%
Spirochaetaceae bacterium UBA 12470 Branch: 0.05%
Spirochaetaceae bacterium UBA5556: 2.57%
Spirochaetaceae bacterium UBA5630: 0.35%
Spirochaetaceae bacterium UBA4785: 0.29%
Spirochaetaceae bacterium UBA6076: 0.01%
Desulfotomaculum sp. isolate UBA8947: 6.94%
Pelotomaculum sp. UBA4789: 2.18%
Desulfosporosinus sp. UBA6075: 0.01%
Peptococcaceae bacterium UBA6129: 0.01%
Peptococcaceae bacterium UBA6116: 0.01%
Syntrophomonas sp. UBA4807: 0.01%
Clostridiales bacterium UBA4821: 0.03%
Acetobacterium sp. UBA6819: 0.09%
Moorella sp. UBA4076: 0.01%
Firmicutes bacterium UBA4053: 5.84%
Firmicutes bacterium UBA6155: 1.89%
Firmicutes bacterium UBA4061: 0.93%
Firmicutes bacterium UBA5766: 2.53%
Firmicutes bacterium UBA5625: 0.64%
Firmicutes bacterium UBA6800: 0.38%
Firmicutes bacterium UBA2269: 0.24%
Firmicutes bacterium UBA6245: 0.19%
Firmicutes bacterium UBA4049: 0.01%
Firmicutes bacterium UBA6813: 0.43%
Firmicutes bacterium UBA2203: 0.03%
Firmicutes bacterium UBA4795: 0.08%
Firmicutes bacterium UBA4091: 0.08%
Firmicutes bacterium UBA6226: 0.02%
Trichococcus sp UBA 10746 Branch: 0.01%
Dehalococcoidia bacterium UBA2243: 0.79%
Dehalococcoidia bacterium UBA4060: 0.73%
Dehalococcoidia bacterium UBA2247: 0.05%
Dehalococcoidia bacterium UBA4086: 0.05%
Dehalococcoidia bacterium UBA6808: 0.02%
Dehalococcoidia bacterium isolate UBA10535: 1.46%
Dehalococcoidia bacterium UBA5629: 0.05%
Dehalococcoidia bacterium UBA4087: 0.00%
Dehalococcoides mccartyi UBA 12596 Branch: 0.01%
Anaerolineaceae bacterium isolate UBA8906: 0.50%
Anaerolineaceae bacterium UBA4781: 0.02%
Anaerolineaceae bacterium UBA5823: 0.02%
Anaerolineaceae bacterium UBA6105: 0.02%
Anaerolineaceae bacterium UBA6107: 0.01%
Anaerolineaceae bacterium UBA2260: 0.00%
Anaerolineaceae bacterium UBA4081: 0.00%
Leptolinea sp. UBA2195: 0.14%
Thermoleophilia bacterium UBA2241: 0.01%
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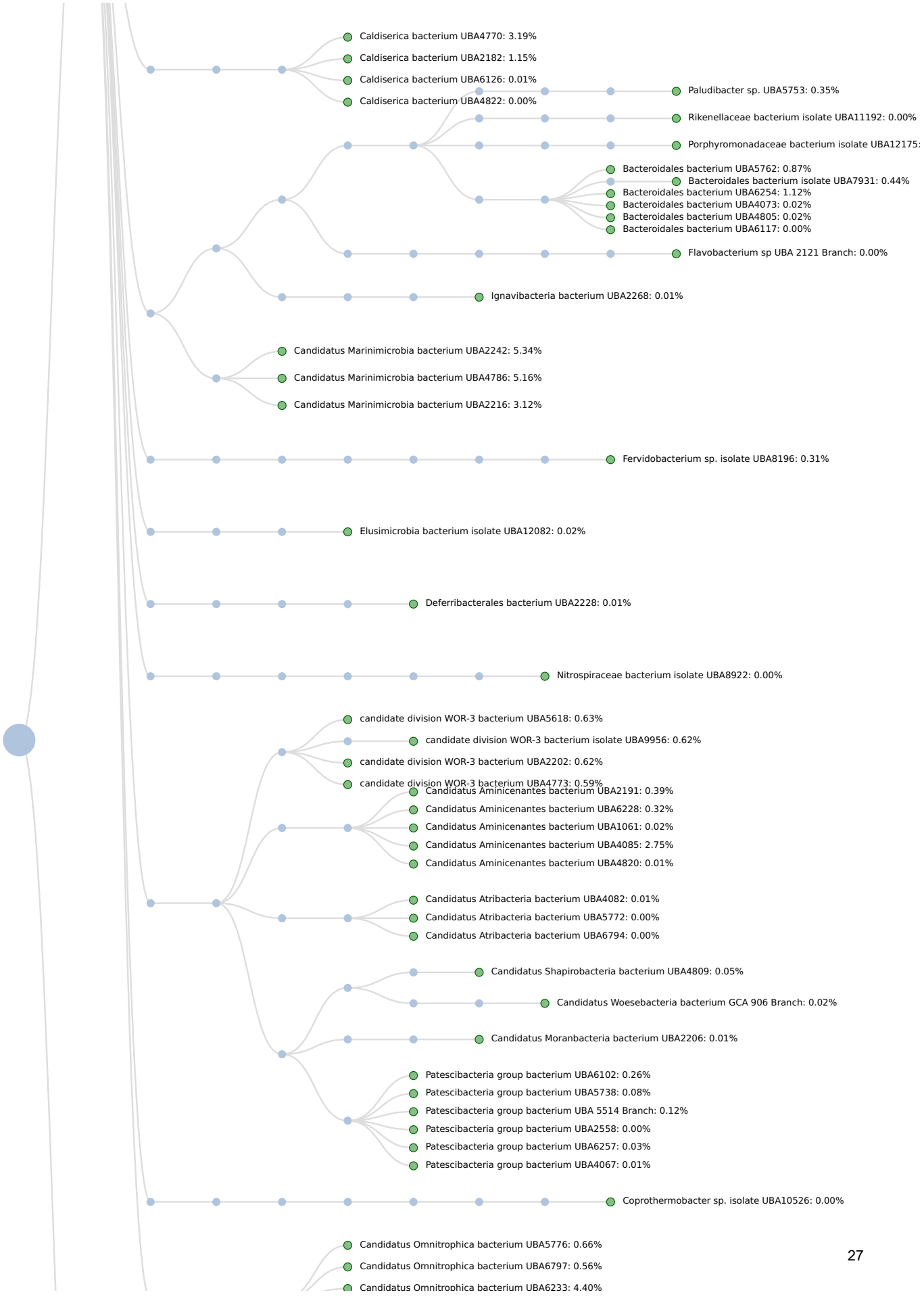
Caldiserica bacterium UBA4770: 3.19%
Caldiserica bacterium UBA2182: 1.15%
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Caldiserica bacterium UBA4822: 0.00%
Paludibacter sp. UBA5753: 0.35%
Rikenellaceae bacterium isolate UBA11192: 0.00%
Porphyromonadaceae bacterium isolate UBA12175:
Bacteroidales bacterium UBA5762: 0.87%
Bacteroidales bacterium isolate UBA7931: 0.44%
Bacteroidales bacterium UBA6254: 1.12%
Bacteroidales bacterium UBA4073: 0.02%
Bacteroidales bacterium UBA4805: 0.02%
Bacteroidales bacterium UBA6117: 0.00%
Flavobacterium sp UBA 2121 Branch: 0.00%
Ignavibacteria bacterium UBA2268: 0.01%
Candidatus Marinimicrobia bacterium UBA2242: 5.34%
Candidatus Marinimicrobia bacterium UBA4786: 5.16%
Candidatus Marinimicrobia bacterium UBA2216: 3.12%
Fervidobacterium sp. isolate UBA8196: 0.31%
Elusimicrobia bacterium isolate UBA12082: 0.02%
Deferribacterales bacterium UBA2228: 0.01%
Nitrospiraceae bacterium isolate UBA8922: 0.00%
candidate division WOR-3 bacterium UBA5618: 0.63%
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Candidatus Aminicenantes bacterium UBA2191: 0.39%
Candidatus Aminicenantes bacterium UBA6228: 0.32%
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Candidatus Aminicenantes bacterium UBA4820: 0.01%
Candidatus Atribacteria bacterium UBA4082: 0.01%
Candidatus Atribacteria bacterium UBA5772: 0.00%
Candidatus Atribacteria bacterium UBA6794: 0.00%
Candidatus Shapirobacteria bacterium UBA4809: 0.05%
Candidatus Woesebacteria bacterium GCA 906 Branch: 0.02%
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Patescibacteria group bacterium UBA6102: 0.26%
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Coprothermobacter sp. isolate UBA10526: 0.00%
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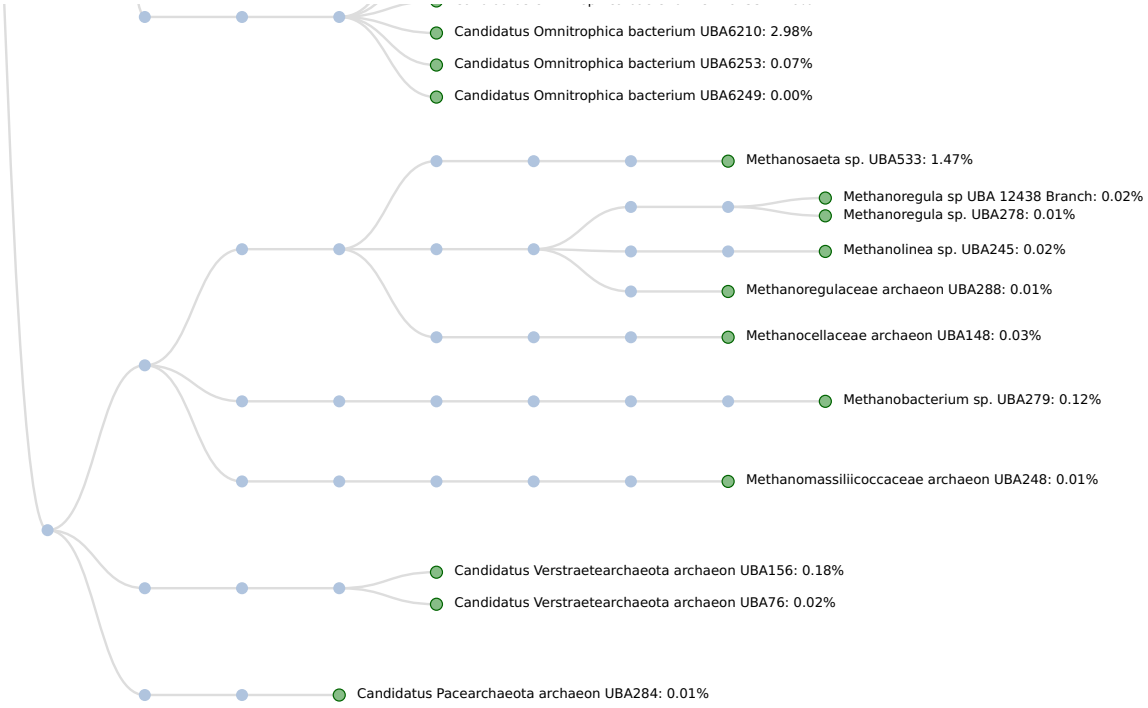
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Candidatus Omnitrophica bacterium UBA6253: 0.07%
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Methanosaeta sp. UBA533: 1.47%
Methanoregula sp UBA 12438 Branch: 0.02%
Methanoregula sp. UBA278: 0.01%
Methanolinea sp. UBA245: 0.02%
Methanoregulaceae archaeon UBA288: 0.01%
Methanocellaceae archaeon UBA148: 0.03%
Methanobacterium sp. UBA279: 0.12%
Methanomassiliicoccaceae archaeon UBA248: 0.01%
Candidatus Verstraetearchaeota archaeon UBA156: 0.18%
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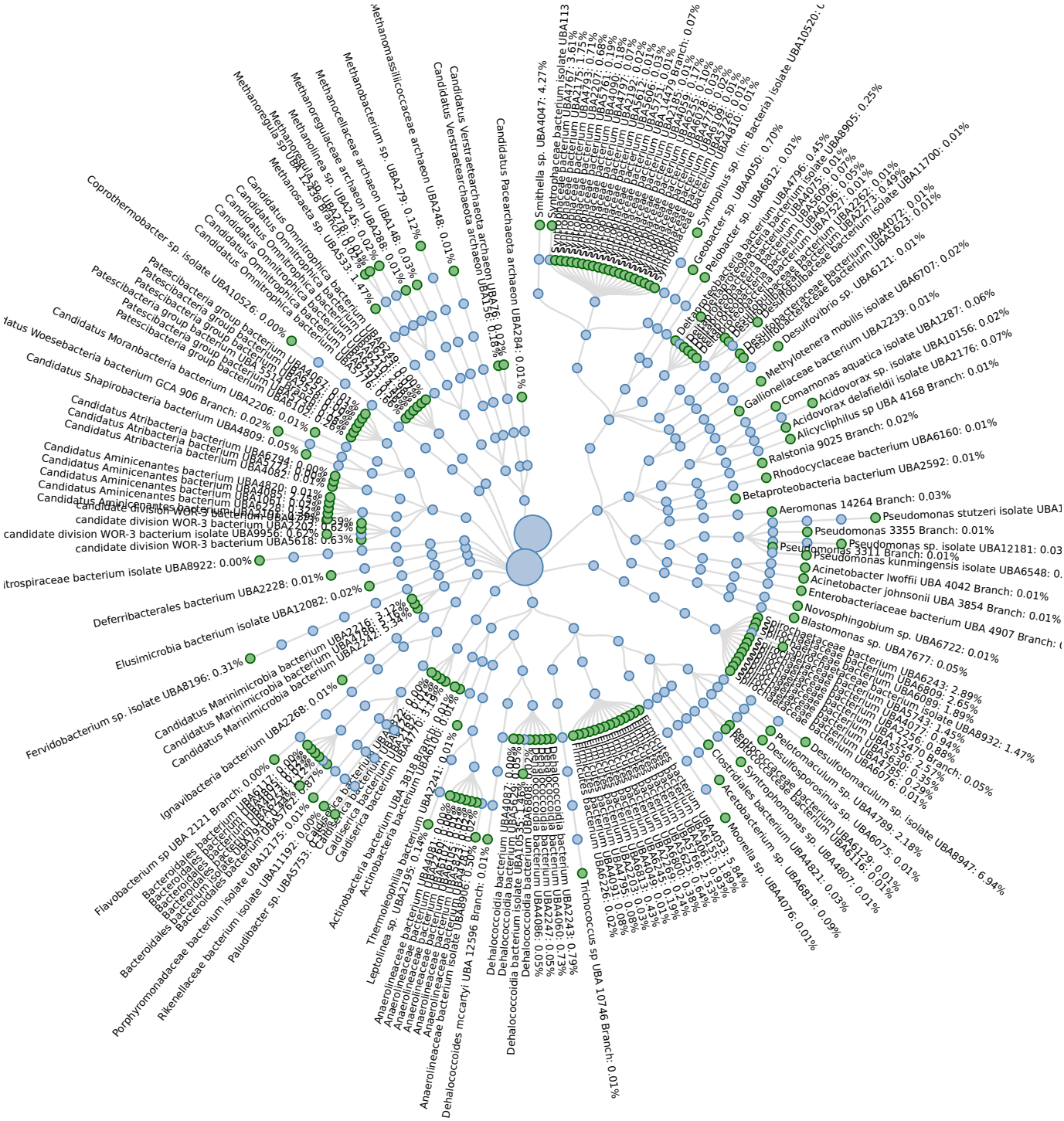
Candidatus Pacearchaeota archaeon UBA284: 0.01%


Methanomassiliicoccaceae archaeon UBA248: 0.01%
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Methanolinea sp. UBA225: 0.02%
Methanoregulaceae archaeon UBA276: 0.01%
Methanoregula sp. UBA288: 0.01%
Methanoseata sp. UBA333: 1.47%
Candidatus Verstraetearchaeota archaeon UBA156: 0.12%
Candidatus Verstraetearchaeota archaeon UBA476: 0.01%
Candidatus Pacearchaeota archaeon UBA284: 0.01%
Smithella sp. UBA4047: 4.27%
Syntrophaceae bacterium isolate UBA1137: 3.61%
Syntrophaceae bacterium UBA2175: 1.75%
Syntrophaceae bacterium UBA4793: 0.71%
Syntrophaceae bacterium UBA2207: 0.69%
Syntrophaceae bacterium UBA3761: 0.18%
Syntrophaceae bacterium UBA4090: 0.18%
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Syntrophaceae bacterium UBA5612: 0.02%
Syntrophaceae bacterium UBA5606: 0.03%
Syntrophaceae bacterium UBA1751: 0.01%
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Syntrophaceae bacterium UBA6078: 0.03%
Syntrophaceae bacterium UBA6126: 0.02%
Syntrophaceae bacterium UBA4810: 0.01%
Syntrophus sp. (in: Bacteria) isolate UBA10520: 0.07%
Geobacter sp. UBA6812: 0.01%
Pelobacter sp. UBA4050: 0.70%
Deltaproteobacteria bacterium UBA4796: 0.45%
Deltaproteobacteria bacterium isolate UBA8905: 0.25%
Deltaproteobacteria bacterium UBA4075: 0.01%
Deltaproteobacteria bacterium UBA5609: 0.07%
Deltaproteobacteria bacterium UBA6066: 0.05%
Deltaproteobacteria bacterium UBA7527: 0.01%
Deltaproteobacteria bacterium UBA2262: 0.01%
Deltaproteobacteria bacterium UBA2273: 0.49%
Deltaproteobacteria bacterium isolate UBA11700: 0.01%
Desulfobacteraceae bacterium UBA4072: 0.01%
Desulfobacteraceae bacterium UBA5623: 0.01%
Desulfobacteraceae bacterium UBA6121: 0.01%
Desulfovibrio sp. UBA6707: 0.02%
Desulfovibrio mobilis isolate UBA1287: 0.06%
Methylotenera mobilis isolate UBA2239: 0.01%
Gallionellaceae bacterium UBA10156: 0.02%
Comamonas aquatica isolate UBA2176: 0.07%
Acidovorax sp. UBA 4168 Branch: 0.01%
Acidovorax delafieldii isolate UBA6160: 0.01%
Alicycliphilus sp UBA 4168 Branch: 0.02%
Ralstonia 9025 Branch: 0.01%
Rhodocyclaceae bacterium UBA2592: 0.01%
Betaproteobacteria bacterium UBA6794: 0.01%
Aeromonas 14264 Branch: 0.03%
Pseudomonas stutzeri isolate UBA1
Pseudomonas 3355 Branch: 0.01%
Pseudomonas sp. isolate UBA12181: 0.03
Pseudomonas 3311 Branch: 0.01%
Pseudomonas kunmingensis isolate UBA6548: 0.
Acinetobacter lwoffii UBA 4042 Branch: 0.01%
Acinetobacter johnsonii UBA 3854 Branch: 0.01%
Enterobacteriaceae bacterium UBA 4907 Branch:
Novosphingobium sp. UBA6722: 0.01%
Blastomonas sp. UBA7677: 0.05%
Spirochaetaceae bacterium UBA6243: 2.89%
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Spirochaetaceae bacterium UBA4077: 1.45%
Spirochaetaceae bacterium UBA8932: 1.47%
Spirochaetaceae bacterium UBA2556: 0.94%
Spirochaetaceae bacterium UBA5470 Branch: 0.05%
Spirochaetaceae bacterium UBA4630: 2.57%
Spirochaetaceae bacterium UBA6185: 0.35%
Spirochaetaceae bacterium UBA6076: 0.29%
Spirochaetaceae bacterium UBA6076: 0.01%
Desulfotomaculum sp. isolate UBA8947: 6.94%
Desulfotomaculum sp. UBA6075: 0.01%
Desulfosporosinus sp. UBA6129: 0.01%
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Peptococcaceae bacterium UBA4821: 0.03%
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Syntrophomonas sp. UBA4076: 0.01%
Clostridiales bacterium UBA4053: 5.84%
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Dehalococcoidia bacterium UBA4087: 0.09%
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Dehalococcoidia bacterium UBA4086: 0.05%
Dehalococcoidia bacterium UBA2247: 0.05%
Dehalococcoidia bacterium UBA4086: 0.05%
Dehalococcoidia bacterium UBA2243: 0.79%
Dehalococcoidia bacterium isolate UBA10535: 1.46%
Dehalococcoides mccartyi UBA 12596 Branch: 0.01%
Anaerolineaceae bacterium UBA4081: 0.00%
Anaerolineaceae bacterium UBA6102: 0.00%
Anaerolineaceae bacterium UBA5575: 0.00%
Anaerolineaceae bacterium UBA6102: 0.00%
Anaerolineaceae bacterium UBA2241: 0.01%
Anaerolineaceae bacterium UBA4081: 0.00%
Anaerolineaceae bacterium UBA6102: 0.00%
Anaerolineaceae bacterium UBA5575: 0.00%
Anaerolineaceae bacterium UBA6102: 0.00%
Anaerolineaceae bacterium UBA2241: 0.01%
Leptolinea sp. UBA2195: 0.14%
Thermoleophilia bacterium UBA3818 Branch: 0.01%
Actinobacteria bacterium UBA2222: 0.00%
Actinobacteria bacterium UBA2222: 0.00%
Actinobacteria bacterium UBA4196: 0.19%
Caldisericia bacterium UBA2222: 0.00%
Caldisericia bacterium UBA2222: 0.00%
Caldisericia bacterium UBA4196: 0.19

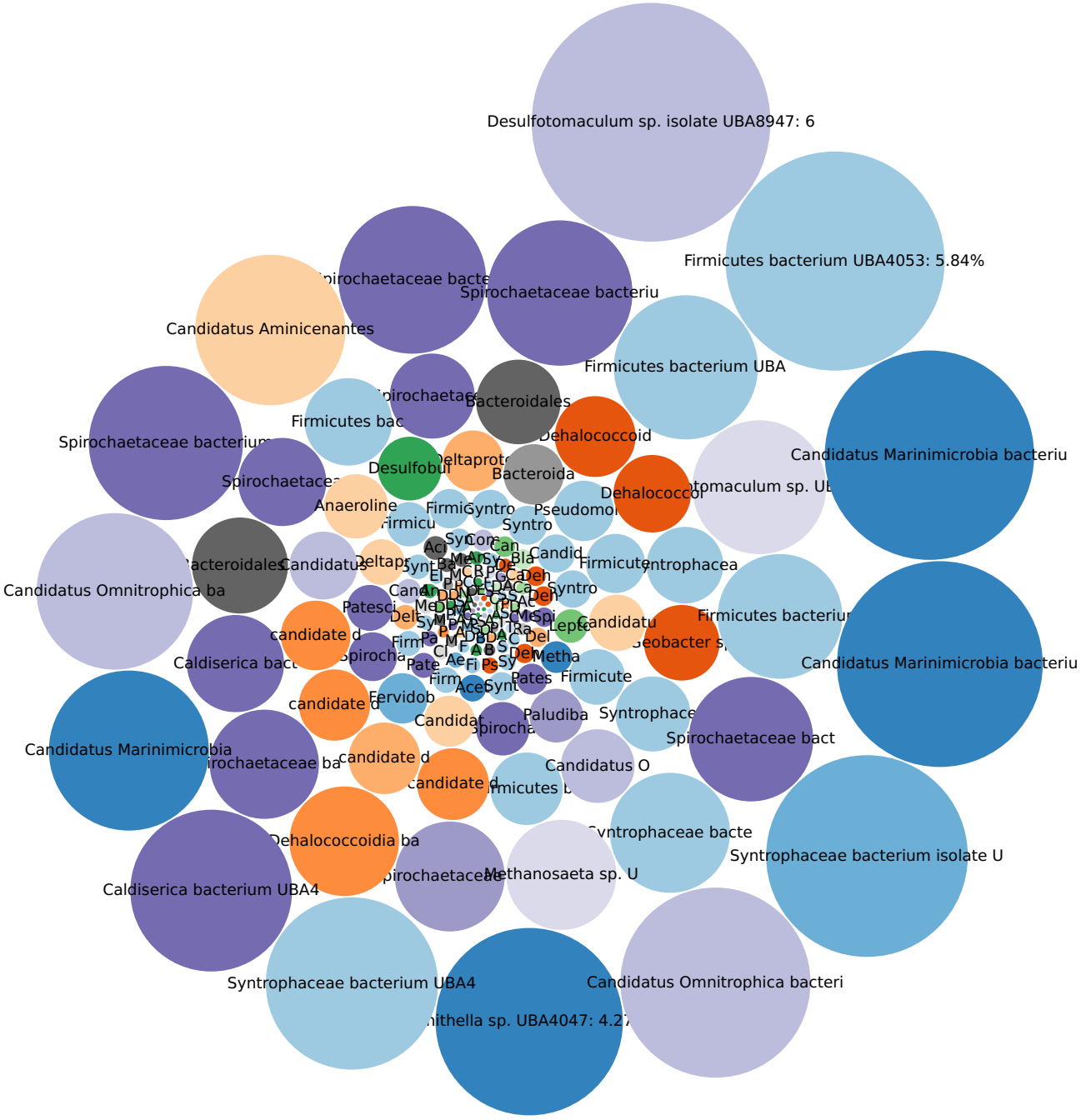
Dark Matter (Beta)

Sunburst Chart Taxonomy

1B-85-1_MBPO210215-A

Total results




Desulfotomaculum sp. isolate UBA8947: 6
Firmicutes bacterium UBA4053: 5.84%
Spirochaetaceae bacteriu
Candidatus Aminicenantes
Firmicutes bacterium UBA
Bacteroidales
Firmicutes bac
Dehalococcoid
Spirochaetaceae bacterium
Candidatus Marinimicrobia bacteriu
Desulfobul
Bacteroida
Spirochaetace
Anaeroline
Syntro
Pseudomo
Candidatus Omnitrophica ba
Candidatus
Firmicute
Syntrophacea
Syntro
Patesci
Firmicutes bacteriu
candidate d
Candidatu
Caldiserica bacu
Metha
Candidatus Marinimicrobia bacteriu
Pates
Firmicute
Fervidob
candidate d
Paludiba
Syntrophace
Candidatus Marinimicrobia
Spirocha
Spirochaetaceae bact
candidate d
Candidatus O
candidate d
Dehalococcoidia ba
Syntrophaceae bacte
Syntrophaceae bacterium isolate U
Caldiserica bacterium UBA4
Methanosaeta sp. U
Syntrophaceae bacterium UBA4
Candidatus Omnitrophica bacteri

Phages

1B-85-1_MBPO210215-A

Fasta/q details

Total results

Metric	Value
Hit	168

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudomonas phage PS-1	1573458	52.46	100.00	0.88	0.88	238

Viruses

1B-85-1_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	206

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Rosellinia necatrix partitivirus 2	859651	4.99	100.00	0.35	0.35	9

Virulence Factors

1B-85-1_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	128

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Salmonella Typhimurium GI 46019645	-	1064.62	30.33	20.00	20.00	123
Enterobacter aerogenes GENE kluB	-	1024.41	29.19	29.76	29.76	25
Serratia marcescens GENE intI3	-	890.29	25.36	18.92	18.92	77
Enterobacter aerogenes GENE trbG	-	530.63	15.12	11.95	11.95	54

MICROBAC®

Genomic Sequencing Report

Microbac Oak Ridge WO# Z1B0085-02 **3/17/2021**

Client: Stantec

Sample Project: PHL- Belmont Terminal Drilling Sampling

Sample ID: BT-17A-W-83-20210210

Summary:

- There were 3.84 Million reads for this sample and the file size was 790.5 MiB.
- There were 120 identifications (ID's) in the bacterial data set.
- There was 1 identification in the antibiotic resistance data set.
- There were 8 identifications in the fungal data set.
- There were 2 identifications in the protists data set.
- There were 75 identifications in the Dark Matter data set.
- There were 4 identifications in the phages data set.
- There were 0 identifications in the virus data set.
- There were 14 virulence factors identified in the data set.

The Oak Ridge Microbac laboratory uses the CosmosID bioinformatics pipeline and cloud computing platform for analysis and report generation. The report consists of tables and figures for bacteria, antibiotic resistance genes, fungi, protists, phages, viruses, and virulence genes.

Report Definitions

- **Name:** The name for the organism or taxonomic level or the name of the antibiotic resistance gene or virulence factor.
- **Calls at different taxonomic levels:** In the results there may be some calls at sub-species or strain level and others at species or genus level or higher. CosmosID calls the lowest level possible based on the identification of unique kmers that match the reference genomes. If identification was not possible at strain level, for example, there will be a try to make an identification at species level etc.
- **Tax ID:** The tax id is the NCBI taxonomic id for the organism.
- **Frequency:** The number of unique kmer occurrences in the queried sample. This is roughly equivalent to the number of reads that matched to the organism identified.

- **Unique Matches:** Unique matches percent is the amount of unique kmers that were found in the sample for an organism out of the total possible number of kmers in the database that are unique to that organism.
- **Total Matches:** The shared plus unique matches divided by the pre-calculated shared plus unique matches possible in the reference database.
- **Relative Abundance:** Relative abundance is calculated based on the number of organism specific kmers and their observed frequency in the sample and then normalized to represent the abundance of each organism.

Bacteria

1B-85-2_MBPO210215-A

Fasta/q details

Total results

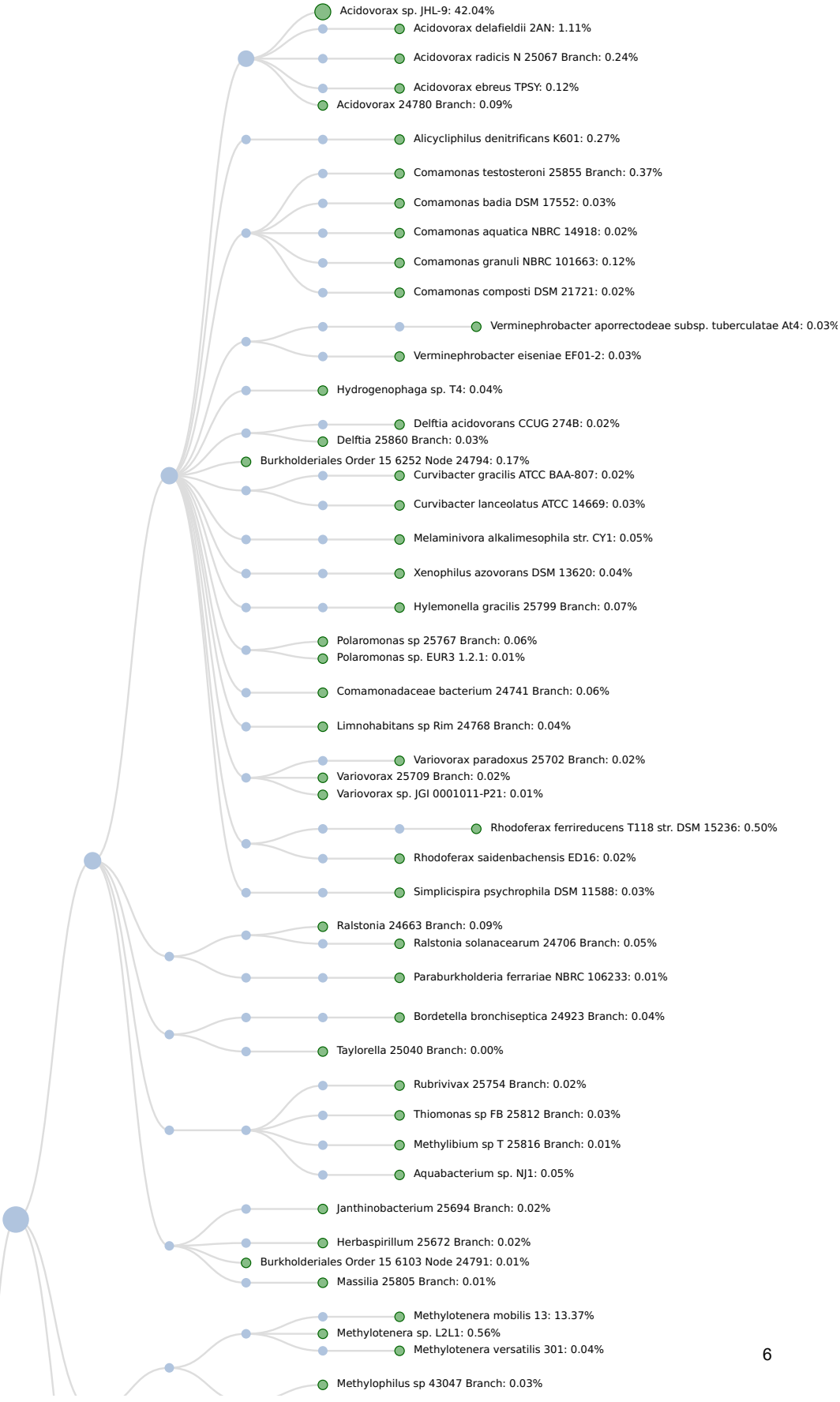
Metric	Value
Hit	1.213M

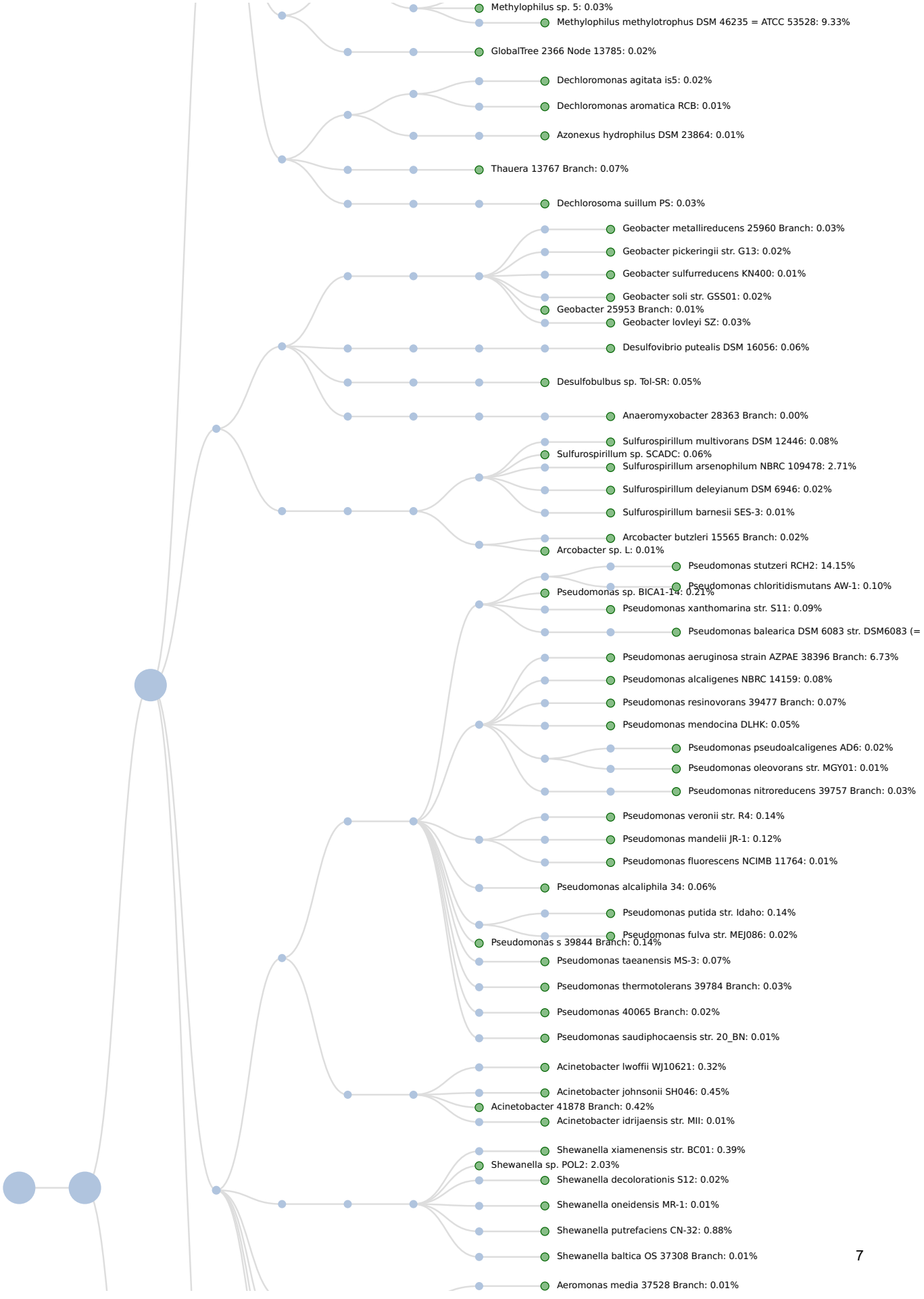
Table

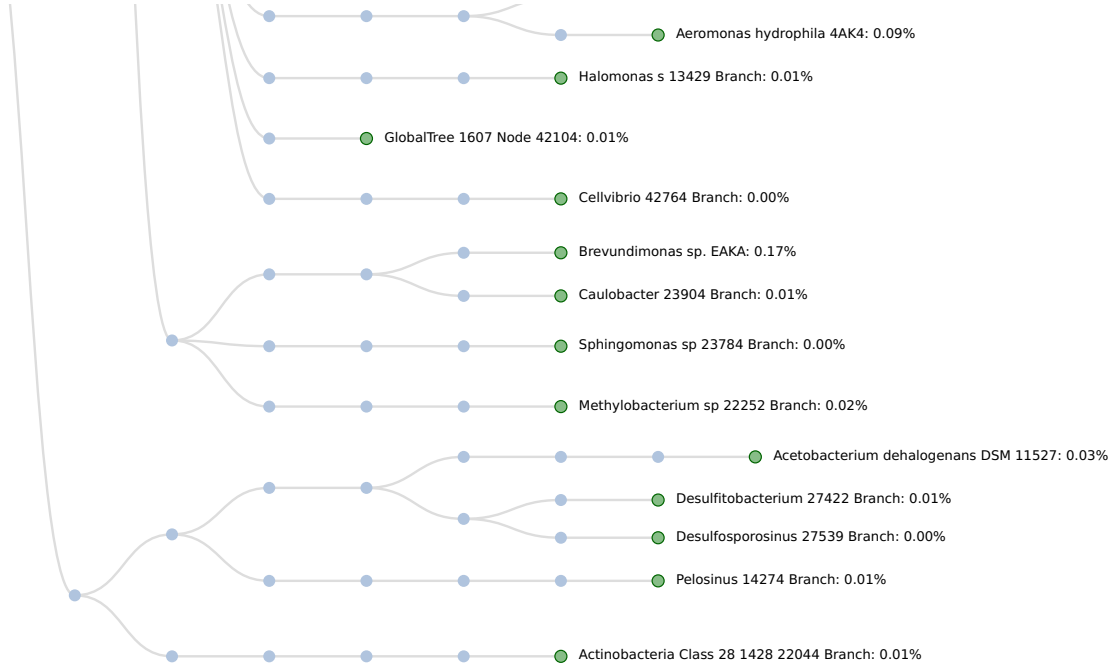
Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Acidovorax sp. JHL-9	1276756	34251.04	42.04	40.39	42.38	2062635
Pseudomonas stutzeri RCH2	644801	11528.22	14.15	59.50	60.57	401212
Methylotenera mobilis 13	1132855	10894.08	13.37	61.97	62.63	306155
Methylophilus methylotrophus DSM 46235 = ATCC 53528	1122236	7605.89	9.34	38.38	38.59	288183
Pseudomonas aeruginosa	287	5484.89	6.73	74.20	74.20	580
Sulfurospirillum arsenophilum NBRC 109478	1349789	2209.44	2.71	14.11	14.62	74538
Shewanella sp. POL2	1201295	1651.48	2.03	11.48	16.27	13773
Acidovorax delafieldii 2AN	573060	906.04	1.11	3.52	5.49	42811
Shewanella putrefaciens CN-32	319224	717.57	0.88	2.29	10.36	1201
Methylotenera sp. L2L1	1502770	454.71	0.56	2.99	6.55	19283
Rhodoferax ferrireducens T118	338969	404.06	0.50	4.11	4.11	10503
Acinetobacter johnsonii SH046	575586	369.54	0.45	1.62	3.87	1513
Acinetobacter	469	341.18	0.42	8.88	8.84	38
Shewanella xiamenensis	332186	318.61	0.39	2.29	12.06	2499
Comamonas testosteroni	285	300.55	0.37	0.11	0.09	172
Acinetobacter lwoffii WJ10621	1046625	261.34	0.32	1.29	3.79	1209
Alicycliphilus denitrificans K601	596154	221.22	0.27	1.02	0.72	15075
Acidovorax radicis	758826	191.64	0.24	0.89	1.12	14889
Pseudomonas sp. BICA1-14	1619235	174.72	0.21	1.07	1.71	4727
Brevundimonas sp. EAKA	1495854	139.37	0.17	1.16	2.27	1444
Comamonadaceae	80864	134.80	0.17	1.22	1.22	41
Pseudomonas veronii	76761	116.12	0.14	1.13	1.91	1864
Pseudomonas	286	116.36	0.14	2.88	2.88	21
Pseudomonas putida str. Idaho	1079364	112.11	0.14	1.51	0.89	5451
Pseudomonas mandelii JR-1	1147786	100.07	0.12	1.18	1.19	2745
Acidovorax ebreus TPSY	535289	99.68	0.12	0.42	0.56	5831
Comamonas granuli NBRC 101663	1223521	98.93	0.12	0.44	0.44	7870
Pseudomonas chloritidismutans AW-1	1263865	83.52	0.10	0.88	1.61	1803
Acidovorax	12916	72.76	0.09	0.27	0.40	344
Ralstonia	48736	70.97	0.09	1.26	0.82	3
Pseudomonas xanthomarina	271420	69.78	0.09	0.73	1.80	1454
Aeromonas hydrophila 4AK4	1354302	69.53	0.08	0.89	1.03	1734
Sulfurospirillum multivorans DSM 12446	1150621	68.18	0.08	0.64	1.29	3475
Pseudomonas alcaligenes NBRC 14159	1215092	63.42	0.08	0.73	0.81	9346
Hylemonella gracilis	80880	59.12	0.07	0.45	0.45	232
Pseudomonas resinovorans	53412	57.49	0.07	0.48	0.50	203
Pseudomonas taeanensis MS-3	1395571	56.79	0.07	0.44	0.46	3968
Thauera	33057	54.00	0.07	0.34	0.30	2
Pseudomonas alcaliphila 34	1248438	52.24	0.06	0.44	0.34	2295
Polaromonas	52972	49.15	0.06	0.45	0.45	46
Desulfovibrio putealis DSM 16056	1121462	48.95	0.06	0.64	0.64	1444
unclassified Comamonadaceae	83494	46.60	0.06	0.20	0.20	11
Sulfurospirillum sp. SCADC	1537915	46.05	0.06	0.46	1.04	2262
Ralstonia solanacearum	305	44.41	0.06	0.21	0.15	3
Aquabacterium sp. NJ1	1538295	41.51	0.05	0.47	0.47	1915
Melaminivora alkalimesophila	1165852	41.01	0.05	0.26	0.28	3102
Pseudomonas mendocina DLHK	1197721	39.99	0.05	0.29	0.25	1918

Desulfobulbus sp. Tol-SR	1536652	37.67	0.05	0.51	0.51	1145
Xenophilus azovorans DSM 13620	1123504	34.01	0.04	0.24	0.48	2796
Hydrogenophaga sp. T4	1437444	32.69	0.04	0.19	1.63	3096
Methylotenera versatilis 301	666681	30.26	0.04	0.26	0.26	2023
Bordetella bronchiseptica	518	29.02	0.04	0.73	0.52	42
Limnohabitans	665874	28.60	0.03	0.34	0.34	25
Dechlorosoma suillum PS	640081	27.55	0.03	0.38	0.38	904
Acetobacterium dehalogenans DSM 11527	1068975	28.02	0.03	0.38	0.43	952
Comamonas badia DSM 17552	1121348	26.58	0.03	0.14	0.14	2535
Delftia	80865	26.17	0.03	0.12	0.39	144
Curvibacter lanceolatus ATCC 14669	1265504	26.26	0.03	0.28	0.41	1585
Simplicispira psychrophila DSM 11588	1123255	26.10	0.03	0.17	0.17	2413
Methylophilus	16	26.16	0.03	0.20	1.52	223
Methylophilus sp. 5	1112274	25.80	0.03	0.26	0.73	1511
Thiomonas	32012	25.21	0.03	1.10	1.10	6
Verminephrobacter aporrectodeae subsp. tuberculatae At4	565443	23.49	0.03	0.13	0.14	2413
Verminephrobacter eiseniae EF01-2	391735	23.25	0.03	0.13	0.14	2349
Geobacter lovleyi SZ	398767	22.46	0.03	0.30	0.30	914
Pseudomonas nitroreducens	46680	22.63	0.03	0.14	0.15	140
Geobacter metallireducens	28232	20.80	0.03	0.95	1.10	4028
Geobacter pickeringii	345632	20.00	0.03	0.25	0.42	933
Pseudomonas thermotolerans	157784	20.44	0.03	0.12	0.12	731
Methylobacterium	407	20.27	0.03	0.24	0.40	87
Comamonas aquatica NBRC 14918	1219031	19.78	0.02	0.11	0.17	1708
Comamonas composti DSM 21721	1121349	19.72	0.02	0.12	0.12	1977
Variovorax paradoxus	34073	19.18	0.02	0.17	0.14	10
Delftia acidovorans CCUG 274B	883101	16.79	0.02	0.11	0.20	768
Dechloromonas agitata is5	1304883	17.49	0.02	0.25	0.28	683
Curvibacter gracilis ATCC BAA-807	1336244	15.96	0.02	0.16	0.35	1178
Variovorax	34072	16.10	0.02	0.15	0.15	6
Rubrivivax	28067	16.34	0.02	0.13	0.14	167
Pseudomonas syringae group	136849	15.10	0.02	0.13	0.13	52
Shewanella decolorationis S12	1353536	15.85	0.02	0.23	1.44	585
Herbaspirillum	963	14.70	0.02	0.18	0.18	5
Geobacter soli	1510391	14.98	0.02	0.20	0.28	700
Pseudomonas pseudoalcaligenes AD6	1453503	14.95	0.02	0.13	0.17	1311
Janthinobacterium	29580	14.17	0.02	0.17	0.18	64
Sulfurospirillum deleyianum DSM 6946	525898	13.63	0.02	0.17	0.28	631
Rhodoferax saidenbachensis ED16	614083	13.32	0.02	0.12	0.12	1182
Methyloversatilis	378210	13.34	0.02	0.12	0.31	7
Pseudomonas fulva	47880	12.80	0.02	0.11	0.15	1136
Arcobacter butzleri	28197	12.47	0.01	0.17	0.40	65
Polaromonas sp. EUR3 1.2.1	1305734	11.33	0.01	0.11	0.11	956
Sulfurospirillum barnesii SES-3	760154	11.04	0.01	0.14	0.24	613
Pseudomonas saudiphocaensis	1499686	11.25	0.01	0.11	0.11	926
Methylibium	316612	10.19	0.01	0.13	0.09	403
Oxalobacteraceae	75682	10.57	0.01	0.30	0.30	10
Arcobacter sp. L	944547	10.44	0.01	0.16	0.21	320
Pseudomonas oleovorans	301	10.93	0.01	0.12	0.16	623
Pseudomonas fluorescens NCIMB 11764	1221522	10.31	0.01	0.15	0.18	484
Dechloromonas aromatica RCB	159087	9.47	0.01	0.14	0.16	423
Geobacter	28231	9.55	0.01	0.14	0.22	66
Pseudomonas balearica DSM 6083	1123016	9.40	0.01	0.12	0.12	322
Nevskiales	1775403	9.55	0.01	66.67	66.67	4
Pelosinus	365348	8.68	0.01	0.11	0.11	55

Geobacter sulfurreducens KN400	663917	8.04	0.01	0.14	0.21	125
Acinetobacter idrijaensis	1507807	8.34	0.01	0.15	0.13	125
Shewanella oneidensis MR-1	211586	8.31	0.01	0.13	1.24	389
Shewanella baltica	62322	8.35	0.01	0.18	0.30	73
Desulfitobacterium	36853	8.06	0.01	0.25	0.25	15
Paraburkholderia ferrariae NBRC 106233	1218076	7.24	<0.01	0.15	0.15	366
Massilia	149698	7.32	<0.01	1.51	1.51	29
Azonexus hydrophilus DSM 23864	1121032	7.09	<0.01	0.11	0.13	374
Aeromonas media	651	7.72	<0.01	0.10	0.22	43
Halomonas	2745	7.21	<0.01	0.22	0.22	8
Variovorax sp. JGI 0001011-P21	1286834	5.86	<0.01	0.11	0.11	62
Caulobacter	75	5.48	<0.01	0.20	0.18	6
Geodermatophilaceae	85030	5.68	<0.01	5.08	5.08	3
Cellvibrio	10	3.82	<0.01	0.29	0.29	3
Taylorella	29574	3.64	<0.01	0.35	0.35	2
Anaeromyxobacter	161492	1.45	<0.01	0.11	0.11	3
Sphingomonas	13687	1.23	<0.01	5.41	5.41	2
Desulfosporosinus	79206	1.67	<0.01	2.68	2.68	4


Acidovorax sp. JHL-9: 42.04%
Acidovorax delafieldii 2AN: 1.11%
Acidovorax radicis N 25067 Branch: 0.24%
Acidovorax ebreus TPSY: 0.12%
Acidovorax 24780 Branch: 0.09%
Alicycliphilus denitrificans K601: 0.27%
Comamonas testosteroni 25855 Branch: 0.37%
Comamonas badia DSM 17552: 0.03%
Comamonas aquatica NBRC 14918: 0.02%
Comamonas granuli NBRC 101663: 0.12%
Comamonas composti DSM 21721: 0.02%
Verminephrobacter aporrectodeae subsp. tuberculatae At4: 0.03%
Verminephrobacter eiseniae EF01-2: 0.03%
Hydrogenophaga sp. T4: 0.04%
Delftia acidovorans CCUG 274B: 0.02%
Delftia 25860 Branch: 0.03%
Burkholderiales Order 15 6252 Node 24794: 0.17%
Curvibacter gracilis ATCC BAA-807: 0.02%
Curvibacter lanceolatus ATCC 14669: 0.03%
Melaminivora alkalimesophila str. CY1: 0.05%
Xenophilus azovorans DSM 13620: 0.04%
Hylemonella gracilis 25799 Branch: 0.07%
Polaromonas sp 25767 Branch: 0.06%
Polaromonas sp. EUR3 1.2.1: 0.01%
Comamonadaceae bacterium 24741 Branch: 0.06%
Limnohabitans sp Rim 24768 Branch: 0.04%
Variovorax paradoxus 25702 Branch: 0.02%
Variovorax 25709 Branch: 0.02%
Variovorax sp. JGI 0001011-P21: 0.01%
Rhodoferax ferrireducens T118 str. DSM 15236: 0.50%
Rhodoferax saidenbachensis ED16: 0.02%
Simplicispira psychrophila DSM 11588: 0.03%
Ralstonia 24663 Branch: 0.09%
Ralstonia solanacearum 24706 Branch: 0.05%
Paraburkholderia ferrariae NBRC 106233: 0.01%
Bordetella bronchiseptica 24923 Branch: 0.04%
Taylorella 25040 Branch: 0.00%
Rubrivivax 25754 Branch: 0.02%
Thiomonas sp FB 25812 Branch: 0.03%
Methylibium sp T 25816 Branch: 0.01%
Aquabacterium sp. NJ1: 0.05%
Janthinobacterium 25694 Branch: 0.02%
Herbaspirillum 25672 Branch: 0.02%
Burkholderiales Order 15 6103 Node 24791: 0.01%
Massilia 25805 Branch: 0.01%
Methylotenera mobilis 13: 13.37%
Methylotenera sp. L2L1: 0.56%
Methylotenera versatilis 301: 0.04%
Methylophilus sp 43047 Branch: 0.03%


Methylophilus sp. 5: 0.03%
Methylophilus methylotrophus DSM 46235 = ATCC 53528: 9.33%
GlobalTree 2366 Node 13785: 0.02%
Dechloromonas agitata is5: 0.02%
Dechloromonas aromatica RCB: 0.01%
Azonexus hydrophilus DSM 23864: 0.01%
Thauera 13767 Branch: 0.07%
Dechlorosoma suillum PS: 0.03%
Geobacter metallireducens 25960 Branch: 0.03%
Geobacter pickeringii str. G13: 0.02%
Geobacter sulfurreducens KN400: 0.01%
Geobacter soli str. GSS01: 0.02%
Geobacter 25953 Branch: 0.01%
Geobacter lovleyi SZ: 0.03%
Desulfovibrio putealis DSM 16056: 0.06%
Desulfobulbus sp. Tol-SR: 0.05%
Anaeromyxobacter 28363 Branch: 0.00%
Sulfurospirillum multivorans DSM 12446: 0.08%
Sulfurospirillum sp. SCADC: 0.06%
Sulfurospirillum arsenophilum NBRC 109478: 2.71%
Sulfurospirillum deleyianum DSM 6946: 0.02%
Sulfurospirillum barnesii SES-3: 0.01%
Arcobacter butzleri 15565 Branch: 0.02%
Arcobacter sp. L: 0.01%
Pseudomonas stutzeri RCH2: 14.15%
Pseudomonas chloritidismutans AW-1: 0.10%
Pseudomonas sp. BICA1-14: 0.21%
Pseudomonas xanthomarina str. S11: 0.09%
Pseudomonas balearica DSM 6083 str. DSM6083 (=
Pseudomonas aeruginosa strain AZPAE 38396 Branch: 6.73%
Pseudomonas alcaligenes NBRC 14159: 0.08%
Pseudomonas resinovorans 39477 Branch: 0.07%
Pseudomonas mendocina DLHK: 0.05%
Pseudomonas pseudoalcaligenes AD6: 0.02%
Pseudomonas oleovorans str. MGY01: 0.01%
Pseudomonas nitroreducens 39757 Branch: 0.03%
Pseudomonas veronii str. R4: 0.14%
Pseudomonas mandelii JR-1: 0.12%
Pseudomonas fluorescens NCIMB 11764: 0.01%
Pseudomonas alcaliphila 34: 0.06%
Pseudomonas putida str. Idaho: 0.14%
Pseudomonas fulva str. MEJ086: 0.02%
Pseudomonas s 39844 Branch: 0.14%
Pseudomonas taeanensis MS-3: 0.07%
Pseudomonas thermotolerans 39784 Branch: 0.03%
Pseudomonas 40065 Branch: 0.02%
Pseudomonas saudiphocaensis str. 20_BN: 0.01%
Acinetobacter lwoffii WJ10621: 0.32%
Acinetobacter johnsonii SH046: 0.45%
Acinetobacter 41878 Branch: 0.42%
Acinetobacter idrijaensis str. MII: 0.01%
Shewanella xiamenensis str. BC01: 0.39%
Shewanella sp. POL2: 2.03%
Shewanella decolorationis S12: 0.02%
Shewanella oneidensis MR-1: 0.01%
Shewanella putrefaciens CN-32: 0.88%
Shewanella baltica OS 37308 Branch: 0.01%
Aeromonas media 37528 Branch: 0.01%


Aeromonas hydrophila 4AK4: 0.09%
Halomonas s 13429 Branch: 0.01%
GlobalTree 1607 Node 42104: 0.01%
Cellvibrio 42764 Branch: 0.00%
Brevundimonas sp. EAKA: 0.17%
Caulobacter 23904 Branch: 0.01%
Sphingomonas sp 23784 Branch: 0.00%
Methylobacterium sp 22252 Branch: 0.02%
Acetobacterium dehalogenans DSM 11527: 0.03%
Desulfitobacterium 27422 Branch: 0.01%
Desulfosporosinus 27539 Branch: 0.00%
Pelosinus 14274 Branch: 0.01%
Actinobacteria Class 28 1428 22044 Branch: 0.01%

Bacteria

Radial Tree Chart Taxonomy

1B-85-2_MBPO210215-A

Total results



Bacteria

Sunburst Chart Taxonomy

1B-85-2_MBPO210215-A

Total results



Bacteria

Bubble Chart Taxonomy

1B-85-2_MBPO210215-A

Total results



Antibiotic Resistance

1B-85-2_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	517

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Aminoglycoside aadA 2150 Branch	-	939.83	100.00	26.32	13.16	5

Fungi

1B-85-2_MBPO210215-A

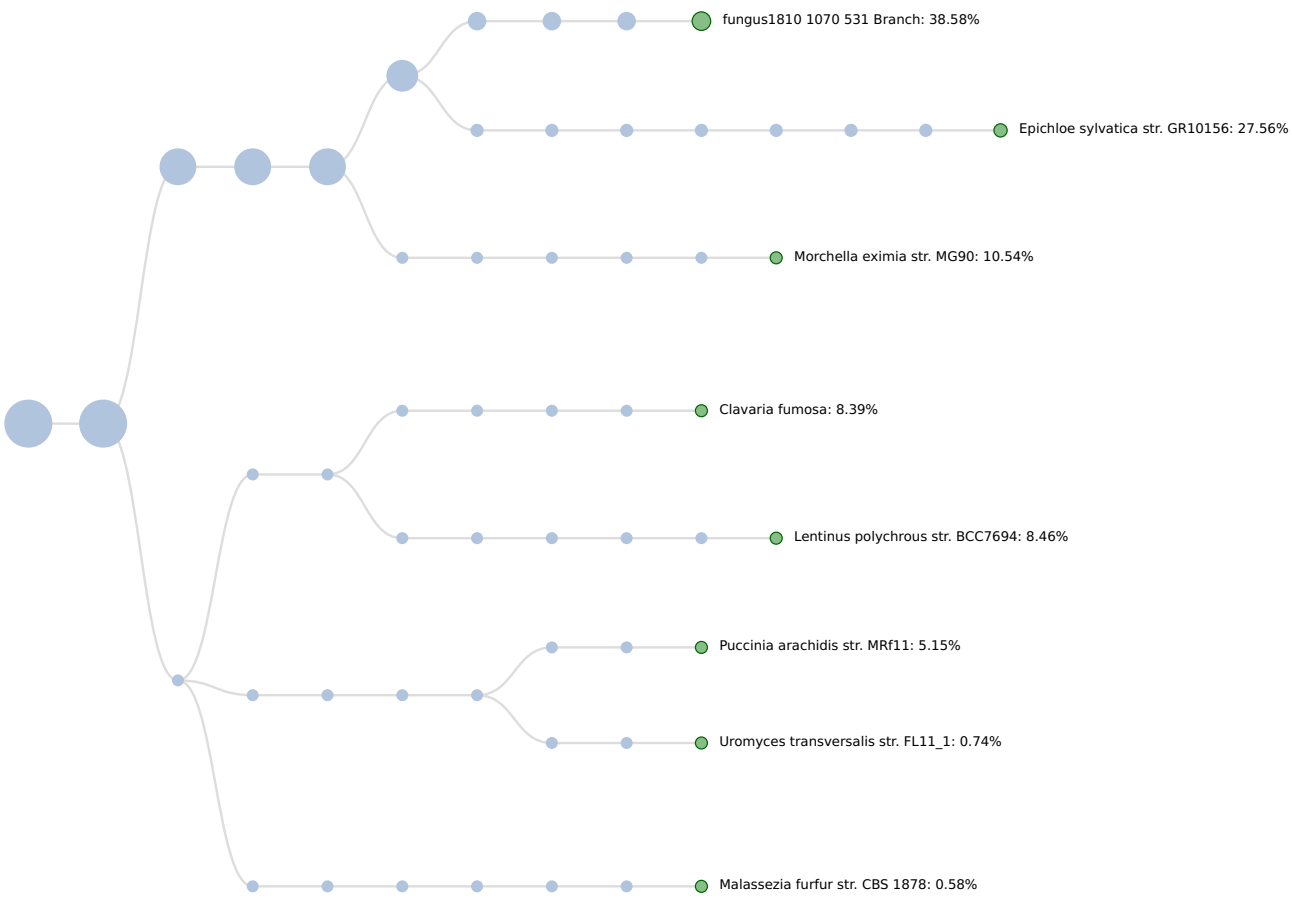
Fasta/q details

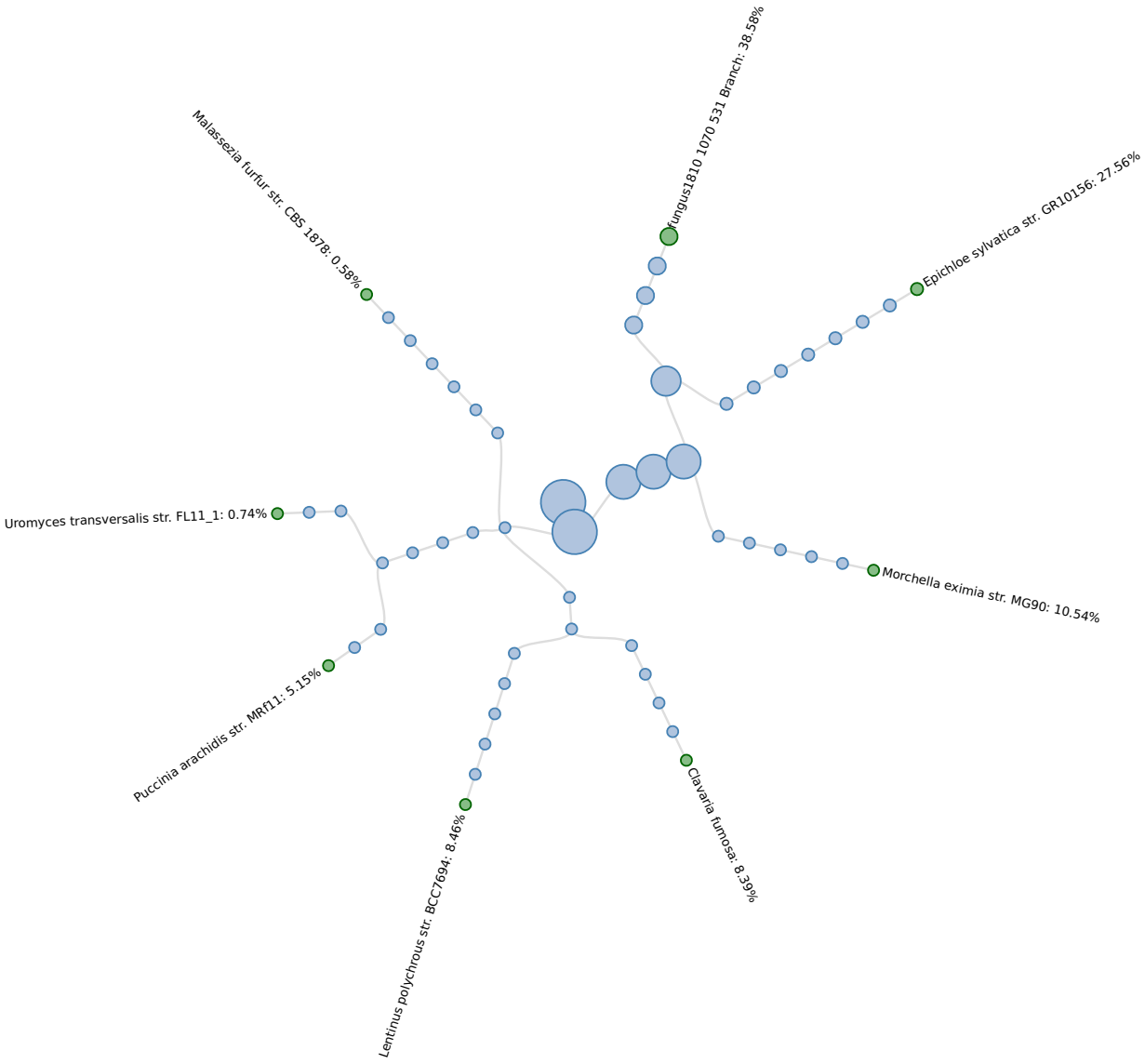
Total results

Metric	Value
Hit	13.972k

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Onygenales	33183	51.57	38.58	0.12	0.18	3007
Epichloe sylvatica	79593	36.84	27.56	0.29	0.22	2047
Morchella eximia	1582338	14.09	10.54	0.15	0.10	746
Lentinus polychrous	292559	11.31	8.46	0.07	0.07	922
Clavaria fumosa	264083	11.22	8.39	0.04	0.13	1073
Puccinia arachidis	333523	6.88	5.15	0.05	0.11	574
Uromyces transversalis	462795	0.99	0.74	0.01	0.02	113
Malassezia furfur	55194	0.77	0.58	0.01	0.01	82


fungus1810 1070 531 Branch: 38.58%
Epichloe sylvatica str. GR10156: 27.56%
Morchella eximia str. MG90: 10.54%
Clavaria fumosa: 8.39%
Lentinus polychrous str. BCC7694: 8.46%
Puccinia arachidis str. MRf11: 5.15%
Uromyces transversalis str. FL11_1: 0.74%
Malassezia furfur str. CBS 1878: 0.58%


fungus1810 1070 531 Branch: 38.58%
Epichloe sylvatica str. GR10156: 27.56%
Morchella eximia str. MG90: 10.54%
Clavaria fumosa: 8.39%
Lentinus polychrous str. BCC7694: 8.46%
Puccinia arachidis str. MRf11: 5.15%
Uromyces transversalis str. FL11_1: 0.74%
Malassezia furfur str. CBS 1878: 0.58%

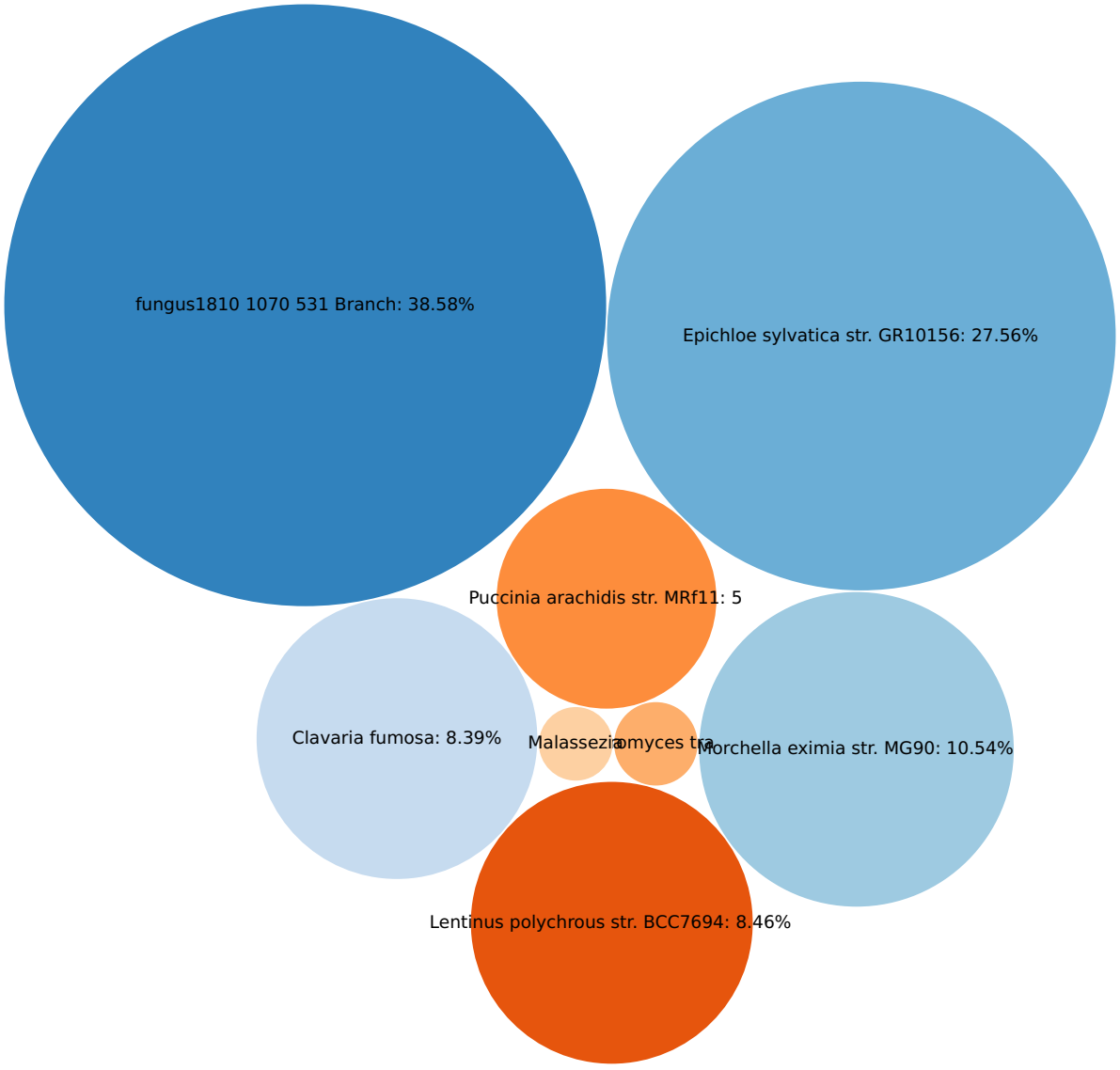
Fungi

Sunburst Chart Taxonomy

1B-85-2_MBPO210215-A

Total results




fungus1810 1070 531 Branch: 38.58%
Epichloe sylvatica str. GR10156: 27.56%
Puccinia arachidis str. MRf11: 5
Clavaria fumosa: 8.39%
Malasseziamyces tra
Morchella eximia str. MG90: 10.54%
Lentinus polychrous str. BCC7694: 8.46%

Protists

1B-85-2_MBPO210215-A

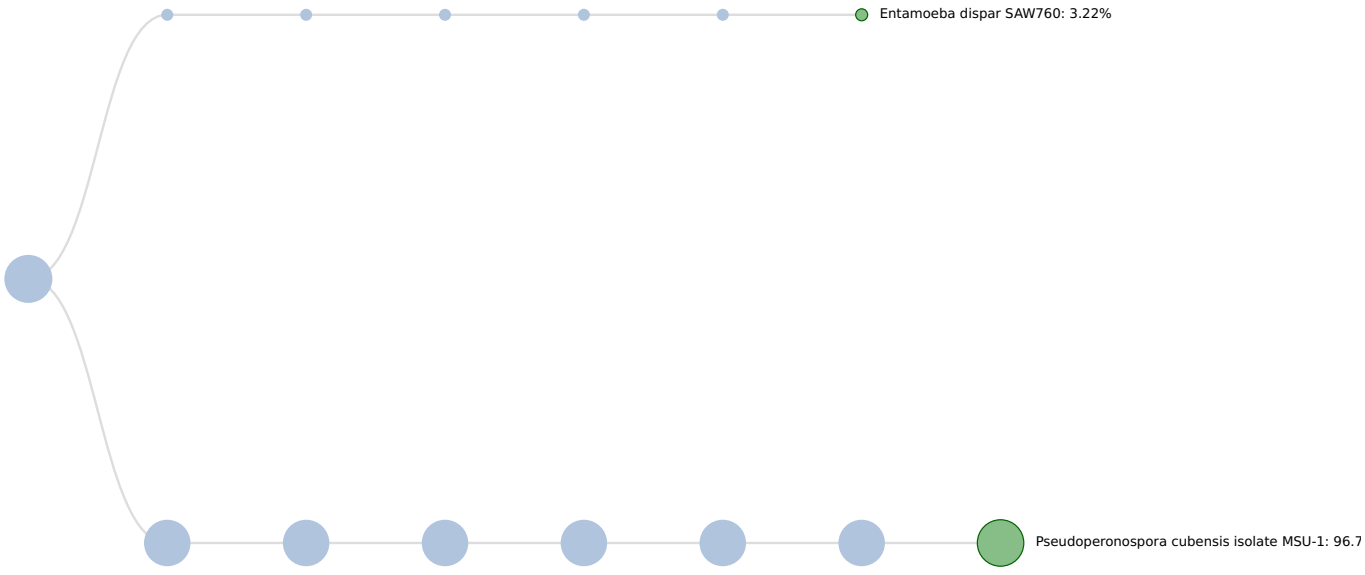
Total results

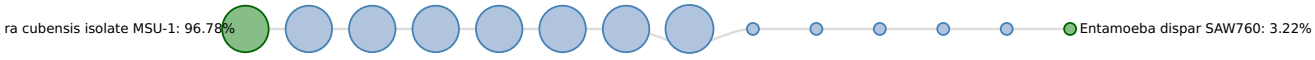
Fasta/q details

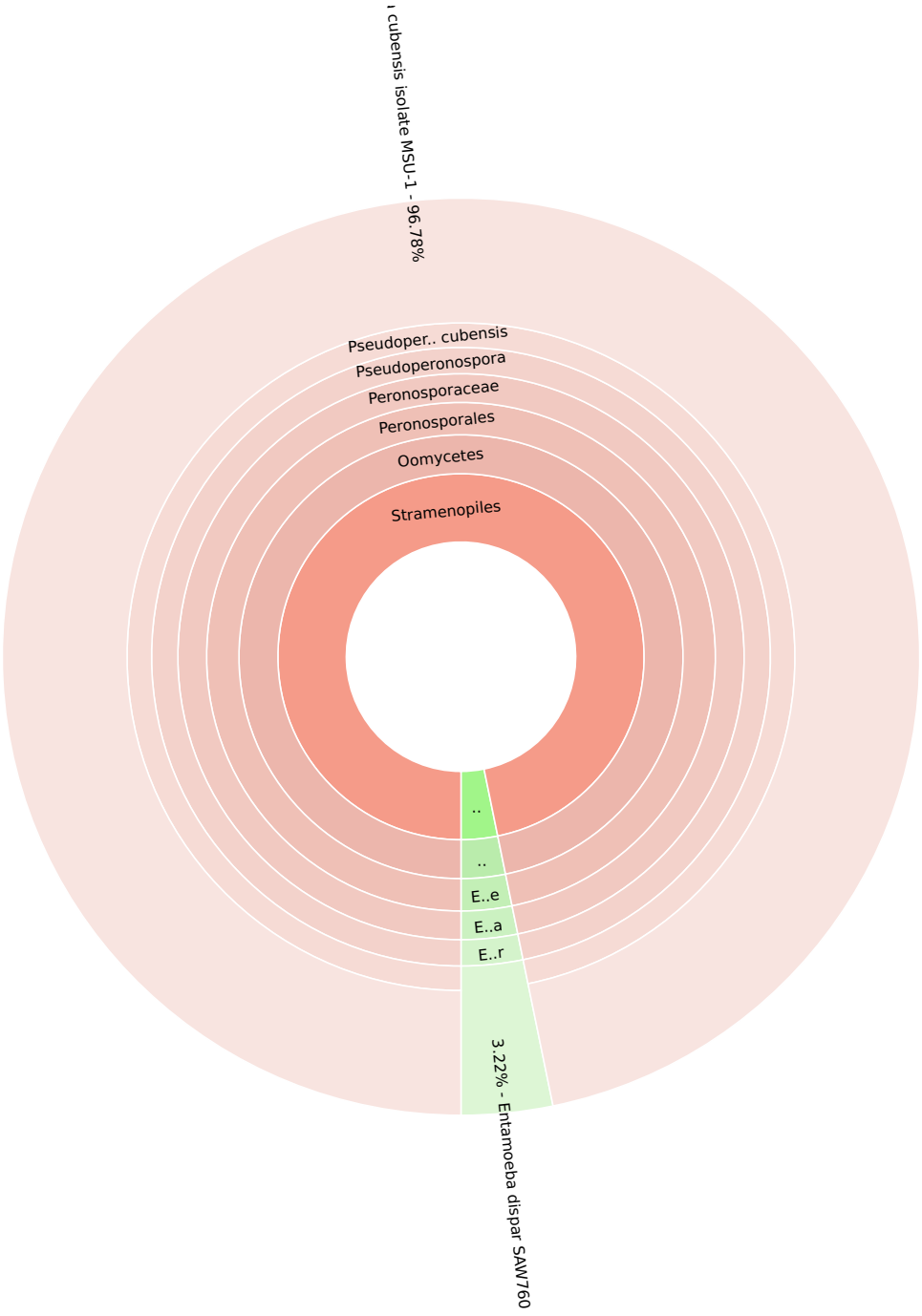
Metric	Value
Hit	7.549k

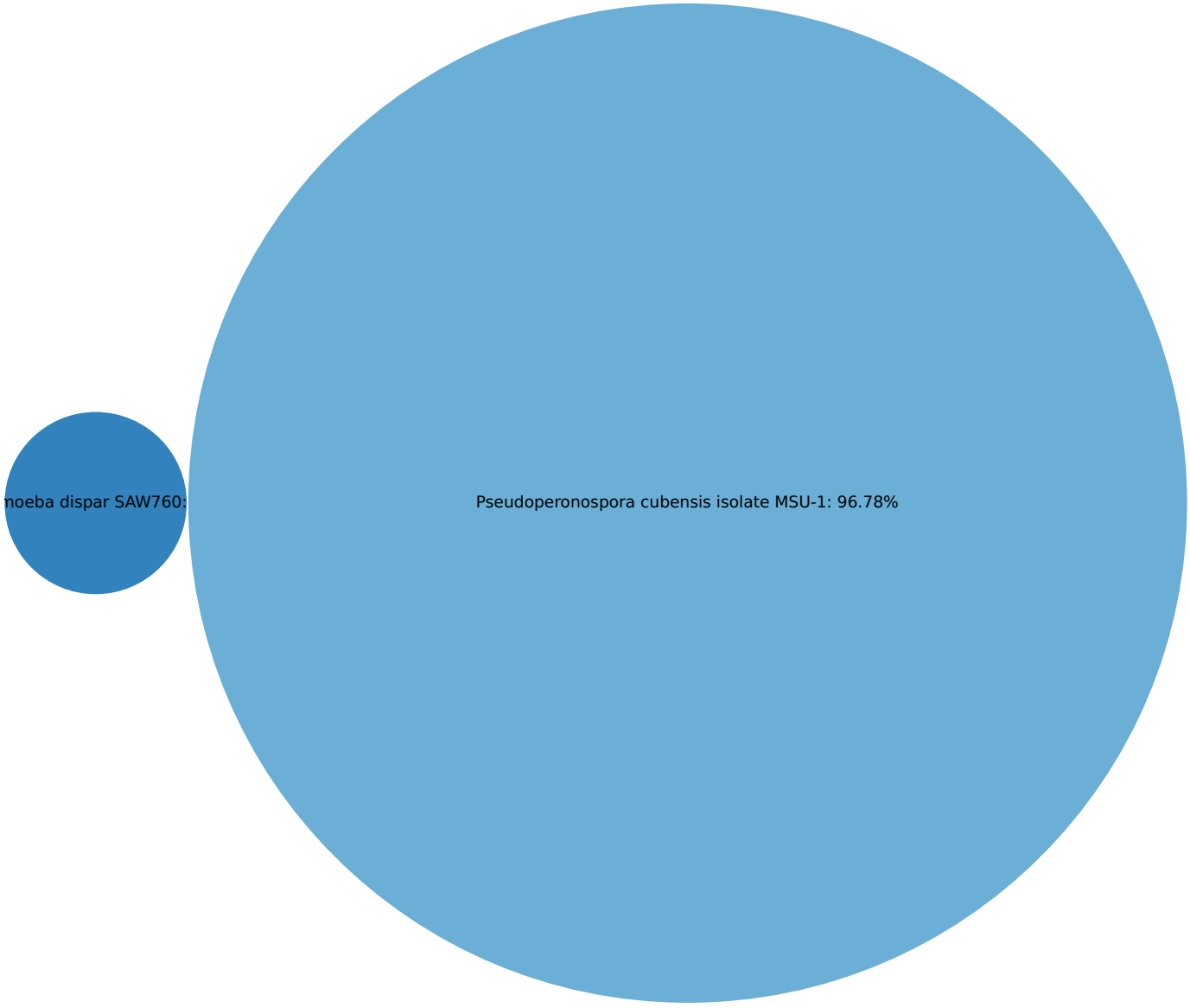
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudoperonospora cubensis	143453	62.89	96.78	0.24	0.28	4443
Entamoeba dispar SAW760	370354	2.09	3.22	0.03	0.03	92


Entamoeba dispar SAW760: 3.22%
Pseudoperonospora cubensis isolate MSU-1: 96.7


ra cubensis isolate MSU-1: 96.78%
Entamoeba dispar SAW760: 3.22%


ı cubensis isolate MSU-1 - 96.78%
Pseudoper.. cubensis
Pseudoperonospora
Peronosporaceae
Peronosporales
Oomycetes
Stramenopiles
..
..
E..e
E..a
E..r
3.22% - Entamoeba dispar SAW760


noeba dispar SAW760:
Pseudoperonospora cubensis isolate MSU-1: 96.78%

Dark Matter (Beta)

1B-85-2_MBPO210215-A

Fasta/q details

Total results

Metric	Value
Hit	0.340M

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Methylotenera mobilis	359408	5769.62	33.39	40.23	61.44	27939
Acidovorax delafieldii	47920	2730.34	15.80	8.61	8.72	59545
Pseudomonas stutzeri	316	1910.21	11.05	13.95	13.95	28750
Propionibacteriaceae bacterium UBA6214	1952963	645.68	3.74	7.04	7.04	6431
Pseudomonas sp.	306	618.71	3.58	4.59	4.57	4178
Comamonadaceae bacterium	1871071	617.54	3.57	3.55	3.45	15980
Acidovorax sp.	1872122	606.05	3.51	1.92	2.16	31918
Acetobacterium sp.	1872094	534.24	3.09	6.53	9.79	912
Geobacter sp. UBA4050	1961391	524.00	3.03	4.68	8.36	81
Paludibacter sp. UBA5753	1947025	505.71	2.93	4.78	9.35	360
Alicycliphilus sp. UBA4115	1946002	489.23	2.83	2.45	1.33	14370
Mageeibacillus sp. UBA5747	1946798	276.32	1.60	3.52	3.52	1792
Acinetobacter johnsonii	40214	207.89	1.20	1.58	3.46	466
Comamonadaceae bacterium UBA6202	1951611	131.39	0.76	0.65	0.68	5656
unclassified Sulfurospirillum	2618290	124.32	0.72	0.65	0.65	900
Pseudomonas kunmingensis	1211807	111.03	0.64	1.19	1.22	620
Delftia acidovorans	80866	100.73	0.58	0.68	0.58	1384
Methylophilus sp. UBA6697	1946902	76.22	0.44	0.83	0.85	594
Comamonadaceae bacterium UBA4962	1951608	67.27	0.39	0.26	0.27	4653
Acinetobacter ursingii	108980	64.63	0.37	2.08	1.17	178
Rhodoferax sp. UBA4409	1947378	64.51	0.37	0.63	0.63	1790
Shewanella sp.	50422	58.03	0.34	0.83	1.17	771
unclassified Acinetobacter	196816	54.80	0.32	1.85	1.90	4
Hydrogenophaga sp.	1904254	53.44	0.31	0.39	0.24	307
Comamonas aquatica	225991	51.12	0.30	0.28	0.29	2204
Curvibacter sp.	1888168	47.89	0.28	0.23	0.23	2532
Pseudomonas	286	46.75	0.27	0.74	0.74	23
uncultured Acinetobacter sp.	165433	45.29	0.26	0.97	0.97	51
Aeromonas sp.	647	43.96	0.25	0.67	0.72	520
unclassified Comamonadaceae	83494	43.61	0.25	0.14	0.14	365
Aquabacterium sp. UBA666	1946043	41.84	0.24	0.54	0.55	634
Cellulomonas sp. UBA6250	1946310	32.83	0.19	0.48	0.48	694
Sulfurospirillum sp. UBA1314	1947592	32.66	0.19	0.38	0.50	639
Burkholderiales bacterium UBA1834	1950768	32.47	0.19	0.37	0.22	435
Delftia lacustris	558537	30.68	0.18	0.18	0.34	1530
Desulfobulbaceae bacterium UBA4056	1961550	25.95	0.15	0.65	0.53	43
Comamonadaceae bacterium UBA2121	1951599	25.07	0.14	0.14	0.18	1509
unclassified Pseudomonas	2583993	24.67	0.14	0.18	0.18	328
Pseudomonas mendocina	300	24.60	0.14	0.21	0.25	1266
Sinobacteraceae bacterium UBA5061	1953077	22.57	0.13	0.46	0.46	1440
Comamonadaceae bacterium UBA4184	1951606	22.12	0.13	0.17	0.18	1190
Shewanella baltica	62322	19.72	0.11	0.33	0.75	286
Methylotenera sp. UBA6020	1946903	19.32	0.11	0.20	0.26	482
Comamonas terrigena	32013	17.53	0.10	0.11	0.18	875
Hylemonella sp. UBA6679	1946611	17.31	0.10	0.11	0.11	784
Comamonas sp. UBA7528	1946391	16.80	0.10	0.11	0.18	906
Pseudomonas oleovorans	301	14.49	0.08	0.14	0.20	297

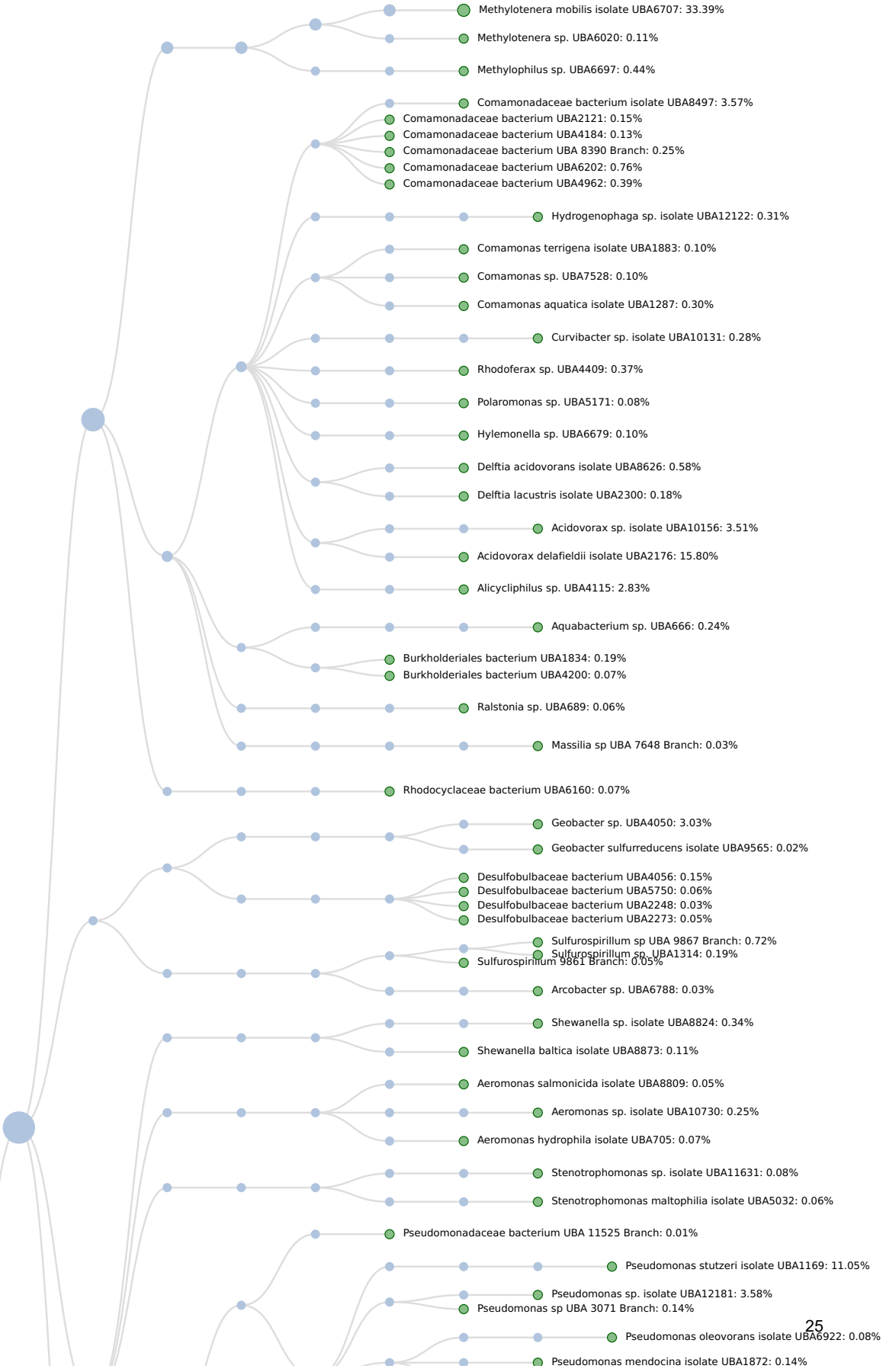
Stenotrophomonas sp.	69392	13.70	0.08	0.28	0.29	90
Polaromonas sp. UBA5171	1947075	13.08	0.08	0.11	0.12	710
Burkholderiales bacterium UBA4200	1950777	12.82	0.07	0.33	0.19	37
Aeromonas hydrophila	644	12.16	0.07	0.22	0.25	201
Rhodocyclaceae bacterium UBA6160	1952847	11.90	0.07	0.23	0.23	127
unclassified Prolixibacteraceae	1952944	11.02	0.06	0.10	0.10	209
Stenotrophomonas maltophilia	40324	10.82	0.06	0.20	0.21	111
Pseudomonas nitroreducens	46680	10.58	0.06	0.12	0.13	568
Pseudomonas rhodesiae	76760	10.53	0.06	0.16	0.27	204
Gammaproteobacteria bacterium	1913989	10.62	0.06	0.29	0.29	30
Desulfobulbaceae bacterium UBA5750	1961557	10.30	0.06	0.33	0.49	18
Ralstonia sp. UBA689	1947373	10.09	0.06	0.14	0.18	415
Pseudomonas fluorescens	294	9.23	0.05	0.14	0.26	173
Desulfobulbaceae bacterium UBA2273	1961547	8.93	0.05	0.18	0.18	116
Sulfurospirillum	57665	8.98	0.05	0.12	0.12	23
Propionibacteriaceae bacterium UBA6238	1952964	8.99	0.05	0.16	0.16	208
Prolixibacteraceae bacterium	2053594	8.69	0.05	0.15	0.15	186
Aeromonas salmonicida	645	7.84	0.04	0.19	0.11	51
Acinetobacter pittii	48296	7.19	0.04	0.20	0.17	28
Acinetobacter sp. UBA6720	1945953	6.82	0.04	0.14	0.36	95
Massilia sp.	1882437	5.40	0.03	0.12	0.13	17
Sphingomonas sp. UBA4815	1947533	5.38	0.03	0.13	0.13	600
Desulfobulbaceae bacterium UBA2248	1961544	5.19	0.03	0.23	0.47	12
Moraxellaceae bacterium	1889775	5.25	0.03	0.13	0.13	144
Brevundimonas sp.	1871086	4.95	0.03	0.11	0.11	88
Arcobacter sp. UBA6788	1946050	4.44	0.03	0.15	0.15	15
Geobacter sulfurreducens	35554	2.85	0.02	0.19	0.18	20
unclassified Pseudomonadaceae	190017	2.57	0.01	0.15	0.14	6

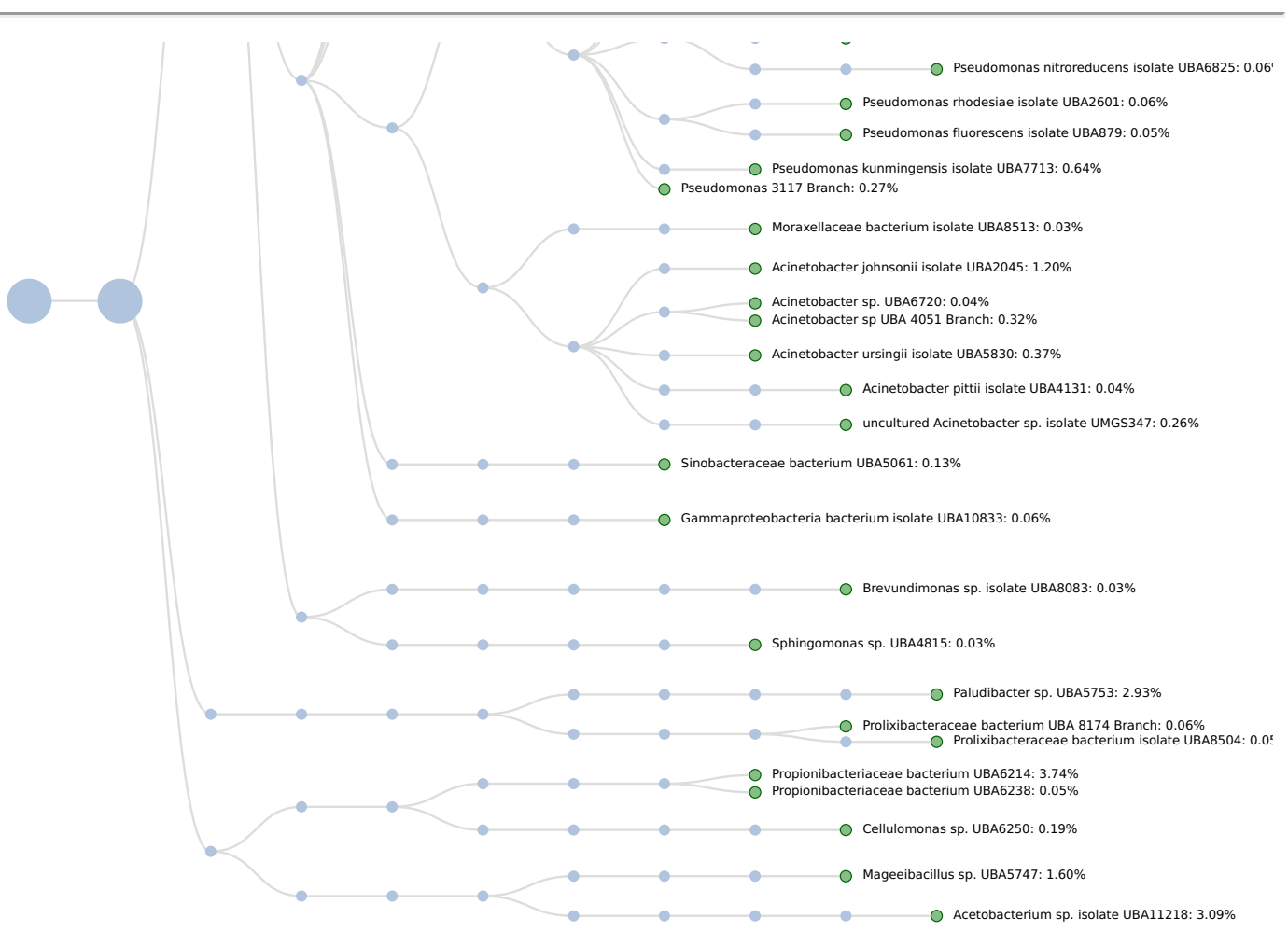
Dark Matter (Beta)

Tree Chart Taxonomy

1B-85-2_MBPO210215-A

Total results



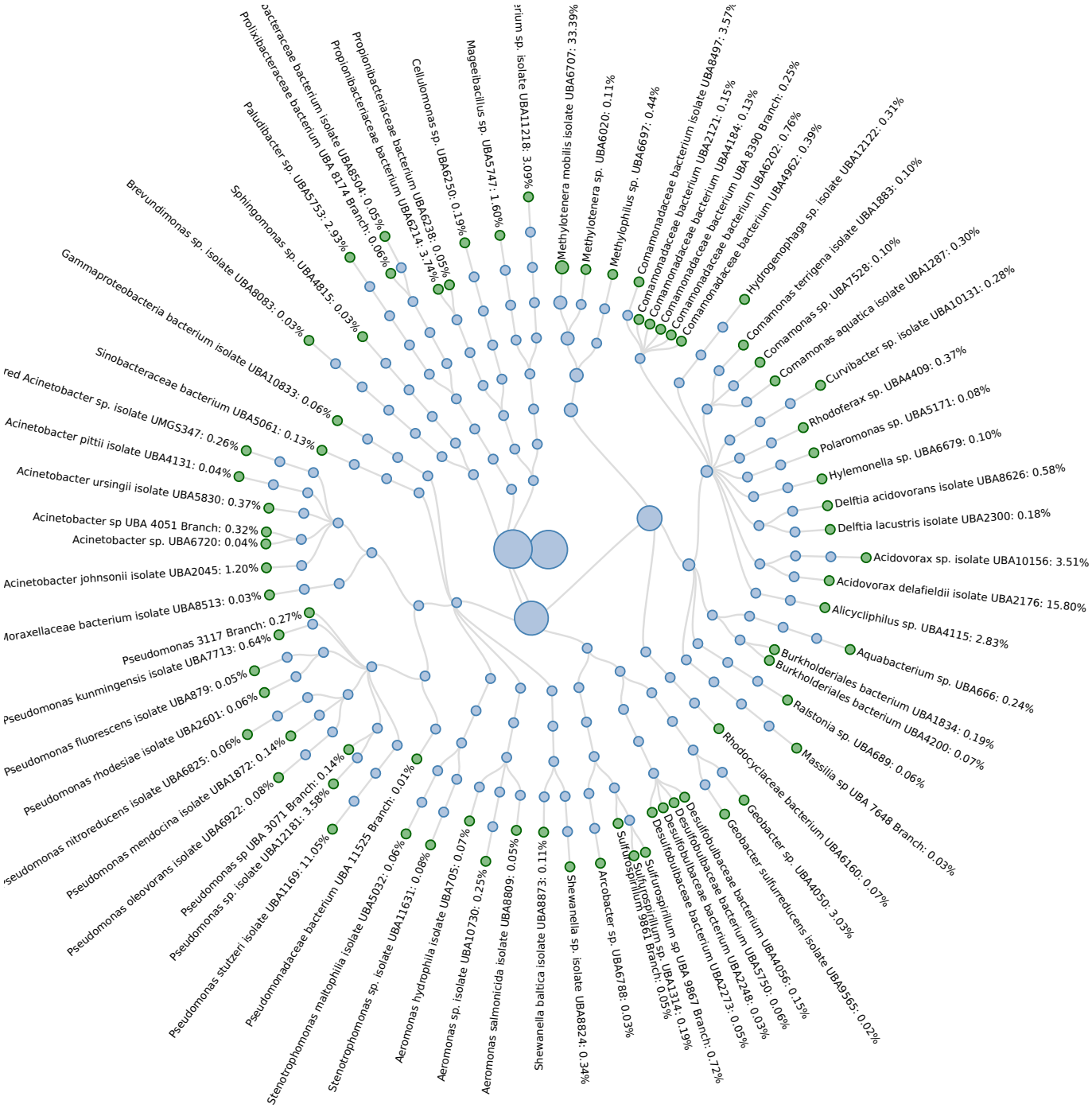

Pseudomonas nitroreducens isolate UBA6825: 0.06
Pseudomonas rhodesiae isolate UBA2601: 0.06%
Pseudomonas fluorescens isolate UBA879: 0.05%
Pseudomonas kunmingensis isolate UBA7713: 0.64%
Pseudomonas 3117 Branch: 0.27%
Moraxellaceae bacterium isolate UBA8513: 0.03%
Acinetobacter johnsonii isolate UBA2045: 1.20%
Acinetobacter sp. UBA6720: 0.04%
Acinetobacter sp UBA 4051 Branch: 0.32%
Acinetobacter ursingii isolate UBA5830: 0.37%
Acinetobacter pittii isolate UBA4131: 0.04%
uncultured Acinetobacter sp. isolate UMGS347: 0.26%
Sinobacteraceae bacterium UBA5061: 0.13%
Gammaproteobacteria bacterium isolate UBA10833: 0.06%
Brevundimonas sp. isolate UBA8083: 0.03%
Sphingomonas sp. UBA4815: 0.03%
Paludibacter sp. UBA5753: 2.93%
Prolixibacteraceae bacterium UBA 8174 Branch: 0.06%
Prolixibacteraceae bacterium isolate UBA8504: 0.0
Propionibacteriaceae bacterium UBA6214: 3.74%
Propionibacteriaceae bacterium UBA6238: 0.05%
Cellulomonas sp. UBA6250: 0.19%
Mageeibacillus sp. UBA5747: 1.60%
Acetobacterium sp. isolate UBA11218: 3.09%

Dark Matter (Beta)

Radial Tree Chart Taxonomy

1B-85-2_MBPO210215-A

Total results



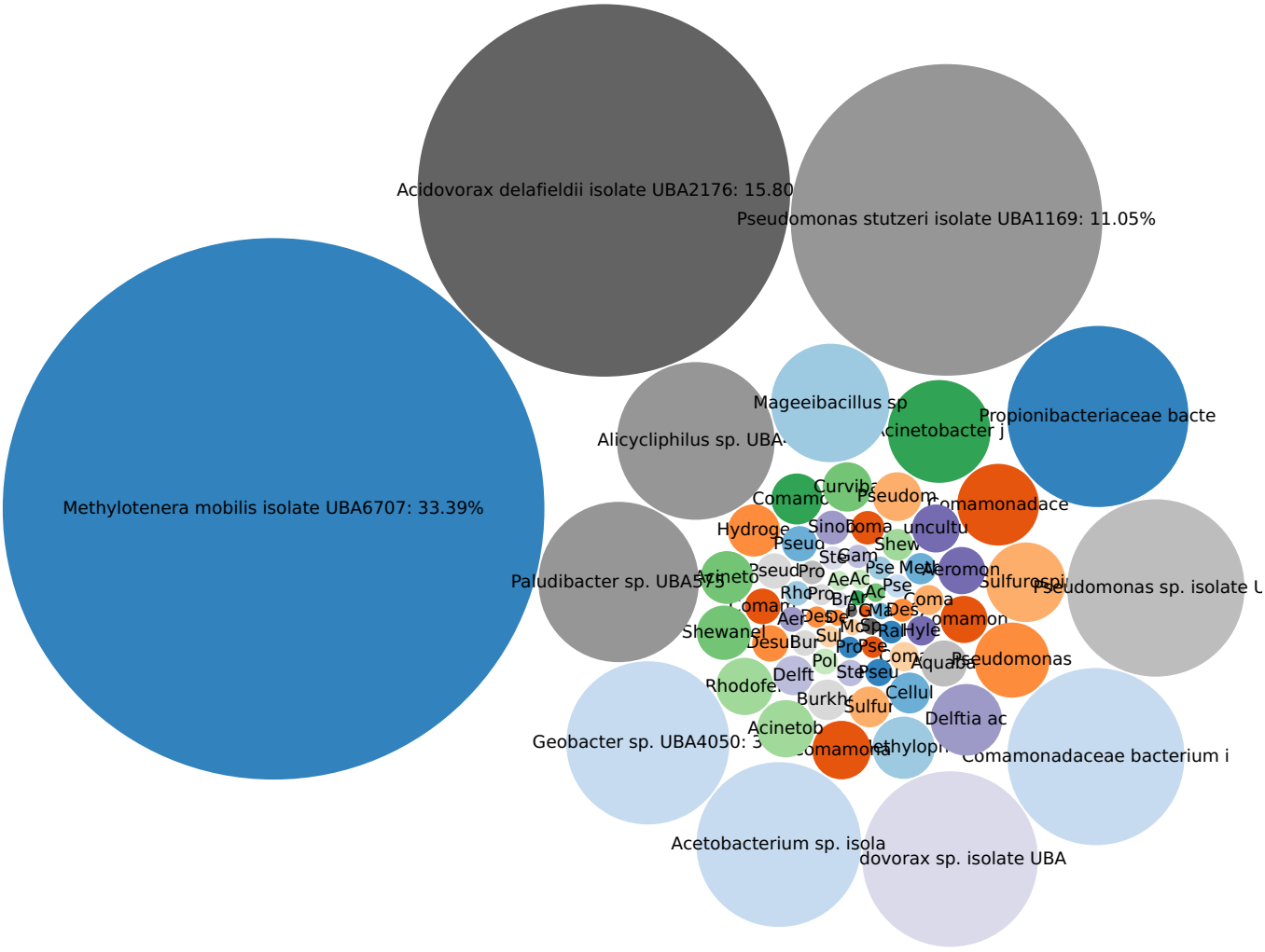
Dark Matter (Beta)

Sunburst Chart Taxonomy

1B-85-2_MBPO210215-A

Total results




Acidovorax delafieldii isolate UBA2176: 15.80
Pseudomonas stutzeri isolate UBA1169: 11.05%
Methylotenera mobilis isolate UBA6707: 33.39%
Mageeibacillus sp
Propionibacteriaceae bacte
Alicycliphilus sp. UBA
Paludibacter sp. UBA575
Pseudomonas sp. isolate U
Shewanel
Rhodofe
Geobacter sp. UBA4050: 3
Comamonadaceae bacterium i
Acetobacterium sp. isola
dovorax sp. isolate UBA

Phages

1B-85-2_MBPO210215-A

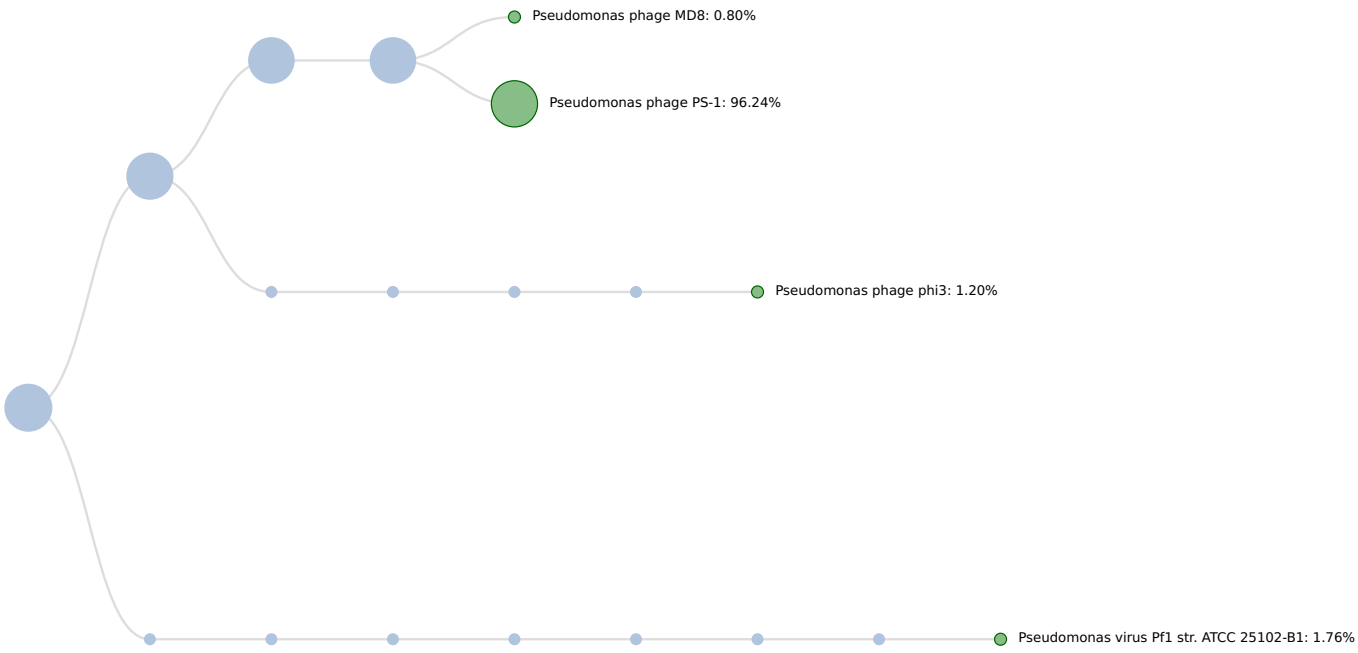
Fasta/q details

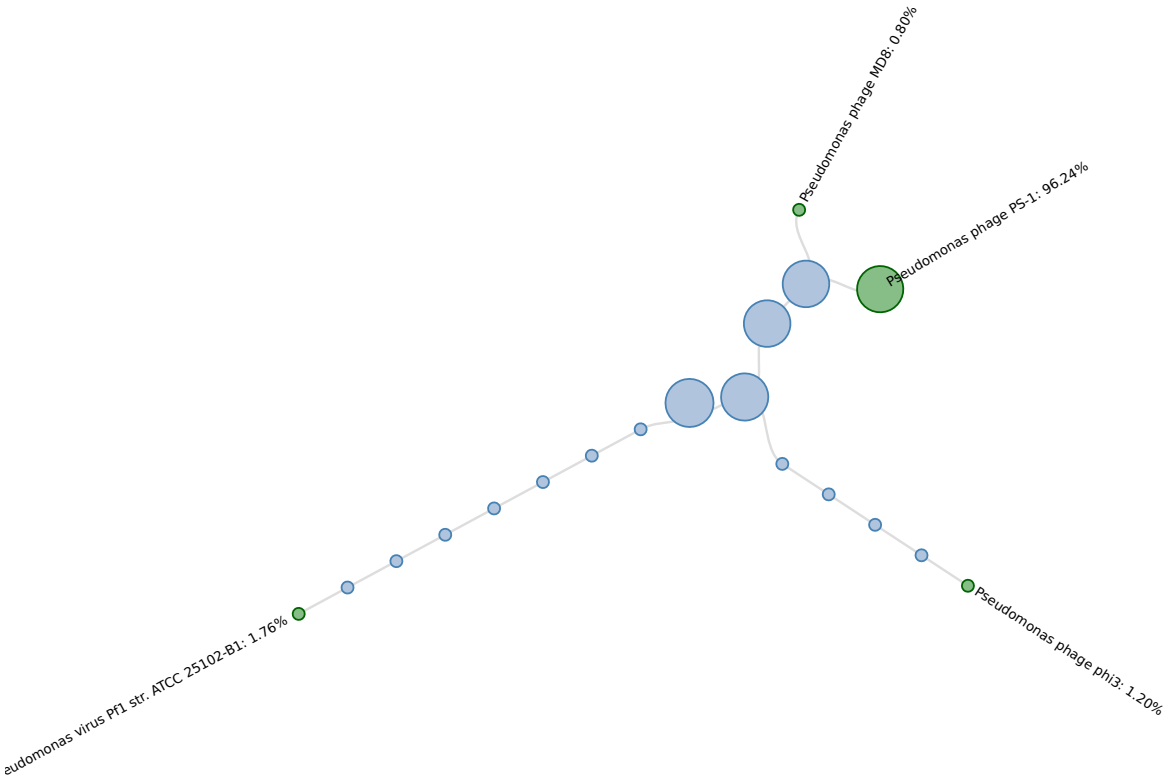
Total results

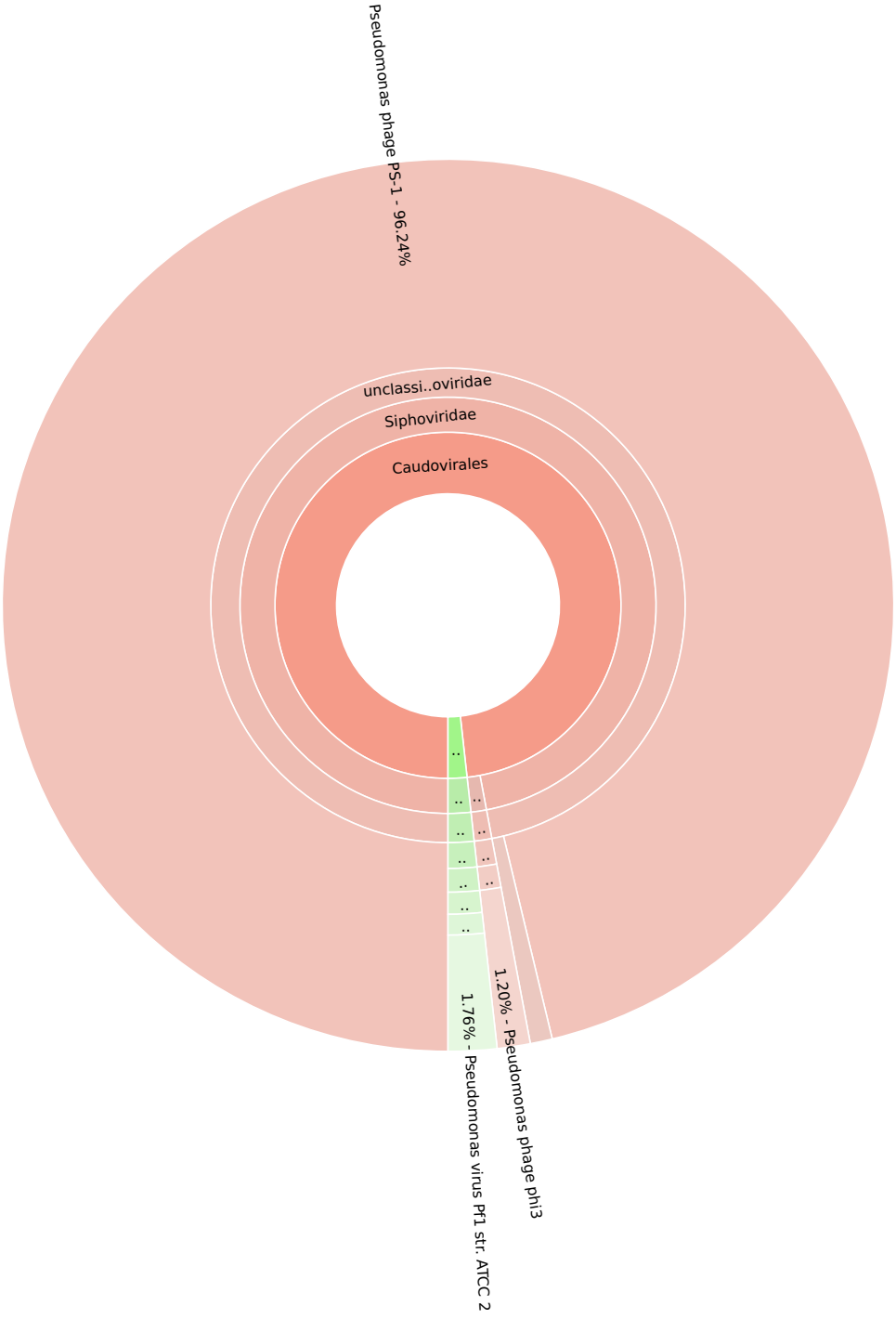
Metric	Value
Hit	890

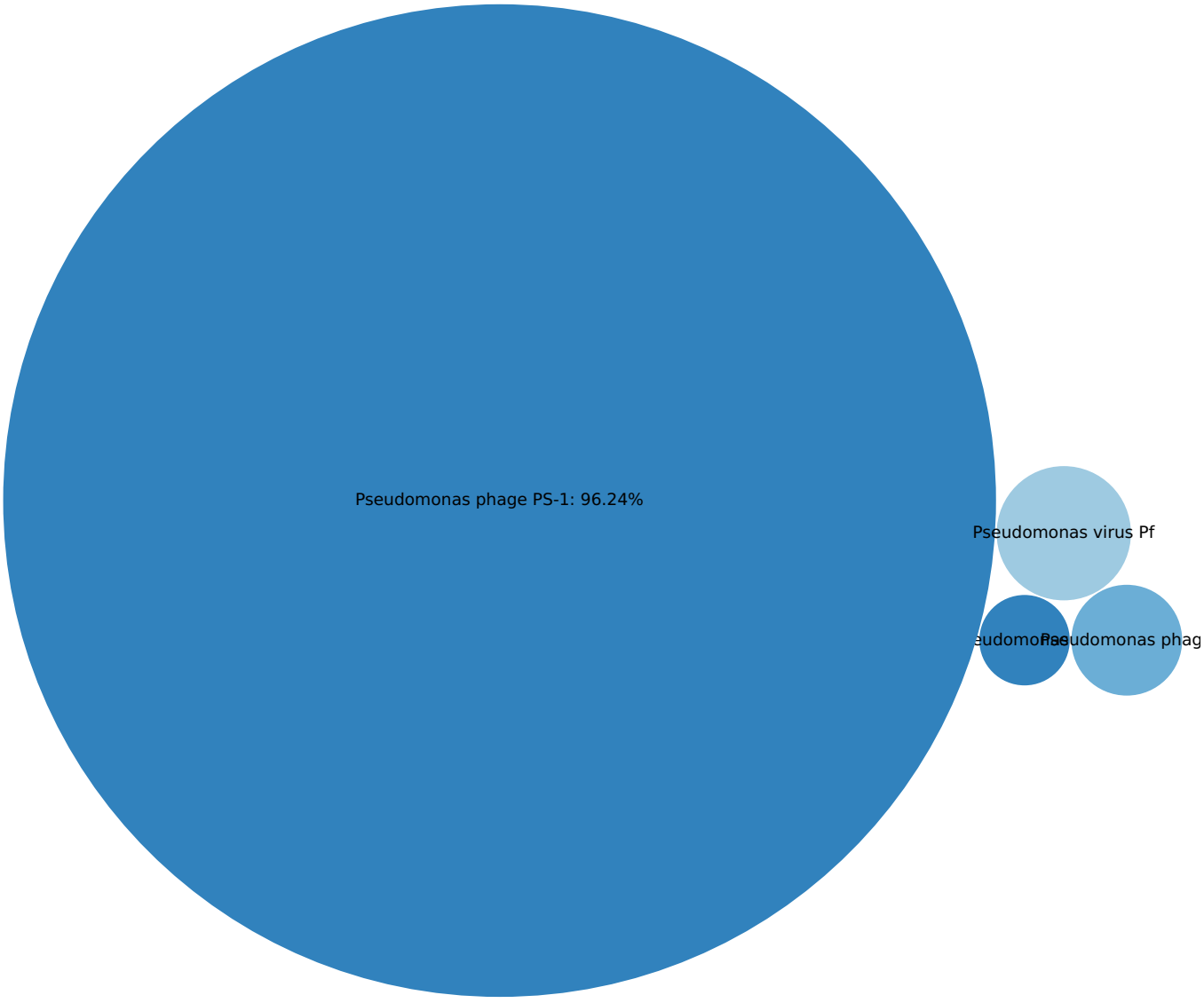
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudomonas phage PS-1	1573458	629.36	96.24	4.53	4.53	4204
Pseudomonas virus Pf1	2011081	11.51	1.76	0.55	0.55	54
Pseudomonas phage phi3	1754217	7.84	1.20	0.29	0.29	179
Pseudomonas phage MD8	1868596	5.22	0.80	0.16	0.13	20


Pseudomonas phage MD8: 0.80%
Pseudomonas phage PS-1: 96.24%
Pseudomonas phage phi3: 1.20%
Pseudomonas virus Pf1 str. ATCC 25102-B1: 1.76%


Pseudomonas phage MDB: 0.80%
Pseudomonas phage PS-1: 96.24%
eudomonas virus Pf1 str. ATCC 25102-B1: 1.76%
Pseudomonas phage phi3: 1.20%


Pseudomonas phage PS-1 - 96.24%
unclassi..oviridae
Siphoviridae
Caudovirales
1.76% - Pseudomonas virus Pf1 str. ATCC 2
1.20% - Pseudomonas phage phi3


Pseudomonas phage PS-1: 96.24%
Pseudomonas virus Pf
eudomonas
Pseudomonas phag

Virulence Factors

1B-85-2_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	1.300k

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudomonas aeruginosa GI 3342496	-	10965.65	25.05	86.18	86.18	1298
Salmonella Typhimurium GI 46019645	-	10559.25	24.12	75.94	75.94	1735
Pseudomonas aeruginosa GENE intI1	-	5544.47	12.66	100.00	100.00	117
Citrobacter freundii GENE tnpAcp2	-	2957.40	6.75	26.96	26.96	638
Enterobacter aerogenes GENE tniC	-	2903.83	6.63	53.33	53.33	150
Salmonella Infantis GENE tnpR	-	1863.82	4.26	44.00	44.00	54
Pseudomonas aeruginosa GENE tnpA	-	1808.11	4.13	12.34	12.34	1871
Pseudomonas aeruginosa GENE pilT	-	1396.19	3.19	13.93	13.93	264
Enterobacter aerogenes GI 1572570	-	1321.13	3.02	24.39	24.39	144
Pseudomonas aeruginosa GENE orfC	-	1081.16	2.47	21.15	21.15	66
Pseudomonas aeruginosa GENE tnpR	-	985.01	2.25	12.59	12.59	226
Pseudomonas aeruginosa GENE orfA	-	934.01	2.13	10.71	10.71	263
Pseudomonas aeruginosa GENE flgG	-	860.01	1.96	11.89	11.89	137
Pseudomonas aeruginosa GENE orfD	-	599.77	1.37	14.38	14.38	51

Genomic Sequencing Report

Microbac Oak Ridge WO# Z1B0085-03 **3/17/2021**

Client: Stantec

Sample Project: PHL- Belmont Terminal Drilling Sampling

Sample ID: BT-17B-W-43-20210210

Summary:

- There were 4.102 Million reads for this sample and the file size was 839.9 MiB.
- There were 167 identifications (ID's) in the bacterial data set.
- There were 2 identifications in the antibiotic resistance data set.
- There were 8 identifications in the fungal data set.
- There were 4 identifications in the protists data set.
- There were 201 identifications in the Dark Matter data set.
- There were 4 identifications in the phages data set.
- There were 0 identifications in the virus data set.
- There were 21 virulence factors identified in the data set.

The Oak Ridge Microbac laboratory uses the CosmosID bioinformatics pipeline and cloud computing platform for analysis and report generation. The report consists of tables and figures for bacteria, antibiotic resistance genes, fungi, protists, phages, viruses, and virulence genes.

Report Definitions

- **Name:** The name for the organism or taxonomic level or the name of the antibiotic resistance gene or virulence factor.
- **Calls at different taxonomic levels:** In the results there may be some calls at sub-species or strain level and others at species or genus level or higher. CosmosID calls the lowest level possible based on the identification of unique kmers that match the reference genomes. If identification was not possible at strain level, for example, there will be a try to make an identification at species level etc.
- **Tax ID:** The tax id is the NCBI taxonomic id for the organism.
- **Frequency:** The number of unique kmer occurrences in the queried sample. This is roughly equivalent to the number of reads that matched to the organism identified.

- **Unique Matches:** Unique matches percent is the amount of unique kmers that were found in the sample for an organism out of the total possible number of kmers in the database that are unique to that organism.
- **Total Matches:** The shared plus unique matches divided by the pre-calculated shared plus unique matches possible in the reference database.
- **Relative Abundance:** Relative abundance is calculated based on the number of organism specific kmers and their observed frequency in the sample and then normalized to represent the abundance of each organism.

Bacteria

1B-85-3_MBPO210215-A

Fasta/q details

Total results

Metric	Value
Hit	0.454M

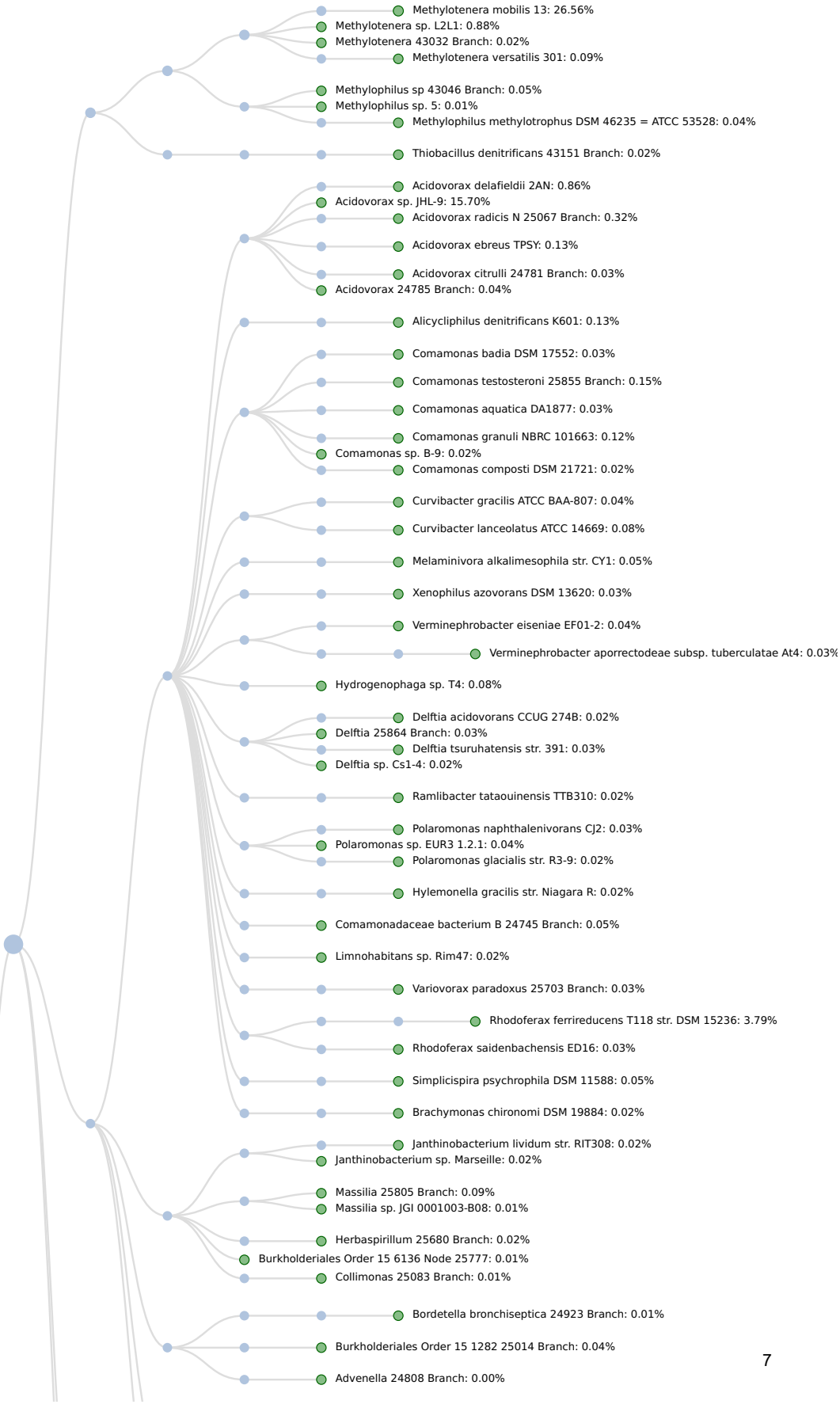
Table

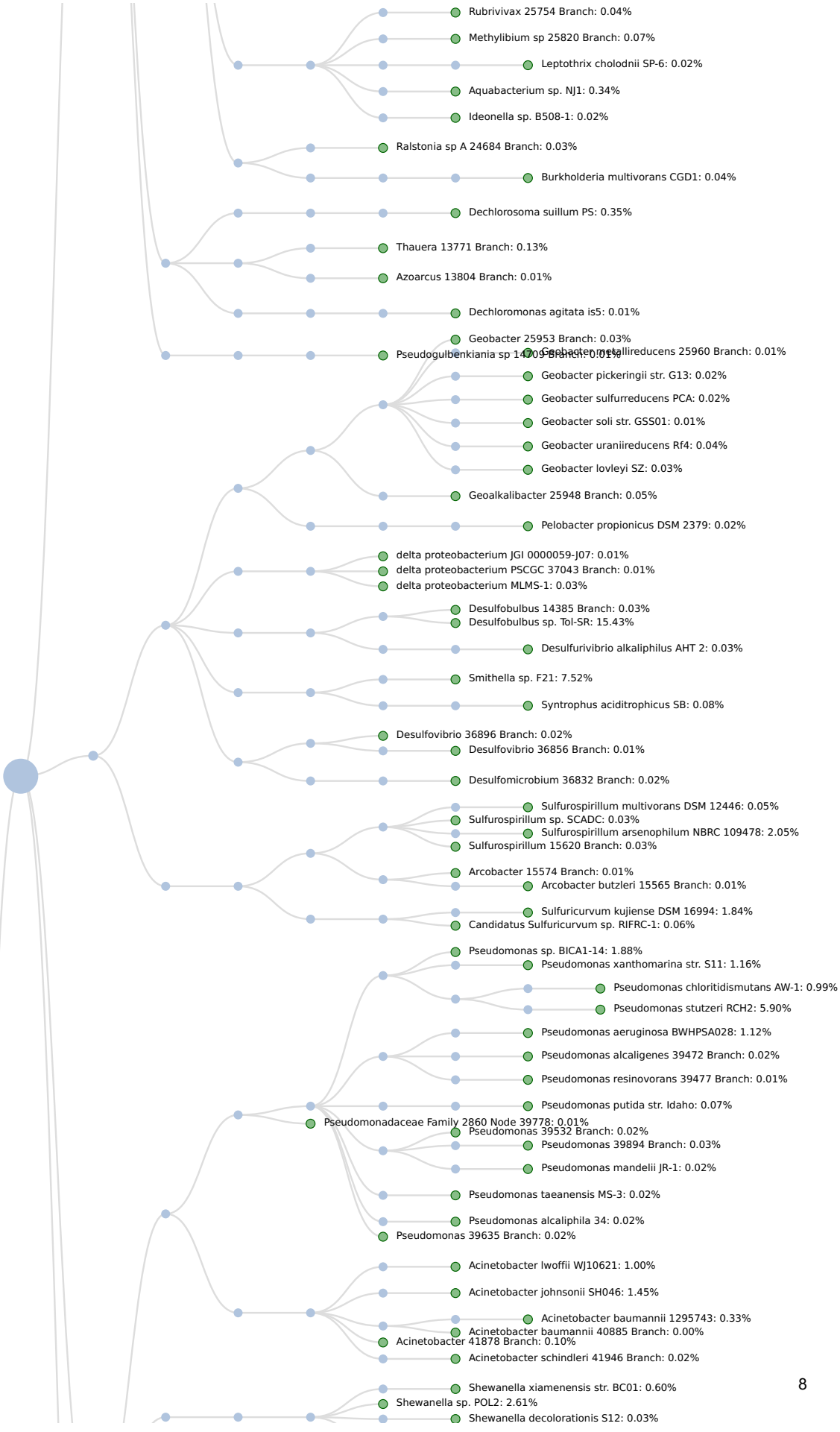
Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Methylotenera mobilis 13	1132855	12110.51	26.56	58.35	59.21	413567
Acidovorax sp. JHL-9	1276756	7160.44	15.70	34.13	36.14	286048
Desulfobulbus sp. Tol-SR	1536652	7036.72	15.43	51.67	51.67	175384
Smithella sp. F21	1538640	3430.22	7.52	29.23	29.24	46948
Pseudomonas stutzeri RCH2	644801	2690.17	5.90	22.15	22.74	55292
Rhodoferax ferrireducens T118	338969	1729.23	3.79	14.64	14.64	45213
Shewanella sp. POL2	1201295	1189.03	2.61	8.55	12.11	9483
Sulfurospirillum arsenophilum NBRC 109478	1349789	934.72	2.05	8.19	8.45	22857
Pseudomonas sp. BICA1-14	1619235	855.57	1.88	3.61	9.86	7466
Sulfuricurvum kujiense DSM 16994	709032	838.89	1.84	6.88	7.24	26231
Acinetobacter johnsonii SH046	575586	660.51	1.45	2.49	6.44	2424
Pseudomonas xanthomarina	271420	530.55	1.16	2.32	12.71	1839
Pseudomonas aeruginosa BWHPSA028	1402528	510.15	1.12	5.96	7.26	361
Acinetobacter lwoffii WJ10621	1046625	457.90	1.00	2.02	6.27	1914
Pseudomonas chloritidismutans AW-1	1263865	452.23	0.99	2.16	11.78	1925
Methylotenera sp. L2L1	1502770	402.33	0.88	2.86	6.46	16054
Acidovorax delafieldii 2AN	573060	390.64	0.86	2.10	3.93	13977
Shewanella xiamenensis	332186	274.57	0.60	1.52	8.85	1576
Shewanella putrefaciens CN-32	319224	249.53	0.55	1.05	4.00	468
Geothrix fermentans DSM 14018	1121920	217.89	0.48	2.36	2.43	5246
Methanothrix soehngenii GP6	990316	190.84	0.42	2.20	2.20	3948
Methylobacter tundripaludum 21/22	1408450	181.68	0.40	1.08	2.16	3661
Dechlorosoma suillum PS	640081	159.07	0.35	1.82	1.84	3783
Desulfosporosinus sp. Tol-M	1536651	156.55	0.34	1.81	1.81	3869
Aquabacterium sp. NJ1	1538295	153.10	0.34	1.14	1.14	8910
Acinetobacter baumannii 1295743	1310613	150.74	0.33	2.33	2.32	437
Acidovorax radicis	758826	148.08	0.33	1.30	1.90	6744
Desulfurobacteriaceae	558314	88.24	0.19	4.17	4.17	3
Methylomonas	416	74.06	0.16	2.54	2.54	10
Comamonas testosteroni	285	69.01	0.15	0.18	0.11	20
Methylobacter	429	64.22	0.14	0.73	1.29	139
Alicycliphilus denitrificans K601	596154	60.74	0.13	1.00	0.63	1904
Acidovorax ebreus TPSY	535289	59.37	0.13	0.65	0.64	1885
Thauera	33057	58.60	0.13	0.15	0.14	23
Dehalococcoides mccartyi	61435	58.12	0.13	0.71	0.71	31
Comamonas granuli NBRC 101663	1223521	56.41	0.12	0.53	0.53	2975
Latescibacteria bacterium JGI 0000059-A10	1047067	52.45	0.11	1.13	1.13	82
Acinetobacter	469	45.74	0.10	19.63	19.53	89
Methylotenera versatilis 301	666681	41.39	0.09	0.32	0.32	2806
Rhizobium selenitireducens ATCC BAA-1503	1336235	40.81	0.09	0.55	0.55	1219
Massilia	149698	39.47	0.09	1.00	1.00	19
Curvibacter lanceolatus ATCC 14669	1265504	38.45	0.08	0.49	0.80	1439
Peptococcaceae bacterium SCADC1_2_3	1487582	37.17	0.08	0.50	0.50	1010
Syntrophus aciditrophicus SB	56780	35.01	0.08	0.60	0.60	1613
Hydrogenophaga sp. T4	1437444	34.82	0.08	0.39	0.88	1759
Methylibium	316612	33.11	0.07	0.63	0.63	19
Pseudomonas putida str. Idaho	1079364	30.47	0.07	0.45	0.29	565

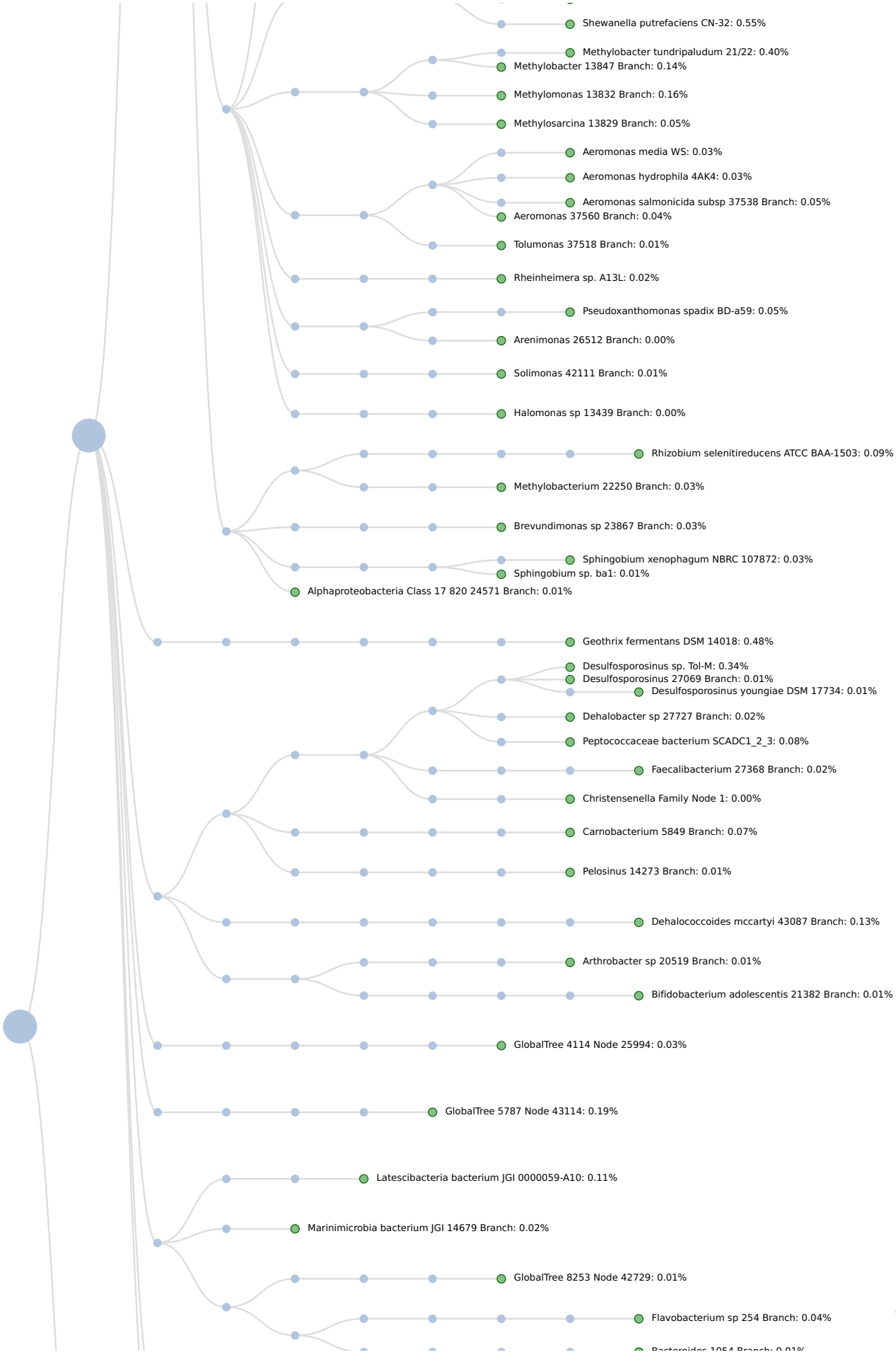
Carnobacterium	2747	30.62	0.07	0.96	0.96	19
Candidatus Sulfuricurvum sp. RIFRC-1	1249480	25.76	0.06	0.31	0.77	1120
Methylosarcina	160800	25.03	0.06	0.98	0.98	8
Aeromonas salmonicida	645	24.89	0.06	0.27	0.26	254
Sulfurospirillum multivorans DSM 12446	1150621	23.89	0.05	0.31	0.64	968
Simplicispira psychrophila DSM 11588	1123255	22.46	0.05	0.25	0.25	1297
Methylophilus	16	21.99	0.05	0.14	0.30	166
Melaminivora alkalimesophila	1165852	21.69	0.05	0.24	0.25	1161
unclassified Comamonadaceae	83494	21.36	0.05	0.15	0.17	99
Geoalkalibacter	392332	21.11	0.05	0.94	0.94	7
Pseudoxanthomonas spadix BD-a59	1045855	20.95	0.05	0.29	0.29	768
Curvibacter gracilis ATCC BAA-807	1336244	20.03	0.04	0.26	0.68	922
Polaromonas sp. EUR3 1.2.1	1305734	19.85	0.04	0.25	0.25	971
Flavobacterium	237	19.72	0.04	0.30	0.30	55
Methanobacterium sp. Maddingley MBC34	1220534	19.65	0.04	0.30	0.32	473
Achromobacter	222	18.67	0.04	0.81	0.81	2
Rubrivivax	28067	18.65	0.04	0.14	0.15	217
Burkholderia multivorans CGD1	513051	17.98	0.04	0.16	0.15	912
Acidovorax	12916	17.44	0.04	0.12	0.19	476
Aeromonas	642	17.37	0.04	0.21	0.21	94
Verminephrobacter eiseniae EF01-2	391735	17.02	0.04	0.19	0.21	1068
Methylophilus methylotrophus DSM 46235 = ATCC 53528	1122236	16.50	0.04	0.24	0.26	619
Geobacter uraniireducens Rf4	351605	16.49	0.04	0.23	0.23	685
Xenophilus azovorans DSM 13620	1123504	15.00	0.03	0.18	0.41	871
Delftia tsuruhatensis	180282	15.23	0.03	0.26	0.27	271
Desulfurivibrio alkaliphilus AHT 2	589865	15.17	0.03	0.15	0.15	1028
Aeromonas hydrophila 4AK4	1354302	15.18	0.03	0.24	0.37	458
Geobacter lovleyi SZ	398767	14.68	0.03	0.21	0.21	624
Comamonas badia DSM 17552	1121348	14.23	0.03	0.17	0.20	859
Comamonas aquatica DA1877	1457173	14.24	0.03	0.16	0.22	826
Delftia	80865	14.36	0.03	0.15	0.44	29
Brevundimonas	41275	14.23	0.03	0.18	0.18	303
Opitutaceae	134623	14.20	0.03	0.37	0.63	19
Acidovorax citrulli	80869	13.62	0.03	0.11	0.17	563
Verminephrobacter aporrectodeae subsp. tuberculatae At4	565443	13.56	0.03	0.16	0.17	881
Ralstonia	48736	13.54	0.03	0.26	0.26	62
Sulfurospirillum	57665	13.47	0.03	0.39	5.30	8
Variovorax paradoxus	34073	13.07	0.03	0.13	0.13	99
Sulfurospirillum sp. SCADC	1537915	13.33	0.03	0.19	0.49	545
Sphingobium xenophagum NBRC 107872	1219037	12.58	0.03	0.20	0.14	369
Polaromonas naphthalenivorans CJ2	365044	12.22	0.03	0.16	0.25	715
Geobacter	28231	12.36	0.03	0.14	0.27	68
Desulfobulbus	893	12.50	0.03	1.65	1.65	127
Pseudomonas veronii	76761	12.14	0.03	0.10	0.10	213
Shewanella decolorationis S12	1353536	11.63	0.03	0.18	1.05	424
Aeromonas media WS	1208104	12.05	0.03	0.22	0.48	183
Methanocella paludicola SANAE	304371	11.96	0.03	0.19	0.19	440
Rhodoferax saidenbachensis ED16	614083	11.43	0.03	0.14	0.14	727
delta proteobacterium MLMS-1	262489	11.58	0.03	0.11	0.12	890
Pseudomonas	286	11.35	0.03	0.32	0.32	5
Methylobacterium	407	11.59	0.03	0.14	0.23	5
Comamonas sp. B-9	1055192	10.94	0.02	0.14	0.14	655
Brachymonas chironomi DSM 19884	1121116	11.01	0.02	0.14	0.14	635
Pseudomonas alcaligenes	43263	10.72	0.02	0.50	0.48	4
Desulfovibrionaceae	194924	10.62	0.02	0.37	0.37	10

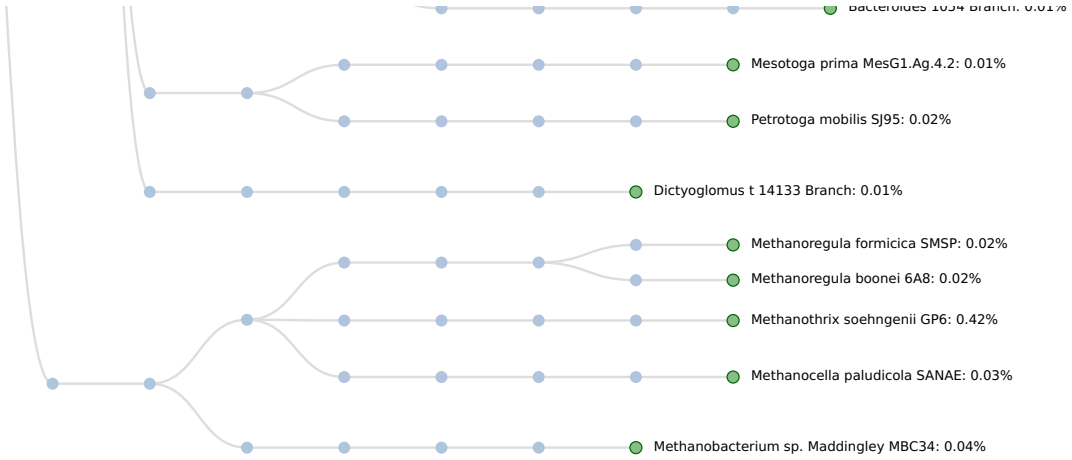
Methanoregula formicica SMSP	593750	10.32	0.02	0.16	0.19	384
Comamonas composti DSM 21721	1121349	9.92	0.02	0.12	0.12	683
Acinetobacter schindleri	108981	10.06	0.02	0.20	0.16	119
Limnohabitans sp. Rim47	1100721	9.79	0.02	0.12	0.13	635
Herbaspirillum	963	9.68	0.02	0.18	0.23	27
Ideonella sp. B508-1	137716	9.46	0.02	0.11	0.11	692
Pseudomonas fluorescens group	136843	9.74	0.02	0.11	0.11	81
Janthinobacterium sp. Marseille	375286	9.22	0.02	0.12	0.14	574
Rheinheimera sp. A13L	506534	9.04	0.02	0.15	0.15	338
Candidatus Marinimicrobia	62680	9.32	0.02	0.28	0.17	14
Methylotenera	359407	8.85	0.02	0.10	0.11	548
Thiobacillus denitrificans	36861	8.61	0.02	0.41	0.94	3
Hylemonella gracilis str. Niagara R	1458275	8.63	0.02	0.10	0.13	612
Leptothrix cholodnii SP-6	395495	8.49	0.02	0.10	0.11	630
Geobacter sulfurreducens PCA	243231	8.77	0.02	0.18	0.12	106
Faecalibacterium prausnitzii	853	8.50	0.02	0.17	0.16	16
Methanoregula boonei 6A8	456442	8.86	0.02	0.14	0.17	338
Ramlibacter tataouinensis TTB310	365046	8.42	0.02	0.11	0.11	548
Janthinobacterium lividum	29581	8.22	0.02	0.14	0.40	310
Pelobacter propionicus DSM 2379	338966	8.18	0.02	0.12	0.12	431
Dehalobacter	56112	8.34	0.02	0.11	0.09	129
Petrotoga mobilis SJ95	403833	8.22	0.02	0.15	0.15	199
Delftia acidovorans CCUG 274B	883101	7.80	0.02	0.13	0.21	195
Desulfomicrobium	898	7.72	0.02	0.28	0.28	8
Pseudomonas mandelii JR-1	1147786	7.75	0.02	0.13	0.13	277
Pseudomonas alcaliphila 34	1248438	7.53	0.02	0.13	0.13	195
Delftia sp. Cs1-4	742013	7.10	0.02	0.12	0.24	212
Polaromonas glacialis	866564	7.49	0.02	0.10	0.16	459
Pseudomonas taeanensis MS-3	1395571	7.44	0.02	0.12	0.12	324
Methylophilus sp. 5	1112274	6.85	0.01	0.10	0.15	361
Oxalobacteraceae	75682	6.82	0.01	0.10	0.11	61
Geobacter pickeringii	345632	7.05	0.01	0.12	0.18	293
unclassified Deltaproteobacteria (miscellaneous)	122706	6.68	0.01	0.32	0.32	5
Sphingobium sp. ba1	1522072	6.73	0.01	0.12	0.14	242
Dechloromonas agitata is5	1304883	6.55	0.01	0.11	0.12	291
Geobacter soli	1510391	6.52	0.01	0.11	0.14	276
delta proteobacterium JGI 0000059-J07	1283297	6.40	0.01	0.13	0.12	87
Solimonas	413435	6.20	0.01	0.14	0.14	20
Desulfosporosinus youngiae DSM 17734	768710	6.18	0.01	0.10	0.10	277
Pelosinus	365348	6.30	0.01	0.32	0.32	6
Dictyoglomus	13	6.39	0.01	0.26	0.26	9
Azoarcus	12960	5.72	0.01	0.20	0.20	7
Arcobacter butzleri	28197	6.13	0.01	0.11	0.42	34
Bordetella bronchiseptica	518	5.27	0.01	0.22	0.16	9
Geobacter metallireducens	28232	5.30	0.01	0.31	0.37	836
Alphaproteobacteria	28211	5.26	0.01	16.67	16.67	6
Ignavibacteriales	795748	5.47	0.01	10.47	10.47	13
Mesotoga prima MesG1.Ag.4.2	660470	5.32	0.01	0.11	0.14	117
Pseudogulbenkiania	568394	4.85	0.01	0.10	0.10	13
Desulfovibrio	872	4.84	0.01	0.17	0.17	2
Pseudomonas resinovorans	53412	4.92	0.01	0.10	0.10	12
Massilia sp. JGI 0001003-B08	1235984	4.46	0.01	0.12	0.12	31
Bacteroides	816	4.43	0.01	0.24	0.24	2
Arcobacter	28196	3.95	<0.01	0.16	3.64	2
Collimonas	202907	3.81	<0.01	0.11	0.11	8

Arthrobacter	1663	3.58	<0.01	0.12	0.12	2
Pseudomonadaceae	135621	3.26	<0.01	1.63	1.63	5
Desulfosporosinus	79206	3.18	<0.01	1.83	1.67	4
Tolumonas	43947	2.68	<0.01	0.10	0.10	4
Bifidobacterium adolescentis	1680	2.44	<0.01	0.14	0.14	4
Advenella	290425	1.92	<0.01	0.15	0.15	2
Acinetobacter calcoaceticus/baumannii complex	909768	1.74	<0.01	0.13	0.13	3
Arenimonas	490567	1.96	<0.01	0.12	0.08	3
Christensenella	990721	1.63	<0.01	0.43	0.43	122
Halomonas	2745	1.40	<0.01	0.10	0.10	3


Methylotenera mobilis 13: 26.56%
Methylotenera sp. L2L1: 0.88%
Methylotenera 43032 Branch: 0.02%
Methylotenera versatilis 301: 0.09%
Methylophilus sp 43046 Branch: 0.05%
Methylophilus sp. 5: 0.01%
Methylophilus methylotrophus DSM 46235 = ATCC 53528: 0.04%
Thiobacillus denitrificans 43151 Branch: 0.02%
Acidovorax delafieldii 2AN: 0.86%
Acidovorax sp. JHL-9: 15.70%
Acidovorax radicis N 25067 Branch: 0.32%
Acidovorax ebreus TPSY: 0.13%
Acidovorax citrulli 24781 Branch: 0.03%
Acidovorax 24785 Branch: 0.04%
Alicycliphilus denitrificans K601: 0.13%
Comamonas badia DSM 17552: 0.03%
Comamonas testosteroni 25855 Branch: 0.15%
Comamonas aquatica DA1877: 0.03%
Comamonas granuli NBRC 101663: 0.12%
Comamonas sp. B-9: 0.02%
Comamonas composti DSM 21721: 0.02%
Curvibacter gracilis ATCC BAA-807: 0.04%
Curvibacter lanceolatus ATCC 14669: 0.08%
Melaminivora alkalimesophila str. CY1: 0.05%
Xenophilus azovorans DSM 13620: 0.03%
Verminephrobacter eiseniae EF01-2: 0.04%
Verminephrobacter aporrectodeae subsp. tuberculatae At4: 0.03%
Hydrogenophaga sp. T4: 0.08%
Delftia acidovorans CCUG 274B: 0.02%
Delftia 25864 Branch: 0.03%
Delftia tsuruhatensis str. 391: 0.03%
Delftia sp. Cs1-4: 0.02%
Ramlibacter tataouinensis TTB310: 0.02%
Polaromonas naphthalenivorans CJ2: 0.03%
Polaromonas sp. EUR3 1.2.1: 0.04%
Polaromonas glacialis str. R3-9: 0.02%
Hylemonella gracilis str. Niagara R: 0.02%
Comamonadaceae bacterium B 24745 Branch: 0.05%
Limnohabitans sp. Rim47: 0.02%
Variovorax paradoxus 25703 Branch: 0.03%
Rhodoferax ferrireducens T118 str. DSM 15236: 3.79%
Rhodoferax saidenbachensis ED16: 0.03%
Simplicispira psychrophila DSM 11588: 0.05%
Brachymonas chironomi DSM 19884: 0.02%
Janthinobacterium lividum str. RIT308: 0.02%
Janthinobacterium sp. Marseille: 0.02%
Massilia 25805 Branch: 0.09%
Massilia sp. JGI 0001003-B08: 0.01%
Herbaspirillum 25680 Branch: 0.02%
Burkholderiales Order 15 6136 Node 25777: 0.01%
Collimonas 25083 Branch: 0.01%
Bordetella bronchiseptica 24923 Branch: 0.01%
Burkholderiales Order 15 1282 25014 Branch: 0.04%
Advenella 24808 Branch: 0.00%


Rubrivivax 25754 Branch: 0.04%
Methylibium sp 25820 Branch: 0.07%
Leptothrix cholodnii SP-6: 0.02%
Aquabacterium sp. NJ1: 0.34%
Ideonella sp. B508-1: 0.02%
Ralstonia sp A 24684 Branch: 0.03%
Burkholderia multivorans CGD1: 0.04%
Dechlorosoma suillum PS: 0.35%
Thauera 13771 Branch: 0.13%
Azoarcus 13804 Branch: 0.01%
Dechloromonas agitata is5: 0.01%
Geobacter 25953 Branch: 0.03%
Pseudogulbenkiania sp 14709 Branch: 0.01%
Geobacter metallireducens 25960 Branch: 0.01%
Geobacter pickeringii str. G13: 0.02%
Geobacter sulfurreducens PCA: 0.02%
Geobacter soli str. GSS01: 0.01%
Geobacter uraniireducens Rf4: 0.04%
Geobacter lovleyi SZ: 0.03%
Geoalkalibacter 25948 Branch: 0.05%
Pelobacter propionicus DSM 2379: 0.02%
delta proteobacterium JGI 0000059-J07: 0.01%
delta proteobacterium PSCGC 37043 Branch: 0.01%
delta proteobacterium MLMS-1: 0.03%
Desulfobulbus 14385 Branch: 0.03%
Desulfobulbus sp. Tol-SR: 15.43%
Desulfurivibrio alkaliphilus AHT 2: 0.03%
Smithella sp. F21: 7.52%
Syntrophus aciditrophicus SB: 0.08%
Desulfovibrio 36896 Branch: 0.02%
Desulfovibrio 36856 Branch: 0.01%
Desulfomicrobium 36832 Branch: 0.02%
Sulfurospirillum multivorans DSM 12446: 0.05%
Sulfurospirillum sp. SCADC: 0.03%
Sulfurospirillum arsenophilum NBRC 109478: 2.05%
Sulfurospirillum 15620 Branch: 0.03%
Arcobacter 15574 Branch: 0.01%
Arcobacter butzleri 15565 Branch: 0.01%
Sulfuricurvum kujiense DSM 16994: 1.84%
Candidatus Sulfuricurvum sp. RIFRC-1: 0.06%
Pseudomonas sp. BICA1-14: 1.88%
Pseudomonas xanthomarina str. S11: 1.16%
Pseudomonas chloritidismutans AW-1: 0.99%
Pseudomonas stutzeri RCH2: 5.90%
Pseudomonas aeruginosa BWHPSA028: 1.12%
Pseudomonas alcaligenes 39472 Branch: 0.02%
Pseudomonas resinovorans 39477 Branch: 0.01%
Pseudomonas putida str. Idaho: 0.07%
Pseudomonadaceae Family 2860 Node 39778: 0.01%
Pseudomonas 39532 Branch: 0.02%
Pseudomonas 39894 Branch: 0.03%
Pseudomonas mandelii JR-1: 0.02%
Pseudomonas taeanensis MS-3: 0.02%
Pseudomonas alcaliphila 34: 0.02%
Pseudomonas 39635 Branch: 0.02%
Acinetobacter lwoffii WJ10621: 1.00%
Acinetobacter johnsonii SH046: 1.45%
Acinetobacter baumannii 1295743: 0.33%
Acinetobacter baumannii 40885 Branch: 0.00%
Acinetobacter 41878 Branch: 0.10%
Acinetobacter schindleri 41946 Branch: 0.02%
Shewanella xiamenensis str. BC01: 0.60%
Shewanella sp. POL2: 2.61%
Shewanella decolorationis S12: 0.03%


Shewanella putrefaciens CN-32: 0.55%
Methylobacter tundripaludum 21/22: 0.40%
Methylobacter 13847 Branch: 0.14%
Methylomonas 13832 Branch: 0.16%
Methylosarcina 13829 Branch: 0.05%
Aeromonas media WS: 0.03%
Aeromonas hydrophila 4AK4: 0.03%
Aeromonas salmonicida subsp 37538 Branch: 0.05%
Aeromonas 37560 Branch: 0.04%
Tolumonas 37518 Branch: 0.01%
Rheinheimera sp. A13L: 0.02%
Pseudoxanthomonas spadix BD-a59: 0.05%
Arenimonas 26512 Branch: 0.00%
Solimonas 42111 Branch: 0.01%
Halomonas sp 13439 Branch: 0.00%
Rhizobium selenitireducens ATCC BAA-1503: 0.09%
Methylobacterium 22250 Branch: 0.03%
Brevundimonas sp 23867 Branch: 0.03%
Sphingobium xenophagum NBRC 107872: 0.03%
Sphingobium sp. ba1: 0.01%
Alphaproteobacteria Class 17 820 24571 Branch: 0.01%
Geothrix fermentans DSM 14018: 0.48%
Desulfosporosinus sp. Tol-M: 0.34%
Desulfosporosinus 27069 Branch: 0.01%
Desulfosporosinus youngiae DSM 17734: 0.01%
Dehalobacter sp 27727 Branch: 0.02%
Peptococcaceae bacterium SCADC1_2_3: 0.08%
Faecalibacterium 27368 Branch: 0.02%
Christensenella Family Node 1: 0.00%
Carnobacterium 5849 Branch: 0.07%
Pelosinus 14273 Branch: 0.01%
Dehalococcoides mccartyi 43087 Branch: 0.13%
Arthrobacter sp 20519 Branch: 0.01%
Bifidobacterium adolescentis 21382 Branch: 0.01%
GlobalTree 4114 Node 25994: 0.03%
GlobalTree 5787 Node 43114: 0.19%
Latescibacteria bacterium JGI 0000059-A10: 0.11%
Marinimicrobia bacterium JGI 14679 Branch: 0.02%
GlobalTree 8253 Node 42729: 0.01%
Flavobacterium sp 254 Branch: 0.04%

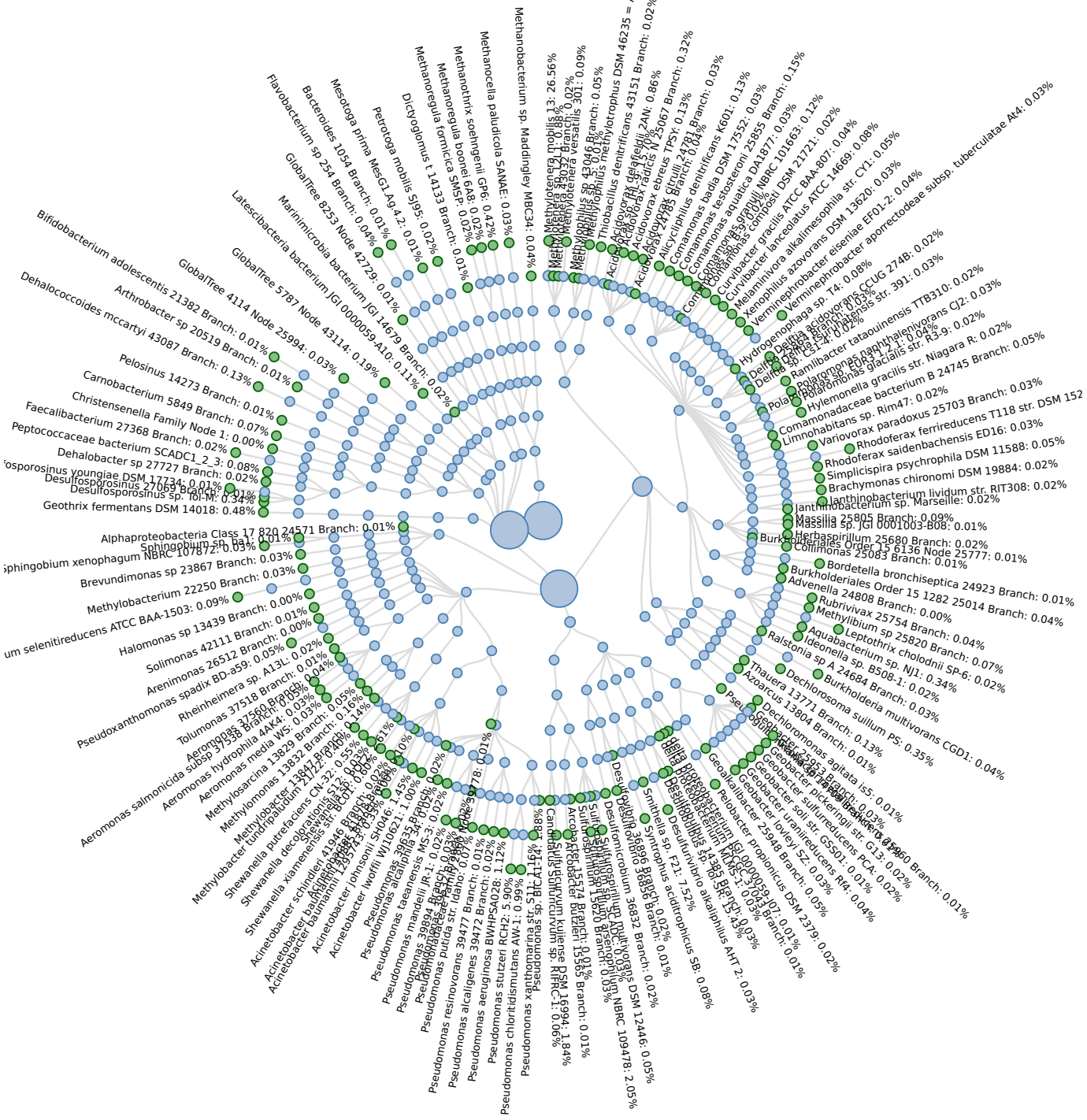

Bacteroides 1034 Branch: 0.01%
Mesotoga prima MesG1.Ag.4.2: 0.01%
Petrotoga mobilis SJ95: 0.02%
Dictyoglomus t 14133 Branch: 0.01%
Methanoregula formicica SMSP: 0.02%
Methanoregula boonei 6A8: 0.02%
Methanothrix soehngenii GP6: 0.42%
Methanocella paludicola SANAE: 0.03%
Methanobacterium sp. Maddingley MBC34: 0.04%

Bacteria

Radial Tree Chart Taxonomy

1B-85-3_MBPO210215-A

Total results


Methanobacterium sp. Maddingley MBC34: 0.04%
Methanocella paludicola SANAE: 0.03%
Methanothrix soehngenii GP6: 0.42%
Methanoregula boonei 6A8: 0.02%
Methanoregula formicica SMSP: 0.02%
Methanoregula t 14133 Branch: 0.01%
Dictyoglomus t 14133 Branch: 0.01%
Petrotoga mobilis SJ95: 0.02%
Petrotoga prima MesG1.Ag.4.2: 0.01%
Mesotoga prima MesG1.Ag.4.2: 0.01%
Bacteroides 1054 Branch: 0.01%
Flavobacterium sp 254 Branch: 0.04%
GlobalTree 8253 Node 42729: 0.01%
Marinimicrobia bacterium JGI 0000059-A10: 0.11%
Latescibacteria bacterium JGI 0000059-A10: 0.19%
GlobalTree 5787 Node 43114: 0.02%
GlobalTree 4114 Node 25994: 0.03%
Bifidobacterium adolescentis 21382 Branch: 0.01%
Arthrobacter sp 20519 Branch: 0.01%
Dehalococcoides mccartyi 43087 Branch: 0.13%
Pelosinus 14273 Branch: 0.01%
Carnobacterium 5849 Branch: 0.07%
Christensenella Family Node 1: 0.00%
Faecalibacterium 27368 Branch: 0.02%
Peptococcaceae bacterium SCADC1_2_3: 0.08%
Dehalobacter sp 27727 Branch: 0.02%
Desulfosporosinus youngiae DSM 17734: 0.01%
Desulfosporosinus 27069 Branch: 0.01%
Desulfosporosinus sp. Tol-M: 0.34%
Geothrix fermentans DSM 14018: 0.48%
Alphaproteobacteria Class 17 820 24571 Branch: 0.01%
Sphingobium sp. ba1: 0.01%
Sphingobium xenophagum NBRC 107872: 0.03%
Brevundimonas sp 23867 Branch: 0.03%
Methylobacterium 22250 Branch: 0.03%
um selenitireducens ATCC BAA-1503: 0.09%
Halomonas sp 13439 Branch: 0.00%
Solimonas 42111 Branch: 0.01%
Arenimonas 26512 Branch: 0.00%
Pseudoxanthomonas spadix BD-a59: 0.05%
Rheinheimera sp. A13L: 0.02%
Tolumonas 37518 Branch: 0.01%
Aeromonas 37560 Branch: 0.04%
Aeromonas salmonicida subsp 37538 Branch: 0.05%
Aeromonas hydrophila 4AK4: 0.03%
Aeromonas media WS: 0.03%
Methylosarcina 13829 Branch: 0.05%
Methylosarcina 13832 Branch: 0.16%
Methylobacter 13847 Branch: 0.14%
Methylobacter tundripaludum 21722: 0.40%
Shewanella putrefaciens CN-32: 0.55%
Shewanella decolorationis S12: 0.02%
Shewanella xiamenensis str. BC01: 0.60%
Shewanella baltica 41946 Branch: 0.02%
Acinetobacter schindleri 41946 Branch: 0.02%
Acinetobacter baumannii 13795 Branch: 0.03%
Acinetobacter baumannii 13795 Branch: 0.03%
Acinetobacter johnsonii SH046: 1.45%
Acinetobacter lwoffii WJ10621: 1.00%
Pseudomonas alcaligenes 39635 Branch: 0.02%
Pseudomonas mandelii JR-1: 0.02%
Pseudomonas taeanensis MS-3: 0.02%
Pseudomonas 39934 Branch: 0.02%
Pseudomonas putida str. Idaho: 0.07%
Pseudomonas resinovorans 39477 Branch: 0.01%
Pseudomonas alcaligenes 39472 Branch: 0.02%
Pseudomonas aeruginosa BWHPSA028: 1.12%
Pseudomonas stutzeri RCH2: 5.90%
Pseudomonas chlororaphis subsp. aurantiaca 39478: 0.01%
Pseudomonas chloritidismutans AW-1: 0.99%
Pseudomonas xanthomarina str. S11: 1.16%
Pseudomonas sp. BICA1-14: 1.88%
Pseudomonas sp. RIHRC1: 0.96%
Methylotenera mobilis 13: 26.56%
Methylotenera 43032 Branch: 0.08%
Methylotenera versatilis 301: 0.09%
Methylophilus sp 43046 Branch: 0.05%
Methylophilus methylotrophus DSM 46235 = ATCC
Thiobacillus denitrificans 43151 Branch: 0.02%
Acidovorax delafieldii 2AN: 0.86%
Acidovorax sp 24785 Branch: 0.04%
Acidovorax radicis N 25067 Branch: 0.32%
Alicycliphilus denitrificans K601: 0.13%
Comamonas badia DSM 17552: 0.03%
Comamonas testosteroni 25855 Branch: 0.15%
Comamonas aquatica DA1877: 0.03%
Comamonas granuli NBRC 101663: 0.12%
Comamonas composti DSM 21721: 0.02%
Curvibacter gracilis ATCC BAA-807: 0.04%
Curvibacter lanceolatus ATCC 14669: 0.08%
Melaminivora alkalimesophila str. CY1: 0.05%
Melaminivora azovorans DSM 13620: 0.03%
Vermiphilus aporrectodeae EF01-2: 0.04%
Vermiphilus sp. T4: 0.08%
Xenophilus azovorans CCUG 274B: 0.02%
Xenophilus sp 24 Branch: 0.03%
Hydrogenophaga sp. T4: 0.08%
Delftia acidovorans SPH-1: 0.02%
Delftia lacustris 24 Branch: 0.02%
Delftia sp. CS1-4: 0.02%
Ramlibacter tataouinensis TTB310: 0.02%
Polaromonas naphthalenivorans CJ2: 0.03%
Polaromonas sp. JS023_1_1: 0.04%
Polaromonas glacialis str. R3-9: 0.02%
Polaromonas sp. JS666: 0.02%
Hylemonella gracilis str. Niagara R: 0.02%
Comamonadaceae bacterium B 24745 Branch: 0.05%
Limnohabitans sp. Rim47: 0.02%
Variovorax paradoxus 25703 Branch: 0.03%
Rhodoferax ferrireducens T118 str. DSM 152
Rhodoferax saidenbachensis ED16: 0.03%
Simplicispira psychrophila DSM 11588: 0.05%
Brachymonas chironomi DSM 19884: 0.02%
Janthinobacterium lividum str. RIT308: 0.02%
Janthinobacterium sp. Marseille: 0.02%
Massilia 25805 Branch: 0.09%
Massilia sp. JGI 0001003-B08: 0.01%
Herbaspirillum 25680 Branch: 0.02%
Burkholderiales Order 15 6136 Node 25777: 0.01%
Collimonas 25083 Branch: 0.01%
Bordetella bronchiseptica 24923 Branch: 0.01%
Burkholderiales Order 15 1282 25014 Branch: 0.04%
Advenella 24808 Branch: 0.00%
Rubrivivax 25754 Branch: 0.04%
Methylibium sp 25820 Branch: 0.07%
Leptothrix cholodnii SP-6: 0.02%
Aquabacterium sp. NJ1: 0.34%
Ideonella sp. B508-1: 0.02%
Ralstonia sp A 24684 Branch: 0.03%
Burkholderia multivorans CGD1: 0.04%
Dechlorosoma suillum PS: 0.35%
Azoarcus 13771 Branch: 0.13%
Thauera 13804 Branch: 0.01%
Dechloromonas agitata is5: 0.01%
Geobacter 25952 Branch: 0.03%
Geobacter soli str. GSS01: 0.01%
Geobacter uraniireducens PCA: 0.02%
Geobacter uraniireducens Rf4: 0.04%
Geobacter lovleyi SZ: 0.03%
Geobacter sulfurreducens PCA: 0.02%
Geobacter pickeringii str. G13: 0.02%
Geobacter 25948 Branch: 0.05%
Geobacter metallireducens GS-15: 0.03%
Geobacter bemidjiensis Bem: 0.01%
Geobacter sp. M21: 0.01%
Geobacter sp. M18: 0.03%
Geoalkalibacter subterraneus 25960 Branch: 0.01%
Geoalkalibacter ferrihydriticus DSM 17813: 0.03%
Geoalkalibacter sp. MLSB: 0.03%
Geoalkalibacter sp. MLMS1: 0.03%
Geoalkalibacter sp. SFB: 0.03%
Geoalkalibacter sp. SG-1: 0.03%
Geoalkalibacter sp. MLSS: 0.03%
Geoalkalibacter sp. MLS6: 0.03%
Geoalkalibacter sp. MLS10: 0.03%
Geoalkalibacter sp. MLS7: 0.01%
Geoalkalibacter sp. MLS5: 0.03%
Geoalkalibacter sp. MLS2: 0.03%
Geoalkalibacter sp. MLS3: 0.03%
Geoalkalibacter sp. MLS4: 0.03%
Geoalkalibacter sp. MLS1: 0.03%
Geoalkalibacter sp. MLS8: 0.03%
Geoalkalibacter sp. MLS9: 0.03%
Geoalkalibacter sp. MLS11: 0.03%
Geoalkalibacter sp. MLS12: 0.03%
Geoalkalibacter sp. MLS13: 0.03%
Geoalkalibacter sp. MLS14: 0.03%
Geoalkalibacter sp. MLS15: 0.03%
Geoalkalibacter sp. MLS16: 0.03%
Geoalkalibacter sp. MLS17: 0.03%
Geoalkalibacter sp. MLS18: 0.03%
Geoalkalibacter sp. MLS19: 0.03%
Geoalkalibacter sp. MLS20: 0.03%
Geoalkalibacter sp.

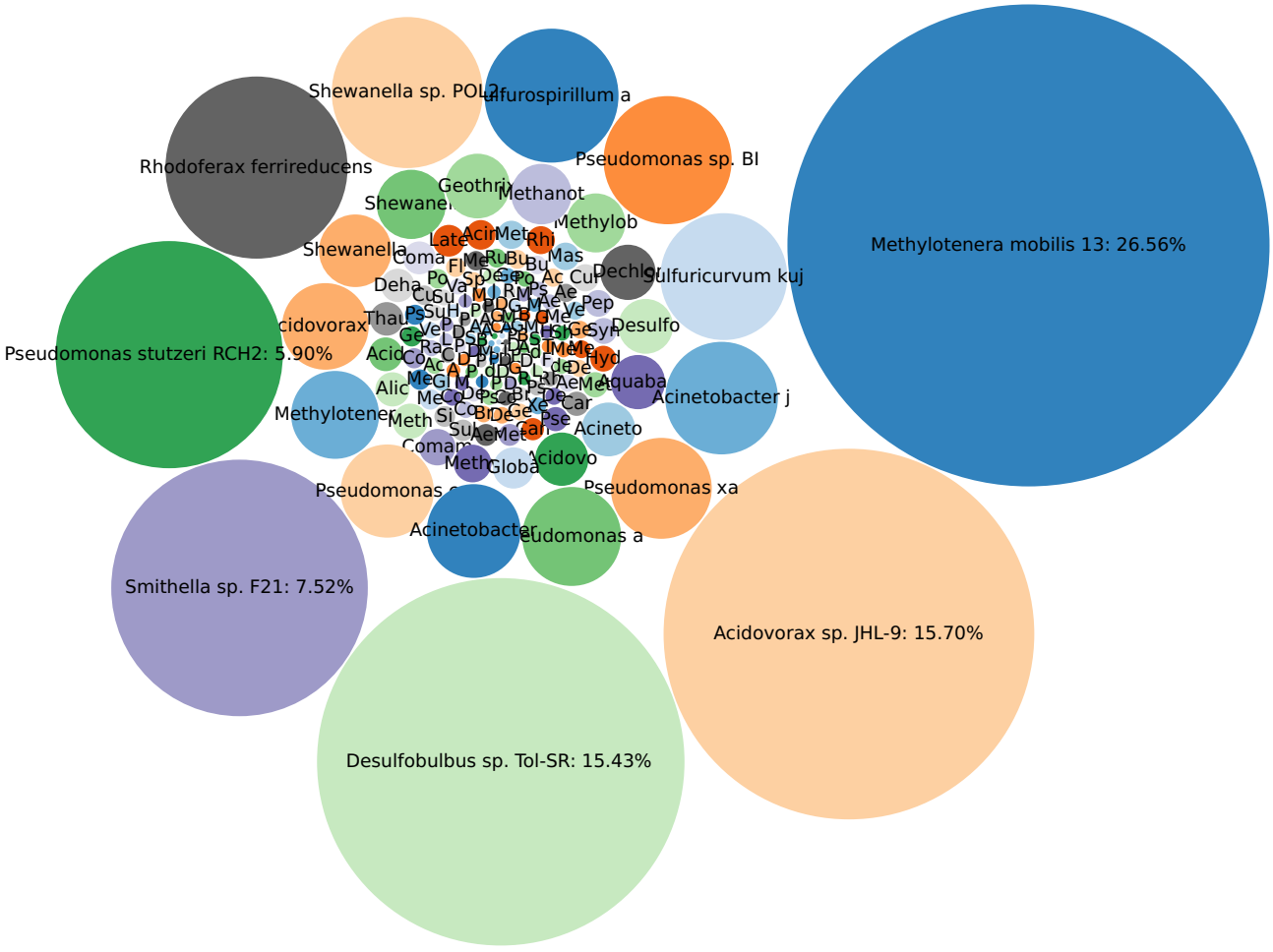
Bacteria

Sunburst Chart Taxonomy

1B-85-3_MBPO210215-A

Total results




Shewanella sp. POL2
ufurospirillum a
Rhodoferax ferrireducens
Pseudomonas sp. BI
Methylotenera mobilis 13: 26.56%
Pseudomonas stutzeri RCH2: 5.90%
Sulfuricurvum kuj
Acinetobacter j
Smithella sp. F21: 7.52%
Acidovorax sp. JHL-9: 15.70%
Desulfobulbus sp. Tol-SR: 15.43%

Fasta/q details

Total results

Metric	Value
Hit	200

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Beta-lactam-resistance blaOXA 437 Branch	-	1685.26	57.49	39.46	34.73	58
Beta-lactam-resistance blaOXA 211	-	1246.31	42.51	18.52	26.57	23

Fungi

1B-85-3_MBPO210215-A

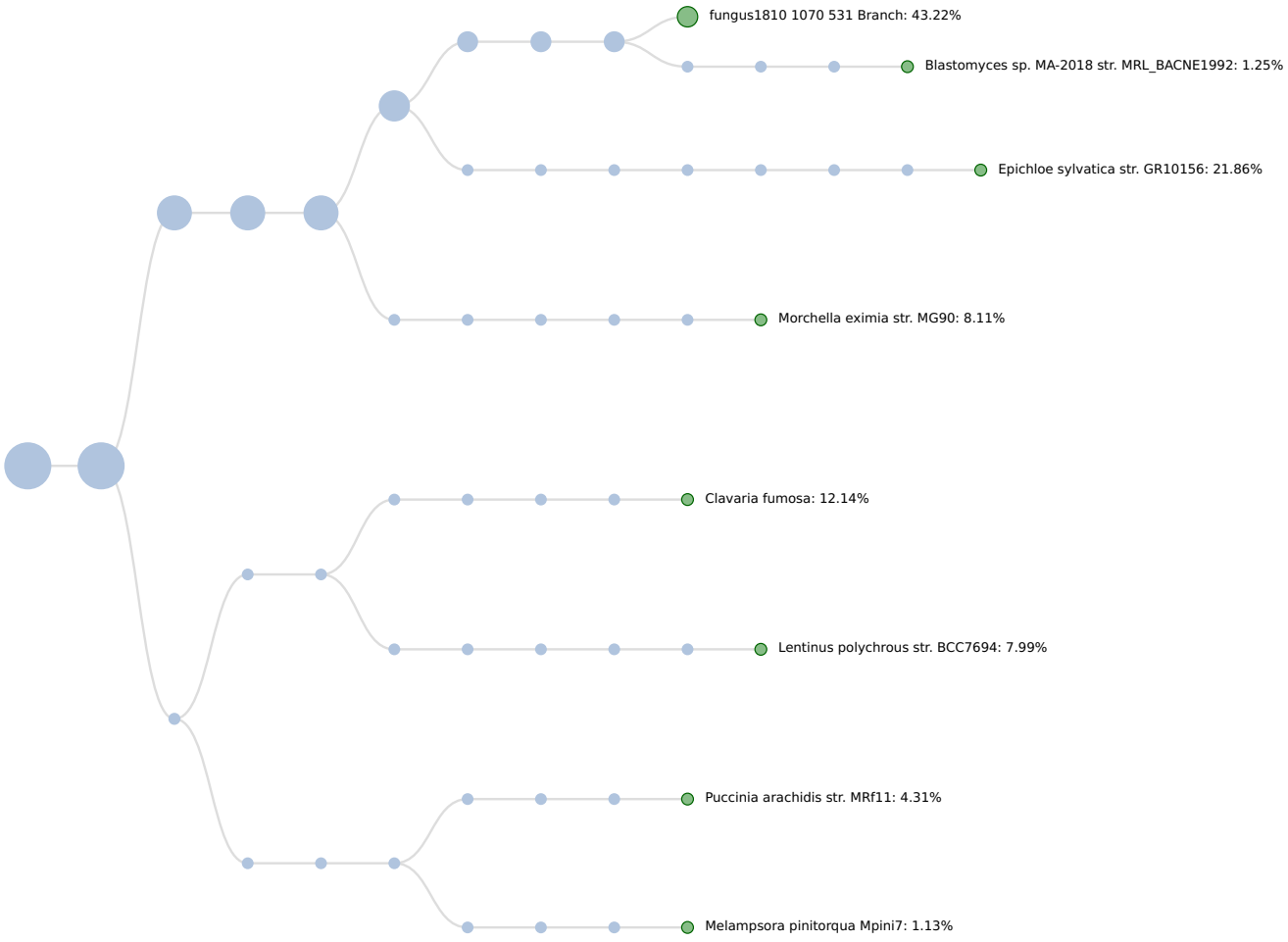
Fasta/q details

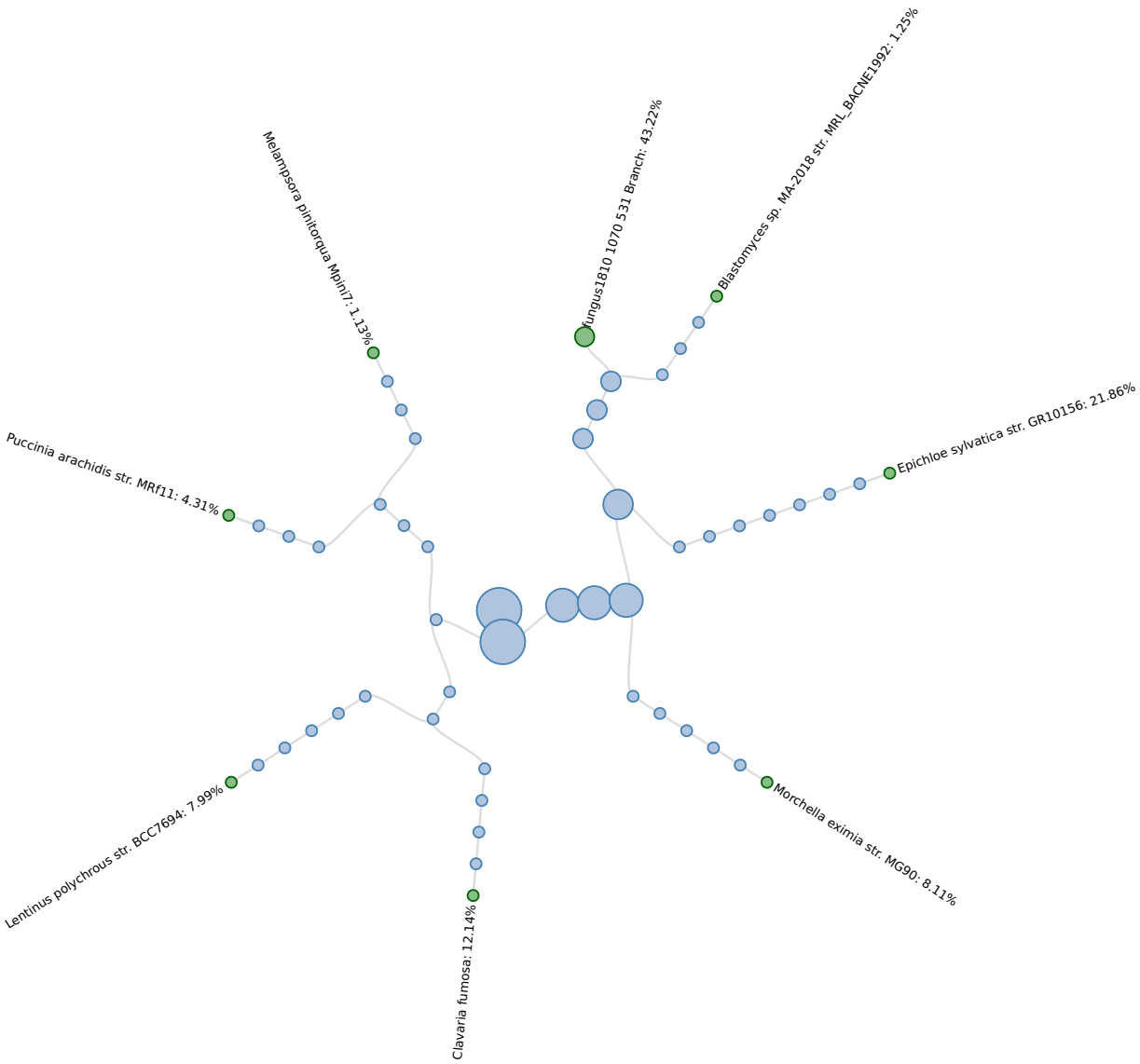
Total results

Metric	Value
Hit	5.027k

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Onygenales	33183	22.18	43.22	0.15	0.22	1133
Epichloe sylvatica	79593	11.22	21.86	0.13	0.10	597
Clavaria fumosa	264083	6.23	12.14	0.06	0.13	454
Morchella eximia	1582338	4.16	8.11	0.07	0.04	203
Lentinus polychrous	292559	4.10	7.99	0.06	0.06	247
Puccinia arachidis	333523	2.21	4.31	0.03	0.08	164
Blastomyces sp. MA-2018	2164086	0.64	1.25	0.02	0.02	34
Melampsora pinitorqua Mpini7	1298852	0.58	1.13	0.01	0.01	58


fungus1810 1070 531 Branch: 43.22%
Blastomyces sp. MA-2018 str. MRL_BACNE1992: 1.25%
Epichloe sylvatica str. GR10156: 21.86%
Morchella eximia str. MG90: 8.11%
Clavaria fumosa: 12.14%
Lentinus polychrous str. BCC7694: 7.99%
Puccinia arachidis str. MRf11: 4.31%
Melampsora pinitorqua Mpini7: 1.13%

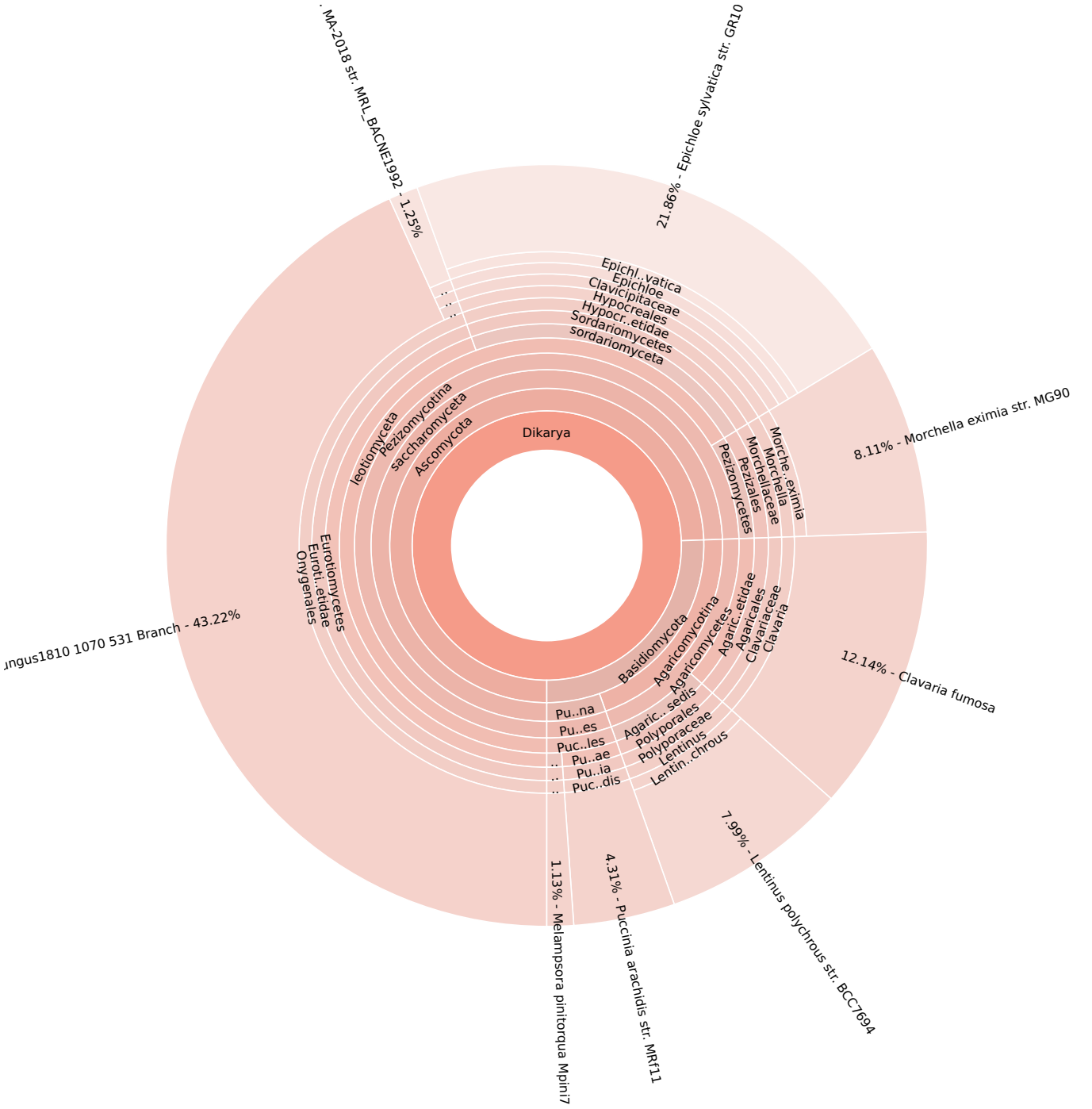

Melampsora pinitorqua Mpini7: 1.13%
fungus1810 1070 531 Branch: 43.22%
Blastomyces sp. MA-2018 str. MRL_BACNE1992: 1.25%
Puccinia arachidis str. MRf11: 4.31%
Epichloe sylvatica str. GR10156: 21.86%
Lentinus polychrous str. BCC7694: 7.99%
Morchella eximia str. MG90: 8.11%
Clavaria fumosa: 12.14%

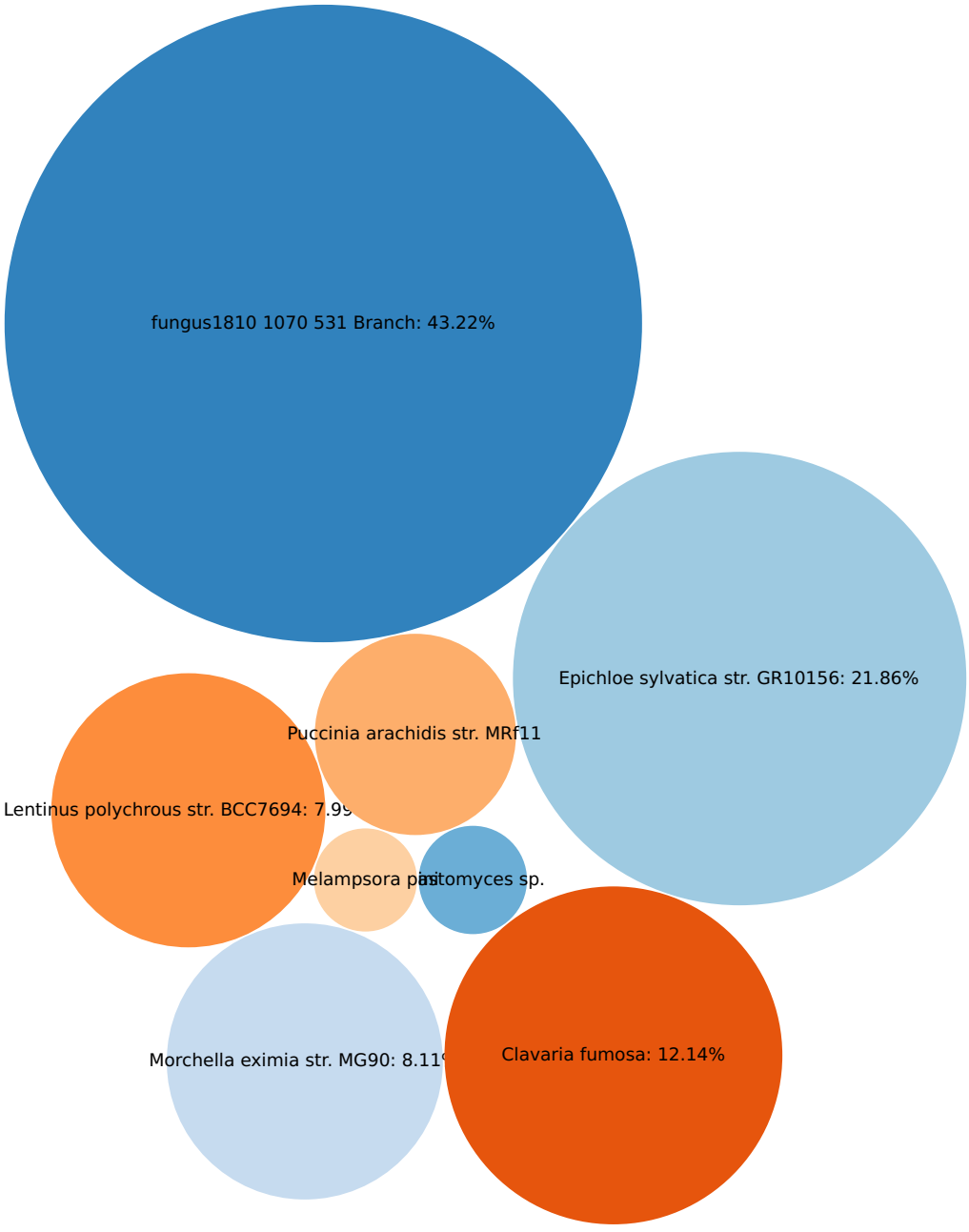
Fungi

Sunburst Chart Taxonomy

1B-85-3_MBPO210215-A

Total results




fungus1810 1070 531 Branch: 43.22%
Epichloe sylvatica str. GR10156: 21.86%
Puccinia arachidis str. MRf11
Lentinus polychrous str. BCC7694: 7.9
Melampsora pa
tomyces sp.
Morchella eximia str. MG90: 8.11
Clavaria fumosa: 12.14%

Protists

1B-85-3_MBPO210215-A

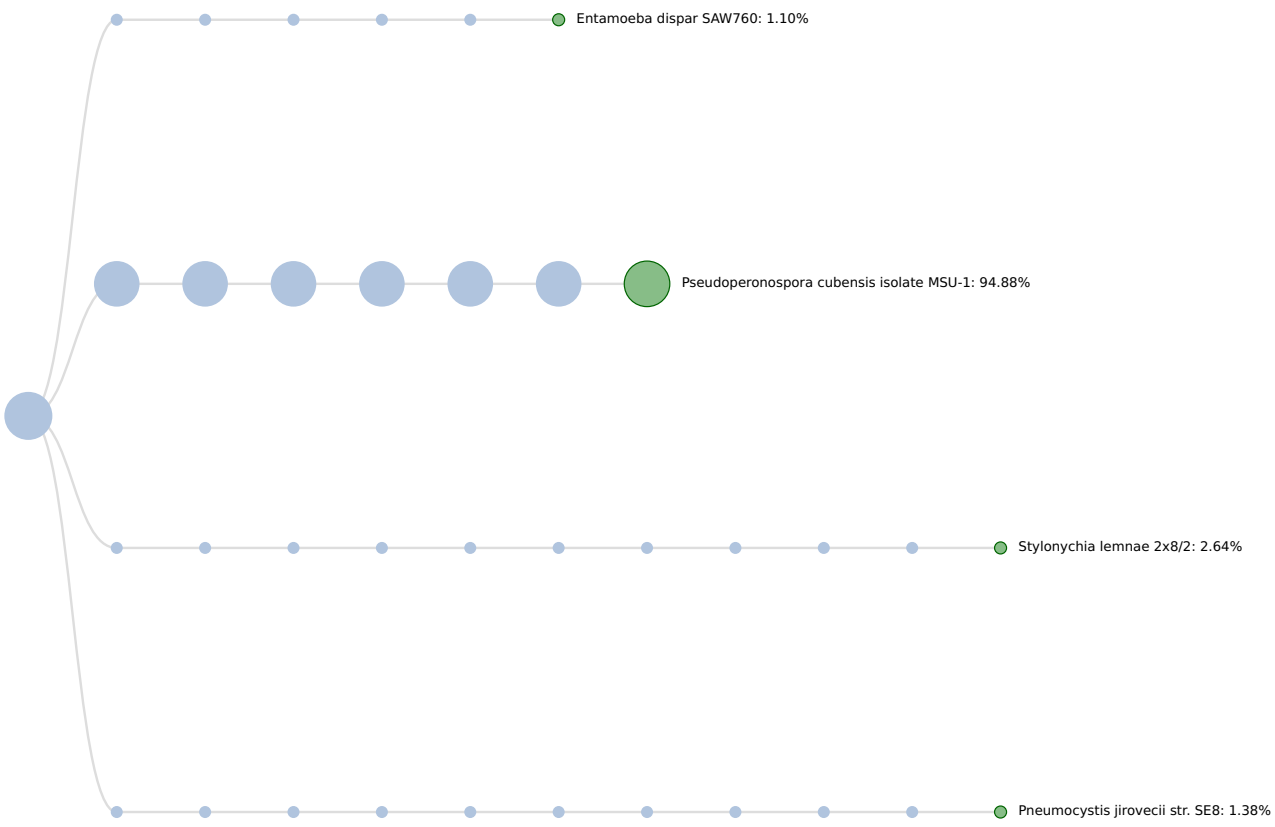
Total results

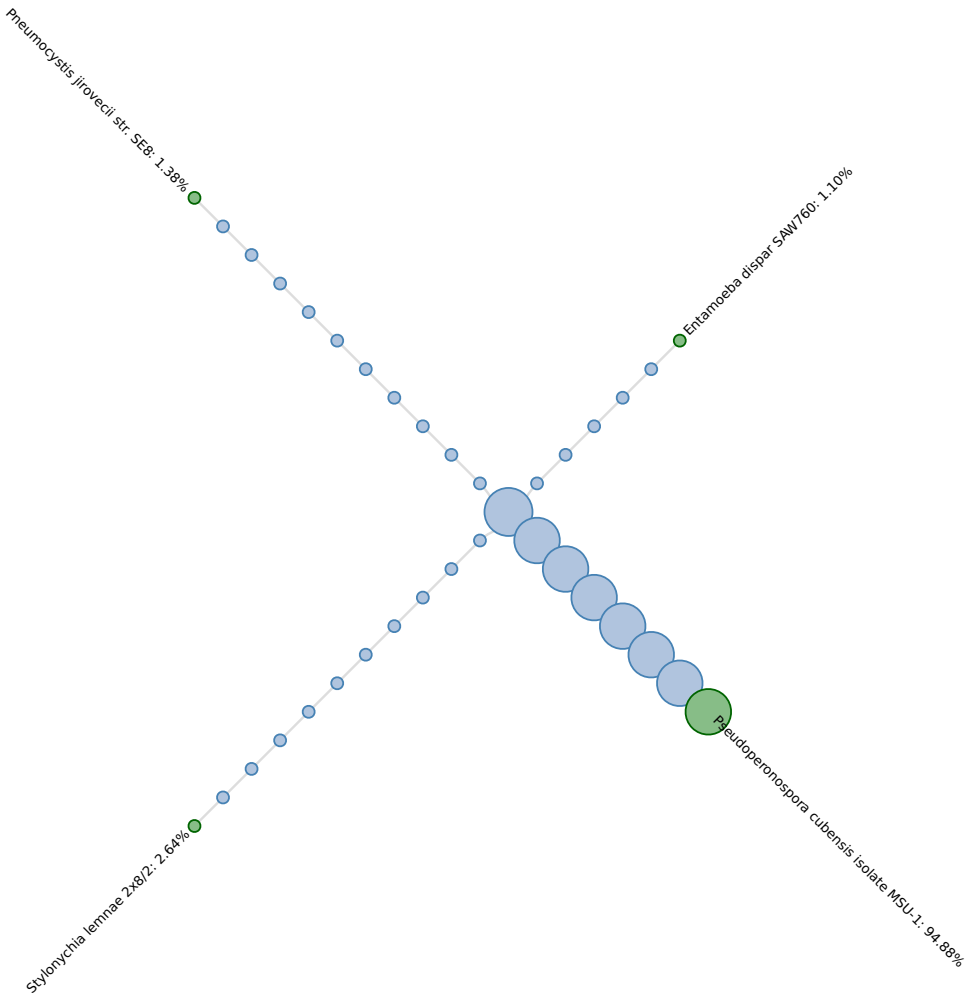
Fasta/q details

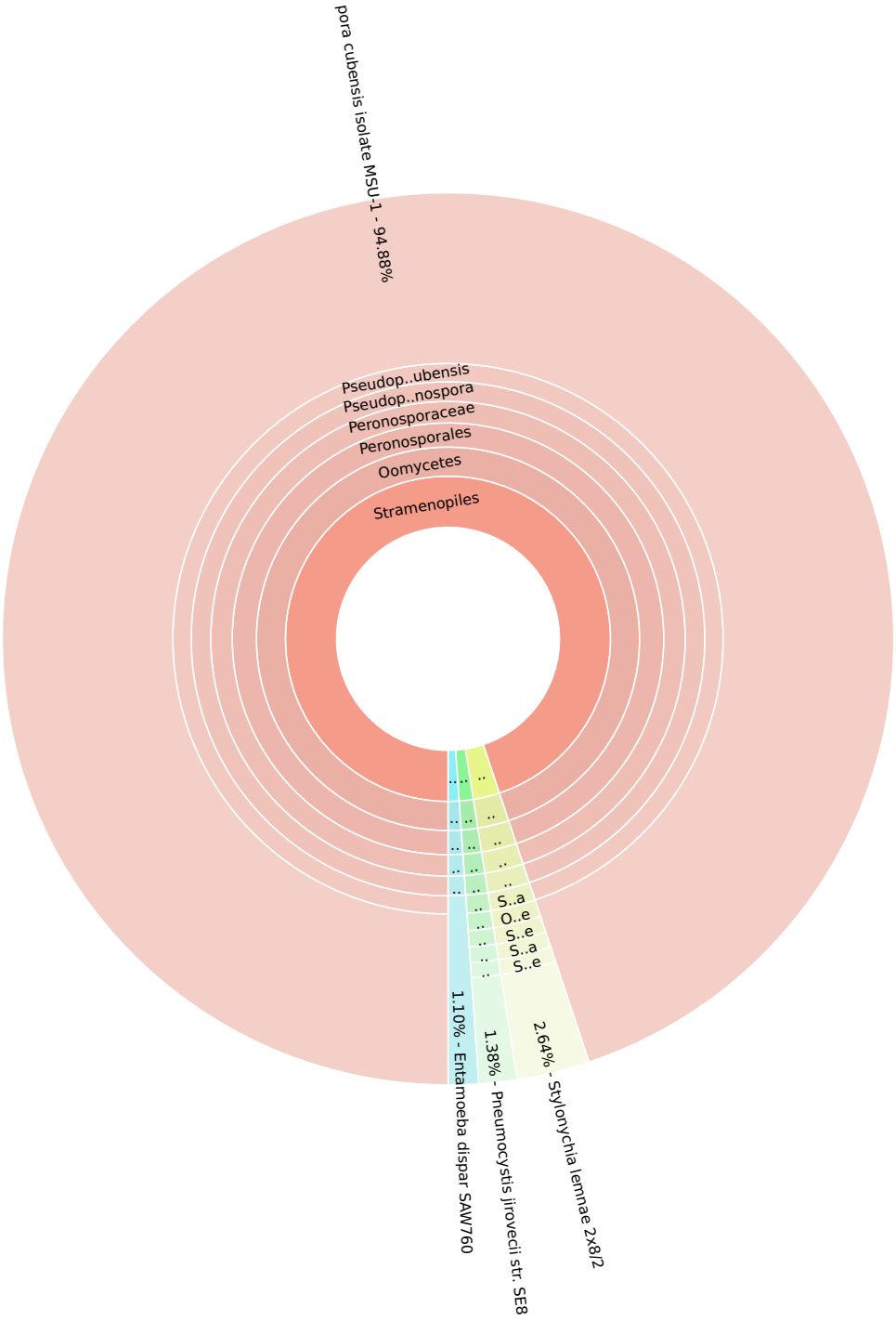
Metric	Value
Hit	2.360k

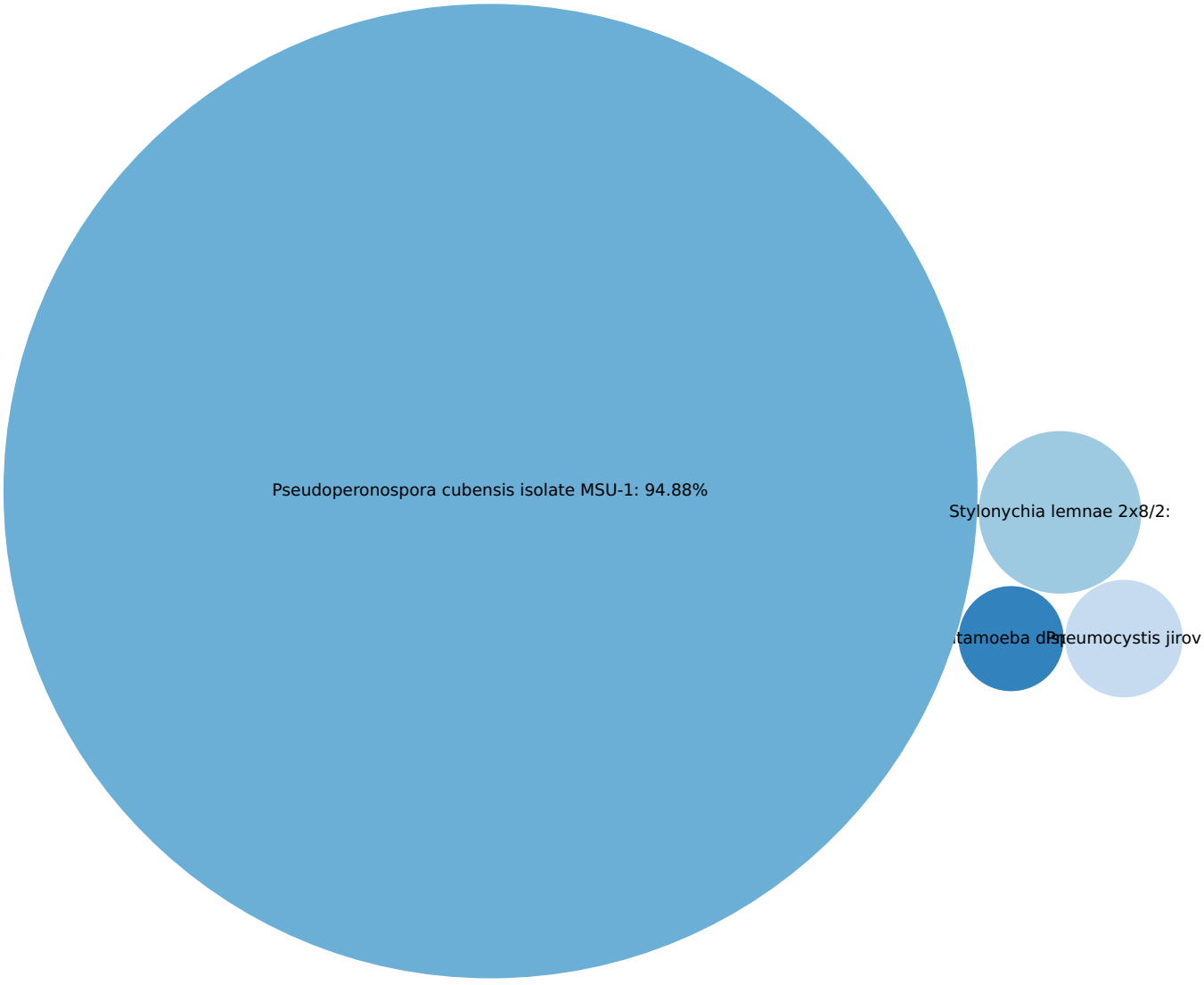
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudoperonospora cubensis	143453	24.08	94.88	0.24	0.28	1203
Stylonychia lemnae 2x8/2	755200	0.67	2.64	0.02	0.02	19
Pneumocystis jirovecii	42068	0.35	1.38	0.01	0.01	16
Entamoeba dispar SAW760	370354	0.28	1.10	0.01	0.01	12


Entamoeba dispar SAW760: 1.10%
Pseudoperonospora cubensis isolate MSU-1: 94.88%
Stylonychia lemnae 2x8/2: 2.64%
Pneumocystis jirovecii str. SE8: 1.38%


Pneumocystis jirovecii str. SE8: 1.38%
Entamoeba dispar SAW760: 1.10%
Pseudoperonospora cubensis isolate MSU-1: 94.88%
Stylonychia lemnae 2x8/2: 2.64%


pora cubensis isolate MSU-1 - 94.88%
Pseudop..ubensis
Pseudop..nospora
Peronosporaceae
Peronosporales
Oomycetes
Stramenopiles
1.10% - Entamoeba dispar SAW760
1.38% - Pneumocystis jirovecii str. SE8
2.64% - Stylonychia lemnae 2x8/2


Pseudoperonospora cubensis isolate MSU-1: 94.88%
Stylonychia lemnae 2x8/2:
tamoeba d
Pneumocystis jirov

Dark Matter (Beta)

1B-85-3_MBPO210215-A

Fasta/q details

Total results

Metric	Value
Hit	0.398M

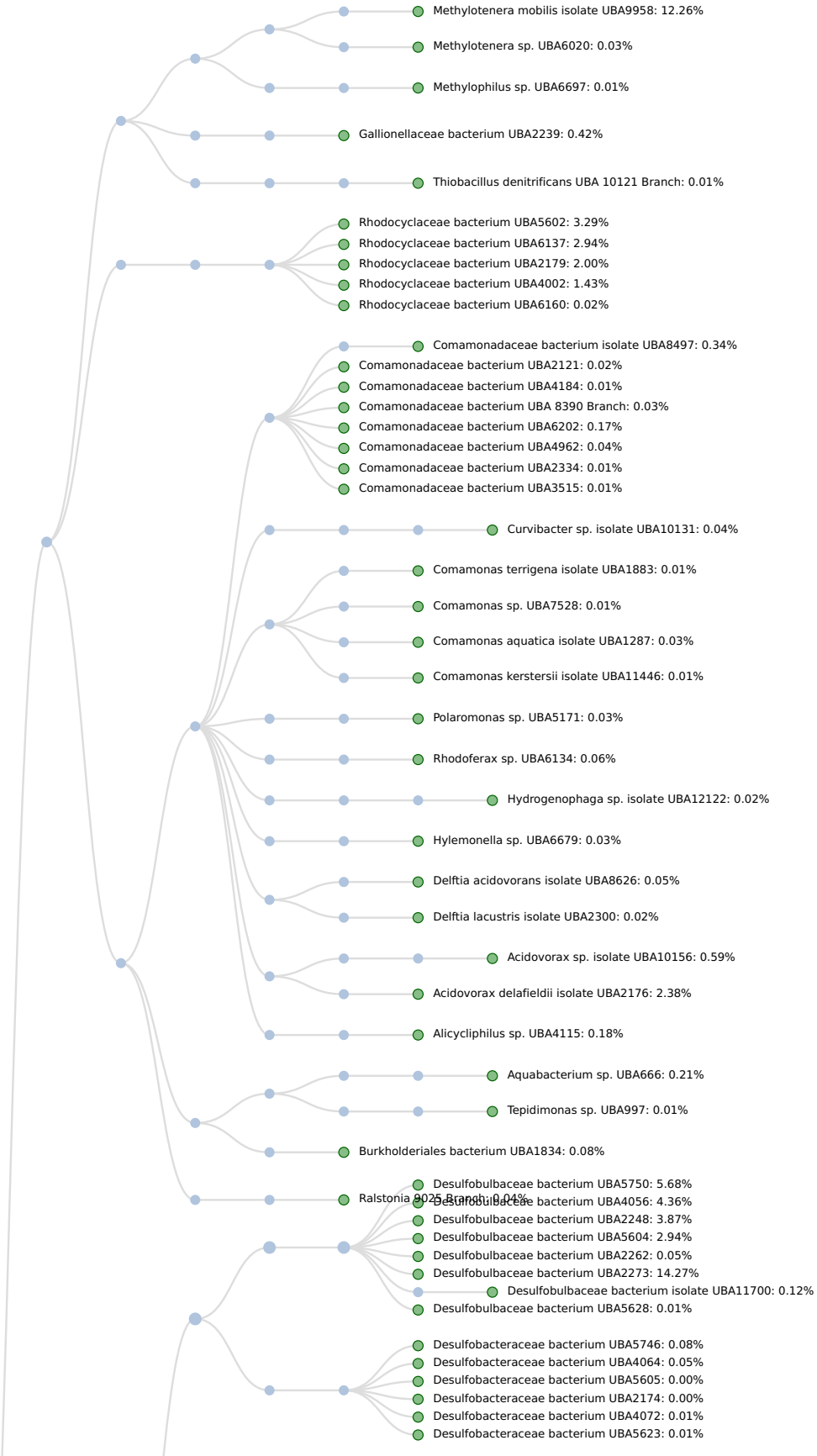
Table

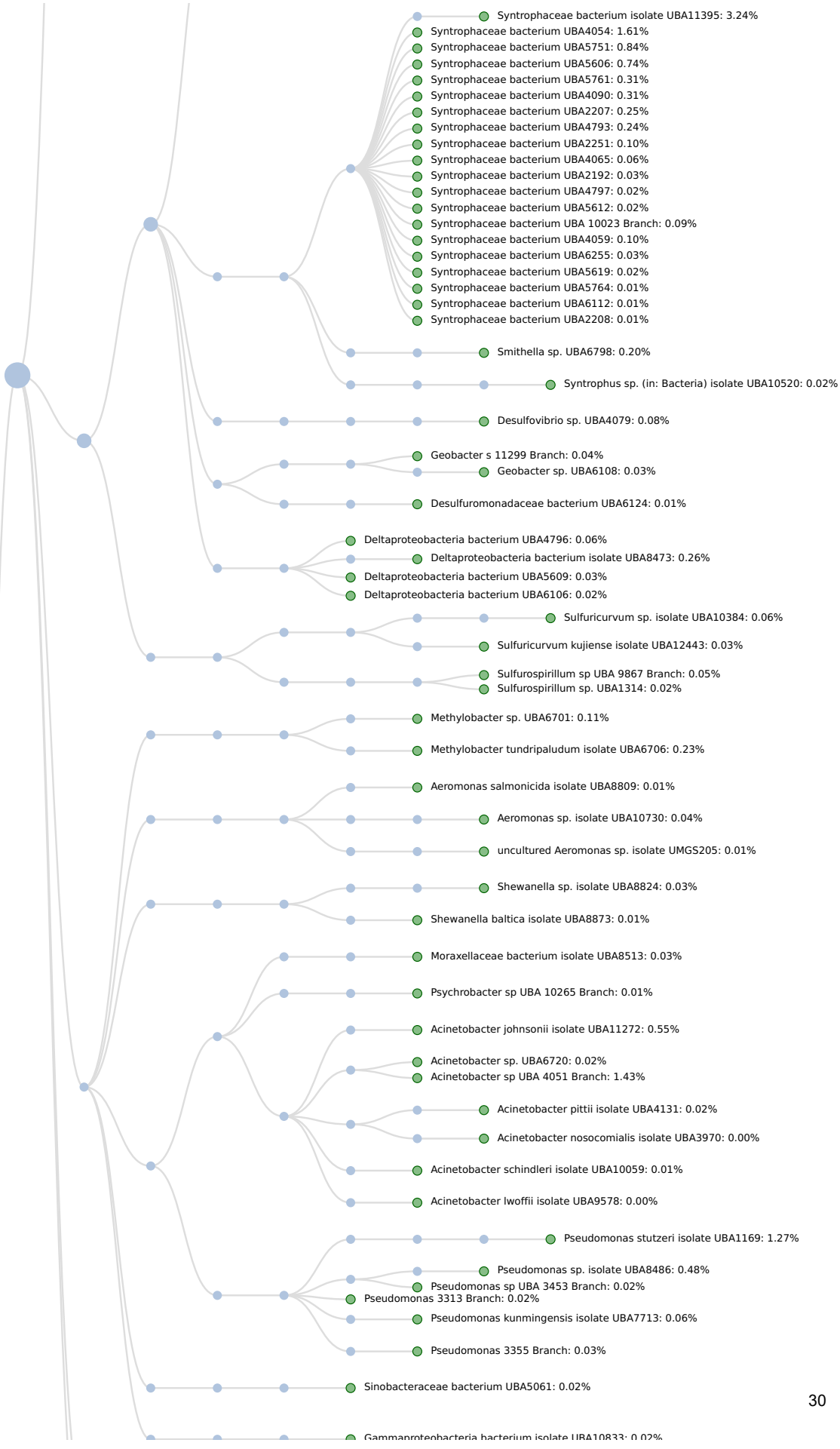
Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Desulfobulbaceae bacterium UBA2273	1961547	10263.93	14.27	55.86	55.86	137704
Methylotenera mobilis	359408	8816.04	12.26	52.89	70.25	26263
Candidatus Omnitrophica bacterium UBA6210	1953267	7144.61	9.94	56.10	56.10	57580
Desulfobulbaceae bacterium UBA5750	1961557	4083.24	5.68	37.84	53.63	3220
Desulfobulbaceae bacterium UBA4056	1961550	3137.07	4.36	26.65	52.78	2136
Desulfobulbaceae bacterium UBA2248	1961544	2783.04	3.87	23.77	52.98	1871
Rhodocyclaceae bacterium UBA5602	1952845	2362.18	3.28	21.64	43.04	922
Syntrophaceae bacterium	2052184	2327.83	3.24	18.80	33.61	3260
Desulfobulbaceae bacterium UBA5604	1961554	2112.99	2.94	18.50	53.06	980
Rhodocyclaceae bacterium UBA6137	1952846	2112.11	2.94	19.67	43.28	744
Acidovorax delafieldii	47920	1712.74	2.38	12.14	12.12	24438
Paludibacter sp. UBA5753	1947025	1675.40	2.33	13.68	26.62	1259
Candidatus Omnitrophica bacterium UBA6253	1953271	1653.98	2.30	18.01	18.01	4854
Rhodocyclaceae bacterium UBA2179	1952836	1435.59	2.00	13.45	43.03	774
Syntrophaceae bacterium UBA4054	1961429	1160.75	1.61	14.75	16.37	202
Rhodocyclaceae bacterium UBA4002	1952841	1027.22	1.43	9.96	43.26	399
unclassified Acinetobacter	196816	1027.03	1.43	30.56	12.41	92
Pseudomonas stutzeri	316	916.46	1.27	9.61	9.60	8258
Caldiserica bacterium UBA4770	1953180	909.93	1.26	13.34	15.54	650
Anaerolineaceae bacterium	2024896	830.61	1.16	9.66	9.66	3619
Candidatus Omnitrophica bacterium UBA6233	1953269	732.17	1.02	8.81	8.81	2465
Syntrophaceae bacterium UBA5751	1961445	602.46	0.84	5.17	16.22	68
Caldiserica bacterium UBA2182	1953179	564.66	0.78	9.74	16.03	69
Syntrophaceae bacterium UBA5606	1961440	528.54	0.73	5.64	15.71	265
Spirochaetaceae bacterium UBA6243	1952898	521.24	0.73	8.10	11.15	489
Spirochaetaceae bacterium UBA6809	1952899	511.28	0.71	7.82	10.99	647
Candidatus Omnitrophica bacterium UBA5776	1953266	468.80	0.65	6.59	8.13	1192
Spirochaetaceae bacterium UBA6089	1952897	450.66	0.63	5.97	7.71	996
Acidovorax sp.	1872122	427.02	0.59	3.72	3.97	11304
Mageeibacillus sp. UBA5747	1946798	396.43	0.55	4.87	4.87	2439
Acinetobacter johnsonii	40214	393.61	0.55	3.08	6.04	538
Candidatus Omnitrophica bacterium UBA6797	1953272	364.04	0.51	5.50	7.98	655
Spirochaetaceae bacterium UBA5743	1952894	361.52	0.50	6.03	7.68	355
Pseudomonas sp.	306	343.76	0.48	4.10	4.62	874
Spirochaetaceae bacterium	1898206	316.20	0.44	4.64	7.68	315
Gallionellaceae bacterium UBA2239	1953084	298.95	0.42	3.52	3.52	3270
Anaerolineaceae bacterium UBA4781	1951412	290.95	0.40	3.82	3.82	1311
Comamonadaceae bacterium	1871071	247.28	0.34	2.40	2.55	4593
Spirochaetaceae bacterium UBA5630	1952893	246.23	0.34	3.04	3.28	182
Candidatus Verstraetearchaeota archaeon UBA156	1916019	232.65	0.32	3.17	3.18	1091
Syntrophaceae bacterium UBA5761	1961446	219.66	0.30	3.06	4.74	435
Syntrophaceae bacterium UBA4090	1961432	219.51	0.30	3.08	4.93	247
Spirochaetaceae bacterium UBA4785	1952888	212.42	0.29	1.17	3.26	15
Elusimicrobia bacterium	2030800	198.92	0.28	2.09	2.28	2611
Deltaproteobacteria bacterium	2026735	188.19	0.26	2.60	2.60	858
Syntrophaceae bacterium UBA2207	1961423	180.59	0.25	2.45	4.43	251
Syntrophaceae bacterium UBA4793	1961435	171.66	0.24	2.40	4.51	133

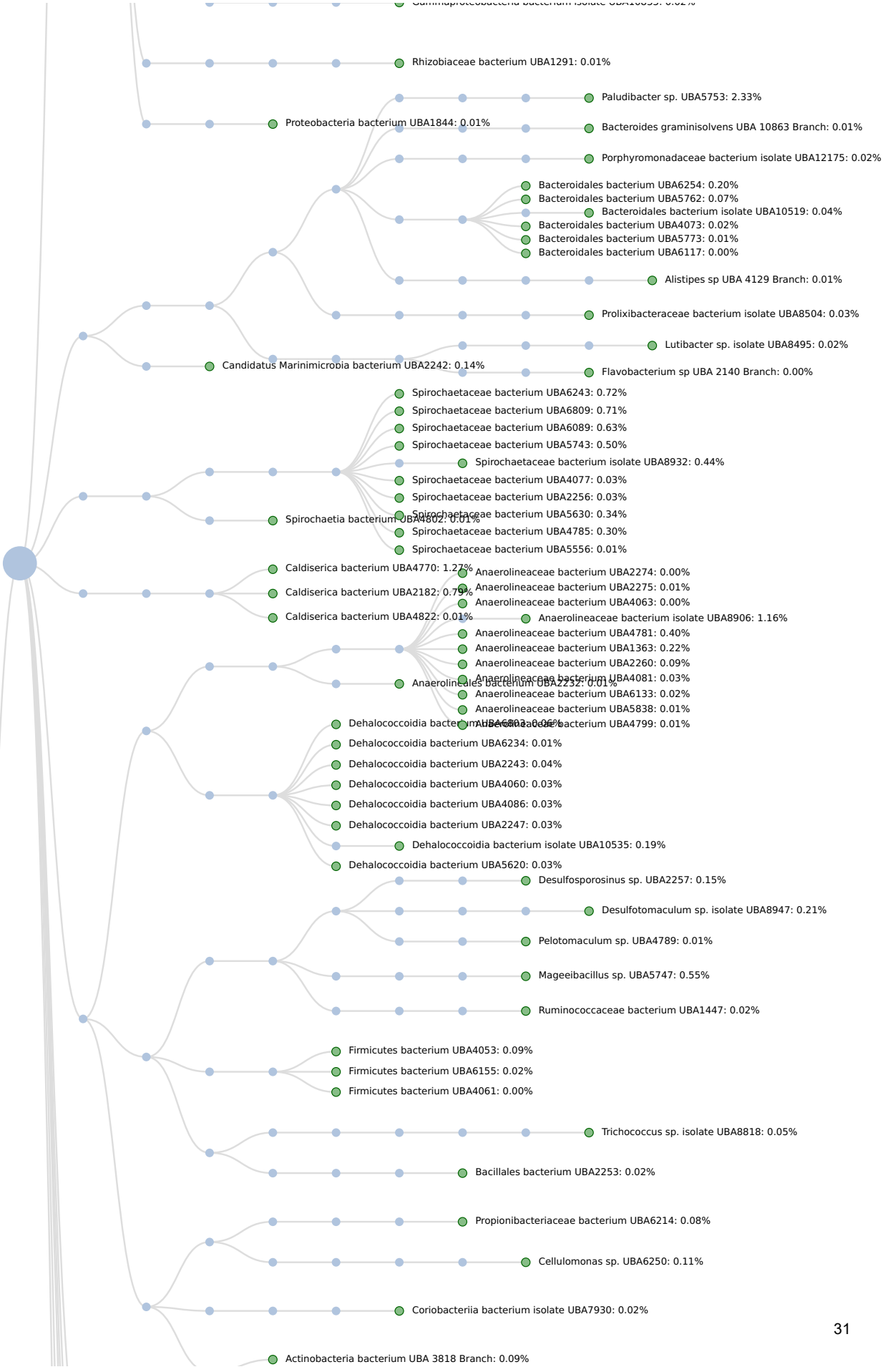
Methylobacter tundripaludum	173365	167.05	0.23	1.41	1.91	1790
Anaerolineaceae bacterium UBA1363	1951402	156.96	0.22	2.13	2.15	1001
Aquabacterium sp. UBA666	1946043	149.23	0.21	1.82	1.58	2639
Desulfotomaculum sp.	41211	147.94	0.21	3.03	2.60	347
Smithella sp. UBA6798	1961386	147.21	0.21	4.41	2.78	489
Bacteroidales bacterium UBA6254	1950674	142.36	0.20	1.27	2.86	71
Dehalococcoidia bacterium	2026734	133.32	0.18	2.09	2.10	425
Alicycliphilus sp. UBA4115	1946002	128.01	0.18	2.09	1.18	2131
Methanosaeta sp. UBA533	1915562	123.97	0.17	1.23	1.94	199
Comamonadaceae bacterium UBA6202	1951611	123.28	0.17	1.29	1.33	2592
Desulfosporosinus sp. UBA2257	1946407	104.78	0.15	1.72	1.96	43
Candidatus Marinimicrobia bacterium UBA2242	1953229	97.13	0.14	2.98	2.61	129
Desulfobulbaceae bacterium	2053307	85.08	0.12	0.92	0.92	1156
Cellulomonas sp. UBA6250	1946310	81.42	0.11	1.08	1.08	1492
Holophagaceae bacterium	2052165	81.60	0.11	1.13	1.13	869
Methylobacter sp. UBA6701	1946863	79.81	0.11	1.00	1.56	100
Methanomicrobiaceae archaeon UBA436	1915692	78.11	0.11	1.19	1.19	542
Syntrophaceae bacterium UBA2251	1961426	72.94	0.10	2.21	1.28	117
Syntrophaceae bacterium UBA4059	1961430	72.65	0.10	1.03	1.04	773
Candidatus Aminicenantes bacterium UBA4085	1953194	70.06	0.10	0.95	0.95	1113
unclassified Syntrophaceae	1510979	67.19	0.09	0.57	0.57	199
Firmicutes bacterium UBA4053	1948000	66.76	0.09	1.53	1.80	175
Anaerolineaceae bacterium UBA2260	1951405	64.30	0.09	0.99	0.99	503
unclassified Actinobacteria	1752188	63.58	0.09	3.14	3.14	5
Candidatus Aminicenantes bacterium UBA4820	1953195	60.72	0.08	1.08	1.08	203
Propionibacteriaceae bacterium UBA6214	1952963	59.40	0.08	0.85	0.85	769
Burkholderiales bacterium UBA1834	1950768	55.56	0.08	0.58	0.42	690
Desulfobacteraceae bacterium UBA5746	1961541	54.61	0.08	1.14	1.14	72
Desulfovibrio sp. UBA4079	1961407	54.03	0.07	0.96	1.11	213
Bacteroidales bacterium UBA5762	1950652	47.85	0.07	0.90	2.49	137
Pseudomonas kunmingensis	1211807	45.85	0.06	0.88	1.22	143
Dehalococcoidia bacterium UBA6803	1948516	44.81	0.06	1.09	1.14	33
Rhodoferax sp. UBA6134	1947380	42.38	0.06	0.61	0.61	526
Syntrophaceae bacterium UBA4065	1961431	40.39	0.06	0.95	1.23	51
Sulfuricurvum sp.	2025608	39.96	0.06	0.38	0.48	936
Deltaproteobacteria bacterium UBA4796	1948548	39.87	0.06	1.02	0.96	64
Synergistaceae bacterium	2053624	39.70	0.06	0.66	0.66	308
Desulfobulbaceae bacterium UBA2262	1961545	37.27	0.05	0.49	0.36	345
Desulfobacteraceae bacterium UBA4064	1961534	35.48	0.05	0.90	1.15	41
unclassified Sulfurospirillum	2618290	33.69	0.05	0.30	0.30	264
Trichococcus sp.	1985464	33.95	0.05	0.68	0.68	103
Delftia acidovorans	80866	32.92	0.05	0.51	0.58	280
Ralstonia	48736	31.05	0.04	0.70	0.70	30
Candidatus Omnitrophica bacterium UBA6249	1953270	31.25	0.04	0.42	0.42	305
Aeromonas sp.	647	30.31	0.04	0.48	0.53	391
Dehalococcoidia bacterium UBA2243	1948483	29.71	0.04	0.86	0.56	25
Geobacter	28231	28.77	0.04	0.13	0.13	37
Curvibacter sp.	1888168	26.41	0.04	0.31	0.32	837
Bacteroidales bacterium	2030927	26.35	0.04	0.58	0.62	75
Comamonadaceae bacterium UBA4962	1951608	25.59	0.04	0.28	0.29	1147
Shewanella sp.	50422	24.19	0.03	0.39	0.57	354
Spirochaetaceae bacterium UBA4077	1952887	24.69	0.03	0.57	0.65	61
Patescibacteria group bacterium UBA6102	1948843	24.31	0.03	0.52	0.56	88
Comamonas aquatica	225991	22.83	0.03	0.28	0.29	264
Sulfuricurvum kujiense	148813	22.06	0.03	0.32	0.43	357

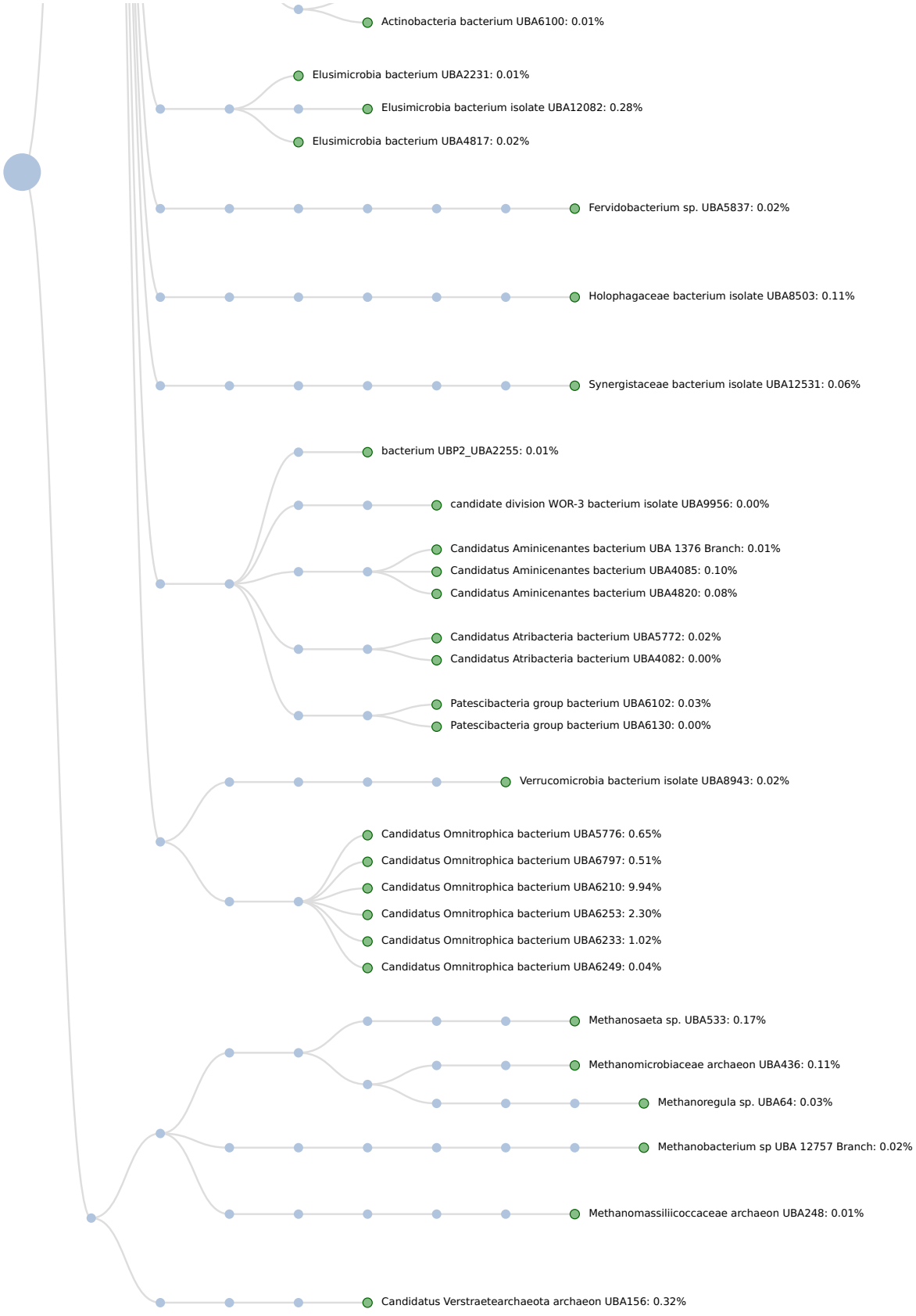
Dehalococcoidia bacterium UBA4060	1948499	21.94	0.03	0.52	0.52	54
unclassified Comamonadaceae	83494	21.24	0.03	0.17	0.17	146
Methylotenera sp. UBA6020	1946903	20.12	0.03	0.23	0.30	440
Polaromonas sp. UBA5171	1947075	19.79	0.03	0.28	0.29	541
Syntrophaceae bacterium UBA2192	1961422	20.36	0.03	0.47	0.39	62
Prolixibacteraceae bacterium	2053594	20.29	0.03	0.33	0.33	328
Spirochaetaceae bacterium UBA2256	1952886	19.92	0.03	0.58	0.66	25
Anaerolineaceae bacterium UBA4081	1951410	20.26	0.03	0.40	0.40	129
Dehalococcoidia bacterium UBA4086	1948500	19.92	0.03	0.53	0.66	33
Methanoregula sp. UBA64	1915554	20.26	0.03	0.35	0.35	259
Hylemonella sp. UBA6679	1946611	19.71	0.03	0.26	0.26	478
Syntrophaceae bacterium UBA6255	1961454	19.43	0.03	0.33	0.33	251
Geobacter sp. UBA6108	1961398	19.23	0.03	0.48	0.30	42
Moraxellaceae bacterium	1889775	19.45	0.03	0.41	0.41	1112
Dehalococcoidia bacterium UBA2247	1948484	19.54	0.03	0.48	0.62	47
Deltaproteobacteria bacterium UBA5609	1948553	18.49	0.03	0.34	0.29	174
Dehalococcoidia bacterium UBA5620	1948504	18.50	0.03	0.37	0.37	115
Syntrophaceae bacterium UBA5619	1961442	17.69	0.03	0.30	0.33	261
Pseudomonas aeruginosa group	136841	18.25	0.03	0.59	0.73	8
Rhodocyclaceae bacterium UBA6160	1952847	17.18	0.02	0.31	0.87	169
Porphyromonadaceae bacterium	2049046	17.46	0.02	0.33	0.33	137
Firmicutes bacterium UBA6155	1948089	16.34	0.02	0.41	0.34	41
Acinetobacter pittii	48296	16.11	0.02	0.39	0.34	47
Coriobacteriia bacterium	2052159	15.49	0.02	0.26	0.26	278
Fervidobacterium sp. UBA5837	1946524	15.82	0.02	0.64	1.10	12
Candidatus Atribacteria bacterium UBA5772	1953205	15.07	0.02	0.70	0.64	9
Sulfurospirillum sp. UBA1314	1947592	14.18	0.02	0.24	0.30	210
Hydrogenophaga sp.	1904254	13.99	0.02	0.28	0.29	60
Syntrophus sp. (in: Bacteria)	48412	13.66	0.02	0.29	0.90	86
Delftia lacustris	558537	13.29	0.02	0.17	0.37	457
Pseudomonas	286	13.19	0.02	0.14	0.17	65
Bacteroidales bacterium UBA4073	1950537	12.68	0.02	0.28	0.47	67
Bacillales bacterium UBA2253	1950249	13.10	0.02	0.34	0.37	36
Verrucomicrobia bacterium	2026799	13.06	0.02	0.25	0.25	146
Syntrophaceae bacterium UBA5612	1961441	12.48	0.02	0.38	0.39	21
Deltaproteobacteria bacterium UBA6106	1948560	12.21	0.02	0.24	0.23	130
unclassified Pseudomonas	2583993	11.95	0.02	0.24	0.24	7
Anaerolineaceae bacterium UBA6133	1951441	12.22	0.02	0.25	0.31	111
Elusimicrobia bacterium UBA4817	1947921	12.15	0.02	0.34	0.27	29
Syntrophaceae bacterium UBA4797	1961436	11.24	0.02	0.30	0.37	33
Acinetobacter sp. UBA6720	1945953	11.46	0.02	0.22	0.65	144
Sinobacteraceae bacterium UBA5061	1953077	11.18	0.02	0.26	0.26	318
Gammaproteobacteria bacterium	1913989	11.21	0.02	0.32	0.32	27
Ruminococcaceae bacterium UBA1447	1952286	11.38	0.02	0.31	0.31	118
unclassified Methanobacterium	2627676	11.29	0.02	0.33	0.33	14
Comamonadaceae bacterium UBA2121	1951599	11.03	0.01	0.12	0.18	517
Lutibacter sp.	1925666	11.13	0.01	0.23	0.23	105
Pelotomaculum sp. UBA4789	1947067	10.66	0.01	0.24	0.24	71
Desulfobacteraceae bacterium UBA4072	1961535	10.37	0.01	0.21	0.14	101
Syntrophaceae bacterium UBA5764	1961447	10.36	0.01	0.20	0.20	118
Comamonadaceae bacterium UBA4184	1951606	9.09	0.01	0.13	0.16	346
Comamonadaceae bacterium UBA2334	1951601	9.16	0.01	0.12	0.12	419
Comamonas terrigena	32013	9.29	0.01	0.12	0.22	322
Tepidimonas sp. UBA997	1947650	9.16	0.01	0.14	0.14	248
Acinetobacter schindleri	108981	9.03	0.01	0.26	0.14	26

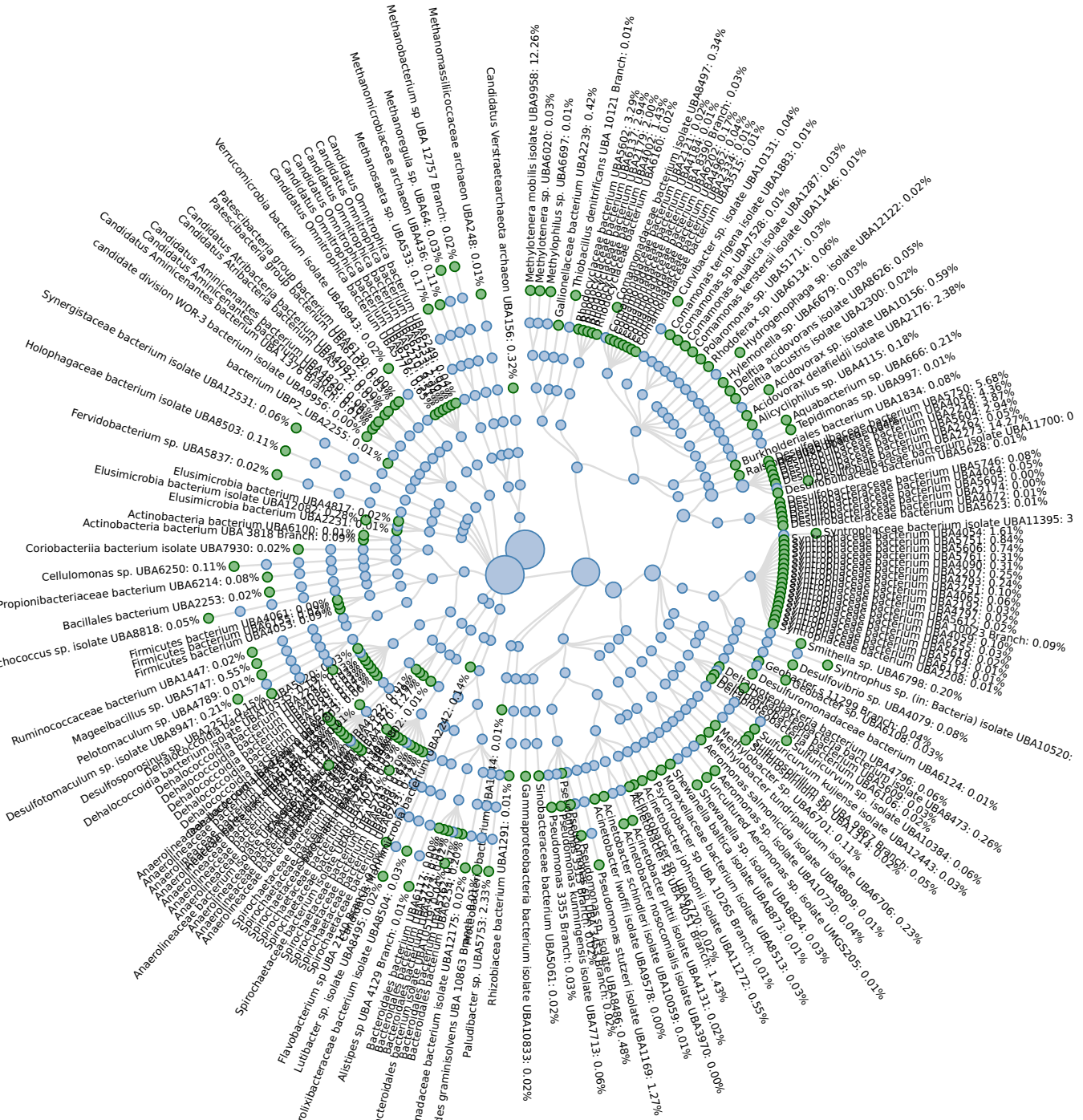
Bacteroidales bacterium UBA5773	1950653	9.32	0.01	0.27	0.24	24
Comamonas sp. UBA7528	1946391	8.48	0.01	0.11	0.21	315
Bacteroides graminisolvens	477666	8.45	0.01	0.12	0.12	21
Spirochaetaceae bacterium UBA5556	1952892	8.38	0.01	0.17	0.51	115
Anaerolineaceae bacterium UBA5838	1951436	8.46	0.01	0.19	0.22	65
Dehalococcoidia bacterium UBA6234	1948510	8.39	0.01	0.46	1.08	8
bacterium UBP2_UBA2255	1953423	8.27	0.01	0.23	0.12	164
Thiobacillus denitrificans	36861	8.10	0.01	3.03	3.03	10
Comamonadaceae bacterium UBA3515	1951605	7.86	0.01	0.12	0.16	238
Desulfuromonadaceae bacterium UBA6124	1961572	8.15	0.01	0.15	0.15	148
Shewanella baltica	62322	7.97	0.01	0.15	0.37	133
Anaerolineales bacterium UBA2232	1950192	7.84	0.01	0.11	0.11	329
Elusimicrobia bacterium UBA2231	1947911	7.91	0.01	0.18	0.18	65
Desulfobulbaceae bacterium UBA5628	1961556	7.37	0.01	0.12	0.12	121
Desulfobacteraceae bacterium UBA5623	1961539	7.16	0.01	0.15	0.15	103
Aeromonas salmonicida	645	7.06	0.01	0.17	0.15	46
uncultured Aeromonas sp.	263763	6.85	0.01	0.13	0.18	132
Spirochaetia bacterium UBA4802	1948757	7.04	0.01	0.30	0.18	9
Methylophilus sp. UBA6697	1946902	6.42	<0.01	0.13	0.13	66
Comamonas kerstersii	225992	6.78	<0.01	0.10	0.11	205
Syntrophaceae bacterium UBA6112	1961452	6.48	<0.01	0.12	0.13	134
Rhizobiaceae bacterium UBA1291	1953063	6.26	<0.01	0.12	0.12	152
Actinobacteria bacterium UBA6100	1953128	6.77	<0.01	0.13	0.13	147
Caldiserica bacterium UBA4822	1953181	5.48	<0.01	0.13	0.13	47
Anaerolineaceae bacterium UBA2275	1951407	5.42	<0.01	0.22	0.22	10
Syntrophaceae bacterium UBA2208	1961424	4.43	<0.01	0.10	0.10	61
unclassified Psychrobacter	196806	4.33	<0.01	0.10	0.13	5
Proteobacteria bacterium UBA1844	1948138	4.26	<0.01	0.11	0.11	398
Methanomassiliicoccaceae archaeon UBA248	1915631	4.22	<0.01	0.10	0.11	49
Desulfobacteraceae bacterium UBA2174	1961530	3.41	<0.01	0.12	0.12	14
Acinetobacter lwoffii	28090	3.49	<0.01	0.10	0.13	24
Alistipes sp.	1872444	3.80	<0.01	0.17	0.17	8
Anaerolineaceae bacterium UBA4063	1951409	3.48	<0.01	0.17	0.19	10
Anaerolineaceae bacterium UBA4799	1951414	3.78	<0.01	0.10	0.10	32
candidate division WOR-3 bacterium	2052148	3.27	<0.01	0.37	0.55	5
unclassified Aminicenantes	910038	3.82	<0.01	0.15	0.15	5
Desulfobacteraceae bacterium UBA5605	1961537	3.15	<0.01	0.17	1.07	10
Acinetobacter nosocomialis	106654	3.21	<0.01	0.29	0.20	4
Patescibacteria group bacterium UBA6130	1948844	2.94	<0.01	0.15	0.15	8
Bacteroidales bacterium UBA6117	1950668	1.96	<0.01	0.12	0.28	5
unclassified Flavobacterium	196869	2.21	<0.01	0.21	0.21	2
Candidatus Atribacteria bacterium UBA4082	1953204	2.05	<0.01	0.18	0.55	4
Anaerolineaceae bacterium UBA2274	1951406	1.24	<0.01	0.14	0.18	3
Firmicutes bacterium UBA4061	1948001	1.62	<0.01	0.12	0.25	3


Methylotenera mobilis isolate UBA9958: 12.26%
Methylotenera sp. UBA6020: 0.03%
Methylophilus sp. UBA6697: 0.01%
Gallionellaceae bacterium UBA2239: 0.42%
Thiobacillus denitrificans UBA 10121 Branch: 0.01%
Rhodocyclaceae bacterium UBA5602: 3.29%
Rhodocyclaceae bacterium UBA6137: 2.94%
Rhodocyclaceae bacterium UBA2179: 2.00%
Rhodocyclaceae bacterium UBA4002: 1.43%
Rhodocyclaceae bacterium UBA6160: 0.02%
Comamonadaceae bacterium isolate UBA8497: 0.34%
Comamonadaceae bacterium UBA2121: 0.02%
Comamonadaceae bacterium UBA4184: 0.01%
Comamonadaceae bacterium UBA 8390 Branch: 0.03%
Comamonadaceae bacterium UBA6202: 0.17%
Comamonadaceae bacterium UBA4962: 0.04%
Comamonadaceae bacterium UBA2334: 0.01%
Comamonadaceae bacterium UBA3515: 0.01%
Curvibacter sp. isolate UBA10131: 0.04%
Comamonas terrigena isolate UBA1883: 0.01%
Comamonas sp. UBA7528: 0.01%
Comamonas aquatica isolate UBA1287: 0.03%
Comamonas kerstersii isolate UBA11446: 0.01%
Polaromonas sp. UBA5171: 0.03%
Rhodoferax sp. UBA6134: 0.06%
Hydrogenophaga sp. isolate UBA12122: 0.02%
Hylemonella sp. UBA6679: 0.03%
Delftia acidovorans isolate UBA8626: 0.05%
Delftia lacustris isolate UBA2300: 0.02%
Acidovorax sp. isolate UBA10156: 0.59%
Acidovorax delafieldii isolate UBA2176: 2.38%
Alicycliphilus sp. UBA4115: 0.18%
Aquabacterium sp. UBA666: 0.21%
Tepidimonas sp. UBA997: 0.01%
Burkholderiales bacterium UBA1834: 0.08%
Desulfobulbaceae bacterium UBA5750: 5.68%
Ralstonia 9025 Branch: 0.04%
Desulfobulbaceae bacterium UBA4056: 4.36%
Desulfobulbaceae bacterium UBA2248: 3.87%
Desulfobulbaceae bacterium UBA5604: 2.94%
Desulfobulbaceae bacterium UBA2262: 0.05%
Desulfobulbaceae bacterium UBA2273: 14.27%
Desulfobulbaceae bacterium isolate UBA11700: 0.12%
Desulfobulbaceae bacterium UBA5628: 0.01%
Desulfobacteraceae bacterium UBA5746: 0.08%
Desulfobacteraceae bacterium UBA4064: 0.05%
Desulfobacteraceae bacterium UBA5605: 0.00%
Desulfobacteraceae bacterium UBA2174: 0.00%
Desulfobacteraceae bacterium UBA4072: 0.01%
Desulfobacteraceae bacterium UBA5623: 0.01%


Syntrophaceae bacterium isolate UBA11395: 3.24%
Syntrophaceae bacterium UBA4054: 1.61%
Syntrophaceae bacterium UBA5751: 0.84%
Syntrophaceae bacterium UBA5606: 0.74%
Syntrophaceae bacterium UBA5761: 0.31%
Syntrophaceae bacterium UBA4090: 0.31%
Syntrophaceae bacterium UBA2207: 0.25%
Syntrophaceae bacterium UBA4793: 0.24%
Syntrophaceae bacterium UBA2251: 0.10%
Syntrophaceae bacterium UBA4065: 0.06%
Syntrophaceae bacterium UBA2192: 0.03%
Syntrophaceae bacterium UBA4797: 0.02%
Syntrophaceae bacterium UBA5612: 0.02%
Syntrophaceae bacterium UBA 10023 Branch: 0.09%
Syntrophaceae bacterium UBA4059: 0.10%
Syntrophaceae bacterium UBA6255: 0.03%
Syntrophaceae bacterium UBA5619: 0.02%
Syntrophaceae bacterium UBA5764: 0.01%
Syntrophaceae bacterium UBA6112: 0.01%
Syntrophaceae bacterium UBA2208: 0.01%
Smithella sp. UBA6798: 0.20%
Syntrophus sp. (in: Bacteria) isolate UBA10520: 0.02%
Desulfovibrio sp. UBA4079: 0.08%
Geobacter s 11299 Branch: 0.04%
Geobacter sp. UBA6108: 0.03%
Desulfuromonadaceae bacterium UBA6124: 0.01%
Deltaproteobacteria bacterium UBA4796: 0.06%
Deltaproteobacteria bacterium isolate UBA8473: 0.26%
Deltaproteobacteria bacterium UBA5609: 0.03%
Deltaproteobacteria bacterium UBA6106: 0.02%
Sulfuricurvum sp. isolate UBA10384: 0.06%
Sulfuricurvum kujiense isolate UBA12443: 0.03%
Sulfurospirillum sp UBA 9867 Branch: 0.05%
Sulfurospirillum sp. UBA1314: 0.02%
Methylobacter sp. UBA6701: 0.11%
Methylobacter tundripaludum isolate UBA6706: 0.23%
Aeromonas salmonicida isolate UBA8809: 0.01%
Aeromonas sp. isolate UBA10730: 0.04%
uncultured Aeromonas sp. isolate UMGS205: 0.01%
Shewanella sp. isolate UBA8824: 0.03%
Shewanella baltica isolate UBA8873: 0.01%
Moraxellaceae bacterium isolate UBA8513: 0.03%
Psychrobacter sp UBA 10265 Branch: 0.01%
Acinetobacter johnsonii isolate UBA11272: 0.55%
Acinetobacter sp. UBA6720: 0.02%
Acinetobacter sp UBA 4051 Branch: 1.43%
Acinetobacter pittii isolate UBA4131: 0.02%
Acinetobacter nosocomialis isolate UBA3970: 0.00%
Acinetobacter schindleri isolate UBA10059: 0.01%
Acinetobacter lwoffii isolate UBA9578: 0.00%
Pseudomonas stutzeri isolate UBA1169: 1.27%
Pseudomonas sp. isolate UBA8486: 0.48%
Pseudomonas sp UBA 3453 Branch: 0.02%
Pseudomonas 3313 Branch: 0.02%
Pseudomonas kunmingensis isolate UBA7713: 0.06%
Pseudomonas 3355 Branch: 0.03%
Sinobacteraceae bacterium UBA5061: 0.02%
Gammaproteobacteria bacterium isolate UBA10833: 0.02%


Rhizobiaceae bacterium UBA1291: 0.01%
Proteobacteria bacterium UBA1844: 0.01%
Paludibacter sp. UBA5753: 2.33%
Bacteroides graminisolvens UBA 10863 Branch: 0.01%
Porphyromonadaceae bacterium isolate UBA12175: 0.02%
Bacteroidales bacterium UBA6254: 0.20%
Bacteroidales bacterium UBA5762: 0.07%
Bacteroidales bacterium isolate UBA10519: 0.04%
Bacteroidales bacterium UBA4073: 0.02%
Bacteroidales bacterium UBA5773: 0.01%
Bacteroidales bacterium UBA6117: 0.00%
Alistipes sp UBA 4129 Branch: 0.01%
Prolixibacteraceae bacterium isolate UBA8504: 0.03%
Lutibacter sp. isolate UBA8495: 0.02%
Candidatus Marinimicrobia bacterium UBA2242: 0.14%
Flavobacterium sp UBA 2140 Branch: 0.00%
Spirochaetaceae bacterium UBA6243: 0.72%
Spirochaetaceae bacterium UBA6809: 0.71%
Spirochaetaceae bacterium UBA6089: 0.63%
Spirochaetaceae bacterium UBA5743: 0.50%
Spirochaetaceae bacterium isolate UBA8932: 0.44%
Spirochaetaceae bacterium UBA4077: 0.03%
Spirochaetaceae bacterium UBA2256: 0.03%
Spirochaetaceae bacterium UBA5630: 0.34%
Spirochaetia bacterium UBA4802: 0.01%
Spirochaetaceae bacterium UBA4785: 0.30%
Spirochaetaceae bacterium UBA5556: 0.01%
Caldiserica bacterium UBA4770: 1.27%
Caldiserica bacterium UBA2182: 0.79%
Caldiserica bacterium UBA4822: 0.01%
Anaerolineaceae bacterium UBA2274: 0.00%
Anaerolineaceae bacterium UBA2275: 0.01%
Anaerolineaceae bacterium UBA4063: 0.00%
Anaerolineaceae bacterium isolate UBA8906: 1.16%
Anaerolineaceae bacterium UBA4781: 0.40%
Anaerolineaceae bacterium UBA1363: 0.22%
Anaerolineaceae bacterium UBA2260: 0.09%
Anaerolineaceae bacterium UBA4081: 0.03%
Anaerolineales bacterium UBA2232: 0.01%
Anaerolineaceae bacterium UBA6133: 0.02%
Anaerolineaceae bacterium UBA5838: 0.01%
Anaerolineaceae bacterium UBA4799: 0.01%
Dehalococcoidia bacterium UBA6234: 0.01%
Dehalococcoidia bacterium UBA2243: 0.04%
Dehalococcoidia bacterium UBA4060: 0.03%
Dehalococcoidia bacterium UBA4086: 0.03%
Dehalococcoidia bacterium UBA2247: 0.03%
Dehalococcoidia bacterium isolate UBA10535: 0.19%
Dehalococcoidia bacterium UBA5620: 0.03%
Desulfosporosinus sp. UBA2257: 0.15%
Desulfotomaculum sp. isolate UBA8947: 0.21%
Pelotomaculum sp. UBA4789: 0.01%
Mageeibacillus sp. UBA5747: 0.55%
Ruminococcaceae bacterium UBA1447: 0.02%
Firmicutes bacterium UBA4053: 0.09%
Firmicutes bacterium UBA6155: 0.02%
Firmicutes bacterium UBA4061: 0.00%
Trichococcus sp. isolate UBA8818: 0.05%
Bacillales bacterium UBA2253: 0.02%
Propionibacteriaceae bacterium UBA6214: 0.08%
Cellulomonas sp. UBA6250: 0.11%
Coriobacteriia bacterium isolate UBA7930: 0.02%
Actinobacteria bacterium UBA 3818 Branch: 0.09%


Actinobacteria bacterium UBA6100: 0.01%
Elusimicrobia bacterium UBA2231: 0.01%
Elusimicrobia bacterium isolate UBA12082: 0.28%
Elusimicrobia bacterium UBA4817: 0.02%
Fervidobacterium sp. UBA5837: 0.02%
Holophagaceae bacterium isolate UBA8503: 0.11%
Synergistaceae bacterium isolate UBA12531: 0.06%
bacterium UBP2_UBA2255: 0.01%
candidate division WOR-3 bacterium isolate UBA9956: 0.00%
Candidatus Aminicenantes bacterium UBA 1376 Branch: 0.01%
Candidatus Aminicenantes bacterium UBA4085: 0.10%
Candidatus Aminicenantes bacterium UBA4820: 0.08%
Candidatus Atribacteria bacterium UBA5772: 0.02%
Candidatus Atribacteria bacterium UBA4082: 0.00%
Patescibacteria group bacterium UBA6102: 0.03%
Patescibacteria group bacterium UBA6130: 0.00%
Verrucomicrobia bacterium isolate UBA8943: 0.02%
Candidatus Omnitrophica bacterium UBA5776: 0.65%
Candidatus Omnitrophica bacterium UBA6797: 0.51%
Candidatus Omnitrophica bacterium UBA6210: 9.94%
Candidatus Omnitrophica bacterium UBA6253: 2.30%
Candidatus Omnitrophica bacterium UBA6233: 1.02%
Candidatus Omnitrophica bacterium UBA6249: 0.04%
Methanosaeta sp. UBA533: 0.17%
Methanomicrobiaceae archaeon UBA436: 0.11%
Methanoregula sp. UBA64: 0.03%
Methanobacterium sp UBA 12757 Branch: 0.02%
Methanomassiliicoccaceae archaeon UBA248: 0.01%
Candidatus Verstraetearchaeota archaeon UBA156: 0.32%

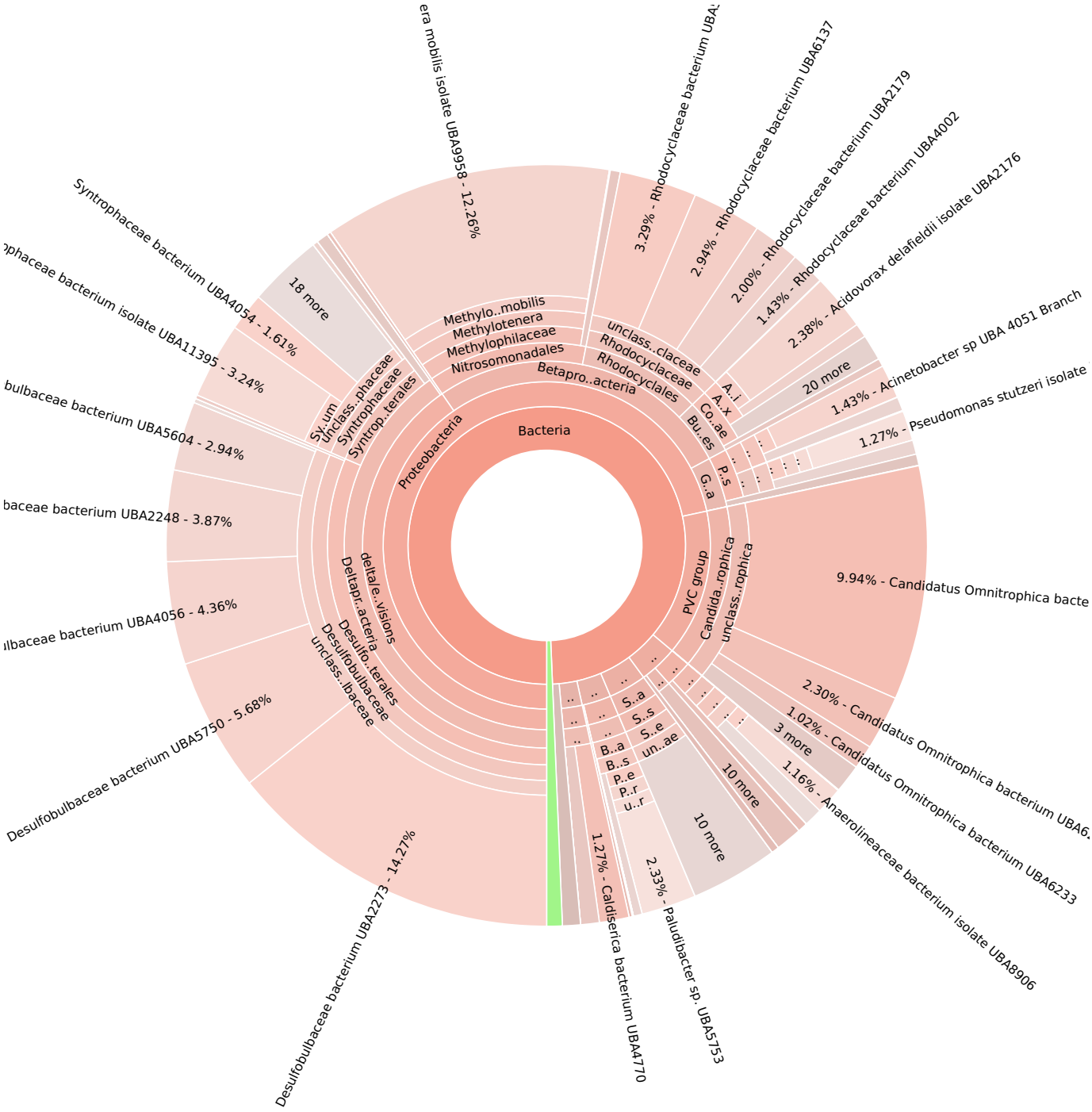

Candidatus Verstraetearchaeota archaeon UBA156: 0.32%
Methanomassiliicoccaceae archaeon UBA248: 0.01%
Methanobacterium sp. UBA12757 Branch: 0.02%
Methanoregula sp. UBA64: 0.03%
Methanosaeta sp. UBA533: 0.17%
Methanomicrobiaceae archaeon UBA436: 0.11%
Methylotenera mobilis isolate UBA9958: 12.26%
Methylotenera sp. UBA6020: 0.03%
Methylophilus sp. UBA6697: 0.01%
Gallionellaceae bacterium UBA2239: 0.42%
Thiobacillus denitrificans UBA 10121 Branch: 0.01%
Rhodocyclaceae bacterium UBA6602: 3.29%
Rhodocyclaceae bacterium UBA2137: 2.04%
Rhodocyclaceae bacterium UBA4135: 2.00%
Rhodocyclaceae bacterium UBA4001: 1.43%
Rhodocyclaceae bacterium UBA6160: 0.02%
Comamonadaceae bacterium isolate UBA8497: 0.34%
Comamonadaceae bacterium UBA4123: 0.01%
Comamonadaceae bacterium UBA6350: 0.17%
Comamonadaceae bacterium UBA4662: 0.04%
Comamonadaceae bacterium UBA3334: 0.01%
Comamonadaceae bacterium UBA3515: 0.01%
Curvibacter sp. isolate UBA10131: 0.04%
Comamonas terrigena isolate UBA1883: 0.01%
Comamonas sp. UBA7528: 0.01%
Comamonas aquatica isolate UBA1287: 0.03%
Comamonas kerstersii isolate UBA11446: 0.01%
Polaromonas sp. UBA5171: 0.03%
Polaromonas sp. UBA6134: 0.06%
Rhodoferax sp. UBA6679: 0.03%
Hydrogenophaga sp. isolate UBA12122: 0.02%
Hylemonella sp. UBA4115: 0.18%
Delftia acidovorans isolate UBA8626: 0.05%
Delftia lacustris isolate UBA2300: 0.02%
Acidovorax sp. UBA666: 0.21%
Acidovorax delafieldii isolate UBA10156: 0.59%
Aquabacterium sp. UBA997: 0.01%
Alicycliphilus sp. UBA2176: 2.38%
Tepidimonas sp. UBA1834: 0.08%
Tepidimonas bacterium UBA4038: 3.94%
Burkholderiales bacterium UBA5750: 5.68%
Burkholderiales bacterium UBA3604: 0.05%
Burkholderiales bacterium UBA2765: 14.27%
Burkholderiales bacterium UBA2275: 0.27%
Burkholderiales bacterium isolate UBA11700: 0
Burkholderiales bacterium UBA5628: 0.01%
Rariglobus sp. UBA5746: 0.08%
Desulfobacterales bacterium UBA4064: 0.05%
Desulfobacterales bacterium UBA5695: 0.00%
Desulfobacterales bacterium UBA4174: 0.00%
Desulfobacterales bacterium UBA4072: 0.01%
Desulfobacterales bacterium UBA5623: 0.01%
Desulfobacterales bacterium isolate UBA11395: 3
Syntrophaceae bacterium UBA4054: 1.61%
Syntrophaceae bacterium UBA5721: 0.84%
Syntrophaceae bacterium UBA5606: 0.74%
Syntrophaceae bacterium UBA5761: 0.31%
Syntrophaceae bacterium UBA4090: 0.31%
Syntrophaceae bacterium UBA2207: 0.25%
Syntrophaceae bacterium UBA4793: 0.24%
Syntrophaceae bacterium UBA2251: 0.10%
Syntrophaceae bacterium UBA3062: 0.06%
Syntrophaceae bacterium UBA3193: 0.03%
Syntrophaceae bacterium UBA4724: 0.03%
Syntrophaceae bacterium UBA5612: 0.02%
Syntrophaceae bacterium UBA10023: 0.02%
Syntrophaceae bacterium UBA4059 Branch: 0.09%
Syntrophaceae bacterium UBA5675: 0.03%
Syntrophaceae bacterium UBA4764: 0.03%
Syntrophaceae bacterium UBA5213: 0.01%
Syntrophaceae bacterium UBA2208: 0.01%
Smithella sp. UBA6798: 0.20%
Syntrophus sp. (in: Bacteria) isolate UBA10520:
Desulfovibrio sp. UBA4079: 0.08%
Geobacter sp. 11299 Branch: 0.04%
Desulfuromonadaceae bacterium UBA6108: 0.03%
Desulfuromonadaceae bacterium UBA4796: 0.06%
Desulfuromonadaceae bacterium UBA6124: 0.01%
Sulfuricurvum kujiense isolate UBA8473: 0.26%
Sulfuricurvum kujiense isolate UBA10384: 0.06%
Sulfuricurvum sp. isolate UBA12443: 0.03%
Sulfuricurvum sp. UBA6109: 0.02%
Sulfuricurvum sp. UBA6706: 0.23%
Sulfuricurvum sp. UBA9867 Branch: 0.05%
Sulfurimonas sp. UBA1314: 0.05%
Methylobacter tundripaludum isolate UBA8809: 0.01%
Methylobacter sp. UBA6701: 0.11%
Aeromonas salmonicida isolate UBA10730: 0.04%
Aeromonas sp. isolate UBA8824: 0.03%
Aeromonas sp. isolate UMGS205: 0.01%
Shewanella baltica isolate UBA9513: 0.03%
Shewanella sp. isolate UBA8873: 0.01%
Shewanellaceae bacterium UBA 10265 Branch: 0.01%
uncultured Aeromonas sp. isolate UBA11272: 0.55%
Psychrobacter johnsonii isolate UBA4131: 1.43%
Psychrobacter sp. UBA3970: 0.00%
Psychrobacter sp. UBA4051 Branch: 0.02%
Psychrobacter nosocomialis isolate UBA10059: 0.01%
Acinetobacter pittii isolate UBA9578: 0.00%
Acinetobacter sp. UBA1169: 1.27%
Acinetobacter schindleri isolate UBA8486: 0.48%
Acinetobacter lwoffii isolate UBA7713: 0.06%
Pseudomonas stutzeri isolate UBA1169: 0.00%
Pseudomonas sp. isolate UBA8486: 0.02%
Pseudomonas 3355 Branch: 0.03%
Pseudomonas fluorescens isolate UBA5061: 0.02%
Pseudomonas sp. UBA1291: 0.01%
Gammaproteobacteria bacterium isolate UBA10833: 0.02%
Sinobacteraceae bacterium UBA2242: 0.14%
Rhizobiaceae bacterium UBA1291: 0.01%
Paludibacter sp. UBA5753: 2.33%
Bacteroides graminisolvens UBA 10863 Branch: 0.01%
Porphyromonadaceae bacterium isolate UBA12175: 0.02%
Bacteroidales bacterium UBA4122: 0.01%
Bacteroidales bacterium UBA4113: 0.01%
Bacteroidales bacterium UBA2242: 0.01%
Bacteroidales bacterium UBA8504: 0.03%
Bacteroidales bacterium UBA8495: 0.02%
Alistipes sp UBA 4129 Branch: 0.01%
Prolixibacteraceae bacterium isolate UBA8504: 0.03%
Lutibacter sp. isolate UBA 2129 Branch: 0.04%
Flavobacterium sp UBA 2129 Branch: 0.04%
Spirochaetaceae bacterium UBA4122: 0.01%
Spirochaetaceae bacterium UBA4113: 0.01%
Spirochaetaceae bacterium UBA2242: 0.01%
Spirochaetaceae bacterium UBA8504: 0.03%
Spirochaetaceae bacterium UBA8495: 0.02%
Spirochaetaceae bacterium UBA12175: 0.02%
Anaerolineaceae bacterium UBA4122: 0.01%
Anaerolineaceae bacterium UBA4113: 0.01%
Anaerolineaceae bacterium UBA2242: 0.01%
Anaerolineaceae bacterium UBA8504: 0.03%
Anaerolineaceae bacterium UBA8495: 0.02%
Anaerolineaceae bacterium UBA12175: 0.02%
Dehalococcoidia bacterium UBA4122: 0.01%
Dehalococcoidia bacterium UBA4113: 0.01%
Dehalococcoidia bacterium UBA2242: 0.01%
Dehalococcoidia bacterium UBA8504: 0.03%
Dehalococcoidia bacterium UBA8495: 0.02%
Dehalococcoidia bacterium UBA12175: 0.02%
Desulfosporosinus sp. UBA8947: 0.21%
Desulfotomaculum sp. isolate UBA8947: 0.01%
Pelotomaculum sp. UBA4789: 0.01%
Mageeibacillus sp. UBA5747: 0.55%
Ruminococcaceae bacterium UBA1447: 0.02%
Firmicutes bacterium UBA4061: 0.09%
Firmicutes bacterium UBA4053: 0.09%
Firmicutes bacterium UBA4122: 0.01%
Trichococcus sp. isolate UBA8818: 0.05%
Bacillales bacterium UBA2253: 0.02%
Propionibacteriaceae bacterium UBA6214: 0.08%
Cellulomonas sp. UBA6250: 0.11%
Coriobacteriia bacterium isolate UBA7930: 0.02%
Actinobacteria bacterium UBA 3818 Branch: 0.09%
Actinobacteria bacterium UBA6100: 0.01%
Elusimicrobia bacterium UBA4231: 0.01%
Elusimicrobia bacterium isolate UBA12087: 0.28%
Elusimicrobia bacterium UBA4817: 0.02%
Fervidobacterium sp. UBA5837: 0.02%
Holophagaceae bacterium isolate UBA8503: 0.11%
Synergistaceae bacterium isolate UBA12531: 0.06%
candidate division WOR-3 bacterium isolate UBA9956: 0.00%
bacterium UBP2_UBA2255: 0.01%
Candidatus Aminicenantes bacterium UBA4139: 0.09%
Candidatus Aminicenantes bacterium UBA4092: 0.09%
Candidatus Aminicenantes bacterium UBA4139: 0.09%
Candidatus Atribacteria bacterium UBA4092: 0.09%
Patescibacteria group bacterium UBA4139: 0.09%
Patescibacteria group bacterium UBA4092: 0.09%
Verrucomicrobia bacterium isolate UBA8943: 0.02%
Candidatus Omnitrophica bacterium UBA4139: 0.09%
Candidatus Omnitrophica bacterium UBA4092: 0.09%
Candidatus Omnitrophica bacterium UBA2255: 0.01%
Candidatus Omnitrophica bacterium UBA2242: 0.14%

Dark Matter (Beta)

Sunburst Chart Taxonomy

1B-85-3_MBPO210215-A

Total results




Desulfobulbaceae bacterium
Desulfobulbaceae bacterium U
Desulfobulbaceae bacterium UBA57
Rhodocyclaceae bacterium U
Caldiserica bac
Anaerolineaceae
Pseudomonas stu
Candidatus Omn
Gallionel
Anaerolin
Spirochae
Acinetobacter sp
omamona
Candidatus Omnitrophica bacterium UBA6210: 9.
Pseudomon
Dehalo
Alicyc
Metha
Spirocha
trophaceae bacterium i
Bacter
Des
Desul
Spirochaet
Candidat
Caldiserica
Syntrop
Candidatus
Syntrophaceae b
Acinetoba
Anaerol
Methyl
Mageeibaci
Syntrop
Deltapr
Elusimi
Spirochaetac
Methylotenera mobilis isolate UBA9958: 12.2
Rhodocyclaceae bacte
Acidovorax
Spirochaet
Candidatus
Rhodocyclaceae bacterium
Candidatus Omnitrophi
cidovorax delafieldii
udibacter sp. UBA57
Desulfobulbaceae bacterium UBA2273: 14.27%

Phages

1B-85-3_MBPO210215-A

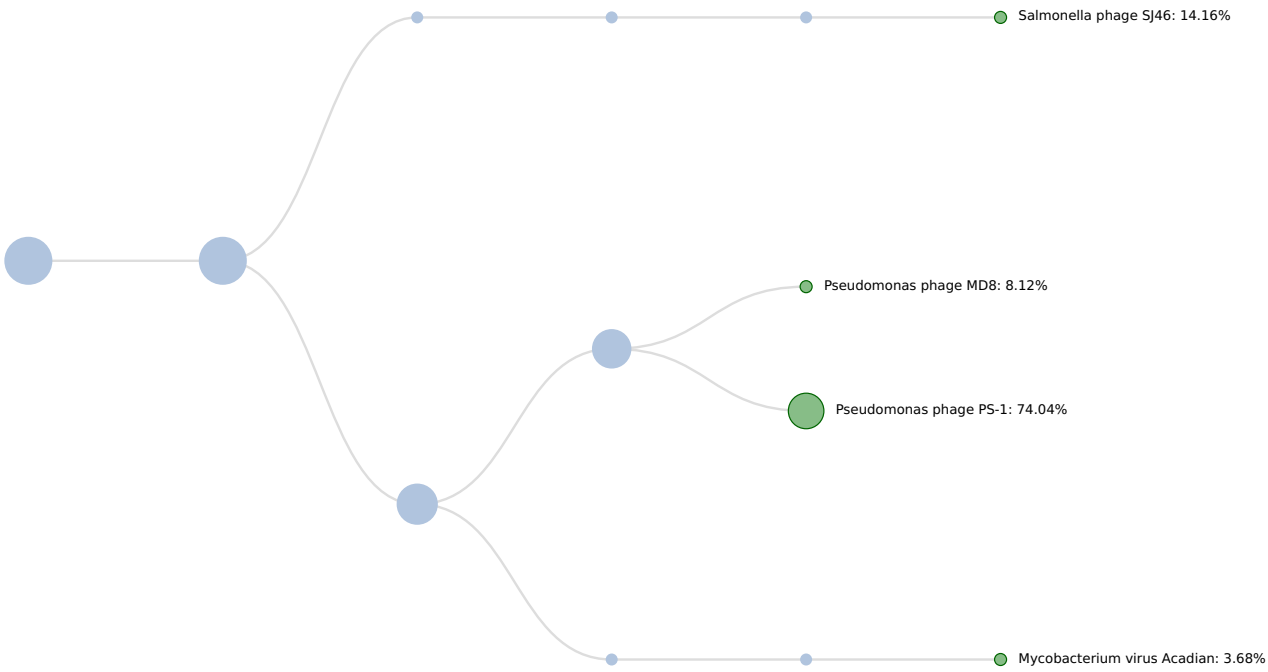
Fasta/q details

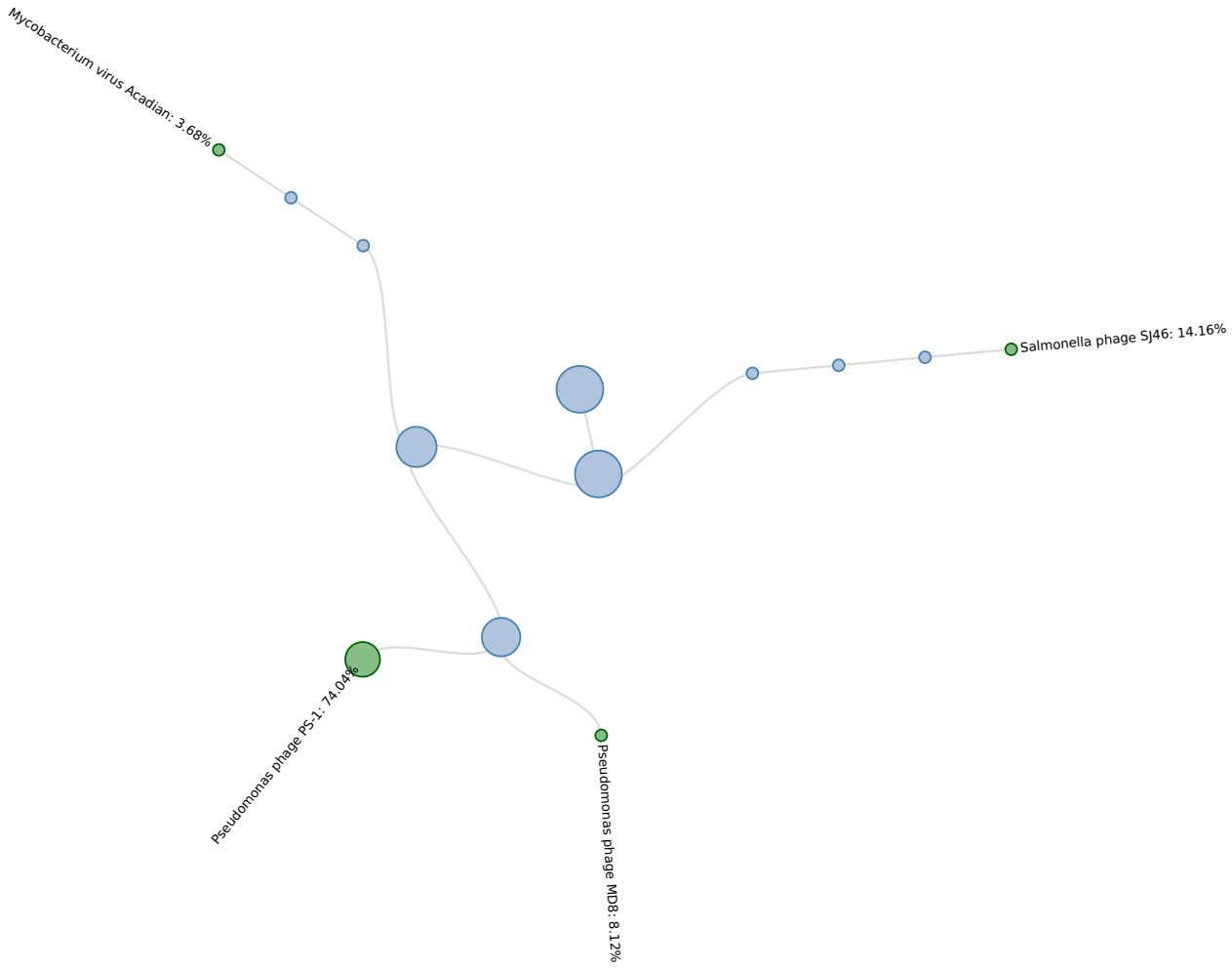
Total results

Metric	Value
Hit	336

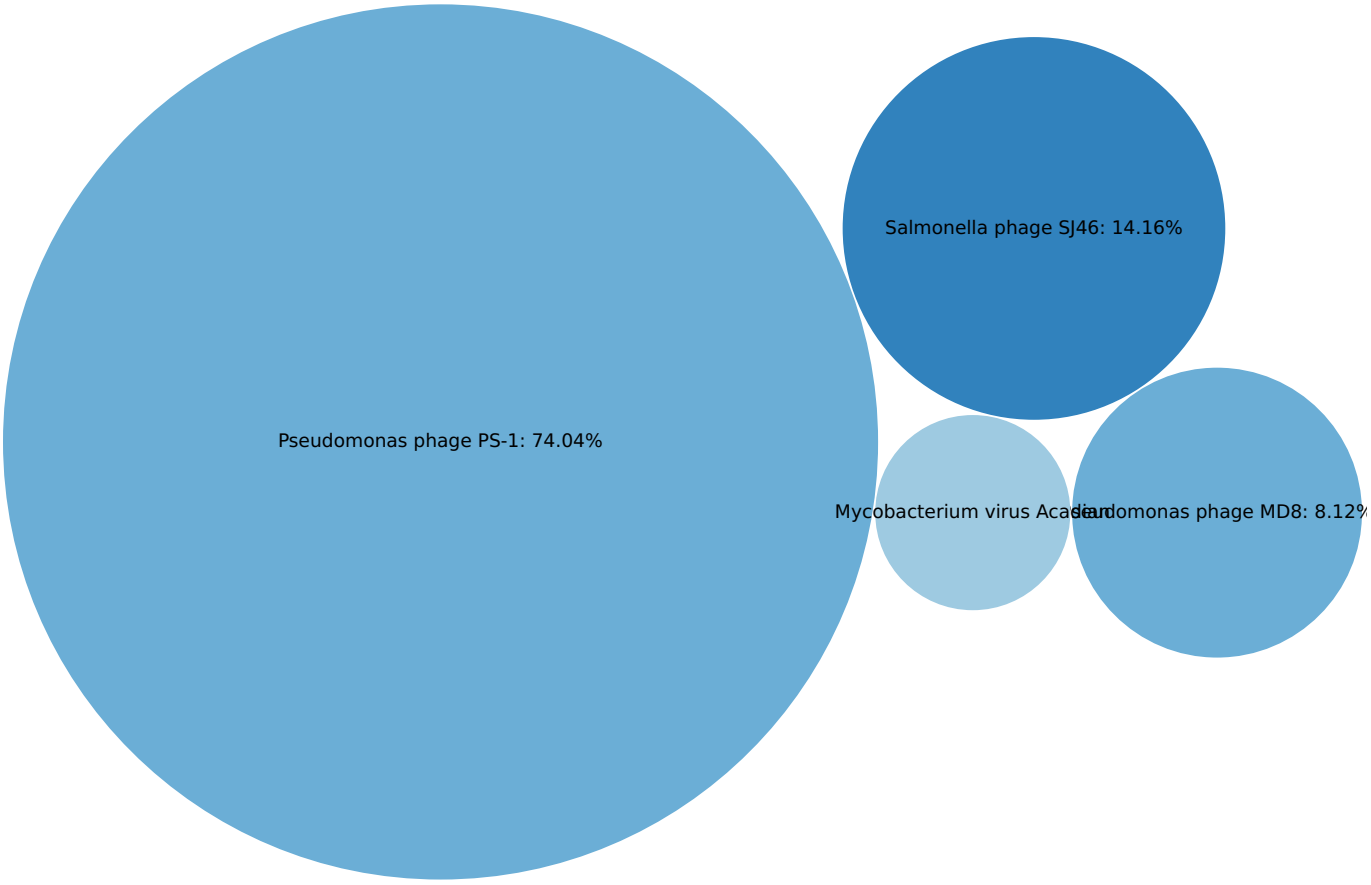
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudomonas phage PS-1	1573458	221.04	74.04	3.05	3.05	805
Salmonella phage SJ46	1815968	42.26	14.16	0.97	0.61	319
Pseudomonas phage MD8	1868596	24.25	8.12	0.49	0.40	90
Mycobacterium virus Acadian	1982901	10.99	3.68	0.34	0.34	56


Salmonella phage SJ46: 14.16%
Pseudomonas phage MD8: 8.12%
Pseudomonas phage PS-1: 74.04%
Mycobacterium virus Acadian: 3.68%


Mycobacterium virus Acadian: 3.68%
Salmonella phage SJ46: 14.16%
Pseudomonas phage PS-1: 74.04%
Pseudomonas phage MD8: 8.12%


Pseudomonas phage PS-1 - 74.04%
unclassifi..phoviridae
Siphoviridae
Caudovirales
Myoviridae
Punavirus
Salmonella virus SJ46
B..e
Ac..us
8.12% - Pseudomonas phage MD8
3.68% - Mycobacterium virus Acadian
14.16% - Salmonella phage SJ46


Pseudomonas phage PS-1: 74.04%
Salmonella phage SJ46: 14.16%
Mycobacterium virus Acadian
Pseudomonas phage MD8: 8.12%

Virulence Factors

1B-85-3_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	423

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudomonas aeruginosa GI 3342496	-	4787.16	18.07	79.27	79.27	276
Enterobacter aerogenes GENE kleE	-	3246.65	12.25	73.44	73.44	63
Salmonella Typhimurium GI 46019645	-	2395.23	9.04	40.58	40.58	223
Enterobacter aerogenes GENE traM	-	2039.60	7.70	51.19	51.19	43
Klebsiella pneumoniae GENE tnpA	-	1960.39	7.40	41.71	41.71	88
Enterobacter aerogenes GENE trbE	-	1154.50	4.36	19.18	19.18	243
Enterobacter aerogenes GENE trbO	-	1020.36	3.85	25.00	25.00	40
Enterobacter aerogenes GI 1572570	-	998.41	3.77	17.07	17.07	148
Enterobacter aerogenes GENE trbD	-	979.20	3.69	24.36	24.36	38
Enterobacter aerogenes GENE tniC	-	951.82	3.59	23.89	23.89	43
Enterobacter aerogenes GENE trbC	-	850.30	3.21	25.00	25.00	24
Enterobacter aerogenes GENE trbB	-	824.32	3.11	11.53	11.53	149
Enterobacter aerogenes GENE tniB	-	715.40	2.70	14.93	14.93	67
Klebsiella pneumoniae GI 7328117	-	712.77	2.69	14.57	14.57	95
Enterobacter aerogenes GENE klcB	-	697.86	2.63	16.43	16.43	55
Enterobacter aerogenes GENE upf54.4	-	646.52	2.44	18.57	18.57	26
Enterobacter aerogenes GENE tra 2353 Branch	-	572.70	2.16	16.51	16.51	25
Pseudomonas aeruginosa GENE fliP	-	556.81	2.10	12.74	12.74	52
Enterobacter aerogenes GENE traC-4	-	521.73	1.97	12.11	12.11	59
Enterobacter aerogenes GENE traG	-	504.64	1.90	10.89	10.89	74
Salmonella Infantis GENE tnpR	-	362.45	1.37	13.00	13.00	13

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Microbac Laboratories, Inc., Oak Ridge

CERTIFICATE OF ANALYSIS

Z1B0090

Stantec

Andrew Klingbeil
35055 W12 Mile Rd. Suite 140
Farmington Hills, MI 48331

Project Name: PHC- Belmont Terminal Drilling Sampling
Project / PO Number: N/A
Received: 02/11/2021
Reported: 03/17/2021

Analytical Testing Parameters

Client Sample ID: BT-18A-W-41-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0090-01 **Collection Date:** 02/10/2021 13:00

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
PCR								
Metagenomic Analysis	**Complete**		NA	1		02/17/21 1512	03/17/21 1709	MNC
QPCR								
Estimated Bacterial Biomass	**1500000000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Client Sample ID: BT-02A-W-38-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0090-02 **Collection Date:** 02/10/2021 13:35

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
QPCR								
Estimated Bacterial Biomass	**6200000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Client Sample ID: BT-14-W-65-20210210
Sample Matrix: Aqueous
Lab Sample ID: Z1B0090-03 **Collection Date:** 02/10/2021 14:20

Microbiology	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
PCR								
Metagenomic Analysis	**Complete**		NA	1		02/17/21 1512	03/17/21 1709	MNC
QPCR								
Estimated Bacterial Biomass	**6700000000**		gene copies/L	1		02/17/21 1512	03/08/21 1432	RWB

Definitions

NA: Not Applicable

Report Comments

Reviewed and Approved By:



Maraea Clark
Project Manager
Reported: 03/17/2021 17:13

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

MICROBAC LABORATORIES, INC
MICROBAC® Oak Ridge Division
800 Oak Ridge Turnpike, Suite A-702
Oak Ridge, TN 37830
PHONE: (865) 687-4887 FAX: (703) 925-9366

CHAIN OF CUSTODY

Page 1 of 1

Z 1 B 0 0 9 0

Stantec Consulting Services Inc.
PM: Maraea Clark

Project ID: PHC: Belmont Terminal Drilling Sampling
Permit #:
If drinking water, State Reported?: ☐ Yes ☒ No (N/A)

Report To: Andrew Kilhoffer (Stantec)
Address: 1060 Andrew Drive, Ste 140
West Chester, PA 19380
Phone: 610-850-1420 Fax 610-840-2501
E-mail: andrew.kilhoffer@stantec.com

Invoice To: Same
Address:
P.O. #:
Quote #:

(1) Sample Matrix codes

AR = Air	OL = Oil	SW = Storm Water
DW = Dr. Water	PC = Paint Chip	WP = Wipe
FO = Food	SB = Swab	WW = Waste Water
FT = Filter	SD = Soil/Solid	FB = Field Blank
GW = Gr. Water	SL = Sludge	TB = Trip Blank

(2) Sample Type codes

G = Grab	C = Composite

Sample Identification	Sample Date	Sample Time	(1) Sample Matrix	(2) Sample Type	# of Containers	ANALYSIS REQUIRED: Metagenomic Analysis
BT-18A-W-41-20210210	2/10/21	1300	GW	G	1	X
BT-02A-W-38-20210216	2/10/21	1335	GW	G	1	X
BT-14-W-65-20210210	2/10/21	1420	GW	G	1	X

Please Mark Testing Required Below (X)

FOR LAB CHECK-IN ONLY
Temp Rec'd: 1 °C
Prop. Preserved: (Y) N
Customer #:
Project: Product Analysis
Proj. Mgr:
Special instructions / notes:

Samples collected by [please print]: Dane Hopkins

PRIORITY (addl. fee)
☐ Same Day (+200%)
☒ Next Day (+100%)
☐ 2 Day (+50%)
☐ 3 Day (+25%)
☐ 4 Day (+10%)

All rush priority orders require prior approval.

Relinquished By:	Date:	Time:	Received By:
Dane Hopkins	2/10/21	09:56	[signature] 2/11/21
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Genomic Sequencing Report

Microbac Oak Ridge WO# Z1B0090-01 **3/17/2021**

Client: Stantec

Sample Project: PHL- Belmont Terminal Drilling Sampling

Sample ID: BT-18A-W-41-20210210

Summary:

- There were 4.191 Million reads for this sample and the file size was 855.88 MiB.
- There were 185 identifications (ID's) in the bacterial data set.
- There were 3 identifications in the antibiotic resistance data set.
- There were 12 identifications in the fungal data set.
- There were 4 identifications in the protists data set.
- There were 147 identifications in the Dark Matter data set.
- There were 21 identifications in the phages data set.
- There were 0 identifications in the virus data set.
- There were 18 virulence factors identified in the data set.

The Oak Ridge Microbac laboratory uses the CosmosID bioinformatics pipeline and cloud computing platform for analysis and report generation. The report consists of tables and figures for bacteria, antibiotic resistance genes, fungi, protists, phages, viruses, and virulence genes.

Report Definitions

- **Name:** The name for the organism or taxonomic level or the name of the antibiotic resistance gene or virulence factor.
- **Calls at different taxonomic levels:** In the results there may be some calls at sub-species or strain level and others at species or genus level or higher. CosmosID calls the lowest level possible based on the identification of unique kmers that match the reference genomes. If identification was not possible at strain level, for example, there will be a try to make an identification at species level etc.
- **Tax ID:** The tax id is the NCBI taxonomic id for the organism.
- **Frequency:** The number of unique kmer occurrences in the queried sample. This is roughly equivalent to the number of reads that matched to the organism identified.

- **Unique Matches:** Unique matches percent is the amount of unique kmers that were found in the sample for an organism out of the total possible number of kmers in the database that are unique to that organism.
- **Total Matches:** The shared plus unique matches divided by the pre-calculated shared plus unique matches possible in the reference database.
- **Relative Abundance:** Relative abundance is calculated based on the number of organism specific kmers and their observed frequency in the sample and then normalized to represent the abundance of each organism.

Bacteria

1B-90-1_MBPO210215-A

Fasta/q details

Total results

Metric	Value
Hit	0.448M

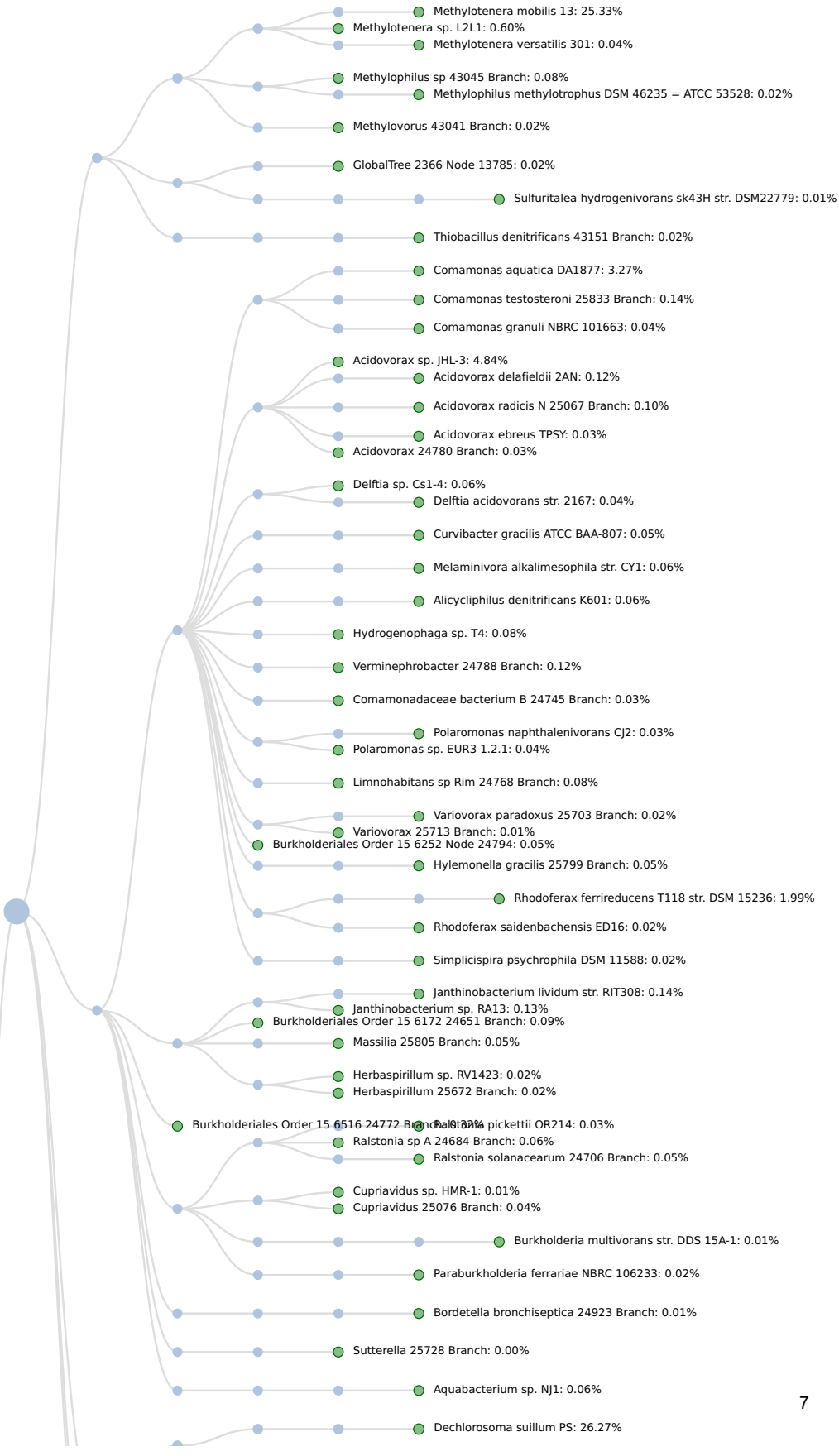
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Dechlorosoma suillum PS	640081	12768.16	26.27	67.30	67.62	447732
Methylotenera mobilis 13	1132855	12309.16	25.33	64.78	65.41	382870
Pseudoxanthomonas spadix BD-a59	1045855	2749.43	5.66	23.44	23.45	57233
Pseudomonas aeruginosa C52	1402578	2387.35	4.91	6.88	20.17	532
Acidovorax sp. JHL-3	1276755	2351.16	4.84	19.35	20.04	51931
Shewanella sp. POL2	1201295	1637.83	3.37	10.75	17.65	11756
Comamonas aquatica DA1877	1457173	1587.92	3.27	13.33	23.30	31402
Desulfobulbus sp. Tol-SR	1536652	1159.96	2.39	10.81	10.81	26349
Pseudomonas stutzeri RCH2	644801	1098.09	2.26	9.98	10.23	23054
Bacteroides graminisolvens DSM 19988 = JCM 15093	1121097	980.14	2.02	9.53	9.13	24437
Rhodoferax ferrireducens T118	338969	965.54	1.99	8.80	8.80	25053
Sulfurospirillum multivorans DSM 12446	1150621	712.55	1.47	6.56	6.94	15682
Aeromonas media	651	590.00	1.21	1.73	1.73	1740
Geobacter uraniireducens Rf4	351605	547.75	1.13	5.45	5.45	13446
Shewanella xiamenensis	332186	495.24	1.02	3.37	14.51	3440
Smithella sp. D17	1538639	422.44	0.87	10.61	6.11	1162
Methanothrix soehngenii GP6	990316	387.70	0.80	4.13	4.13	7571
Desulfovibrio termitidis HI1	644897	366.12	0.75	3.19	3.84	7085
Methylotenera sp. L2L1	1502770	291.77	0.60	2.51	6.19	9730
Pseudomonas xanthomarina	271420	271.48	0.56	1.13	4.29	913
Pseudomonas sp. BICA1-14	1619235	259.43	0.53	1.29	3.32	2934
Geothrix fermentans DSM 14018	1121920	213.02	0.44	2.40	2.42	4472
Pseudomonas putida	303	212.01	0.44	1.16	2.27	1165
Shewanella putrefaciens 200	399804	174.74	0.36	1.18	2.78	834
Burkholderiales	80840	154.92	0.32	5.15	5.80	14
Geobacter metallireducens	28232	153.26	0.32	1.13	1.31	6419
Geobacter lovleyi SZ	398767	143.76	0.30	0.92	0.92	9699
Pseudomonas taeanensis MS-3	1395571	104.54	0.21	0.80	0.82	6434
Pseudomonas alcaligenes NBRC 14159	1215092	98.77	0.20	0.82	0.92	5605
Pseudomonas chloritidismutans AW-1	1263865	77.92	0.16	1.00	3.96	1204
Azotobacter chroococcum NCIMB 8003	1328314	75.94	0.16	0.44	0.53	5913
Desulfosporosinus sp. OT	913865	73.85	0.15	0.36	0.40	6519
Comamonas testosteroni	285	70.28	0.14	0.15	0.19	21
Janthinobacterium lividum	29581	70.22	0.14	0.88	2.89	2043
Sulfurospirillum arsenophilum NBRC 109478	1349789	68.52	0.14	0.87	1.07	1745
Janthinobacterium sp. RA13	1502762	65.12	0.13	0.82	2.91	1891
Pseudomonas alcaliphila 34	1248438	59.37	0.12	0.62	0.55	1959
Pseudomonas	286	58.84	0.12	0.20	0.20	2052
Acidovorax delafieldii 2AN	573060	57.70	0.12	0.70	1.33	1978
Verminephrobacter	364316	55.95	0.11	1.24	1.24	29
Sulfurospirillum sp. SCADC	1537915	54.23	0.11	0.70	1.49	1492
Pseudomonas thermotolerans	157784	53.90	0.11	0.29	0.29	2370
Aeromonas salmonicida subsp. pectinolytica 34mel	1324960	50.74	0.10	0.70	1.66	1037
Acidovorax radicis	758826	49.58	0.10	0.63	0.82	1640
Desulfobulbus	893	48.26	0.10	1.00	1.00	41
Pseudomonas veronii	76761	47.51	0.10	0.64	1.17	1133
Rhizobium selenitireducens ATCC BAA-1503	1336235	47.21	0.10	0.62	0.63	1389

Oxalobacteraceae	75682	41.57	0.09	1.99	1.99	5
Pseudomonas nitroreducens	46680	40.92	0.08	0.18	0.20	221
Thermofilum	2268	41.00	0.08	1.91	1.91	8
Hydrogenophaga sp. T4	1437444	38.74	0.08	0.41	1.08	2040
Limnohabitans	665874	38.31	0.08	0.63	0.63	47
Methylophilus	16	37.43	0.08	0.59	0.68	33
Pseudomonas mendocina DLHK	1197721	36.09	0.07	0.44	0.39	1047
Delftia sp. Cs1-4	742013	31.38	0.07	0.46	2.11	635
Ralstonia	48736	31.33	0.06	0.51	0.51	112
Geobacter pickeringii	345632	31.29	0.06	0.33	0.52	1726
Geobacter	28231	31.16	0.06	0.29	0.41	226
Halomonas	2745	29.96	0.06	0.56	0.56	20
Azovibrio restrictus DSM 23866	1121035	29.67	0.06	0.31	1.46	1722
Alicycliphilus denitrificans K601	596154	27.94	0.06	0.42	0.26	441
Shewanella decolorationis S12	1353536	27.61	0.06	0.38	1.77	927
Melaminivora alkalimesophila	1165852	26.81	0.06	0.36	0.37	907
Aquabacterium sp. NJ1	1538295	26.78	0.06	0.35	0.35	1070
Azotobacter vinelandii	354	26.13	0.05	0.16	0.17	2134
Ralstonia solanacearum	305	25.92	0.05	0.42	0.36	8
Curvibacter gracilis ATCC BAA-807	1336244	25.20	0.05	0.32	0.26	1141
Arcobacter	28196	25.32	0.05	0.81	3.14	14
Geobacter sulfurreducens PCA	243231	24.57	0.05	0.37	0.29	324
Massilia	149698	24.42	0.05	0.84	0.84	7
Desulfosporosinus	79206	24.07	0.05	0.91	1.00	7
Comamonadaceae	80864	23.85	0.05	1.22	1.22	3
Hylemonella gracilis	80880	23.40	0.05	0.37	0.37	51
Pseudomonas fluorescens	294	23.23	0.05	0.33	0.36	830
Anaeromyxobacter	161492	22.35	0.05	0.50	0.50	26
Pseudomonas syringae group	136849	22.02	0.04	1.29	1.29	3
Delftia acidovorans	80866	21.05	0.04	0.33	1.91	474
Polaromonas sp. EUR3 1.2.1	1305734	20.81	0.04	0.23	0.23	1247
Aeromonas hydrophila 4AK4	1354302	20.77	0.04	0.30	1.18	639
Comamonas granuli NBRC 101663	1223521	19.77	0.04	0.27	0.27	807
Cupriavidus	106589	19.26	0.04	0.14	0.13	3
Pseudomonas resinovorans NBRC 106553	1245471	19.12	0.04	0.15	0.20	1658
Pelobacter propionicus DSM 2379	338966	18.16	0.04	0.17	0.17	1398
Pseudomonas pseudoalcaligenes AD6	1453503	17.76	0.04	0.18	0.24	1242
Pseudomonas azotifigens DSM 17556	1292027	17.81	0.04	0.16	0.26	1373
Shewanella baltica	62322	17.81	0.04	0.12	0.30	18
Methylotenera versatilis 301	666681	17.44	0.04	0.20	0.20	998
Desulfovibrio aminophilus DSM 12254	1121440	17.68	0.04	0.26	0.27	589
Pseudomonas oleovorans	301	17.52	0.04	0.19	0.25	823
Azoarcus	12960	17.02	0.03	0.27	0.30	41
Geobacter soli	1510391	17.11	0.03	0.20	0.31	976
Desulfovibrio sp. A2	298701	16.88	0.03	0.25	1.14	582
Lysobacter	68	16.84	0.03	0.51	0.51	15
Pseudomonas mandelii JR-1	1147786	16.49	0.03	0.24	0.24	633
Microgenomates bacterium SCGC AAA011-I21	1104614	15.71	0.03	0.32	0.32	106
unclassified Comamonadaceae	83494	15.15	0.03	0.13	0.17	59
Sulfurospirillum cavolei NBRC 109482	1349788	15.17	0.03	0.25	0.26	349
Acinetobacter johnsonii SH046	575586	14.88	0.03	0.26	0.65	217
Psychrobacter	497	15.13	0.03	2.10	1.48	174
Desulfovibrio vulgaris str. 'Miyazaki F'	883	14.78	0.03	0.23	1.49	490
Thioalkalivibrio	106633	14.68	0.03	0.27	0.27	16
Candidatus Brocadiaceae	1127830	14.51	0.03	26.67	26.67	20

Polaromonas naphthalenivorans CJ2	365044	14.19	0.03	0.18	0.49	766
Ralstonia pickettii OR214	1264675	13.40	0.03	0.24	0.15	200
Desulfovibrionaceae	194924	13.58	0.03	0.43	0.43	12
Pseudomonas fulva	47880	13.45	0.03	0.14	0.18	987
Acidovorax ebreus TPSY	535289	12.61	0.03	0.20	0.29	350
Acidovorax	12916	12.63	0.03	0.14	0.22	37
Pseudomonas flexibilis	706570	12.16	0.03	0.13	0.27	302
Pseudomonas knackmussii B13	1301098	11.93	0.03	0.11	0.13	1019
Xanthomonas	338	12.08	0.03	0.37	0.37	4
Enterobacter sp. Bisph2	1274400	12.01	0.03	0.19	0.19	421
Acinetobacter lwoffii WJ10621	1046625	11.82	0.02	0.22	0.65	178
Aeromonas caviae	648	11.52	0.02	0.23	0.52	105
Methylobacterium	407	11.70	0.02	0.29	0.31	15
Peptococcaceae bacterium SCADC1_2_3	1487582	11.44	0.02	0.17	0.17	446
Methylophilus methylotrophus DSM 46235 = ATCC 53528	1122236	11.23	0.02	0.14	0.15	612
Herbaspirillum	963	11.42	0.02	0.24	0.24	4
Methyloversatilis	378210	10.75	0.02	0.14	0.12	9
Stenotrophomonas maltophilia S028	1210005	10.63	0.02	0.17	0.18	360
Magnetospirillum gryphiswaldense MSR-1 v2	1430440	10.76	0.02	0.17	0.17	401
Methanoregula boonei 6A8	456442	10.56	0.02	0.17	0.18	397
Dechloromonas agitata is5	1304883	10.20	0.02	0.14	0.14	582
Methylovorus	81682	9.49	0.02	0.10	0.10	155
Pseudomonas balearica DSM 6083	1123016	9.66	0.02	0.13	0.15	310
Pseudomonas alkylphenolica	237609	9.61	0.02	0.10	0.11	759
Shewanella oneidensis MR-1	211586	9.62	0.02	0.15	1.51	371
Parcubacteria bacterium SCGC AAA011-A08	1046985	9.56	0.02	0.22	0.22	57
Simplicispira psychrophila DSM 11588	1123255	9.45	0.02	0.13	0.13	513
Herbaspirillum sp. RV1423	1443993	9.19	0.02	0.11	0.40	629
Paraburkholderia ferrariae NBRC 106233	1218076	9.46	0.02	0.15	0.15	369
Aeromonas	642	9.47	0.02	0.30	0.70	10
Raoultella ornithinolytica	54291	9.19	0.02	0.15	0.15	322
Parvibaculum lavamentivorans DS-1	402881	9.06	0.02	0.19	0.19	451
Variovorax paradoxus	34073	8.82	0.02	0.11	0.13	66
Rhodoferax saidenbachensis ED16	614083	8.89	0.02	0.12	0.12	547
Pseudomonas chlororaphis	587753	8.91	0.02	0.11	0.09	33
Acinetobacter	469	8.72	0.02	0.19	0.19	6
archaeon GW2011_AR11	1579371	8.93	0.02	0.18	0.18	126
Thauera	33057	8.26	0.02	0.11	0.14	34
Escherichia coli DEC14A	868201	7.86	0.02	0.50	0.50	7
Thiobacillus denitrificans	36861	7.35	0.01	0.27	0.38	6
Pseudomonas rhodesiae	76760	7.47	0.01	0.14	1.40	139
Aeromonas piscicola	600645	7.39	0.01	0.13	0.39	252
Arenimonas	490567	7.13	0.01	0.33	0.32	5
Sulfuritalea hydrogenivorans sk43H	1223802	6.75	0.01	0.11	0.11	335
Variovorax	34072	6.74	0.01	0.16	0.15	10
Burkholderia multivorans	87883	6.98	0.01	0.17	0.14	390
Pluralibacter	1330546	6.93	0.01	0.37	0.37	4
Acinetobacter sp. CIP 51.11	1144670	6.08	0.01	0.14	0.25	58
Marinobacter	2742	6.46	0.01	0.11	0.11	2
Aeromonas bestiarum	105751	6.53	0.01	0.12	0.40	142
Modestobacter	88138	6.37	0.01	0.16	0.21	6
Opitutaceae	134623	6.45	0.01	10.71	10.53	11
Chlorobiaceae	191412	6.31	0.01	40.00	40.00	2
Cupriavidus sp. HMR-1	1249621	6.07	0.01	0.12	0.12	141
Pseudogulbenkiania	568394	5.63	0.01	0.10	0.10	11

Dehalogenimonas lykanthroporepellens BL-DC-9	552811	5.95	0.01	0.15	0.15	363
Thermodesulfovibrio	28261	5.70	0.01	2.53	2.53	9
Brevundimonas sp. BAL3	391600	5.50	0.01	0.11	0.10	135
Enterobacter cloacae complex	354276	4.78	0.01	0.15	0.12	11
Alcanivorax	59753	5.02	0.01	0.17	0.17	8
Magnetospirillum	13134	5.07	0.01	0.11	0.11	22
Dehalobacter	56112	5.09	0.01	0.17	0.15	912
Thermaerobacter	73918	4.76	0.01	0.13	0.13	20
Acinetobacter baumannii 1295743	1310613	4.28	<0.01	0.15	0.15	22
Bacteroides	816	4.19	<0.01	0.11	0.10	33
Bordetella bronchiseptica	518	3.67	<0.01	0.17	0.12	7
Desulfomicrobium	898	3.68	<0.01	0.12	0.12	3
Lysobacter antibioticus	84531	4.01	<0.01	0.11	0.13	16
Ectothiorhodospiraceae	72276	3.89	<0.01	0.21	0.21	3
Christensenella	990721	3.32	<0.01	0.32	0.32	588
Ktedonobacteria	388447	3.21	<0.01	8.89	8.89	4
Candidatus Accumulibacter	327159	3.08	<0.01	0.16	0.16	3
Sulfurospirillum	57665	3.15	<0.01	0.13	2.68	2
Chromatiaceae	1046	2.63	<0.01	0.24	0.24	2
Gemmatimonadaceae	219687	2.36	<0.01	5.56	5.56	2
Sutterella	40544	1.86	<0.01	4.44	4.44	6
Dehalococcoides mccartyi	61435	2.17	<0.01	0.40	0.40	107
Ignavibacteriales	795748	1.26	<0.01	3.49	3.49	3
Candidatus Marinimicrobia	62680	1.30	<0.01	0.14	0.08	2
Tolumonas	43947	1.00	<0.01	0.52	0.52	16
zeta proteobacterium SCGC AB-602-E04	1131288	1.21	<0.01	0.14	0.14	3
Rhodopirellula	265488	1.07	<0.01	2.80	2.80	3
Lewinella	70994	1.18	<0.01	5.13	5.13	2


Methylotenera mobilis 13: 25.33%
Methylotenera sp. L2L1: 0.60%
Methylotenera versatilis 301: 0.04%
Methylophilus sp 43045 Branch: 0.08%
Methylophilus methylotrophus DSM 46235 = ATCC 53528: 0.02%
Methylovorus 43041 Branch: 0.02%
GlobalTree 2366 Node 13785: 0.02%
Sulfuritalea hydrogenivorans sk43H str. DSM22779: 0.01%
Thiobacillus denitrificans 43151 Branch: 0.02%
Comamonas aquatica DA1877: 3.27%
Comamonas testosteroni 25833 Branch: 0.14%
Comamonas granuli NBRC 101663: 0.04%
Acidovorax sp. JHL-3: 4.84%
Acidovorax delafieldii 2AN: 0.12%
Acidovorax radicis N 25067 Branch: 0.10%
Acidovorax ebreus TPSY: 0.03%
Acidovorax 24780 Branch: 0.03%
Delftia sp. Cs1-4: 0.06%
Delftia acidovorans str. 2167: 0.04%
Curvibacter gracilis ATCC BAA-807: 0.05%
Melaminivora alkalimesophila str. CY1: 0.06%
Alicycliphilus denitrificans K601: 0.06%
Hydrogenophaga sp. T4: 0.08%
Verminephrobacter 24788 Branch: 0.12%
Comamonadaceae bacterium B 24745 Branch: 0.03%
Polaromonas naphthalenivorans CJ2: 0.03%
Polaromonas sp. EUR3 1.2.1: 0.04%
Limnohabitans sp Rim 24768 Branch: 0.08%
Variovorax paradoxus 25703 Branch: 0.02%
Variovorax 25713 Branch: 0.01%
Burkholderiales Order 15 6252 Node 24794: 0.05%
Hylemonella gracilis 25799 Branch: 0.05%
Rhodoferax ferrireducens T118 str. DSM 15236: 1.99%
Rhodoferax saidenbachensis ED16: 0.02%
Simplicispira psychrophila DSM 11588: 0.02%
Janthinobacterium lividum str. RIT308: 0.14%
Janthinobacterium sp. RA13: 0.13%
Burkholderiales Order 15 6172 24651 Branch: 0.09%
Massilia 25805 Branch: 0.05%
Herbaspirillum sp. RV1423: 0.02%
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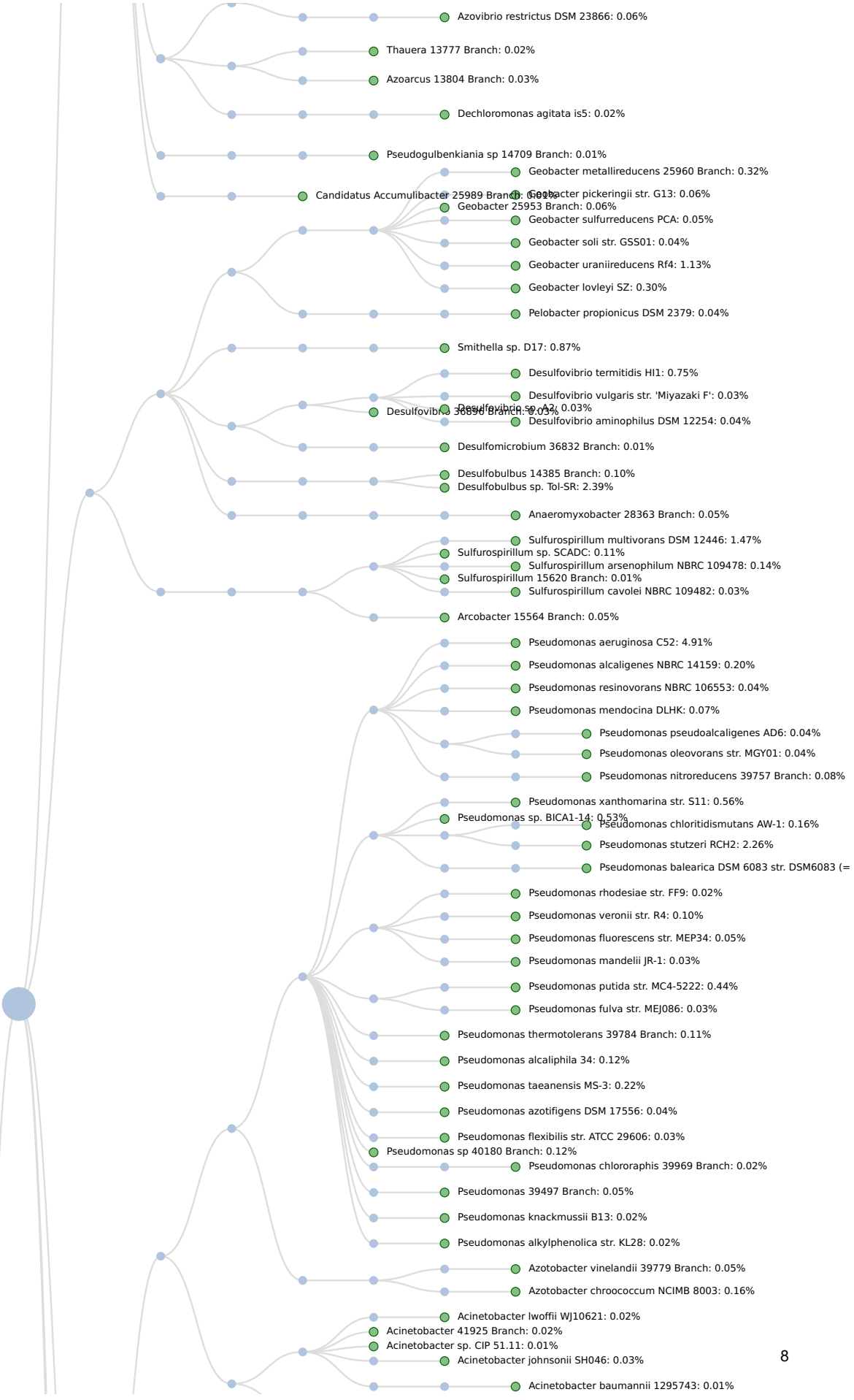
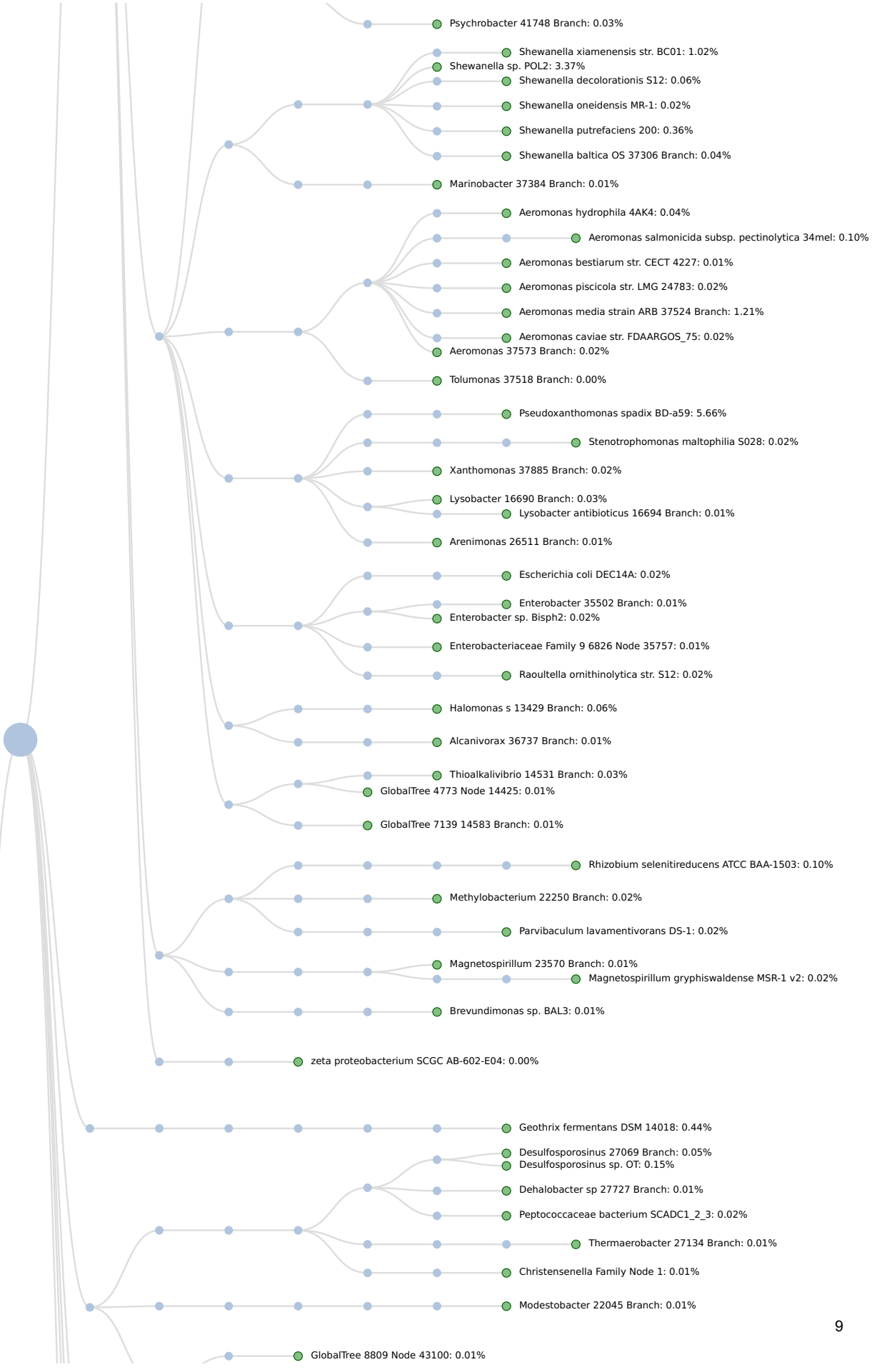
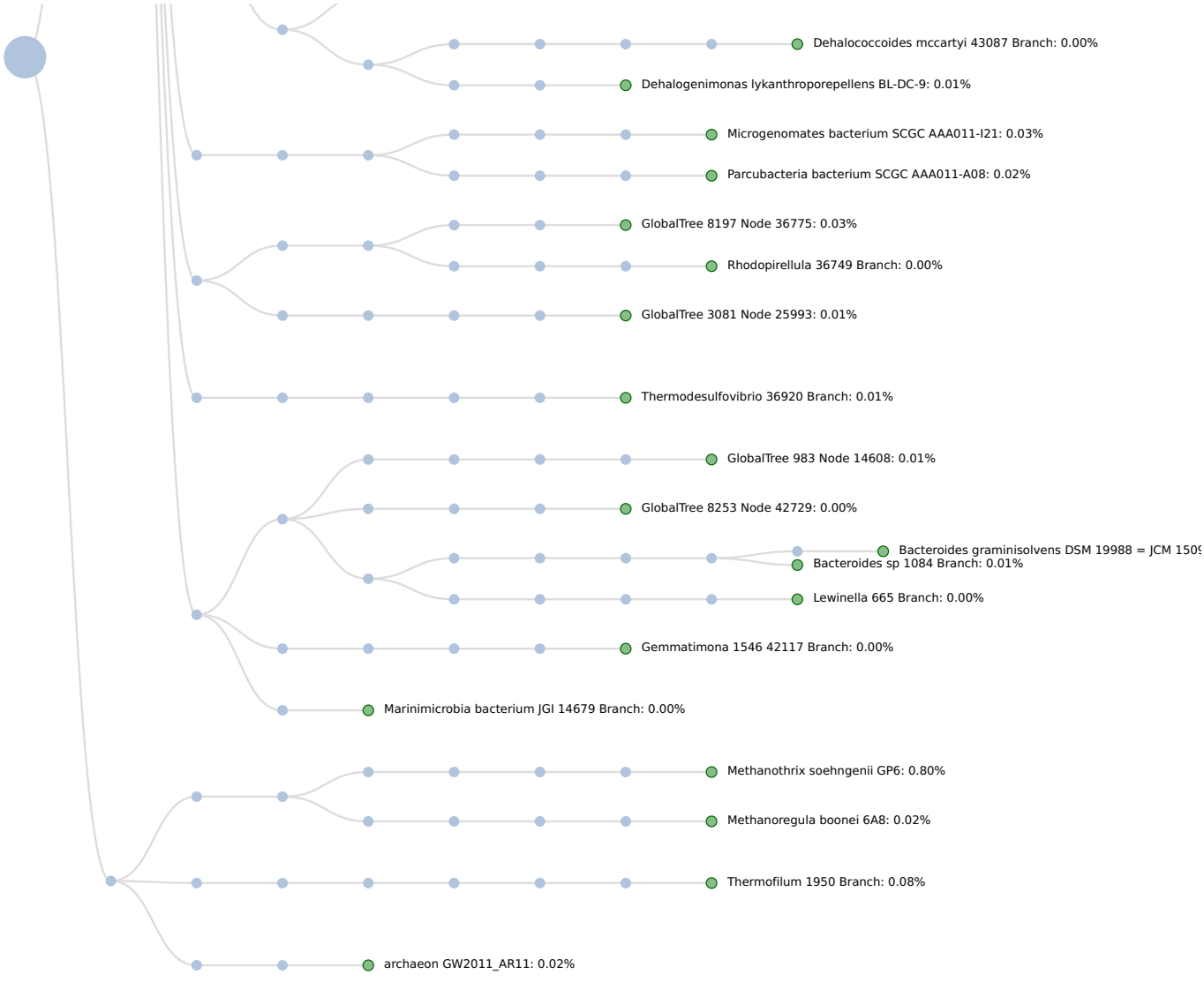
Burkholderiales Order 15 6516 24772 Branch: 0.32%
Ralstonia pickettii OR214: 0.03%
Ralstonia sp A 24684 Branch: 0.06%
Ralstonia solanacearum 24706 Branch: 0.05%
Cupriavidus sp. HMR-1: 0.01%
Cupriavidus 25076 Branch: 0.04%
Burkholderia multivorans str. DDS 15A-1: 0.01%
Paraburkholderia ferrariae NBRC 106233: 0.02%
Bordetella bronchiseptica 24923 Branch: 0.01%
Sutterella 25728 Branch: 0.00%
Aquabacterium sp. NJ1: 0.06%
Dechlorosoma suillum PS: 26.27%


Azovibrio restrictus DSM 23866: 0.06%
Thauera 13777 Branch: 0.02%
Azoarcus 13804 Branch: 0.03%
Dechloromonas agitata is5: 0.02%
Pseudogulbenkiania sp 14709 Branch: 0.01%
Candidatus Accumulibacter 25989 Branch: 0.01%
Geobacter metallireducens 25960 Branch: 0.32%
Geobacter pickeringii str. G13: 0.06%
Geobacter 25953 Branch: 0.06%
Geobacter sulfurreducens PCA: 0.05%
Geobacter soli str. GSS01: 0.04%
Geobacter uraniireducens Rf4: 1.13%
Geobacter lovleyi SZ: 0.30%
Pelobacter propionicus DSM 2379: 0.04%
Smithella sp. D17: 0.87%
Desulfovibrio termitidis HI1: 0.75%
Desulfovibrio vulgaris str. 'Miyazaki F': 0.03%
Desulfovibrio sp. A2: 0.03%
Desulfovibrio 36890 Branch: 0.03%
Desulfovibrio aminophilus DSM 12254: 0.04%
Desulfomicrobium 36832 Branch: 0.01%
Desulfobulbus 14385 Branch: 0.10%
Desulfobulbus sp. Tol-SR: 2.39%
Anaeromyxobacter 28363 Branch: 0.05%
Sulfurospirillum multivorans DSM 12446: 1.47%
Sulfurospirillum sp. SCADC: 0.11%
Sulfurospirillum arsenophilum NBRC 109478: 0.14%
Sulfurospirillum 15620 Branch: 0.01%
Sulfurospirillum cavolei NBRC 109482: 0.03%
Arcobacter 15564 Branch: 0.05%
Pseudomonas aeruginosa C52: 4.91%
Pseudomonas alcaligenes NBRC 14159: 0.20%
Pseudomonas resinovorans NBRC 106553: 0.04%
Pseudomonas mendocina DLHK: 0.07%
Pseudomonas pseudoalcaligenes AD6: 0.04%
Pseudomonas oleovorans str. MGY01: 0.04%
Pseudomonas nitroreducens 39757 Branch: 0.08%
Pseudomonas xanthomarina str. S11: 0.56%
Pseudomonas sp. BICA1-14: 0.53%
Pseudomonas chloritidismutans AW-1: 0.16%
Pseudomonas stutzeri RCH2: 2.26%
Pseudomonas balearica DSM 6083 str. DSM6083 (=
Pseudomonas rhodesiae str. FF9: 0.02%
Pseudomonas veronii str. R4: 0.10%
Pseudomonas fluorescens str. MEP34: 0.05%
Pseudomonas mandelii JR-1: 0.03%
Pseudomonas putida str. MC4-5222: 0.44%
Pseudomonas fulva str. MEJ086: 0.03%
Pseudomonas thermotolerans 39784 Branch: 0.11%
Pseudomonas alcaliphila 34: 0.12%
Pseudomonas taeanensis MS-3: 0.22%
Pseudomonas azotifigens DSM 17556: 0.04%
Pseudomonas flexibilis str. ATCC 29606: 0.03%
Pseudomonas sp 40180 Branch: 0.12%
Pseudomonas chlororaphis 39969 Branch: 0.02%
Pseudomonas 39497 Branch: 0.05%
Pseudomonas knackmussii B13: 0.02%
Pseudomonas alkylphenolica str. KL28: 0.02%
Azotobacter vinelandii 39779 Branch: 0.05%
Azotobacter chroococcum NCIMB 8003: 0.16%
Acinetobacter lwoffii WJ10621: 0.02%
Acinetobacter 41925 Branch: 0.02%
Acinetobacter sp. CIP 51.11: 0.01%
Acinetobacter johnsonii SH046: 0.03%
Acinetobacter baumannii 1295743: 0.01%


Psychrobacter 41748 Branch: 0.03%
Shewanella xiamenensis str. BC01: 1.02%
Shewanella sp. POL2: 3.37%
Shewanella decolorationis S12: 0.06%
Shewanella oneidensis MR-1: 0.02%
Shewanella putrefaciens 200: 0.36%
Shewanella baltica OS 37306 Branch: 0.04%
Marinobacter 37384 Branch: 0.01%
Aeromonas hydrophila 4AK4: 0.04%
Aeromonas salmonicida subsp. pectinolytica 34mel: 0.10%
Aeromonas bestiarum str. CECT 4227: 0.01%
Aeromonas piscicola str. LMG 24783: 0.02%
Aeromonas media strain ARB 37524 Branch: 1.21%
Aeromonas caviae str. FDAARGOS_75: 0.02%
Aeromonas 37573 Branch: 0.02%
Tolumonas 37518 Branch: 0.00%
Pseudoxanthomonas spadix BD-a59: 5.66%
Stenotrophomonas maltophilia S028: 0.02%
Xanthomonas 37885 Branch: 0.02%
Lysobacter 16690 Branch: 0.03%
Lysobacter antibioticus 16694 Branch: 0.01%
Arenimonas 26511 Branch: 0.01%
Escherichia coli DEC14A: 0.02%
Enterobacter 35502 Branch: 0.01%
Enterobacter sp. Bisph2: 0.02%
Enterobacteriaceae Family 9 6826 Node 35757: 0.01%
Raoultella ornithinolytica str. S12: 0.02%
Halomonas s 13429 Branch: 0.06%
Alcanivorax 36737 Branch: 0.01%
Thioalkalivibrio 14531 Branch: 0.03%
GlobalTree 4773 Node 14425: 0.01%
GlobalTree 7139 14583 Branch: 0.01%
Rhizobium selenitireducens ATCC BAA-1503: 0.10%
Methylobacterium 22250 Branch: 0.02%
Parvibaculum lavamentivorans DS-1: 0.02%
Magnetospirillum 23570 Branch: 0.01%
Magnetospirillum gryphiswaldense MSR-1 v2: 0.02%
Brevundimonas sp. BAL3: 0.01%
zeta proteobacterium SCGC AB-602-E04: 0.00%
Geothrix fermentans DSM 14018: 0.44%
Desulfosporosinus 27069 Branch: 0.05%
Desulfosporosinus sp. OT: 0.15%
Dehalobacter sp 27727 Branch: 0.01%
Peptococcaceae bacterium SCADC1_2_3: 0.02%
Thermaerobacter 27134 Branch: 0.01%
Christensenella Family Node 1: 0.01%
Modestobacter 22045 Branch: 0.01%
GlobalTree 8809 Node 43100: 0.01%

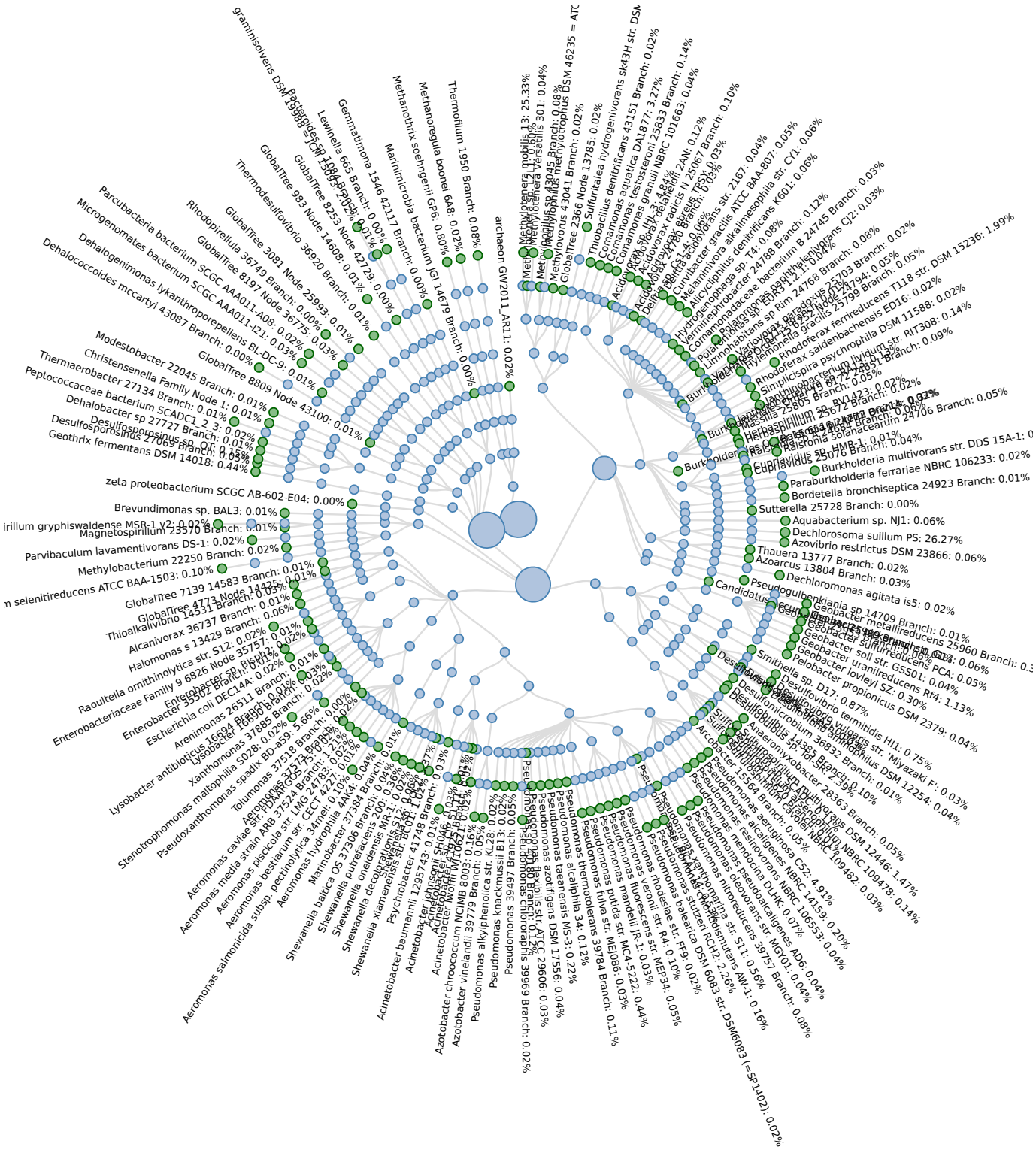

Dehalococcoides mccartyi 43087 Branch: 0.00%
Dehalogenimonas lykanthroporepellens BL-DC-9: 0.01%
Microgenomates bacterium SCGC AAA011-I21: 0.03%
Parcubacteria bacterium SCGC AAA011-A08: 0.02%
GlobalTree 8197 Node 36775: 0.03%
Rhodopirellula 36749 Branch: 0.00%
GlobalTree 3081 Node 25993: 0.01%
Thermodesulfovibrio 36920 Branch: 0.01%
GlobalTree 983 Node 14608: 0.01%
GlobalTree 8253 Node 42729: 0.00%
Bacteroides graminisolvens DSM 19988 = JCM 150
Bacteroides sp 1084 Branch: 0.01%
Lewinella 665 Branch: 0.00%
Gemmatimona 1546 42117 Branch: 0.00%
Marinimicrobia bacterium JGI 14679 Branch: 0.00%
Methanothrix soehngenii GP6: 0.80%
Methanoregula boonei 6A8: 0.02%
Thermofilum 1950 Branch: 0.08%
archaeon GW2011_AR11: 0.02%

Bacteria

Radial Tree Chart Taxonomy

1B-90-1_MBPO210215-A

Total results



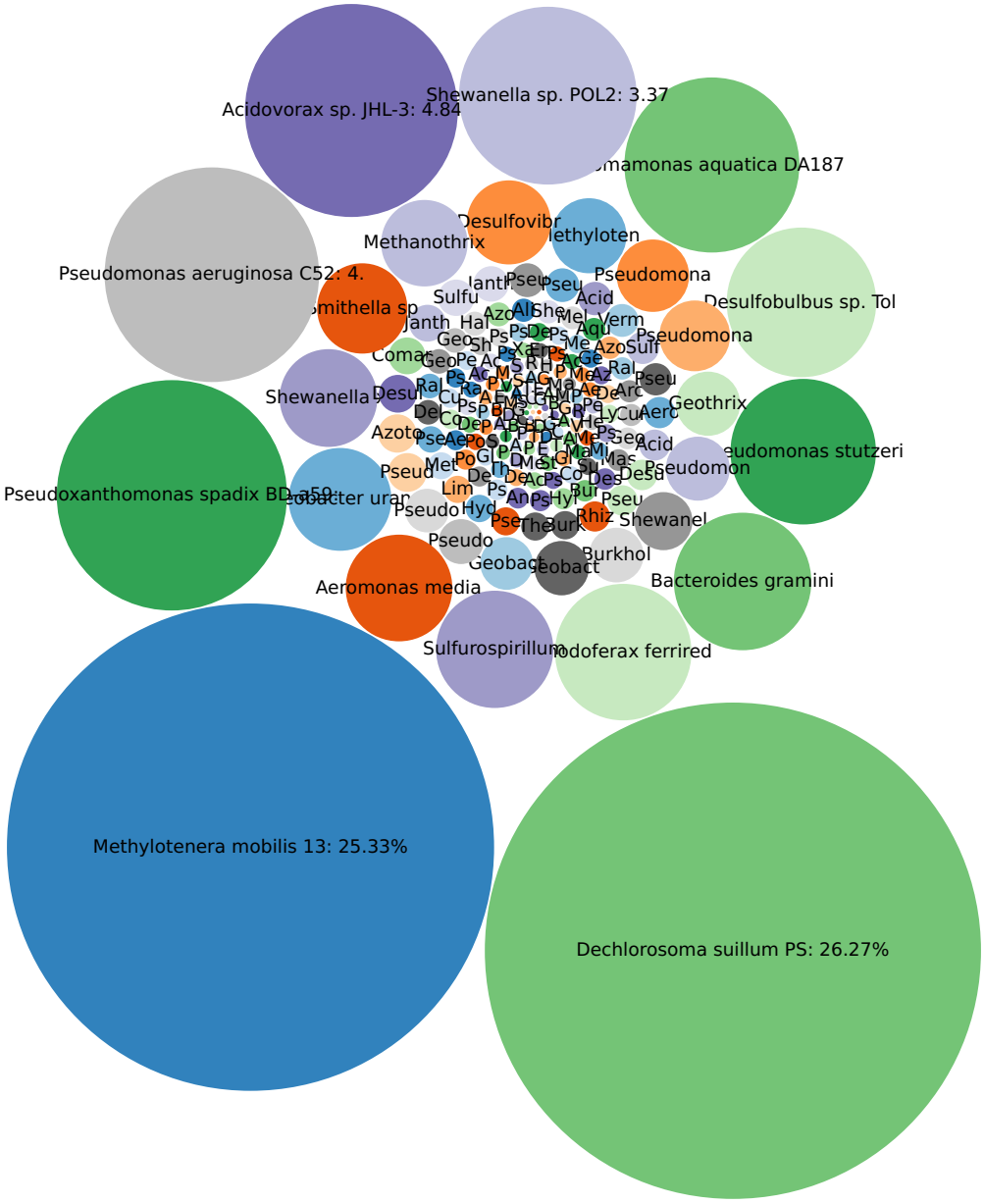
Bacteria

Sunburst Chart Taxonomy

1B-90-1_MBPO210215-A

Total results




Acidovorax sp. JHL-3: 4.84
Shewanella sp. POL2: 3.37
Methanothrix
Pseudomonas aeruginosa C52: 4.
Desulfobulbus sp. Tol
Shewanella
Geothrix
Pseudoxanthomonas spadix BD-a59:
Aeromonas media
Bacteroides gramini
Sulfurospirillum
Methylotenera mobilis 13: 25.33%
Dechlorosoma suillum PS: 26.27%

Antibiotic Resistance

1B-90-1_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	373

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Trimethoprim dfrA1	-	822.68	39.99	19.21	19.21	58
Aminoglycoside ant2'' Ia	-	625.60	30.41	75.00	15.89	39
Sulphonamide sul2	-	608.97	29.60	13.58	13.58	71

Fungi

1B-90-1_MBPO210215-A

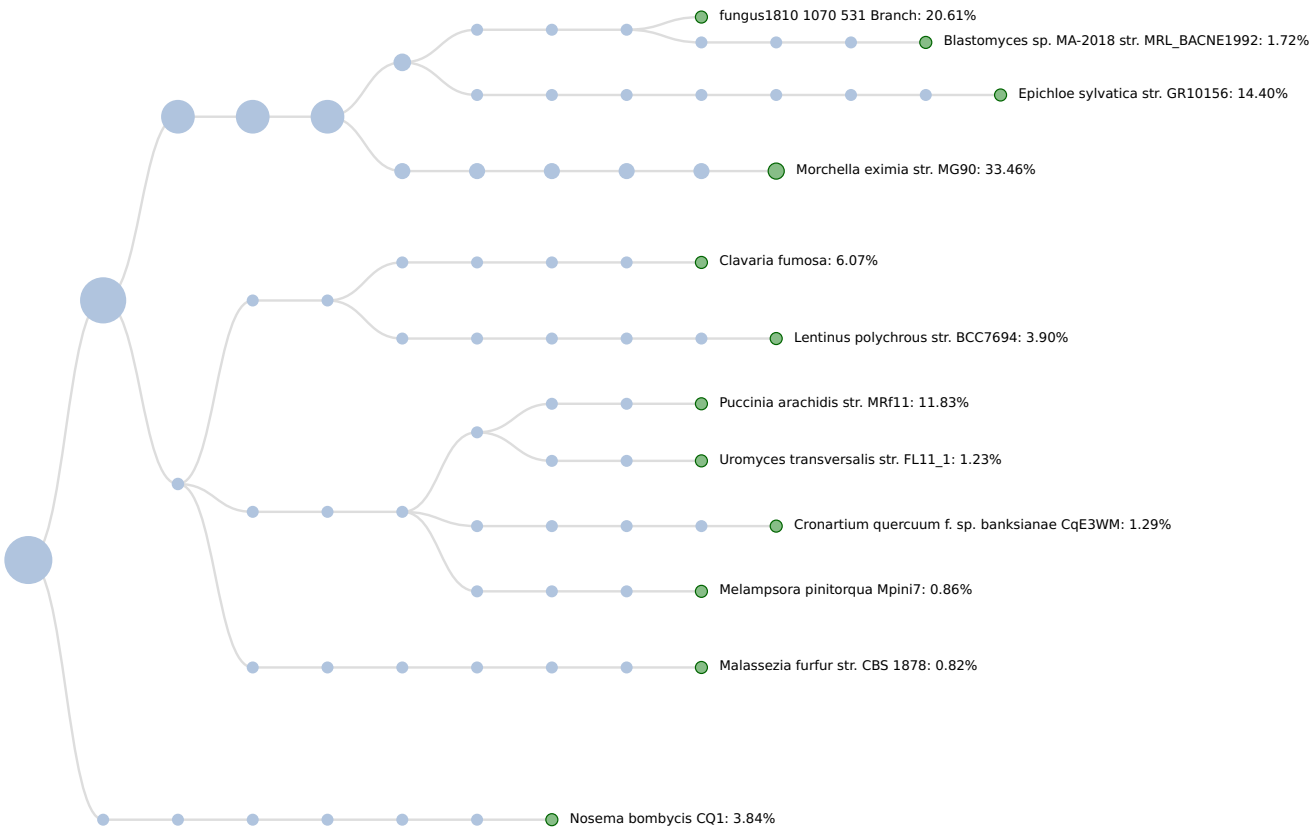
Fasta/q details

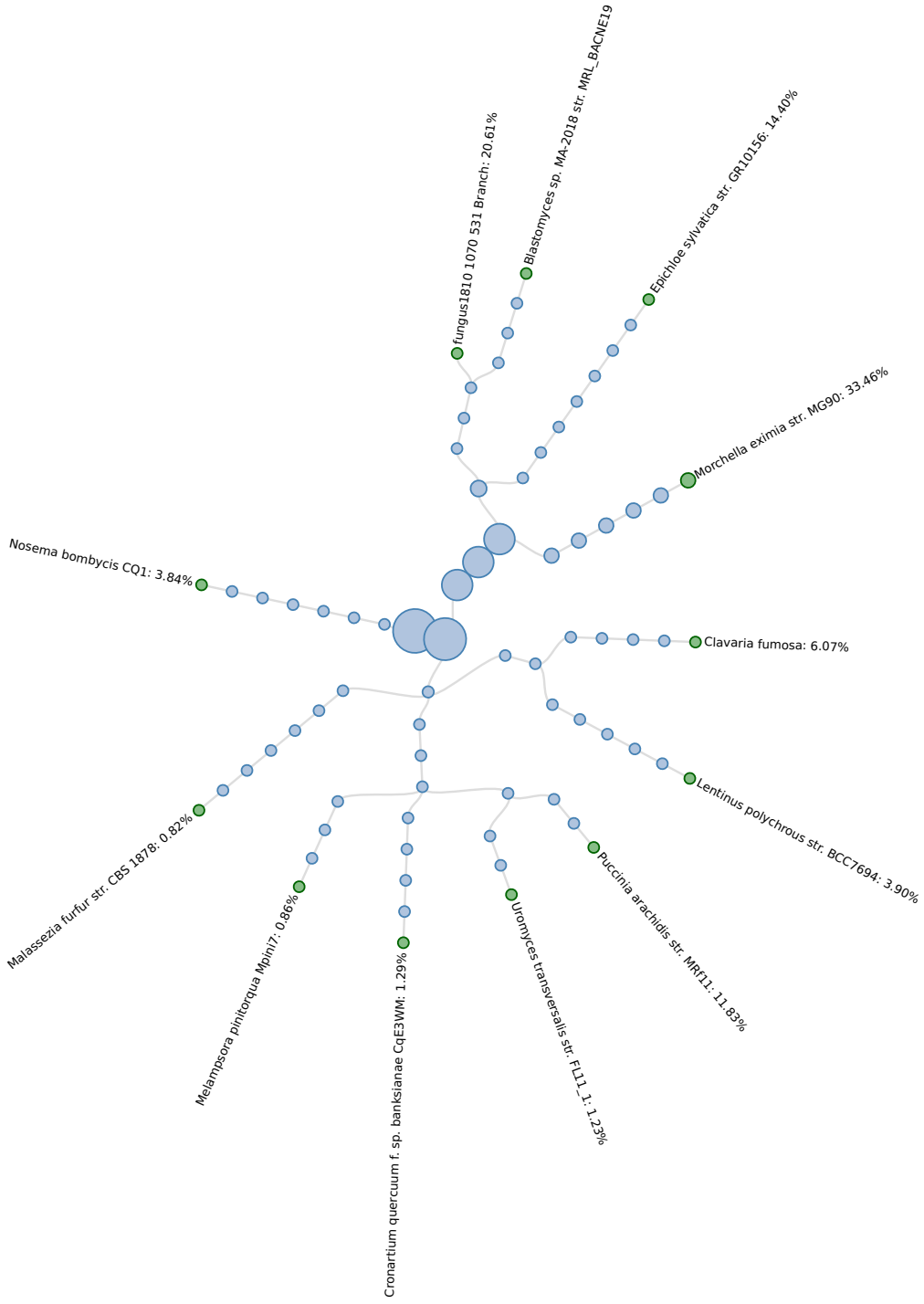
Total results

Metric	Value
Hit	5.226k

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Morchella eximia	1582338	16.38	33.46	0.17	0.12	853
Onygenales	33183	10.09	20.61	0.12	0.16	430
Epichloe sylvatica	79593	7.05	14.40	0.11	0.08	309
Puccinia arachidis	333523	5.79	11.83	0.06	0.15	388
Clavaria fumosa	264083	2.97	6.07	0.05	0.11	154
Lentinus polychrous	292559	1.91	3.90	0.05	0.06	125
Nosema bombycis CQ1	578461	1.88	3.84	0.02	0.02	187
Blastomyces sp. MA-2018	2164086	0.84	1.72	0.02	0.02	39
Cronartium quercuum f. sp. banksianae CqE3WM	1301520	0.63	1.29	0.03	0.03	22
Uromyces transversalis	462795	0.60	1.23	0.01	0.02	45
Melampsora pinitorqua Mpini7	1298852	0.42	0.86	0.01	0.01	166
Malassezia furfur	55194	0.40	0.82	0.01	0.01	26


fungus1810 1070 531 Branch: 20.61%
Blastomyces sp. MA-2018 str. MRL_BACNE1992: 1.72%
Epichloe sylvatica str. GR10156: 14.40%
Morchella eximia str. MG90: 33.46%
Clavaria fumosa: 6.07%
Lentinus polychrous str. BCC7694: 3.90%
Puccinia arachidis str. MRf11: 11.83%
Uromyces transversalis str. FL11_1: 1.23%
Cronartium quercuum f. sp. banksianae CqE3WM: 1.29%
Melampsora pinitorqua Mpini7: 0.86%
Malassezia furfur str. CBS 1878: 0.82%
Nosema bombycis CQ1: 3.84%


fungus1810 1070 531 Branch: 20.61%
Blastomyces sp. MA-2018 str. MRL_BACNE19
Epichloe sylvatica str. GR10156: 14.40%
Morchella eximia str. MG90: 33.46%
Nosema bombycis CQ1: 3.84%
Clavaria fumosa: 6.07%
Lentinus polychrous str. BCC7694: 3.90%
Puccinia arachidis str. MRf11: 11.83%
Uromyces transversalis str. FL11_1: 1.23%
Cronartium quercuum f. sp. banksianae CqE3WM: 1.29%
Melampsora pinitorqua MpiniI7: 0.86%
Malassezia furfur str. CBS 1878: 0.82%

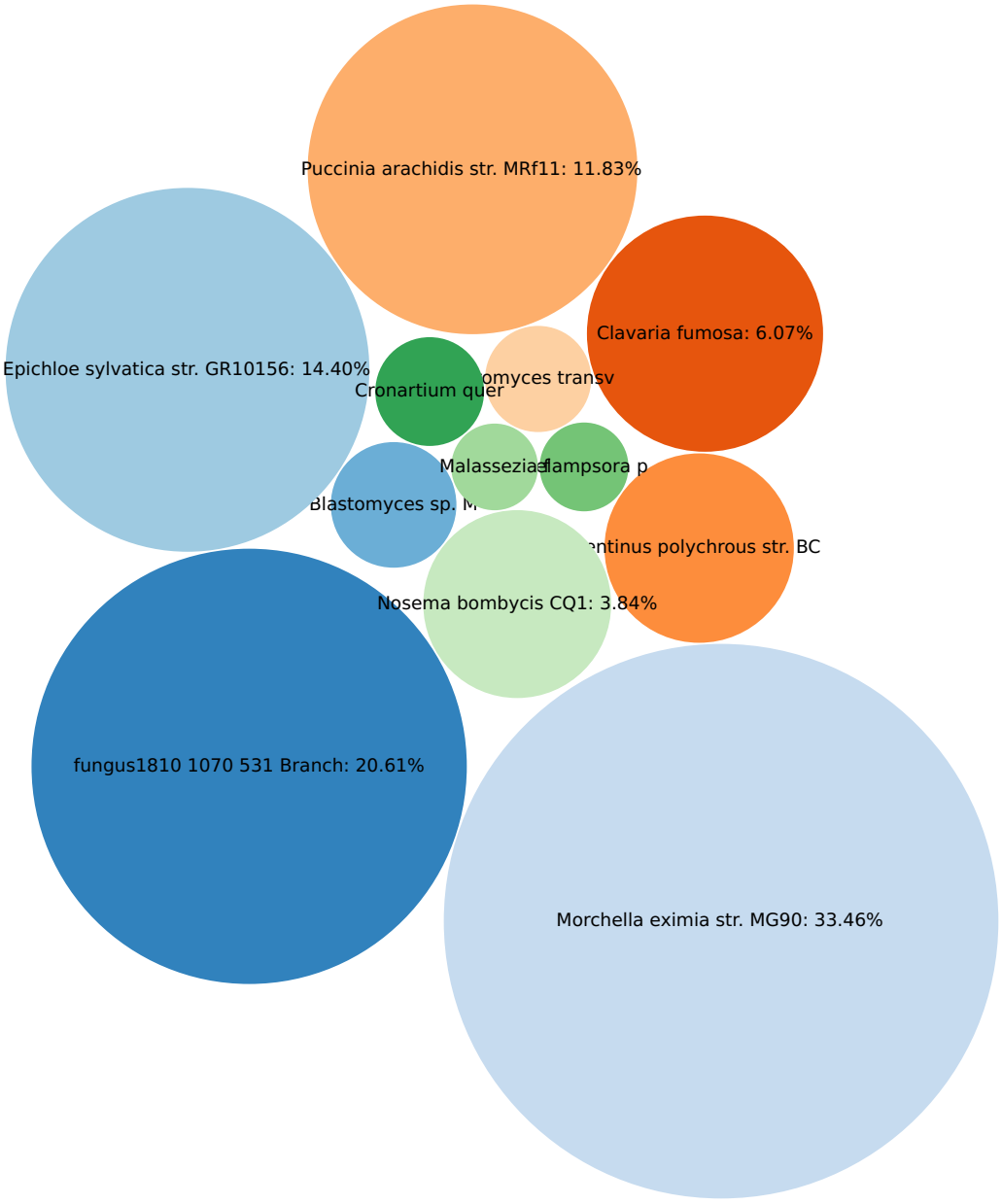
Fungi

Sunburst Chart Taxonomy

1B-90-1_MBPO210215-A

Total results




Puccinia arachidis str. MRf11: 11.83%
Epichloe sylvatica str. GR10156: 14.40%
Clavaria fumosa: 6.07%
Cronartium quer
omyces transv
Malasseziaæ
lampsora p
Blastomyces sp. M
ntinus polychrous str. BC
Nosema bombycis CQ1: 3.84%
fungus1810 1070 531 Branch: 20.61%
Morchella eximia str. MG90: 33.46%

Protists

1B-90-1_MBPO210215-A

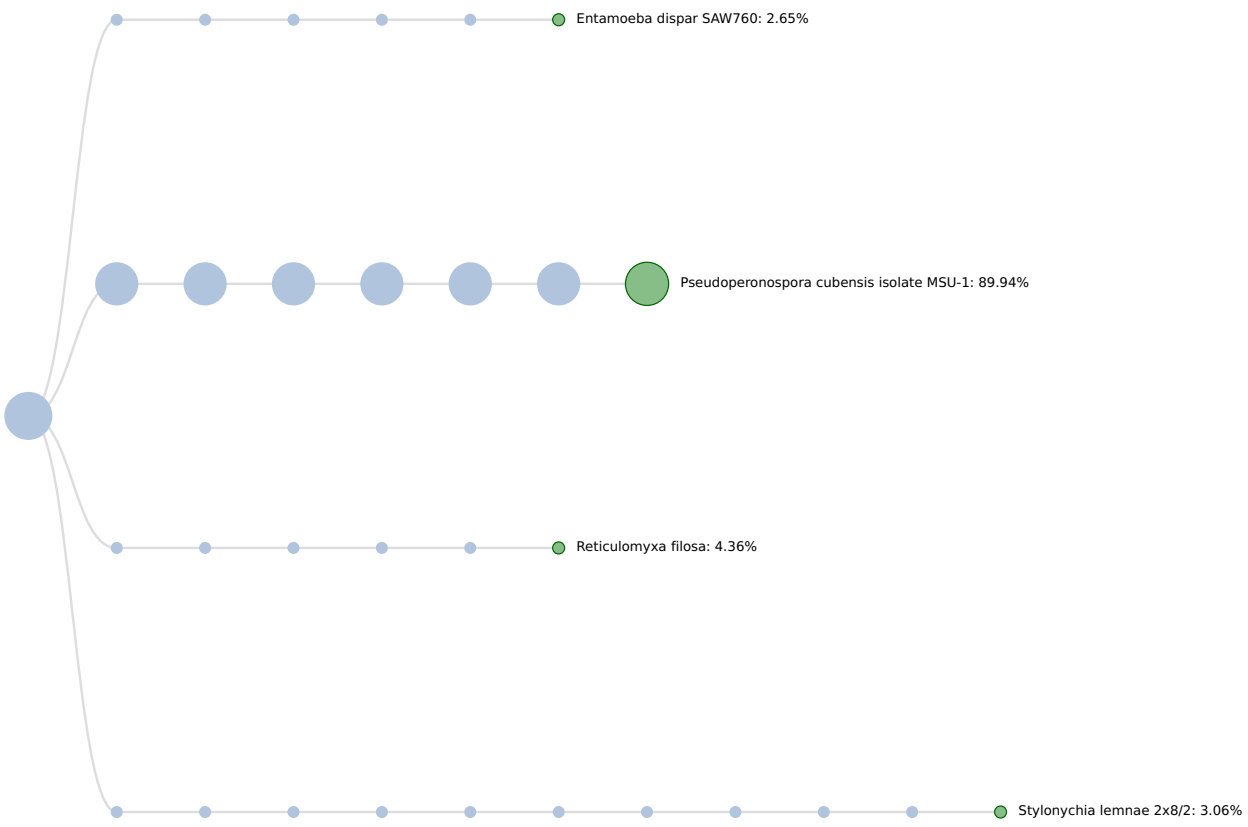
Fasta/q details

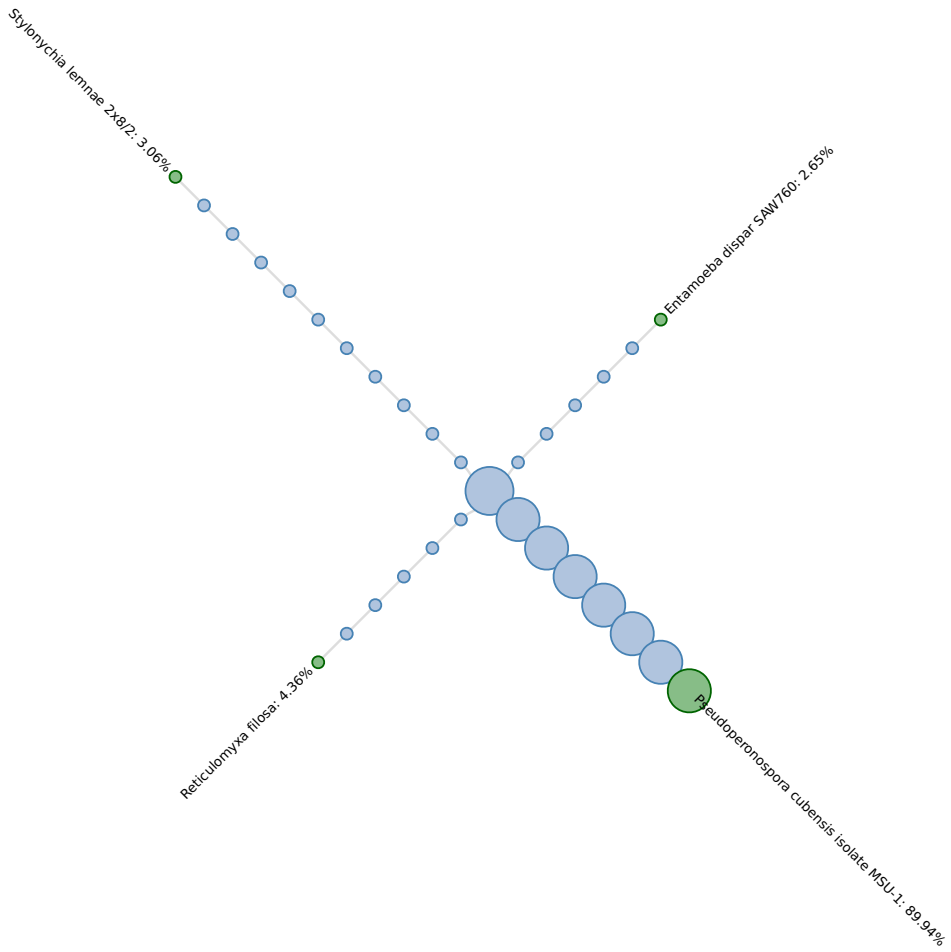
Total results

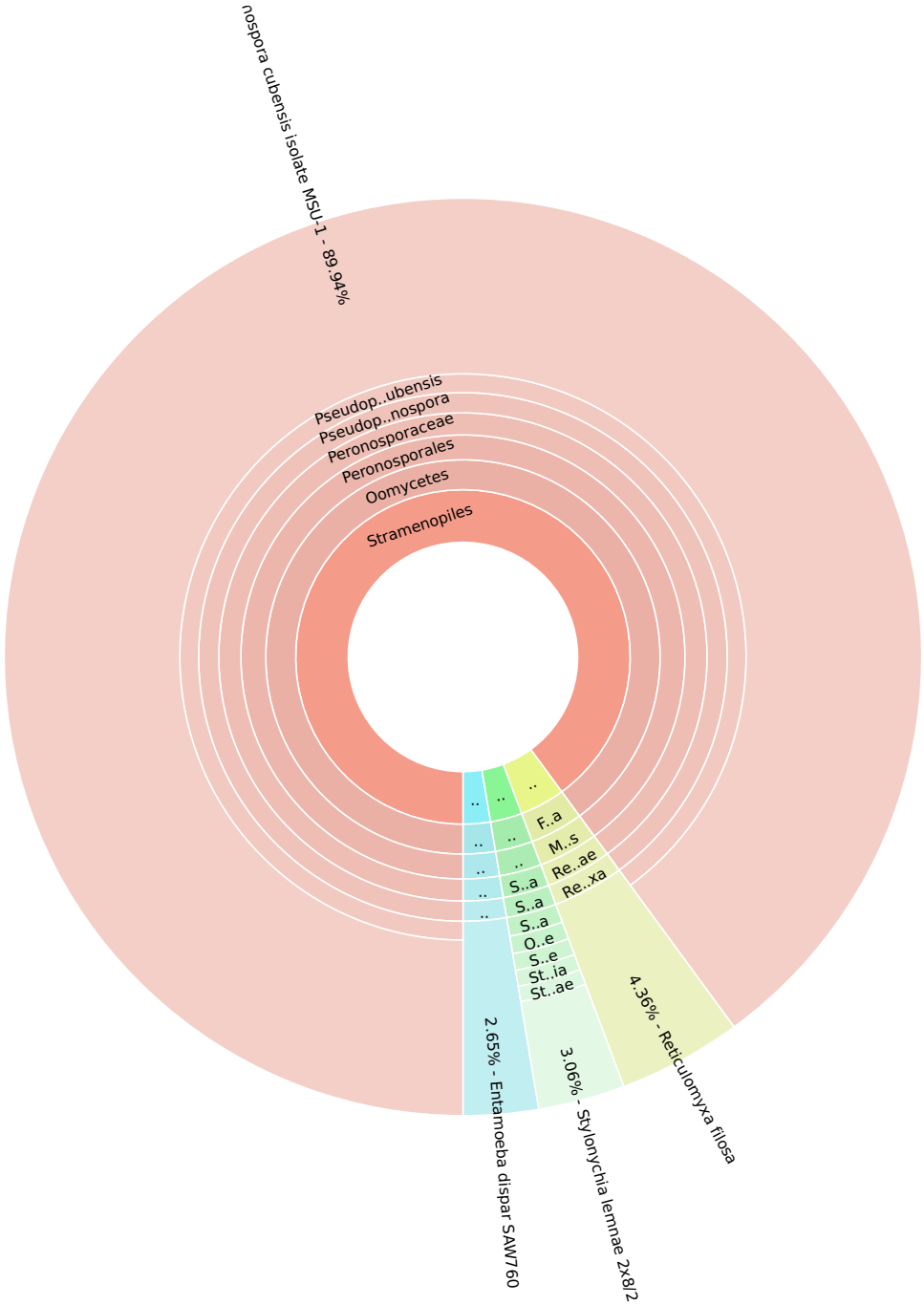
Metric	Value
Hit	3.511k

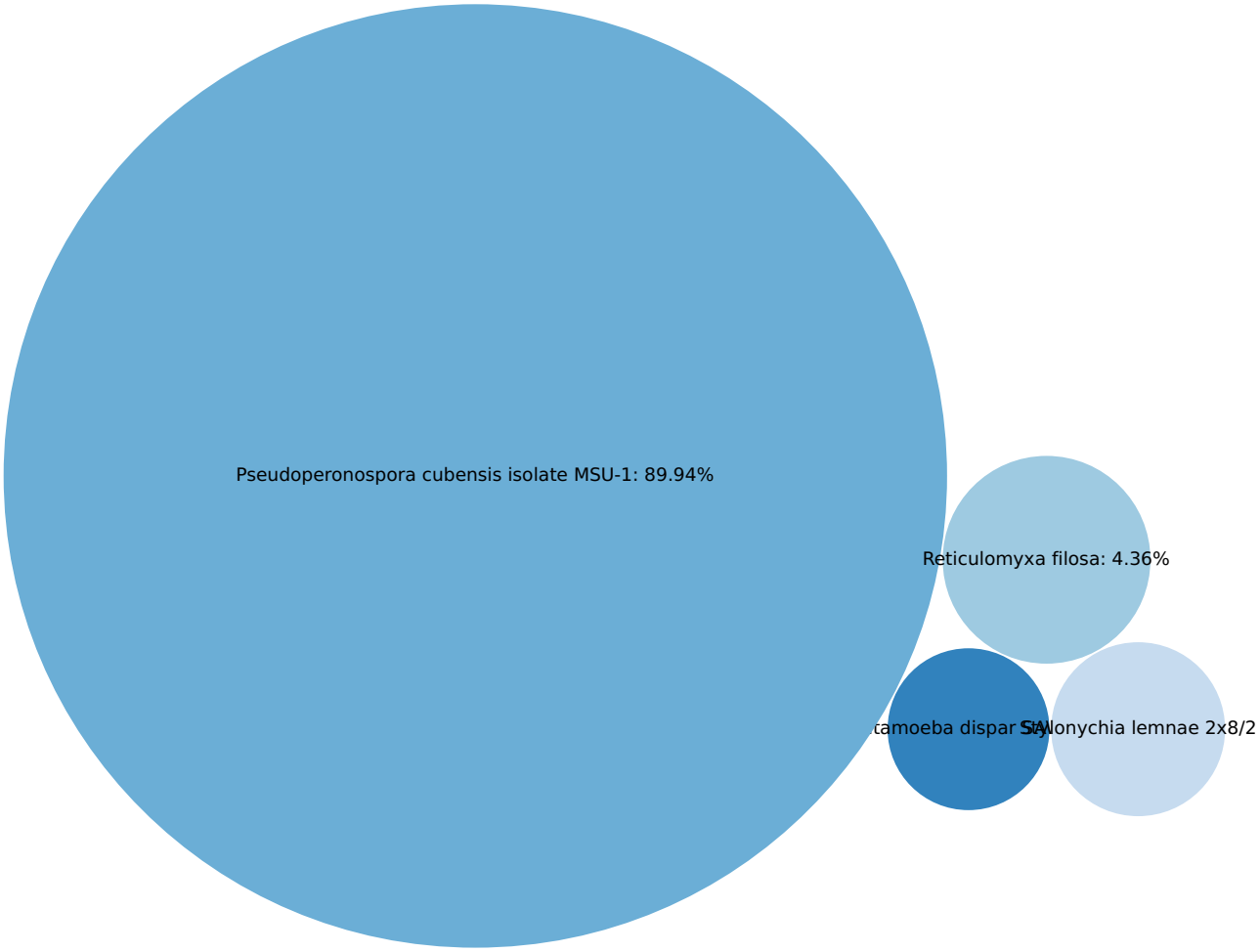
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudoperonospora cubensis	143453	24.13	89.94	0.28	0.33	1000
Reticulomyxa filosa	46433	1.17	4.36	0.01	0.02	141
Stylonychia lemnae 2x8/2	755200	0.82	3.06	0.02	0.02	24
Entamoeba dispar SAW760	370354	0.71	2.65	0.02	0.02	18


Entamoeba dispar SAW760: 2.65%
Pseudoperonospora cubensis isolate MSU-1: 89.94%
Reticulomyxa filosa: 4.36%
Stylonychia lemnae 2x8/2: 3.06%


Stylonychia lemnae 2x8/2: 3.06%
Entamoeba dispar SAW760: 2.65%
Reticulomyxa filosa: 4.36%
Pseudoperonospora cubensis isolate MSU-1: 89.94%


nospora cubensis isolate MSU-1 - 89.94%
Pseudop..ubensis
Pseudop..nospora
Peronosporaceae
Peronosporales
Oomycetes
Stramenopiles
F..a
M..s
Re..ae
Re..xa
S..a
S..a
S..a
O..e
S..e
St..ia
St..ae
4.36% - Reticulomyxa filosa
3.06% - Stylonychia lemnae 2x8/2
2.65% - Entamoeba dispar SAW760


Pseudoperonospora cubensis isolate MSU-1: 89.94%
Reticulomyxa filosa: 4.36%
amoeba dispar SAW
Stylonychia lemnae 2x8/2

Dark Matter (Beta)

1B-90-1_MBPO210215-A

Fasta/q details

Total results

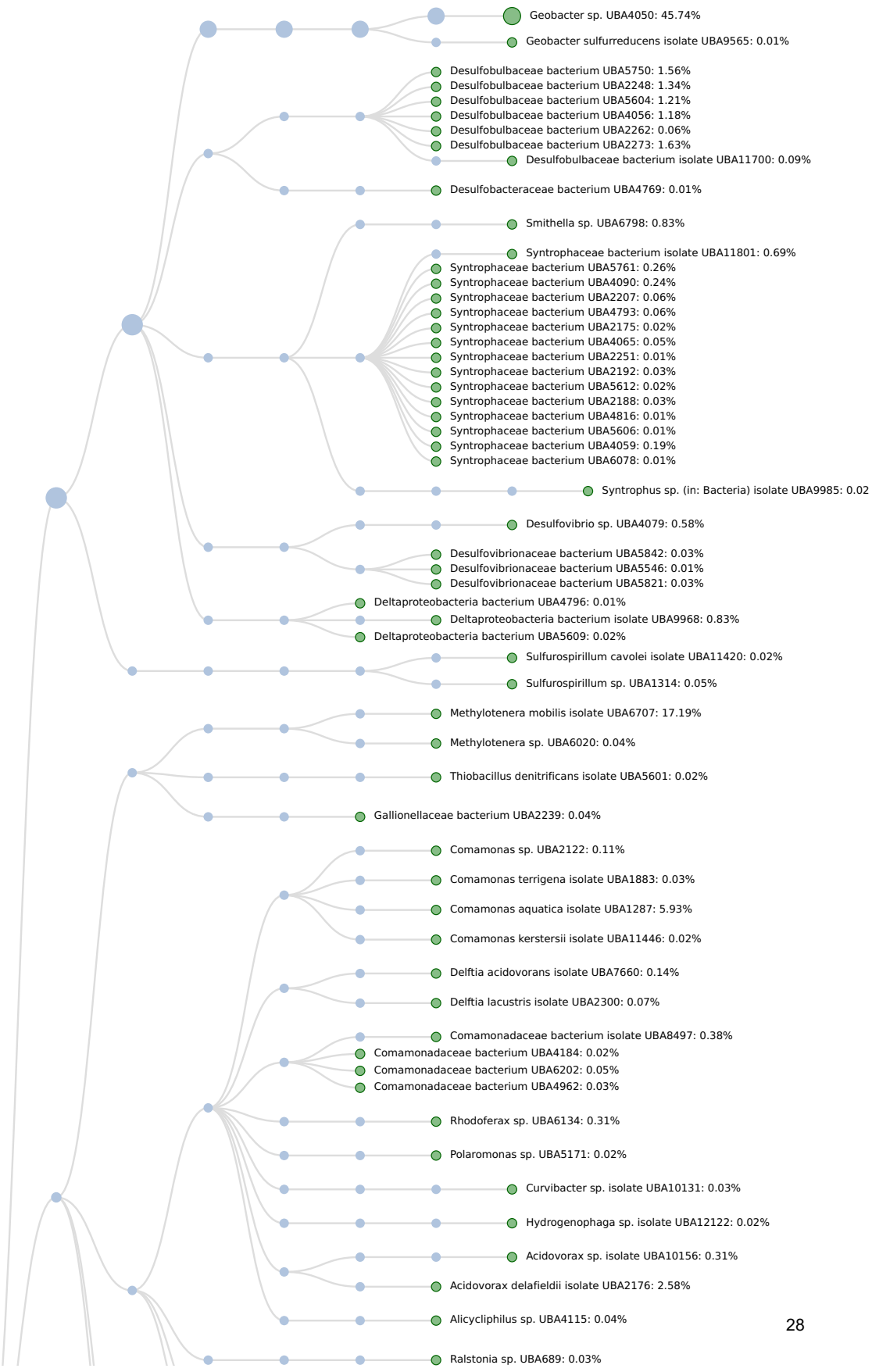
Metric	Value
Hit	0.366M

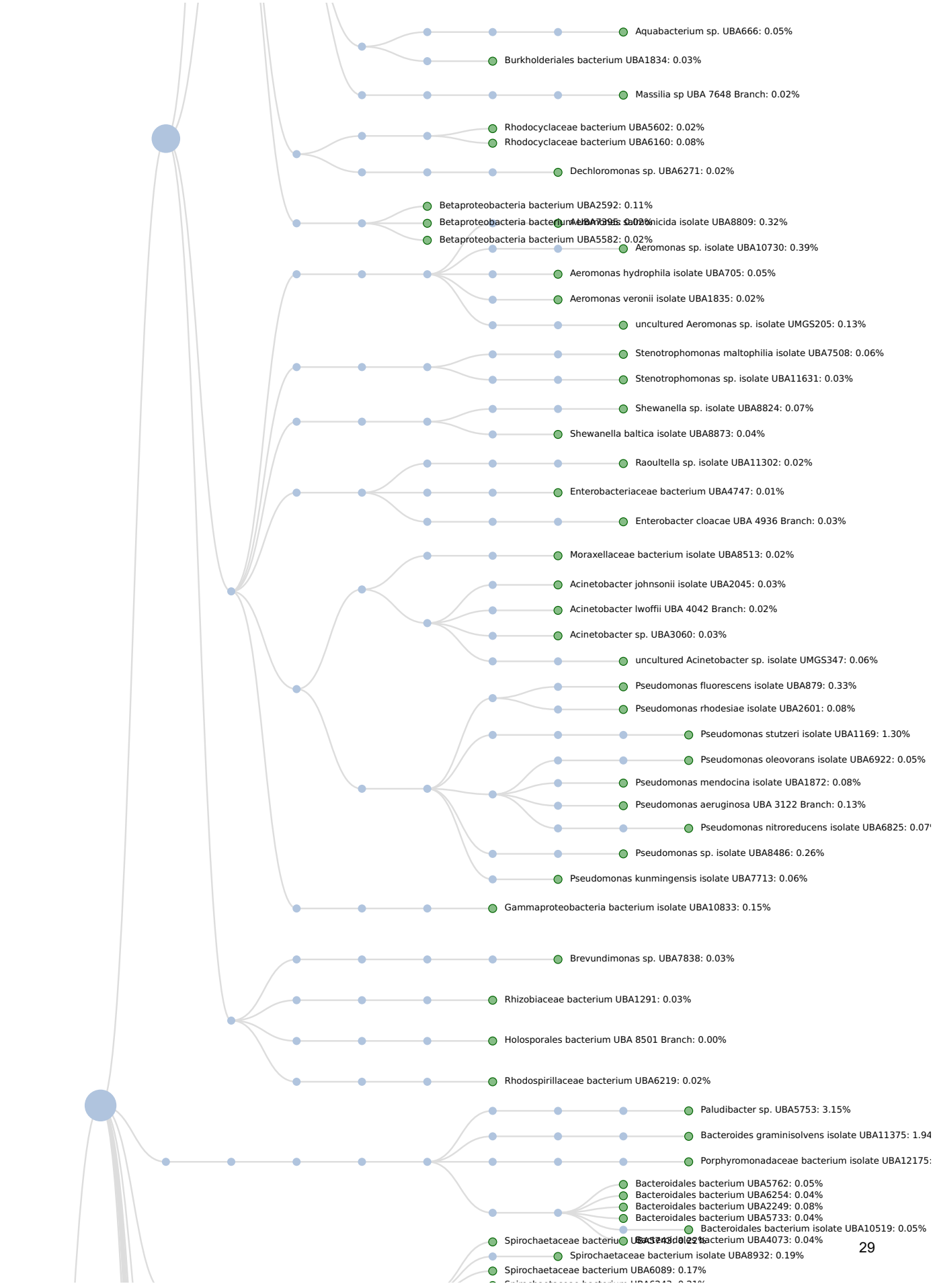
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Geobacter sp. UBA4050	1961391	17704.12	45.74	76.37	96.30	7299
Methylotenera mobilis	359408	6654.48	17.19	42.45	65.01	33759
Comamonas aquatica	225991	2293.29	5.92	20.74	20.83	24604
Paludibacter sp. UBA5753	1947025	1218.79	3.15	9.81	18.11	808
Acidovorax delafieldii	47920	1000.18	2.58	10.16	10.14	8686
Bacteroides graminisolvens	477666	749.45	1.94	9.57	12.20	1259
Desulfobulbaceae bacterium UBA2273	1961547	629.78	1.63	5.22	5.22	9145
Desulfobulbaceae bacterium UBA5750	1961557	601.99	1.55	6.77	11.09	422
Desulfobulbaceae bacterium UBA2248	1961544	519.18	1.34	5.42	11.26	374
Pseudomonas stutzeri	316	504.79	1.30	5.63	5.62	4823
Desulfobulbaceae bacterium UBA5604	1961554	469.52	1.21	4.76	11.37	175
Desulfobulbaceae bacterium UBA4056	1961550	456.71	1.18	4.77	10.91	288
Methanosaeta sp. UBA332	1915558	456.88	1.18	2.31	6.05	73
Anaerolineaceae bacterium	2024896	394.98	1.02	5.03	5.03	1827
Desulfosporosinus sp. UBA4726	1946409	377.28	0.97	2.30	2.30	7028
Smithella sp. UBA6798	1961386	322.58	0.83	4.99	5.62	524
Deltaproteobacteria bacterium	2026735	320.84	0.83	3.86	3.86	2800
Syntrophaceae bacterium	2052184	266.11	0.69	3.39	4.75	234
Desulfovibrio sp. UBA4079	1961407	225.33	0.58	2.55	3.69	660
Candidatus Omnitrophica bacterium UBA6210	1953267	191.30	0.49	2.49	2.49	1526
Aeromonas sp.	647	151.38	0.39	1.60	1.95	1295
Comamonadaceae bacterium	1871071	145.67	0.38	1.64	1.67	2430
Pseudomonas fluorescens	294	128.95	0.33	1.12	1.87	575
Aeromonas salmonicida	645	122.00	0.32	1.88	2.24	463
Rhodoferax sp. UBA6134	1947380	118.48	0.31	1.19	1.19	1903
Acidovorax sp.	1872122	118.62	0.31	1.34	1.49	2510
Pseudomonas sp.	306	102.40	0.27	1.49	1.57	363
Syntrophaceae bacterium UBA5761	1961446	101.35	0.26	1.42	2.22	171
Syntrophaceae bacterium UBA4090	1961432	94.43	0.24	1.28	2.26	115
Spirochaetaceae bacterium UBA5743	1952894	85.10	0.22	1.86	1.91	102
Spirochaetaceae bacterium UBA6243	1952898	80.01	0.21	1.54	2.06	91
Syntrophaceae bacterium UBA4059	1961430	73.78	0.19	1.06	1.06	757
Spirochaetaceae bacterium	1898206	71.86	0.19	1.41	1.82	92
Spirochaetaceae bacterium UBA6809	1952899	70.02	0.18	1.36	2.02	100
Spirochaetaceae bacterium UBA6089	1952897	64.74	0.17	1.08	1.72	166
Gammaproteobacteria bacterium	1913989	58.65	0.15	1.00	1.00	164
Delftia acidovorans	80866	53.04	0.14	0.76	2.44	576
uncultured Aeromonas sp.	263763	50.51	0.13	0.73	1.02	721
Pseudomonas aeruginosa	287	49.30	0.13	0.18	0.19	738
Methanoregula sp. UBA64	1915554	46.36	0.12	0.69	0.69	559
Comamonas sp. UBA2122	1946390	42.41	0.11	0.66	1.13	420
Betaproteobacteria bacterium UBA2592	1948455	42.48	0.11	0.48	0.48	832
Candidatus Verstraetearchaeota archaeon UBA156	1916019	42.67	0.11	0.72	0.72	268
Desulfotomaculum sp.	41211	36.94	0.10	0.80	0.59	79
Candidatus Rokubacteria bacterium	2053607	35.19	0.09	0.51	0.42	751
Desulfobulbaceae bacterium	2053307	34.73	0.09	0.44	0.44	522
Patescibacteria group bacterium UBA6102	1948843	33.90	0.09	0.68	0.69	113

Pseudomonas rhodesiae	76760	31.57	0.08	0.50	1.55	346
Pseudomonas mendocina	300	31.47	0.08	0.29	0.36	1451
Rhodocyclaceae bacterium UBA6160	1952847	30.90	0.08	0.53	0.53	256
Bacteroidales bacterium UBA2249	1950439	30.86	0.08	0.77	0.72	43
Spirochaetaceae bacterium UBA2256	1952886	30.78	0.08	0.82	0.73	34
Firmicutes bacterium UBA4053	1948000	29.11	0.07	0.63	0.51	77
Candidatus Omnitrophica bacterium UBA6233	1953269	27.99	0.07	0.53	0.53	140
Delftia lacustris	558537	27.47	0.07	0.43	1.66	438
Shewanella sp.	50422	27.07	0.07	0.43	0.70	382
Pseudomonas nitroreducens	46680	26.37	0.07	0.26	0.27	1317
Spirochaetaceae bacterium UBA4077	1952887	23.15	0.06	0.52	0.68	64
Syntrophaceae bacterium UBA2207	1961423	22.76	0.06	0.51	1.78	63
Pseudomonas kunmingensis	1211807	22.72	0.06	0.47	0.56	91
Candidatus Omnitrophica bacterium UBA5776	1953266	22.78	0.06	0.47	0.57	90
Syntrophaceae bacterium UBA4793	1961435	22.53	0.06	0.52	1.84	50
Stenotrophomonas maltophilia	40324	22.40	0.06	0.55	0.37	241
Desulfobulbaceae bacterium UBA2262	1961545	21.87	0.06	0.34	0.45	197
uncultured Acinetobacter sp.	165433	21.95	0.06	0.64	0.64	23
Synergistaceae bacterium UBA6101	1952925	21.04	0.05	0.44	0.22	93
Bacteroidales bacterium UBA5762	1950652	20.44	0.05	0.48	0.95	56
Comamonadaceae bacterium UBA6202	1951611	20.29	0.05	0.30	0.32	456
Sulfurospirillum sp. UBA1314	1947592	19.27	0.05	0.34	0.50	214
Aeromonas hydrophila	644	19.26	0.05	0.32	0.56	307
Pseudomonas oleovorans	301	18.91	0.05	0.24	0.27	294
Aquabacterium sp. UBA666	1946043	18.70	0.05	0.30	0.33	260
Bacteroidales bacterium	2030927	18.63	0.05	0.45	0.65	50
Syntrophaceae bacterium UBA4065	1961431	17.87	0.05	0.40	0.23	41
Gallionellaceae bacterium UBA2239	1953084	16.99	0.04	0.20	0.20	552
Holophagaceae bacterium	2052165	17.13	0.04	0.31	0.31	206
Candidatus Omnitrophica bacterium UBA6797	1953272	16.84	0.04	0.41	0.57	47
Shewanella baltica	62322	16.57	0.04	0.28	0.58	253
Anaerolineaceae bacterium UBA2260	1951405	16.61	0.04	0.30	0.30	188
Candidatus Roizmanbacteria	1752723	16.83	0.04	100.00	100.00	4
Bacteroidales bacterium UBA5733	1950650	16.39	0.04	0.54	0.71	18
Alicycliphilus sp. UBA4115	1946002	15.97	0.04	0.31	0.42	118
Bacteroidales bacterium UBA6254	1950674	15.36	0.04	0.46	1.00	23
Bacteroidales bacterium UBA4073	1950537	15.64	0.04	0.34	0.55	78
Methylotenera sp. UBA6020	1946903	14.06	0.04	0.16	0.23	342
Candidatus Micrarchaeota archaeon UBA96	1916003	13.57	0.03	0.31	0.31	62
Comamonas terrigena	32013	12.65	0.03	0.21	0.32	247
Acinetobacter johnsonii	40214	12.25	0.03	0.27	0.54	70
Synergistaceae bacterium	2053624	12.52	0.03	0.25	0.25	115
Burkholderiales bacterium UBA1834	1950768	11.81	0.03	0.24	0.16	95
Enterobacter cloacae	550	11.91	0.03	0.12	0.12	68
Acinetobacter sp. UBA3060	1945934	12.13	0.03	0.30	0.39	48
Anaerolineaceae bacterium UBA1363	1951402	11.79	0.03	0.24	0.24	103
Comamonadaceae bacterium UBA4962	1951608	11.30	0.03	0.18	0.19	363
Porphyromonadaceae bacterium	2049046	11.16	0.03	0.23	0.23	97
Ralstonia sp. UBA689	1947373	10.70	0.03	0.18	0.22	303
Syntrophaceae bacterium UBA2192	1961422	10.33	0.03	0.27	0.20	36
Syntrophaceae bacterium UBA2188	1961421	10.51	0.03	0.30	0.24	27
Curvibacter sp.	1888168	10.49	0.03	0.16	0.17	304
Stenotrophomonas sp.	69392	10.55	0.03	0.23	0.34	75
Desulfovibrionaceae bacterium UBA5842	1961566	10.20	0.03	0.22	0.64	26
Desulfovibrionaceae bacterium UBA5821	1961565	9.87	0.03	0.22	0.68	70

Brevundimonas sp. UBA7838	1946142	9.91	0.03	0.18	0.19	197
Rhizobiaceae bacterium UBA1291	1953063	9.86	0.03	0.18	0.19	217
Acinetobacter lwoffii	28090	9.46	0.02	0.19	0.32	7
Elusimicrobia bacterium	2030800	9.26	0.02	0.16	0.16	233
Comamonas kerstersii	225992	7.94	0.02	0.14	0.17	160
Polaromonas sp. UBA5171	1947075	8.15	0.02	0.13	0.14	264
Raoultella sp.	1873496	8.16	0.02	0.15	0.15	186
Hydrogenophaga sp.	1904254	7.82	0.02	0.22	0.18	28
Rhodocyclaceae bacterium UBA5602	1952845	7.63	0.02	0.22	0.15	20
Betaproteobacteria bacterium UBA7395	1948463	7.82	0.02	0.13	0.14	200
Trichococcus sp.	1985464	7.63	0.02	0.22	0.14	25
Sulfurospirillum cavolei	366522	7.52	0.02	0.15	0.15	111
Betaproteobacteria bacterium UBA5582	1948460	7.54	0.02	0.10	0.11	284
Aeromonas veronii	654	7.27	0.02	0.14	0.22	138
Synergistaceae bacterium UBA5768	1952921	7.54	0.02	0.26	0.15	15
Syntrophus sp. (in: Bacteria)	48412	7.02	0.02	0.13	0.13	138
Comamonadaceae bacterium UBA4184	1951606	6.83	0.02	0.12	0.12	189
Spirochaetaceae bacterium UBA5630	1952893	6.98	0.02	0.25	0.38	18
Candidatus Aminicenantes bacterium UBA4820	1953195	7.08	0.02	0.19	0.19	36
Methanocellaceae archaeon UBA148	1915626	7.10	0.02	0.17	0.17	54
Massilia sp.	1882437	6.53	0.02	0.11	0.11	15
Dechloromonas sp. UBA6271	1946404	6.72	0.02	0.10	0.10	249
Moraxellaceae bacterium	1889775	6.61	0.02	0.13	0.13	127
Syntrophaceae bacterium UBA2175	1961419	6.18	0.02	0.41	0.93	6
Syntrophaceae bacterium UBA5612	1961441	6.24	0.02	0.22	0.18	15
Deltaproteobacteria bacterium UBA5609	1948553	6.28	0.02	0.14	0.11	64
Rhodospirillaceae bacterium UBA6219	1952862	6.05	0.02	0.11	0.11	176
Anaerolineaceae bacterium UBA4081	1951410	6.37	0.02	0.15	0.20	49
Thiobacillus denitrificans	36861	5.85	0.01	0.16	0.16	306
Syntrophaceae bacterium UBA4816	1961439	5.52	0.01	0.18	0.23	17
Desulfovibrionaceae bacterium UBA5546	1961564	5.16	0.01	0.16	0.63	22
Candidatus Omnitrophica bacterium	2035772	5.14	0.01	0.17	0.15	17
Desulfobacteraceae bacterium UBA4769	1961536	4.32	0.01	0.15	0.13	15
Geobacter sulfurreducens	35554	3.95	0.01	0.19	0.20	11
Dehalococcoidia bacterium UBA5620	1948504	3.76	0.01	0.10	0.10	32
Candidatus Yonathbacteria bacterium	2053650	3.68	0.01	0.13	0.13	14
Syntrophaceae bacterium UBA6078	1961449	3.62	<0.01	0.10	0.10	98
Deltaproteobacteria bacterium UBA4796	1948548	3.42	<0.01	0.14	0.14	10
Candidatus Levybacteria bacterium	2052151	3.46	<0.01	0.15	0.15	89
Nitrospiraceae bacterium	2026770	3.06	<0.01	0.11	0.13	12
Leptolinea sp. UBA4782	1946752	2.78	<0.01	0.22	0.11	5
Syntrophaceae bacterium UBA2251	1961426	2.51	<0.01	0.15	0.22	13
Syntrophaceae bacterium UBA5606	1961440	2.21	<0.01	0.14	0.14	16
Enterobacteriaceae bacterium UBA4747	1951690	2.01	<0.01	0.10	0.17	6
Holosporales bacterium	2053559	1.31	<0.01	0.29	0.29	67


Geobacter sp. UBA4050: 45.74%
Geobacter sulfurreducens isolate UBA9565: 0.01%
Desulfobulbaceae bacterium UBA5750: 1.56%
Desulfobulbaceae bacterium UBA2248: 1.34%
Desulfobulbaceae bacterium UBA5604: 1.21%
Desulfobulbaceae bacterium UBA4056: 1.18%
Desulfobulbaceae bacterium UBA2262: 0.06%
Desulfobulbaceae bacterium UBA2273: 1.63%
Desulfobulbaceae bacterium isolate UBA11700: 0.09%
Desulfobacteraceae bacterium UBA4769: 0.01%
Smithella sp. UBA6798: 0.83%
Syntrophaceae bacterium isolate UBA11801: 0.69%
Syntrophaceae bacterium UBA5761: 0.26%
Syntrophaceae bacterium UBA4090: 0.24%
Syntrophaceae bacterium UBA2207: 0.06%
Syntrophaceae bacterium UBA4793: 0.06%
Syntrophaceae bacterium UBA2175: 0.02%
Syntrophaceae bacterium UBA4065: 0.05%
Syntrophaceae bacterium UBA2251: 0.01%
Syntrophaceae bacterium UBA2192: 0.03%
Syntrophaceae bacterium UBA5612: 0.02%
Syntrophaceae bacterium UBA2188: 0.03%
Syntrophaceae bacterium UBA4816: 0.01%
Syntrophaceae bacterium UBA5606: 0.01%
Syntrophaceae bacterium UBA4059: 0.19%
Syntrophaceae bacterium UBA6078: 0.01%
Syntrophus sp. (in: Bacteria) isolate UBA9985: 0.02
Desulfovibrio sp. UBA4079: 0.58%
Desulfovibrionaceae bacterium UBA5842: 0.03%
Desulfovibrionaceae bacterium UBA5546: 0.01%
Desulfovibrionaceae bacterium UBA5821: 0.03%
Deltaproteobacteria bacterium UBA4796: 0.01%
Deltaproteobacteria bacterium isolate UBA9968: 0.83%
Deltaproteobacteria bacterium UBA5609: 0.02%
Sulfurospirillum cavolei isolate UBA11420: 0.02%
Sulfurospirillum sp. UBA1314: 0.05%
Methylotenera mobilis isolate UBA6707: 17.19%
Methylotenera sp. UBA6020: 0.04%
Thiobacillus denitrificans isolate UBA5601: 0.02%
Gallionellaceae bacterium UBA2239: 0.04%
Comamonas sp. UBA2122: 0.11%
Comamonas terrigena isolate UBA1883: 0.03%
Comamonas aquatica isolate UBA1287: 5.93%
Comamonas kerstersii isolate UBA11446: 0.02%
Delftia acidovorans isolate UBA7660: 0.14%
Delftia lacustris isolate UBA2300: 0.07%
Comamonadaceae bacterium isolate UBA8497: 0.38%
Comamonadaceae bacterium UBA4184: 0.02%
Comamonadaceae bacterium UBA6202: 0.05%
Comamonadaceae bacterium UBA4962: 0.03%
Rhodoferax sp. UBA6134: 0.31%
Polaromonas sp. UBA5171: 0.02%
Curvibacter sp. isolate UBA10131: 0.03%
Hydrogenophaga sp. isolate UBA12122: 0.02%
Acidovorax sp. isolate UBA10156: 0.31%
Acidovorax delafieldii isolate UBA2176: 2.58%
Alicycliphilus sp. UBA4115: 0.04%
Ralstonia sp. UBA689: 0.03%


Aquabacterium sp. UBA666: 0.05%
Burkholderiales bacterium UBA1834: 0.03%
Massilia sp UBA 7648 Branch: 0.02%
Rhodocyclaceae bacterium UBA5602: 0.02%
Rhodocyclaceae bacterium UBA6160: 0.08%
Dechloromonas sp. UBA6271: 0.02%
Betaproteobacteria bacterium UBA2592: 0.11%
Betaproteobacteria bacterium UBA7395: 0.02%
Betaproteobacteria bacterium UBA5582: 0.02%
Aeromonas sp. isolate UBA10730: 0.39%
Aeromonas hydrophila isolate UBA705: 0.05%
Aeromonas veronii isolate UBA1835: 0.02%
uncultured Aeromonas sp. isolate UMGS205: 0.13%
Stenotrophomonas maltophilia isolate UBA7508: 0.06%
Stenotrophomonas sp. isolate UBA11631: 0.03%
Shewanella sp. isolate UBA8824: 0.07%
Shewanella baltica isolate UBA8873: 0.04%
Raoultella sp. isolate UBA11302: 0.02%
Enterobacteriaceae bacterium UBA4747: 0.01%
Enterobacter cloacae UBA 4936 Branch: 0.03%
Moraxellaceae bacterium isolate UBA8513: 0.02%
Acinetobacter johnsonii isolate UBA2045: 0.03%
Acinetobacter lwoffii UBA 4042 Branch: 0.02%
Acinetobacter sp. UBA3060: 0.03%
uncultured Acinetobacter sp. isolate UMGS347: 0.06%
Pseudomonas fluorescens isolate UBA879: 0.33%
Pseudomonas rhodesiae isolate UBA2601: 0.08%
Pseudomonas stutzeri isolate UBA1169: 1.30%
Pseudomonas oleovorans isolate UBA6922: 0.05%
Pseudomonas mendocina isolate UBA1872: 0.08%
Pseudomonas aeruginosa UBA 3122 Branch: 0.13%
Pseudomonas nitroreducens isolate UBA6825: 0.07
Pseudomonas sp. isolate UBA8486: 0.26%
Pseudomonas kunmingensis isolate UBA7713: 0.06%
Gammaproteobacteria bacterium isolate UBA10833: 0.15%
Brevundimonas sp. UBA7838: 0.03%
Rhizobiaceae bacterium UBA1291: 0.03%
Holosporales bacterium UBA 8501 Branch: 0.00%
Rhodospirillaceae bacterium UBA6219: 0.02%
Paludibacter sp. UBA5753: 3.15%
Bacteroides graminisolvens isolate UBA11375: 1.94
Porphyromonadaceae bacterium isolate UBA12175:
Bacteroidales bacterium UBA5762: 0.05%
Bacteroidales bacterium UBA6254: 0.04%
Bacteroidales bacterium UBA2249: 0.08%
Bacteroidales bacterium UBA5733: 0.04%
Bacteroidales bacterium isolate UBA10519: 0.05%
Bacteroidales bacterium UBA4073: 0.04%
Spirochaetaceae bacterium UBA3743: 0.22%
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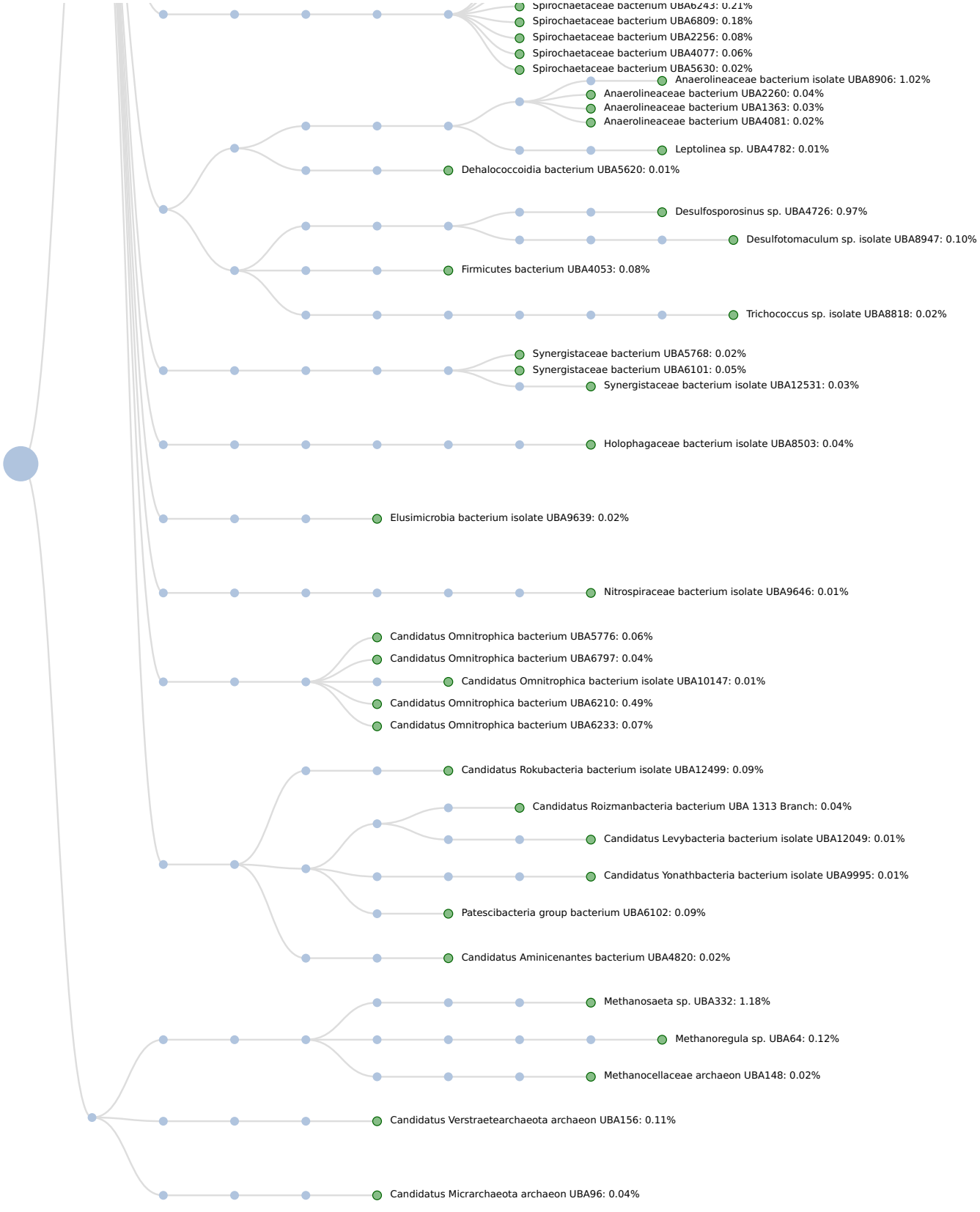
Spirochaetaceae bacterium UBA6243: 0.21%
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Spirochaetaceae bacterium UBA5630: 0.02%
Anaerolineaceae bacterium isolate UBA8906: 1.02%
Anaerolineaceae bacterium UBA2260: 0.04%
Anaerolineaceae bacterium UBA1363: 0.03%
Anaerolineaceae bacterium UBA4081: 0.02%
Leptolinea sp. UBA4782: 0.01%
Dehalococcoidia bacterium UBA5620: 0.01%
Desulfosporosinus sp. UBA4726: 0.97%
Desulfotomaculum sp. isolate UBA8947: 0.10%
Firmicutes bacterium UBA4053: 0.08%
Trichococcus sp. isolate UBA8818: 0.02%
Synergistaceae bacterium UBA5768: 0.02%
Synergistaceae bacterium UBA6101: 0.05%
Synergistaceae bacterium isolate UBA12531: 0.03%
Holophagaceae bacterium isolate UBA8503: 0.04%
Elusimicrobia bacterium isolate UBA9639: 0.02%
Nitrospiraceae bacterium isolate UBA9646: 0.01%
Candidatus Omnitrophica bacterium UBA5776: 0.06%
Candidatus Omnitrophica bacterium UBA6797: 0.04%
Candidatus Omnitrophica bacterium isolate UBA10147: 0.01%
Candidatus Omnitrophica bacterium UBA6210: 0.49%
Candidatus Omnitrophica bacterium UBA6233: 0.07%
Candidatus Rokubacteria bacterium isolate UBA12499: 0.09%
Candidatus Roizmanbacteria bacterium UBA 1313 Branch: 0.04%
Candidatus Levybacteria bacterium isolate UBA12049: 0.01%
Candidatus Yonathbacteria bacterium isolate UBA9995: 0.01%
Patescibacteria group bacterium UBA6102: 0.09%
Candidatus Aminicenantes bacterium UBA4820: 0.02%
Methanosaeta sp. UBA332: 1.18%
Methanoregula sp. UBA64: 0.12%
Methanocellaceae archaeon UBA148: 0.02%
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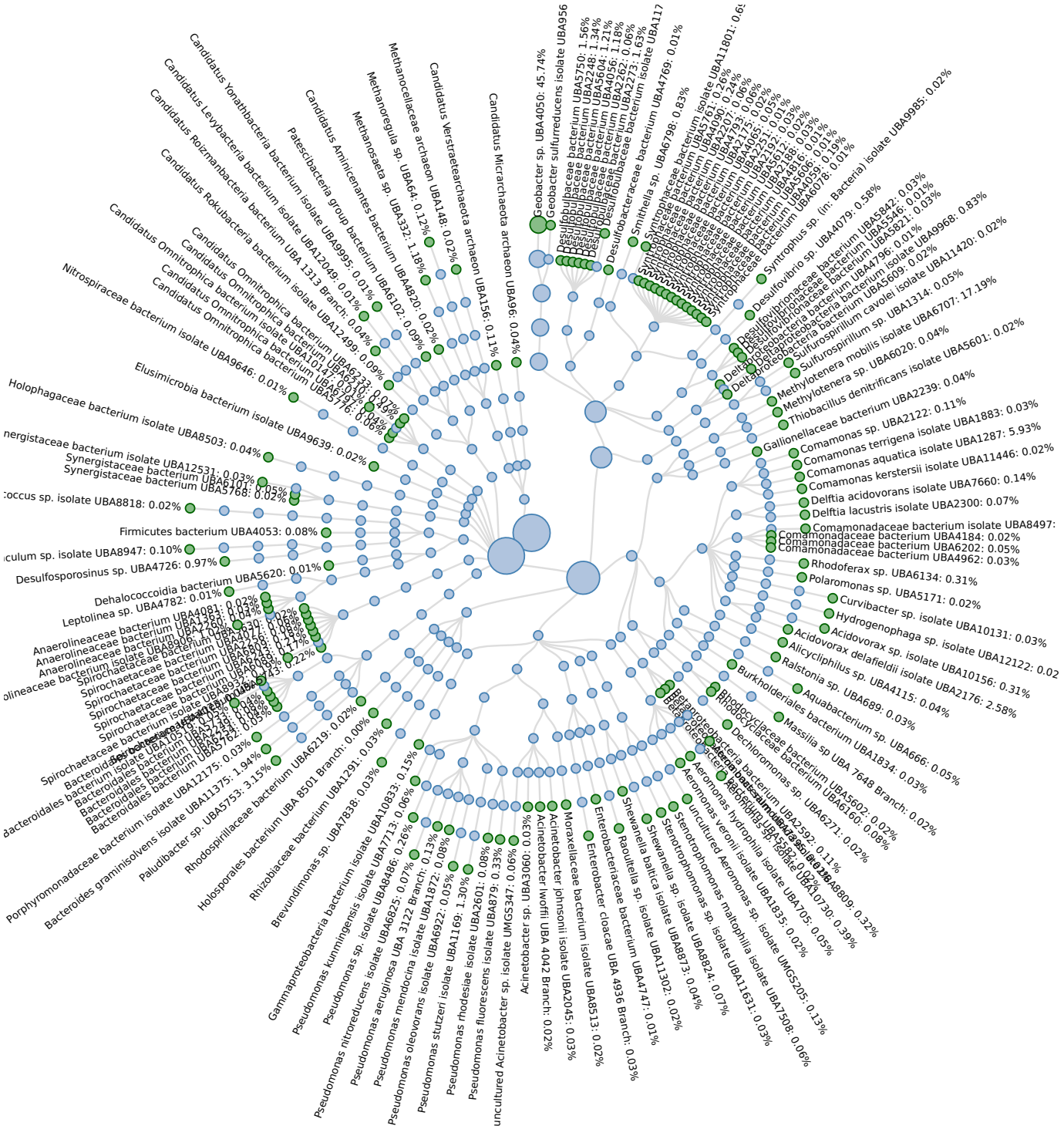
Candidatus Micrarchaeota archaeon UBA96: 0.04%


Candidatus Micrarchaeota archaeon UBA96: 0.04%
Geobacter sp. UBA4050: 45.74%
Geobacter sulfurreducens isolate UBA956
Desulfobulbaceae bacterium UBA5750: 1.56%
Desulfobulbaceae bacterium UBA2448: 1.34%
Desulfobulbaceae bacterium UBA5604: 1.21%
Desulfobulbaceae bacterium UBA4056: 1.18%
Desulfobulbaceae bacterium UBA2262: 0.06%
Desulfobacteraceae bacterium UBA2273: 1.63%
Desulfobacteraceae bacterium isolate UBA117
Smithella sp. UBA6798: 0.83%
Syntrophaceae bacterium UBA4769: 0.01%
Syntrophaceae bacterium isolate UBA11801: 0.6
Syntrophaceae bacterium UBA5761: 0.26%
Syntrophaceae bacterium UBA4090: 0.24%
Syntrophaceae bacterium UBA2207: 0.06%
Syntrophaceae bacterium UBA4791: 0.06%
Syntrophaceae bacterium UBA2175: 0.05%
Syntrophaceae bacterium UBA4065: 0.05%
Syntrophaceae bacterium UBA2221: 0.05%
Syntrophaceae bacterium UBA2192: 0.03%
Syntrophaceae bacterium UBA4612: 0.03%
Syntrophaceae bacterium UBA2188: 0.02%
Syntrophaceae bacterium UBA4806: 0.02%
Syntrophaceae bacterium UBA4059: 0.01%
Syntrophaceae bacterium UBA6078: 0.01%
Syntrophus sp. (in: Bacteria) isolate UBA9985: 0.02%
Desulfovibrio sp. UBA4079: 0.58%
Desulfovibrionaceae bacterium UBA5842: 0.03%
Desulfovibrionaceae bacterium UBA5546: 0.01%
Desulfovibrionaceae bacterium UBA5821: 0.03%
Desulfovibrionaceae bacterium UBA4796: 0.01%
Desulfovibrionaceae bacterium isolate UBA9968: 0.83%
Deltaproteobacteria bacterium UBA5609: 0.02%
Deltaproteobacteria bacterium isolate UBA11420: 0.02%
Sulfurospirillum cavolei isolate UBA1314: 0.05%
Sulfurospirillum sp. UBA6707: 17.19%
Methylotenera mobilis isolate UBA6020: 0.04%
Methylotenera sp. UBA5601: 0.02%
Thiobacillus denitrificans isolate UBA2239: 0.04%
Gallionellaceae bacterium UBA2122: 0.11%
Comamonas sp. UBA1883: 0.03%
Comamonas terrigena isolate UBA1287: 5.93%
Comamonas aquatica isolate UBA11446: 0.02%
Comamonas kerstersii isolate UBA7660: 0.14%
Delftia acidovorans isolate UBA2300: 0.07%
Delftia lacustris isolate UBA8497:
Comamonadaceae bacterium UBA4184: 0.02%
Comamonadaceae bacterium UBA6202: 0.05%
Comamonadaceae bacterium UBA4962: 0.03%
Rhodoferax sp. UBA6134: 0.31%
Polaromonas sp. UBA5171: 0.02%
Curvibacter sp. isolate UBA10131: 0.03%
Hydrogenophaga sp. isolate UBA12122: 0.02
Acidovorax sp. isolate UBA10156: 0.31%
Acidovorax delafieldii isolate UBA2176: 2.58%
Alicycliphilus sp. UBA4115: 0.04%
Ralstonia sp. UBA689: 0.03%
Aquabacterium sp. UBA666: 0.05%
Massilia sp UBA 7648 Branch: 0.02%
Burkholderiales bacterium UBA1834: 0.03%
Rhodocyclaceae bacterium UBA5602: 0.02%
Dechloromonas sp. UBA6271: 0.02%
Rhodocyclaceae bacterium UBA6160: 0.08%
Aeromonas hydrophila UBA1835: 0.02%
Aeromonas veronii isolate UBA1730: 0.39%
uncultured Aeromonas sp. isolate UMGS205: 0.13%
Stenotrophomonas maltophilia isolate UBA7508: 0.06%
Stenotrophomonas sp. isolate UBA8824: 0.07%
Shewanella baltica isolate UBA8873: 0.04%
Shewanella sp. isolate UBA11302: 0.02%
Raoultella sp. isolate UBA4747: 0.01%
Enterobacteriaceae bacterium UBA 4936 Branch: 0.03%
Enterobacter cloacae UBA8513: 0.02%
Moraxellaceae bacterium isolate UBA2045: 0.03%
Acinetobacter johnsonii isolate UBA 4042 Branch: 0.02%
Acinetobacter sp. UBA3060: 0.03%
uncultured Acinetobacter sp. isolate UMGS347: 0.06%
Pseudomonas fluorescens isolate UBA879: 0.33%
Pseudomonas rhodesiae isolate UBA2601: 0.08%
Pseudomonas stutzeri isolate UBA1169: 1.30%
Pseudomonas oleovorans isolate UBA6922: 0.05%
Pseudomonas mendocina isolate UBA1872: 0.08%
Pseudomonas aeruginosa UBA 3122 Branch: 0.13%
Pseudomonas sp. isolate UBA8486: 0.26%
Pseudomonas nitroreducens isolate UBA6825: 0.07%
Pseudomonas kunmingensis isolate UBA7713: 0.06%
Gammaproteobacteria bacterium isolate UBA10833: 0.15%
Brevundimonas sp. UBA7838: 0.03%
Rhizobiaceae bacterium UBA 8501 Branch: 0.00%
Holosporales bacterium UBA1291: 0.03%
Rhodospirillaceae bacterium UBA6219: 0.02%
Paludibacter sp. UBA5753: 3.15%
Paludibacter isolate UBA11375: 1.94%
Bacteroides graminisolvens isolate UBA12175: 0.03%
Porphyromonadaceae bacterium UBA5762: 0.03%
Bacteroidales bacterium UBA2234: 0.04%
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Bacteroidales bacterium isolate UBA10376: 0.04%
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Dark Matter (Beta)

Sunburst Chart Taxonomy

1B-90-1_MBPO210215-A

Total results

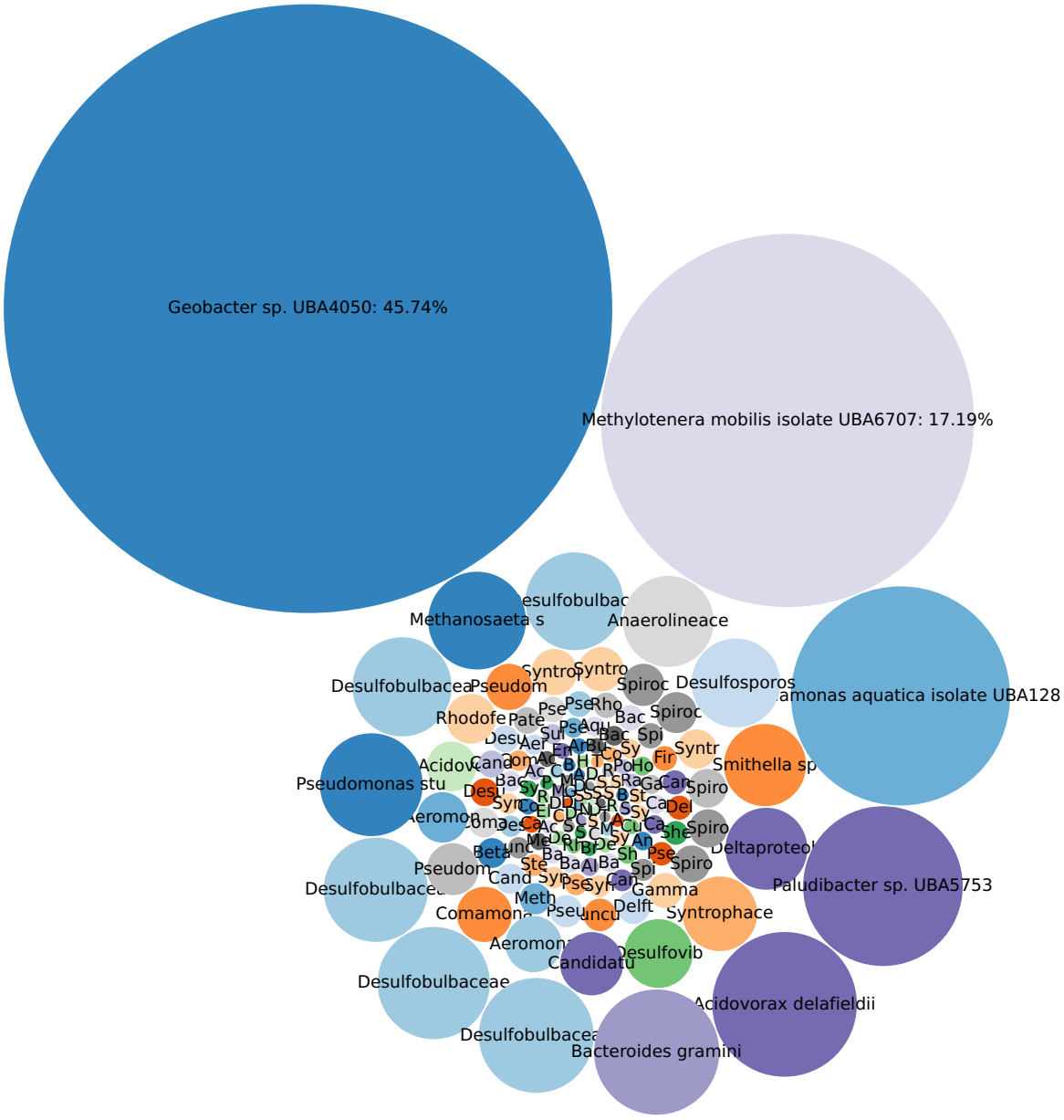


Dark Matter (Beta)

Bubble Chart Taxonomy

1B-90-1_MBPO210215-A

Total results



Phages

1B-90-1_MBPO210215-A

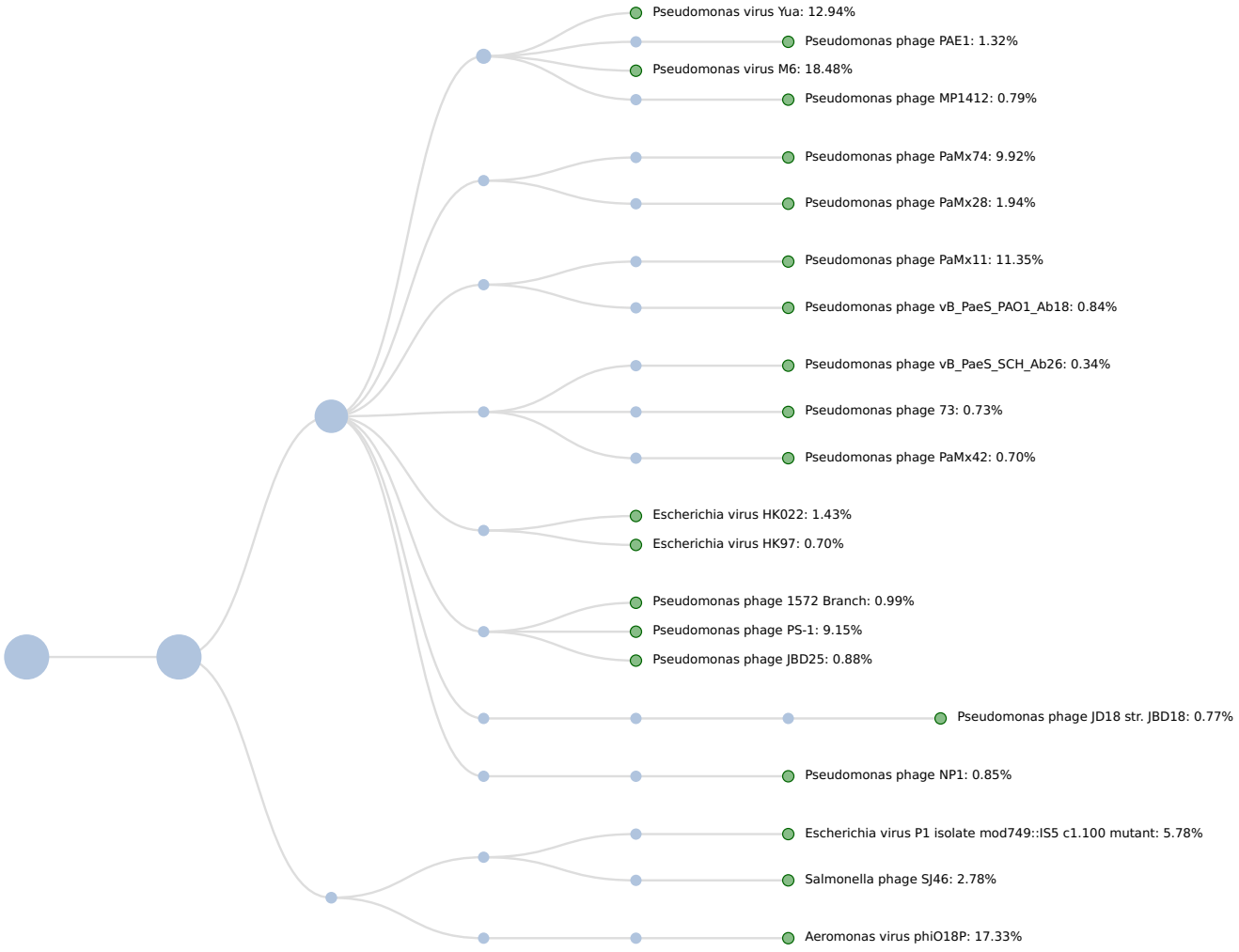
Fasta/q details

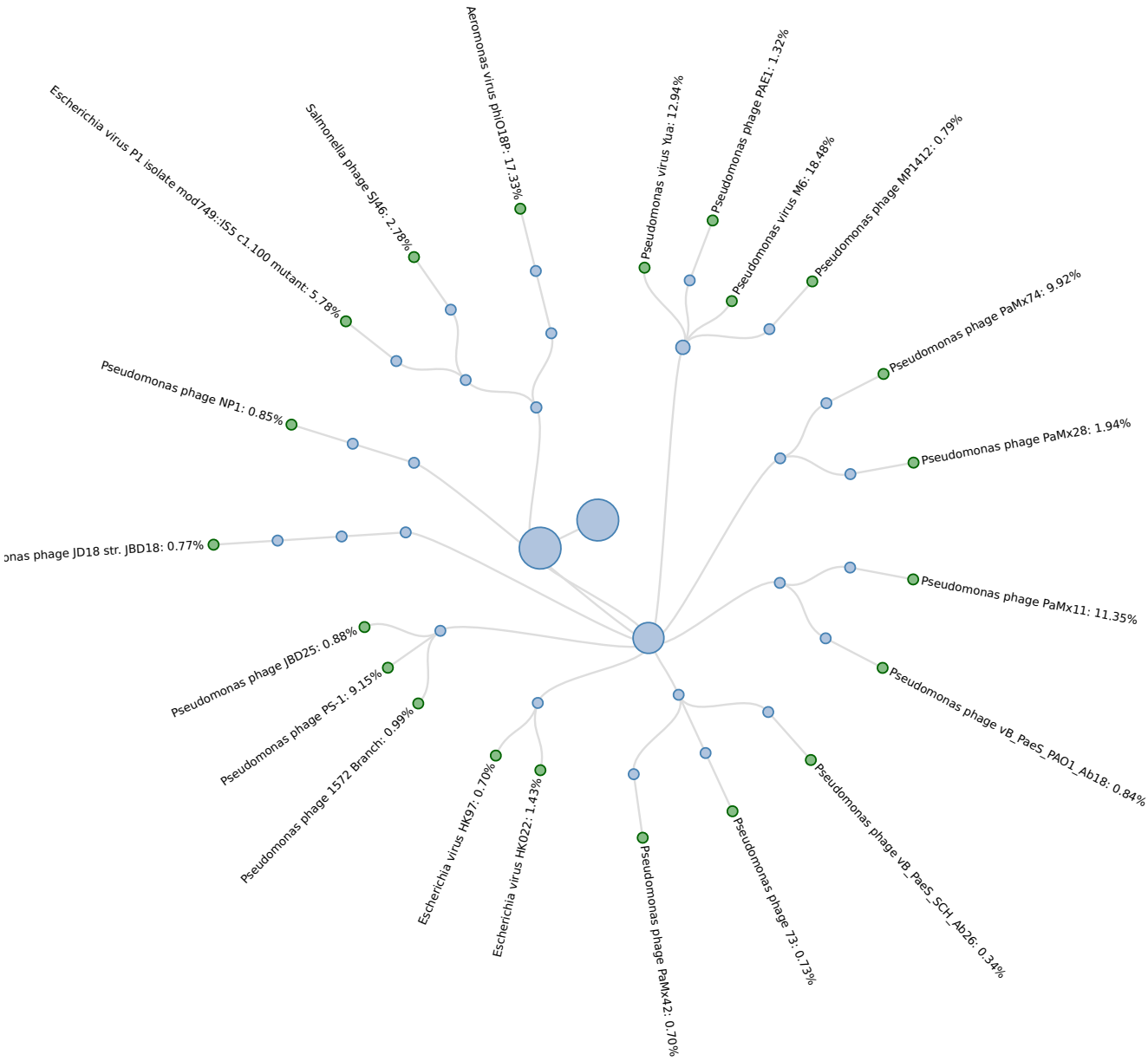
Total results

Metric	Value
Hit	1.470k

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudomonas virus M6	347328	257.71	18.48	2.14	4.76	120
Aeromonas virus phiO18P	393598	241.65	17.33	3.73	3.73	493
Pseudomonas virus Yua	462590	180.37	12.94	1.78	3.66	214
Pseudomonas phage PaMx11	1175657	158.28	11.35	2.38	2.46	467
Pseudomonas phage PaMx74	1175663	138.33	9.92	2.01	2.20	403
Pseudomonas phage PS-1	1573458	127.63	9.15	1.97	1.97	447
Escherichia virus P1	10678	80.57	5.78	1.68	0.89	1045
Salmonella phage SJ46	1815968	38.76	2.78	0.90	0.56	244
Pseudomonas phage PaMx28	1175659	27.00	1.94	0.56	0.78	100
Escherichia virus HK022	10742	19.87	1.43	0.65	0.62	17
Pseudomonas phage PAE1	1718273	18.36	1.32	0.46	3.81	40
unclassified Siphoviridae	196894	13.78	0.99	1.19	0.89	1167
Pseudomonas phage JBD25	1225792	12.24	0.88	0.13	0.28	104
Pseudomonas phage NP1	1844477	11.87	0.85	0.15	0.15	167
Pseudomonas phage vB_PaeS_PAO1_Ab18	1548905	11.71	0.84	0.28	0.52	50
Pseudomonas phage MP1412	1204517	10.99	0.79	0.30	3.75	30
Pseudomonas phage JD18	1225791	10.68	0.77	0.20	0.25	52
Pseudomonas phage 73	347325	10.13	0.73	0.35	0.27	14
Pseudomonas phage PaMx42	1175662	9.75	0.70	0.16	0.22	99
Escherichia virus HK97	37554	9.72	0.70	0.31	0.23	18
Pseudomonas phage vB_PaeS_SCH_Ab26	1476390	4.81	0.34	0.17	0.20	14


Pseudomonas virus Yua: 12.94%
Pseudomonas phage PAE1: 1.32%
Pseudomonas virus M6: 18.48%
Pseudomonas phage MP1412: 0.79%
Pseudomonas phage PaMx74: 9.92%
Pseudomonas phage PaMx28: 1.94%
Pseudomonas phage PaMx11: 11.35%
Pseudomonas phage vB_PaeS_PAO1_Ab18: 0.84%
Pseudomonas phage vB_PaeS_SCH_Ab26: 0.34%
Pseudomonas phage 73: 0.73%
Pseudomonas phage PaMx42: 0.70%
Escherichia virus HK022: 1.43%
Escherichia virus HK97: 0.70%
Pseudomonas phage 1572 Branch: 0.99%
Pseudomonas phage PS-1: 9.15%
Pseudomonas phage JBD25: 0.88%
Pseudomonas phage JD18 str. JBD18: 0.77%
Pseudomonas phage NP1: 0.85%
Escherichia virus P1 isolate mod749::IS5 c1.100 mutant: 5.78%
Salmonella phage SJ46: 2.78%
Aeromonas virus phiO18P: 17.33%


Escherichia virus P1 isolate mod749::IS5 c1.100 mutant: 5.78%
Salmonella phage SJ46: 2.78%
Aeromonas virus phiO18P: 17.33%
Pseudomonas virus Yua: 12.94%
Pseudomonas phage PAE1: 1.32%
Pseudomonas virus M6: 18.48%
Pseudomonas phage MP1412: 0.79%
Pseudomonas phage PaMx74: 9.92%
Pseudomonas phage PaMx28: 1.94%
Pseudomonas phage NP1: 0.85%
onas phage JD18 str. JBD18: 0.77%
Pseudomonas phage PaMx11: 11.35%
Pseudomonas phage vB_PaeS_PAO1_Ab18: 0.84%
Pseudomonas phage JBD25: 0.88%
Pseudomonas phage PS-1: 9.15%
Pseudomonas phage 1572 Branch: 0.99%
Escherichia virus HK97: 0.70%
Escherichia virus HK022: 1.43%
Pseudomonas phage PaMx42: 0.70%
Pseudomonas phage 73: 0.73%
Pseudomonas phage vB_PaeS_SCH_Ab26: 0.34%

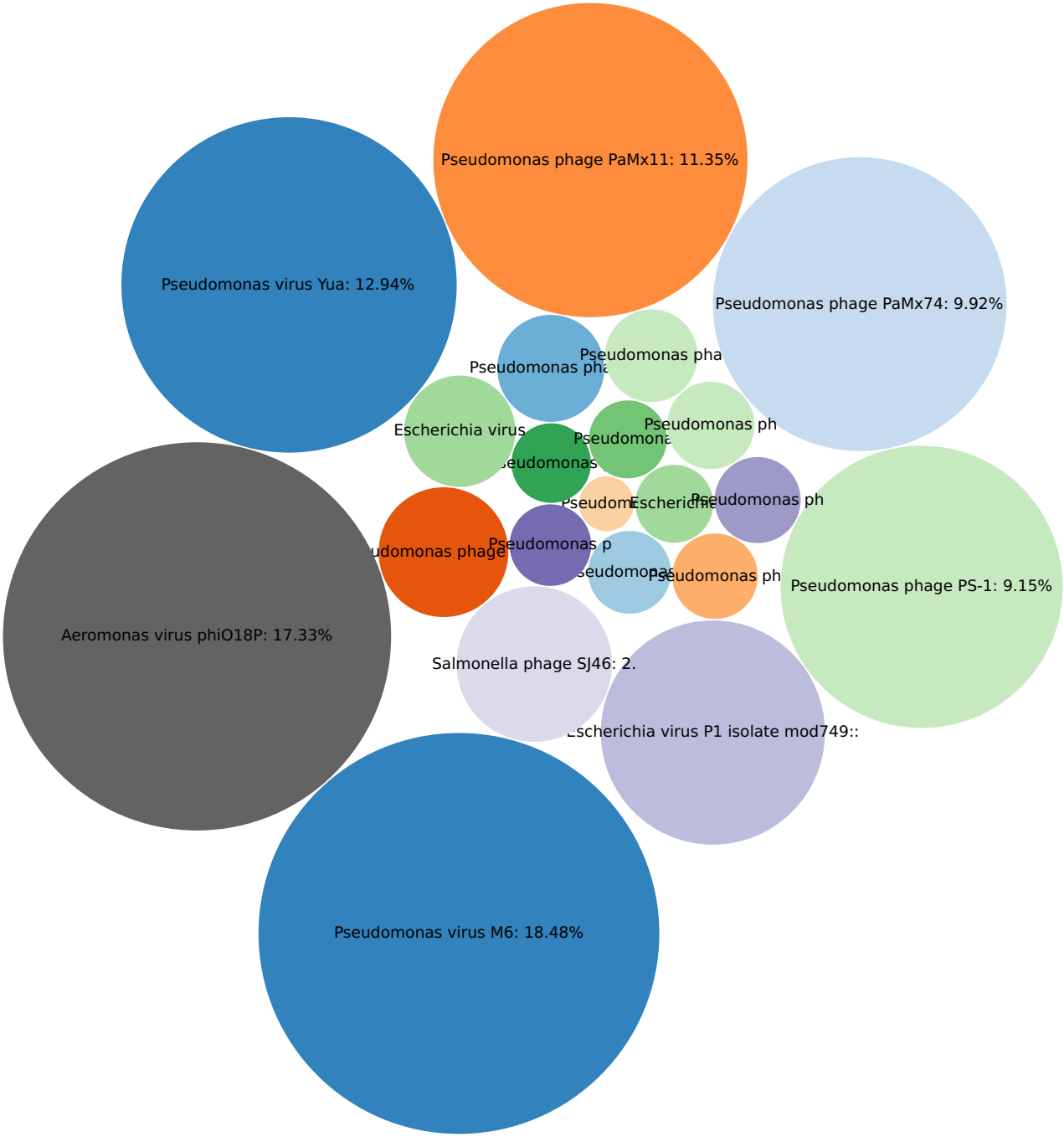
Phages

Sunburst Chart Taxonomy

1B-90-1_MBPO210215-A

Total results




Pseudomonas phage PaMx11: 11.35%
Pseudomonas virus Yua: 12.94%
Pseudomonas phage PaMx74: 9.92%
Pseudomonas pha
Pseudomonas ph
Escherichia virus
Pseudomonas ph
Pseudomonas phage PS-1: 9.15%
Aeromonas virus phiO18P: 17.33%
Salmonella phage SJ46: 2.
Pseudomonas virus M6: 18.48%

Virulence Factors

1B-90-1_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	2.183k

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Enterobacter aerogenes GENE tniA	-	21922.47	22.10	100.00	100.00	4842
Enterobacter aerogenes GI 1572570	-	17501.27	17.64	99.19	99.19	3120
Enterobacter aerogenes GENE tniB	-	16140.18	16.27	99.00	99.00	1721
Salmonella Typhimurium GI 46019645	-	6809.35	6.86	73.91	73.91	885
Enterobacter aerogenes GENE tniC	-	6077.02	6.13	78.89	78.89	424
Pseudomonas aeruginosa GENE tnpR	-	5674.32	5.72	29.78	29.78	1409
Citrobacter freundii GENE tnpAcp2	-	5050.32	5.09	53.43	53.43	830
Pseudomonas aeruginosa GENE intI1	-	3930.57	3.96	96.00	96.00	48
Klebsiella pneumoniae GENE tnpA	-	3009.78	3.03	53.55	53.55	176
Pseudomonas aeruginosa GENE pilU	-	2515.52	2.54	14.24	14.24	598
Pseudomonas aeruginosa GENE pilT	-	2203.33	2.22	17.86	17.86	413
Pseudomonas aeruginosa GENE qacEdelta1	-	1861.07	1.88	16.13	16.13	72
Pseudomonas aeruginosa GENE tnpA	-	1725.69	1.74	13.13	13.13	1687
Pseudomonas aeruginosa GI 3342496	-	1658.32	1.67	35.37	35.37	87
Salmonella Infantis GENE tnpR	-	1004.62	1.01	25.00	25.00	41
Pseudomonas aeruginosa GENE pilG	-	854.53	0.86	11.29	11.29	91
Pseudomonas aeruginosa GENE flgG	-	710.34	0.72	10.25	10.25	117
Enterobacter aerogenes GENE trbD	-	563.69	0.57	19.23	19.23	15

Genomic Sequencing Report

Microbac Oak Ridge WO# Z1B0090-03 **3/17/2021**

Client: Stantec

Sample Project: PHL- Belmont Terminal Drilling Sampling

Sample ID: BT-14-W-65-20210210

Summary:

- There were 5.476 Million reads for this sample and the file size was 1.09 GiB.
- There were 169 identifications (ID's) in the bacterial data set.
- There were 4 identifications in the antibiotic resistance data set.
- There were 14 identifications in the fungal data set.
- There were 8 identifications in the protists data set.
- There were 84 identifications in the Dark Matter data set.
- There were 4 identifications in the phages data set.
- There were 0 identifications in the virus data set.
- There were 18 virulence factors identified in the data set.

The Oak Ridge Microbac laboratory uses the CosmosID bioinformatics pipeline and cloud computing platform for analysis and report generation. The report consists of tables and figures for bacteria, antibiotic resistance genes, fungi, protists, phages, viruses, and virulence genes.

Report Definitions

- **Name:** The name for the organism or taxonomic level or the name of the antibiotic resistance gene or virulence factor.
- **Calls at different taxonomic levels:** In the results there may be some calls at sub-species or strain level and others at species or genus level or higher. CosmosID calls the lowest level possible based on the identification of unique kmers that match the reference genomes. If identification was not possible at strain level, for example, there will be a try to make an identification at species level etc.
- **Tax ID:** The tax id is the NCBI taxonomic id for the organism.
- **Frequency:** The number of unique kmer occurrences in the queried sample. This is roughly equivalent to the number of reads that matched to the organism identified.

- **Unique Matches:** Unique matches percent is the amount of unique kmers that were found in the sample for an organism out of the total possible number of kmers in the database that are unique to that organism.
- **Total Matches:** The shared plus unique matches divided by the pre-calculated shared plus unique matches possible in the reference database.
- **Relative Abundance:** Relative abundance is calculated based on the number of organism specific kmers and their observed frequency in the sample and then normalized to represent the abundance of each organism.

Bacteria

1B-90-3_MBPO210215-A

Fasta/q details

Total results

Metric	Value
Hit	1.460M

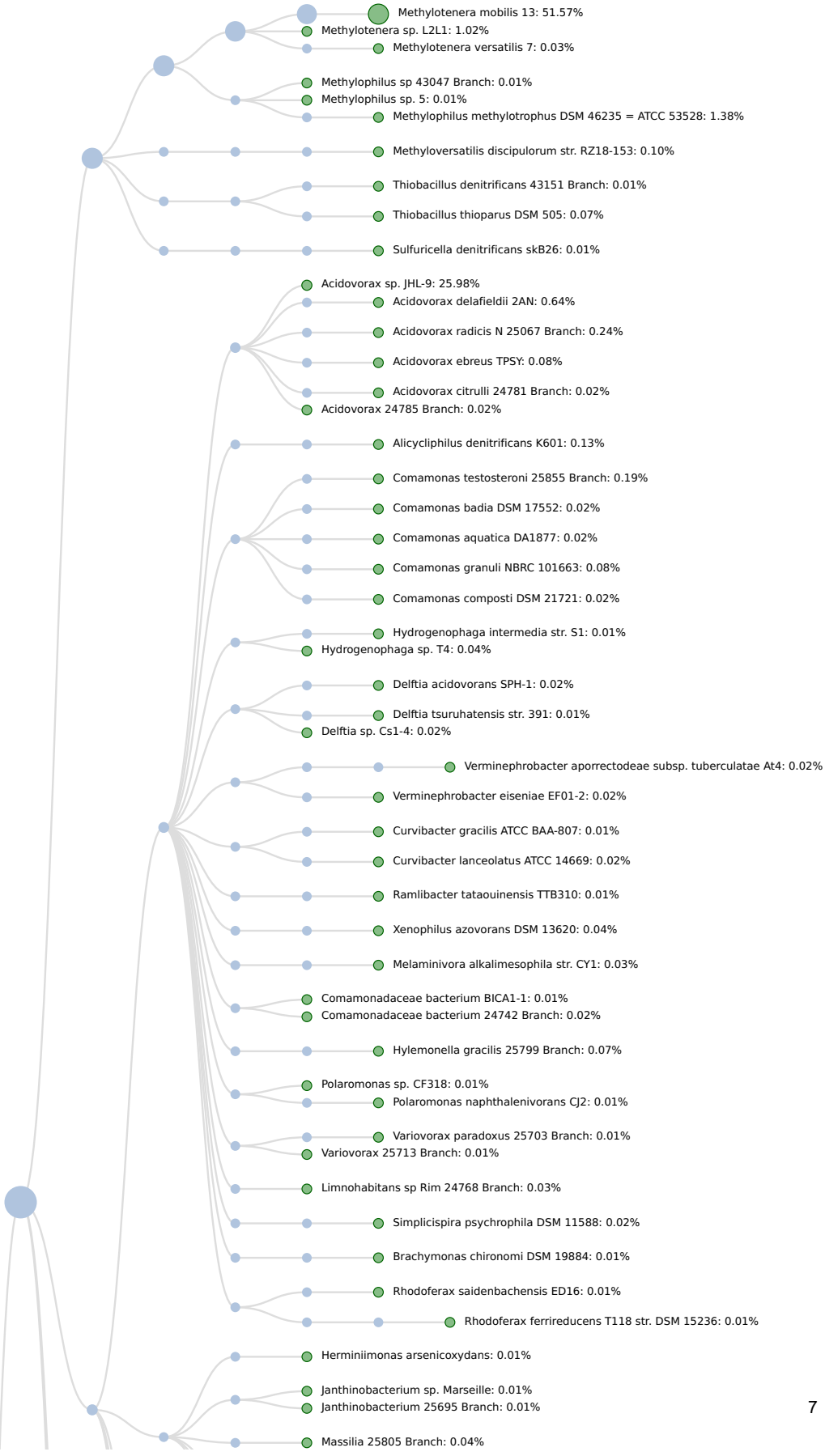
Table

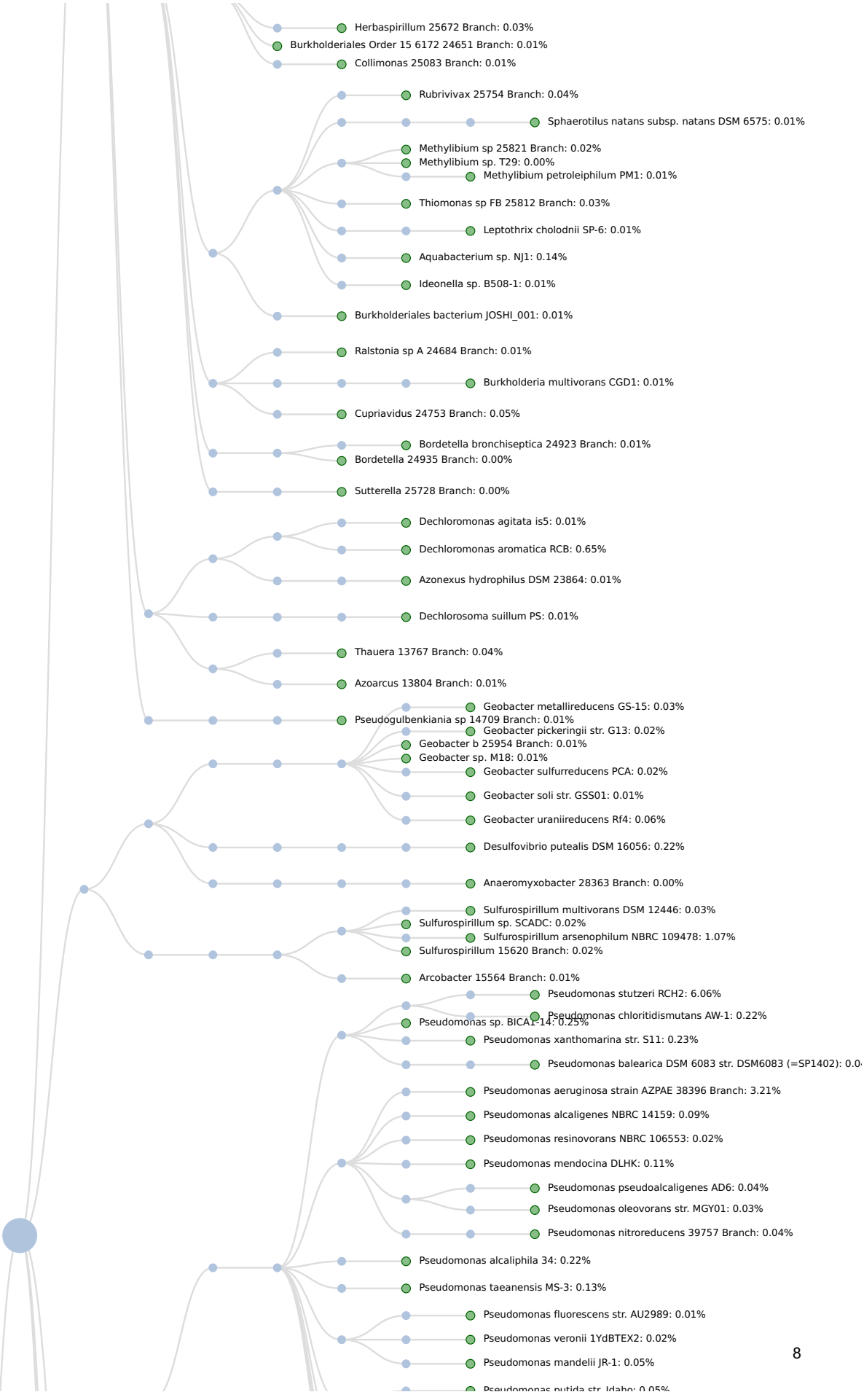
Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Methylotenera mobilis 13	1132855	59477.56	51.57	80.00	80.66	2933972
Acidovorax sp. JHL-9	1276756	29967.70	25.98	42.42	44.18	1784256
Pseudomonas stutzeri RCH2	644801	6989.26	6.06	47.63	48.51	178451
Pseudomonas aeruginosa	287	3701.73	3.21	57.18	57.18	357
Shewanella sp. POL2	1201295	1826.43	1.58	12.04	18.29	13841
Methylophilus methylotrophus DSM 46235 = ATCC 53528	1122236	1595.29	1.38	14.00	14.09	35439
Sulfurospirillum arsenophilum NBRC 109478	1349789	1237.75	1.07	9.99	10.32	33147
Methylotenera sp. L2L1	1502770	1177.30	1.02	4.10	8.47	60570
Dechloromonas aromatica RCB	159087	753.03	0.65	7.25	7.30	17604
Acidovorax delafieldii 2AN	573060	734.26	0.64	2.68	4.40	33325
Shewanella xiamenensis	332186	385.43	0.33	2.72	14.00	2989
Sphingobium xenophagum QYY	1192759	382.57	0.33	2.88	5.67	4770
Methylobacterium sp. UNCCL110	1449057	345.68	0.30	2.03	4.46	3382
Shewanella putrefaciens CN-32	319224	313.64	0.27	1.61	5.21	736
Brevundimonas sp. EAKA	1495854	297.60	0.26	2.55	4.53	3279
Pseudomonas sp. BICA1-14	1619235	285.95	0.25	1.55	3.37	4611
Acidovorax radicis	758826	272.68	0.24	1.89	2.32	14374
Pseudomonas xanthomarina	271420	264.59	0.23	1.29	4.06	1562
Pseudomonas alcaliphila 34	1248438	254.35	0.22	1.45	1.61	12683
Pseudomonas chloritidismutans AW-1	1263865	251.11	0.22	1.27	3.70	1837
Desulfovibrio putealis DSM 16056	1121462	250.50	0.22	2.72	2.72	6485
Comamonas testosteroni	285	215.31	0.19	0.18	0.12	103
Methylobacterium oryzae CBMB20	693986	200.53	0.17	1.10	4.39	1293
Aquabacterium sp. NJ1	1538295	165.02	0.14	1.06	1.06	10747
Pseudomonas taeanensis MS-3	1395571	150.60	0.13	0.47	0.49	13955
Alicycliphilus denitrificans K601	596154	146.77	0.13	1.17	0.68	8456
Pseudomonas mendocina DLHK	1197721	124.90	0.11	0.43	0.39	6701
Methyloversatilis discipulorum	1119528	115.58	0.10	1.13	1.34	2481
Pseudomonas alcaligenes NBRC 14159	1215092	107.61	0.09	0.88	1.13	31466
Geothrix fermentans DSM 14018	1121920	106.96	0.09	1.30	1.31	2388
Rhizobium selenitireducens ATCC BAA-1503	1336235	101.40	0.09	1.21	1.23	2722
Acidovorax ebreus TPSY	535289	92.58	0.08	0.44	0.57	5202
Comamonas granuli NBRC 101663	1223521	91.31	0.08	0.48	0.48	6887
Bradyrhizobium japonicum	375	88.17	0.08	1.19	1.07	2634
Hylemonella gracilis	80880	83.05	0.07	0.58	0.58	331
Sphingobium yanoikuyae XLDN2-5	1074493	78.25	0.07	0.93	0.67	2158
Novosphingobium subterraneum	48936	76.66	0.07	0.95	0.97	2183
Thiobacillus thioparus DSM 505	1123393	75.32	0.07	0.93	0.94	2111
Pseudomonas syringae group	136849	74.03	0.06	1.29	1.29	3
Geobacter uraniireducens Rf4	351605	66.43	0.06	0.84	0.84	1938
Desulfosporosinus sp. BICA1-9	1531958	63.47	0.06	0.77	0.86	2154
Pseudomonas putida str. Idaho	1079364	58.74	0.05	1.10	0.64	2055
Desulfosporosinus	79206	58.28	0.05	2.28	8.67	9
Cupriavidus	106589	56.69	0.05	0.12	0.11	9
Pseudomonas mandelii JR-1	1147786	52.20	0.04	0.65	0.67	1740
Thauera	33057	48.76	0.04	0.50	0.60	9
Pseudomonas nitroreducens	46680	48.34	0.04	0.16	0.18	333

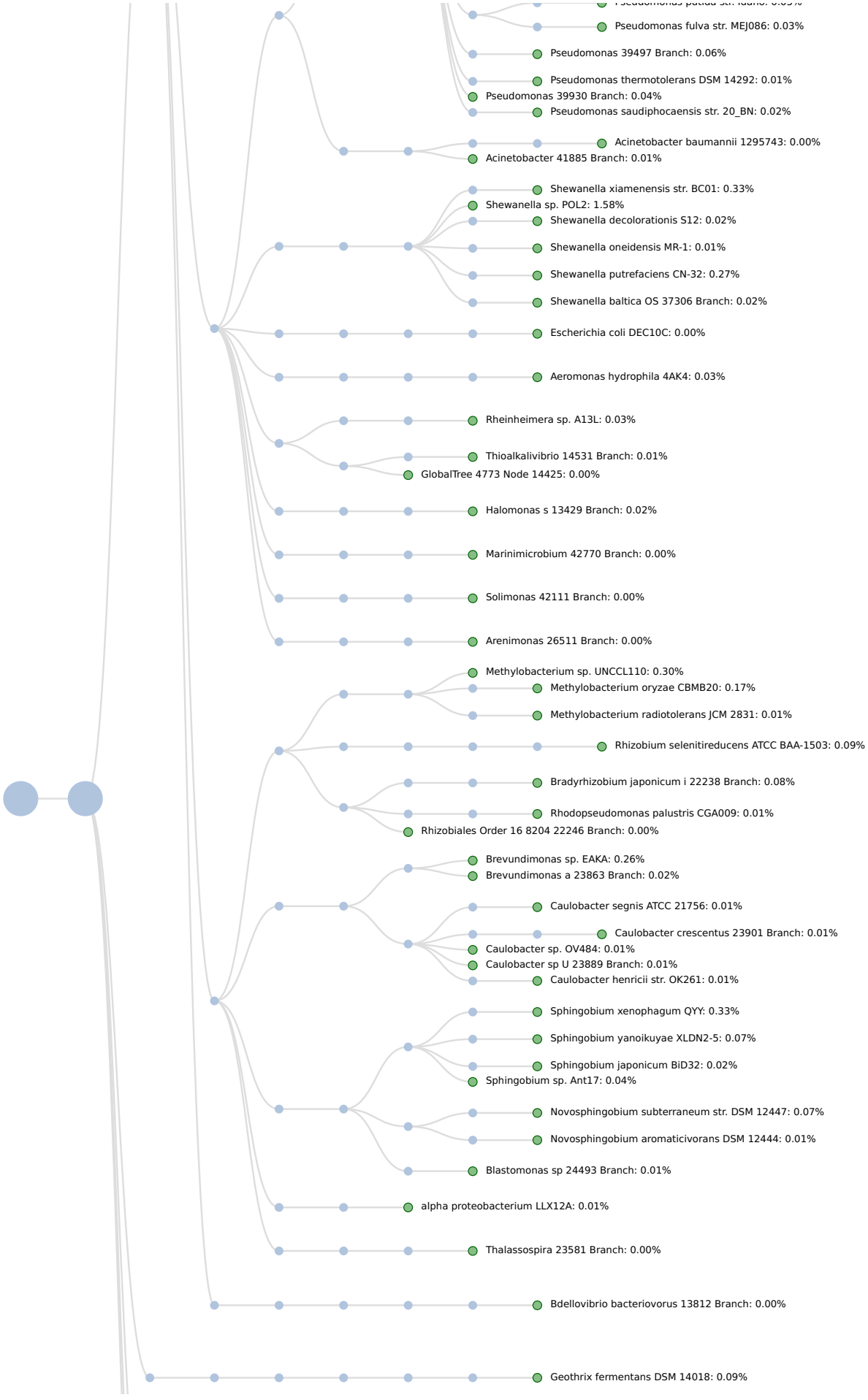
Hydrogenophaga sp. T4	1437444	47.27	0.04	0.40	2.76	3186
Xenophilus azovorans DSM 13620	1123504	46.94	0.04	0.28	0.51	4044
Massilia	149698	46.27	0.04	1.17	1.17	20
Rubrivivax	28067	46.60	0.04	0.39	0.42	403
Pseudomonas balearica DSM 6083	1123016	45.90	0.04	0.57	0.29	952
Pseudomonas pseudoalcaligenes AD6	1453503	45.98	0.04	0.20	0.31	4573
Pseudomonas	286	42.56	0.04	0.27	0.27	60
Sphingobium sp. Ant17	1461752	42.68	0.04	0.56	0.71	1366
Aeromonas hydrophila 4AK4	1354302	37.94	0.03	0.52	0.60	1033
Melaminivora alkalimesophila	1165852	37.01	0.03	0.29	0.31	2467
Rheinheimera sp. A13L	506534	37.28	0.03	0.49	0.49	1268
Herbaspirillum	963	35.24	0.03	0.24	0.24	27
Pseudomonas fulva	47880	35.77	0.03	0.15	0.20	3759
Methylotenera versatilis 7	1101193	34.33	0.03	0.17	0.18	2653
Geobacter metallireducens GS-15	269799	33.31	0.03	0.68	10.73	101
Dehalobacter sp. UNSWDHB	1339256	33.56	0.03	0.57	0.31	261
Pseudomonas oleovorans	301	32.08	0.03	0.17	0.23	2183
Sulfurospirillum multivorans DSM 12446	1150621	29.55	0.03	0.36	0.76	1305
Limnohabitans	665874	29.19	0.03	0.38	0.38	16
Thiomonas	32012	29.38	0.03	1.10	1.10	9
Halomonas	2745	28.31	0.03	0.34	0.34	33
Acidovorax	12916	27.96	0.02	0.12	0.18	1022
Pseudomonas veronii 1YdBTEX2	1295141	27.36	0.02	0.21	0.35	1717
Simplicispira psychrophila DSM 11588	1123255	26.22	0.02	0.21	0.21	2120
Geobacter sulfurreducens PCA	243231	26.40	0.02	0.44	0.28	274
Acidovorax citrulli	80869	24.35	0.02	0.12	0.18	1524
Geobacter pickeringii	345632	23.08	0.02	0.30	0.63	946
Brevundimonas	41275	22.65	0.02	1.41	1.41	4
Sphingobium japonicum BiD32	1301087	23.51	0.02	0.33	0.76	791
Comamonas aquatica DA1877	1457173	21.43	0.02	0.17	0.21	1605
Verminephrobacter aporrectodeae subsp. tuberculatae At4	565443	21.54	0.02	0.15	0.16	1988
Curvibacter lanceolatus ATCC 14669	1265504	21.80	0.02	0.22	0.31	1470
Comamonas badia DSM 17552	1121348	20.83	0.02	0.13	0.13	1917
Verminephrobacter eiseniae EF01-2	391735	20.30	0.02	0.16	0.17	1772
Sulfurospirillum	57665	19.91	0.02	0.51	5.65	12
Pseudomonas saudiphocaensis	1499686	19.61	0.02	0.13	0.13	1835
Shewanella decolorationis S12	1353536	19.82	0.02	0.28	1.64	726
Shewanella baltica	62322	19.49	0.02	0.11	0.46	13
Desulfosporosinus youngiae DSM 17734	768710	20.12	0.02	0.28	0.28	759
Comamonas composti DSM 21721	1121349	18.95	0.02	0.12	0.12	1881
Delftia acidovorans SPH-1	398578	18.60	0.02	0.17	0.52	965
unclassified Comamonadaceae	83494	18.79	0.02	0.13	0.17	95
Methylibium	316612	18.26	0.02	0.16	0.17	481
Sulfurospirillum sp. SCADC	1537915	18.49	0.02	0.24	0.59	840
Pseudomonas resinovorans NBRC 106553	1245471	18.06	0.02	0.12	0.16	1780
Thiobacillus denitrificans	36861	17.20	0.01	0.68	1.03	5
Delftia sp. Cs1-4	742013	17.56	0.01	0.20	0.51	746
Brachymonas chironomi DSM 19884	1121116	17.34	0.01	0.17	0.17	1195
Herminiimonas arsenicoxydans	204773	16.90	0.01	0.25	0.31	633
Dechlorosoma suillum PS	640081	17.07	0.01	0.24	0.25	654
Variovorax paradoxus	34073	16.13	0.01	0.12	0.15	107
Dechloromonas agitata is5	1304883	16.71	0.01	0.24	0.35	649
Methylophilus	16	15.23	0.01	0.11	0.67	109
Ramlibacter tataouinensis TTB310	365046	14.99	0.01	0.14	0.14	4168
Janthinobacterium sp. Marseille	375286	15.07	0.01	0.19	0.26	831

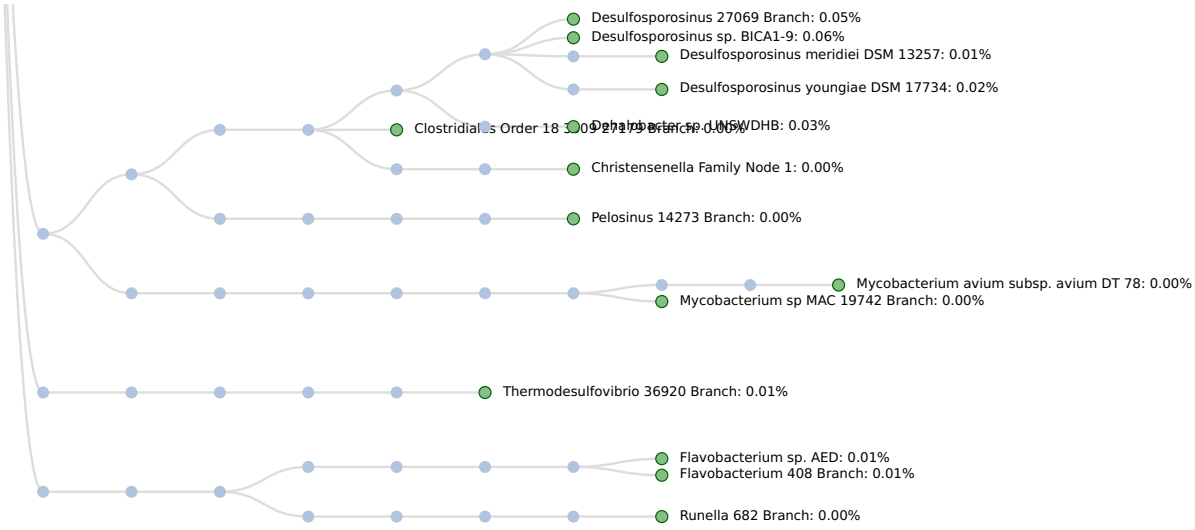
Leptothrix cholodnii SP-6	395495	15.28	0.01	0.16	0.17	1070
alpha proteobacterium LLX12A	1229484	15.08	0.01	0.23	0.25	465
Curvibacter gracilis ATCC BAA-807	1336244	13.73	0.01	0.13	0.26	1096
Polaromonas sp. CF318	1144318	13.72	0.01	0.10	0.11	1328
Bordetella bronchiseptica	518	14.16	0.01	0.44	0.31	21
Geobacter sp. M18	443143	14.12	0.01	0.21	0.29	521
Pseudomonas fluorescens	294	13.58	0.01	0.15	0.47	654
Delftia tsuruhatensis	180282	12.67	0.01	0.17	0.57	381
Comamonadaceae bacterium BICA1-1	1531963	13.04	0.01	0.13	0.14	894
Polaromonas naphthalenivorans CJ2	365044	12.67	0.01	0.11	0.14	1168
Sphaerotilus natans subsp. natans DSM 6575	1286631	12.29	0.01	0.13	0.14	896
Ideonella sp. B508-1	137716	12.99	0.01	0.13	0.13	1025
Burkholderiales bacterium JOSHI_001	864051	12.30	0.01	0.14	0.14	829
Variovorax	34072	11.40	0.01	0.11	0.13	16
Rhodoferax saidenbachensis ED16	614083	11.96	0.01	0.11	0.11	1037
Oxalobacteraceae	75682	12.00	0.01	0.80	0.80	3
Acinetobacter	469	11.87	0.01	0.13	0.23	14
Methylobacterium radiotolerans JCM 2831	426355	11.63	0.01	0.21	1.08	163
Methylophilus sp. 5	1112274	9.95	<0.01	0.12	0.31	605
Janthinobacterium	29580	10.48	<0.01	0.14	0.31	81
Burkholderia multivorans CGD1	513051	10.20	<0.01	0.14	0.12	379
Geobacter	28231	10.91	<0.01	0.12	0.35	167
Thioalkalivibrio	106633	10.19	<0.01	0.18	0.18	14
Caulobacter sp. OV484	1500308	10.63	<0.01	0.17	0.27	388
Caulobacter	75	10.90	<0.01	0.25	0.26	21
Flavobacterium sp. AED	1423323	9.83	<0.01	0.16	0.23	331
Flavobacterium	237	10.80	<0.01	0.68	0.52	4
Rhodoferax ferrireducens T118	338969	9.21	<0.01	0.10	0.10	727
Ralstonia	48736	8.74	<0.01	0.15	0.15	39
Azonexus hydrophilus DSM 23864	1121032	8.80	<0.01	0.13	0.16	418
Geobacter soli	1510391	9.07	<0.01	0.13	0.24	428
Rhodopseudomonas palustris CGA009	258594	9.65	<0.01	0.21	0.21	383
Novosphingobium aromaticivorans DSM 12444	279238	9.52	<0.01	0.16	0.18	319
Blastomonas	150203	9.79	<0.01	0.25	0.20	17
Methylibium petroleiphilum PM1	420662	8.18	<0.01	0.12	0.12	315
Azoarcus	12960	8.29	<0.01	0.27	0.26	9
Pseudogulbenkiania	568394	7.69	<0.01	0.10	0.10	29
Shewanella oneidensis MR-1	211586	7.56	<0.01	0.12	1.40	313
Sulfuricella denitrificans skB26	1163617	6.37	<0.01	0.11	0.11	263
Hydrogenophaga intermedia	65786	6.50	<0.01	0.11	0.19	109
Collimonas	202907	7.01	<0.01	0.20	0.20	10
Pseudomonas thermotolerans DSM 14292	1123021	7.05	<0.01	0.10	0.14	154
Caulobacter crescentus CB15	190650	6.80	<0.01	0.12	0.13	243
Caulobacter henricii	69395	7.19	<0.01	0.12	0.15	276
Thermodesulfovibrio	28261	6.62	<0.01	0.72	0.72	2
Arcobacter	28196	6.34	<0.01	1.28	2.41	25
Acinetobacter baumannii 1295743	1310613	5.43	<0.01	0.16	0.16	26
Caulobacter segnis ATCC 21756	509190	6.17	<0.01	0.10	0.19	258
Desulfosporosinus meridiei DSM 13257	768704	6.13	<0.01	0.10	0.14	271
Bordetella	517	4.82	<0.01	0.38	0.38	2
Runella	105	4.72	<0.01	3.28	3.28	7
Methylibium sp. T29	1430884	3.81	<0.01	0.18	0.34	15
Escherichia coli DEC10C	868182	3.19	<0.01	0.36	0.29	3
Ectothiorhodospiraceae	72276	3.23	<0.01	0.21	0.21	3
Arenimonas	490567	3.66	<0.01	0.22	0.21	2

Mycobacterium avium complex (MAC)	120793	3.29	<0.01	0.10	0.13	21
Marinimicrobium	359337	1.81	<0.01	0.15	0.15	2
Bradyrhizobiaceae	41294	2.56	<0.01	2.11	2.11	19
Clostridiales	186802	2.03	<0.01	2.83	2.83	3
Christensenella	990721	1.79	<0.01	0.54	0.54	224
Mycobacterium avium subsp. avium DT 78	1078011	2.53	<0.01	0.14	0.76	9
Sutterella	40544	1.49	<0.01	4.44	4.44	2
Anaeromyxobacter	161492	1.40	<0.01	0.11	0.11	2
Solimonas	413435	1.09	<0.01	0.14	0.14	59
Thalassospira	168934	1.56	<0.01	0.35	0.35	47
Bdellovibrio bacteriovorus	959	1.38	<0.01	2.82	2.82	5
Pelosinus	365348	1.04	<0.01	0.74	0.74	10


Methylotenera mobilis 13: 51.57%
Methylotenera sp. L2L1: 1.02%
Methylotenera versatilis 7: 0.03%
Methylophilus sp 43047 Branch: 0.01%
Methylophilus sp. 5: 0.01%
Methylophilus methylotrophus DSM 46235 = ATCC 53528: 1.38%
Methyloversatilis discipulorum str. RZ18-153: 0.10%
Thiobacillus denitrificans 43151 Branch: 0.01%
Thiobacillus thioparus DSM 505: 0.07%
Sulfuricella denitrificans skB26: 0.01%
Acidovorax sp. JHL-9: 25.98%
Acidovorax delafieldii 2AN: 0.64%
Acidovorax radicis N 25067 Branch: 0.24%
Acidovorax ebreus TPSY: 0.08%
Acidovorax citrulli 24781 Branch: 0.02%
Acidovorax 24785 Branch: 0.02%
Alicycliphilus denitrificans K601: 0.13%
Comamonas testosteroni 25855 Branch: 0.19%
Comamonas badia DSM 17552: 0.02%
Comamonas aquatica DA1877: 0.02%
Comamonas granuli NBRC 101663: 0.08%
Comamonas composti DSM 21721: 0.02%
Hydrogenophaga intermedia str. S1: 0.01%
Hydrogenophaga sp. T4: 0.04%
Delftia acidovorans SPH-1: 0.02%
Delftia tsuruhatensis str. 391: 0.01%
Delftia sp. Cs1-4: 0.02%
Verminephrobacter aporrectodeae subsp. tuberculatae At4: 0.02%
Verminephrobacter eiseniae EF01-2: 0.02%
Curvibacter gracilis ATCC BAA-807: 0.01%
Curvibacter lanceolatus ATCC 14669: 0.02%
Ramlibacter tataouinensis TTB310: 0.01%
Xenophilus azovorans DSM 13620: 0.04%
Melaminivora alkalimesophila str. CY1: 0.03%
Comamonadaceae bacterium BICA1-1: 0.01%
Comamonadaceae bacterium 24742 Branch: 0.02%
Hylemonella gracilis 25799 Branch: 0.07%
Polaromonas sp. CF318: 0.01%
Polaromonas naphthalenivorans CJ2: 0.01%
Variovorax paradoxus 25703 Branch: 0.01%
Variovorax 25713 Branch: 0.01%
Limnohabitans sp Rim 24768 Branch: 0.03%
Simplicispira psychrophila DSM 11588: 0.02%
Brachymonas chironomi DSM 19884: 0.01%
Rhodoferax saidenbachensis ED16: 0.01%
Rhodoferax ferrireducens T118 str. DSM 15236: 0.01%
Herminiimonas arsenicoxydans: 0.01%
Janthinobacterium sp. Marseille: 0.01%
Janthinobacterium 25695 Branch: 0.01%
Massilia 25805 Branch: 0.04%


Herbaspirillum 25672 Branch: 0.03%
Burkholderiales Order 15 6172 24651 Branch: 0.01%
Collimonas 25083 Branch: 0.01%
Rubrivivax 25754 Branch: 0.04%
Sphaerotilus natans subsp. natans DSM 6575: 0.01%
Methylibium sp 25821 Branch: 0.02%
Methylibium sp. T29: 0.00%
Methylibium petroleiphilum PM1: 0.01%
Thiomonas sp FB 25812 Branch: 0.03%
Leptothrix cholodnii SP-6: 0.01%
Aquabacterium sp. NJ1: 0.14%
Ideonella sp. B508-1: 0.01%
Burkholderiales bacterium JOSHI_001: 0.01%
Ralstonia sp A 24684 Branch: 0.01%
Burkholderia multivorans CGD1: 0.01%
Cupriavidus 24753 Branch: 0.05%
Bordetella bronchiseptica 24923 Branch: 0.01%
Bordetella 24935 Branch: 0.00%
Sutterella 25728 Branch: 0.00%
Dechloromonas agitata is5: 0.01%
Dechloromonas aromatica RCB: 0.65%
Azonexus hydrophilus DSM 23864: 0.01%
Dechlorosoma suillum PS: 0.01%
Thauera 13767 Branch: 0.04%
Azoarcus 13804 Branch: 0.01%
Geobacter metallireducens GS-15: 0.03%
Pseudogulbenkiania sp 14709 Branch: 0.01%
Geobacter pickeringii str. G13: 0.02%
Geobacter b 25954 Branch: 0.01%
Geobacter sp. M18: 0.01%
Geobacter sulfurreducens PCA: 0.02%
Geobacter soli str. GSS01: 0.01%
Geobacter uraniireducens Rf4: 0.06%
Desulfovibrio putealis DSM 16056: 0.22%
Anaeromyxobacter 28363 Branch: 0.00%
Sulfurospirillum multivorans DSM 12446: 0.03%
Sulfurospirillum sp. SCADC: 0.02%
Sulfurospirillum arsenophilum NBRC 109478: 1.07%
Sulfurospirillum 15620 Branch: 0.02%
Arcobacter 15564 Branch: 0.01%
Pseudomonas stutzeri RCH2: 6.06%
Pseudomonas chloritidismutans AW-1: 0.22%
Pseudomonas sp. BICA1-14: 0.25%
Pseudomonas xanthomarina str. S11: 0.23%
Pseudomonas balearica DSM 6083 str. DSM6083 (=SP1402): 0.0
Pseudomonas aeruginosa strain AZPAE 38396 Branch: 3.21%
Pseudomonas alcaligenes NBRC 14159: 0.09%
Pseudomonas resinovorans NBRC 106553: 0.02%
Pseudomonas mendocina DLHK: 0.11%
Pseudomonas pseudoalcaligenes AD6: 0.04%
Pseudomonas oleovorans str. MGY01: 0.03%
Pseudomonas nitroreducens 39757 Branch: 0.04%
Pseudomonas alcaliphila 34: 0.22%
Pseudomonas taeanensis MS-3: 0.13%
Pseudomonas fluorescens str. AU2989: 0.01%
Pseudomonas veronii 1YdBTEX2: 0.02%
Pseudomonas mandelii JR-1: 0.05%


Pseudomonas fulva str. MEJ086: 0.03%
Pseudomonas 39497 Branch: 0.06%
Pseudomonas thermotolerans DSM 14292: 0.01%
Pseudomonas 39930 Branch: 0.04%
Pseudomonas saudiphocaensis str. 20_BN: 0.02%
Acinetobacter baumannii 1295743: 0.00%
Acinetobacter 41885 Branch: 0.01%
Shewanella xiamenensis str. BC01: 0.33%
Shewanella sp. POL2: 1.58%
Shewanella decolorationis S12: 0.02%
Shewanella oneidensis MR-1: 0.01%
Shewanella putrefaciens CN-32: 0.27%
Shewanella baltica OS 37306 Branch: 0.02%
Escherichia coli DEC10C: 0.00%
Aeromonas hydrophila 4AK4: 0.03%
Rheinheimera sp. A13L: 0.03%
Thioalkalivibrio 14531 Branch: 0.01%
GlobalTree 4773 Node 14425: 0.00%
Halomonas s 13429 Branch: 0.02%
Marinimicrobium 42770 Branch: 0.00%
Solimonas 42111 Branch: 0.00%
Arenimonas 26511 Branch: 0.00%
Methylobacterium sp. UNCCL110: 0.30%
Methylobacterium oryzae CBMB20: 0.17%
Methylobacterium radiotolerans JCM 2831: 0.01%
Rhizobium selenitireducens ATCC BAA-1503: 0.09%
Bradyrhizobium japonicum i 22238 Branch: 0.08%
Rhodopseudomonas palustris CGA009: 0.01%
Rhizobiales Order 16 8204 22246 Branch: 0.00%
Brevundimonas sp. EAKA: 0.26%
Brevundimonas a 23863 Branch: 0.02%
Caulobacter segnis ATCC 21756: 0.01%
Caulobacter crescentus 23901 Branch: 0.01%
Caulobacter sp. OV484: 0.01%
Caulobacter sp U 23889 Branch: 0.01%
Caulobacter henricii str. OK261: 0.01%
Sphingobium xenophagum QYY: 0.33%
Sphingobium yanoikuyae XLDN2-5: 0.07%
Sphingobium japonicum BiD32: 0.02%
Sphingobium sp. Ant17: 0.04%
Novosphingobium subterraneum str. DSM 12447: 0.07%
Novosphingobium aromaticivorans DSM 12444: 0.01%
Blastomonas sp 24493 Branch: 0.01%
alpha proteobacterium LLX12A: 0.01%
Thalassospira 23581 Branch: 0.00%
Bdellovibrio bacteriovorus 13812 Branch: 0.00%
Geothrix fermentans DSM 14018: 0.09%


Desulfosporosinus 27069 Branch: 0.05%
Desulfosporosinus sp. BICA1-9: 0.06%
Desulfosporosinus meridiei DSM 13257: 0.01%
Desulfosporosinus youngiae DSM 17734: 0.02%
Clostridiales Order 18 3009 7179 Branch: 0.00%
Dehalobacter sp. UNSWDHB: 0.03%
Christensenella Family Node 1: 0.00%
Pelosinus 14273 Branch: 0.00%
Mycobacterium avium subsp. avium DT 78: 0.00%
Mycobacterium sp MAC 19742 Branch: 0.00%
Thermodesulfovibrio 36920 Branch: 0.01%
Flavobacterium sp. AED: 0.01%
Flavobacterium 408 Branch: 0.01%
Runella 682 Branch: 0.00%

Bacteria

Radial Tree Chart Taxonomy

1B-90-3_MBPO210215-A

Total results



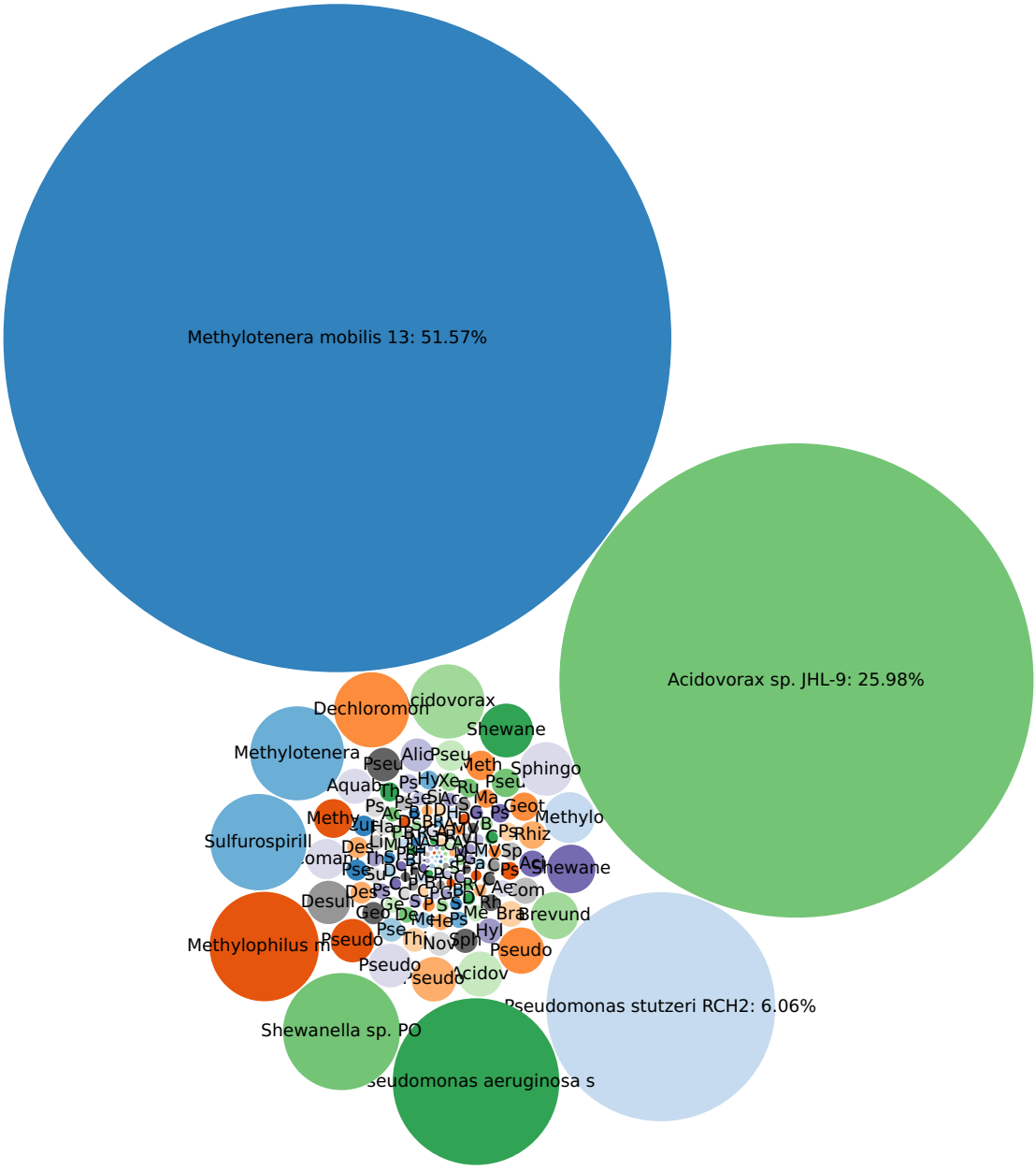
Bacteria

Sunburst Chart Taxonomy

1B-90-3_MBPO210215-A

Total results




Methylotenera mobilis 13: 51.57%
Acidovorax sp. JHL-9: 25.98%
Pseudomonas stutzeri RCH2: 6.06%
Dechloromon
Shewane
Methylotenera
Sphingo
Sulfurospirill
Methylophilus m
Shewanella sp. PO
Pseudomonas aeruginosa s
Pseudo
Acidov
Brevund

Antibiotic Resistance

1B-90-3_MBPO210215-A

Total results

Fasta/q details

Metric	Value
Hit	623

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Aminoglycoside ant2'' Ia	-	3496.60	35.80	75.00	21.32	475
Aminoglycoside aadA1	-	3355.51	34.36	13.79	65.56	34
Aminoglycoside aadA24	-	2035.94	20.85	10.15	50.52	37
Beta-lactam-resistance blaOXA 181	-	877.92	8.99	100.00	20.66	2

Fungi

1B-90-3_MBPO210215-A

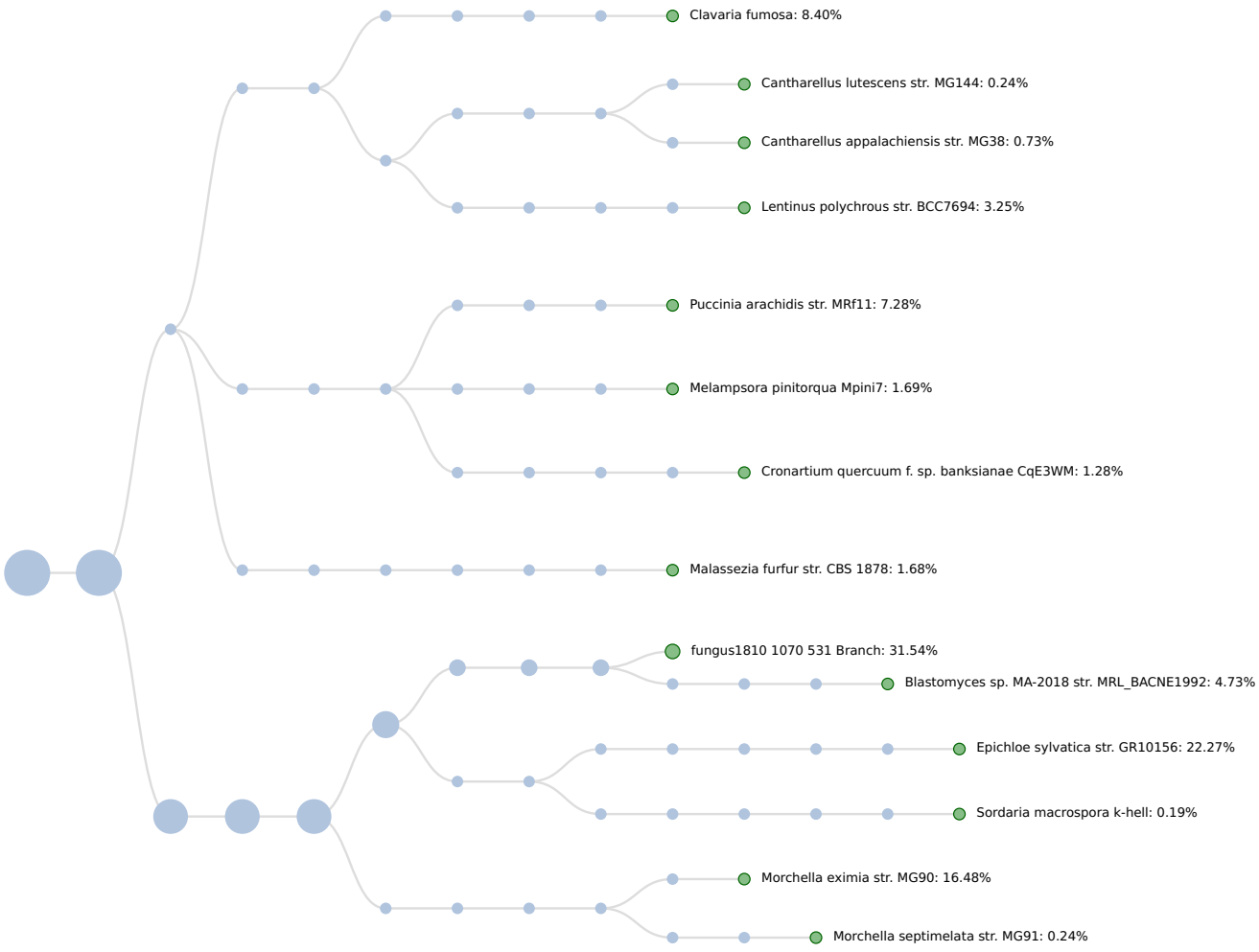
Fasta/q details

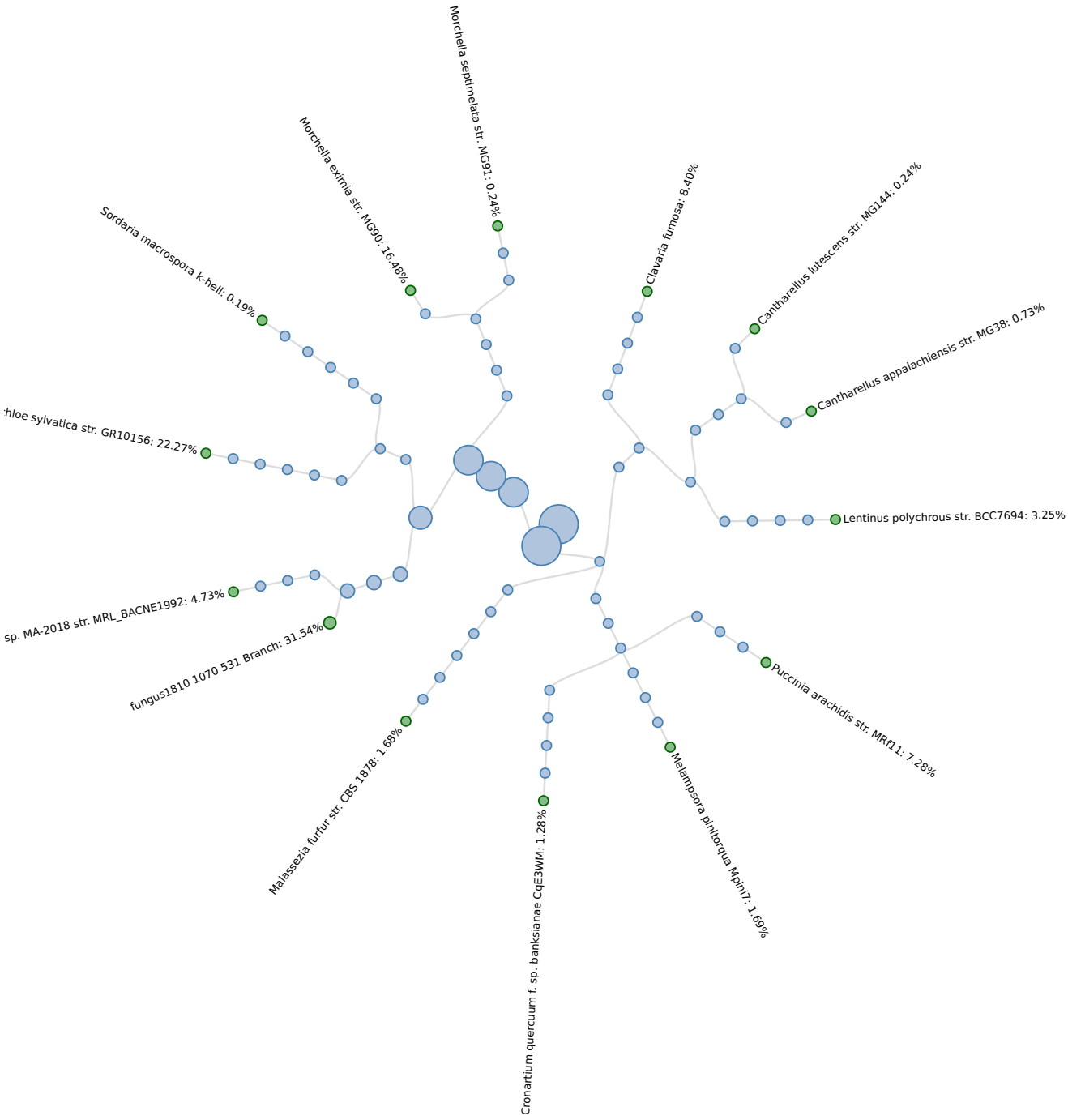
Total results

Metric	Value
Hit	17.786k

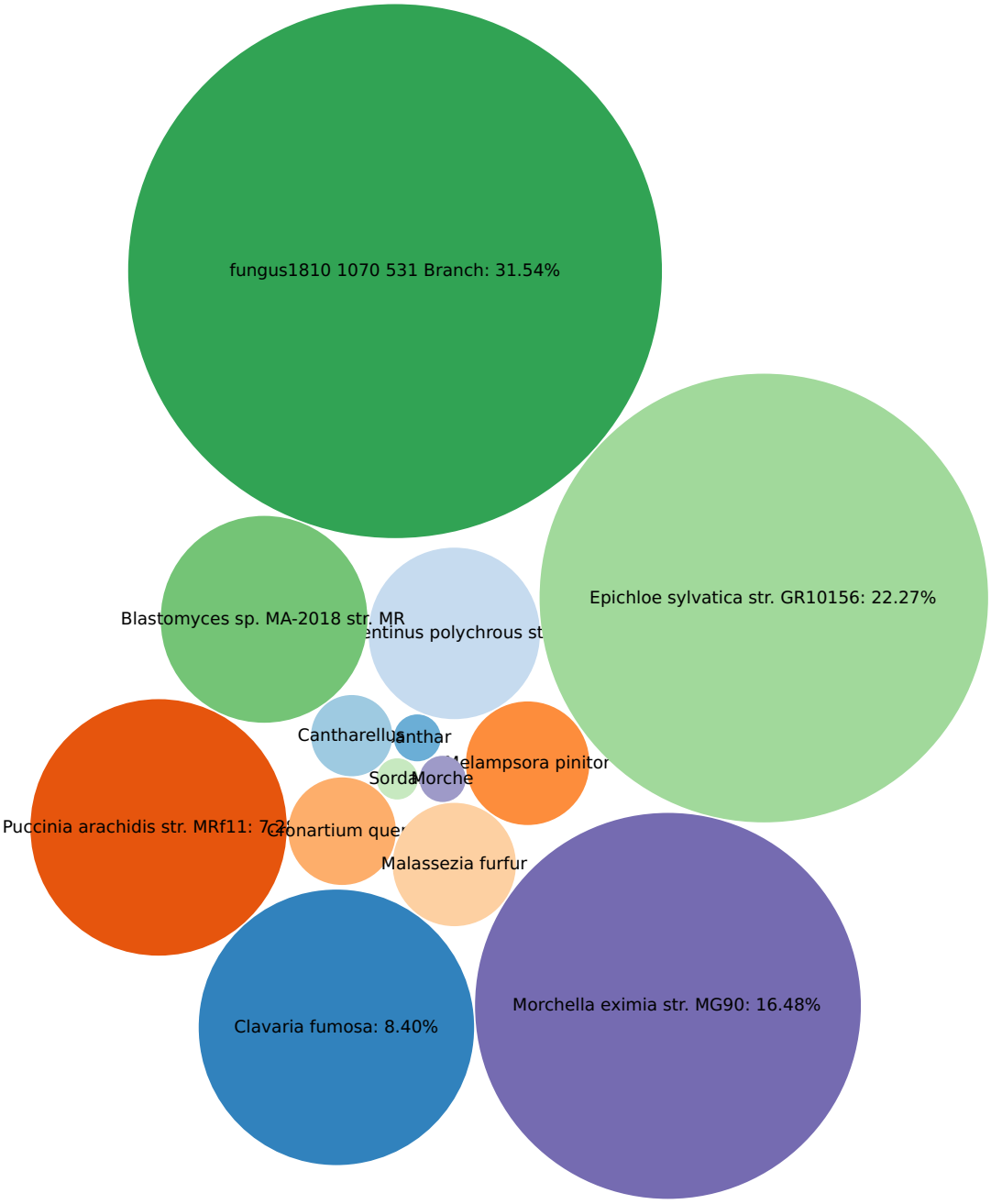
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Onygenales	33183	45.38	31.54	0.16	0.26	2514
Epichloe sylvatica	79593	32.04	22.27	0.22	0.17	1972
Morchella eximia	1582338	23.71	16.48	0.15	0.10	1629
Clavaria fumosa	264083	12.08	8.40	0.08	0.36	955
Puccinia arachidis	333523	10.47	7.28	0.08	0.18	777
Blastomyces sp. MA-2018	2164086	6.81	4.73	0.11	0.14	236
Lentinus polychrous	292559	4.68	3.25	0.10	0.11	922
Melampsora pinitorqua Mpini7	1298852	2.43	1.69	0.04	0.04	166
Malassezia furfur	55194	2.42	1.68	0.01	0.01	297
Cronartium quercuum f. sp. banksianae CqE3WM	1301520	1.84	1.28	0.06	0.06	135
Cantharellus appalachiensis	409893	1.05	0.73	0.02	0.32	72
Cantharellus lutescens	104198	0.35	0.24	0.01	0.32	17
Morchella septimelata	1174676	0.34	0.24	0.01	0.01	97
Sordaria macrospora k-hell	771870	0.27	0.19	0.01	0.01	32


Clavaria fumosa: 8.40%
Cantharellus lutescens str. MG144: 0.24%
Cantharellus appalachiensis str. MG38: 0.73%
Lentinus polychrous str. BCC7694: 3.25%
Puccinia arachidis str. MRf11: 7.28%
Melampsora pinitorqua Mpini7: 1.69%
Cronartium quercuum f. sp. banksianae CqE3WM: 1.28%
Malassezia furfur str. CBS 1878: 1.68%
fungus1810 1070 531 Branch: 31.54%
Blastomyces sp. MA-2018 str. MRL_BACNE1992: 4.73%
Epichloe sylvatica str. GR10156: 22.27%
Sordaria macrospora k-hell: 0.19%
Morchella eximia str. MG90: 16.48%
Morchella septimelata str. MG91: 0.24%


Morchella septimelata str. MG91: 0.24%
Morchella eximia str. MG90: 16.48%
Sordaria macrospora k-hell: 0.19%
Clavaria fumosa: 8.40%
Cantharellus lutescens str. MG144: 0.24%
Cantharellus appalachiensis str. MG38: 0.73%
hloe sylvatica str. GR10156: 22.27%
Lentinus polychrous str. BCC7694: 3.25%
sp. MA-2018 str. MRL_BACNE1992: 4.73%
fungus1810 1070 531 Branch: 31.54%
Puccinia arachidis str. MRf11: 7.28%
Malassezia furfur str. CBS 1878: 1.68%
Melampsora pinitorqua Mpini7: 1.69%
Cronartium quercuum f. sp. banksianae CqE3WM: 1.28%


sylvatica str. GR10156 - 22.27%
16.48% - Morchella eximia str. MG90
8.40% - Clavaria fumosa
3.25% - Lentinus polychrous str. BCC7694
7.28% - Puccinia arachidis str. MRF11
1.69% - Melampsora pinitorqua Mpini7
1.28% - Cronartium quercuum f. sp. banksian
1.68% - Malassezia furfur str. CBS 1878
fungus1810 1070 531 Branch - 31.54%
Onygenales
Eurotiomycetes
leotiomyceta
saccharomyceta
Pezizomycotina
Ascomycota
Basidiomycota
Dikarya
Pezizomycetes
Pezizales
Morchellaceae
Clavariaceae
Agaricales
Agaricomycetes
Agaricomycotina
Pucciniales
Puccinia
Sordariomycetes
sordariomyceta
Hypocreales
Clavicipitaceae
Epichloe
Epichl..vatica


fungus1810 1070 531 Branch: 31.54%
Epichloe sylvatica str. GR10156: 22.27%
Blastomyces sp. MA-2018 str. MR
entinus polychrous st
Cantharellus
anthar
elampsora pinitor
Sorda
Morche
Puccinia arachidis str. MRf11: 7.2%
Cronartium que
Malassezia furfur
Clavaria fumosa: 8.40%
Morchella eximia str. MG90: 16.48%

Protists

1B-90-3_MBPO210215-A

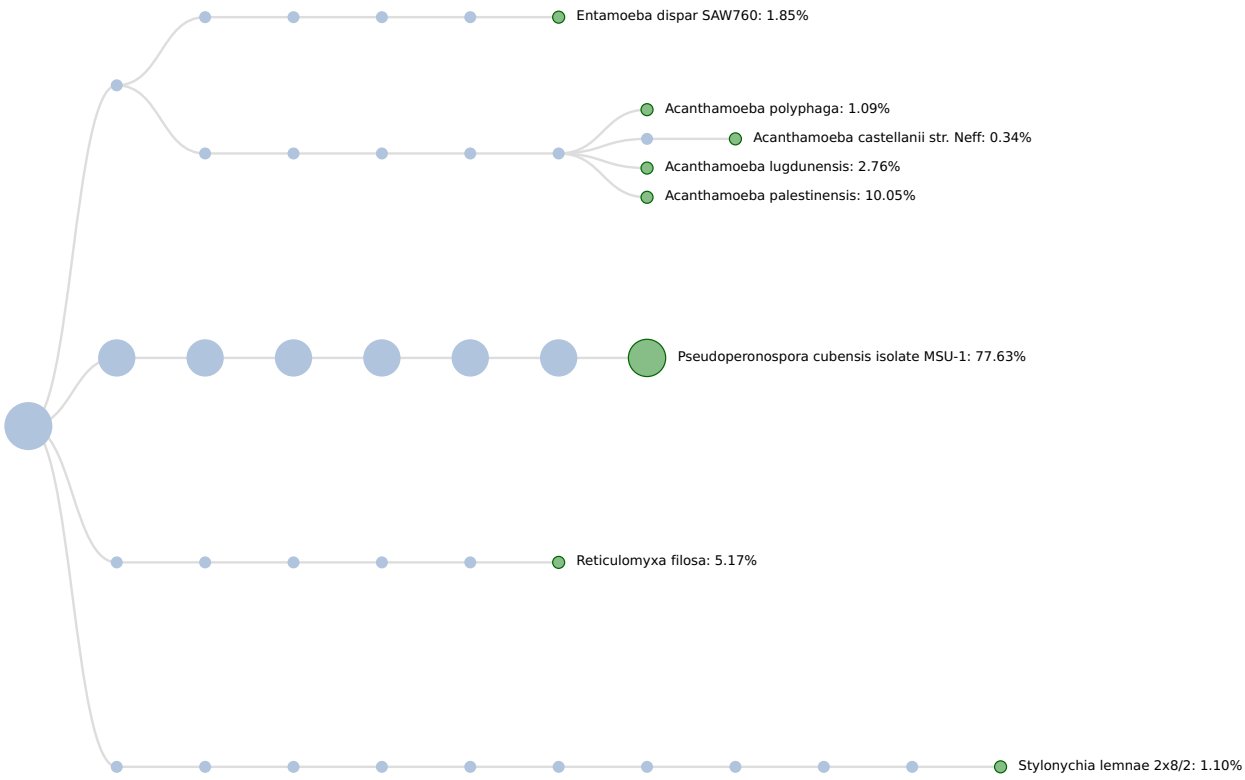
Total results

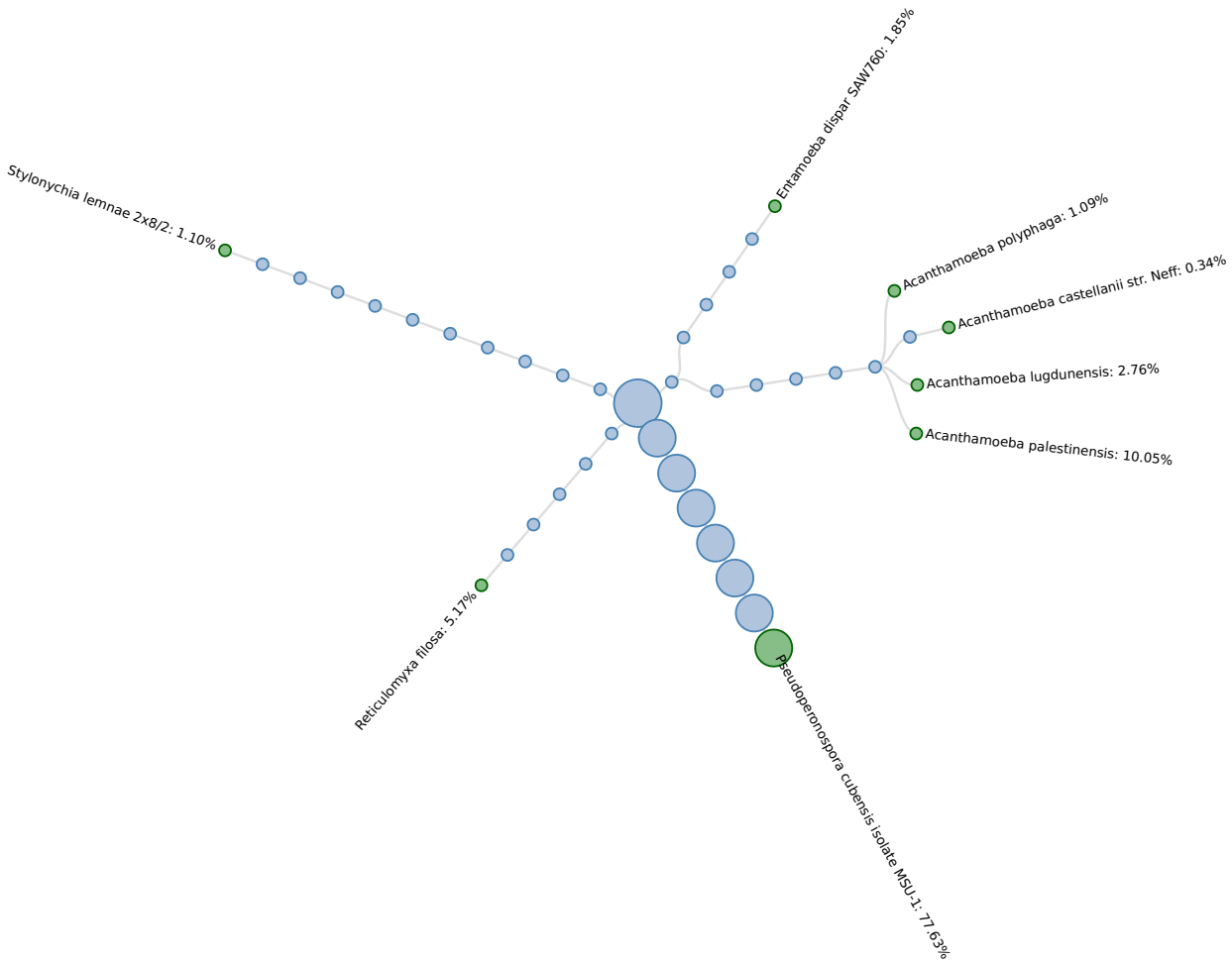
Fasta/q details

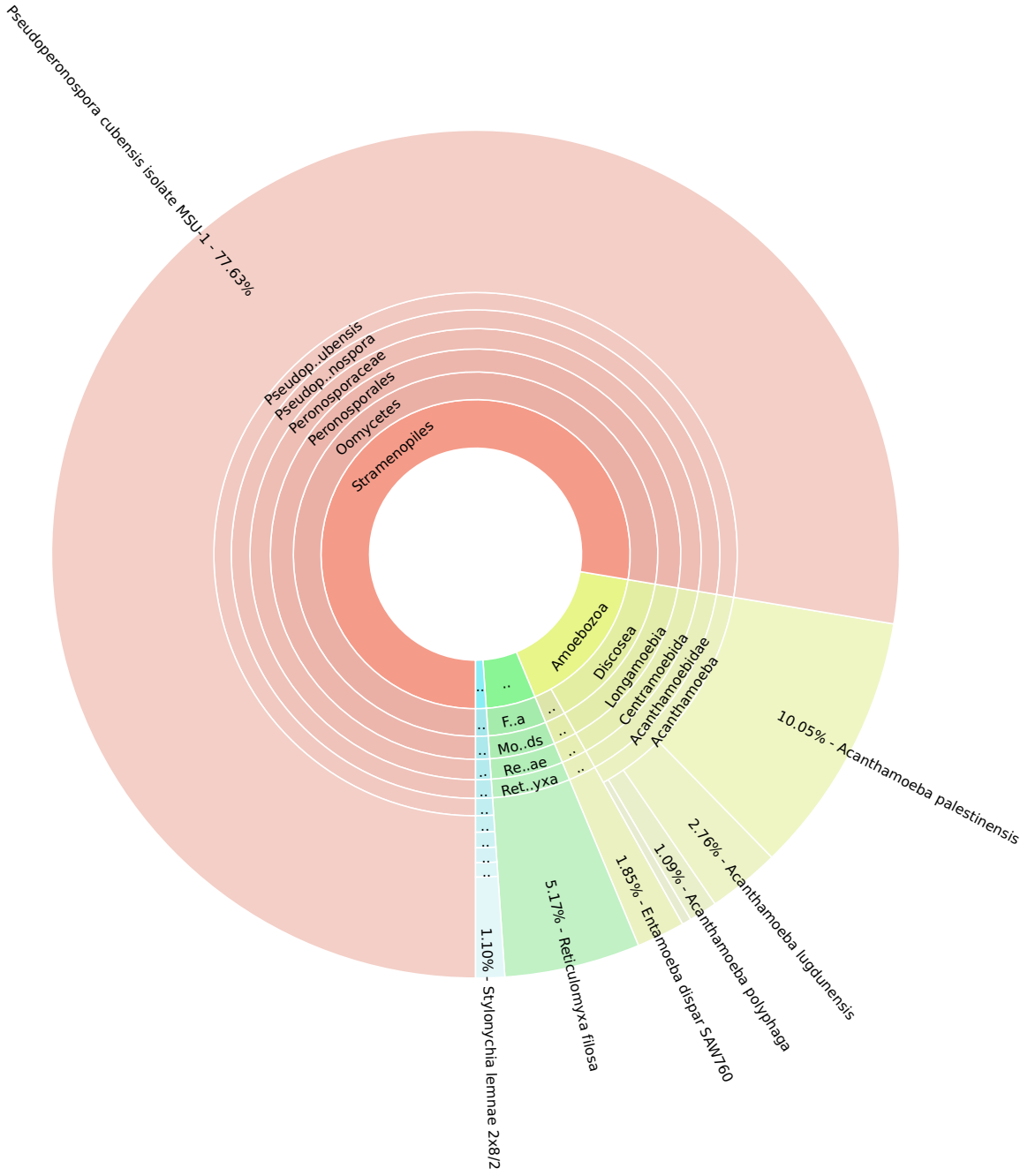
Metric	Value
Hit	10.562k

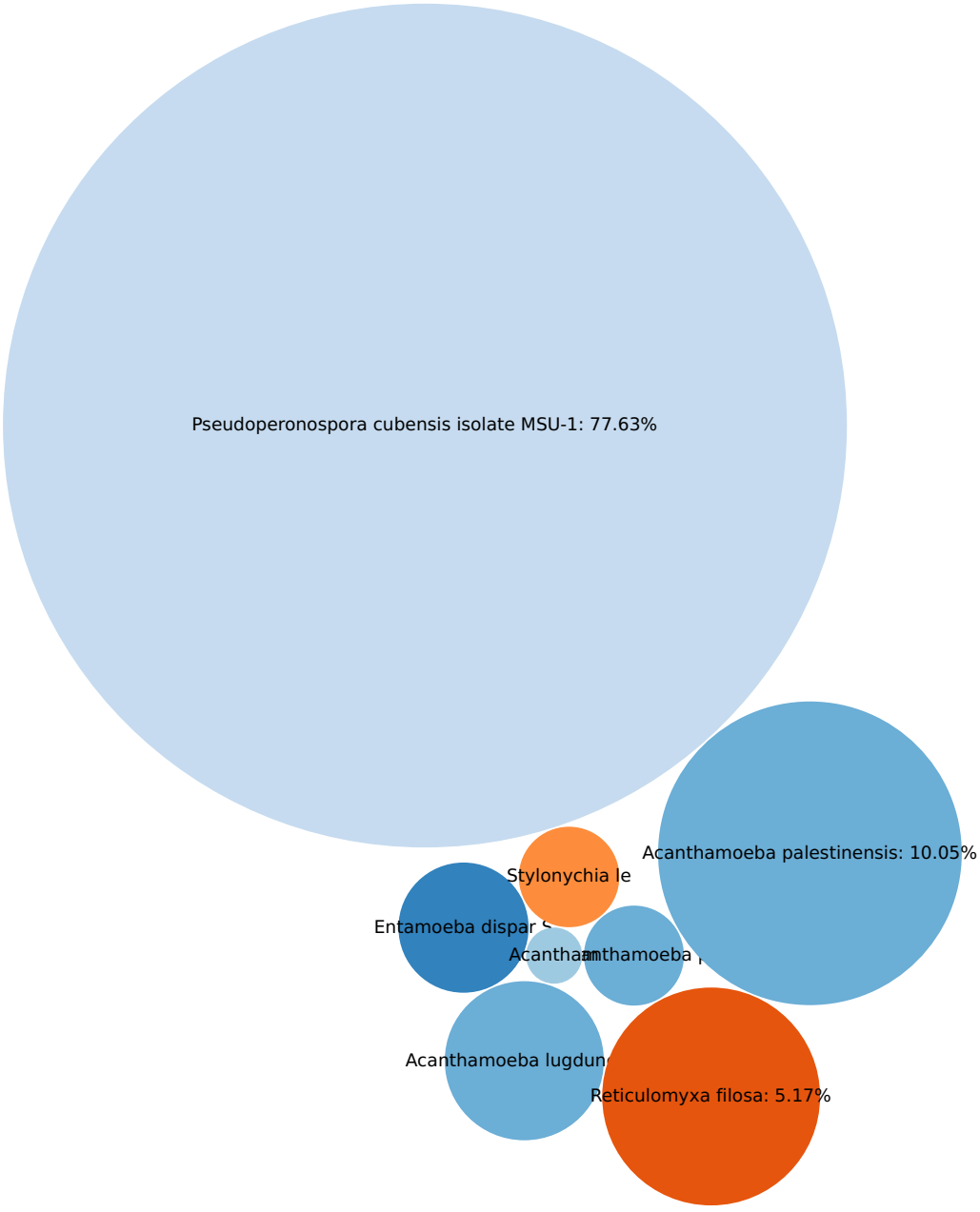
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudoperonospora cubensis	143453	65.56	77.63	0.30	0.36	4315
Acanthamoeba palestinensis	28015	8.49	10.05	0.15	0.16	232
Reticulomyxa filosa	46433	4.37	5.17	0.01	0.02	517
Acanthamoeba lugdunensis	61605	2.33	2.76	0.05	0.12	74
Entamoeba dispar SAW760	370354	1.56	1.85	0.03	0.03	55
Stylonychia lemnae 2x8/2	755200	0.93	1.10	0.02	0.02	34
Acanthamoeba polyphaga	5757	0.92	1.09	0.02	0.08	77
Acanthamoeba castellanii	5755	0.29	0.34	0.01	0.09	6


Entamoeba dispar SAW760: 1.85%
Acanthamoeba polyphaga: 1.09%
Acanthamoeba castellanii str. Neff: 0.34%
Acanthamoeba lugdunensis: 2.76%
Acanthamoeba palestinensis: 10.05%
Pseudoperonospora cubensis isolate MSU-1: 77.63%
Reticulomyxa filosa: 5.17%
Stylonychia lemnae 2x8/2: 1.10%


Entamoeba dispar SAW760: 1.85%
Stylonychia lemnae 2x8/2: 1.10%
Acanthamoeba polyphaga: 1.09%
Acanthamoeba castellanii str. Neff: 0.34%
Acanthamoeba lugdunensis: 2.76%
Acanthamoeba palestinensis: 10.05%
Reticulomyxa filosa: 5.17%
Pseudoperonospora cubensis isolate MSU-1: 77.63%


Pseudoperonospora cubensis isolate MSU-1 - 77.63%
Pseudop..ubensis
Pseudop..nospora
Peronosporaceae
Peronosporales
Oomycetes
Stramenopiles
Amoebozoa
Discosea
Longamoebia
Centramoebida
Acanthamoebidae
Acanthamoeba
10.05% - Acanthamoeba palestinensis
2.76% - Acanthamoeba lugdunensis
1.09% - Acanthamoeba polyphaga
1.85% - Entamoeba dispar SAW760
5.17% - Reticulomyxa filosa
1.10% - Stylonychia lemnae 2x8/2
F..a
Mo..ds
Re..ae
Ret..yxa


Pseudoperonospora cubensis isolate MSU-1: 77.63%
Acanthamoeba palestinensis: 10.05%
Stylonychia le
Entamoeba dispar S
Acanthamoeba lugdun
Reticulomyxa filosa: 5.17%

Dark Matter (Beta)

1B-90-3_MBPO210215-A

Fasta/q details

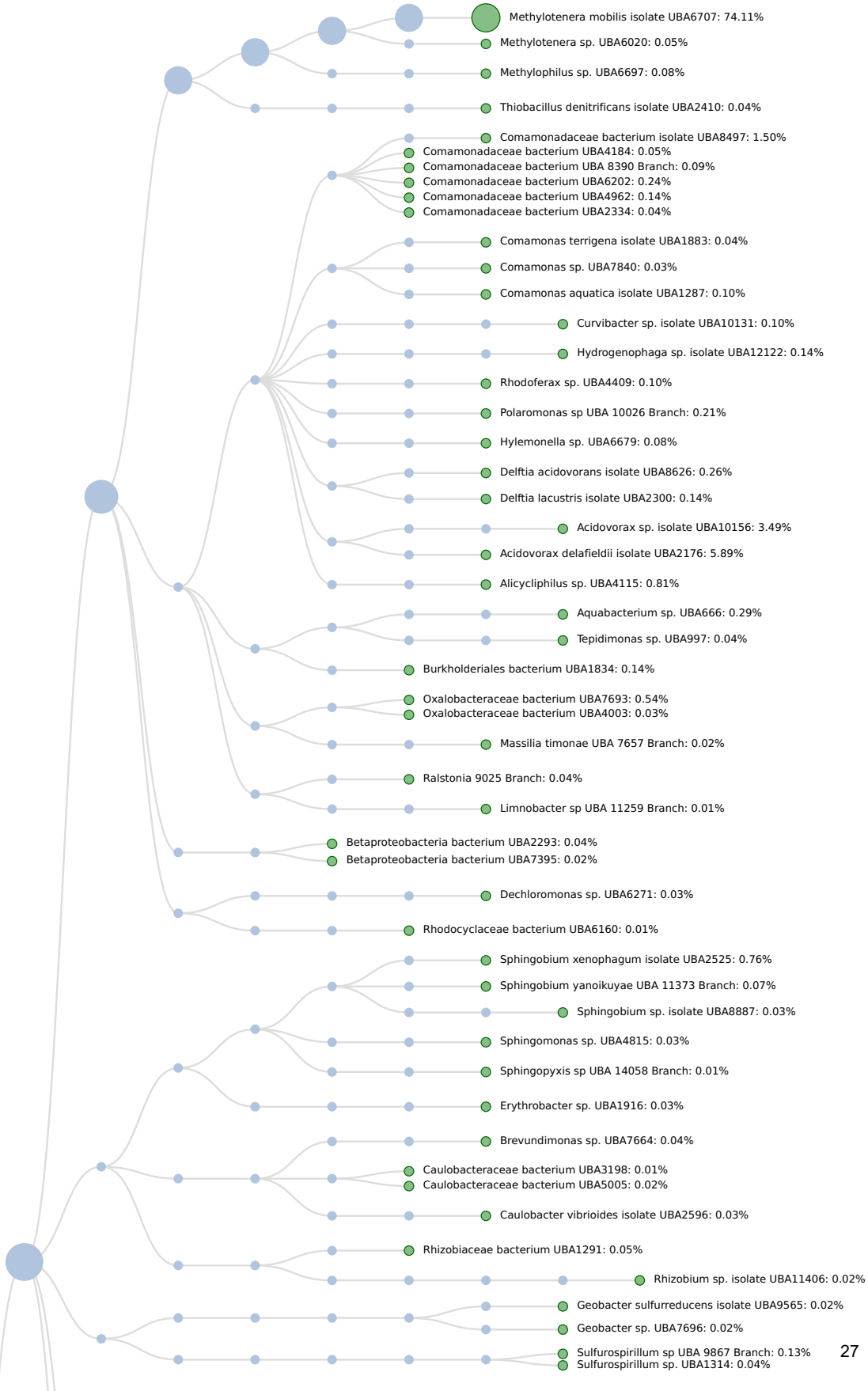
Total results

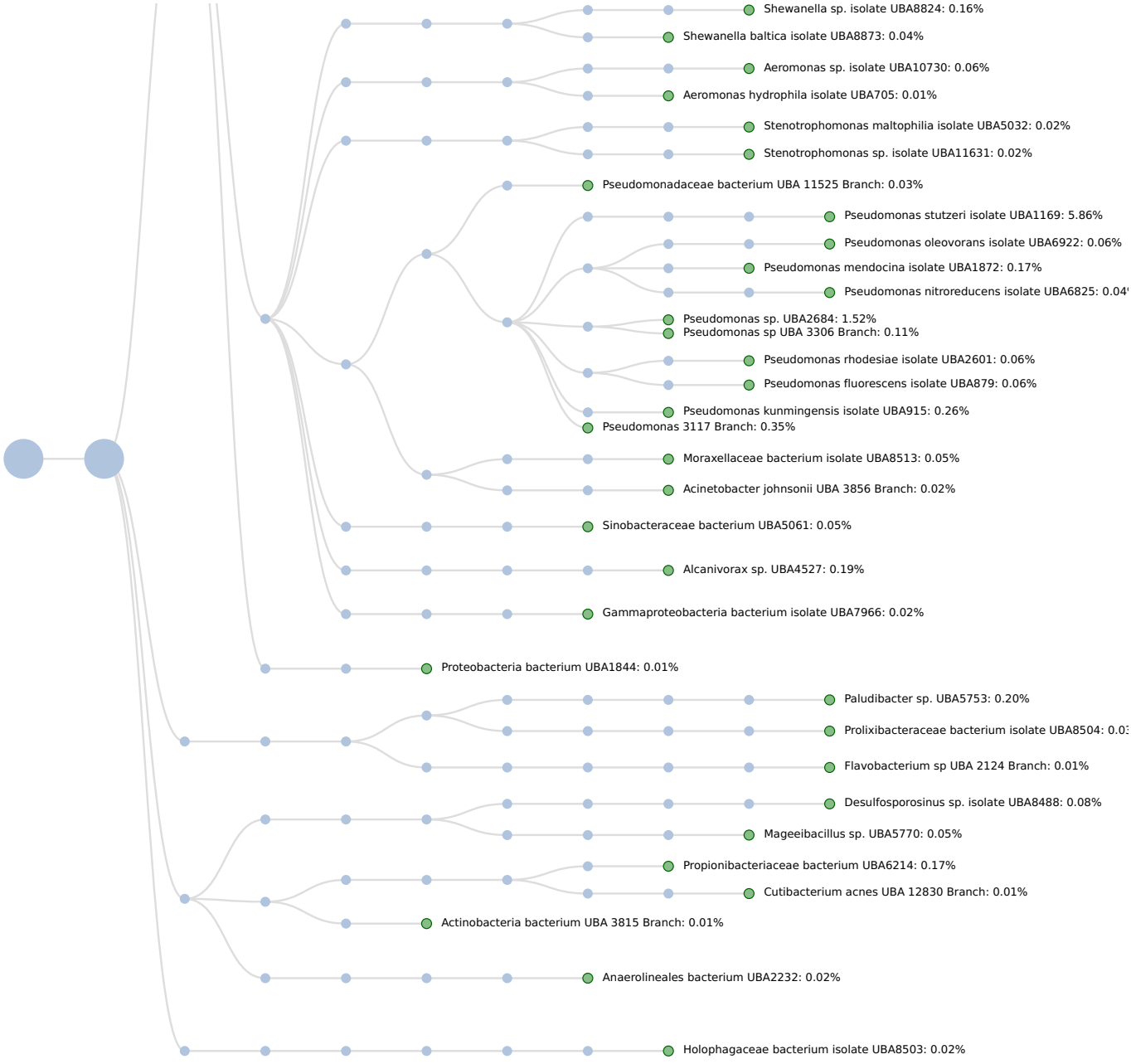
Metric	Value
Hit	0.775M

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Methylotenera mobilis	359408	32393.70	74.11	57.15	78.68	260555
Acidovorax delafieldii	47920	2574.32	5.89	12.19	12.24	47254
Pseudomonas stutzeri	316	2561.72	5.86	22.68	22.67	25442
Acidovorax sp.	1872122	1525.43	3.49	10.98	11.20	40210
Pseudomonas sp. UBA2684	1947311	663.42	1.52	6.14	2.07	24745
Comamonadaceae bacterium	1871071	656.50	1.50	4.57	4.19	15604
Alicycliphilus sp. UBA4115	1946002	355.83	0.81	2.40	1.30	9539
Sphingobium xenophagum	121428	333.98	0.76	4.20	5.54	1709
Oxalobacteraceae bacterium UBA7693	1953006	237.19	0.54	2.84	2.84	2973
Pseudomonas	286	153.84	0.35	0.99	0.99	72
Aquabacterium sp. UBA666	1946043	128.25	0.29	1.48	1.21	2447
Delftia acidovorans	80866	115.06	0.26	0.69	1.07	1635
Pseudomonas kunmingensis	1211807	114.36	0.26	1.22	0.84	562
Comamonadaceae bacterium UBA6202	1951611	103.96	0.24	0.67	0.71	4063
unclassified Polaromonas	2638319	93.13	0.21	0.56	0.56	128
Paludibacter sp. UBA5753	1947025	88.35	0.20	1.21	2.03	91
Alcanivorax sp. UBA4527	1945991	83.94	0.19	0.73	0.65	156
Pseudomonas mendocina	300	73.38	0.17	0.36	0.45	4153
Propionibacteriaceae bacterium UBA6214	1952963	73.07	0.17	1.01	1.01	946
Shewanella sp.	50422	69.38	0.16	0.97	1.24	896
Burkholderiales bacterium UBA1834	1950768	62.06	0.14	0.57	0.41	835
Hydrogenophaga sp.	1904254	61.03	0.14	0.65	0.37	280
Delftia lacustris	558537	60.91	0.14	0.65	0.99	1626
Comamonadaceae bacterium UBA4962	1951608	59.10	0.14	0.29	0.30	3873
unclassified Sulfurospirillum	2618290	56.06	0.13	0.37	0.37	341
unclassified Pseudomonas	2583993	49.11	0.11	0.78	0.79	9
Curvibacter sp.	1888168	42.76	0.10	0.26	0.27	2077
Comamonas aquatica	225991	42.43	0.10	0.27	0.28	1781
Rhodoferax sp. UBA4409	1947378	42.57	0.10	0.21	0.21	1992
unclassified Comamonadaceae	83494	39.45	0.09	0.15	0.15	364
Desulfosporosinus sp.	157907	36.21	0.08	0.51	0.51	696
Hylemonella sp. UBA6679	1946611	34.82	0.08	0.31	0.31	1107
Methylophilus sp. UBA6697	1946902	33.12	0.08	0.42	0.38	290
Sphingobium yanoikuyae	13690	30.79	0.07	0.25	0.26	31
Aeromonas sp.	647	25.82	0.06	0.42	0.47	329
Pseudomonas oleovorans	301	26.00	0.06	0.24	0.31	466
Pseudomonas rhodesiae	76760	25.62	0.06	0.29	0.59	521
Pseudomonas fluorescens	294	24.78	0.06	0.30	0.63	412
Rhizobiaceae bacterium UBA1291	1953063	23.73	0.05	0.37	0.38	481
Mageeibacillus sp. UBA5770	1946799	23.07	0.05	0.39	0.39	263
Sinobacteraceae bacterium UBA5061	1953077	21.77	0.05	0.45	0.45	1671
Comamonadaceae bacterium UBA4184	1951606	20.60	0.05	0.17	0.17	1095
Moraxellaceae bacterium	1889775	20.35	0.05	0.42	0.42	1559
Methylotenera sp. UBA6020	1946903	20.10	0.05	0.12	0.19	659
Thiobacillus denitrificans	36861	17.99	0.04	0.29	0.29	343
Betaproteobacteria bacterium UBA2293	1948454	17.95	0.04	0.26	0.27	518
Sulfurospirillum sp. UBA1314	1947592	17.58	0.04	0.28	0.35	278

Shewanella baltica	62322	17.63	0.04	0.30	0.66	253
Comamonadaceae bacterium UBA2334	1951601	17.07	0.04	0.12	0.12	1063
Comamonas terrigena	32013	17.16	0.04	0.12	0.20	797
Brevundimonas sp. UBA7664	1946141	17.00	0.04	0.29	0.37	289
Ralstonia	48736	16.43	0.04	0.13	0.13	39
Tepidimonas sp. UBA997	1947650	16.32	0.04	0.13	0.13	646
Pseudomonas nitroreducens	46680	16.18	0.04	0.14	0.14	1027
Sphingomonas sp. UBA4815	1947533	14.93	0.03	0.23	0.25	388
Caulobacter vibrioides	155892	15.03	0.03	0.24	0.24	373
Prolixibacteraceae bacterium	2053594	15.03	0.03	0.23	0.23	330
Comamonas sp. UBA7840	1946392	13.26	0.03	0.11	0.13	506
unclassified Pseudomonadaceae	190017	12.53	0.03	0.15	0.14	30
Erythrobacter sp. UBA1916	1946469	11.98	0.03	0.21	0.36	204
Dechloromonas sp. UBA6271	1946404	11.44	0.03	0.20	0.20	246
Sphingobium sp.	1912891	11.34	0.03	0.19	0.20	239
Oxalobacteraceae bacterium UBA4003	1953002	11.07	0.03	0.19	0.19	229
Stenotrophomonas maltophilia	40324	10.56	0.02	0.17	0.17	133
Geobacter sulfurreducens	35554	9.89	0.02	0.37	0.24	18
Acinetobacter johnsonii	40214	10.03	0.02	0.29	0.62	2
Geobacter sp. UBA7696	1961403	9.43	0.02	0.17	0.24	150
Rhizobium sp.	391	8.59	0.02	0.14	0.16	261
Anaerolineales bacterium UBA2232	1950192	8.54	0.02	0.12	0.12	330
Stenotrophomonas sp.	69392	7.78	0.02	0.23	0.23	74
Gammaproteobacteria bacterium	1913989	7.69	0.02	0.19	0.19	306
Betaproteobacteria bacterium UBA7395	1948463	7.60	0.02	0.13	0.17	171
Holophagaceae bacterium	2052165	7.34	0.02	0.15	0.15	102
Massilia timonae	47229	6.90	0.02	0.11	0.06	26
Caulobacteraceae bacterium UBA5005	1951539	7.10	0.02	0.13	0.13	185
Cutibacterium acnes	1747	5.69	0.01	0.14	0.14	15
Rhodocyclaceae bacterium UBA6160	1952847	5.18	0.01	0.12	0.12	59
Caulobacteraceae bacterium UBA3198	1951537	4.69	0.01	0.20	0.12	9
Aeromonas hydrophila	644	4.90	0.01	0.10	0.13	95
unclassified Limnobacter	2630203	3.83	<0.01	0.12	0.13	19
Proteobacteria bacterium UBA1844	1948138	4.00	<0.01	0.10	0.10	535
unclassified Flavobacterium	196869	4.12	<0.01	0.19	0.19	5
unclassified Sphingopyxis	2614943	3.02	<0.01	1.51	1.51	10
unclassified Actinobacteria	1752188	2.42	<0.01	3.65	3.65	5


Methylotenera mobilis isolate UBA6707: 74.11%
Methylotenera sp. UBA6020: 0.05%
Methylophilus sp. UBA6697: 0.08%
Thiobacillus denitrificans isolate UBA2410: 0.04%
Comamonadaceae bacterium isolate UBA8497: 1.50%
Comamonadaceae bacterium UBA4184: 0.05%
Comamonadaceae bacterium UBA 8390 Branch: 0.09%
Comamonadaceae bacterium UBA6202: 0.24%
Comamonadaceae bacterium UBA4962: 0.14%
Comamonadaceae bacterium UBA2334: 0.04%
Comamonas terrigena isolate UBA1883: 0.04%
Comamonas sp. UBA7840: 0.03%
Comamonas aquatica isolate UBA1287: 0.10%
Curvibacter sp. isolate UBA10131: 0.10%
Hydrogenophaga sp. isolate UBA12122: 0.14%
Rhodoferax sp. UBA4409: 0.10%
Polaromonas sp UBA 10026 Branch: 0.21%
Hylemonella sp. UBA6679: 0.08%
Delftia acidovorans isolate UBA8626: 0.26%
Delftia lacustris isolate UBA2300: 0.14%
Acidovorax sp. isolate UBA10156: 3.49%
Acidovorax delafieldii isolate UBA2176: 5.89%
Alicycliphilus sp. UBA4115: 0.81%
Aquabacterium sp. UBA666: 0.29%
Tepidimonas sp. UBA997: 0.04%
Burkholderiales bacterium UBA1834: 0.14%
Oxalobacteraceae bacterium UBA7693: 0.54%
Oxalobacteraceae bacterium UBA4003: 0.03%
Massilia timonae UBA 7657 Branch: 0.02%
Ralstonia 9025 Branch: 0.04%
Limnobacter sp UBA 11259 Branch: 0.01%
Betaproteobacteria bacterium UBA2293: 0.04%
Betaproteobacteria bacterium UBA7395: 0.02%
Dechloromonas sp. UBA6271: 0.03%
Rhodocyclaceae bacterium UBA6160: 0.01%
Sphingobium xenophagum isolate UBA2525: 0.76%
Sphingobium yanoikuyae UBA 11373 Branch: 0.07%
Sphingobium sp. isolate UBA8887: 0.03%
Sphingomonas sp. UBA4815: 0.03%
Sphingopyxis sp UBA 14058 Branch: 0.01%
Erythrobacter sp. UBA1916: 0.03%
Brevundimonas sp. UBA7664: 0.04%
Caulobacteraceae bacterium UBA3198: 0.01%
Caulobacteraceae bacterium UBA5005: 0.02%
Caulobacter vibrioides isolate UBA2596: 0.03%
Rhizobiaceae bacterium UBA1291: 0.05%
Rhizobium sp. isolate UBA11406: 0.02%
Geobacter sulfurreducens isolate UBA9565: 0.02%
Geobacter sp. UBA7696: 0.02%
Sulfurospirillum sp UBA 9867 Branch: 0.13%
Sulfurospirillum sp. UBA1314: 0.04%


Shewanella sp. isolate UBA8824: 0.16%
Shewanella baltica isolate UBA8873: 0.04%
Aeromonas sp. isolate UBA10730: 0.06%
Aeromonas hydrophila isolate UBA705: 0.01%
Stenotrophomonas maltophilia isolate UBA5032: 0.02%
Stenotrophomonas sp. isolate UBA11631: 0.02%
Pseudomonadaceae bacterium UBA 11525 Branch: 0.03%
Pseudomonas stutzeri isolate UBA1169: 5.86%
Pseudomonas oleovorans isolate UBA6922: 0.06%
Pseudomonas mendocina isolate UBA1872: 0.17%
Pseudomonas nitroreducens isolate UBA6825: 0.04
Pseudomonas sp. UBA2684: 1.52%
Pseudomonas sp UBA 3306 Branch: 0.11%
Pseudomonas rhodesiae isolate UBA2601: 0.06%
Pseudomonas fluorescens isolate UBA879: 0.06%
Pseudomonas kunmingensis isolate UBA915: 0.26%
Pseudomonas 3117 Branch: 0.35%
Moraxellaceae bacterium isolate UBA8513: 0.05%
Acinetobacter johnsonii UBA 3856 Branch: 0.02%
Sinobacteraceae bacterium UBA5061: 0.05%
Alcanivorax sp. UBA4527: 0.19%
Gammaproteobacteria bacterium isolate UBA7966: 0.02%
Proteobacteria bacterium UBA1844: 0.01%
Paludibacter sp. UBA5753: 0.20%
Prolixibacteraceae bacterium isolate UBA8504: 0.0
Flavobacterium sp UBA 2124 Branch: 0.01%
Desulfosporosinus sp. isolate UBA8488: 0.08%
Mageeibacillus sp. UBA5770: 0.05%
Propionibacteriaceae bacterium UBA6214: 0.17%
Cutibacterium acnes UBA 12830 Branch: 0.01%
Actinobacteria bacterium UBA 3815 Branch: 0.01%
Anaerolineales bacterium UBA2232: 0.02%
Holophagaceae bacterium isolate UBA8503: 0.02%

Dark Matter (Beta)

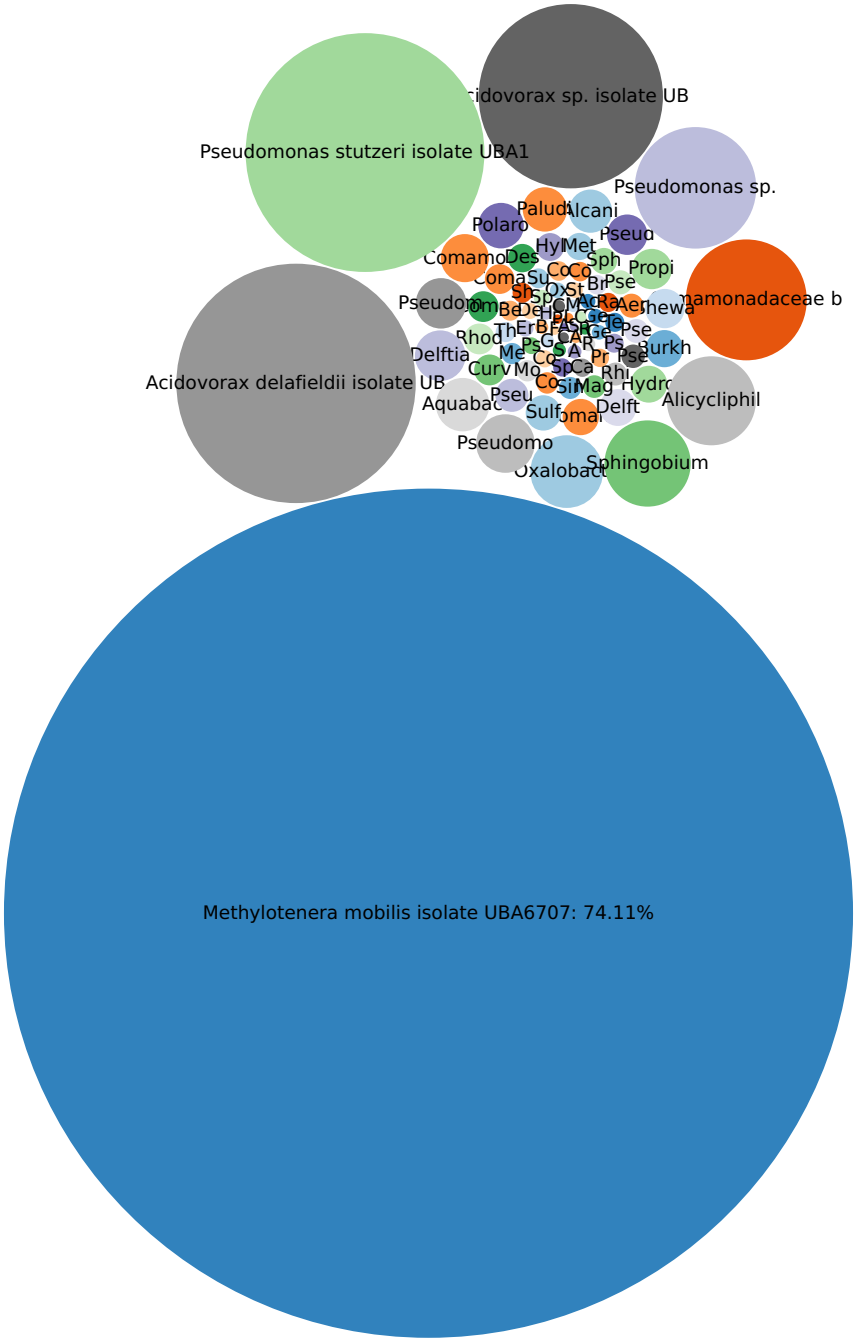
Radial Tree Chart Taxonomy

1B-90-3_MBPO210215-A

Total results




Methylotenera mobilis isolate UBA6707 - 74.11%
Methylo..mobilis
Methylotenera
Methylophilaceae
Nitrosomonadales
Betapro..acteria
Proteobacteria
Bacteria
5.89% - Acidovorax delafieldii isolat
Acido..eldii
Acidovorax
un..ax
Ac..p.
Comamonadaceae
..
..
Burkholderiales
3.49% - Acidovorax sp. isolate UBA10156
1.50% - Comamonadaceae bacterium isolate UBA84
11 more
8 more
5.86% - Pseudomonas stutzeri isolate UBA1169
1.52% - Pseudomonas sp. UBA2684
12 more
..Gammapr..acteria
Pseudomonadales
Pseudomonadaceae
Pseudomonas
..
Pseu..roup
Pseud..group
Pseud..tzeri


idovorax sp. isolate UB
Pseudomonas stutzeri isolate UBA1
Pseudomonas sp.
Acidovorax delafieldii isolate UB
Methylotenera mobilis isolate UBA6707: 74.11%
Sphingobium

Phages

1B-90-3_MBPO210215-A

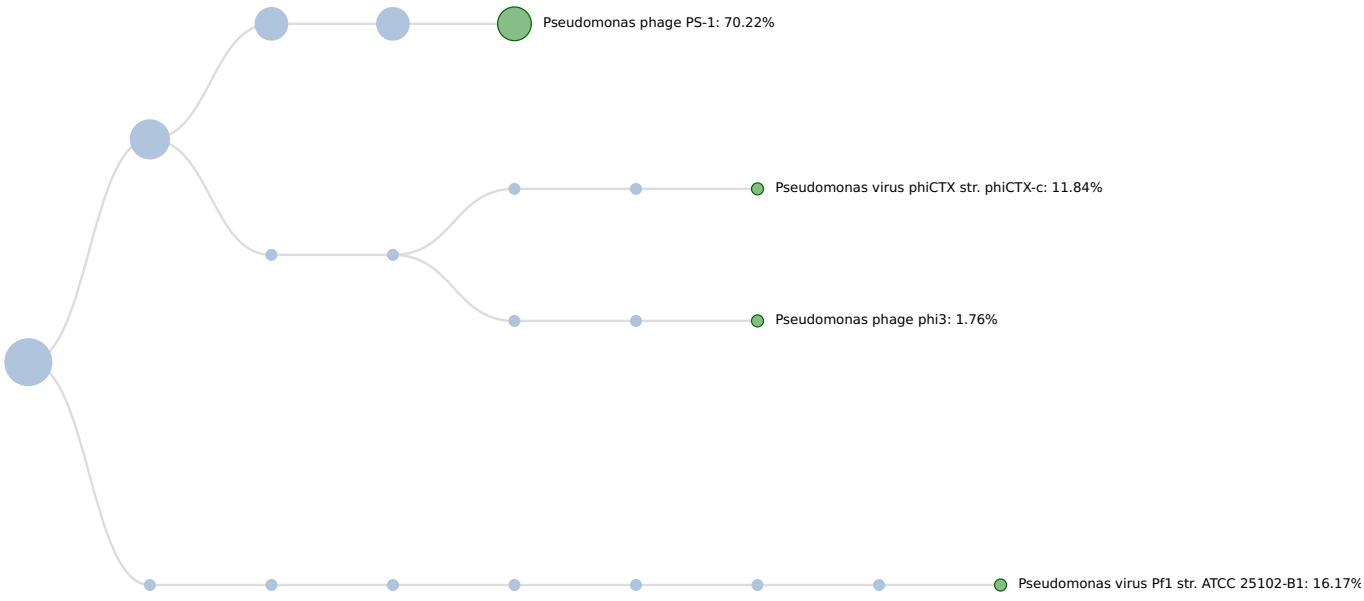
Total results

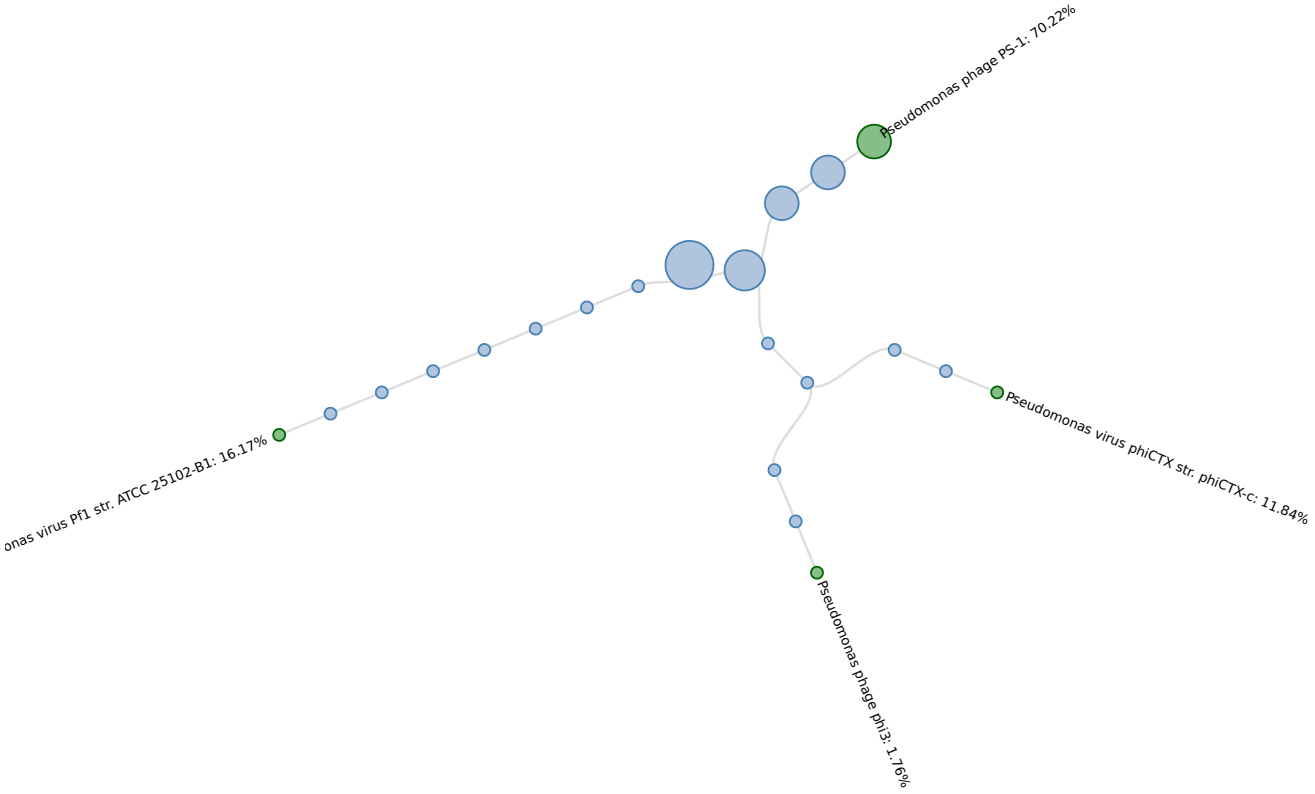
Fasta/q details

Metric	Value
Hit	1.197k

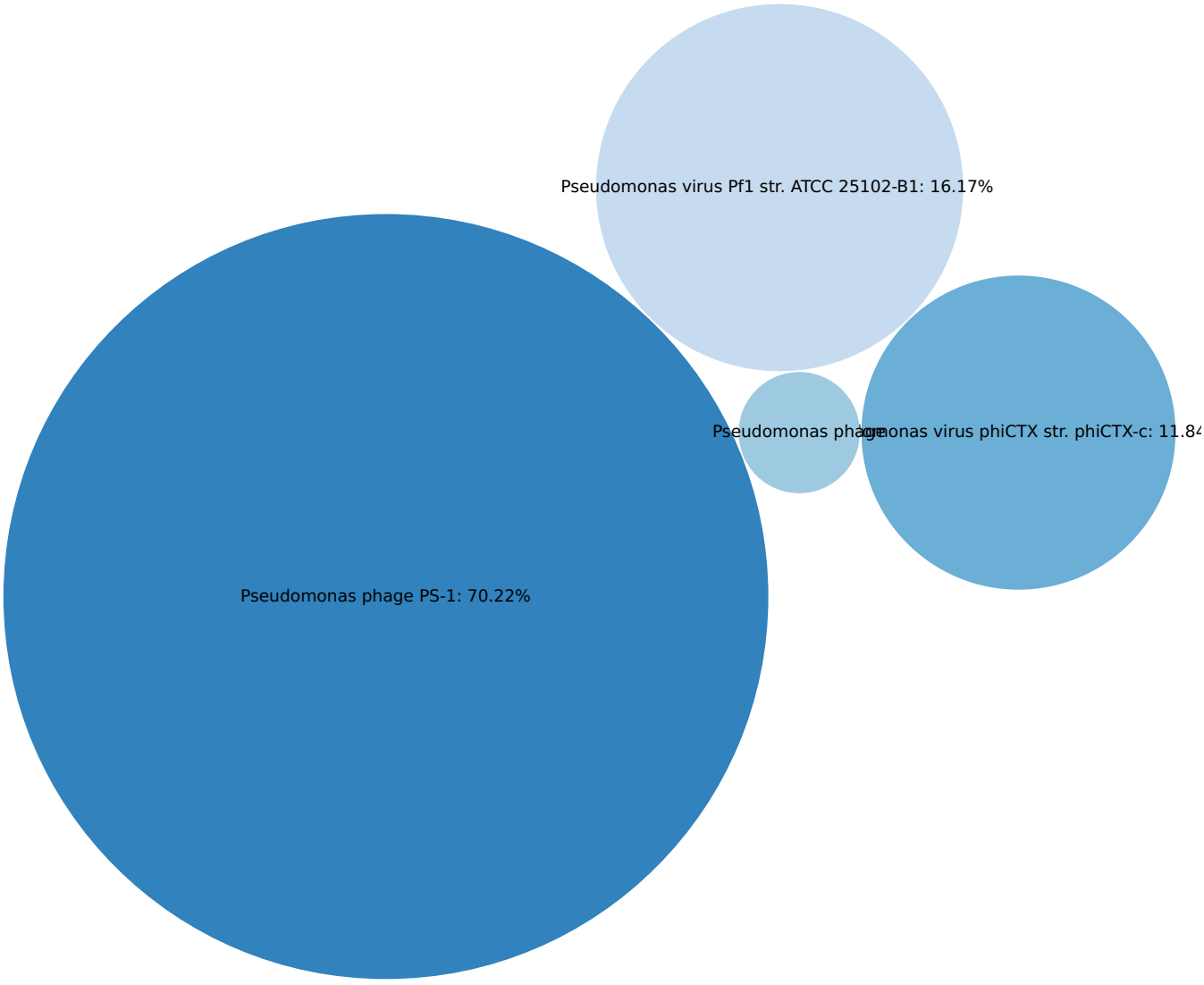
Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudomonas phage PS-1	1573458	97.57	70.23	1.50	1.50	403
Pseudomonas virus Pf1	2011081	22.47	16.17	0.90	0.90	127
Pseudomonas virus phiCTX	35343	16.45	11.84	0.15	0.15	168
Pseudomonas phage phi3	1754217	2.45	1.76	0.12	0.12	330


Pseudomonas phage PS-1: 70.22%
Pseudomonas virus phiCTX str. phiCTX-c: 11.84%
Pseudomonas phage phi3: 1.76%
Pseudomonas virus Pf1 str. ATCC 25102-B1: 16.17%


Pseudomonas phage PS-1: 70.22%
onas virus Pf1 str. ATCC 25102-B1: 16.17%
Pseudomonas virus phiCTX str. phiCTX-c: 11.84%
Pseudomonas phage phi3: 1.76%


Pseudomonas phage PS-1 - 70.22%
unclassi..oviridae
Siphoviridae
Caudovirales
Myoviridae
Peduovirinae
Peduovirus
Pseudomo..s phiCTX
11.84% - Pseudomonas virus phiCTX
..
..
1.76% - Pseudomonas phage phi3
Monodnaviria
Loebvirae
Hofneiviricota
Faserviricetes
Tubulavirales
Inoviridae
Pseudomo..irus Pf1
16.17% - Pseudomonas virus Pf1 str. ATCC 25102-B1


Pseudomonas virus Pf1 str. ATCC 25102-B1: 16.17%
Pseudomonas phage
monas virus phiCTX str. phiCTX-c: 11.8
Pseudomonas phage PS-1: 70.22%

Virulence Factors

1B-90-3_MBPO210215-A

Fasta/q details

Total results

Metric	Value
Hit	3.079k

Table

Name	Tax ID	Abundance Score	Relative Abundance %	Unique Matches %	Total Matches %	Frequency
Pseudomonas aeruginosa GI 3342496	-	67163.86	36.41	93.50	93.50	9574
Salmonella Typhimurium GI 46019645	-	31971.08	17.33	100.00	100.00	5959
Enterobacter aerogenes GENE tniC	-	14211.74	7.70	100.00	100.00	1330
Citrobacter freundii GENE tnpAcp2	-	13459.37	7.30	38.97	38.97	3342
Pseudomonas aeruginosa GENE intI1	-	10524.56	5.71	100.00	100.00	337
Vibrio cholerae GENE intI1	-	9733.37	5.28	100.00	100.00	117
Enterobacter aerogenes GENE tniA	-	6608.41	3.58	81.96	81.96	858
Enterobacter aerogenes GI 1572570	-	5591.74	3.03	45.53	45.53	1032
Klebsiella pneumoniae GENE tnpA	-	5245.98	2.84	71.56	71.56	398
Enterobacter aerogenes GENE tniB	-	4355.74	2.36	67.66	67.66	278
Pseudomonas aeruginosa GENE tnpA	-	4267.06	2.31	17.21	17.21	4725
Pseudomonas aeruginosa GENE tnpR	-	2810.07	1.52	25.91	25.91	615
Pseudomonas aeruginosa GENE pilT	-	2485.77	1.35	10.71	10.71	558
Salmonella Infantis GENE tnpR	-	2431.73	1.32	57.00	57.00	57
Pseudomonas aeruginosa GENE flgG	-	1468.63	0.80	13.11	13.11	263
Enterobacter aerogenes GENE klcB	-	868.70	0.47	20.28	20.28	58
Pseudomonas aeruginosa GENE orfA	-	729.42	0.40	10.29	10.29	185
Pseudomonas aeruginosa GENE orfD	-	533.22	0.29	10.70	10.70	75

ATTACHMENT E

Evergreen Field Procedures Manual

Quality Assurance/ Quality Control Plan and Field Procedures Manual

Sunoco Partners Marcus Hook Industrial Complex and Philadelphia Energy Solutions (PES) Philadelphia Refinery Complex

Evergreen Resources Management Operations
May 20, 2016

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Appendix

A Evergreen Field Procedures Manual

1.0 INTRODUCTION

This Quality Assurance/Quality Control Plan and Field Procedures Manual (QA/QC Plan) outlines the procedures developed to ensure the collection and analysis of quality data for investigations completed under the United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA), Pennsylvania Department of Environmental Protection (PADEP) Act 2, and Pennsylvania and Delaware's Tank programs at the Sunoco Partners Marketing and Terminals, LP (Sunoco Partners) Marcus Hook Industrial Complex (MHIC) and the Philadelphia Energy Solutions Refining and Marketing, LLC (PES) Philadelphia Refinery Complex (PRC) on behalf of Evergreen Resources Management Operations (Evergreen). This document shall be used in conjunction with the site-specific work plans developed for each site and Standard Operating Procedures (SOPs) for field work as incorporated as Appendix A of this QA/QC Plan.

The QA/QC Plan is a planning document that provides a "blueprint" for obtaining the type and quality of data needed to support environmental decision making. The QA/QC Plan integrates relevant technical and quality aspects of a project and documents quality assurance and quality control.

The selection criteria and evaluation specified in this document will be used for validating the data in accordance with the USEPA Guidance on Environmental Data Verification and Data Validation (USEPA 240-R-02-004), dated November 2002 (EPA QA/G-8), USEPA Contract Laboratory Program National Functional Guidelines (NFGs) for Superfund Organic Methods Data Review (USEPA 540-R-08-01), dated June 2008 (SOM02.2) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (USEPA 540-R-10-011), dated January 2010 (ISM02.2). Qualifiers assigned to the data will be consistent with the data qualifiers specified in the NFGs and the USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (USEPA 540-R-08-01), collectively referred to herein as validation guidance.

2.0 QUALITY CONTROL REQUIREMENTS

The field and laboratory QC requirements for the characterization and remediation activities are discussed in the following subsections. Specific QC checks and acceptance criteria are provided in the referenced analytical methods.

2.1 Field Sampling Quality Control

The field QC requirements include analyzing reference standards for field instrument calibration and for routine calibration verifications. All initial and continuing calibration procedures will be implemented by trained personnel following the manufacturer's instructions to ensure the equipment is functioning within the specified tolerances. The calibration and maintenance history of the project-specific field instrumentation will be maintained in an active field logbook.

Field QC samples for this project include field duplicate samples to assess the overall precision of the sampling and analysis event, equipment rinse blanks to ensure proper cleaning of non-dedicated equipment is conducted between samples to avoid potential cross contamination (also generally referred to as field blanks), and trip blank samples to monitor cross contamination of water samples by volatile organic compounds (VOCs) during sample transport.

The frequency of collection of equipment rinse blanks will be one per sampling event. Field duplicate samples will only be prepared for groundwater samples, not for soil sampling events, at a collection frequency of 1 in 20 samples. One trip blank will be included for every shipment of samples to an analytical laboratory, at a minimum frequency of one trip blank per sample shipment which contains samples for VOCs analyses.

2.2 Analytical Quality Control

The laboratory QC requirements for the analyses may include evaluating chemical/thermal preservation, holding times, handling requirements, method blanks, instrument performance checks, initial calibration standards, calibration verification standards, internal standards, surrogate compound spikes, interference check samples, serial dilution samples, matrix spike/matrix spike duplicate (MS/MSD) samples, and laboratory control samples (LCS). The

acceptance criteria for the above identified requirements will be generated by the laboratory and included in the laboratory reports, along with the other laboratory QC requirements.

3.0 DATA VERIFICATION, VALIDATION, AND USABILITY

All field and laboratory data will be reviewed, verified, and/or validated. These terms are defined as follows:

- Data review is the in-house examination to ensure that the data have been recorded, transmitted, and processed correctly.
- Data verification is the process for evaluating the completeness, correctness, and conformance/compliance of a specific data set against the method, procedural, and/or contractual requirements.
- Data validation is an analyte-specific and sample-specific process that extends the evaluation of data beyond method, procedure, or contractual compliance (i.e., data verification) to determine the quality of a specific data set relative to the end use.

Field data and logbooks will be reviewed to ensure that the requirements of the sampling program, including the number of samples and locations, sampling, and sample handling procedures, were fulfilled.

Data verification, validation, and usability assessments performed on a percentage of lab packages to ensure that the data are scientifically defensible, properly documented, of known quality, and meet the project objectives, are described in the following sections. Data determined to be unusable may require corrective action be taken. Data use limitations will be identified in the data validation and usability assessment (VUA) report, which will be generated as required for characterization or final reporting to the agencies.

3.1 Data Review, Verification, and Validation Requirements

Data review, verification, and validation of the analytical data will be performed by each consultant completing the field activities. The exception to this scenario will be Aquaterra Technologies, Inc. (Aquaterra), in which case Aquaterra will review/verify the data and the consultant company working with Aquaterra will subsequently validate the samples.

Field information will be reviewed to ensure that all field measurements were conducted in accordance with the requirements of the site-specific work plan and this QA/QC Plan including applicable SOPs. Field measurements obtained using procedures inconsistent with the

requirements of these documents will be evaluated and may require that additional samples are collected or the use of the data be restricted.

Stage 1 Verification and Validation Checks

One hundred percent of the sample results will go through a Stage 1 verification and validation. As part of the data management process, each consultant will complete verification and validation based on the validation guidance. Data verification and validation will consist of the following items based on the guidance stated.

Stage 1 verification and validation of the laboratory analytical data package consists of checks for the compliance of sample receipt conditions, sample characteristics (e.g., percent moisture), and analytical results (with associated information). It is recommended that the following minimum baseline checks (as relevant) be performed on the laboratory analytical data package received for a Stage 1 validation label:

1. Documentation identifies the laboratory receiving and conducting analyses, and includes documentation for all samples submitted by the project or requester for analyses.
2. Requested analytical methods were performed and the analysis dates are present.
3. Requested target analyte results are reported along with the original laboratory data qualifiers and data qualifier definitions for each reported result.
4. Requested target analyte result units are reported.
5. Requested reporting limits for all samples are present and results at and below the requested (required) reporting limits are clearly identified (including sample detection limits if required).
6. Sampling dates (including times if needed), date and time of laboratory receipt of samples, and sample conditions upon receipt at the laboratory (including preservation, pH and temperature) are documented.
7. Sample results are evaluated by comparing sample conditions upon receipt at the laboratory (e.g., preservation checks) and sample characteristics (e.g., percent moisture) to the validation guidance.

Stage 2 Verification and Validation Checks

A minimum of 10 percent of the samples will be flagged for VUA. When a laboratory work order is selected, the entire work order will undergo Stage 2 validation. Laboratory work orders or sample delivery groups (SDGs) that are selected for VUA will undergo validation based on the NFGs.

The selection of samples that will undergo VUA process is designed to meet the needs of the site investigation, characterization, remediation, and closure programs, such as tank closures. Sampling that falls outside these programs will not undergo the VUA process. This includes samples that are collected for permit compliance, such as RCRA and effluent wastewater, as well as product samples, onsite soil reuse samples, and waste characterization samples.

Ten percent of samples will be selected based on the following additional conditions:

1. Sample package selected will contain a field duplicate sample.
2. Sample package selected will contain an equipment rinse blank.
3. Sample package selected will be representative of the contracted analytical laboratories, sample media, parameters, time, and project goals.

QC samples that are collected in the field will provide the best information for completing the VUA reports. The conditions for selection of samples are designed to provide the most useful information regarding sample analysis. Therefore, field duplicate samples have been identified as a priority condition. However, field duplicate samples will only be prepared for groundwater samples, not for soil sampling events. This is due to the known, inherent heterogeneity of soil at the sites. For program efficiency, entire SDGs will be selected for submission in the VUA process. Individual samples should not be selected and processed unless there is an overriding reason to do so, such as a point of compliance sample result that when compared to the historic data set appears to be anomalous.

Stage 2 data validation includes a review of the following QC data deliverables:

1. Technical holding times
2. Method blanks
3. Surrogate spikes
4. MS/MSD results
5. LCS results
6. Field duplicates

7. Trip and equipment rinse blank samples

Stage 2B Verification and Validation Checks

Stage 2B verification and validation will be completed on inorganic analytical data and will contain the following (in addition to Stage 1 verification):

1. Requested methods (handling, preparation, cleanup, and analytical) are performed.
2. Method dates (including dates, times and duration of analysis for radiation counting measurements and other methods, if needed) for handling (e.g., Toxicity Characteristic Leaching Procedure), preparation, cleanup and analysis are present, as appropriate.
3. Sample-related QC data and QC acceptance criteria (e.g., method blanks, surrogate recoveries, deuterated monitoring compounds (DMC) recoveries, laboratory control sample (LCS) recoveries, duplicate analyses, matrix spike and matrix spike duplicate recoveries, serial dilutions, post digestion spikes, standard reference materials) are provided and linked to the reported field samples (including the field quality control samples such as trip and equipment blanks).
4. Requested spike analytes or compounds (e.g., surrogate, DMCs, LCS spikes, post digestion spikes) have been added, as appropriate.
5. Sample holding times (from sampling date to preparation and preparation to analysis) are evaluated.
6. Frequency of QC samples is checked for appropriateness (e.g., one LCS per twenty samples in a preparation batch).
7. Sample results are evaluated by comparing holding times and sample-related QC data to the requirements in the data validation guidance.
8. Initial calibration data (e.g., initial calibration standards, initial calibration verification [ICV] standards, initial calibration blanks [ICBs]) are provided for all requested analytes and linked to field samples reported. For each initial calibration, the calibration type used is present along with the initial calibration equation used including any weighting factor(s) applied and the associated correlation coefficients, as appropriate. Recalculations of the standard concentrations using the initial calibration curve are present, along with their associated percent recoveries, as appropriate (e.g., if required by the project, method, or contract). For the ICV standard, the associated percent recovery (or percent difference, as appropriate) is present.
9. Appropriate number and concentration of initial calibration standards are present.

10. Continuing calibration data (e.g., continuing calibration verification [CCV] standards and continuing calibration blanks [CCBs]) are provided for all requested analytes and linked to field samples reported, as appropriate. For the CCV standard(s), the associated percent recoveries (or percent differences, as appropriate) are present.
11. Reported samples are bracketed by CCV standards and CCBs standards as appropriate.
12. Method specific instrument performance checks are present as appropriate (e.g., tunes for mass spectrometry methods, DDT/Endrin breakdown checks for pesticides and aroclors, instrument blanks and interference checks for ICP methods).
13. Frequency of instrument QC samples is checked for appropriateness (e.g., gas chromatography-mass spectroscopy [GC-MS] tunes have been run every 12 hours).
14. Sample results are evaluated by comparing instrument-related QC data to the requirements in the data validation guidance.

Stage 3 Verification and Validation Checks

Stage 3 verification and validation will be completed on organic analytical data and will contain the following (in addition to Stage 2B):

1. Instrument response data (e.g., GC peak areas, ICP corrected intensities) are reported for requested analytes, surrogates, internal standards, and DMCs for all requested field samples, matrix spikes, matrix spike duplicates, LCS, and method blanks as well as calibration data and instrument QC checks (e.g., tunes, DDT/Endrin breakdowns, interelement correction factors, and Florisil cartridge checks).
2. Reported target analyte instrument responses are associated with appropriate internal standard analyte(s) for each (or selected) analyte(s) (for methods using internal standard for calibration).
3. Fit and appropriateness of the initial calibration curve used or required (e.g., mean calibration factor, regression analysis [linear or non-linear, with or without weighting factors, with or without forcing]) is checked with recalculation of the initial calibration curve for each (or selected) analyte(s) from the instrument response.
4. Comparison of instrument response to the minimum response requirements for each (or selected) analyte(s).
5. Recalculation of each (or selected) opening and closing CCV (and CCB) response from the peak data reported for each (or selected) analyte(s) from the instrument response, as appropriate.

6. Compliance check of recalculated opening and/or closing CCV (and CCB) response to recalculated initial calibration response for each (or selected) analyte(s).
7. Recalculation of percent ratios for each (or selected) tune from the instrument response, as appropriate.
8. Compliance check of recalculated percent ratio for each (or selected) tune from the instrument response.
9. Recalculation of each (or selected) instrument performance check (e.g., DDT/Endrin breakdown for pesticide analysis, instrument blanks, interference checks) from the instrument response.
10. Recalculation and compliance check of retention time windows (for chromatographic methods) for each (or selected) analyte(s) from the laboratory reported retention times.
11. Recalculation of reported results for each reported (or selected) target analyte(s) from the instrument response.
12. Recalculation of each (or selected) reported spike recovery (surrogate recoveries, DMC recoveries, LCS recoveries, duplicate analyses, matrix spike and matrix spike duplicate recoveries, serial dilutions, post digestion spikes, standard reference materials etc.) from the instrument response.
13. Each (or selected) sample result(s) and spike recovery(ies) are evaluated by comparing the recalculated numbers to the laboratory reported numbers according to the requirements in the data validation guidance.

Stage 4 Verification and Validation Checks

Additional data validation may be completed for selected sites and/or sampling events, up to EPA Level 4 data review, which will require a laboratory data package inclusive of raw data. Stage 4 verification and validation includes all of the elements of the previous stages of validation and the following:

1. Evaluation of instrument performance checks (GC/MS)
2. Initial and continuing calibration checks (organic and inorganic analyses)
3. Review of internal standards (GC/MS)
4. Instrument blanks (inorganics)
5. Interference check samples (metals)
6. Recalculations of sample results and reporting limits

3.2 Validation Codes

Consultant specific validation codes will be added to the database. This will allow quick identification of the consultant that has performed the verification and/or VUA. Stantec may append additional codes for data management purposes to the codes provided in dt_result table approval_code field. Valid codes are as follows:

Langan:

- LAN1 – Historical data collected by Langan Level 1 Validation (Verification)
- LAN-VER – Langan performed verification
- LAN-USB – Langan performed usability

GHD:

- GHD-VER – GHD performed verification
- GHD-USB – GHD performed usability

Stantec:

- STN-VER – Stantec performed verification
- STN-USB – Stantec performed usability

This methodology creates a means for consultants to perform verification and usability on data collected by another consultant.

3.3 Data Updates in the Electronic Data Deliverables

All consultants will request EQuIS 4 file format Electronic Data Deliverables (EDDs) for data management from the analytical laboratories. In order to facilitate the data updates in the database, the following methodology will be used.

1. The consultant chemist / chemist team will open the .RES file for the EDD that has been selected to be validated for usability. The file can be opened using Excel, Access, Notepad, or similar tool. Although, it is a best practice to open the file in a way to preserve the textual nature of the EDD, it is not necessary.
2. The chemist will use the result_comment field in the .RES file to enter the qualifiers associated with the record and add a semicolon as a delimiter (;) followed by the reason code for the qualification.

3. The .RES file is to be saved with a .USB extension at the end of the file. This file is to be separate from the original .RES file provided and should not be used to over write the original .RES file that was sent with the EDD. This will result in the laboratory work order undergoing VUA having five files instead of four for the EDD. For example:
    - 1234.SMP
    - 1234.TST
    - 1234.BCH
    - 1234.RES
    - 1234.RES.USB
4. Stantec will use the fifth file to update the database with the appropriate qualifiers and codes in validator_qualifiers and approval_a through approval_d fields in dt_result table in the database.
5. Stantec will also change the validated y/n field in dt_result table in the database for the particular EDD.

3.4 Validation Qualifiers

The following qualifiers should be used during the validation/usability process. These are based on the NFGs, validation guidance, and commonly used qualifiers.

Data Qualifiers and Definitions

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample, potentially biased high.

J- The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample, potentially biased low.

UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

NJ The analyte has been "tentatively identified" or "presumptively identified" as present and the associated numerical value is the estimated concentration in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

B The analyte was detected in the method, field, and/or trip blank. This qualifier is not pursuant to the NFGs.

If additional qualifiers are required, please forward the suggestions to the Stantec Data Management Team and they will be added to the list of approved codes.

Submitting Data and Validation Codes for Inclusion in the Database

EDDs will be submitted to the database using the SharePoint portal intake forms. The appropriate qualifiers and codes that have been added to the result_comment field in the .RES.USB file will be included in the submission.

Reason Codes

Following is a list of reason codes available for validation. If additional codes are required, please forward the suggestions to the Stantec Data Management Team and they will be added to the list of approved codes.

Reason Code	Reason Description
General Use	
EC	Result exceeds the calibration range.
HT	Holding time requirement was not met
MB	Method blank or preparation blank contamination
LCS	Laboratory control sample evaluation criteria not met
FB	Field blank contamination
RB	Rinsate blank contamination
SQL	The analysis meets all qualitative identification criteria, but the measured concentration is less than the reporting limit.
FD	Field duplicate evaluation criteria not met
TvP	Total to Partial criteria not met
RL	Reporting limit exceeds decision criteria (for non-detects)
Inorganic Methods	
ICV	Initial calibration verification evaluation criteria not met
CCV	Continuing calibration verification evaluation criteria not met
CCB	Continuing calibration blank contamination
PB	Preparation Blank
ICS	Interference check sample evaluation criteria not met
D	Laboratory duplicate or spike duplicate precision evaluation criteria not met
MS	Matrix spike recovery outside acceptance range
PDS	Post-digestion spike recovery outside acceptance range
MSA	Method of standard additions correction coefficient _0.995
DL	Serial dilution results did not meet evaluation criteria
Organic Methods	
TUNE	Instrument performance (tuning) criteria not met
ICAL	Initial calibration evaluation criteria not met
CCAL	Continuing calibration evaluation criteria not met
SUR	Surrogate recovery outside acceptance range
MS/SD	Matrix spike/matrix spike duplicate precision criteria not met
MS	Matrix spike recovery outside acceptance range
IS	Internal standard evaluation criteria not met
LM	The PFK lock mass SICPs indicate that ion suppression evident
ID	Target compound identification criteria not met
Results Reported for Analytes Analyzed Multiple Times	
NSR	Not selected for reporting because the result was qualified as unusable
NSDL	Not selected for reporting because diluted resulted was selected for reporting
NSQ	Not selected for reporting because result was lesser quality based on data validation
NSO	Not selected for reporting because of other reason
Bias Codes	
H	Bias in sample result likely to be high
L	Bias in sample result likely to be low
I	Bias in sample result is indeterminate

3.4 Verification and Validation Summary

Verification of sample collection procedures will consist of reviewing sample collection documentation for compliance with the requirements of the site-specific work plan and this QA/QC Plan. If alternate sampling procedures were used, the acceptability of the procedure will be evaluated to determine the effect on the usability of the data. Data usability will not be affected if the procedure used is determined to be an acceptable alternative that fulfills the measurement performance criteria in this QA/QC Plan.

The results of the data verification and validation procedure will identify data that do not meet the measurement performance criteria of this QA/QC Plan. Data verification and validation will determine whether the data are acceptable, of limited usability (qualified as estimated), or rejected. Data qualified as estimated will be reviewed and a discussion of the usability of estimated data will be included in the VUA report.

Data determined to be unusable may require corrective action to be taken. Potential types of corrective action may include resampling by the field team or reanalysis of samples by the laboratory. The corrective actions taken are dependent upon the ability to mobilize the field team and whether or not the data are critical for project data quality objectives to be achieved. Data use limitations will be identified in VUA report, which will be generated as required for characterization or final reporting to the agencies. Each consultant will be responsible for their own VUA reports.

Revision History

Revision	Description	Prepared By	Date
1.0	Initial creation of document as SOP for VUA	Stantec (Gus Sukkurwala/Jennifer Menges/Andrew Bradley)	5/31/2015
2.0	Incorporation into QA/QC Plan	GHD (Colleen Costello)	3/21/2016
3.0	Inclusion of Field Procedures. Edits from Langan (Emily Strake & Kevin McKeever)	Stantec (Jennifer Menges)	5/13/2016

APPENDIX A
EVERGREEN FIELD PROCEDURES MANUAL

Evergreen
Field Procedures Manual

Sunoco Partners Marcus Hook Industrial Complex and Philadelphia Energy Solutions (PES) Philadelphia Refinery Complex

Evergreen Resources Management Operations

May 20, 2016

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1.0 INTRODUCTION

This Field Procedures Manual outlines the standard operating procedures developed to ensure the collection and analysis of quality data for investigations completed under the United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) program, Pennsylvania Department of Environmental Protection (PADEP) Act 2 program and Pennsylvania and Delaware's Tank programs at the Sunoco Partners Marketing and Terminals, LP (Sunoco Partners) Marcus Hook Industrial Complex (MHIC) and the Philadelphia Energy Solutions Refining and Marketing, LLC (PES) Philadelphia Refinery Complex (PRC) on behalf of Evergreen Resources Management Operations (Evergreen). The MHIC and PRC are herein referred to as facility or site.

Evergreen's consultants collect data in pursuit of site characterization and remediation that will meet the expectations of the appropriate regulatory agencies. This document shall be used in conjunction with the site-specific work plans developed for each site and the QA/QC Plan of which this manual was incorporated as Appendix A.

1.1 Training Qualifications

All field personnel involved in field work at MHIC and the PRC shall have completed and where applicable, be current with OSHA 40-hour HAZWOPER training, annual OSHA 8-hour HAZWOPER refresher, Process Safety Management (PSM) training, site-specific safety module training for current facility badges (including fire watch and hole watch, if required), TWIC Card, annual drug screening, and annual respirator fit testing. All field personnel new to the facility should be provided with onsite health and safety (H&S) orientation by an experienced member of the project team. The onsite orientation should include review of the facility's emergency action plan and training on Evergreen and site-specific H&S requirements. Appropriately qualified personnel should perform field work, based on the work scope and experience level required by the task to be executed.

1.2 Health and Safety Requirements

All consultants performing work at the referenced sites on behalf of Evergreen shall comply with the *Evergreen Resources Management Operations Health and Safety Requirements* dated June 1, 2014. This includes contractors, sub-contractors, and third party companies performing

work for Evergreen at MHIC and the PES PRC. Each consultant must also have their own site-specific health and safety plan (HASP) submitted to and approved by Evergreen prior to performing any work. A site-specific HASP must be reviewed and signed by all field personnel prior to commencement of field activities.

1.3 PPE Requirements

The minimum standard PPE at the facilities includes fire resistant clothing (FRC; coveralls may be Nomex or other FRC, 6 ounce minimum, orange in color) with the name of the company displayed on the back of the garment, hard hat, sturdy safety-toe boots, safety glasses, long-gauntlet leather gloves, and personal H_2S monitors. Nitrile gloves for chemical protection and hearing protection may also be required depending on the location and type of work. Workers are to be trained on these PPE requirements before being permitted onsite. An appropriate respirator may be required if site-specific air monitoring action levels are met, in accordance with the site-specific HASP. If a worker has a particular sensitivity or concern, a respirator may be worn regardless of OSHA action levels. During winter weather conditions, slip prevention footwear such as crampons or overshoes should be worn for traction. Task-specific PPE will be further identified in following sections.

1.4 Site Controls

Safety cones and/or caution tape should be used in high traffic areas. The "Buddy System" may also be employed in high traffic areas, in areas where other contractors are working, and in remote areas. Additional task-specific site controls will be detailed in following sections.

1.5 Equipment and Decontamination

Numerous practices are employed throughout the processes of site investigation and sampling to assure the integrity of the resulting data. The risk in use of non-dedicated equipment at multiple sampling locations lies in the potential for cross-contamination. While the threat of cross-contamination is always present, it can be minimized through the implementation of a consistent decontamination program during sensitive site measurement and data collection activities.

All site equipment to be used in multiple locations (non-dedicated) for sampling of soil, sediment, and/or groundwater will be decontaminated immediately prior to initial use and between uses at each location according to the following steps:

- Remove particulates with a sorbent pad or towel and/or initial rinse with clean potable tap water;
- Wash equipment with clean sponge, soft cloth, or scrub brush as necessary in a solution of tap water/laboratory grade detergent (Alconox®, Liquinox®, or equivalent);
- Rinse with tap water;
- Rinse with deionized or distilled water; and
- Air dry for as long as possible.

Rinse water generated during decontamination procedures will be treated onsite by passing the water through a bucket or tube filled with activated carbon prior to discharge to the ground surface. Additional decontamination procedures may be appropriate depending on the task, and will be identified in the following sections, as applicable.

1.6 Documentation

All site activities and conditions for characterization activities should be recorded by field personnel in a field computer (e.g., YUMA) using the EQuIS Data Gathering Engine (EDGE) application, or if necessary, a field book may be used. The entry shall include at a minimum, the date, time, weather conditions, location, personnel present onsite, field readings, sampling methodology, as well as additional comments or observations. Task specific observations which should also be recorded will be identified in the following applicable sections.

2.0 LIQUID LEVEL ACQUISITION (WELL GAUGING) PROCEDURES

2.1 Potential Hazards

Traffic, pinch points, chemical (airborne and physical contact), and biological are all likely hazards to be encountered as well as slip/trip/fall potential during onsite well gauging activities. Additional hazards may be mentioned in the site-specific HASP and/or the daily job safety analysis (JSA).

2.2 Materials and Equipment Necessary for Task Completion

Optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy, decontamination supplies (laboratory-grade detergent, deionized or distilled water, appropriate containers, scrub brush, and sorbent pads or paper towels), socket set, flathead screwdriver (or pry bar or manhole cover lifter), clear bailers with string for confirmation of light non-aqueous phase liquids (LNAPL), if necessary, and air monitoring instruments (optional, based on previous site visits).

2.3 Methodology

This task involves the deployment of an optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy into a well (in most cases), recording the measurement, and decontaminating the probe. The recorded field measurements may then be utilized for one of several applications including: well sampling, water table gradient mapping, LNAPL occurrence, LNAPL thickness, and/or gradient mapping, and various testing procedures. Wells should be gauged in order of least to most contaminated, based on existing sampling data or LNAPL occurrence, to minimize the potential for cross-contamination between wells. If LNAPL is detected in a well that does not typically have LNAPL, it should be confirmed with a clear bailer.

The proper procedure for liquid level acquisition is as follows:

1) Decontaminate the optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy prior to initial deployment, and again after each well measurement to prevent cross-contamination between wells.

2) If warranted, mark off a work area surrounding the well(s) to be gauged with safety cones and/or caution tape in order to protect personnel from auto traffic; the "Buddy System" may also be employed.

3) Where applicable, lift the manhole cover off of the well head (a screwdriver, pry bar, or manhole cover lifter may be used to lift the cover depending on the size of the manhole) or open protective well casing (stickup) and remove the well plug, if present.

4) Most wells should contain a mark or notch in the top edge of the casing from which normalized readings are to be measured (reference point elevation). Slowly lower the optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy into the well until the instrument signals contact with liquid. Note whether or not the instrument's tone is indicative of the presence of free-phase LNAPL (commonly a solid tone), or water (commonly an oscillating or beeping tone). If LNAPL is present, record the depth at which LNAPL was first indicated to the nearest hundredth of a foot, as measured from the top of well casing mark/notch. Slowly lower the probe through the LNAPL until the instrument's tone changes to indicate the presence of water. Record the depth at which water was first indicated to the nearest hundredth of a foot. A clear bailer may be used to verify the existence or approximate amount and appearance of LNAPL. If no LNAPL is apparent, record the depth to water.

5) Retract the probe from the well and secure the well appropriately.

6) Note the date and time of measurement for gauging and record all measurements and observations in the field computer or, if necessary, in a field book for subsequent electronic data entry.

7) Decontaminate the probe in accordance with the decontamination procedure outlined in Section 1.5.

8) Clean up the work area, remove gauging equipment, and remove any traffic control devices.

3.0 GROUNDWATER MONITORING PROCEDURES

3.1 Potential Hazards

Traffic, pinch points, chemical (airborne and physical contact), and biological are all likely hazards to be encountered as well as slip/trip/fall potential during onsite well gauging activities. Additional hazards may be mentioned in the site-specific HASP and/or the daily JSA.

3.2 Materials and Equipment Necessary for Task Completion

A list of equipment required to access, gauge, purge, and sample site monitoring wells is presented below. Also listed are materials necessary to store, label, preserve, and transport groundwater samples.

- Current site map detailing well locations;
- Field book and/or field computer for recording site data;
- Graduated, optical oil/water interface probe;
- Keys and tools to provide well access;
- Appropriate, laboratory prepared sample containers and labels;
- Appropriate well purging apparatus as determined by volume of groundwater to be purged and compounds to be analyzed;
- Water quality meter for monitoring indicator field parameters (DO, pH, specific conductance, redox potential, and turbidity if available);
- Dedicated polyethylene bottom-loading bailer or well pump and disposable tubing for groundwater sample collection;
- Clean nylon or polypropylene bailer cord;
- Disposable nitrile sampling gloves;
- Decontamination supplies;
- Calibrated five-gallon bucket and watch or stopwatch to determine discharge rate during purging;
- Blank chain-of-custody forms; and

- Cooler(s) and ice for sample preservation.

3.3 Methodology for Three Well Volume Sampling

Prior to site visitation for the groundwater sampling event, the following data will be reviewed to ensure proper preparation for field activities:

- Most recent liquid level data from all wells;
- Most recent analytical data from all wells to determine gauging and sampling sequence; and
- Well construction characteristics.

Each monitoring well to be sampled will be gauged to obtain liquid level data immediately prior to initiation of the sampling process (refer to well gauging procedures above). Liquid level data should be recorded in a field computer or if necessary, a field book. Should free-phase LNAPL be detected by the gauging process, routine groundwater sampling will not be conducted at that location. If groundwater sampling under LNAPL is warranted, refer to the sub-LNAPL sampling section and methodology in Section 3.6.

Groundwater sampling will be initiated by purging from the well a minimum of three well volumes, except in cases where the well is pumped dry, as referenced below. Well purging is performed to remove stagnant water and to draw representative water from the aquifer into the well for subsequent sampling and analysis. In extreme cases where a well is pumped dry and/or shows little recharge capacity, the well should be evacuated once prior to sampling. Wellbore storage volume should be estimated using as-built information stored in the field computer or as indicated on the well log, and the depth to water measurement obtained immediately prior to sampling.

Water quality should be monitored and readings recorded in the field computer or field book while purging, typically through use of a multi-parameter water quality meter with a flow through cell or cord for down-well measurements. Water quality readings should be recorded a minimum of three times (pre-purge, during purge, and post-purge/sample collection) or four times (pre-purge and following each well volume). The parameters to be monitored and recorded are

dissolved oxygen, pH, specific conductance, redox potential, temperature, and turbidity if available.

Well purging can be performed with various equipment including: a dedicated bailer for hand bailing low volumes of water; a surface mounted electric centrifugal pump with dedicated polyethylene tubing; and/or submersible pump (particularly when the depth to water is greater than 20 feet) with dedicated polyethylene tubing. During pumping, the intake will be placed directly below the static water surface and slowly lowered during the purging process. This procedure may not be necessary in low-yielding wells but is important in high-yielding, permeable strata where an intake initially placed deep in a well may draw laterally and have little influence in exchanging water from shallower depths within the well bore.

Flow rate during well purging will be approximated by the bucket and stop watch method. The duration of pumping required to remove three well volumes will be calculated directly from this flow rate. All fluids removed during purging will be treated onsite with activated carbon or in accordance with an approved work plan.

The sequence of obtaining groundwater samples will be based upon available historical site data for existing wells and photoionization detector (PID) readings for newly installed wells. Monitoring wells will be sampled in order of those having the lowest to highest concentration of constituents of concern (or PID readings for new wells), based upon the most recent available set of laboratory analyses, to reduce the potential for cross-contamination. For general monitoring events, groundwater samples will not be obtained for analysis from any well containing measurable free product. If groundwater sampling under LNAPL is warranted, refer to the sub-LNAPL sampling section and methodology in Section 3.6.

The following sequence of procedures will be implemented for the collection of groundwater samples from monitoring wells.

1) Establish a clean work area where sampling equipment will not come in contact with the ground or any potentially contaminated surfaces.
2) Use a dedicated polyethylene sampling bailer for each well.
3) Use a clean pair of nitrile gloves.

4) Attach an appropriate length of unused, clean nylon or polypropylene cord to the designated sampling bailer.

5) Select appropriate laboratory-provided sample containers.

6) Slowly lower sampling bailer into well until water surface is encountered; continue to lower the sampling bailer into the standing water column to one foot below the water surface.

7) Retrieve bailer at a steady rate to avoid excess agitation.

8) Visually inspect bailed sample to ensure that no free product or organic detritus has been collected.

9) Uncap first designated sample vial and fill from bailer as rapidly as possible but minimizing agitation; secure septum and lid.

10) Inspect sealed sample for entrapped air; if air is present, remove the lid and gently top off sample in vial, seal and inspect. Repeat until no air is apparent.

11) Repeat Steps 9 and 10 for the remaining sample vials based on the laboratory and/or regulatory protocol.

12) Complete and attach labels to sample containers noting sample collector, date, time, and location of sample; record same data in field computer or field book.

13) Place samples in ice-filled cooler in such a manner as to avoid breakage. Samples will be maintained at a temperature of approximately 4°C.

14) Dispose of gloves, bailer, and bailer cord as solid waste and move to next sample location.

3.4 Methodology for Low-Flow Purging and Sampling

For wells that will be purged and sampled via low-flow methodology, the USEPA Region III Bulletin QAD023: *Procedure for Low-Flow Purging and Sampling of Groundwater Monitoring Wells* will be followed. The following data will be reviewed for each well in order to set the pump intake for the low-flow sampling:

- Soil boring lithologic log;
- Well construction log showing the screened interval;
- Identification of the most permeable zone screened by the well;
- Approximate depth to static water;

- Proposed pump intake setting; and
- Technical rationale for the pump intake setting, preferably across from the most impacted/contaminated subsurface interval.

Adjustable rate, submersible, bladder pumps in conjunction with polyethylene tubing for purging and sampling will be used. An alternate set up could include a stainless steel submersible pump, such as a Hurricane® pump or a Monsoon® pump with dedicated polyethylene tubing. The tubing diameter will be between 3/16-inch and ½-inch inner diameter and the length of the tubing extended outside of the well should be minimized. Flow-through cells will be used to monitor groundwater quality parameters during sampling. Monitoring well information, equipment specifications, water level measurements, parameter readings, and other pertinent information will be recorded during well purging and sampling.

The following sequence of procedures will be implemented for the collection of groundwater samples from monitoring wells by the low-flow methodology.

1) PID Screening of Well: A PID measurement may be collected at the rim of the well immediately after the well cap is removed and recorded in the field computer or field book, if historic data is not available.
2) Depth to Water Measurement: A depth to water measurement will be collected and recorded. To avoid disturbing accumulated sediment and to prevent the inadvertent mixing of stagnant water, measuring the total depth of the well should be done at the completion of sampling.
3) Low Stress Purging Startup: Water pumping will commence at a rate of 100 to 400 milliliters per minute (mL/min). This pumping should cause very little drawdown in the well (less than 0.2-0.3 feet) and the water level should stabilize. Water level measurements are made frequently, and flow rate will be recorded in mL/min on the sampling form or field computer.
4) Low Stress Purging and Sampling: The water level and pumping rate will be monitored and recorded every five minutes during purging, and any pumping rate adjustments will be recorded. During the early phase of purging, emphasis will be placed on minimizing and stabilizing pumping stress, and recording any necessary adjustments. Adjustments, when necessary, will be made in the first 15 minutes of purging. If necessary, pumping rates will

be reduced to the minimum capabilities of the pump to avoid well dewatering. If the minimal drawdown exceeds 0.3 feet, but the water level stabilizes above the pump intake setting, purging will continue until indicator field parameters stabilize, as detailed in Step 5 below. If the water level drops below the pump intake setting at the absolute minimum purge rate, the pump will remain in place and the water level will be allowed to recover repeatedly until there will be sufficient water volume in the well to permit the collection of samples.

5) Indicator Field Parameter Monitoring: During well purging, indicator field parameters (DO, pH, specific conductance, redox potential, and turbidity if available) will be monitored every five minutes (or less frequently, if appropriate). Purging will be considered complete and sampling can commence when all the indicator field parameters have stabilized. Stabilization will be achieved when three consecutive readings, taken at five minute intervals (or less frequently, if appropriate), are within the following limits:
    - DO (±10 percent);
    - turbidity (±10 percent);
    - specific conductance (±3 percent);
    - pH (± 0.1 unit); and
    - redox potential ([Eh] ±10 mv).

    Temperature and depth to water will be also monitored during purging. Should any of the parameter-specific components of the water quality meter fail during monitoring, the sampling team will attempt to locate a replacement multi-meter or individual criteria meter. If none are available, the sampling team will continue recording the parameters that are operational, and proceed with the sampling. Any other field observations relating to sample quality, such as odor, foaming, effervescence, and sheens, will also be recorded in the field computer or on the sampling form.
6) Collection of Ground Water Samples: Water samples for laboratory analyses will be collected prior to the flow-through cell by either using a bypass assembly or by temporarily disconnecting the flow-through cell. All sample containers will be filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence. During purging and sampling, the tubing should remain filled with water in order to minimize possible changes in water chemistry upon contact with the atmosphere. Methods employed to ensure that the outlet tubing will be filled include adjusting the tubing angle upward to

completely fill the tubing and restricting the diameter of the tubing near the outlet of the tubing.

The order in which samples will be collected is as follows:

- Volatile organics;
- Gas sensitive (e.g., Fe^{+2}, CH_4, H_2S/HS);
- Base neutrals or PAHs;
- Total petroleum hydrocarbons;
- Total metals;
- Dissolved metals;
- Cyanide;
- Sulfate and chloride;
- Nitrate and ammonia;
- Preserved inorganic;
- Non-preserved inorganic; and
- Bacteria.

After the appropriate laboratory-provided glassware is filled and labeled, the samples shall be placed in an ice-filled cooler and maintained at approximate 4°C for submittal to the laboratory. Upon completion of sampling at the well, decontaminate non-dedicated equipment in accordance with the decontamination procedure outlined in Section 1.5, and dispose of all dedicated equipment (gloves, tubing, etc.) as solid waste before moving to the next location.

3.5 Methodology for Passive (No-Purge) Sampling for Groundwater Collection

There are many passive groundwater sampling devices that allow for accurate sample collection without purging. Each device has specific uses and conditions for which they are more applicable. This methodology presents details for the use of HydraSleeve samplers.

The HydraSleeve is a disposable, single use device for the collection of representative groundwater samples for laboratory analysis of physical and chemical parameters.

HydraSleeves are placed within the screened interval (or other defined interval) of the well and activated after an equilibrium period. When used according to the manufacturer's instruction, the HydraSleeve will collect a groundwater sample without purging, thus causing no drawdown, agitation, or water column mixing. The HydraSleeve collects a sample from the screened interval only, and excludes water (or other fluids) from other parts of the well by use of check valve that seals when the sampler is full. The HydraSleeve takes advantage of the continuous natural movement of groundwater, which produces an equilibrium condition between the water in a well screen and the adjacent formation. HydraSleeves produce reliable data from low yield wells where other sample methods cannot due to well screen dewatering and associated alteration in water chemistry.

The HydraSleeve consists of the following components:

1) A long (usually 3 to 5 feet), flexible, lay-flat polyethylene sample sleeve, which is sealed at the bottom, and is equipped with a reed valve at the top allowing water to enter the HydraSleeve only during active sample retrieval.
2) A reusable, stainless steel weight attached with a clip to the bottom of the sleeve. The weight is used to carry the sample sleeve down the well to the specified depth (usually the bottom of the well screen). An optional top weight is also available to compress the sleeve in wells with short well screens.
3) A tether line attached to a spring clip at the top of the sample sleeve to deploy the device within the well and later retrieve it for sample collection.
4) A discharge tube is supplied with the device, which is used to puncture the wall of the sleeve after it is recovered to allow direct filling of sample bottles.

Deployment

Upon retrieval, the HydraSleeve is designed to effectively collect a "core" of water from within the well screen, which is equivalent in length and diameter to the sample sleeve. The upward motion opens the valve at the top, which then allows the device to fill with water. The Hydrasleeve should be installed with the top of the sample sleeve as close to the desired sample interval as possible. This will allow the sampler to fill and the check valve to close before the top of the device is pulled past the top of the sample interval.

To assemble and deploy the HydraSleeve:

1) Remove the Hydrasleeve from its package and hold it by the top, pinching the top at the holes.
2) Attach the spring clip and tether in the holes.
3) Slide the clip and bottom weight assembly into the holes at the bottom of the sleeve.
4) Lower the Hydrasleeve by the tether to the bottom or to the specified depth and secure the tether at the wellhead (Note: do not pull the HydraSleeve upward at any time during deployment, as this could cause the check valve to open and water to fill the sleeve inadvertently).

Sample Collection

Although the HydraSleeve only displaces approximately 100 milliliters (ml) of water during deployment, the well should be allowed to stabilize prior to sample collection so that natural flow conditions and contaminant distribution can return to equilibrium conditions. In certain jurisdictions, regulatory directives may prescribe a minimum equilibration period. When used for periodic monitoring programs, such as quarterly or semi-annual sampling, the HydraSleeve can be installed and remain in the well until the next sampling event, thus providing ample time for the well to equilibrate.

To collect a sample:

1) Be sure the tether is secured to the top of the well.
2) In one smooth motion, pull the tether upward at a rate of approximately 1 foot per second. The weight of the sampler will be felt when the valve closes. Continue pulling upward until the HydraSleeve is clear of the well.
3) Discard the water trapped at the top of the HydraSleeve above the reed valve.
4) Hold the HydraSleeve at the reed valve, and puncture the sleeve with the discharge tube just below the reed valve.
5) Decant the water into sample containers.
6) Discard the HydraSleeve as solid waste and process the excess water through activated carbon prior to discharge to the ground surface.

The weight and clips should be decontaminated prior to deploying a replacement HydraSleeve in the well. Tethers can be dedicated to individual wells or decontaminated and reused.

3.6 Methodology for Sub-LNAPL Sampling

The following section describes the methodology used for obtaining groundwater samples from the water column beneath LNAPL. Wells for sub-LNAPL sampling are not purged of three well volumes prior to sampling. This will prevent the potential of drawing LNAPL into the sample and to be representative of steady-state groundwater conditions beneath the LNAPL.

The following data will be reviewed for each well in order determine the appropriate equipment necessary:

- Well construction log showing diameter and total depth of the well;
- Approximate depth to LNAPL; and
- Approximate depth to static water.

A list of equipment for sub-LNAPL sampling is presented below:

- Field book or field computer for recording site data;
- Optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy;
- Keys and tools to provide well access;
- Peristaltic pump;
- Polyethylene tubing specifications of 0.25-inch outer diameter x 0.17-inch inner diameter is preferable as this small diameter assists in achieving lower flow rates;
- Silicone tubing of appropriate diameter to operate peristaltic pump;
- Polyvinyl chloride (PVC) drop tube (1.5-inch or other appropriate diameter);
- PVC rod (0.5-inch or other appropriate diameter);
- PVC end cap for drop tube;
- Tether for end cap;
- Clamps for securing drop tube to well casing;
- Appropriate sample containers and labels;

- Decontamination supplies;
- Blank chain-of-custody forms; and
- Cooler and ice for sample preservation.

The following sequence of procedures will be implemented for the collection of sub-LNAPL groundwater samples.

1) Determine LNAPL Thickness: Use an optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy to collect depth to LNAPL and depth to water measurements.
2) Installing Sampling Equipment: Deploy a 1.5-inch (or other appropriate diameter) PVC pipe (drop tube), with an attached end cap, through the LNAPL layer in the well. The end cap should be tethered to the drop tube so it is not lost in the well when removed and in a way that allows the drop tube to be sealed during installation. Lower the drop tube until the bottom of the tube is approximately two feet into the water column below the bottom of the LNAPL. Secure the drop tube to the well, and allow the system to equilibrate, approximately one half hour. The end cap is then removed by inserting a 0.5-inch (or other appropriate diameter) PVC rod into the drop tube and pushing on the cap until the lid is removed. The cap will be removed along with the tube upon completion of sampling.
3) Collection of Groundwater Samples: Lower polyethylene tubing through the 1.5-inch drop tube into the water column. Connect the polyethylene tubing to silicon tubing and engage the peristaltic pump for groundwater retrieval. Set the flow rate to the lowest pumping rate that can be sustained so that the LNAPL is not drawn into the tubing. Begin collecting groundwater in the sample container and continue until enough volume is obtained for all bottleware required by the laboratory for the requested analyses.

3.7 Decontamination Requirements

Of particular significance to the procedures of groundwater measurement and sampling is the limitation, whenever possible, of materials inserted into a well bore and, even more importantly, of materials transferred from well to well.

Many items can be discarded between well sampling and/or gauging locations without significantly impacting project costs. Dedicated sampling equipment which can be discarded

between well sampling locations, will be used whenever possible to preclude decontamination requirements. Sampling equipment included in this category are polyethylene bailers, bailer cord, nitrile gloves, and sampling tubing. However, other monitoring and sampling equipment, such as oil/water interface probes and submersible sampling pumps, must be reused from well to well.

All site equipment to be used in multiple locations (non-dedicated) for gauging and/or sampling of groundwater will be decontaminated immediately prior to initial use and between uses at each location according to the following steps:

- Remove particulates with a sorbent pad or towel and/or initial rinse with clean potable tap water;
- Wash equipment with clean sponge, soft cloth, or scrub brush as necessary in a solution of tap water/laboratory grade detergent (Alconox®, Liquinox®, or equivalent);
- Rinse with tap water;
- Rinse with deionized or distilled water; and
- Air dry for as long as possible.

Rinse water generated during decontamination procedures will be treated onsite by passing the water through a bucket filled with activated carbon prior to disposal.

3.8 Documentation

All site activities and conditions at the time of purging and groundwater sampling should be recorded by field personnel in a field computer via the EDGE application or, if necessary, a field book may be used. The entry shall include the date, time, weather conditions, location (well name), personnel present onsite, PID readings, sampling methodology, purge rate, purge volume, and the aforementioned groundwater indicator parameters. A field qualifier “SL” shall be applied to each sub-LNAPL sample entry to denote sample collection as sub-LNAPL. Additional comments or observations (e.g., well damage, nearby pumping, LNAPL sheen) should also be recorded.

4.0 SOIL SAMPLING & WELL INSTALLATION PROCEDURES

4.1 Site Controls

Prior to hand augering, hydroexcavation, utilizing a backhoe, or deploying any drilling apparatus to the site, an underground utility line protection request must be made (i.e., Pennsylvania One Call) for mark-out of known subsurface utilities and associated laterals proximal to the drilling location. Site plans, if available, should be reviewed to document and avoid the location of onsite utilities.

After review of all known mapped and marked utilities, a site reconnaissance will be performed to document the location of utility meters and storm sewer drains. In addition, the location of overhead utilities must be documented. After completing the subsurface and overhead utility review, the area to drill may be considered clear of utilities, or the location may be adjusted to a nearby location, which must also be cleared.

Lastly, any drilling activities must be preceeded by clearing of the borehole, prior to advancement of augers or split spoons. To ensure the safety of workers, the borehole will be cleared by hand, hydroexcavator, or backhoe to a depth of approximately 8 feet below ground surface.

4.2 Potential Hazards

Traffic, pinch points, chemical (airborne and physical contact), and biological are all likely hazards to be encountered during soil sampling and well installation, as well as slip/trip/fall potential. Drilling is considered a high risk activity which requires facility approval prior to implementation. Additional hazards are identified in the site-specific HASP and/or the daily JSA.

4.3 Materials and Equipment Necessary for Task Completion

A list of equipment required to oversee test boring advancement and, where applicable, sample soil is presented below. Also listed are materials necessary to store, label, preserve, and transport soil samples.

- Current site map detailing well locations;
- Field computer and/or field book for recording site data;

- Appropriate, laboratory prepared sample containers and labels;
- PID;
- Single-use, disposable plastic scoops or stainless steel scoop for collecting soil samples;
- Single-use, disposable, laboratory-supplied syringes for soil sample collection (if applicable);
- Scale for weighing samples (e.g., methanol kits, if necessary);
- Disposable nitrile sampling gloves;
- Measuring tape (for measuring core recovery);
- Munsell soil color chart/book (recommended);
- Decontamination equipment (if applicable);
- Blank chain-of-custody forms; and
- Cooler(s) and ice for sample preservation.

4.4 Decontamination Requirements

All down-hole drilling equipment must be steam cleaned prior to drilling at each soil boring or well location. All soil sampling equipment must be cleaned with detergent and rinsed with deionized or distilled water prior to deployment into the borehole. All well construction materials (i.e. PVC well casing, PVC well screen, sand pack, bentonite) should be clean and dedicated to each borehole.

4.5 Methodology for Soil Boring Installation

4.5.1. Borehole Advancement

During test drilling activities, a borehole is advanced into the subsurface via a rotary or direct-push drilling technique. Various types of drilling methods could be deployed at these facilities to advance the borehole and gain access to the subsurface for characterization and sampling. A description of the most commonly utilized drilling methods is included below:

4.5.1.1 Hollow Stem Auger

A hollow, steel pipe (available diameters vary) with welded, exterior steel "flights" is used to convey subsurface material to the surface when rotated clockwise. A bit at the bottom of the lead auger cuts into the subsurface material, and the rotation conveys the loosened material (cuttings) up the flights, allowing the hole to be advanced (cuttings may not always return to the surface, such as when drilling in soft, saturated materials). The hollow center of the auger allows the driller to access the subsurface for soil sample collection and, where applicable, well installation during borehole advancement. During borehole advancement, a center stem of steel rods connected to an auger plug prevent soil cuttings from entering the drill column. Once a desired drilling depth is reached, the center plug and rods can be pulled out, leaving the auger stem in place to prevent borehole collapse. A split-spoon sampler can be threaded onto the rods in place of the plug and driven via a hammer to obtain a sample (Standard Penetration Test), or if terminal depth has been reached a monitoring well could be installed through the augers.

4.5.1.2 Air and Mud Rotary

Rotary drilling methods are similar to hollow stem auger drilling, however specialized drilling bits at the bottom of rods are used to cut into the subsurface material using compressed air, vibration, and/or pressurized drilling mud. Compressed air or mud is forced through the drilling rods via an air compressor or pump, and escapes through small holes in the drill bit. The circulation of drilling mud, or air combined with introduced water or formation water, conveys the soil cuttings to the surface (while also cooling the drilling bit and preventing borehole collapse).

4.5.1.3 Geoprobe®

A direct-push drilling method, Geoprobe® sampling utilizes a hydraulic hammer to drive steel rods into the subsurface for soil sampling. This method advances a core barrel lined with a plastic Macro-Core® sleeve into the soil column for continuous soil core collection.

4.5.1.4 Hand Auger

A stainless steel or aluminum hand auger is physically advanced to a desired soil sampling depth through rotation of the auger and head.

4.5.2 Soil Sampling

Soil samples will be obtained for lithologic logging and where appropriate, for laboratory analysis with one of three different sampling devices: Split barrel spoon sampler, hand auger, or Geoprobe® soil sampler. For either method, the sampling devices are lowered through the hollow-stem augers or open borehole to allow sampling of undisturbed sediments below the bit or drive shoe. Soil samples will be collected at regular intervals for subsurface characterization and selection of appropriate well screen interval(s). Soils which appear to be visually impacted or from intervals which exhibit the highest deflections on the screening device (PID or similar) will be sampled for laboratory analysis in accordance with an approved sampling plan.

4.5.2.1. Split barrel spoon sampler (split spoon)

The split spoon sampler will be driven into the soil column in accordance with ASTM Standard Method D1586 (Reference A6, Appendix E). Soil sampling by split spoon is characterized by drilling a borehole with a hollow-stem auger to the desired sampling depth (the standard calls for one sample per five foot depth interval). The split spoon sampler is attached to the drilling rods after removal of the auger plug. The drill operator will drive the sampler into the undisturbed soil by repeatedly striking the drilling rods with a 140 pound safety hammer over a 30 inch drop. Field personnel will record the number of blows required to drive the split spoon sampler for each successive six-inch interval. After the sampler has been filled, the driller will remove the rods and sampler from the borehole and should provide the intact sampler to field personnel for opening (the drive shoe and head can be loosened). Field personnel should split the spoon, scan with PID, measure sample recovery, thoroughly describe the soil lithology, note visual observations and odors, note degree of saturation, and where applicable collect soil sample(s) utilizing a stainless steel or disposable scoop. An approved, retractable knife may be used to trim the top and edges of the sample, and once prepared the sample should be containerized in appropriate sample containers.

4.5.2.2. Geoprobe®

The Geoprobe® operator will advance the drilling rods into the subsurface using a truck or track-mounted drill with a hydraulic hammer. A dedicated Geoprobe® Macro-Core® liner is

inserted into the core barrel to collect continuous core samples, usually one per 4 foot interval. The Geoprobe® operator will remove the soil filled liner from the core barrel, cut the liner, and provide field personnel with the intact cores. After retrieval of the sample, the liner may be removed by field personnel and the soil core should be scanned with a PID and logged, including documentation of core recovery, soil lithology, visual observations and odors, and degree of saturation. Where applicable, field staff should remove the soil sample utilizing a stainless steel or disposable scoop and containerize in an appropriate sample container.

4.5.2.3. Hand Auger

The self-powered hand auger allows for soil from the desired interval to be collected directly through removal of the soil sample that is collected in the auger head for every six inches of advancement.

4.6 Methodology for Leaded Tank Bottoms Soil Sampling

Leaded tank bottom material is described as containing materials distinguished by distinctive rust/red to black, metallic, mostly oxidized scale materials, sometimes in a matrix of petroleum wax sludge. The approach for identifying leaded tank bottom materials is summarized below:

- If materials are encountered within the previously designated leaded tank bottom areas, matching the physical description given above for leaded tank bottoms, then samples should be collected for lead analysis.
- If total lead results are above the site-specific standard (SSS) for lead of 2,240 milligrams per kilogram (mg/kg) then samples should be analyzed for lead via Toxicity Characteristic Leaching Procedure (TCLP), EPA Test Method 1311.
- Delineated areas that exhibit soils that physically resemble leaded tank bottoms, exhibit lead concentrations greater than 2,240 mg/kg, and exceed 5 milligrams per liter (mg/l) for lead in the TCLP leachate (which is characteristically hazardous for lead) will retain the leaded tank bottom designation. If no soils are encountered that meet all three of these criteria, then the area will no longer be classified as a leaded tank bottom area.

4.7 Methodology for Monitoring Well or Recovery Well Installation

4.7.1 Well Construction

After drilling to a desired terminal depth via any of the drilling methods referenced above, permanent monitoring wells can be installed to allow access to groundwater for future monitoring and groundwater sampling. In general, monitoring wells are constructed of pipe with a slotted interval(s) (screen) through which groundwater can flow into the well from a desired water-bearing stratum. In most cases, PVC materials are utilized for monitoring well construction.

- For applications where LNAPL thickness measurement is necessary, the screened interval should extend above the presumed highest groundwater level.
- For applications where the shallowest groundwater interval is to be monitored (e.g., water-table aquifer), a single well casing is installed.
- For applications where multiple water bearing strata will be penetrated and where deep groundwater conditions are selected for monitoring, a double-cased well may be installed to prevent the vertical migration of contaminants to the deeper water bearing zone from shallower zone(s).

Each well construction type and considerations for field staff regarding how many casings are needed have been provided below.

4.7.1.1 Single Casing Construction

The most commonly installed monitoring well at the facilities have single casings and are constructed of PVC. To determine the length of screen used, seasonal groundwater table or tidal fluctuations should be considered to allow the water table to intercept the well screen throughout the year. Field personnel should advise the driller on the required well diameter, total well depth, screen interval, screen length, and slot size based on available subsurface information prior to drilling. Once the borehole is completed and the drilling crew has been advised on the desired construction, the drilling crew will thread the well screen onto an end cap at the wellhead and will lower the well into the borehole, adding lengths of casing until the terminal depth is reached.

While the well is held near the center of the borehole, the annular space between the well screen and formation is carefully backfilled with a sand filter pack, which consists of clean,

sorted quartz sand sized to the formation grain size (typically #1 or #2 sand). The sand pack establishes continuity with the formation and acts as a filter to prevent soil from entering the well (the well screen slot size should be sized according to the formation median grain size to mitigate sediment intrusion, however is most commonly available from suppliers as 0.01 or 0.02-inch diameter slot size).

The sand pack should extend one to two feet above the top of well screen, and care must be taken by the driller to not bridge the sand or overshoot the top of sand target depth (particularly when installing wells through the auger stem). Above the sand pack, a seal (grout) is installed in the annular space between the well casing and the soil. The seal is comprised of hydrated bentonite, sometimes amended with pellets or a grout consisting of hydrated Portland cement, bentonite powder, or a blend of the two. A conventional grout blend is 95% Portland cement and 5% bentonite powder. The purpose of the seal is to prevent surface water from infiltrating the well screen. It is installed from the top of the sand to one to two feet below ground surface.

In circumstances where the top of well sand terminates below the water table (e.g., deeper groundwater or submerged screen), grout should be mixed into a slurry at the ground surface and pumped via tremmie pipe or hose to prevent bridging. Above the well seal, the annular space can be backfilled with granular bentonite or concrete. A cement cap or well pad is placed at the surface to further mitigate potential infiltration of surface water. A locking, steel protective casing (stand pipe) or a locking, flush-mounted curb box should be installed to protect the well.

4.7.1.2 Double Casing Construction

Construction of a double cased well is similar to that of a single case well; however, to prevent groundwater infiltration from shallower water bearing zones, a second casing is installed through a surface casing. This type of construction requires drilling two different diameter boreholes.

During drilling through the shallower groundwater bearing zone(s), a larger diameter borehole is drilled and should be sized according to the desired well and/or outer casing diameter. This may require reaming of the borehole depending on the conditions and

drilling equipment. An outer (surface) casing is installed and the annulus is grouted. After the outer casing is installed and the grout has set, the borehole is advanced through the surface casing with a smaller diameter drill stem and bit. When the desired terminal depth is reached, a monitoring well is installed through the inner casing using the above-referenced single casing construction procedure (the annular space between the outer and inner casings above the well filter sand should be pressure grouted).

4.7.2 Handling of Soil Cuttings

Soil cuttings generated during drilling will be containerized or stockpiled on plastic until sampling and analytical data can be obtained. Soil cutting final placement (onsite soil reuse or offsite disposal) will be performed in accordance with Pennsylvania Department of Environmental Protection (PADEP) approved onsite soil reuse plans for each facility.

4.7.3 Well Development

After installation, monitoring wells will be developed to remove residual soil from within the well and filter media and to establish communication between the well and formation. Pump and surge methodology, either through use of a ditch pump or air compressor connected to black polyethylene pipe and surge block, should be utilized to successively agitate relatively clear groundwater from the well. Surging should begin from the bottom of the screened interval and continue iteratively to the top of the well screen in approximately 2 to 4-foot intervals (i.e., pump and surge each 2 to 4 foot interval of well screen several times until relatively clear discharge water is maintained, then move up to the next screen interval until all of the screen has been developed).

Alternately, a submersible pump may be used to pump water from the screened interval of shallow wells, with the screen of the well surged to evacuate silt that remains in the sand pack. The well should be alternately surged and purged until groundwater flowing from the well appears relatively free of sediments. A vacuum truck may be used for development for wells that contains product. Well development water should be managed/treated in accordance with the site-specific work plan.

4.8 Documentation

All site activities and conditions at the time of soil sampling, well installation, and well development should be recorded by field personnel in a field computer via the EDGE application or, if necessary, a field book may be used. The entry shall include the date, time, weather conditions, location (well or boring name), personnel present onsite, and the aforementioned lithologic data and well construction information. The entry shall include detailed data required to create representative soil boring lithologic logs and well as-built logs (if a well is constructed). This data should include but not be limited to soil type, soil texture (e.g., USCS), soil color, relative moisture content, depth of apparent water table, PID readings, blow counts (if split spoon samples are collected), sample recovery, total depth of borehole, length of well screen, length of well casing, sand pack interval, filter sand size, grout materials used, well seal interval, and all well construction materials. Notes should also include well development pumping rate, duration, and observations. Additional comments or observations should also be recorded, as appropriate.

5.0 LIGHT NON-AQUEOUS PHASE LIQUID (LNAPL) SAMPLING PROCEDURES

5.1 Potential Hazards

Traffic, pinch points, chemical (airborne and physical contact), and biological are all likely hazards to be encountered during LNAPL sampling, as well as slip/trip/fall potential. Additional hazards may be mentioned in the site-specific HASP and/or the daily JSA. If significant amounts of LNAPL are being handled, a Tyvek suit should also be worn.

5.2 Materials and Equipment Necessary for Task Completion

A list of equipment required to sample LNAPL from a monitoring well is presented below:

- Current site map detailing well locations;
- Field book or field computer for recording site data;
- Optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy;
- Keys and tools to provide well access;
- Appropriate sample containers and labels. LNAPL samples will be collected in laboratory provided glassware with appropriate preservative, if applicable. A minimum of 10 ml is required for most laboratory analyses. In the case that sufficient volume is not obtained, a swabbing technique (described below) could be used;
- Sorbent pads (required for swabbing technique);
- Stainless steel or clear bottom-loading or top-loading bailer, depending on product thickness;
- Clean nylon or polypropylene bailer cord;
- Decontamination supplies;
- Blank chain-of-custody forms; and
- Cooler and ice for sample preservation.

5.3 Decontamination Requirements

During LNAPL sampling activities, dedicated sampling equipment (i.e., clear bailers, nitrile gloves, and bailer cord) may be utilized; thereby, minimizing decontamination requirements. However, a stainless steel bailer may be used and decontaminated between LNAPL sampling locations. The optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy used to record the presence or absence and approximate thickness of LNAPL prior to sampling also requires decontamination between sampling locations. Decontamination procedures are detailed in Section 1.5.

5.4 Sampling Procedure

Immediately prior to sampling, each monitoring well should be gauged to obtain liquid levels (i.e., depth to LNAPL and depth to water) for estimation of current LNAPL thickness. Refer to Section 3.0 for appropriate well gauging procedures. Liquid level data should be recorded in a field book or field computer through the EDGE application or, if necessary, a field book.

LNAPL sampling may be performed via two different methods, based upon the LNAPL thickness/availability at the time of sampling: direct sample or swabbing. As indicated above, a minimum LNAPL volume of 10 mL is typically required by the analytical laboratory for most LNAPL characterization.

The following sequence of procedures will be implemented for the collection of LNAPL samples from monitoring wells:

1) A clean work area will be established so that sampling equipment will not come in contact with the ground surface or any other potentially contaminated surfaces near the wellhead.
2) A pre-cleaned stainless steel bailer or dedicated disposable bailer will be used for each well.
3) A new pair of nitrile gloves will be worn during sampling and replaced for each well.
4) Based on the gauged depth to LNAPL, an appropriate length of dedicated nylon or polypropylene cord will be tied to the sampling bailer.
5) An appropriately sized (i.e., 40 ml glass vial with plastic cap fitted with Teflon® lined septum) laboratory-provided sample container will be used to containerize the LNAPL sample.

6) The sampling bailer will be slowly lowered into the well until the liquid level is encountered. Once encountered, the sampling bailer should be lowered into the standing liquid column to a depth of approximately 1 foot, or other appropriate depth based on product thickness.

7) The bailer should be retrieved at a steady rate to avoid excess agitation.

8) The bailed sample should be visually evaluated for the presence or absence of LNAPL. If sufficient LNAPL volume is present (>10 ml), a direct sample of the LNAPL will be collected into the laboratory vial. If less than 10 ml of LNAPL is apparent, a sorbent pad may be used to absorb the LNAPL from the surface of the groundwater sample and the swab placed in the laboratory vial. The site-specific work plan should dictate whether a swab sample should be analyzed, or if the well should be monitored at a later date for re-sampling.

9) Labels will be completed and attached to the sample vials, indicating the sample collector's name, date, time, and location of sample; record same data in field computer or field notebook.

10) Store samples in a secure location until possession is transferred to the laboratory.

11) Nitrile gloves, bailer, bailer cord, and any other trash will be disposed of as solid waste.

5.5 Documentation

All site activities and conditions at the time of sampling should be recorded by field personnel in a field computer via the EDGE application or, if necessary, a field book may be used. The entry shall include the date, time, weather conditions, location (well name), personnel present onsite, and the aforementioned well gauging parameters. Additional comments or observations (e.g., color or apparent viscosity of LNAPL) should be recorded.

6.0 INDOOR AND AMBIENT AIR SAMPLING PROCEDURES

In preparation for indoor and/or ambient air sampling, appropriate facility personnel should be notified of intended sampling prior to mobilization. The purpose of this would be to confirm that there are not any non-routine activities occurring in the building, such as painting of indoor walls, which would cause incidental contamination of the samples.

6.1 Materials and Equipment Necessary for Task Completion

A list of equipment required to collect indoor and/or ambient air samples is presented below:

- Field data book or field computer for recording site data;
- Laboratory certified Summa canisters (standard size is 6 liters);
- Flow controllers (standard duration is 8-hours) with integrated vacuum gauge;
- Equipment for elevating sample intake height (examples: extended sampling inlets, zip ties to attach units to fencing, tables, etc);
- Camera; and
- Blank chain-of-custody forms.

6.2 Precautions to Avoid Incidental Contamination

EPA Method TO-15 is the most common method used for analysis of air samples at these sites. This method is highly sensitive to trace concentrations of volatile organic compounds (VOCs). To avoid incidental contamination:

- Do not wear cologne or fragrance on day of sampling;
- Do not use hand sanitizers or lotions;
- Do not store canisters near containers of gasoline, or any fuel; and
- Make sure there are no sources of VOCs in the vehicle used to transport the canisters.

6.3 Sampling Procedure

1) Set Up Summa Canister. Inlets of the flow controllers are to be placed in the breathing zone, approximately 4 to 6 feet above the ground surface. Elevate Summa canisters using appropriate materials available onsite or use laboratory-provided extended inlets (approximately 3 ft long sampling canes). Indoor air samples should be representative of air

in the buildings and should be placed away from obvious ventilation to outdoor air or sources of VOCs. Securely attach flow controller and extended sampling inlet if applicable.

2) Start Air Sample Collection. Open the valve. Document the initial vacuum (should be between approximately -30 inHg and -26 inHg) and the start time of the test. If the vacuum is significantly outside of the range or has a high rate of change, consider using an alternate canister or flow controller as there may be leakage.
3) Monitoring Summa Condition During Sampling Period. Several times during the sampling period, verify that the Summa is in good condition and that the vacuum is decreasing at an appropriate rate several times during the sampling period. An example of a reasonable frequency would be every two hours during an 8-hour event. During these checks, record the time, remaining vacuum, and canister condition. If necessary, obtain a permit to operate a camera, and take a least one photo of each sampling location.
4) Completing Air Sample Collection. Near the end of the sampling period, monitor the gauge more frequently. The sample collection should be stopped when the gauge reads approximately -5 inHg. At this point, close the canister valve. Record the sample end time and sample end vacuum. Ensure that the canister is labeled with the sample ID. Remove all of the attached equipment from the canister. Pack the canisters, flow controller wrapped in bubble wrap, chain of custody (additional information in the following section), and any other laboratory provided equipment back into the original packaging.

6.4 Documentation

All site activities and conditions at the time of air sampling should be recorded by field personnel. The entry shall include the date, time, weather conditions (including wind direction and start/end barometric pressure), sample locations and IDs, and personnel present onsite. Any observation that could influence the level of VOCs in the samples should be noted.

7.0 SURFACE WATER SAMPLING PROCEDURES

7.1 Field Procedures for Surface Water Sampling

7.1.1 General

Surface water sampling is performed to obtain samples for surface water bodies that are representative of existing surface water conditions. Surface water sampling (or gauging) within 3 feet of a bulkhead at certain facilities will require field personnel to wear a life vest.

Surface water sampling locations for surface water quality and groundwater interaction studies are selected based on the following:

1) Study objectives
2) Location of point surface discharges
3) Non-point source discharges and tributaries
4) Presence of structures (e.g., bridge, dam)
5) Accessibility

During surface water sampling it is important to obtain samples that are not impacted by the re-suspension of sediment produced because of improper or poor surface water sampling techniques.

7.1.2 Surface Water Sample Location Selection

Prior to conducting surface water sampling activities, the first requirement is the consideration and development of surface water sampling locations. It is important that all surface water sampling locations be selected in accordance with the work plan.

Wading for surface water samples increases the chances of disturbance of sediments from the floor of the surface water body. When wading for surface water samples be aware of potential safety and health risks. A life vest and safety line must be worn at all times where footing is unstable or when sampling in fast moving or more than 3 feet (0.9 m) deep. A two-person team is required for most surface water sampling activities. If the site conditions require the use of the life vest and safety line, the two people involved in the sampling must be competent swimmers.

Surface water samples must be collected with no suspended sediments. Surface water samples are collected commencing with the furthest downstream location to avoid sediment interference with upstream locations.

7.1.2.1 Rivers, Streams, and Creeks

Surface water samples are generally collected in areas of surface water bodies that are representative of the surface water body conditions. Representative surface water samples will usually be collected in sections of surface water bodies that have a uniform cross section and flow rate. Mixing is influenced by turbulence and water velocity, therefore the selection of surface water sampling locations immediately downstream of a riffle area (i.e., fast flow zone) will ensure good vertical mixing. These locations are also likely areas for deposition of sediment since this occurs in areas of decreased flow velocity.

Surface water sampling locations should not be established in areas near point source discharges. Surface water sampling of these source discharge points can be performed to assess the impact of these source areas on overall surface water quality. Sample tributaries as close to the mouth as possible. It is important to select surface water sample locations considering the impact downstream, including tributary flow and sediment.

In all instances, properly document all surface water sampling locations. Documentation may include photographs and tie-ins to known structures.

7.1.2.2. Sampling Equipment and Techniques

When collecting surface water samples, direct dipping of the sample container into the stream or water is acceptable unless the sample container contains preservatives. If preserved, a pre-cleaned unpreserved sample container should be used to collect the surface water sample. The surface water sample is then transferred to the appropriate preserved sample container. When collecting surface water samples, submerse the inverted bottle to the desired sample depth and tilt the opening of the sample container upstream to fill. During surface water sample collection, wading or movement may cause sediment deposits to be re-suspended and can result in biased samples. Wading is acceptable if the stream has a noticeable current and the samples are collected directly in

the sample container when faced upstream. If the stream is too deep to wade in or if addition samples must be collected at various depths, additional sampling equipment will be required. Surface water samples should be collected about 6 inches (15 cm) below the surface, with the sample bottles being completely submerged. Taking the surface water sample at this depth eliminates the collection of floating debris in the sample container.

Surface water sample collection where the flow depth is less than 1 inch (<2.5 cm) requires the use of special equipment to eliminate sediment disturbance. Surface water sampling may be conducted with a container then transferred to the appropriate sample container, or collection may be performed using a peristaltic pump. A small excavation in the stream bed to create a sump for sample collection can also be considered but should be prepared in advance to allow all the sediment to settle prior to surface water sampling activities.

Teflon™ bailers can be used for surface water sampling if it is not necessary to collect surface water samples at specific depths. A bottom loading bailer with a check ball is sufficient. When the bailer is lowered through the water, the water is continually displaced through the bailer until the desired depth is reached. The bailer is retrieved and the check ball prohibits the release of the collected surface water sample. Bailers are not suitable in surface water bodies with strong currents, or where depth-specific sampling is required. For discrete and specified depth surface water sampling, and the parameters to be monitored do not require a Teflon™ coated sampling device, a standard Kemmerer or Van Dorn sampler can be used. The Kemmerer sampler is a brass cylinder with rubber stoppers that leave the sampler ends open while the sampler is being lowered. The sampler is lowered in a vertical position to allow water to pass through. The Van Dorn sampler is plastic and is lowered in a horizontal position. For both samplers, a messenger is sent down a rope when the sampler has reached the required depth. The messenger causes the stopper on the sampler to close. The sampler is then retrieved and the surface water sample can be collected through a valve. DO sample bottles can be filled by allowing overflow using a rubber tube attached to the valve. During depth-specific surface water sampling, take care not to disturb bottom sediments.

Glass beakers or stainless steel cups may also be used to collect surface water samples if

parameter interference does not occur. The beaker or cup must be rinsed at least three times with the surface water sample prior to sample collection.

All equipment must be thoroughly decontaminated.

7.1.2.3 Field Notes for Surface Water Sampling

Record daily surface sampling activities, describe surface water sampling locations, sampling techniques, and, if applicable, provide a description of photographs taken. Visual observations are important and provide valuable information when interpreting surface water quality results. Observations include:

1) Weather conditions
2) Stream flow directions
3) Stream physical conditions (width, depth, etc.)
4) Tributaries
5) Effluent discharges
6) Impoundments
7) Bridges
8) Railway trestles
9) Oil sheens
10) Odors
11) Buried debris
12) Vegetation
13) Algae
14) Fish and other aquatic life
15) Surrounding industrial areas

The following factors should be considered for surface water sampling:

1) Predominant Surrounding Land Use: Observe the prevalent land use type in the vicinity and note any other land uses in the area which, although not dominant, may potentially affect surface water quality.

2) Local Watershed Erosion: Note the existing or potential erosion of soil in the local watershed and its movement into the stream. Erosion can be rated through visual observation of watershed stream characteristics including increases or decreases in turbidity.

3) Local Watershed Non-Point Source Pollution: This refers to problems or potential problems other than erosion and sedimentation. Nonpoint source pollution can be diffuse agricultural and urban runoff. Other factors may include feed lots, wetlands, septic systems, dams, impoundments, and mine seepage.

4) Estimated Stream Width: The estimated distance from shore at a transect representative of the stream width in the area.

5) Estimated Stream Depth: Riffle (rocky area), run (steady flow area), and pool (still area). Estimate the vertical distance from the water surface to the bottom of the surface water body at a representative depth at three locations.

6) High Water Mark: Estimate the vertical distance from the bank of the surface water body to the peak overflow level, as indicated by debris hanging in bank or flood plain vegetation, and deposition of silt. In instances where bank flow is rare, high water marks may not be evident.

7) Velocity: Record or measure the stream velocity in a representative run area.

8) Dam Present: Indicate the presence or absence of a dam upstream or downstream of the surface water sampling location. If a dam is present, include specific information detailing the alteration of the surface water flow.

9) Channelized: Indicate if the area surrounding the surface water sampling location is channelized.

10) Canopy Cover: Note the general proportion of open to shaded areas which best describes the amount of cover at the surface water sampling location.

7.2 References

For additional information pertaining to surface water sampling, the user of this manual may reference the following:

ASTM D5358 Practice for Sampling with a Dipper or Pond Sampler

ASTM D4489 Practices for Sampling of Waterborne Oils

ASTM D3325 Practice for the Preservation of Waterborne Oil Samples

ASTM D4841 Practice for Estimation of Holding Time for Water Samples Containing Organic and Inorganic Constituents

ASTM D4411 Guide for Sampling Fluvial Sediment in Motion

ASTM D4823 Guide for Core-Sampling Submerged, Unconsolidated Sediments

ASTM D3213 Practice for Handling, Storing, and Preparing Soft Undisturbed Marine Soil

ASTM D3976 Practice for Preparation of Sediment Samples for Chemical Analysis

ASTM E1391 Guide for Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Testing

ASTM D4581 Guide for Measurement of Morphologic Characteristics of Surface Water Bodies

ASTM D5906 Guide for Measuring Horizontal Positioning During Measurements of Surface Water Depths

ASTM D5073 Practice for Depth Measurement of surface water

8.0 SEDIMENT SAMPLING PROCEDURES

8.1. Introduction

Sediment sampling is conducted to obtain samples that are representative of existing chemical and/or physical conditions of sediment.

8.2 Equipment Decontamination

On environmental sites, sediment sampling equipment (e.g., split spoons, trowel, spoons, shovels, bowls, dredges, corers, scoops) are typically cleaned as follows:

1) Wash with clean potable water and laboratory detergent, using a brush as necessary to remove particulates.
2) Rinse with tap water.
3) Rinse with deionized water.
4) Air dry for as long as possible.

Additional or different decontamination procedures may be necessary if sampling for some parameters, including VOCs and metals.

8.3 Sample Site Selection

Before any sampling is conducted, the first requirement is to consider suitable sampling locations. Sampling locations should be selected in accordance with the work plan. Wading for sediment samples in lagoons, lakes, ponds, and slow-moving rivers and streams must be done with caution since bottom deposits are easily disturbed. Sampling must only be attempted where safe conditions exist and samples must be collected from undisturbed sediments. All sediment samples are to be collected commencing with the most downstream sample to avoid sediment interference with other downstream samples. A life vest and safety line should be worn in all cases where footing is unstable or where water is fast moving or over 3 feet (0.85 m) in depth. A second person may also be required for most of the sampling scenarios.

8.3.1. Rivers, Streams, and Creeks

Sediment samples may be collected along a cross-section of a river or stream in order to adequately characterize the bed material, or from specific sediment deposits as described in the work plan. A common procedure is to sample at quarter points along the cross-section of the sampling site selected. Samples may be composited as described in the work plan. Samples of dissimilar composition (e.g., grain size, organic content) should not be combined. Representative samples can usually be collected in portions of the surface water body that have a uniform cross-section and flow rate. Since mixing is influenced by turbulence and water velocity, the selection of a site immediately downstream of a riffle area (e.g., fast flow zone) are likely areas for deposition of sediment since the greatest deposition occurs where stream velocity slows.

A site that is clear of immediate point sources (e.g., tributaries and industrial and municipal effluents) is preferred for the collection of sediment samples unless the sampling is being performed to assess these sources.

8.4 Sampling Equipment and Techniques

8.4.1. General

Any equipment or sampling technique(s) [e.g., stainless steel, polyvinyl chloride (PVC)] used to collect a sample is acceptable so long as it provides a sample which is representative of the area being sampled and is consistent with the work plan.

8.4.2. Sediment Sampling Equipment and Techniques

A variety of methods may be used to collect sediment samples from a stream, river, or lake bed. Dredging (Peterson, Ponar, Van Veen), coring and scooping are acceptable sediment sample collection techniques. Precautions shall be taken to ensure that a representative sample of the targeted sediment is collected. Caution should be exercised when wading in shallow water so as not to disturb the area to be sampled. Samplers should be selected based on the interval to be sampled, type of sediment/sludge (silt, sand, gravel), and required sample volume. More than one sampler is often required to implement a sampling program at a site. The following

describes some of these methods. Manufacturer's information should be consulted to determine the limitations of each type of sampling equipment.

8.4.3 Dredging

The Peterson dredge is best used for rocky bottoms, in very deep water, or when the stream velocity is rapid. The dredge should be lowered slowly as it approaches the bottom, so as to not disturb the lighter sediments.

The Ponar dredge is similar to the Peterson dredge in size and weight. The Ponar dredge is a "clam-shell" type unit that closes on contact with the river/lake bottom. Depending on the size of the unit, a winch is required for larger units, whereas smaller units are available for lowering by a hand line. Once retrieved, the unit is opened and the sample extracted using a sample scoop or spoon. The unit has been modified by the addition of side plates and a screen on top of the sample compartment. This permits water to pass through the sampler as it descends.

The Ponar grab sampler functions by the use of a spring-latch-messenger arrangement. The sampler is lowered to the bottom of the water body by means of a rope, then the messenger is sent down to trip the latch causing the sampler to close on the sediments. The sampler is then raised slowly to minimize the disturbance of the lighter sediments. Sediment is then placed into a stainless steel bowl, homogenized, and placed into the appropriate sample container (if collecting for VOC parameters, fill the VOC jars before homogenization).

8.4.4. Corers

Core samplers are used to obtain vertical columns of sediment. Many types of coring devices are available, depending on the depth of water from which the sample is to be collected, the type of bottom material, and the length of core to be obtained. They vary from hand-push tubes to weight or gravity-driven devices to vibrating penetration devices.

Coring devices are useful in contaminant monitoring due to the minimal disturbance created during descent. The sample is withdrawn intact, allowing the removal of only those layers of interest. Core liners consisting of plastic or Teflon may also be added, thereby reducing the potential for sample contamination and maintaining a stratified sample. The samples may be shipped to the lab in the tubes in which they were collected. The disadvantage of coring devices

is that only a small sampling surface area and sample size is obtained, often necessitating repetitive sampling in order to collect the required amount of sediment for analysis. It is also often difficult to extract the sediment sample back out through the water column without losing the sample.

The core tube is pushed/driven into the sediment until only 4 inches (10 cm) or less of tube is above the sediment-water interface. When sampling hard or coarse sediments, a slight rotation of the tube while it is pushed will create greater penetration and reduce compaction. Cap the tube with a Teflon plug or a sheet of Teflon. The tube is then slowly withdrawn, keeping the sample in the tube. Before pulling the bottom part of the core above the water surface, it must be capped.

8.4.5 Scooping

The easiest way to collect a sediment sample is to scoop the sediment using a stainless steel spoon or scoop. This may be done by wading into the stream or pond and, while facing upstream (into the current), scooping the sample from along the bottom in an upstream direction. This method is only practical in very shallow water.

8.4.6 Mixing

Sediment samples collected for chemical analysis should be thoroughly mixed (except for VOCs) in a stainless steel bowl prior to placement in the appropriate sample container. Standard procedures exist for preparation of sediment samples (ASTM D3976). These should be followed or the laboratory informed of applicable procedures.

8.4.7 Air Monitoring

Prior to sediment/sludge sampling, measure the breathing space above the sample location with a PID, should the potential for volatiles be present, and use a hydrogen sulfide meter should hydrogen sulfide be present. Repeat these measurements during sampling. If either of these measurements exceed any of the air quality criteria established in the HASP, air purifying respirators (APRs) or supplied air systems will be required.

8.4.8 Sample Location Tie-In/Surveying

The recording of the sample locations and depth on the site plan is extremely important. This may be accomplished by manual measurement (i.e., swing ties), global positioning system (GPS) survey, or stadia methods. Manual measurements for each sample location should be tied into three permanent features (e.g., buildings, utility poles, hydrants). Diagrams with measurements should be included in the field book.

8.5 Field Notes

A bound field book is used to record daily activities, describe sampling locations and techniques, and describe photographs (if taken). Visual observations are important, as they may prove invaluable in interpreting water or sediment quality results. Observations shall include (as applicable) weather, stream flow conditions, stream physical conditions (width, depth, etc.), tributaries, effluent discharges, impoundments, bridges, railroad trestles, oil sheens, odors, buried debris, vegetation, algae, fish or other aquatic life, and surrounding industrial areas. The following observations should be considered:

- Predominant Surrounding Land Use: Observe the prevalent land use type in the vicinity (noting any other land uses in the area which, although not predominant, may potentially affect water quality).
- Local Watershed Erosion: The existing or potential erosion of soil within the local watershed (the portion of the watershed that drains directly into the stream) and its movement into a stream is noted. Erosion can be rated through visual observation of watershed and stream characteristics. (Note any turbidity observed during water quality assessment.)
- Local Watershed Non-point Source Pollution: This item refers to problems and potential problems other than siltation. Non-point source pollution is defined as diffuse agricultural and urban runoff (e.g., stormwater runoff). Other compromising factors in a watershed that may affect water quality are feedlots, wetlands, septic systems, dams and impoundments, and/or mine seepage.
- Estimated Stream Width: Estimate the distance from shore at a transect representative of the stream width in the area.

- Estimated Stream Depth: Riffle (rocky area), run (steady flow area), and pool (still area). Estimate the vertical distance from water surface to stream bottom at a representative depth at each of the three locations.
- High Water Mark: Estimate the vertical distance from the stream bank to the peak overflow level, as indicated by debris hanging in bank or floodplain vegetation, and deposition of silt or soil. In instances where bank overflow is rare, a high water mark may not be evident.
- Velocity: Record an estimate of stream velocity in a representative run area (see Section 12.0).
- Dam Present: Indicate the presence or absence of a dam upstream or downstream of the sampling station. If a dam is present, include specific information relating to alteration of flow.
- Channelized: Indicate whether the area around the sampling station is channelized.
- Canopy Cover: Note the general proportion of open to shaded area which best describes the amount of cover at the sampling station.
- Sediment Odors: Disturb sediment and note any odors described (or include any other odors not listed) which are associated with sediment in the area of the sampling station.
- Sediment Oils: Note the term which best describes the relative amount of any sediment oils observed in the sampling area.
- Sediment Characteristics: Note the grain size, color, consistency, layering, presence of biological organisms, man-made debris, etc. in accordance with standard ASTM soil description protocols.
- Sediment Deposits: Note those deposits described (or include any other deposits not listed) which are present in the sampling area. Also indicate whether the undersides of rocks not deeply embedded are black (which generally indicates low dissolved oxygen or anaerobic conditions).

8.6 References

For additional information pertaining to this topic, the user of this manual may reference the following:

ASTM D5358 Practice for Sampling with a Dipper or Pond Sampler

ASTM D4489 Practices for Sampling of Waterborne Oils

ASTM D3325 Practice for the Preservation of Waterborne Oil Samples

ASTM D4841 Practice for Estimation of Holding Time for Water Samples Containing Organic and Inorganic Constituents

ASTM D4416 Guide for Sampling Fluvial Sediment in Motion

ASTM D4823 Guide for Core-Sampling Submerged, Unconsolidated Sediments

ASTM D3213 Practice for Handling, Storing, and Preparing Soft Undisturbed Marine Soil

ASTM D3976 Practice for Preparation of Sediment Samples for Chemical Analysis

ASTM E1391 Guide for Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Testing

ASTM D4581 Guide for Measurement of Morphologic Characteristics of Surface Water Bodies

ASTM D5906 Guide for Measuring Horizontal Positioning During Measurements of Surface Water Depths

ASTM D5073 Practice for Depth Measurement of Surface Water

ASTM D5413 Test Methods for Measurement of Water Levels in Open-Water Bodies

9.0 SLUG TEST PROCEDURES

9.1 Materials and Equipment Necessary for Task Completion

Water level (data) logger capable of recording pressure and/or depth at sub-second time intervals (preferably a vented logger capable of advanced logging modes); vented, direct-read cable of sufficient length (with dessicant); interface tape/probe or water level meter; solid (mechanical) slug, pneumatic slug, or packer system [the introduction or removal of water is not recommended (e.g., bailer or bucket)]; 5 gallon bucket, traffic cones and/or barricades, deionized or distilled water and Alconox®; decontamination bucket and brush; and laptop computer or rugged reader.

9.2 Decontamination Requirements

Equipment utilized during slug testing must be thoroughly decontaminated with Alconox® and deionized/distilled water prior to and between uses at each test well to prevent cross contamination between wells. Any groundwater removed from the well during testing must be containerized and either treated and discharged to ground surface, or disposed of in an approved manner, preferably in a properly installed, onsite holding tank. If LNAPL is encountered/recovered, it should be containerized and properly disposed onsite. However, the preferred test initiation methods (solid and/or pneumatic slug) do not generate any groundwater.

9.3 Methodology for Slug Testing

Slug tests are utilized to provide in-situ estimations of hydraulic conductivity (k) in saturated media, most often in geologic formations that exhibit aquifer properties (low k media can also be tested with special consideration). Slug tests involve rapidly displacing the static water level in a well, and analyzing the well's rate and pattern of recovery back to near-static conditions. Falling head or slug-in tests involve analysis of displacement due to the addition of volume, and rising head or slug-out tests involve the analysis of displacement due to the removal of volume. Displacement is initiated using either a solid or pneumatic slug. Water level response is monitored immediately following the initial displacement and for the ensuing time period until the water level has returned to near-static level (generally within 5% of static). Water level response should be recorded using a water level (data) logger capable of recording pressure and/or depth at sub-second time intervals (preferably a vented logger). Logarithmic logging modes are preferred to shorten the data file while still providing high resolution data just after test initiation.

9.4 Field Procedures

1) Test Well Construction and Configuration - Well construction details are needed to perform slug test calculations and are important considerations when selecting appropriate wells for testing. Important as-built details include: total well depth, well screened interval(s), depth to (static) water, casing diameter, screen diameter, filter pack diameter, filter pack size, and filter pack interval. While these details should be documented on the well log, static water level and total well depth should be field-confirmed before the test. Of particular importance to the testing procedure is the relationship between static water level and well screened interval, and the degree of well development. Test results for poorly or insufficiently-developed wells may be strongly affected by drilling debris/disturbance in the formation that can create skin effects, lowering the apparent formation k. Analysis of testing data for wells screened across the water-table should consider drainage of the filter pack media. In addition, a pneumatic slug assembly should not be utilized unless the test well is screened below the water table and the water level remains above the screen throughout the test.

2) Test Setup and Initiation - Upon arrival, the test well should be gauged for static depth to water and total well depth so that the total water column length can be estimated. Well gauging data should be recorded in a rugged reader using an EDGE file, if available, or field form or book.

   a. Solid Slug

      The displacement volume of the slug is needed. It is suggested that the slug be prefabricated and calibrated for displacement volume prior to site use. Calculate the expected initial well displacement, using the slug volume and well casing radius, and deploy the data logger/cable to a depth just below that level while considering the slug length (to avoid conflict and tangling of the slug and transducer). Also consider the submergence depth limit of the data logger (usually indicated on the logger body). Generally, placing the data logger a foot or two below the bottom of the slug is good practice. Once submerged, allow the

data logger temperature to equilibrate with groundwater prior to initiating the test (up to 30 minutes).

While the data logger temperature equilibrates, secure the slug to an adequate length of disposable string or rope and hang in the well to a depth just above the water surface. Mark the string/rope to accommodate the slug length and tie off. Using the rugged reader or field computer, set up a new test (logarithmic mode or sub-second recording interval) in the data logger supplied software and start the test. Indicate in the file name the type of test and test number (e.g., rising or falling head; test 1 or 2). Once logging is initiated, quickly and smoothly lower the slug (slug-in or falling head test) to the submerged depth and tie off the string/rope (displacement should be instantaneous). Monitor the data logger data until the water level has returned to near-static level. Stop the falling head test.

Without moving the slug or data logger, set up a new test in the data logger supplied software with the same settings and indicate in the file name the type of test being performed (rising head or slug out). Start the test and once the data logger is running, instantaneously lift the slug and tie off the string/rope to its pre-test position (just above static). Monitor the data being recorded by the data logger and stop the test when the water level has returned to near-static.

b. Pneumatic Slug

If a high formation k is anticipated, solid slug removal is found to be too slow to capture well recovery, or to minimize equipment decontamination for wells with submerged screens, a pneumatic slug assembly should be utilized.

Open air release valve, secure pneumatic slug assembly to well casing and tighten coupling to provide an air tight seal. Insert the data logger/cable and deploy to the target submergence depth [it is generally best to keep the data logger shallow (~1-2 feet below static water level) and use small initial displacements to avoid dynamic recovery effects in high k formations]. Close the air release valve and attach the air pump or compressor. Pressurize the well and

use the pressure gauge to set initial displacement. Check for air leaks using a soapy water mixture and sprayer (assembly must be air tight). Allow the water level to return to static and remove the air pump. Using the rugged reader or field computer, set up a new test (logarithmic mode or sub-second recording interval) in the data logger supplied software and start the test. Indicate in the file name the type of test and test number (e.g., rising head; test number). Once logging is initiated, open the air release valve and monitor the test data. Stop the test when the water level has returned to near-static.

3) Test Monitoring and Guidelines - The following are general guidelines for slug testing performance as published by Midwest Geosciences Group in "Field Guide for Slug Testing and Data Analysis:"

- Conduct at least three or more tests per well and if possible conduct both rising and falling head test data.
- Use two or more initial displacement values (2 slug sizes or air pressures applied) that vary by an order of magnitude or more.
- Final slug test initial displacement should be nearly equivalent to the first test's displacement.
- Allow tests to run until near-static conditions are achieved (+/- 5% of static)
- Digital slug test data files collected with the data loggers and/or EDGE files should be backed up to either a thumb drive, corporate email server, and/or corporate file server immediately after collection.

4) Test Data Reduction and Processing - Prior to slug test analyses, digital data logger files should be normalized so that multiple tests conducted on the same test well can be compared for the assessment of test validity and well conditions. Reducing the data as follows:

- From each raw data file, estimate the time of test initiation and the head (depth or pressure) under static conditions.

- In each slug test data file, subtract the time of test initiation from the elapsed time and save to a new field (normalized time or test time; start of test should be time zero).
- In each slug test data file, subtract the static pressure head from the test period pressure head values and save to a new field (deviation from static).
- To normalize the deviation from static values, divide that field by the displacement expected based upon the slug volume or air pressure head applied.
- Create a graphical plot of the normalized head data versus test time for each test performed on the test well. Review the data plots and confirm that the testing data for each repeat test roughly concur. Also confirm that the actual and expected initial displacements are nearly equal.
- If repeat testing data and/or expected versus actual initial displacements vary widely, review well completion details and testing methods prior to performing further analysis (step 5 below) as the results may not be valid (e.g., the well screen interval may be poorly developed or fouled, the data logger may have moved or placed too deep in the well, slug was removed too slowly). The well may need to be retested.

5) Test Data Analysis - For the purposes of this standard operating procedural document, it is assumed that slug test analysis software will be used to apply standard solution methods to the testing data. Various computer programs are available, such as AQTESOLV Professional. Choose an appropriate test solution method by considering the following well configurations (in AQTESOLV, use the Solution Expert):

a. Submerged Screen and/or Confined Aquifer Well - If the well screen fully penetrates the intersecting aquifer, utilize the Cooper et al. Model or Hvorslev Model and analyze the curve match and/or best fit. If well is partially penetrating a confined formation, utilize the KGS Model or Hvorslev Model. If well screen is submerged in an unconfined formation, utilize the KGS Model or Bouwer and Rice Model.

b. Water-Table Intersects Well Screen - If the well screen is intersected by the water table, utilize the Bouwer and Rice Model (double straight line effect) or KGS Model.

c. Rapid Well Recovery in High k Formations - If well response to displacement is extremely rapid and normalized head plots display an oscillatory or concave-downward form, utilize the Butler and Zhan Model (most comprehensive solution available) or High-k Hvorslev Model for confined wells, or the High-k Bouwer and Rice Model.

9.5 Limitations

In general, results of slug test data analyses provide an initial estimate of formation k and have a small scale of relevance (particularly in high k settings). Slug tests can be strongly affected by the degree of well development and can be used diagnostically to assess the degree of well development. In most cases, slug testing should be performed on several wells in an area of interest to develop an understanding of the formation characteristics (e.g., heterogeneous or homogeneous formations).

10.0 PUMP TEST PROCEDURES

10.1 Materials and Equipment Necessary for Task Completion

Water-level (data) loggers (transducers) capable of recording pressure and/or depth at sub-second time intervals (preferably a vented logger capable of advanced logging modes for at least the pumping well); vented, direct-read cables of sufficient length (with dessicant packs); interface tape/probe or water-level meter; well pump (preferably a submersible pump), drop pipe and layflat or comparable discharge line of sufficient length, totalizing flow meter (recommended) and 5 gallon bucket, stop watch, rain gauge or nearby weather station; materials needed to monitor surface water bodies near the test site (e.g., staff gauge, weir, stakes, data logger, camera with permission from refinery personnel); traffic cones and/or barricades, deionized or distilled water and Alconox®; decontamination bucket and brush; laptop computer or rugged reader; portable generator or other power supply appropriate for the submersible pump; and containment (e.g., frac tank) or activated carbon filtration for the temporary staging or filtering of discharge water.

10.2 Decontamination Requirements

Equipment utilized during pumping tests must be thoroughly decontaminated with Alconox® and deionized/distilled water prior to and between uses at each test well to prevent cross contamination between wells. Any groundwater removed from the tested well must be containerized and either treated (filtered as appropriate) and discharged to ground surface, or disposed of in an approved manner, preferably in a properly installed, onsite holding tank. If LNAPL is encountered/recovered, it should be containerized and properly disposed of on or off-site.

10.3 Methodology for Pump Testing

10.3.1 Pre-test Considerations

In general, pumping tests are performed to estimate large-scale in-situ hydraulic properties of water-bearing strata in the subsurface (i.e., transmissivity and storativity) and average out local-scale heterogeneity that can limit the applicability of smaller-scale testing methods, such as slug tests. The geographical area influenced by a pumping test will be determined by the hydraulic properties of the strata being tested (including hydraulic properties of other strata supplying recharge to the pumped formation), boundary conditions, and on the duration of the test.

Pumping tests are also commonly performed to generate drawdown data from which hydraulic boundary conditions, hydraulic flow regime (e.g., anisotropy), and aquifer type (i.e., unconfined or confined, leaky confined) may be estimated. Smaller-scale pumping tests may also be utilized to address pumping efficiency and/or signal to noise ratio (pumping rate) at the pumping well, or to assist in remedial system design. However at this scale, the assumptions of some data analysis methods may not be applicable and should be considered prior to testing.

Appropriate design of a pumping test should include review of site-specific information regarding the geology and hydrogeology of the test area. Pumping test design should also consider the goal(s) of the test (i.e., scale of application of derived aquifer properties, identification of boundary influences, sources of recharge, well efficiency). This should include review of available lithologic well logs or test boring logs, geologic maps, cross sections, structure contour maps, isopach maps, and any other available information so that a conceptual model relating geologic units to hydrostratigraphic units or water-bearing strata can be developed. Additional pre-test considerations should include identification of any potential positive or negative hydraulic barriers, tidal effects, and/or influence from other wells that may be pumping in the test area. Without sufficient knowledge of factors influencing water-levels and hydrology of the test area, test results could be misinterpreted.

Often times, budget considerations and/or time limitations will necessitate the use of an existing monitoring well as the pumping well and/or existing wells as observation points. While this is generally acceptable, the wells must be screened appropriately with respect to the goals of the test and knowledge of well construction is critical to applying test solutions. Wells should also be redeveloped prior to testing if they are relatively old or if records of sufficient well development at the time of installation are not readily available.

Pumping tests can be divided into two general classifications: step-drawdown tests and constant rate tests. Step tests typically involve pumping a well at progressively higher rates or “steps” at intervals of one or two hours per step (typically up to 3 steps). They are often used to estimate the yield a well will sustain during a constant rate pumping test and to evaluate well efficiency (frictional head losses between the screen/gravel pack and the formation). Constant rate pumping tests are used primarily to evaluate hydraulic properties of water-bearing strata for design of groundwater treatment systems and/or water supply purposes (e.g., groundwater

allocation). Where budgets permit, the best pumping test approach is to first perform a step-drawdown test on the pumping well to evaluate well efficiency and sustainable yield (and to gauge whether or not the pumping well needs additional development), allow recovery to near-static conditions, and then initiate a constant rate test.

The test duration is subject to goals of the test and to budget considerations. Optimally, a constant rate test should be run until all drawdowns have stabilized or boundary conditions are identified, and gravity drainage effects are curtailed; however, this is seldom practical due to time limitations. In most instances, an 8 hour constant rate test will be adequate, and a 24 hour test will be sufficient for higher sensitivity sites. Occasionally a 72 hour pumping test is warranted, though this is usually reserved for large scale water supply work. If there are any unexplained water level anomalies observed toward the scheduled end of a test, the test should be continued if at all possible.

The approximate test flow rate needs to be determined in advance for proper pump and discharge design selection, and sizing of discharge containment. If it is not appropriate to perform a step test, sustainable yield can be estimated from slug test data or a brief (<30 minutes) pumping episode the day before the actual test. Generally, it is best to pump the test well at a rate that maximizes the signal to noise ratio (a higher pumping rate does not influence test scale and should not be used as a means to shorten the test duration).

If testing must be performed in an area where contamination is known to be present, careful consideration of the impacts of the test scale should be considered prior to testing so that the spread of subsurface contamination is not increased. If floating product (LNAPL) is present at or near the pumping well, drawdown should be limited so as to not impact uncontaminated soils below the static water table (i.e., create a “smear” zone or allow for the significant migration of free-phase product). Discharge water must be either 1) treated prior to discharge or 2) containerized for on or off-site disposal. If it is to be discharged directly on-site and allowed to infiltrate, it must be routed sufficiently far enough from the test area as to avoid any artificial recharge effects. All appropriate withdrawal and discharge permits must be obtained and complied with. If discharge water is to be treated on-site, proper contaminant loading calculations for the test flow rate, approximate contaminant loading and test duration must be performed in advance to insure treatment is sufficient. Any on-site treatment should also

include at least one discharge effluent sample analysis by an approved laboratory to document treatment effectiveness.

10.3.2 Pre-Test Water Level Monitoring

Water-level conditions in the test area should be monitored for at least one week prior to initiation of testing to identify background trends and factors influencing groundwater levels in the test area. Data loggers should be deployed in all wells to be utilized in the pumping test and set to record depth or pressure at a resolution that is high enough to identify any potential trends (generally a 15 minute recording interval is sufficient for background monitoring). A manual water level should be measured with a water-level meter or interface probe and referenced to the top of casing mark to calibrate the data logger data at the time of deployment and at sufficient intervals throughout the recording period to validate the data and provide backup data in the event that a data logger was to fail.

Ideally, groundwater levels should be static prior to starting a pumping test so that pumping influences alone can be readily evaluated. Any significant precipitation events within the previous several days (documented through use of a site rain gauge or nearby weather station) will usually result in noticeable water level changes. If there are any major water level changes observed that cannot be explained prior to testing, additional investigation into possible area influences (e.g., local well pumping or construction de-watering) should be conducted.

10.3.3 Pumping Test Set Up

Prior to starting the test, all well measuring points (i.e. top of casing) should be clearly marked and preferably surveyed to the nearest 0.01 feet in elevation. The horizontal distance between all wells utilized should be measured and illustrated on a base map. If there are any surface water bodies in the vicinity, a staff gauge (or similar measuring device) should be set up and surveyed to evaluate possible test influences on water levels or stream flow.

The preferred pump to be used for a pumping test is a submersible centrifugal pump powered by either existing site power or a portable generator. These pumps are not explosion proof, so a conductivity probe must be tied into the pump controls to alleviate any possibility of product coming into contact with the pump (if product is anticipated). If the test pump is designed to pump total fluids (e.g. air operated double diaphragm pump, jack pump, etc.) discharge must

either be containerized, or treatment must include an oil/water separator to handle any floating product. The submersible pump should be set deep enough to maintain flow during the test period or at a maximum of just above the screened interval, using a handling line to support the pump's weight [**NOTE:** extreme care must be taken that the power cord is neither bearing any of the pumps weight, nor damaged during installation due to the potential for severe electric shock]. A check valve (or two check valves) should be installed above the pump in the discharge line to prevent backflow into the well after testing.

Discharge piping from the pump should include a flow meter (preferably with totalizer), followed by a flow adjustment valve. The flow meter should be installed in a straight section of hard piping of sufficient length to avoid meter distortion caused by turbulence (typically about 10 pipe diameters on either side of the meter). In low-flow pumping tests, flow rate can be calculated by measuring the exact time required to fill a known-sized container (bucket and stop watch) several times throughout the testing period. The bucket and stop watch method of estimating flow should also be used to back up and check the flow meter data.

Precise and frequent water-level measurements (to the nearest 0.01 feet) and time denotations before, during, and after pumping tests are critical to achieving accurate test results. In terms of prioritization, data loggers should be utilized in at least the pumping well and observation wells closest to the pumping well. Wells further from the pumping well may be manually monitored, due to the reduced likelihood that early-time drawdown will be critical at distal locations. Back-up manual measurements should be collected at least hourly during the first 8 hours of the test, and then at least every 3 hours, to verify data logger measurements. Readings from the transducers are not completely reliable until they have been submerged for at least 30 minutes (sensor equilibration period). All field personnel should have watches with a second hand, and they should all be calibrated to the same time. Liquid level measurements should be obtained using an optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy for those wells with floating product. For wells without product, a water-level meter may be sufficient. All non-dedicated probes must be properly decontaminated after each level reading to prevent any possibility of cross- contamination between wells.

Data loggers should be deployed in each selected well to a depth that will maintain submergence through the test period. Data loggers selected should be capable of being

submerged to that anticipated depth (typically noted on the instrument body). The transducer cable should be secured at the wellhead (manufacturer supplied hangers, well caps, or electrical tape/cable ties) to minimize any movement of the sensor. Care must be taken that the transducer cable is not damaged from rough edges at the well head, and that no vehicles run over the cable. The data logger installed in the pumping well will need to be installed at a depth that will maintain submergence through the test, but also remain clear of the submersible pump (and pump noise if possible). In addition, wells with floating product may require an inner PVC stilling well surrounding the data logger cable to prevent damage from contact with the product. A stilling well may also eliminate the need for any water-level corrections for product thickness.

10.3.4 Running the Test

Once the data loggers have been deployed and secured, tests should be set up in each device and each device either started or “future” started to begin logging when the pump is turned on. The data logger in the pumping well should be set to logarithmic logging mode to capture sub-second data during the early portion of the test. If possible, the pump discharge control valve should be have been pre-set (based on the step test or mini pump test) to the desired flow rate prior to turning on the pump. However, depending on the test pumps performance curves, minor flow rate adjustments are generally needed during the first hour or two of the test to correct for the additional lift required by the pump due to increasing drawdown. In addition, movement of the discharge hose after the test has been started should be avoided, since any change in the elevation of the discharge will affect the pumping rate. All changes in flow rate should be recorded and time stamped.

A minimum of two field personnel are needed to run a pumping test, with additional personnel required for tests with multiple observations wells or additional complexity. One person should be designated to turn on the pump, monitor and adjust flow rate, maintain discharge and treatment, maintain the generator, etc. The second person should be responsible for data logger management and manual water-level measurements. As a rule of thumb regarding the frequency of manual well gauging, one measurement every half minute during the first 5 to 10 minutes, followed by one measurement every 3 to 5 minutes during the first hour, one measurement every 10 to 20 minutes for the second hour, and one hourly measurement thereafter is acceptable.

Throughout the test, data loggers should be downloaded in real time through use of direct-read, vented cables (or non-vented with a barometric logger for compensation) to monitor water-level conditions. It is essential that some data reduction be accomplished in the field, so that major water level trends are recognized during the test. At a minimum, drawdown trends from the pumping well and two of the nearest monitoring wells need to be semi-log plotted against time so that deviations indicative of boundary conditions can be discerned before pumping is ceased. This will allow decisions to be made about whether the test should run longer than planned.

Generally, water quality samples are collected during a pumping test for laboratory analysis of constituents of concern. These are generally collected after the first hour of pumping and just prior to pump shutdown. If the test is of more than 24 hours duration, it is advisable to collect additional samples during the testing period. All groundwater samples should be collected following Evergreen Field Procedures.

10.3.5 Post-test Recovery

At the conclusion of the test, water level recovery data should be collected until near-static conditions are re-established. This requires the installation of a check valve in the discharge line above the submersible pump to prevent backflow. The recovery data has the advantage in that there are no variations in the curve produced due to variations in pumping rate and is independent of test length. In water-table aquifers, however, the effects of formation de-watering can cause the recovery trends to be substantially different from drawdown trends. Consequently, recovery (residual drawdown) data should be used in conjunction with drawdown data where possible.

10.3.6 Data Analysis

The data collected during pumping tests are analyzed to estimate aquifer hydraulic properties, such as transmissivity, conductivity, and storage. Data collected by transducers must be downloaded and transformed (dimensionless drawdown or displacement from static) prior to analysis. Analysis typically involves curve matching of site data to type curves established in literature for particular flow regimes. Curve matching is commonly performed utilizing computer software, such as HydroSOLV's AQTESOLV program, along with diagnostic methods and derivative analysis to best estimate aquifer properties through identification of flow regimes and conditions.

It is noted that the mathematical solutions used in pumping test analysis include many assumptions that must be considered in the context of each test area (e.g., the formation is of uniform thickness and of infinite areal extent). In addition, some of the values incorporated into typical pumping test solutions are not actually measured, but are educated estimates (e.g., porosity based on lithology, etc.). Many problems associated with pumping test data evaluation are due to not recognizing, and/or correcting for, deviations from the theoretical solution employed. Some of the more common analytical errors occur due to: partial well penetration effects, formation de-watering effects, casing storage effects, poor pumping well efficiency and/or the application of incorrect equations or units. Consequently, a thorough understanding of the underlying assumptions inherent to the solution employed is required before the validity of the results can be trusted.

ATTACHMENT F

Forensics Reports

ChemQuants™
ENVIRONMENTAL FORENSICS

Client: Stantec Consulting Services, Inc.

ATTN: Andrew Klingbeil

CQ Project#: 0166

Project name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Laboratory#: L2055267

Advisor

ChemQuants™
ENVIRONMENTAL FORENSICS

CQ Quote # 0166

CQ PM: Mark Cejas

Dear Andrew,

ChemQuants is pleased to deliver this CQ Advisor package that consists of a simple petroleum characterization, a data visualization summary of the chemistry, methods strategy summary, and the chemistry data deliverable. The CQ Interpreter workstream will be quoted and invoiced separately.

Date of Delivery: 1/4/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Company Address: 1060 Andrew Drive Suite 140

Email: Andrew.klingbeil@stantec.com

Project Name: CQ Project # 0166

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Laboratory#: L2055267

CQ Methods Summary

Phase 1 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
1	Saturated Hydrocarbons 8015D (M)	Soil	1
1	PIANO VOCs EPA 8260D (M)	Soil	1
1	VOCs - EPA 8260C/5035 High & Low	Soil	1
1	Alkylated PAHs (w/ Scan) EPA 8270D(M)	Soil	1

Phase 2 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
1	TEL and TML in Water or Soil	Soil	1

CQ Interpreter Stage

CQ Interpreter Authorized (check if yes)?: ∨

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
1338 Kenwood Rd.
Santa Barbara, CA 93109

Advisor

Phase 1 Basic Characterization # 0166

Dear Andrew,

Please find below a basic characterization of petroleum in the project samples. The following characterization was supported by the chromatographic results from three analytical methods – 1) VOC range PIANO 8260B (M), 2) saturated hydrocarbons 8015D (M), and 3) alkylated PAHs w/ Qualitative biomarkers 8270D (M). A GC/FID chromatogram and bar graphs were produced from these data and included to support a basic characterization of the petroleum in the soil sample.

Phase 1 Data Delivery: 1/4/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Email: Andrew.klingbeil@stantec.com

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Sample - L2055267-01 (BT-5-S-9-20201210)

This project sample exhibits petroleum that is dominant in the gasoline range (figure 1). In particular, the soil sample likely contains gasoline OR a mixture of gasoline and light straight run Naphtha (figure 2,3,4).

Recommendation for Phase 2

CQ Quote #0166 lists the analytical methods that were tentatively recommended for phase 2 forensics. Organic Lead Isomer TEL and TML method is recommended for this sample. A final invoice will be delivered to you along with the complete chemistry data package, if an interpretive report and the CQ Interpreter phase is not desired – please advise ASAP.

Mark J. Cejas
Principal



[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
1338 Kenwood Rd.
Santa Barbara, CA 93109

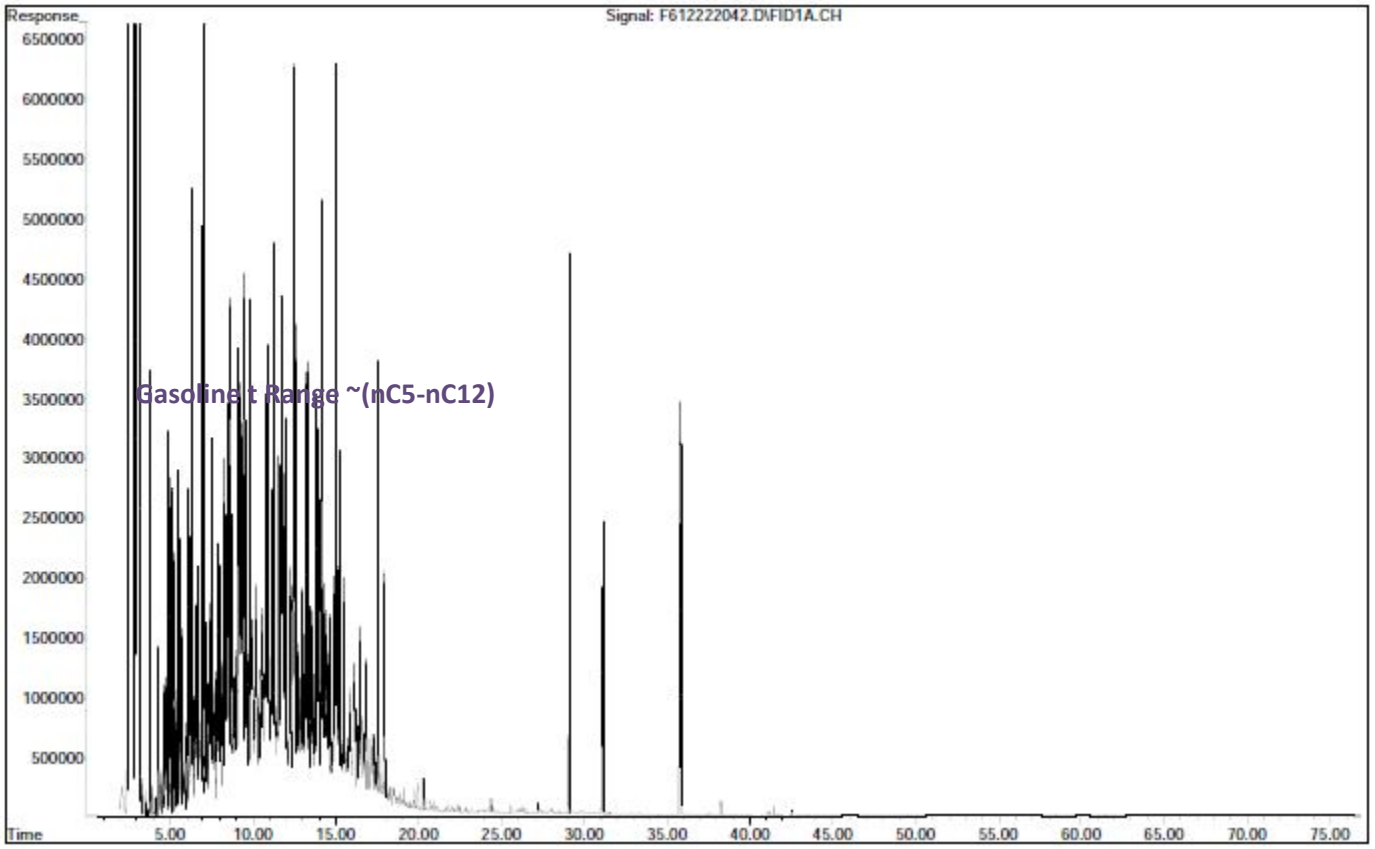

Figure 1- SVOC GC/FID chromatogram of (L2055267-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
1338 Kenwood Rd.
Santa Barbara, CA 93109

ChemQuants™
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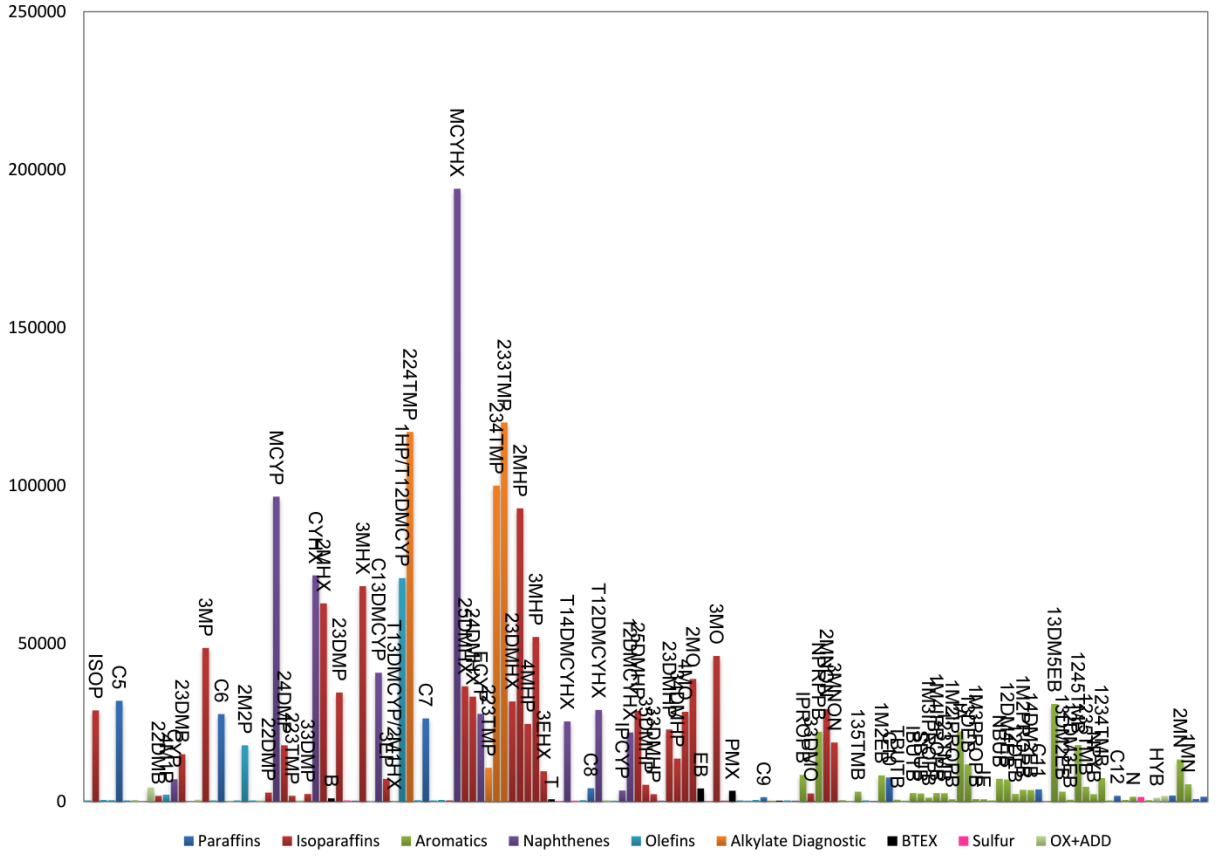

Figure 2 – Bar Graph of VOC PIANO constituents - (L2055267-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
1338 Kenwood Rd.
Santa Barbara, CA 93109

Advisor

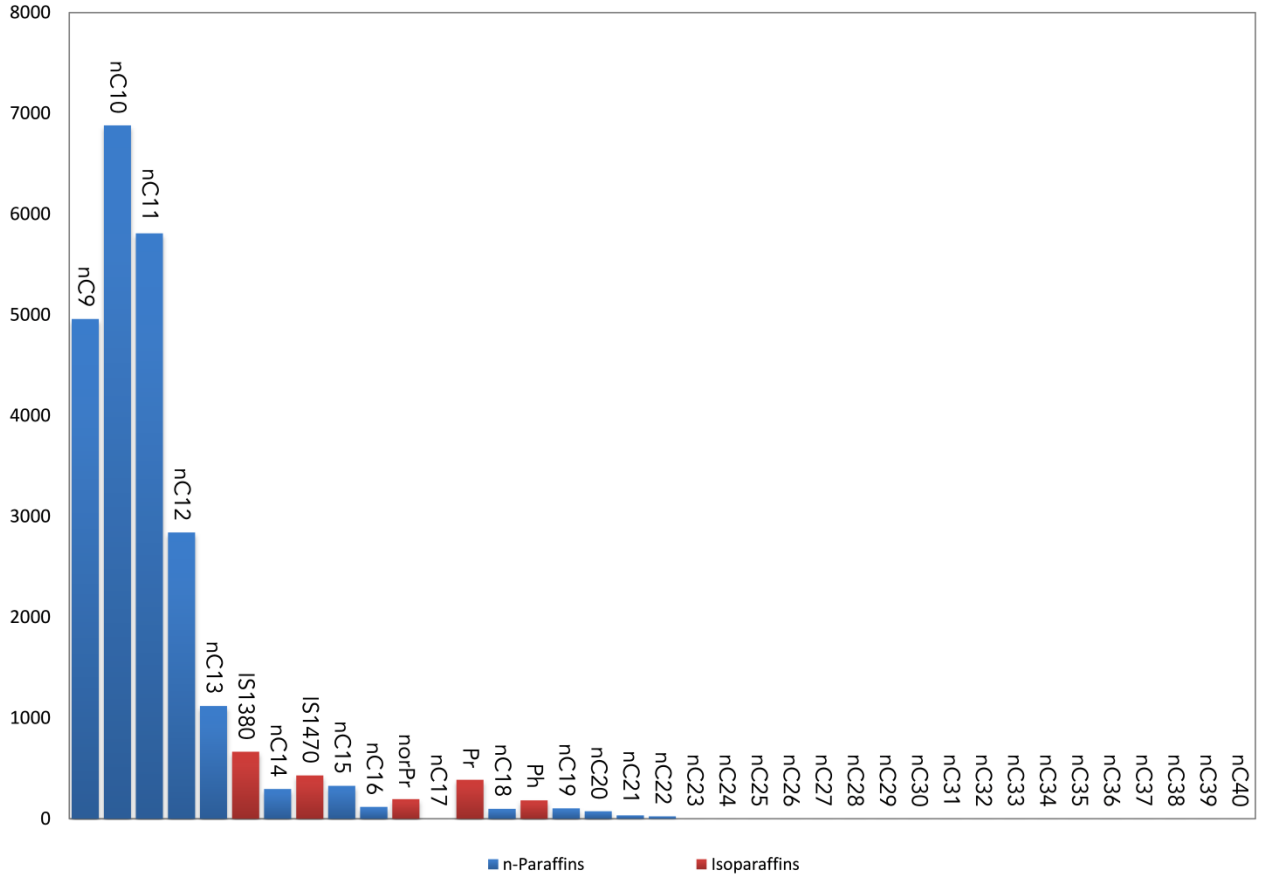

Figure 3 – Bar Graph of Saturated Hydrocarbons GC/FID - (L2055267-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
1338 Kenwood Rd.
Santa Barbara, CA 93109

ChemQuants™
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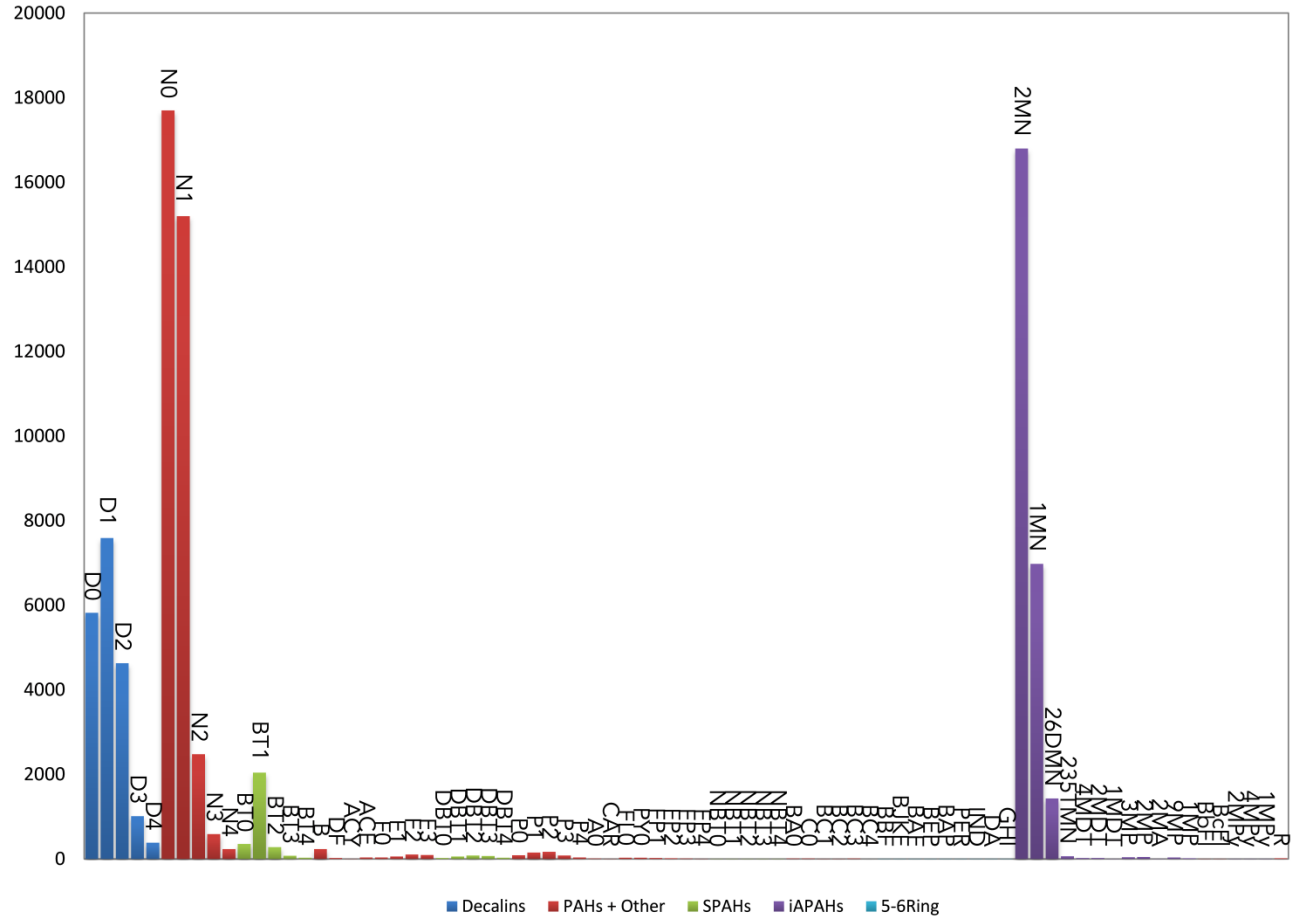


Figure 4 – Bar Graph of Alkylated PAHs - CD-13B-S-26-20200702 (L2055267-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
1338 Kenwood Rd.
Santa Barbara, CA 93109

Advisor

ANALYTICAL REPORT

Lab Number:	L2055267
Client:	ChemQuants, LLC 1338 Kenwood Rd. Santa Barbara, CA 93109
ATTN:	Mark Cejas
Phone:	(305) 342-2250
Project Name:	BELMONT CONFIRMATION DRILLING
Project Number:	0166
Report Date:	01/15/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2055267
Report Date: 01/15/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2055267-01	BT-5-S-9-20201210	SOIL	PHILADELPHIA, PA	12/10/20 12:00	12/10/20

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2055267
Project Number:	0166	**Report Date:**	01/15/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2055267
Project Number:	0166	**Report Date:**	01/15/21

Case Narrative (continued)

Report Submission

January 15, 2021: Final report. The analysis of TEL and TML was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

December 30, 2020: A correction was made to the SHC instrument blank associations.

December 29, 2020: Preliminary report pending decision regarding Phase 2 analyses.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L2055267-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (157%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report. The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

The WG1448547-4 LCSD recovery, associated with L2055267-01, is above the individual acceptance criteria for acrolein (131%), but within the overall method allowances. The results of the associated samples are reported; however, all positive detects are considered to have a potentially high bias for these compounds.

PIANO Volatile Organics

L2055267-01: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 01/15/21

ORGANICS

VOLATILES

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260B
Analytical Date: 12/16/20 23:14
Analyst: RY
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3-Methyl-1-butene	ND		ug/kg	2730	405.	20
Isopentane	28900		ug/kg	2730	499.	20
1-Pentene	ND		ug/kg	2730	498.	20
2-Methyl-1-Butene	ND		ug/kg	2730	424.	20
Pentane	31900		ug/kg	2730	851.	20
trans-2-Pentene	ND		ug/kg	2730	368.	20
Isoprene	ND		ug/kg	2730	487.	20
cis-2-Pentene	ND		ug/kg	2730	439.	20
Tertiary Butanol	ND		ug/kg	34100	4420	20
2,2-Dimethylbutane	1820	J	ug/kg	2730	841.	20
4-Methyl-1-pentene	2160	J	ug/kg	2730	424.	20
Cyclopentane	7070		ug/kg	2730	708.	20
2,3-Dimethylbutane	15000		ug/kg	2730	1130	20
2-Methylpentane	66200		ug/kg	2730	739.	20
Methyl tert butyl ether	ND		ug/kg	2730	562.	20
3-Methylpentane	48600		ug/kg	2730	432.	20
1-Hexene	ND		ug/kg	2730	383.	20
n-Hexane	27700		ug/kg	2730	448.	20
Isopropyl Ether	ND		ug/kg	2730	330.	20
trans-2-Hexene	ND		ug/kg	2730	356.	20
2-Methyl-2-pentene	17800		ug/kg	2730	417.	20
cis-2-Hexene	ND		ug/kg	2730	369.	20
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2730	413.	20
2,2-Dimethylpentane	2880		ug/kg	2730	367.	20
Methylcyclopentane	96500		ug/kg	2730	365.	20
2,4-Dimethylpentane	17800		ug/kg	2730	337.	20
2,2,3-Trimethylbutane	1820	J	ug/kg	2730	368.	20
1,2-Dichloroethane	ND		ug/kg	2730	402.	20

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3,3-Dimethylpentane	2440	J	ug/kg	2730	507.	20
Cyclohexane	71600		ug/kg	2730	337.	20
2-Methylhexane	62700		ug/kg	2730	429.	20
Benzene	1020	J	ug/kg	2730	416.	20
2,3-Dimethylpentane	34500		ug/kg	2730	361.	20
Thiophene	ND		ug/kg	2730	387.	20
1,1-Dimethylcyclopentane	ND		ug/kg	2730	327.	20
3-Methylhexane	68200		ug/kg	2730	436.	20
Tertiary-Amyl Methyl Ether	ND		ug/kg	2730	335.	20
1,3-Dimethylcyclopentane (cis)	40800		ug/kg	2730	410.	20
3-Ethylpentane	7230		ug/kg	2730	394.	20
1-Heptene/1,2-DMCP (trans)	70700		ug/kg	5450	798.	20
Isooctane	117000		ug/kg	2730	297.	20
trans-3-Heptene	ND		ug/kg	2730	424.	20
Heptane	26300		ug/kg	2730	474.	20
trans-2-Heptene	ND		ug/kg	2730	349.	20
cis-2-Heptene	ND		ug/kg	2730	528.	20
2,2-Dimethylhexane	ND		ug/kg	2730	395.	20
Methylcyclohexane	194000		ug/kg	2730	368.	20
2,5-Dimethylhexane	36500		ug/kg	2730	474.	20
2,4-Dimethylhexane	33200		ug/kg	2730	331.	20
Xylene (Total)[1]	3380	J	ug/kg	2730	285.	20
Ethylcyclopentane	27800		ug/kg	2730	361.	20
2,2,3-Trimethylpentane	10700		ug/kg	2730	473.	20
2,3,4-Trimethylpentane	100000		ug/kg	2730	356.	20
2,3,3-Trimethylpentane	120000		ug/kg	2730	541.	20
2,3-Dimethylhexane	31700		ug/kg	2730	661.	20
2-Methylheptane	92800		ug/kg	2730	461.	20
4-Methylheptane	24600		ug/kg	2730	469.	20
3-Methylheptane	52100		ug/kg	2730	388.	20
3-Ethylhexane	9600		ug/kg	2730	488.	20
Toluene	718	J	ug/kg	2730	369.	20
2-Methylthiophene	ND		ug/kg	2730	232.	20
1,4-Dimethylcyclohexane (trans)	25400		ug/kg	2730	354.	20
3-Methylthiophene	ND		ug/kg	2730	319.	20
1-Octene	ND		ug/kg	6820	418.	20
Octane	4200		ug/kg	2730	320.	20

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
1,2-Dimethylcyclohexane (trans)	29000		ug/kg	2730	401.	20
1,2-Dibromoethane	ND		ug/kg	2730	436.	20
cis-2-Octene	ND		ug/kg	2730	312.	20
Isopropylcyclopentane	3520		ug/kg	2730	399.	20
1,2-Dimethylcyclohexane (cis)	21900		ug/kg	2730	792.	20
2,5-Dimethylheptane	28700		ug/kg	2730	457.	20
3,5-Dimethylheptane	5330		ug/kg	2730	384.	20
3,3-Dimethylheptane	2330	J	ug/kg	2730	330.	20
1,1,4-Trimethylcyclohexane	ND		ug/kg	2730	271.	20
2,3-Dimethylheptane	22800		ug/kg	2730	311.	20
3,4-Dimethylheptane	13600		ug/kg	2730	464.	20
4-Methyloctane	28400		ug/kg	2730	455.	20
2-Methyloctane	38800		ug/kg	2730	698.	20
Ethylbenzene	4120		ug/kg	2730	294.	20
2-Ethylthiophene	ND		ug/kg	2730	240.	20
3-Methyloctane	46100		ug/kg	2730	305.	20
3,3-Diethylpentane	ND		ug/kg	2730	318.	20
p/m-Xylene	3380	J	ug/kg	5450	519.	20
1-Nonene	ND		ug/kg	6820	368.	20
trans-3-Nonene	ND		ug/kg	2730	323.	20
cis-3-Nonene	ND		ug/kg	2730	510.	20
Nonane (C9)	1380	J	ug/kg	2730	424.	20
Styrene	ND		ug/kg	2730	275.	20
o-Xylene	ND		ug/kg	2730	285.	20
2-Nonene	ND		ug/kg	6820	346.	20
Isopropylcyclohexane	ND		ug/kg	2730	289.	20
Isopropylbenzene	8430		ug/kg	2730	255.	20
3,3-Dimethyloctane	2580	J	ug/kg	2730	275.	20
n-Propylbenzene	22100		ug/kg	2730	241.	20
2-Methylnonane	29300		ug/kg	2730	386.	20
3-Methylnonane	18700		ug/kg	2730	380.	20
1-Methyl-3-Ethylbenzene	ND		ug/kg	2730	431.	20
1-Methyl-4-Ethylbenzene	4920		ug/kg	2730	384.	20
1,3,5-Trimethylbenzene	3160		ug/kg	2730	314.	20
1-Decene	ND		ug/kg	2730	354.	20
Isobutylcyclohexane	ND		ug/kg	2730	222.	20
1-Methyl-2-Ethylbenzene	8330		ug/kg	2730	232.	20

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
Decane (C10)	7620		ug/kg	2730	369.	20
tert-Butylbenzene	620	J	ug/kg	2730	288.	20
1,2,4-Trimethylbenzene	ND		ug/kg	2730	282.	20
Isobutylbenzene	2700	J	ug/kg	2730	368.	20
sec-Butylbenzene	2590	J	ug/kg	2730	353.	20
1-Methyl-3-Isopropylbenzene	1270	J	ug/kg	2730	352.	20
1-Methyl-4-Isopropylbenzene	2730		ug/kg	2730	289.	20
1,2,3-Trimethylbenzene	2620	J	ug/kg	2730	304.	20
1-Methyl-2-Isopropylbenzene	748	J	ug/kg	2730	296.	20
Indane	22200		ug/kg	2730	168.	20
1,3-Diethylbenzene	11800		ug/kg	2730	339.	20
1-Methyl-3-N-Propylbenzene	814	J	ug/kg	2730	275.	20
Indene	751	J	ug/kg	2730	158.	20
1-Methyl-4-N-Propylbenzene	ND		ug/kg	2730	341.	20
n-Butylbenzene	7190		ug/kg	2730	268.	20
1,2-Dimethyl-4-Ethylbenzene	6960		ug/kg	2730	334.	20
1,2-Diethylbenzene	2390	J	ug/kg	2730	404.	20
1-Methyl-2-N-Propylbenzene	3750		ug/kg	2730	339.	20
1,4-Dimethyl-2-Ethylbenzene	3680		ug/kg	2730	255.	20
Undecane	3840		ug/kg	2730	303.	20
1,3-Dimethyl-4-Ethylbenzene	ND		ug/kg	2730	264.	20
1,3-Dimethyl-5-Ethylbenzene	30900		ug/kg	2730	322.	20
1,3-Dimethyl-2-Ethylbenzene	3110		ug/kg	2730	203.	20
1,2-Dimethyl-3-Ethylbenzene	588	J	ug/kg	2730	173.	20
1,2,4,5-Tetramethylbenzene	17900		ug/kg	2730	211.	20
1,2,3,5-Tetramethylbenzene	4700		ug/kg	2730	207.	20
N-Pentylbenzene	2320	J	ug/kg	2730	339.	20
1,2,3,4-Tetramethylbenzene	7460		ug/kg	2730	292.	20
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	2730	388.	20
Dodecane (C12)	1860	J	ug/kg	6820	896.	20
1,3,5-Triethylbenzene	ND		ug/kg	2730	518.	20
Naphthalene	1520	J	ug/kg	2730	1140	20
Benzothiophene	ND		ug/kg	2730	1440	20
1,2,4-Triethylbenzene	ND		ug/kg	2730	464.	20
Hexylbenzene	1150	J	ug/kg	2730	525.	20
MMT	ND		ug/kg	6820	1750	20
Tridecane	ND		ug/kg	6820	1900	20

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
2-Methylnaphthalene	13300		ug/kg	6820	1800	20
1-Methylnaphthalene	5450	J	ug/kg	6820	2000	20
Tetradecane (C14)	ND		ug/kg	6820	834.	20
Pentadecane	ND		ug/kg	6820	1520	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	85		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	100		70-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 12/22/20 14:38
Analyst: MV
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	3300	1500	10
1,1-Dichloroethane	ND		ug/kg	660	96.	10
Chloroform	ND		ug/kg	990	93.	10
Carbon tetrachloride	ND		ug/kg	660	150	10
1,2-Dichloropropane	ND		ug/kg	660	83.	10
Dibromochloromethane	ND		ug/kg	660	93.	10
1,1,2-Trichloroethane	ND		ug/kg	660	180	10
Tetrachloroethene	ND		ug/kg	330	130	10
Chlorobenzene	ND		ug/kg	330	84.	10
Trichlorofluoromethane	ND		ug/kg	2600	460	10
1,2-Dichloroethane	ND		ug/kg	660	170	10
1,1,1-Trichloroethane	ND		ug/kg	330	110	10
Bromodichloromethane	ND		ug/kg	330	72.	10
trans-1,3-Dichloropropene	ND		ug/kg	660	180	10
cis-1,3-Dichloropropene	ND		ug/kg	330	100	10
1,3-Dichloropropene, Total	ND		ug/kg	330	100	10
1,1-Dichloropropene	ND		ug/kg	330	100	10
Bromoform	ND		ug/kg	2600	160	10
1,1,2,2-Tetrachloroethane	ND		ug/kg	330	110	10
Benzene	2300		ug/kg	330	110	10
Toluene	1600		ug/kg	660	360	10
Ethylbenzene	17000		ug/kg	660	93.	10
Chloromethane	ND		ug/kg	2600	620	10
Bromomethane	ND		ug/kg	1300	380	10
Vinyl chloride	ND		ug/kg	660	220	10
Chloroethane	ND		ug/kg	1300	300	10
1,1-Dichloroethene	ND		ug/kg	660	160	10
trans-1,2-Dichloroethene	ND		ug/kg	990	91.	10

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	330	91.	10
1,2-Dichlorobenzene	ND		ug/kg	1300	95.	10
1,3-Dichlorobenzene	ND		ug/kg	1300	98.	10
1,4-Dichlorobenzene	ND		ug/kg	1300	110	10
Methyl tert butyl ether	ND		ug/kg	1300	130	10
p/m-Xylene	14000		ug/kg	1300	370	10
o-Xylene	1800		ug/kg	660	190	10
Xylenes, Total	16000		ug/kg	660	190	10
cis-1,2-Dichloroethene	ND		ug/kg	660	120	10
1,2-Dichloroethene, Total	ND		ug/kg	660	91.	10
Dibromomethane	ND		ug/kg	1300	160	10
1,4-Dichlorobutane	ND		ug/kg	6600	150	10
1,2,3-Trichloropropane	ND		ug/kg	1300	84.	10
Styrene	ND		ug/kg	660	130	10
Dichlorodifluoromethane	ND		ug/kg	6600	600	10
Acetone	ND		ug/kg	6600	3200	10
Carbon disulfide	ND		ug/kg	6600	3000	10
2-Butanone	ND		ug/kg	6600	1500	10
Vinyl acetate	ND		ug/kg	6600	1400	10
4-Methyl-2-pentanone	ND		ug/kg	6600	850	10
2-Hexanone	ND		ug/kg	6600	780	10
Ethyl methacrylate	ND		ug/kg	6600	1000	10
Acrylonitrile	ND		ug/kg	2600	760	10
Bromochloromethane	ND		ug/kg	1300	140	10
Tetrahydrofuran	ND		ug/kg	2600	1000	10
2,2-Dichloropropane	ND		ug/kg	1300	130	10
1,2-Dibromoethane	ND		ug/kg	660	180	10
1,3-Dichloropropane	ND		ug/kg	1300	110	10
1,1,1,2-Tetrachloroethane	ND		ug/kg	330	87.	10
Bromobenzene	ND		ug/kg	1300	96.	10
n-Butylbenzene	13000		ug/kg	660	110	10
sec-Butylbenzene	6400		ug/kg	660	97.	10
tert-Butylbenzene	1100	J	ug/kg	1300	78.	10
o-Chlorotoluene	ND		ug/kg	1300	130	10
p-Chlorotoluene	ND		ug/kg	1300	72.	10
1,2-Dibromo-3-chloropropane	ND		ug/kg	2000	660	10
Hexachlorobutadiene	ND		ug/kg	2600	110	10

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Isopropylbenzene	22000		ug/kg	660	72.	10
p-Isopropyltoluene	8200		ug/kg	660	72.	10
Naphthalene	33000		ug/kg	2600	430	10
n-Propylbenzene	41000		ug/kg	660	110	10
1,2,3-Trichlorobenzene	ND		ug/kg	1300	210	10
1,2,4-Trichlorobenzene	ND		ug/kg	1300	180	10
1,3,5-Trimethylbenzene	46000		ug/kg	1300	130	10
1,2,4-Trimethylbenzene	900	J	ug/kg	1300	220	10
trans-1,4-Dichloro-2-butene	ND		ug/kg	3300	940	10
Ethyl ether	ND		ug/kg	1300	220	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	123		70-130
4-Bromofluorobenzene	**157**	Q	70-130
Dibromofluoromethane	75		70-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 12/16/20 14:56
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1446337-5					
3-Methyl-1-butene	ND		ug/kg	100	14.8
Isopentane	ND		ug/kg	100	18.3
1-Pentene	ND		ug/kg	100	18.2
2-Methyl-1-Butene	ND		ug/kg	100	15.6
Pentane	ND		ug/kg	100	31.2
trans-2-Pentene	ND		ug/kg	100	13.5
Isoprene	ND		ug/kg	100	17.8
cis-2-Pentene	ND		ug/kg	100	16.1
Tertiary Butanol	ND		ug/kg	1250	162.
2,2-Dimethylbutane	ND		ug/kg	100	30.8
4-Methyl-1-pentene	ND		ug/kg	100	15.6
Cyclopentane	ND		ug/kg	100	26.0
2,3-Dimethylbutane	ND		ug/kg	100	41.3
2-Methylpentane	ND		ug/kg	100	27.1
Methyl tert butyl ether	ND		ug/kg	100	20.6
3-Methylpentane	ND		ug/kg	100	15.8
1-Hexene	ND		ug/kg	100	14.0
n-Hexane	ND		ug/kg	100	16.4
Isopropyl Ether	ND		ug/kg	100	12.1
trans-2-Hexene	ND		ug/kg	100	13.0
2-Methyl-2-pentene	ND		ug/kg	100	15.3
cis-2-Hexene	ND		ug/kg	100	13.6
Ethyl-Tert-Butyl-Ether	ND		ug/kg	100	15.2
2,2-Dimethylpentane	ND		ug/kg	100	13.4
Methylcyclopentane	ND		ug/kg	100	13.4
2,4-Dimethylpentane	ND		ug/kg	100	12.4
2,2,3-Trimethylbutane	ND		ug/kg	100	13.5
1,2-Dichloroethane	ND		ug/kg	100	14.8
3,3-Dimethylpentane	ND		ug/kg	100	18.6

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 12/16/20 14:56
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1446337-5					
Cyclohexane	ND		ug/kg	100	12.4
2-Methylhexane	ND		ug/kg	100	15.8
Benzene	ND		ug/kg	100	15.2
2,3-Dimethylpentane	ND		ug/kg	100	13.2
Thiophene	ND		ug/kg	100	14.2
1,1-Dimethylcyclopentane	ND		ug/kg	100	12.0
3-Methylhexane	ND		ug/kg	100	16.0
Tertiary-Amyl Methyl Ether	ND		ug/kg	100	12.3
1,3-Dimethylcyclopentane (cis)	ND		ug/kg	100	15.0
3-Ethylpentane	ND		ug/kg	100	14.4
1-Heptene/1,2-DMCP (trans)	ND		ug/kg	200	29.2
Isooctane	ND		ug/kg	100	10.9
trans-3-Heptene	ND		ug/kg	100	15.6
Heptane	ND		ug/kg	100	17.4
trans-2-Heptene	ND		ug/kg	100	12.8
cis-2-Heptene	ND		ug/kg	100	19.4
2,2-Dimethylhexane	ND		ug/kg	100	14.5
Methylcyclohexane	ND		ug/kg	100	13.5
2,5-Dimethylhexane	ND		ug/kg	100	17.4
2,4-Dimethylhexane	ND		ug/kg	100	12.2
Xylene (Total)[1]	ND		ug/kg	100	10.4
Ethylcyclopentane	ND		ug/kg	100	13.2
2,2,3-Trimethylpentane	ND		ug/kg	100	17.4
2,3,4-Trimethylpentane	ND		ug/kg	100	13.0
2,3,3-Trimethylpentane	ND		ug/kg	100	19.8
2,3-Dimethylhexane	ND		ug/kg	100	24.2
2-Methylheptane	ND		ug/kg	100	16.9
4-Methylheptane	ND		ug/kg	100	17.2
3-Methylheptane	ND		ug/kg	100	14.2

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 12/16/20 14:56
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1446337-5					
3-Ethylhexane	ND		ug/kg	100	17.9
Toluene	ND		ug/kg	100	13.6
2-Methylthiophene	ND		ug/kg	100	8.50
1,4-Dimethylcyclohexane (trans)	ND		ug/kg	100	13.0
3-Methylthiophene	ND		ug/kg	100	11.7
1-Octene	ND		ug/kg	250	15.4
Octane	ND		ug/kg	100	11.8
1,2-Dimethylcyclohexane (trans)	ND		ug/kg	100	14.7
1,2-Dibromoethane	ND		ug/kg	100	16.0
cis-2-Octene	ND		ug/kg	100	11.4
Isopropylcyclopentane	ND		ug/kg	100	14.6
1,2-Dimethylcyclohexane (cis)	ND		ug/kg	100	29.0
2,5-Dimethylheptane	ND		ug/kg	100	16.8
3,5-Dimethylheptane	ND		ug/kg	100	14.1
3,3-Dimethylheptane	ND		ug/kg	100	12.1
1,1,4-Trimethylcyclohexane	ND		ug/kg	100	9.95
2,3-Dimethylheptane	ND		ug/kg	100	11.4
3,4-Dimethylheptane	ND		ug/kg	100	17.0
4-Methyloctane	ND		ug/kg	100	16.7
2-Methyloctane	ND		ug/kg	100	25.6
Ethylbenzene	ND		ug/kg	100	10.8
2-Ethylthiophene	ND		ug/kg	100	8.80
3-Methyloctane	ND		ug/kg	100	11.2
3,3-Diethylpentane	ND		ug/kg	100	11.6
p/m-Xylene	ND		ug/kg	200	19.0
1-Nonene	ND		ug/kg	250	13.5
trans-3-Nonene	ND		ug/kg	100	11.8
cis-3-Nonene	ND		ug/kg	100	18.7
Nonane (C9)	ND		ug/kg	100	15.6

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 12/16/20 14:56
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1446337-5					
Styrene	ND		ug/kg	100	10.1
o-Xylene	ND		ug/kg	100	10.4
2-Nonene	ND		ug/kg	250	12.7
Isopropylcyclohexane	ND		ug/kg	100	10.6
Isopropylbenzene	ND		ug/kg	100	9.35
3,3-Dimethyloctane	ND		ug/kg	100	10.1
n-Propylbenzene	ND		ug/kg	100	8.85
2-Methylnonane	ND		ug/kg	100	14.2
3-Methylnonane	ND		ug/kg	100	14.0
1-Methyl-3-Ethylbenzene	ND		ug/kg	100	15.8
1-Methyl-4-Ethylbenzene	ND		ug/kg	100	14.1
1,3,5-Trimethylbenzene	ND		ug/kg	100	11.5
1-Decene	ND		ug/kg	100	13.0
Isobutylcyclohexane	ND		ug/kg	100	8.15
1-Methyl-2-Ethylbenzene	ND		ug/kg	100	8.50
Decane (C10)	ND		ug/kg	100	13.6
tert-Butylbenzene	ND		ug/kg	100	10.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	10.4
Isobutylbenzene	ND		ug/kg	100	13.5
sec-Butylbenzene	ND		ug/kg	100	13.0
1-Methyl-3-Isopropylbenzene	ND		ug/kg	100	12.9
1-Methyl-4-Isopropylbenzene	ND		ug/kg	100	10.6
1,2,3-Trimethylbenzene	ND		ug/kg	100	11.2
1-Methyl-2-Isopropylbenzene	ND		ug/kg	100	10.8
Indane	ND		ug/kg	100	6.15
1,3-Diethylbenzene	ND		ug/kg	100	12.4
1-Methyl-3-N-Propylbenzene	ND		ug/kg	100	10.1
Indene	ND		ug/kg	100	5.80
1-Methyl-4-N-Propylbenzene	ND		ug/kg	100	12.5

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 12/16/20 14:56
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1446337-5					
n-Butylbenzene	ND		ug/kg	100	9.85
1,2-Dimethyl-4-Ethylbenzene	ND		ug/kg	100	12.2
1,2-Diethylbenzene	ND		ug/kg	100	14.8
1-Methyl-2-N-Propylbenzene	ND		ug/kg	100	12.4
1,4-Dimethyl-2-Ethylbenzene	ND		ug/kg	100	9.35
Undecane	ND		ug/kg	100	11.1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/kg	100	9.70
1,3-Dimethyl-5-Ethylbenzene	ND		ug/kg	100	11.8
1,3-Dimethyl-2-Ethylbenzene	ND		ug/kg	100	7.45
1,2-Dimethyl-3-Ethylbenzene	ND		ug/kg	100	6.35
1,2,4,5-Tetramethylbenzene	ND		ug/kg	100	7.75
1,2,3,5-Tetramethylbenzene	ND		ug/kg	100	7.60
N-Pentylbenzene	ND		ug/kg	100	12.4
1,2,3,4-Tetramethylbenzene	ND		ug/kg	100	10.7
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	100	14.2
Dodecane (C12)	ND		ug/kg	250	32.8
1,3,5-Triethylbenzene	ND		ug/kg	100	19.0
Naphthalene	ND		ug/kg	100	41.8
Benzothiophene	ND		ug/kg	100	52.8
1,2,4-Triethylbenzene	ND		ug/kg	100	17.0
Hexylbenzene	ND		ug/kg	100	19.2
MMT	ND		ug/kg	250	64.3
Tridecane	ND		ug/kg	250	69.6
2-Methylnaphthalene	ND		ug/kg	250	66.1
1-Methylnaphthalene	ND		ug/kg	250	73.4
Tetradecane (C14)	ND		ug/kg	250	30.6
Pentadecane	ND		ug/kg	250	55.8

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 12/16/20 14:56
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1446337-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	92		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/22/20 10:27
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1448547-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
1,2-Dichloropropane	ND		ug/kg	50	6.2
Dibromochloromethane	ND		ug/kg	50	7.0
1,1,2-Trichloroethane	ND		ug/kg	50	13.
2-Chloroethylvinyl ether	ND		ug/kg	1000	82.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
Trichlorofluoromethane	ND		ug/kg	200	35.
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Bromodichloromethane	ND		ug/kg	25	5.4
trans-1,3-Dichloropropene	ND		ug/kg	50	14.
cis-1,3-Dichloropropene	ND		ug/kg	25	7.9
1,3-Dichloropropene, Total	ND		ug/kg	25	7.9
1,1-Dichloropropene	ND		ug/kg	25	8.0
Bromoform	ND		ug/kg	200	12.
1,1,2,2-Tetrachloroethane	ND		ug/kg	25	8.3
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Chloromethane	ND		ug/kg	200	47.
Bromomethane	ND		ug/kg	100	29.
Vinyl chloride	ND		ug/kg	50	17.
Chloroethane	ND		ug/kg	100	23.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/22/20 10:27
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1448547-5					
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
1,2-Dichloroethene, Total	ND		ug/kg	50	6.8
Dibromomethane	ND		ug/kg	100	12.
1,4-Dichlorobutane	ND		ug/kg	500	11.
1,2,3-Trichloropropane	ND		ug/kg	100	6.4
Styrene	ND		ug/kg	50	9.8
Dichlorodifluoromethane	ND		ug/kg	500	46.
Acetone	ND		ug/kg	500	240
Carbon disulfide	ND		ug/kg	500	230
2-Butanone	ND		ug/kg	500	110
Vinyl acetate	ND		ug/kg	500	110
4-Methyl-2-pentanone	ND		ug/kg	500	64.
2-Hexanone	ND		ug/kg	500	59.
Ethyl methacrylate	ND		ug/kg	500	79.
Acrolein	ND		ug/kg	1200	280
Acrylonitrile	ND		ug/kg	200	58.
Bromochloromethane	ND		ug/kg	100	10.
Tetrahydrofuran	ND		ug/kg	200	80.
2,2-Dichloropropane	ND		ug/kg	100	10.
1,2-Dibromoethane	ND		ug/kg	50	14.
1,3-Dichloropropane	ND		ug/kg	100	8.4

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/22/20 10:27
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1448547-5					
1,1,1,2-Tetrachloroethane	ND		ug/kg	25	6.6
Bromobenzene	ND		ug/kg	100	7.2
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
1,3,5-Trichlorobenzene	ND		ug/kg	100	8.6
o-Chlorotoluene	ND		ug/kg	100	9.6
p-Chlorotoluene	ND		ug/kg	100	5.4
1,2-Dibromo-3-chloropropane	ND		ug/kg	150	50.
Hexachlorobutadiene	ND		ug/kg	200	8.4
Isopropylbenzene	ND		ug/kg	50	5.4
p-Isopropyltoluene	ND		ug/kg	50	5.4
Naphthalene	ND		ug/kg	200	32.
n-Propylbenzene	ND		ug/kg	50	8.6
1,2,3-Trichlorobenzene	ND		ug/kg	100	16.
1,2,4-Trichlorobenzene	ND		ug/kg	100	14.
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
trans-1,4-Dichloro-2-butene	ND		ug/kg	250	71.
Ethyl ether	ND		ug/kg	100	17.
Methyl Acetate	ND		ug/kg	200	48.
Ethyl Acetate	ND		ug/kg	500	60.
Isopropyl Ether	ND		ug/kg	100	11.
Cyclohexane	ND		ug/kg	500	27.
Tert-Butyl Alcohol	ND		ug/kg	1000	260
Ethyl-Tert-Butyl-Ether	ND		ug/kg	100	6.4
Tertiary-Amyl Methyl Ether	ND		ug/kg	100	8.8
1,4-Dioxane	ND		ug/kg	4000	1800
Methyl cyclohexane	ND		ug/kg	200	30.

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/22/20 10:27
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01 Batch: WG1448547-5					
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	200	35.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	82		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1446337-3 WG1446337-4								
1-Pentene	74		77		50-130	4		30
Pentane	65		68		50-130	5		30
Tertiary Butanol	82		80		50-130	2		30
Cyclopentane	70		73		50-130	4		30
2-Methylpentane	72		74		50-130	3		30
Methyl tert butyl ether	79		80		50-130	1		30
3-Methylpentane	74		78		50-130	5		30
1-Hexene	81		83		50-130	2		30
n-Hexane	75		76		50-130	1		30
Isopropyl Ether	84		85		50-130	1		30
Ethyl-Tert-Butyl-Ether	79		81		50-130	3		30
Methylcyclopentane	82		84		50-130	2		30
2,4-Dimethylpentane	80		83		50-130	4		30
Cyclohexane	84		87		50-130	4		30
2-Methylhexane	82		86		50-130	5		30
Benzene	85		87		50-130	2		30
2,3-Dimethylpentane	83		87		50-130	5		30
3-Methylhexane	74		76		50-130	3		30
Tertiary-Amyl Methyl Ether	77		78		50-130	1		30
Isooctane	83		86		50-130	4		30
Heptane	86		89		50-130	3		30
Methylcyclohexane	80		83		50-130	4		30
2-Methylheptane	81		82		50-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1446337-3 WG1446337-4								
3-Methylheptane	86		85		50-130	1		30
Toluene	82		85		50-130	4		30
Octane	89		90		50-130	1		30
Ethylbenzene	81		82		50-130	1		30
p/m-Xylene	85		86		50-130	1		30
Nonane (C9)	78		79		50-130	1		30
o-Xylene	82		84		50-130	2		30
Isopropylbenzene	84		86		50-130	2		30
n-Propylbenzene	83		85		50-130	2		30
1-Methyl-3-Ethylbenzene	83		85		50-130	2		30
1-Methyl-4-Ethylbenzene	87		90		50-130	3		30
1,3,5-Trimethylbenzene	85		87		50-130	2		30
1-Decene	76		78		50-130	3		30
1-Methyl-2-Ethylbenzene	83		85		50-130	2		30
Decane (C10)	100		100		50-130	0		30
1,2,4-Trimethylbenzene	82		83		50-130	1		30
sec-Butylbenzene	86		88		50-130	2		30
1-Methyl-4-N-Propylbenzene	75		76		50-130	1		30
n-Butylbenzene	78		81		50-130	4		30
1,2-Diethylbenzene	80		81		50-130	1		30
Undecane	93		92		50-130	1		30
N-Pentylbenzene	81		82		50-130	1		30
Dodecane (C12)	111		111		50-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2055267
Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1446337-3 WG1446337-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	91		91		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	101		101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1448547-3 WG1448547-4								
Methylene chloride	86		87		70-130	1		30
1,1-Dichloroethane	99		99		70-130	0		30
Chloroform	85		86		70-130	1		30
Carbon tetrachloride	77		77		70-130	0		30
1,2-Dichloropropane	105		106		70-130	1		30
Dibromochloromethane	93		94		70-130	1		30
1,1,2-Trichloroethane	97		98		70-130	1		30
2-Chloroethylvinyl ether	92		99		70-130	7		30
Tetrachloroethene	102		99		70-130	3		30
Chlorobenzene	98		97		70-130	1		30
Trichlorofluoromethane	81		78		70-139	4		30
1,2-Dichloroethane	84		84		70-130	0		30
1,1,1-Trichloroethane	81		80		70-130	1		30
Bromodichloromethane	85		86		70-130	1		30
trans-1,3-Dichloropropene	94		94		70-130	0		30
cis-1,3-Dichloropropene	94		95		70-130	1		30
1,1-Dichloropropene	91		90		70-130	1		30
Bromoform	95		98		70-130	3		30
1,1,2,2-Tetrachloroethane	97		98		70-130	1		30
Benzene	95		95		70-130	0		30
Toluene	100		97		70-130	3		30
Ethylbenzene	95		94		70-130	1		30
Chloromethane	110		112		52-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1448547-3 WG1448547-4								
Bromomethane	98		98		57-147	0		30
Vinyl chloride	118		115		67-130	3		30
Chloroethane	98		98		50-151	0		30
1,1-Dichloroethene	94		94		65-135	0		30
trans-1,2-Dichloroethene	93		93		70-130	0		30
Trichloroethene	91		90		70-130	1		30
1,2-Dichlorobenzene	96		96		70-130	0		30
1,3-Dichlorobenzene	98		99		70-130	1		30
1,4-Dichlorobenzene	98		98		70-130	0		30
Methyl tert butyl ether	86		89		66-130	3		30
p/m-Xylene	98		97		70-130	1		30
o-Xylene	96		96		70-130	0		30
cis-1,2-Dichloroethene	90		91		70-130	1		30
Dibromomethane	84		86		70-130	2		30
1,4-Dichlorobutane	106		108		70-130	2		30
1,2,3-Trichloropropane	91		94		68-130	3		30
Styrene	96		96		70-130	0		30
Dichlorodifluoromethane	86		85		30-146	1		30
Acetone	83		78		54-140	6		30
Carbon disulfide	91		90		59-130	1		30
2-Butanone	81		86		70-130	6		30
Vinyl acetate	90		93		70-130	3		30
4-Methyl-2-pentanone	106		106		70-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1448547-3 WG1448547-4								
2-Hexanone	89		88		70-130	1		30
Ethyl methacrylate	94		96		70-130	2		30
Acrolein	128		**131**	Q	70-130	2		30
Acrylonitrile	108		115		70-130	6		30
Bromochloromethane	88		92		70-130	4		30
Tetrahydrofuran	88		88		66-130	0		30
2,2-Dichloropropane	84		83		70-130	1		30
1,2-Dibromoethane	95		95		70-130	0		30
1,3-Dichloropropane	97		97		69-130	0		30
1,1,1,2-Tetrachloroethane	96		94		70-130	2		30
Bromobenzene	97		97		70-130	0		30
n-Butylbenzene	94		93		70-130	1		30
sec-Butylbenzene	94		93		70-130	1		30
tert-Butylbenzene	94		93		70-130	1		30
1,3,5-Trichlorobenzene	105		108		70-139	3		30
o-Chlorotoluene	93		94		70-130	1		30
p-Chlorotoluene	95		94		70-130	1		30
1,2-Dibromo-3-chloropropane	92		98		68-130	6		30
Hexachlorobutadiene	102		102		67-130	0		30
Isopropylbenzene	96		94		70-130	2		30
p-Isopropyltoluene	95		93		70-130	2		30
Naphthalene	96		98		70-130	2		30
n-Propylbenzene	97		95		70-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01 Batch: WG1448547-3 WG1448547-4								
1,2,3-Trichlorobenzene	100		100		70-130	0		30
1,2,4-Trichlorobenzene	105		108		70-130	3		30
1,3,5-Trimethylbenzene	95		94		70-130	1		30
1,2,4-Trimethylbenzene	96		94		70-130	2		30
trans-1,4-Dichloro-2-butene	101		102		70-130	1		30
Ethyl ether	97		102		67-130	5		30
Methyl Acetate	87		89		65-130	2		30
Ethyl Acetate	88		90		70-130	2		30
Isopropyl Ether	98		99		66-130	1		30
Cyclohexane	104		104		70-130	0		30
Tert-Butyl Alcohol	94		95		70-130	1		30
Ethyl-Tert-Butyl-Ether	100		102		70-130	2		30
Tertiary-Amyl Methyl Ether	87		90		70-130	3		30
1,4-Dioxane	93		95		65-136	2		30
Methyl cyclohexane	90		90		70-130	0		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	88		88		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	85		86		70-130
Toluene-d8	102		100		70-130
4-Bromofluorobenzene	94		93		70-130
Dibromofluoromethane	85		87		70-130

SEMIVOLATILES

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 12/23/20 01:19
Analyst: MJS
Percent Solids: 83%

Extraction Method: ALPHA OP-013
Extraction Date: 12/16/20 20:35
Cleanup Method: EPA 3611B
Cleanup Date: 12/22/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
cis/trans-Decalin	7470	E	ug/kg	1.68	0.846	1
C1-Decalins	7590		ug/kg	3.37	0.846	1
C2-Decalins	4630		ug/kg	3.37	0.846	1
C3-Decalins	1010		ug/kg	3.37	0.846	1
C4-Decalins	384.		ug/kg	3.37	0.846	1
Naphthalene	22800	E	ug/kg	3.37	0.968	1
C1-Naphthalenes	18000	E	ug/kg	3.37	0.968	1
C2-Naphthalenes	2480		ug/kg	3.37	0.968	1
C3-Naphthalenes	586.		ug/kg	3.37	0.968	1
C4-Naphthalenes	232.		ug/kg	3.37	0.968	1
2-Methylnaphthalene	20100	E	ug/kg	3.37	0.869	1
1-Methylnaphthalene	7980	E	ug/kg	3.37	1.06	1
Benzothiophene	356.		ug/kg	3.37	1.06	1
C1-Benzo(b)thiophenes	2040		ug/kg	3.37	1.06	1
C2-Benzo(b)thiophenes	282.		ug/kg	3.37	1.06	1
C3-Benzo(b)thiophenes	74.3		ug/kg	3.37	1.06	1
C4-Benzo(b)thiophenes	30.6		ug/kg	3.37	1.06	1
Biphenyl	232.		ug/kg	3.37	1.04	1
2,6-Dimethylnaphthalene	1430		ug/kg	3.37	0.800	1
Dibenzofuran	23.6		ug/kg	3.37	1.06	1
Acenaphthylene	4.72		ug/kg	3.37	0.643	1
Acenaphthene	33.3		ug/kg	3.37	0.594	1
2,3,5-Trimethylnaphthalene	67.6		ug/kg	3.37	0.551	1
Fluorene	38.7		ug/kg	3.37	0.898	1
C1-Fluorenes	59.2		ug/kg	3.37	0.898	1
C2-Fluorenes	105.		ug/kg	3.37	0.898	1
C3-Fluorenes	93.7		ug/kg	3.37	0.898	1
Dibenzothiophene	24.4		ug/kg	3.37	0.929	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 Date Collected: 12/10/20 12:00

Client ID: BT-5-S-9-20201210 Date Received: 12/10/20

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	24.1		ug/kg	3.37	0.929	1
2/3-Methyldibenzothiophene(2MDT)	24.7		ug/kg	3.37	0.929	1
1-Methyldibenzothiophene(1MDT)	7.18		ug/kg	3.37	0.929	1
C1-Dibenzothiophenes BS	57.8		ug/kg	3.37	0.929	1
C2-Dibenzothiophenes	82.6		ug/kg	3.37	0.929	1
C3-Dibenzothiophenes	69.0		ug/kg	3.37	0.929	1
C4-Dibenzothiophenes	31.5		ug/kg	3.37	0.929	1
Phenanthrene	89.5		ug/kg	3.37	1.12	1
3-Methylphenanthrene (3MP)	42.0		ug/kg	3.37	1.12	1
2-Methylphenanthrene (2MP)	47.1		ug/kg	3.37	1.12	1
2-Methylanthracene (2MA)	6.64		ug/kg	3.37	1.12	1
9/4-Methylphenanthrene (9MP)	33.8		ug/kg	3.37	1.12	1
1-Methylphenanthrene (1MP)	20.6		ug/kg	3.37	1.12	1
C1-Phenanthrenes/Anthracenes	154.		ug/kg	3.37	1.12	1
C2-Phenanthrenes/Anthr BS	169.		ug/kg	3.37	1.12	1
C3-Phenanthrenes/Anthracenes	80.0		ug/kg	3.37	1.12	1
C4-Phenanthrenes/Anthracenes	34.4		ug/kg	3.37	1.12	1
Retene	18.1		ug/kg	3.37	0.826	1
Anthracene	11.2		ug/kg	3.37	0.694	1
Carbazole	4.31		ug/kg	3.37	1.10	1
1-Methylphenanthrene	29.7		ug/kg	3.37	0.890	1
Fluoranthene	30.1		ug/kg	3.37	1.07	1
Benzo(b)fluorene	3.64		ug/kg	3.37	0.976	1
7H-Benzo(c)fluorene	2.10	J	ug/kg	3.37	0.976	1
2-Methylpyrene[1]	3.42		ug/kg	3.37	0.886	1
4-Methylpyrene[1]	3.72		ug/kg	3.37	0.886	1
1-Methylpyrene[1]	2.71	J	ug/kg	3.37	0.886	1
Pyrene	28.3		ug/kg	3.37	0.886	1
C1-Fluoranthenes/Pyrenes	24.7		ug/kg	3.37	0.886	1
C2-Fluoranthenes/Pyrenes	19.8		ug/kg	3.37	0.886	1
C3-Fluoranthenes/Pyrenes	14.4		ug/kg	3.37	0.886	1
C4-Fluoranthenes/Pyrenes	9.32		ug/kg	3.37	0.886	1
Naphthobenzothiophenes	4.16		ug/kg	3.37	0.942	1
C1-Naphthobenzothiophenes	8.71		ug/kg	3.37	0.942	1
C2-Naphthobenzothiophenes	9.28		ug/kg	3.37	0.942	1
C3-Naphthobenzothiophenes	6.28		ug/kg	3.37	0.942	1
C4-Naphthobenzothiophenes	6.46		ug/kg	3.37	0.942	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 Date Collected: 12/10/20 12:00

Client ID: BT-5-S-9-20201210 Date Received: 12/10/20

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Benz(a)anthracene	10.1		ug/kg	3.37	0.687	1
Chrysene/Triphenylene	12.3		ug/kg	3.37	0.681	1
C1-Chrysenes	8.05		ug/kg	3.37	0.681	1
C2-Chrysenes BS	7.06		ug/kg	3.37	0.681	1
C3-Chrysenes	11.7		ug/kg	3.37	0.681	1
C4-Chrysenes	ND		ug/kg	3.37	0.681	1
Benzo(b)fluoranthene	7.88		ug/kg	3.37	0.876	1
Benzo(j)+(k)fluoranthene	7.60		ug/kg	3.37	0.668	1
Benzo(a)fluoranthene	1.61	J	ug/kg	3.37	0.668	1
Benzo(e)pyrene	5.89		ug/kg	3.37	0.695	1
Benzo(a)pyrene	7.33		ug/kg	3.37	0.962	1
Perylene	2.11	J	ug/kg	3.37	0.650	1
Indeno(1,2,3-cd)pyrene	5.00		ug/kg	3.37	0.914	1
Dibenz(a,h)+(a,c)anthracene	1.60	J	ug/kg	3.37	0.910	1
Benzo(g,h,i)perylene	5.34		ug/kg	3.37	0.895	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	97		50-130
Phenanthrene-d10	105		50-130
Benzo(a)pyrene-d12	114		50-130

Project Name: BELMONT CONFIRMATION DRILLING
Lab Number: L2055267
Project Number: 0166
Report Date: 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 D
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 12/28/20 21:48
Analyst: MJS
Percent Solids: 83%

Extraction Method: ALPHA OP-013
Extraction Date: 12/16/20 20:35
Cleanup Method: EPA 3611B
Cleanup Date: 12/22/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
cis/trans-Decalin	5820		ug/kg	16.8	8.46	10
Naphthalene	17700		ug/kg	33.7	9.68	10
C1-Naphthalenes	15200		ug/kg	33.7	9.68	10
2-Methylnaphthalene	16800		ug/kg	33.7	8.69	10
1-Methylnaphthalene	6980		ug/kg	33.7	10.6	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	83		50-130
Phenanthrene-d10	92		50-130
Benzo(a)pyrene-d12	90		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 12/22/20 21:06
Analyst: MJS

Extraction Method: ALPHA OP-013
Extraction Date: 12/16/20 20:35
Cleanup Method: EPA 3611B
Cleanup Date: 12/22/20

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1446106-1					
cis/trans-Decalin	ND		ug/kg	0.500	0.251
C1-Decalins	ND		ug/kg	1.00	0.251
C2-Decalins	ND		ug/kg	1.00	0.251
C3-Decalins	ND		ug/kg	1.00	0.251
C4-Decalins	ND		ug/kg	1.00	0.251
Naphthalene	ND		ug/kg	1.00	0.287
C1-Naphthalenes	ND		ug/kg	1.00	0.287
C2-Naphthalenes	ND		ug/kg	1.00	0.287
C3-Naphthalenes	ND		ug/kg	1.00	0.287
C4-Naphthalenes	ND		ug/kg	1.00	0.287
2-Methylnaphthalene	ND		ug/kg	1.00	0.258
1-Methylnaphthalene	ND		ug/kg	1.00	0.315
Benzothiophene	ND		ug/kg	1.00	0.313
C1-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C2-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C3-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C4-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
Biphenyl	ND		ug/kg	1.00	0.309
2,6-Dimethylnaphthalene	ND		ug/kg	1.00	0.238
Dibenzofuran	ND		ug/kg	1.00	0.315
Acenaphthylene	ND		ug/kg	1.00	0.191
Acenaphthene	ND		ug/kg	1.00	0.176
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.00	0.164
Fluorene	ND		ug/kg	1.00	0.267
C1-Fluorenes	ND		ug/kg	1.00	0.267
C2-Fluorenes	ND		ug/kg	1.00	0.267
C3-Fluorenes	ND		ug/kg	1.00	0.267
Dibenzothiophene	ND		ug/kg	1.00	0.276
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.00	0.276

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 12/22/20 21:06
Analyst: MJS

Extraction Method: ALPHA OP-013
Extraction Date: 12/16/20 20:35
Cleanup Method: EPA 3611B
Cleanup Date: 12/22/20

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1446106-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.00	0.276
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.00	0.276
C1-Dibenzothiophenes BS	ND		ug/kg	1.00	0.276
C2-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C3-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C4-Dibenzothiophenes	ND		ug/kg	1.00	0.276
Phenanthrene	ND		ug/kg	1.00	0.331
3-Methylphenanthrene (3MP)	ND		ug/kg	1.00	0.331
2-Methylphenanthrene (2MP)	ND		ug/kg	1.00	0.331
2-Methylanthracene (2MA)	ND		ug/kg	1.00	0.331
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.00	0.331
1-Methylphenanthrene (1MP)	ND		ug/kg	1.00	0.331
C1-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C2-Phenanthrenes/Anthr BS	ND		ug/kg	1.00	0.331
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
Retene	ND		ug/kg	1.00	0.245
Anthracene	ND		ug/kg	1.00	0.206
Carbazole	ND		ug/kg	1.00	0.327
1-Methylphenanthrene	ND		ug/kg	1.00	0.264
Fluoranthene	ND		ug/kg	1.00	0.318
Benzo(b)fluorene	ND		ug/kg	1.00	0.290
7H-Benzo(c)fluorene	ND		ug/kg	1.00	0.290
2-Methylpyrene[1]	ND		ug/kg	1.00	0.263
4-Methylpyrene[1]	ND		ug/kg	1.00	0.263
1-Methylpyrene[1]	ND		ug/kg	1.00	0.263
Pyrene	ND		ug/kg	1.00	0.263
C1-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 12/22/20 21:06
Analyst: MJS

Extraction Method: ALPHA OP-013
Extraction Date: 12/16/20 20:35
Cleanup Method: EPA 3611B
Cleanup Date: 12/22/20

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1446106-1					
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C1-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C2-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C3-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C4-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
Benz(a)anthracene	ND		ug/kg	1.00	0.204
Chrysene/Triphenylene	ND		ug/kg	1.00	0.202
C1-Chrysenes	ND		ug/kg	1.00	0.202
C2-Chrysenes BS	ND		ug/kg	1.00	0.202
C3-Chrysenes	ND		ug/kg	1.00	0.202
C4-Chrysenes	ND		ug/kg	1.00	0.202
Benzo(b)fluoranthene	ND		ug/kg	1.00	0.260
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(a)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(e)pyrene	ND		ug/kg	1.00	0.206
Benzo(a)pyrene	ND		ug/kg	1.00	0.285
Perylene	ND		ug/kg	1.00	0.193
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.00	0.271
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.00	0.270
Benzo(g,h,i)perylene	ND		ug/kg	1.00	0.266

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	82		50-130
Phenanthrene-d10	96		50-130
Benzo(a)pyrene-d12	96		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1446106-2 WG1446106-3								
Naphthalene	71		81		50-130	13		30
2-Methylnaphthalene	74		85		50-130	14		30
Acenaphthylene	79		89		50-130	12		30
Acenaphthene	75		85		50-130	13		30
Fluorene	79		86		50-130	8		30
Phenanthrene	79		86		50-130	8		30
Anthracene	90		98		50-130	9		30
Fluoranthene	93		101		50-130	8		30
Pyrene	89		98		50-130	10		30
Benz(a)anthracene	88		97		50-130	10		30
Chrysene/Triphenylene	82		91		50-130	10		30
Benzo(b)fluoranthene	77		85		50-130	10		30
Benzo(j)+(k)fluoranthene	82		91		50-130	10		30
Benzo(a)pyrene	71		86		50-130	19		30
Indeno(1,2,3-cd)pyrene	80		88		50-130	10		30
Dibenz(a,h)+(a,c)anthracene	87		96		50-130	10		30
Benzo(g,h,i)perylene	73		81		50-130	10		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1446106-2 WG1446106-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	74		84		50-130
Phenanthrene-d10	88		94		50-130
Benzo(a)pyrene-d12	88		104		50-130
5B(H)Cholane-Surr	91		100		50-130

PETROLEUM HYDROCARBONS

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 12/23/20 16:37
Analyst: WR
Percent Solids: 83%

Extraction Method: ALPHA OP-013
Extraction Date: 12/16/20 20:35
Cleanup Method: EPA 3611B
Cleanup Date: 12/22/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	4.96		mg/kg	0.224	0.067	1
n-Decane (C10)	6.88		mg/kg	0.224	0.072	1
n-Undecane (C11)	5.81		mg/kg	0.224	0.067	1
n-Dodecane (C12)	2.84		mg/kg	0.224	0.049	1
n-Tridecane (C13)	1.12		mg/kg	0.224	0.062	1
2,6,10-Trimethyldodecane (1380)	0.665		mg/kg	0.224	0.034	1
n-Tetradecane (C14)	0.296		mg/kg	0.224	0.034	1
2,6,10-Trimethyltridecane (1470)	0.431		mg/kg	0.224	0.027	1
n-Pentadecane (C15)	0.328		mg/kg	0.224	0.027	1
n-Hexadecane (C16)	0.118	J	mg/kg	0.224	0.034	1
Norpristane (1650)	0.194	J	mg/kg	0.224	0.074	1
n-Heptadecane (C17)	ND		mg/kg	0.224	0.074	1
Pristane	0.388		mg/kg	0.224	0.048	1
n-Octadecane (C18)	0.10	J	mg/kg	0.224	0.045	1
Phytane	0.182	J	mg/kg	0.224	0.028	1
n-Nonadecane (C19)	0.104	J	mg/kg	0.224	0.058	1
n-Eicosane (C20)	0.074	J	mg/kg	0.224	0.032	1
n-Heneicosane (C21)	0.034	J	mg/kg	0.224	0.027	1
n-Docosane (C22)	0.024	J	mg/kg	0.224	0.023	1
n-Tricosane (C23)	ND		mg/kg	0.224	0.029	1
n-Tetracosane (C24)	ND		mg/kg	0.224	0.038	1
n-Pentacosane (C25)	ND		mg/kg	0.224	0.119	1
n-Hexacosane (C26)	ND		mg/kg	0.224	0.033	1
n-Heptacosane (C27)	ND		mg/kg	0.224	0.027	1
n-Octacosane (C28)	ND		mg/kg	0.224	0.048	1
n-Nonacosane (C29)	ND		mg/kg	0.224	0.150	1
n-Triacontane (C30)	ND		mg/kg	0.224	0.026	1
n-Hentriacontane (C31)	ND		mg/kg	0.224	0.032	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01 Date Collected: 12/10/20 12:00

Client ID: BT-5-S-9-20201210 Date Received: 12/10/20

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.224	0.028	1
n-Tritriacontane (C33)	ND		mg/kg	0.224	0.032	1
n-Tetratriacontane (C34)	ND		mg/kg	0.224	0.036	1
n-Pentatriacontane (C35)	ND		mg/kg	0.224	0.039	1
n-Hexatriacontane (C36)	ND		mg/kg	0.224	0.045	1
n-Heptatriacontane (C37)	ND		mg/kg	0.224	0.050	1
n-Octatriacontane (C38)	ND		mg/kg	0.224	0.052	1
n-Nonatriacontane (C39)	ND		mg/kg	0.224	0.073	1
n-Tetracontane (C40)	ND		mg/kg	0.224	0.073	1
Total Petroleum Hydrocarbons (C9-C44)	1580		mg/kg	7.41	1.63	1
Total Saturated Hydrocarbons	24.5	J	mg/kg	0.224	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	87		50-130
d50-Tetracosane	88		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2055267

Project Number: 0166 **Report Date:** 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 12/23/20 10:46
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 12/16/20 20:35
Cleanup Method: EPA 3611B
Cleanup Date: 12/22/20

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1446106-1					
n-Nonane (C9)	ND		mg/kg	0.067	0.020
n-Decane (C10)	ND		mg/kg	0.067	0.021
n-Undecane (C11)	ND		mg/kg	0.067	0.020
n-Dodecane (C12)	ND		mg/kg	0.067	0.015
n-Tridecane (C13)	ND		mg/kg	0.067	0.018
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.067	0.010
n-Tetradecane (C14)	ND		mg/kg	0.067	0.010
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.067	0.008
n-Pentadecane (C15)	ND		mg/kg	0.067	0.008
n-Hexadecane (C16)	ND		mg/kg	0.067	0.010
Norpristane (1650)	ND		mg/kg	0.067	0.022
n-Heptadecane (C17)	ND		mg/kg	0.067	0.022
Pristane	ND		mg/kg	0.067	0.014
n-Octadecane (C18)	ND		mg/kg	0.067	0.013
Phytane	ND		mg/kg	0.067	0.008
n-Nonadecane (C19)	ND		mg/kg	0.067	0.017
n-Eicosane (C20)	ND		mg/kg	0.067	0.009
n-Heneicosane (C21)	ND		mg/kg	0.067	0.008
n-Docosane (C22)	ND		mg/kg	0.067	0.007
n-Tricosane (C23)	ND		mg/kg	0.067	0.008
n-Tetracosane (C24)	ND		mg/kg	0.067	0.011
n-Pentacosane (C25)	ND		mg/kg	0.067	0.035
n-Hexacosane (C26)	ND		mg/kg	0.067	0.010
n-Heptacosane (C27)	ND		mg/kg	0.067	0.008
n-Octacosane (C28)	ND		mg/kg	0.067	0.014
n-Nonacosane (C29)	ND		mg/kg	0.067	0.044
n-Triacontane (C30)	ND		mg/kg	0.067	0.008
n-Hentriacontane (C31)	ND		mg/kg	0.067	0.009
n-Dotriacontane (C32)	ND		mg/kg	0.067	0.008

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166
Lab Number: L2055267
Report Date: 01/15/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 12/23/20 10:46
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 12/16/20 20:35
Cleanup Method: EPA 3611B
Cleanup Date: 12/22/20

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1446106-1					
n-Tritriacontane (C33)	ND		mg/kg	0.067	0.009
n-Tetratriacontane (C34)	ND		mg/kg	0.067	0.011
n-Pentatriacontane (C35)	ND		mg/kg	0.067	0.012
n-Hexatriacontane (C36)	ND		mg/kg	0.067	0.013
n-Heptatriacontane (C37)	ND		mg/kg	0.067	0.015
n-Octatriacontane (C38)	ND		mg/kg	0.067	0.016
n-Nonatriacontane (C39)	ND		mg/kg	0.067	0.022
n-Tetracontane (C40)	ND		mg/kg	0.067	0.022
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/kg	2.20	0.484
Total Saturated Hydrocarbons	ND		mg/kg	0.067	0.007

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	86		50-130
d50-Tetracosane	88		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01 Batch: WG1446106-2 WG1446106-3								
Nonane (C9)	58		56		50-130	4		30
n-Decane (C10)	65		64		50-130	2		30
n-Dodecane (C12)	70		69		50-130	1		30
n-Tetradecane (C14)	77		74		50-130	4		30
n-Hexadecane (C16)	94		87		50-130	8		30
n-Octadecane (C18)	106		98		50-130	8		30
n-Nonadecane (C19)	98		91		50-130	7		30
n-Eicosane (C20)	97		90		50-130	7		30
n-Docosane (C22)	97		89		50-130	9		30
n-Tetracosane (C24)	100		92		50-130	8		30
n-Hexacosane (C26)	100		94		50-130	6		30
n-Octacosane (C28)	99		93		50-130	6		30
n-Triacontane (C30)	100		93		50-130	7		30
n-Hexatriacontane (C36)	91		84		50-130	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	97		89		50-130
d50-Tetracosane	99		91		50-130

INORGANICS
&
MISCELLANEOUS

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166
Lab Number: L2055267
Report Date: 01/15/21

SAMPLE RESULTS

Lab ID: L2055267-01
Client ID: BT-5-S-9-20201210
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 12/10/20 12:00
Date Received: 12/10/20
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.0		%	0.100	NA	1	-	12/12/20 09:28	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2055267

Report Date: 01/15/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1444247-1 QC Sample: L2055175-01 Client ID: DUP Sample						
Solids, Total	79.7	81.9	%	3		20

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2055267
Report Date: 01/15/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2055267-01A	Vial MeOH preserved	A	NA		4.3	Y	Absent		8260HLW(14)
L2055267-01B	Vial water preserved	A	NA		4.3	Y	Absent	11-DEC-20 10:04	8260HLW(14)
L2055267-01C	Vial water preserved	A	NA		4.3	Y	Absent	11-DEC-20 10:04	8260HLW(14)
L2055267-01D	Vial MeOH preserved	A	NA		4.3	Y	Absent		A2-PIANO8260H(14)
L2055267-01E	Vial water preserved	A	NA		4.3	Y	Absent	11-DEC-20 10:04	A2-PIANO8260H(14)
L2055267-01F	Vial water preserved	A	NA		4.3	Y	Absent	11-DEC-20 10:04	A2-PIANO8260H(14)
L2055267-01G	Plastic 2oz unpreserved for TS	A	NA		4.3	Y	Absent		TS(7)
L2055267-01H	Glass 120ml/4oz unpreserved	A	NA		4.3	Y	Absent		A2-SHC(14),A2-ALKPAH/BIOMARKER(14)
L2055267-01I	Glass 120ml/4oz unpreserved	A	NA		4.3	Y	Absent		SUB-ORGLEAD()

*Values in parentheses indicate holding time in days

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2055267
Project Number:	0166	**Report Date:**	01/15/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2055267
Project Number:	0166	**Report Date:**	01/15/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2055267
Project Number:	0166	**Report Date:**	01/15/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2055267
Project Number:	0166	**Report Date:**	01/15/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 12/11/10

ALPHA Job #: L2055267

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Dr Suite 140
West Chester, PA 19438
Phone: 610-840-2500
Fax: 610-840-2501
Email:

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Belmont Confirmation Drilling
Project Location: Philadelphia, PA
Project #: 213402797
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 213402797

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:
(X) Analyze Pending Authorization

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Alkylated PAH + BTEX + Naphthalenes EPA 8260 B/5035 DCM Volatile Organics Saturated Hydrocarbons EPA 8015 (M) Subcontracted to Accutest NJ Total Solids SM2 540	SAMPLE HANDLING: Filtration ☐ Done ☐ Not needed ☐ Lab to do Preservation ☐ Lab to do (Please specify below)	Sample Specific Comments	TOTAL # BOTTLES
55267-01	BT-5-S-9-20201210	12/10/20	1200	SO	JK	(X) (X) (X) (X) (X)			

Container Type																	
Preservative																	

Relinquished By:	Date/Time	Received By:	Date/Time
	12/10/20 15:30	AALI (AAL)	12/10/20 15:30
AALI (AAL)	12/10/20 18:00	Tom Clark	12/10 1800
Tom Clark	12/10		12/10 2200
	12/11 0240		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

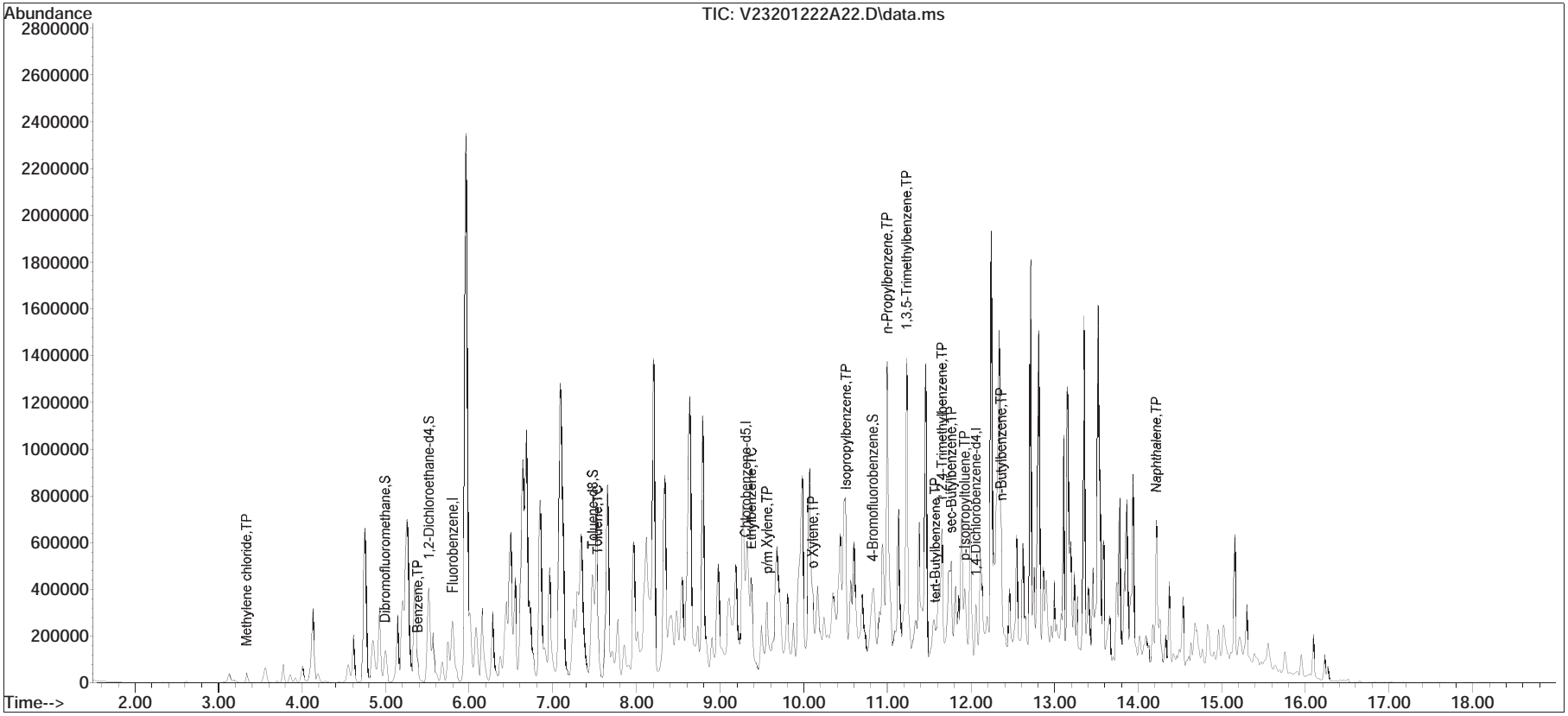
FORM NO: 01-01 (rev. 14-OCT-07)

Quantitation Report (QT Reviewed)

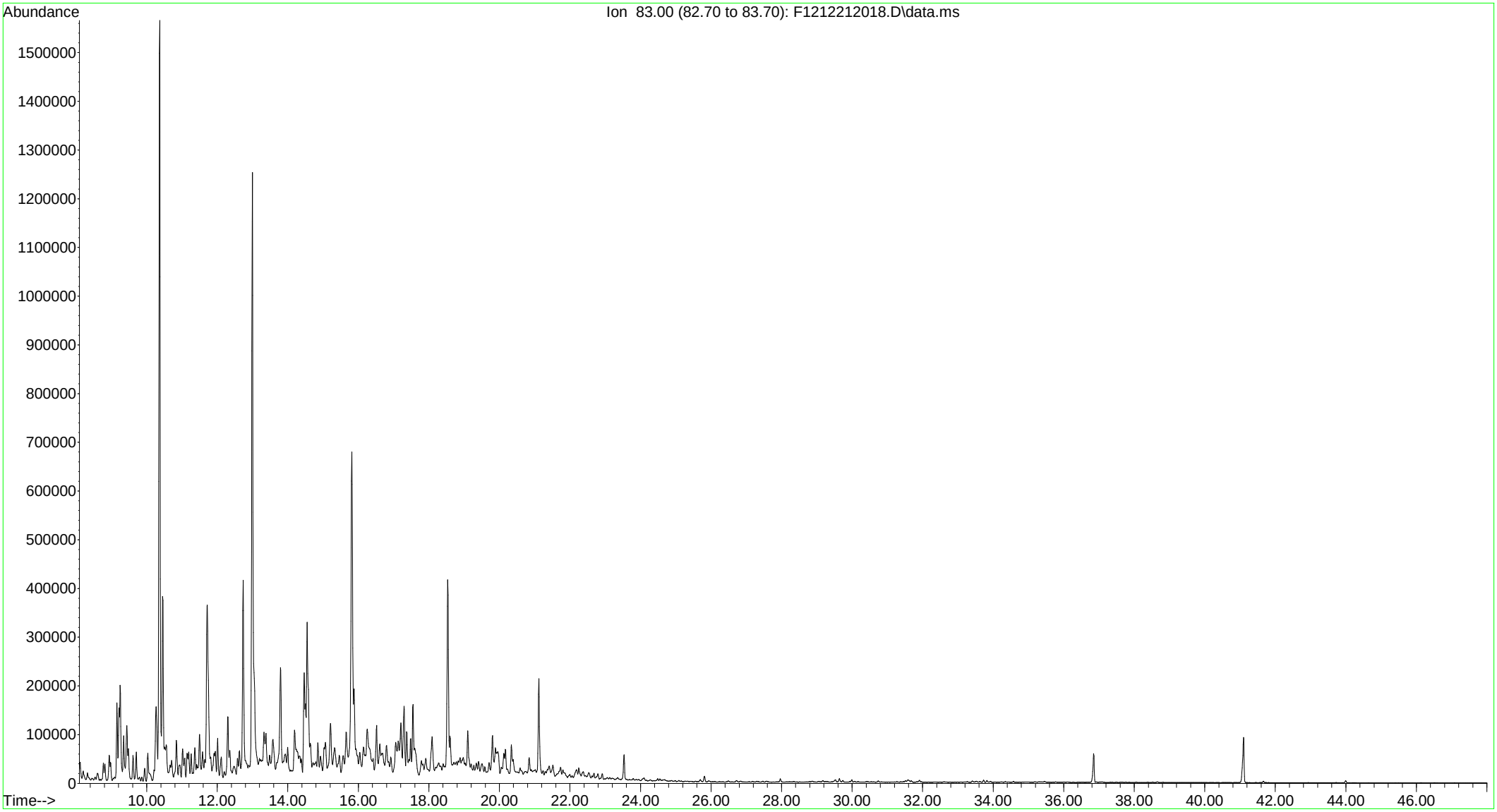
Data Path : I:\VOLATILES\VOA123\2020\201222A\
Data File : V23201222A22.D
Acq On : 22 Dec 2020 02:38 pm
Operator : VOA123:MV
Sample : l2055267-01D,31H,5.38,5,0.010,,a
Misc : WG1448547,ICAL17263
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Dec 23 08:35:04 2020
Quant Method : I:\VOLATILES\VOA123\2020\201222A\V123_201019Q_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Oct 20 11:47:06 2020
Response via : Initial Calibration

Sub List : 8260-Reg - Regular 8260\2020\201222A\V23201222A01.D•



File :O:\Forensics\Data\PAH12\2020\DEC20\Dec20\dec22\F1212212018.D
Operator : PAH12:MJS
Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample : L2055267-01,32,,
Misc Info : WG1448408,WG1446106,ICAL17375
ALS Vial : 14



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Instrument :   PAH12
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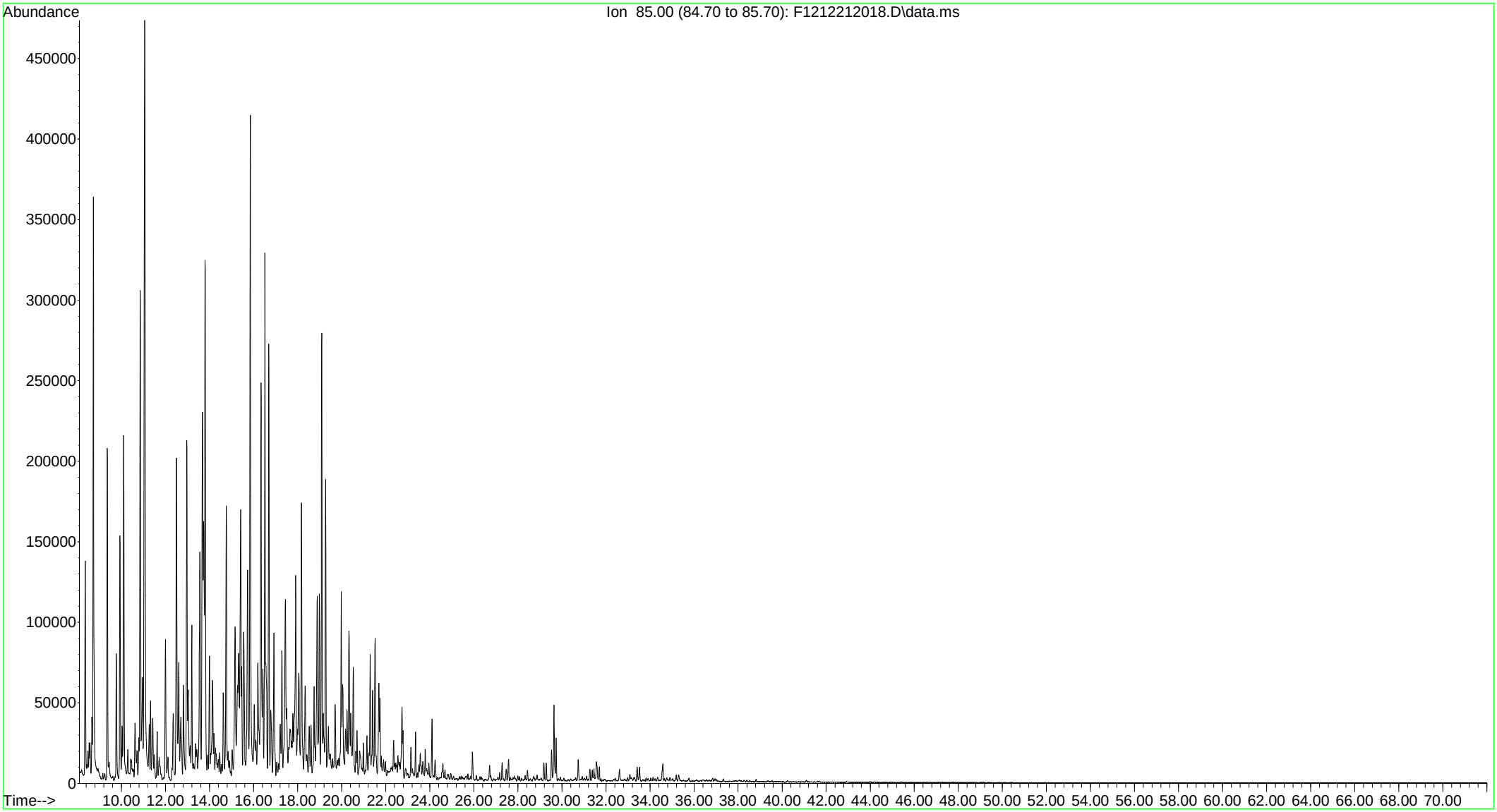
ALS Vial   : 14



File :O:\Forensics\Data\PAH12\2020\DEC20\Dec20\dec22\F1212212018.D
Operator : PAH12:MJS
Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
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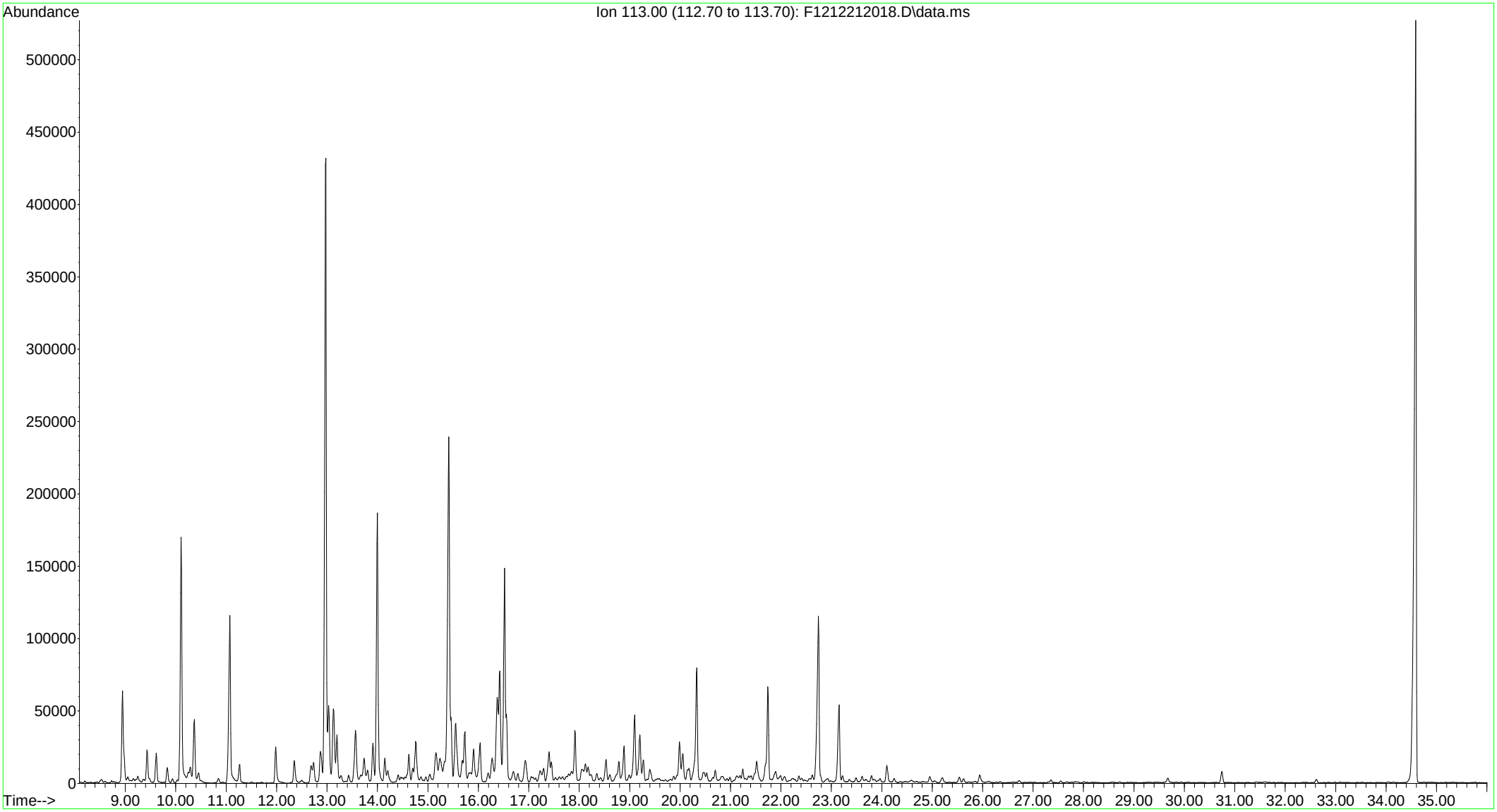

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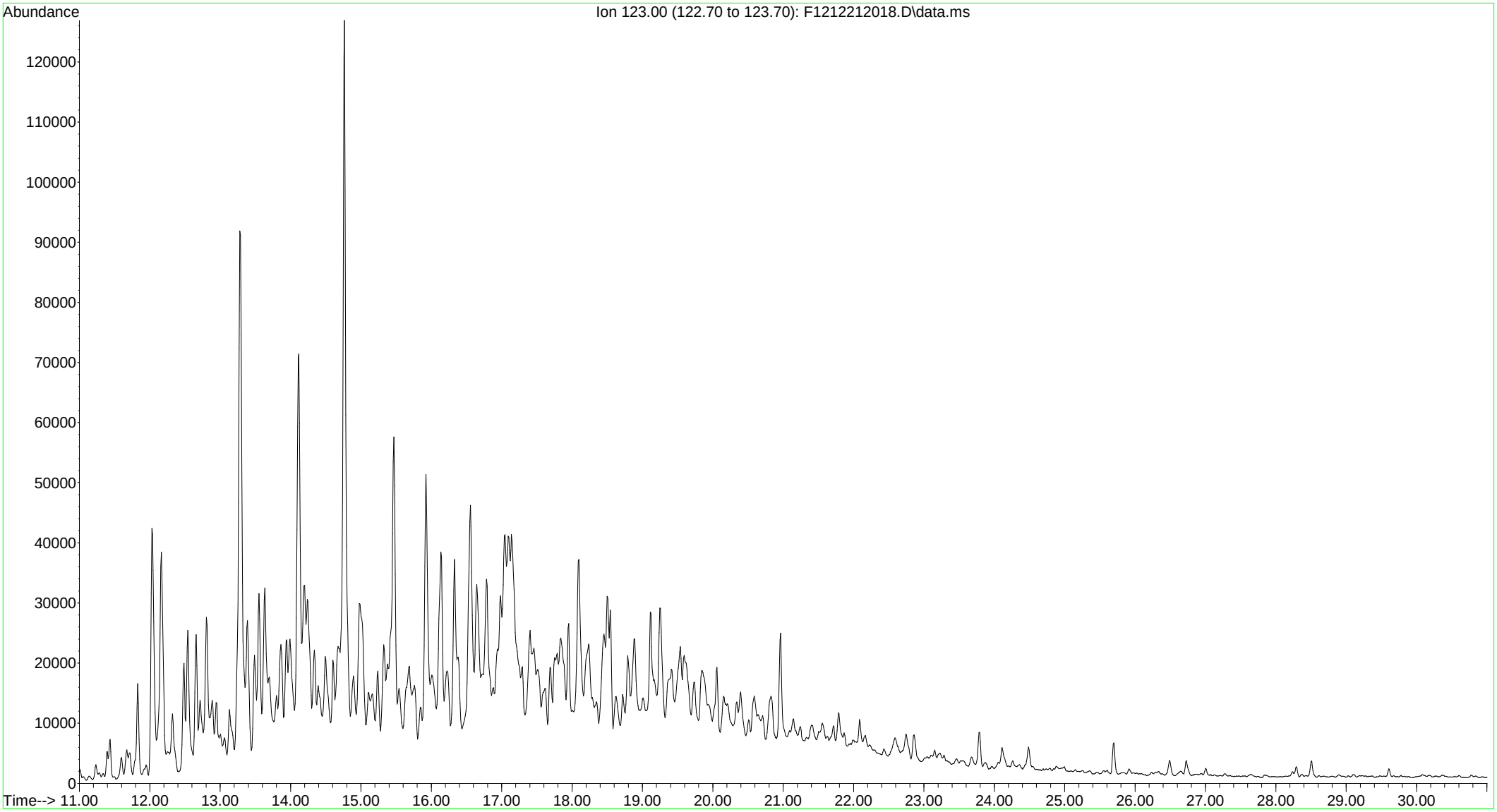

File :O:\Forensics\Data\PAH12\2020\DEC20\Dec20\dec22\F1212212018.D
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Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
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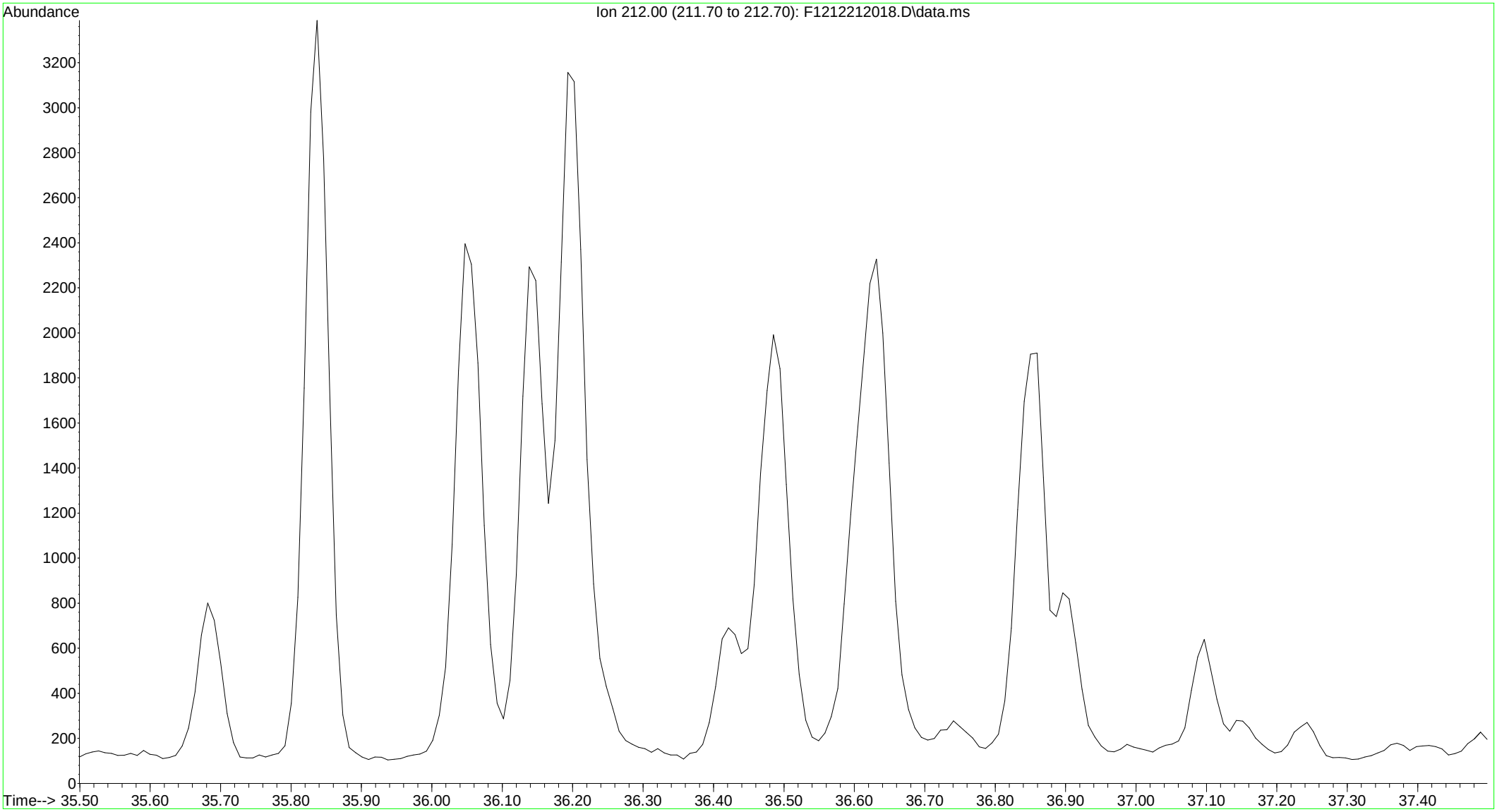

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Acquired : 23 Dec 2020   1:19 am using AcqMethod FRNC12ALT.M
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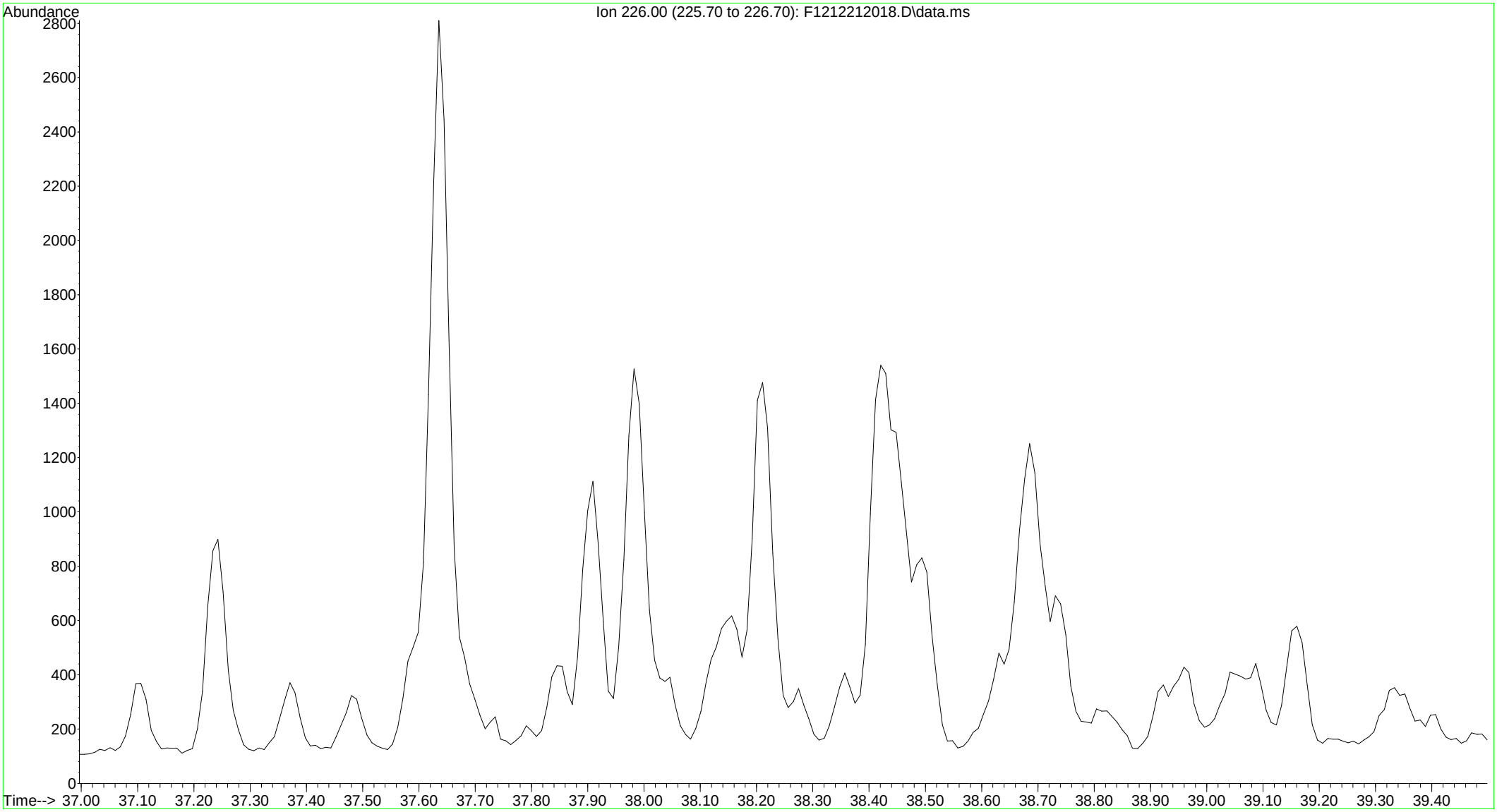

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Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
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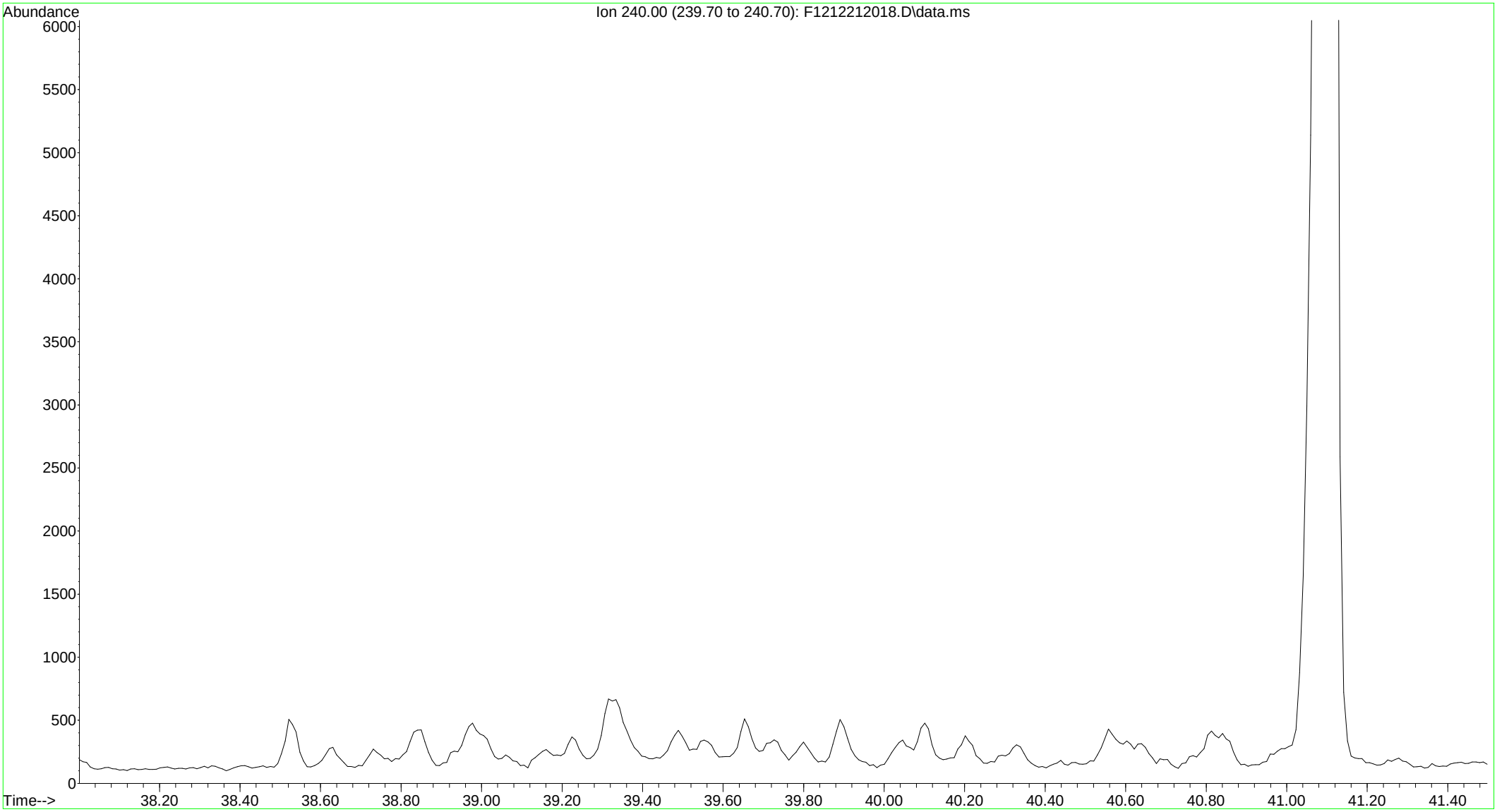

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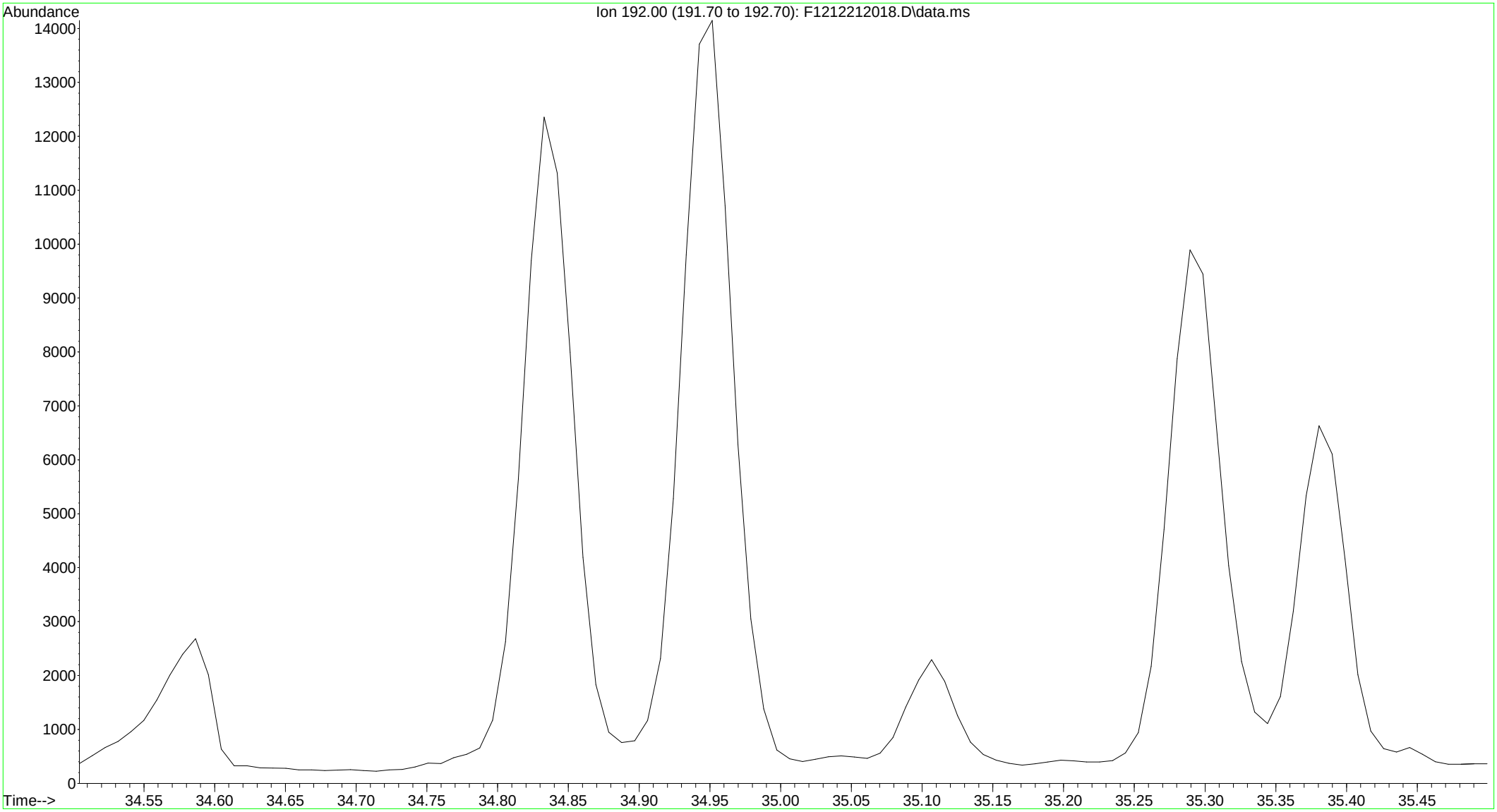

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Operator : PAH12:MJS
Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
Instrument : PAH12
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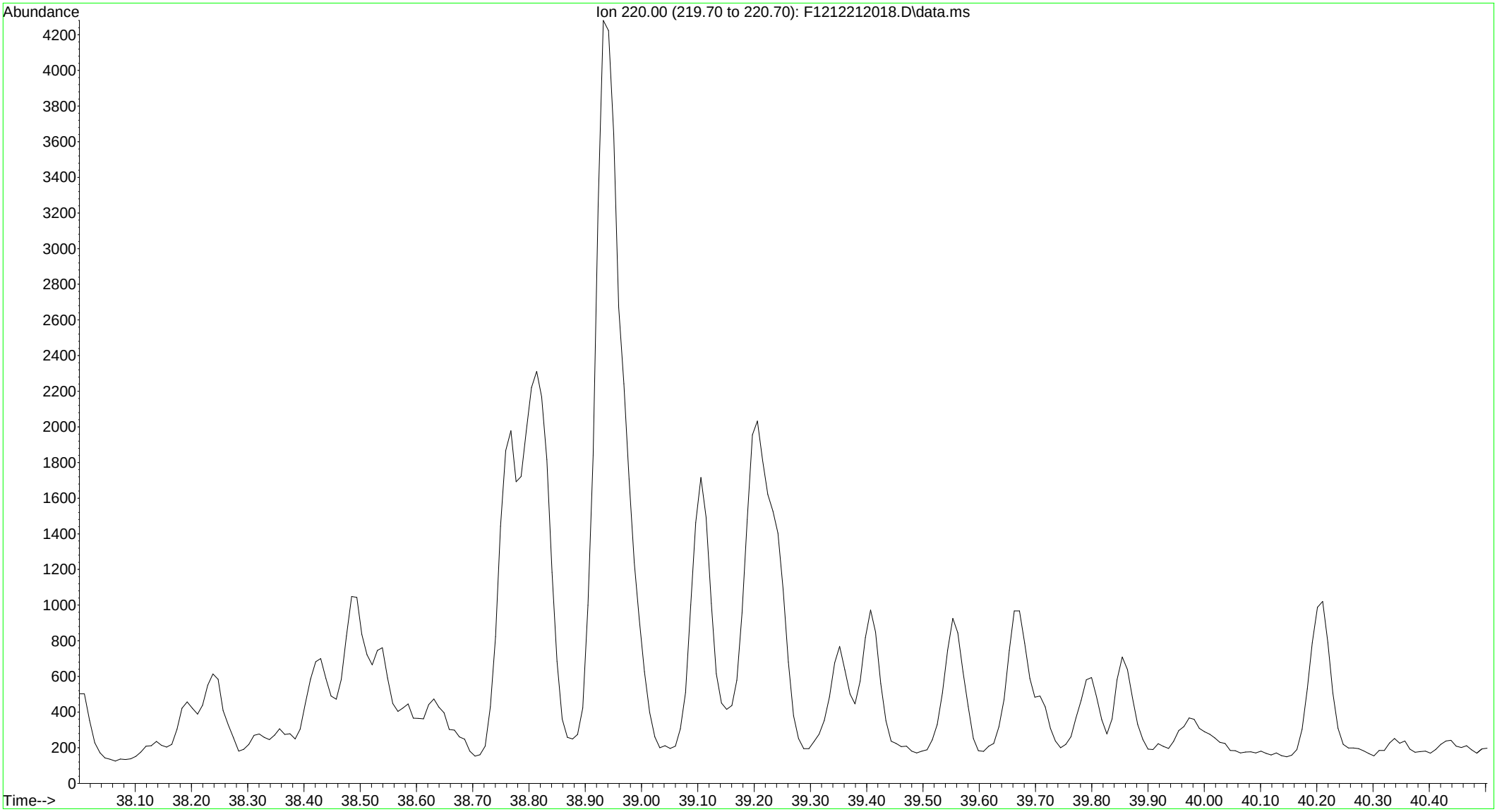
Misc Info : WG1448408,WG1446106,ICAL17375
ALS Vial : 14



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Operator : PAH12:MJS
Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
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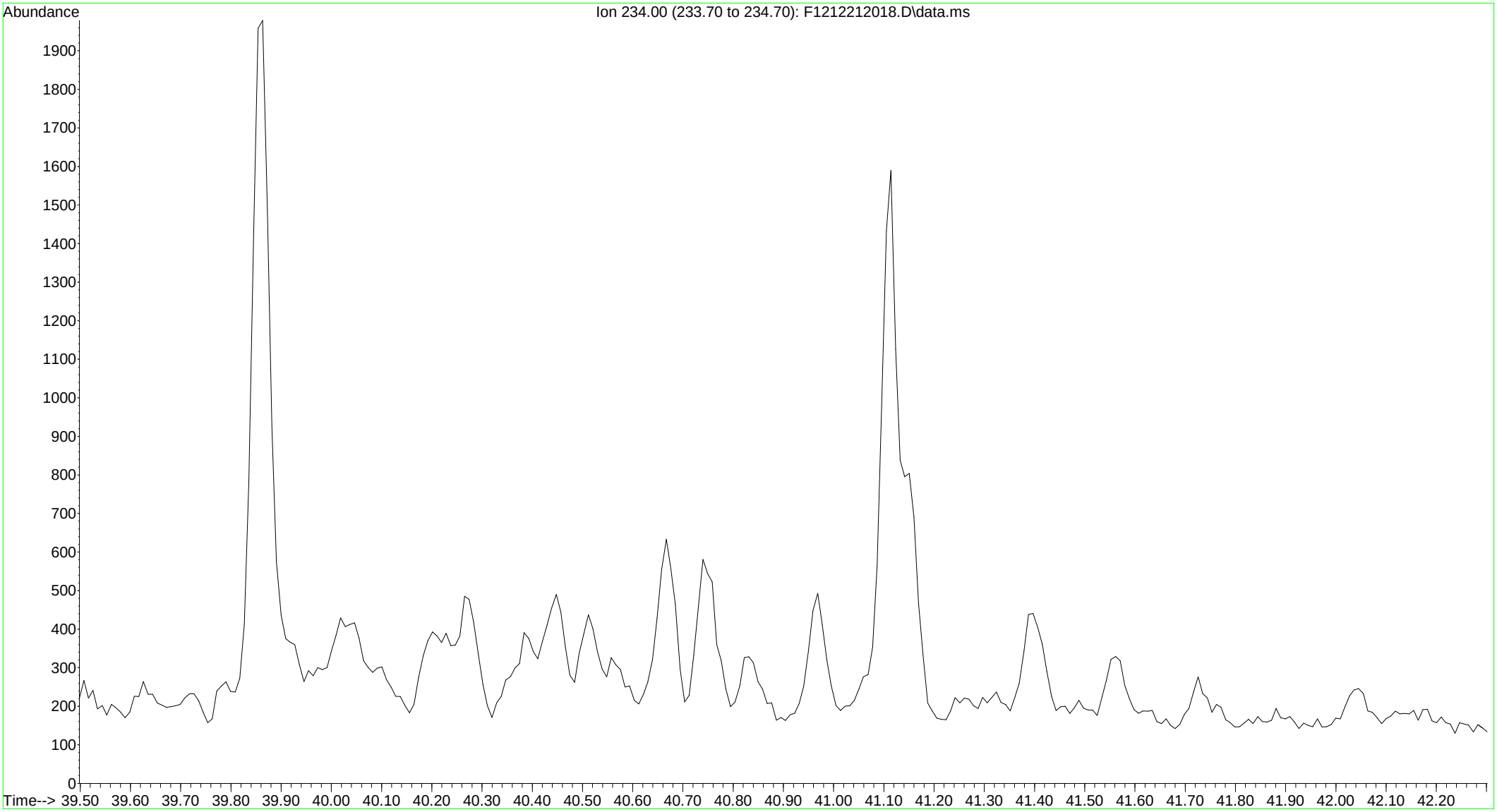

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Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
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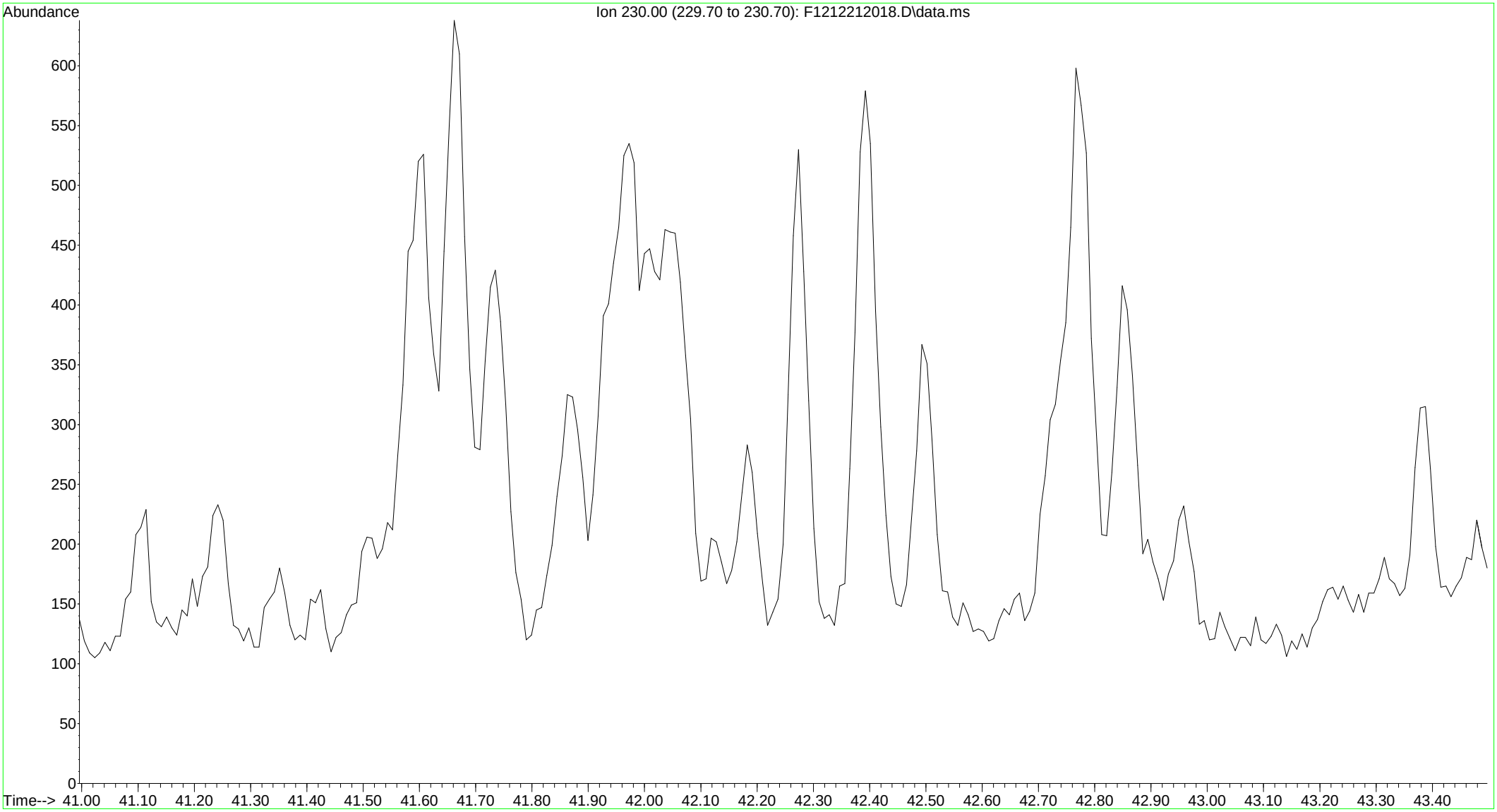
Sample : L2055267-01,32,,
Misc Info : WG1448408,WG1446106,ICAL17375
ALS Vial : 14



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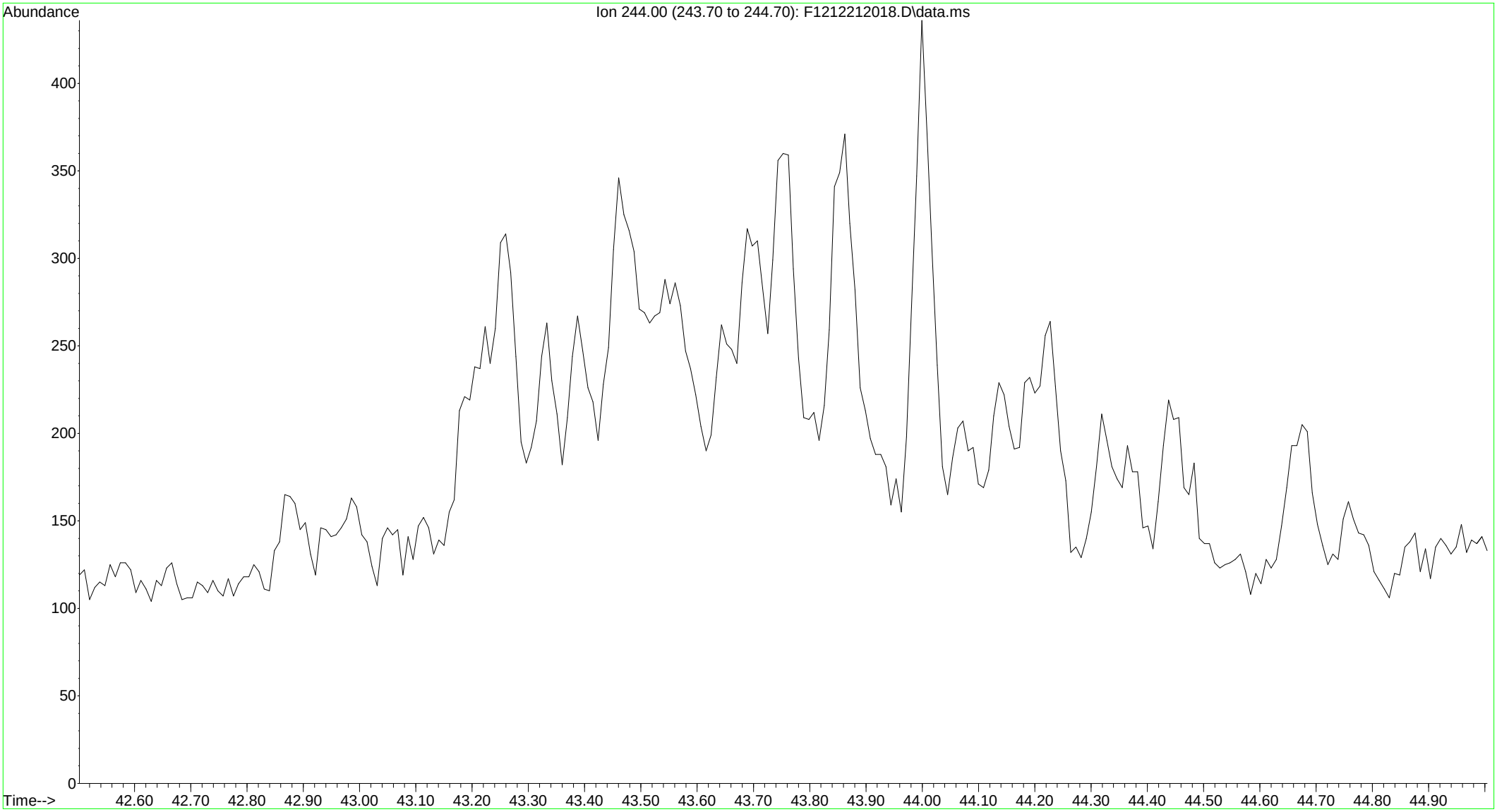
Operator : PAH12:MJS
Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample : L2055267-01,32,,
Misc Info : WG1448408,WG1446106,ICAL17375
ALS Vial : 14



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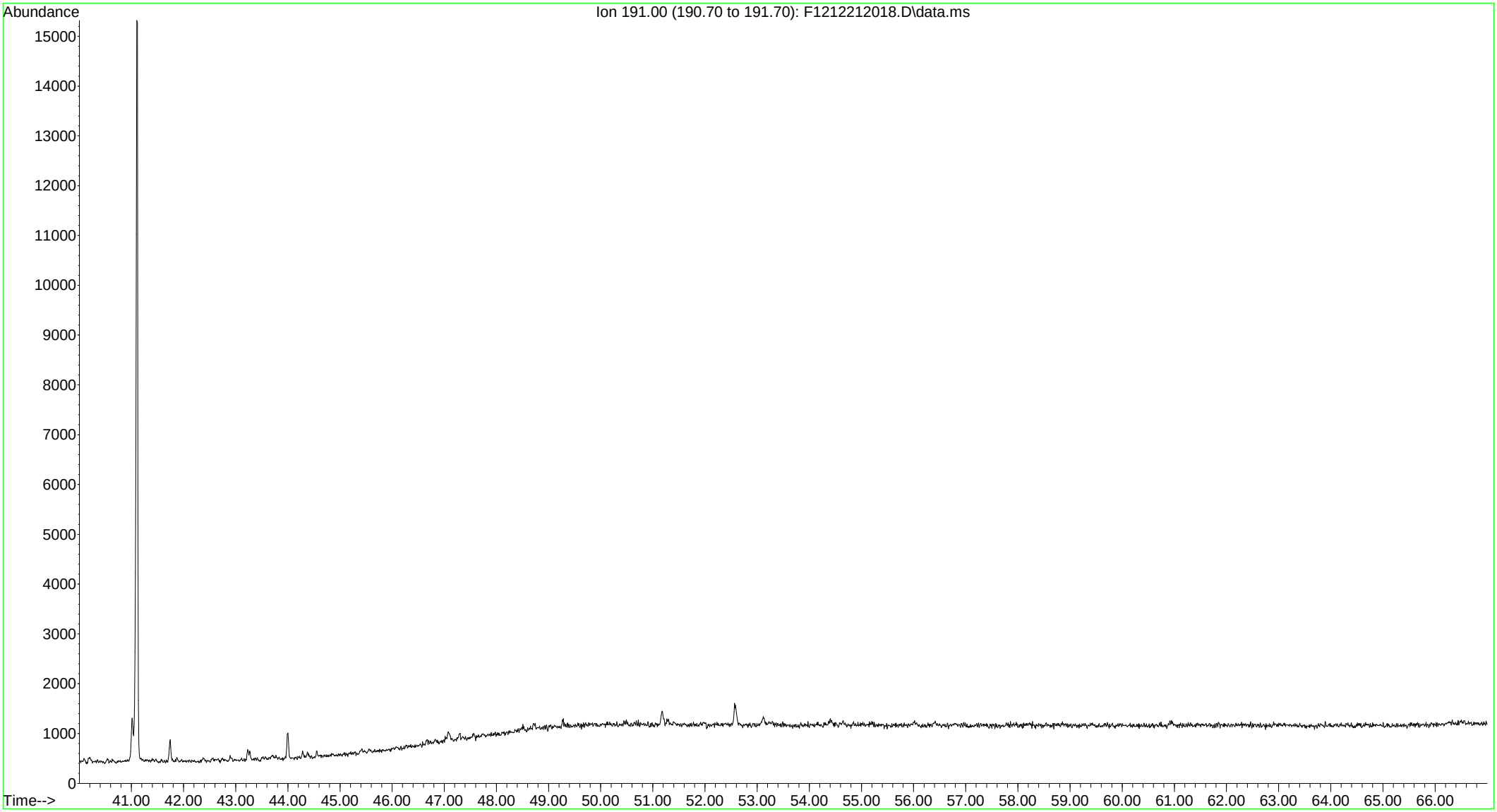
Operator : PAH12:MJS
Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample : L2055267-01,32,,
Misc Info : WG1448408,WG1446106,ICAL17375
ALS Vial : 14



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Operator : PAH12:MJS
Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
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Sample : L2055267-01,32,,
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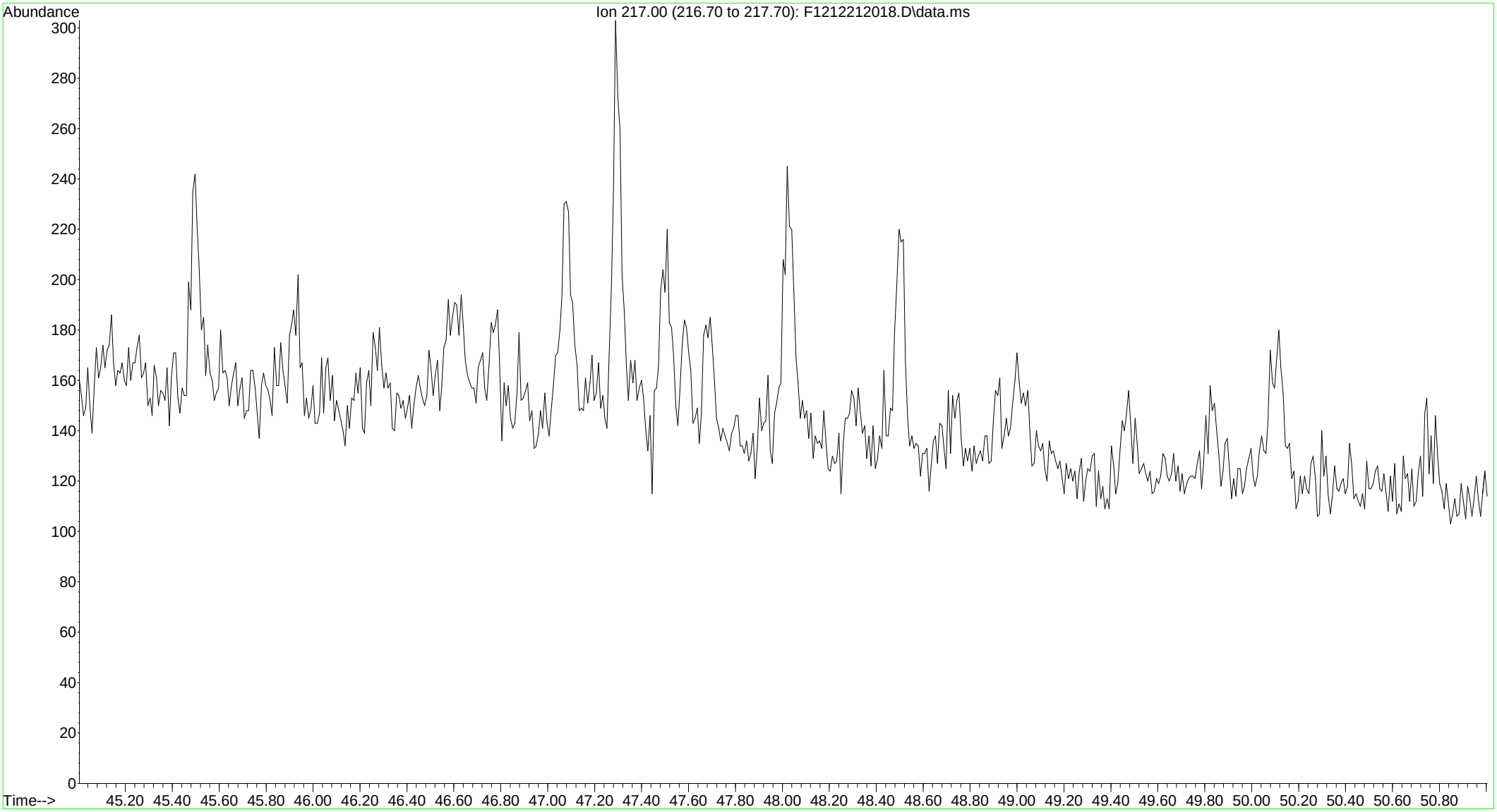

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Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
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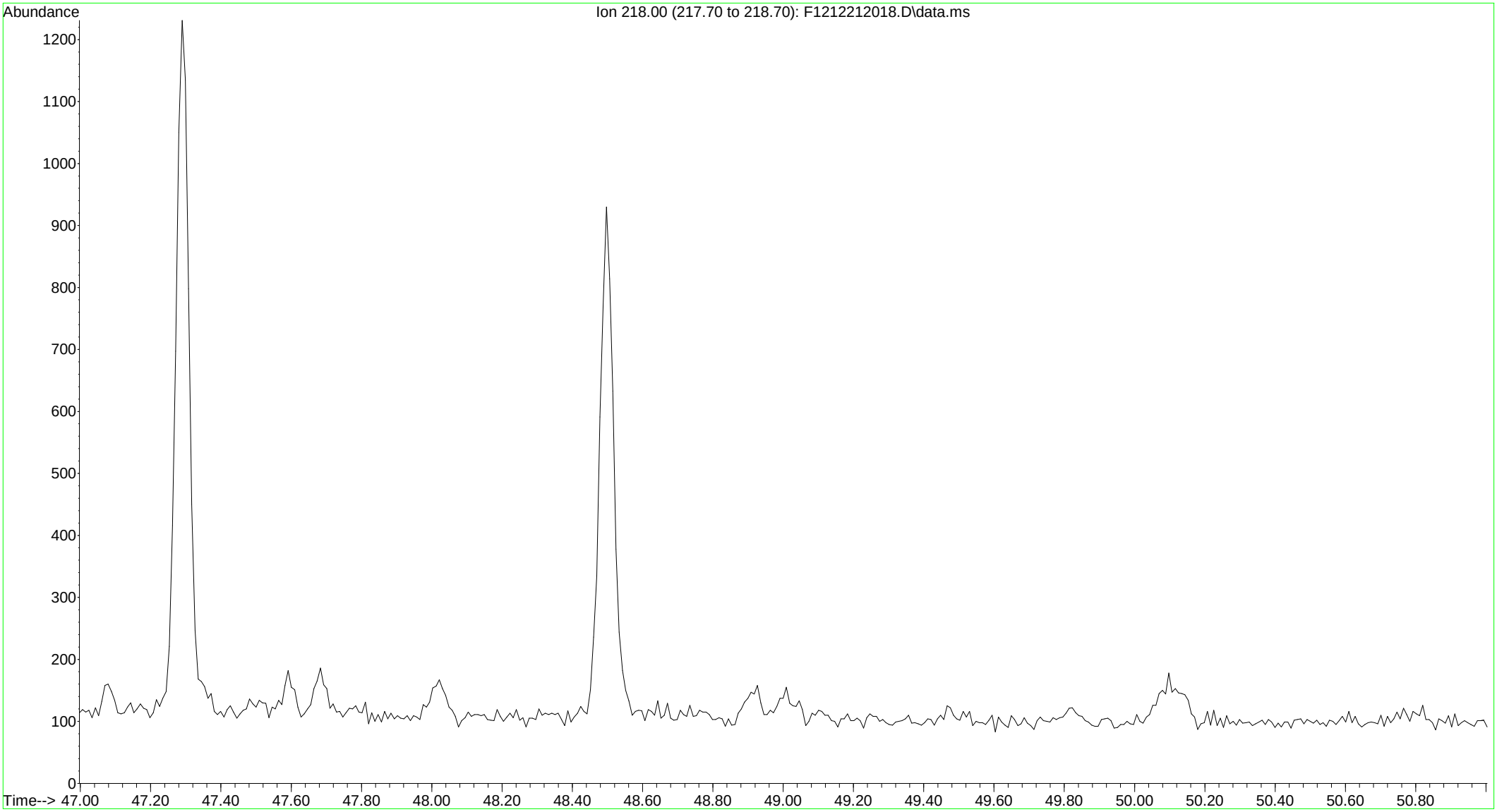

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Acquired : 23 Dec 2020 1:19 am using AcqMethod FRNC12ALT.M
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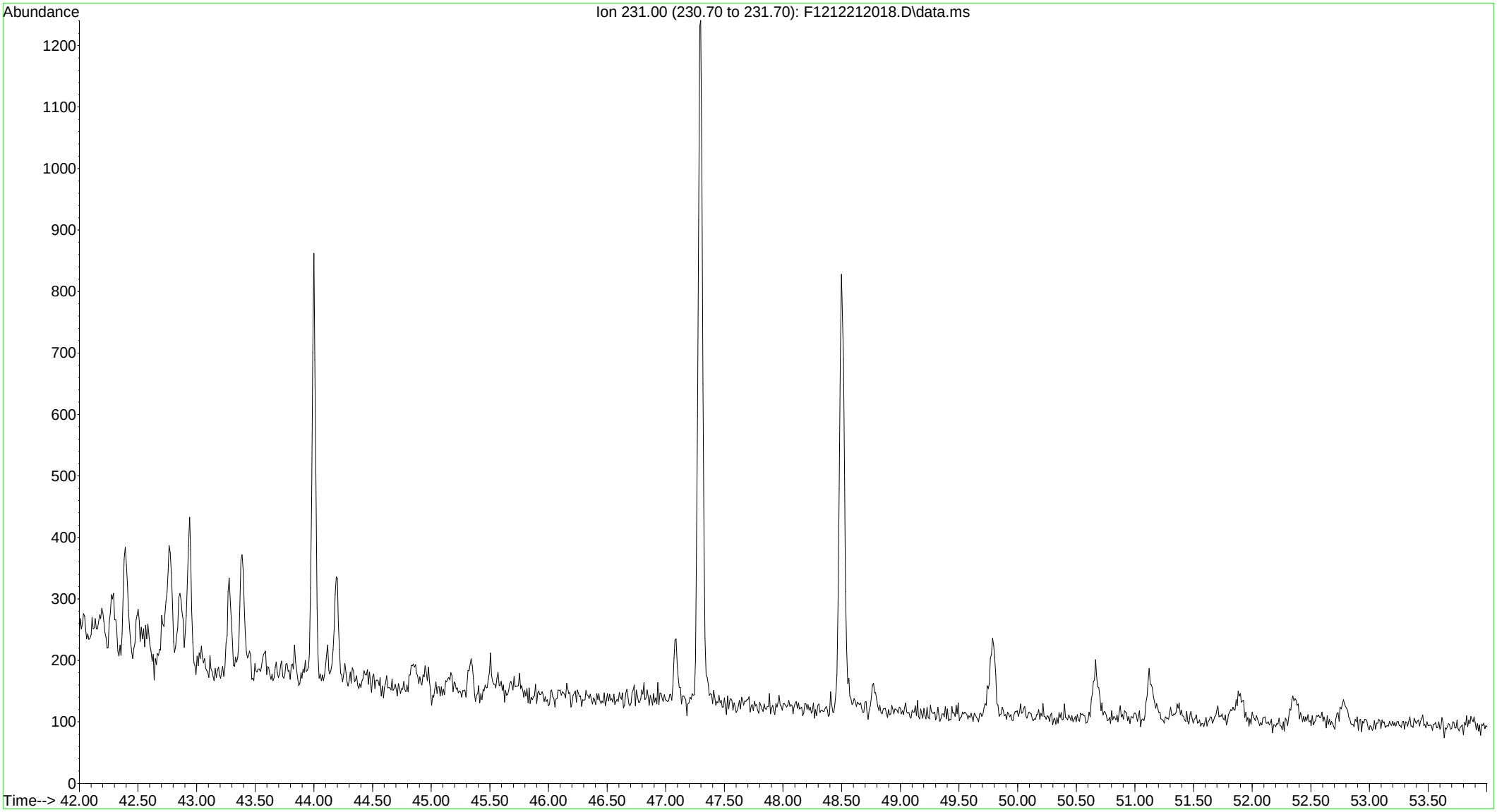

Quantitation Report (QT Reviewed)

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Acquired : 23 Dec 2020 16:37 using AcqMethod FID6A.M
Sample Name: L2055267-01
Instrument: FID6
Misc Info : WG1448203,WG1446106,ICAL17254
Vial Number: 21
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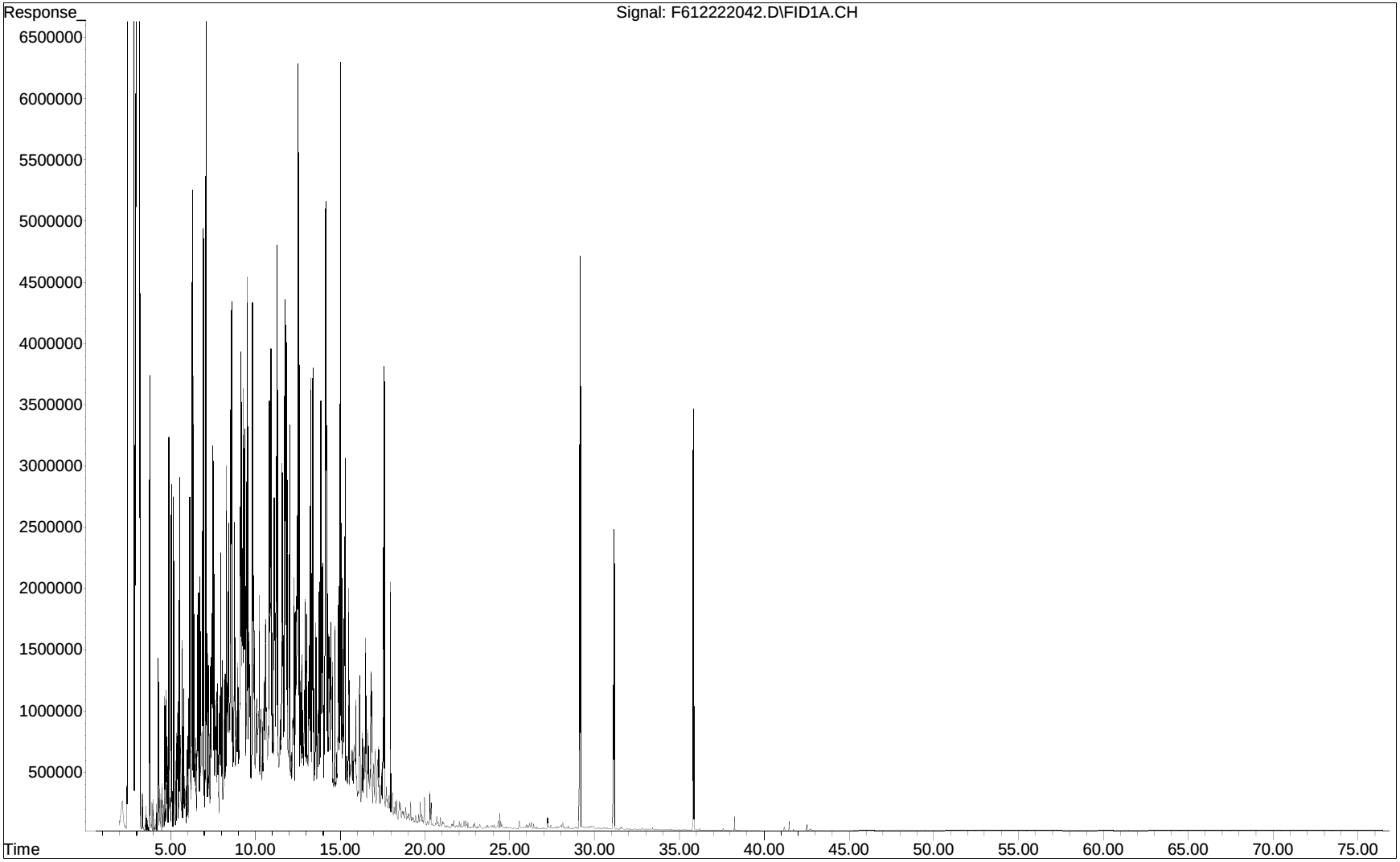

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder:	2101165
Report Created for:	Alpha Analytical, Inc. 320 Forbes Blvd Mansfield, MA 02048
Project Contact:	Susan O'Neil
Project P.O.:	
Project:	L2055267
Project Received:	01/06/2021

Analytical Report reviewed & approved for release on 01/13/2021 by:

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Alpha Analytical, Inc.
Project: L2055267
WorkOrder: 2101165

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Alpha Analytical, Inc.	**WorkOrder:**	2101165
Date Received:	01/06/2021 9:47	**Extraction Method:**	SW3550B
Date Prepared:	01/08/2021	**Analytical Method:**	SW8270C
Project:	L2055267	**Unit:**	mg/Kg

Organic Lead (speciated) by GC-MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BT-5-S-9-20201210	**2101165-001A**	**Soil**	**12/10/2020 12:00**	**GC46 F0112210206.D**	**212764**

Analytes	Result	MDL	RL	DF	Date Analyzed
Tetraethyl Lead	**3.4**	0.024	0.040	20	01/12/2021 17:05
Tetramethyl Lead	ND	0.012	0.040	20	01/12/2021 17:05

Surrogates	REC (%)	Limits	
2-Fluorobiphenyl	107	50-150	01/12/2021 17:05

Analyst(s): TD

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Quality Control Report

Client:	Alpha Analytical, Inc.	**WorkOrder:**	2101165
Date Prepared:	01/08/2021	**BatchID:**	212764
Date Analyzed:	01/12/2021	**Extraction Method:**	SW3550B
Instrument:	GC46	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	L2055267	**Sample ID:**	MB/LCS/LCSD-212764

QC Summary Report for Organic Lead by GC-MS

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Tetraethyl Lead	ND	0.00120	0.00200	-	-	-
Tetramethyl Lead	ND	0.000590	0.00200	-	-	-
Surrogate Recovery						
2-Fluorobiphenyl	0.204			0.2	102	30-150

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Tetraethyl Lead	0.0909	0.0866	0.10	91	87	50-150	4.82	30
Tetramethyl Lead	0.0842	0.0860	0.10	84	86	50-150	2.09	30
Surrogate Recovery								
2-Fluorobiphenyl	0.202	0.205	0.20	101	102	50-150	1.20	30

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2101165 **ClientCode: AAMA**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ EQuIS ☑ Dry-Weight ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Excel

Report to:
Susan O'Neil
Alpha Analytical, Inc.
320 Forbes Blvd
Mansfield, MA 02048
(508) 844-4117 FAX:

Email: #Error
cc/3rd Party: subreports@alphalab.com;
PO:
Project: L2055267

Bill to:
Finance
Alpha Analytical, Inc.
320 Forbes Blvd
Mansfield, MA 02048
ap@alphalab.com

Requested TAT: 5 days;

Date Received: **01/06/2021**
Date Logged: **01/06/2021**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2101165-001	BT-5-S-9-20201210	Soil	12/10/2020 12:00	☐	A	A										

Test Legend:

1	MAI_OPBMS_S [J]	2	PRDisposal Fee	3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Angela Rydelius

Prepared by: Valerie Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: ALPHA ANALYTICAL, INC. **Project:** L2055267 **Work Order:** 2101165
Client Contact: Susan O'Neil **QC Level:** LEVEL 2
Contact's Email: #Error **Comments:** **Date Logged:** 1/6/2021

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	DryWeight	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
2101165-001A	BT-5-S-9-20201210	Soil	SW8270C - Organic Lead (speciated)	1	4OZ GJ, Unpres	☐	12/10/2020 12:00	5 days		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

210165

Subcontract Chain of Custody

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburg, CA 94565

Alpha Job Number
L2055267

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 508.844.4117
Email: soneil@alphalab.com

Project Information

Project Location: PA
Project Manager: Susan O'Neil

Turnaround & Deliverables Information

Due Date: 01/20/21
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:

Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2055267

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com TEL and TML proprietary method

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	BT-5-S-9-20201210	12-10-20 12:00	SOIL	Organic Lead by Method 8270	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature]	1/5/21 1700	UPS	
	UPS	1/6/21 0947	[signature]	1/6/21 0947
Form No: AL_subcoc				

TN: 12 19E 18E 01 9491 2672

5.0 ac wet WA.

McCampbell Analytical, Inc.
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Sample Receipt Checklist

Client Name: **Alpha Analytical, Inc.**
Project: **L2055267**
WorkOrder №: **2101165** Matrix: Soil
Carrier: UPS

Date and Time Received: **1/6/2021 09:47**
Date Logged: **1/6/2021**
Received by: Valerie Alfaro
Logged by: Valerie Alfaro

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☑	No	☐		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☑	No	☐	NA	☐
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
(Ice Type: WET ICE)						
Sample/Temp Blank temperature	Temp: 5°C				NA	☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA	☑
UCMR Samples:						
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA	☑

Comments:

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193

MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab: 12/11/10

ALPHA Job #: L2055267

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Dr Suite 140
West Chester, PA 19438
Phone: 610-840-2500
Fax: 610-840-2501
Email:

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Belmont Confirmation Drilling
Project Location: Philadephia, PA
Project #: 213402797
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 213402797

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

(X) Analyze Pending Authorization

ANALYSIS: Alkylated PAH + Biomarkers; PIANO Volatile Organics; EPA 8260B/8035DCM; Saturated Hydrocarbons; EPA 8015(M); Subcontract - organic lead; by 8270; Total Solids SM2540

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Alkylated PAH + Biomarkers	PIANO Volatile Organics	EPA 8260B/8035DCM	Saturated Hydrocarbons	EPA 8015(M)	Subcontract - organic lead	by 8270	Total Solids SM2540	Sample Specific Comments	TOTAL # BOTTLES
55267-01	BT-5-S-9-20201210	12/10/20	1200	SO	JK	X	X	X	X	X					

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	12/10/20 1530	AALI (AAL)	12/10/20 15:30
AALI (AAL)	12/10/20 15:00	Tom Clark	12/10 1800
Tom Clark	12/10		12/10 2200
	12/11 0230		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

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ENVIRONMENTAL FORENSICS

Client: Stantec Consulting Services, Inc.

ATTN: Andrew Klingbeil

CQ Project#: 0166

Project name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Laboratory#: L2103943

Advisor

ChemQuants™
ENVIRONMENTAL FORENSICS

CQ Quote # 0166

CQ PM: Mark Cejas

Dear Andrew,

ChemQuants is pleased to deliver this CQ Advisor package that consists of a simple petroleum characterization, a data visualization summary of the chemistry, methods strategy summary, and the chemistry data deliverable. The CQ Interpreter workstream will be quoted and invoiced separately.

Date of Delivery: 3/3/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Company Address: 1060 Andrew Drive Suite 140

Email: Andrew.klingbeil@stantec.com

Project Name: CQ Project # 0166

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Laboratory#: L2103943

CQ Methods Summary

Phase 1 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
1	Saturated Hydrocarbons 8015D (M)	Soil	2
1	PIANO VOCs EPA 8260D (M)	Soil	2
2	TEL and TML in Water or Soil	Soil	1
1	Alkylated PAHs (w/ Scan) EPA 8270D(M)	Soil	2

Phase 2 Forensic Method(s)

None

CQ Interpreter Stage

CQ Interpreter Authorized (check if yes)?: ∨

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor

Phase 1 Basic Characterization # 0166

Dear Andrew,

Please find below a basic characterization of petroleum in the project samples. The following characterization was supported by the chromatographic results from three analytical methods – 1) VOC range PIANO 8260B (M), 2) saturated hydrocarbons 8015D (M), and 3) alkylated PAHs w/ Qualitative biomarkers 8270D (M). A GC/FID chromatogram and bar graphs were produced from these data and included to support a basic characterization of the petroleum in the soil sample.

Phase 1 Data Delivery: 2/19/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Email: Andrew.klingbeil@stantec.com

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Sample - L2103943-01 (ARCO-BH-21-01 (28-30))

This project sample exhibits petroleum that spans the gasoline range to the middle distillate range (figure 1). In the VOC range, the sample exhibits what may be a mixture of gasoline and another VOC range hydrocarbon containing product (figure 3). In the SVOC range, the signature confirms the presence of light to middle distillate range chemical features (figures 5, 7). The presence of a light unrefined petroleum product cannot be ruled out.

Sample - L2103943-02 (BT-18B-S-11-20210126)

This project sample exhibits petroleum that spans the gasoline range to the residual range (figure 2). In the VOC range, the signature may be related to a refinery intermediate (figure 4). In the SVOC range, the signature is pyrogenic and likely related to a manufactured gas plant (MGP) residue (figures 6, 8).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

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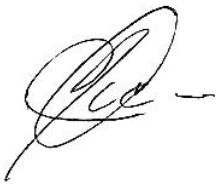
Recommendation for Phase 2

CQ Quote #0166 lists the analytical methods that were tentatively recommended for phase 2 forensics. Organic Lead Isomer TEL and TML method is recommended for this sample. A final invoice will be delivered to you along with the complete chemistry data package, if an interpretive report and the CQ Interpreter phase is not desired – please advise ASAP.

Mark J. Cejas
Principal



[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

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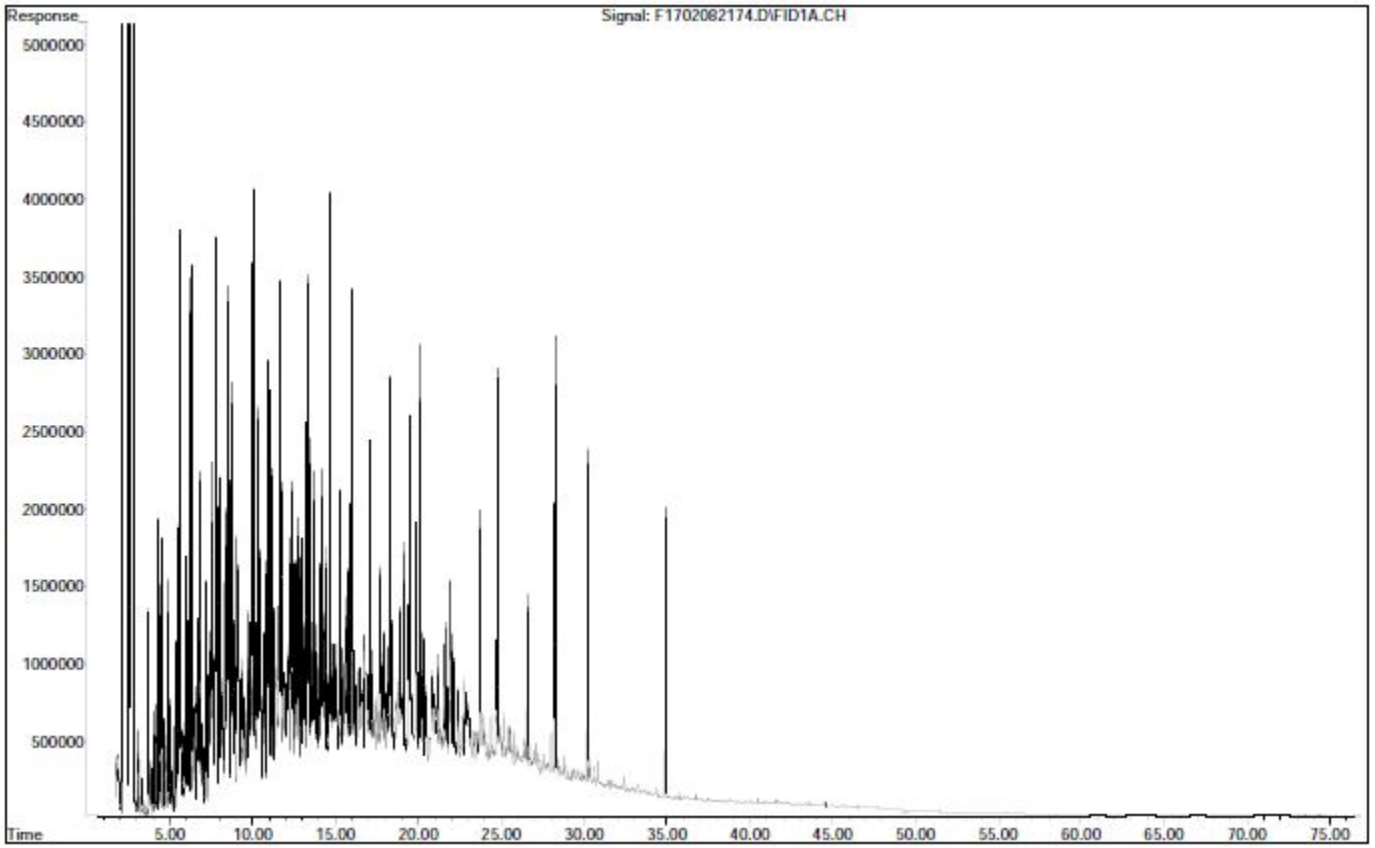

Figure 1- SVOC GC/FID chromatogram of (L2103943-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

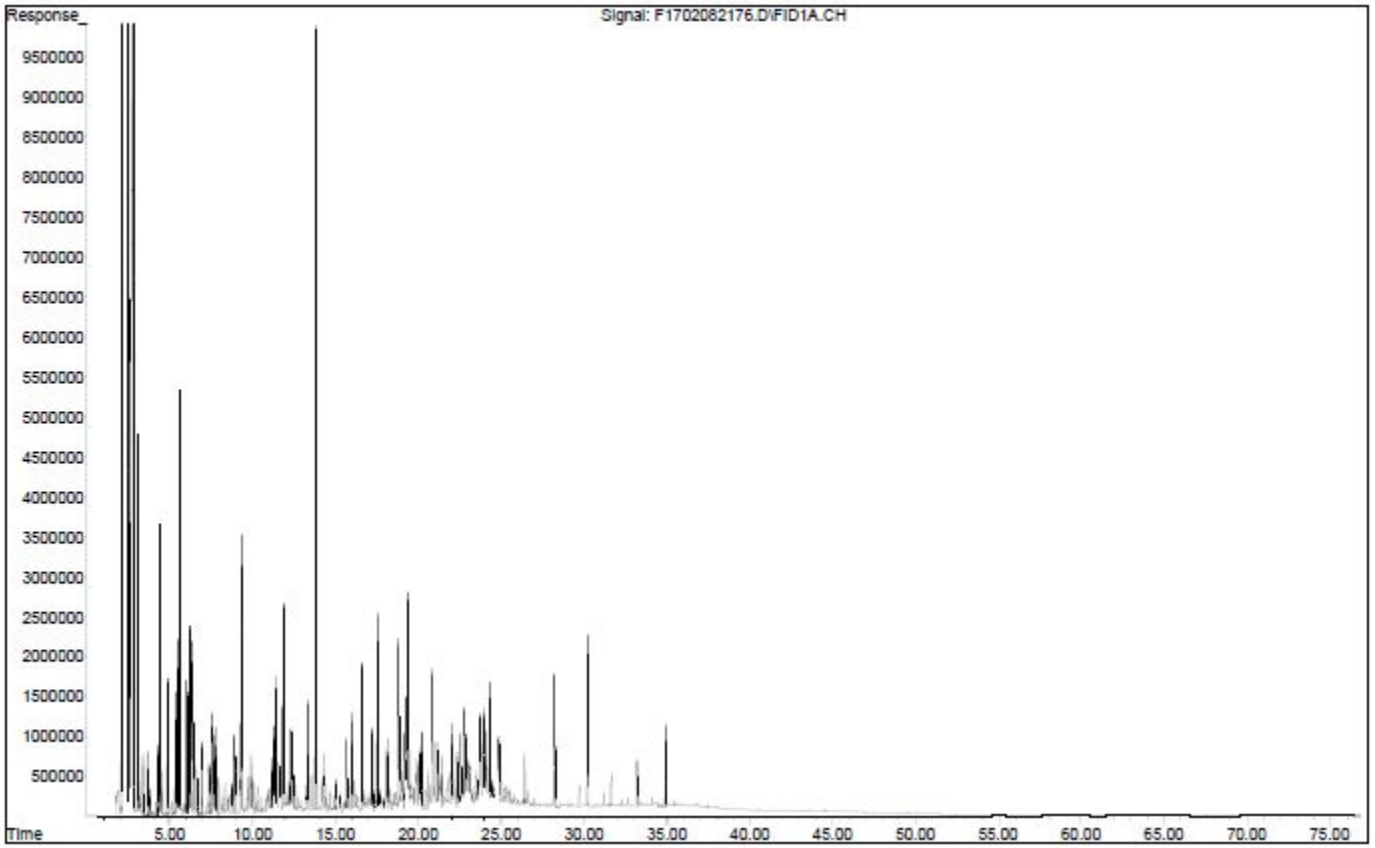

Figure 2 - SVOC GC/FID chromatogram of (L2103943-02).

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markcejas@chemquants.com
ChemQuants,LLC
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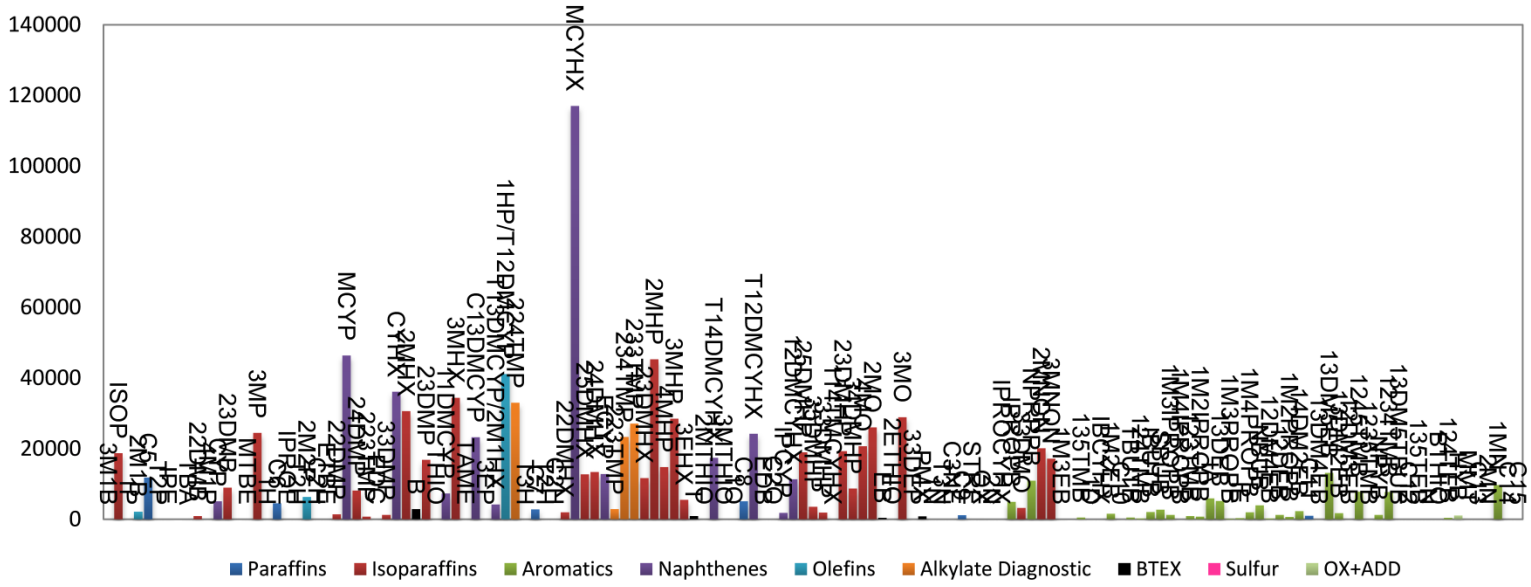

Figure 3 – Bar Graph of VOC PIANO constituents - (L2103943-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor

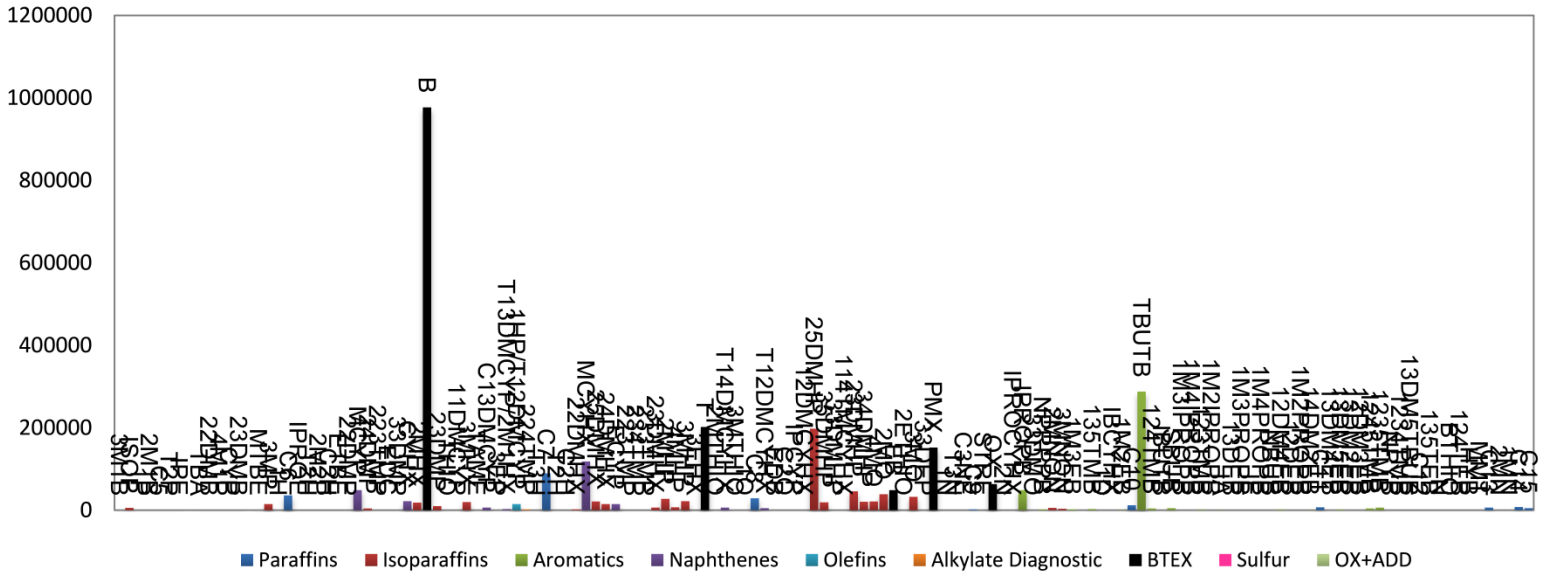

Figure 4 – Bar Graph of VOC PIANO constituents - (L2103943-02).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

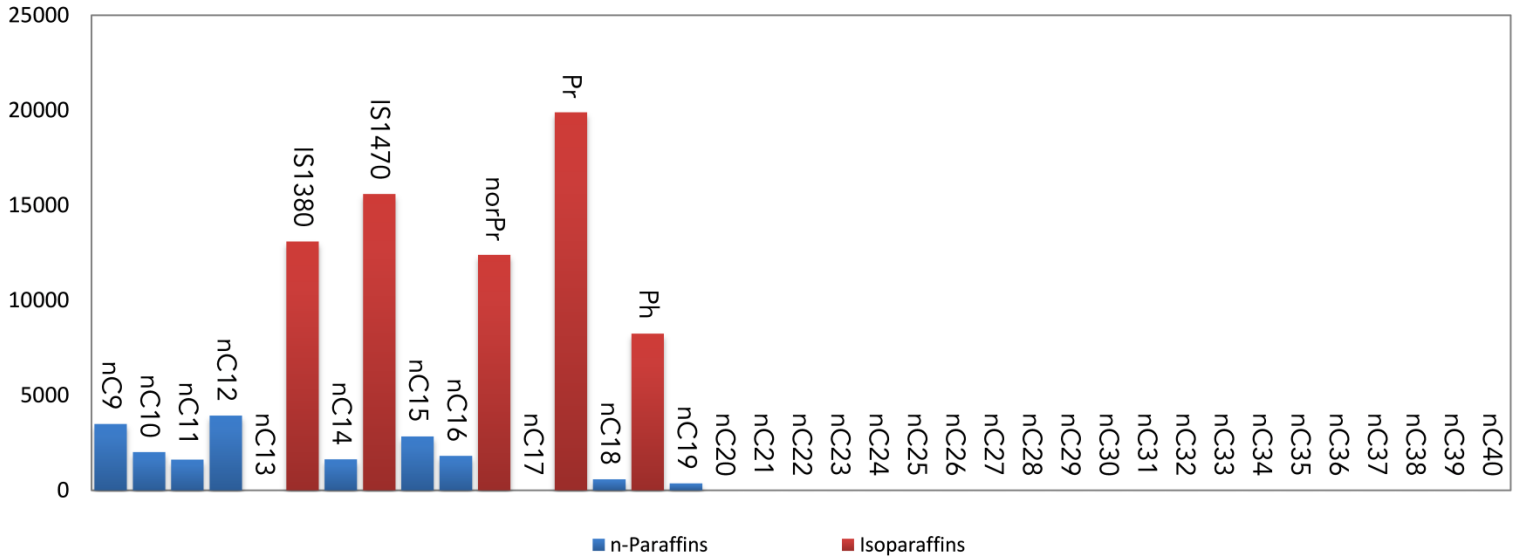

Figure 5 – Bar Graph of Saturated Hydrocarbons GC/FID - (L2103943-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

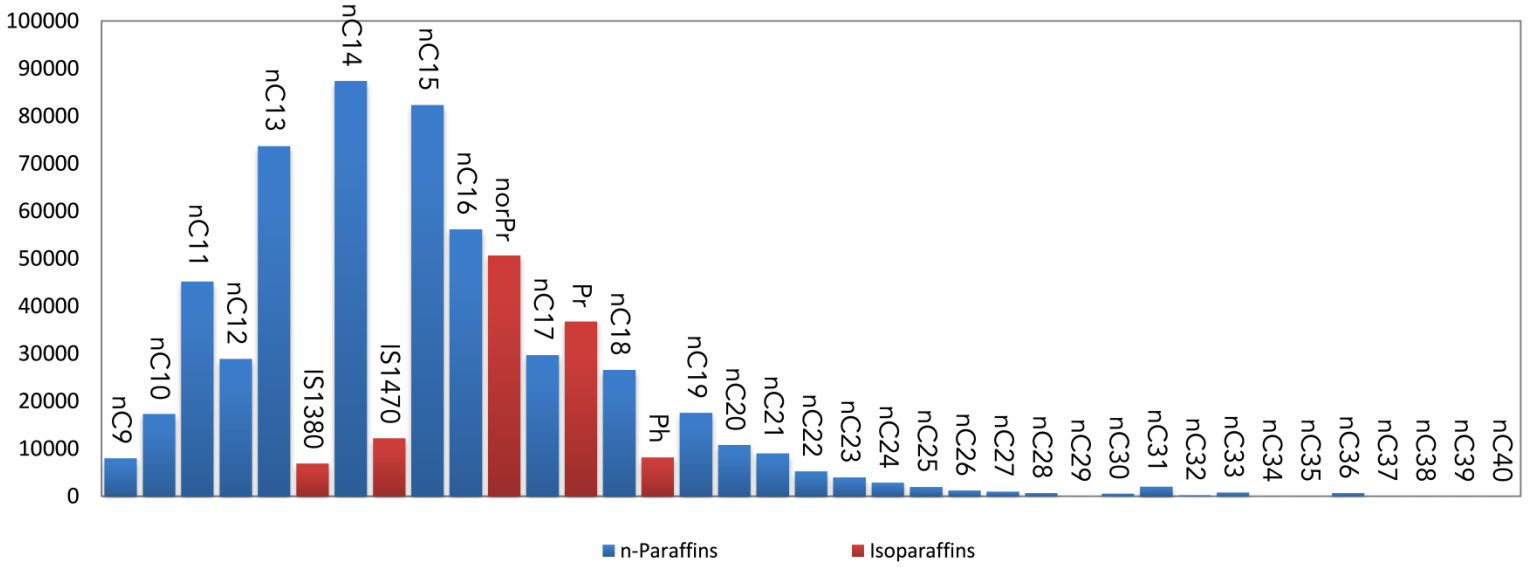

Figure 6 – Bar Graph of Saturated Hydrocarbons GC/FID - (L2103943-02).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

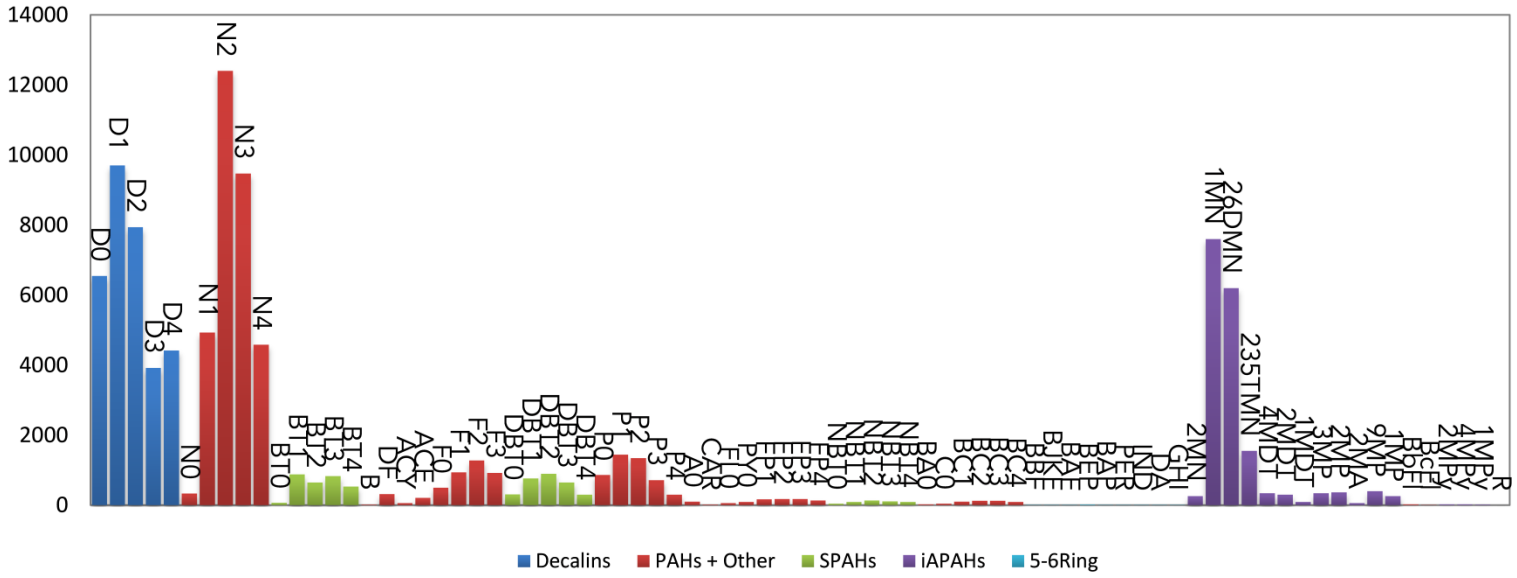

Figure 7 – Bar Graph of Alkylated PAHs - CD-13B-S-26-20200702 (L2103943-01).

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markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

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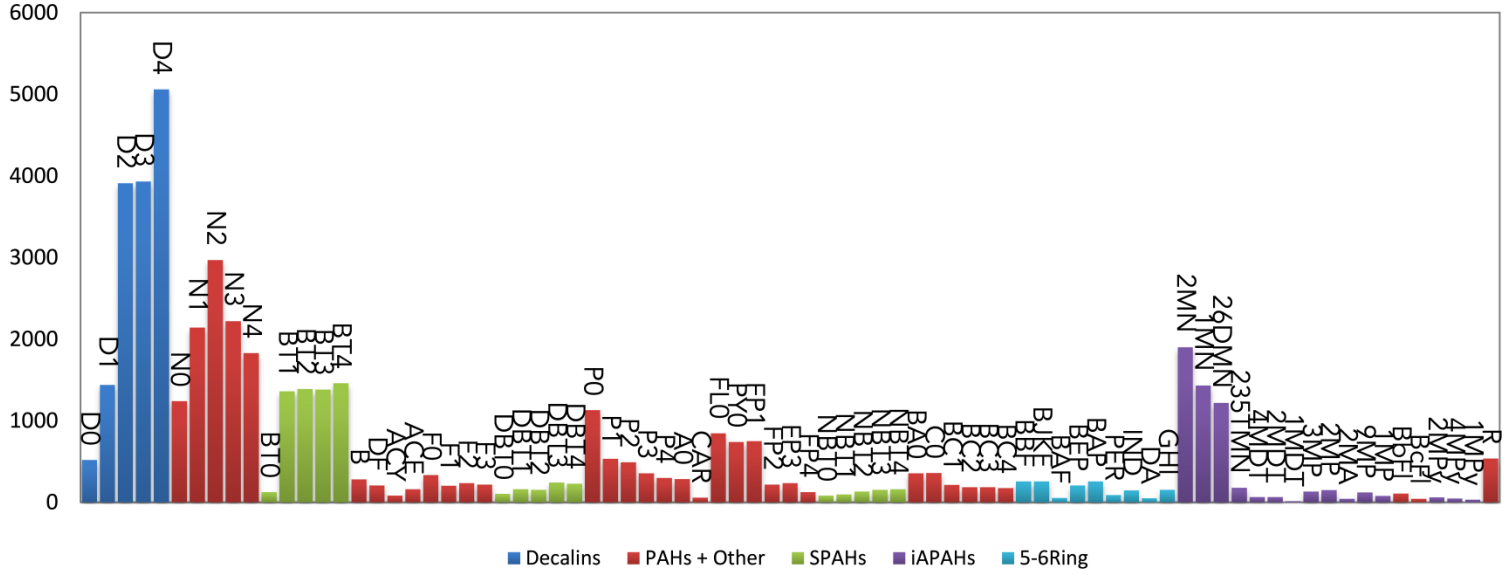

Figure 8 – Bar Graph of Alkylated PAHs - CD-13B-S-26-20200702 (L2103943-02).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor™

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1-27-21

ALPHA Job #: L2103943

ALPHA
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Dr Suite 140 West Chester, PA 19380
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.Kilngeil@stantec.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Belmont Drilling Sampling
Project Location: Philadelphia, PA
Project #: 213402.7497
Project Manager: Andrew Klingeil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 213402.7497

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

⊗ = Analyze Pending Authorization

ANALYSIS

- Filtered PAH + Biomarkers by 8270D-SIM(LL)
- Filtered VOCs by 8260D-SIM(LL)
- Filtered Carbazole by 8270D-SIM(LL)
- Filtered Hexavalent Chromium by EPA 7199 (LL)
- Filtered Metals by 6020B-SIM(LL)
- Total Solids SM 2540G

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Analysis	Total # Bottles
03943-01	ARLO-BH-21-01(22-30)	1/25/21	1520	SO	DPH	⊗⊗⊗⊗⊗	25
02	BT-186-S-11-20210126	1/26/21	0930	SO	DPH	⊗⊗⊗⊗⊗	
03	TRIP BLANK	1/1/20	—	—	—		

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	1/26/21 1008		1/26/21 1008
	1/26/21 1715		1/26/21 1710
DPH AAL	1/27/21 01:10	AAL	1/26/21 21:00
			1/27/21 01:10

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

1127/21 0535

Wendy Lemmo 1/27/21 with T. Hall 1/27/21 0535 and Pat T. Hall 1/27/21 0535

ANALYTICAL REPORT

Lab Number:	L2103943
Client:	ChemQuants, LLC 1338 Kenwood Rd. Santa Barbara, CA 93109
ATTN:	Mark Cejas
Phone:	(305) 342-2250
Project Name:	BELMONT CONFIRMATION DRILLING
Project Number:	0166
Report Date:	03/03/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2103943
Report Date: 03/03/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2103943-01	ARCO-BH-21-01 (28-30)	SOIL	PHILADELPHIA, PA	01/25/21 15:00	01/26/21
L2103943-02	BT-18B-S-11-20210126	SOIL	PHILADELPHIA, PA	01/26/21 09:30	01/26/21
L2103943-03	TRIP BLANK	SOIL	PHILADELPHIA, PA	12/01/20 00:00	01/26/21

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2103943
Project Number:	0166	**Report Date:**	03/03/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2103943
Project Number:	0166	**Report Date:**	03/03/21

Case Narrative (continued)

Report Submission

March 3, 2021: Final report. The analysis of organic lead was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

February 19, 2021: Preliminary report pending the decision regarding phase 2 analyses.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

PIANO Volatile Organics

L2103943-01 and -02: The samples have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the samples.

L2103943-02: The sample was re-analyzed on dilution in order to quantify the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

Alklyated PAH

L2103943-01: The sample was re-analyzed on dilution in order to quantify the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

Saturated Hydrocarbons

L2103943-01 and -02: The sample was re-extracted with the method required holding time exceeded due to suspected solvent contamination in the original extraction. The results of both extractions are reported.

The WG1462898-1 Method Blank, associated with L2103943-01 and -02, has a concentration above the

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2103943
Project Number:	0166	**Report Date:**	03/03/21

Case Narrative (continued)

reporting limit for TPH (C9-C44). Since the associated sample concentrations are greater than 10x the blank concentration for this analyte, no corrective action is required.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 03/03/21

ORGANICS

VOLATILES

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 D
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260B
Analytical Date: 01/29/21 21:11
Analyst: RY
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3-Methyl-1-butene	ND		ug/kg	1360	202.	10
Isopentane	18700		ug/kg	1360	249.	10
1-Pentene	ND		ug/kg	1360	249.	10
2-Methyl-1-Butene	2170		ug/kg	1360	212.	10
Pentane	11800		ug/kg	1360	425.	10
trans-2-Pentene	ND		ug/kg	1360	184.	10
Isoprene	ND		ug/kg	1360	243.	10
cis-2-Pentene	ND		ug/kg	1360	219.	10
Tertiary Butanol	ND		ug/kg	17000	2210	10
2,2-Dimethylbutane	941	J	ug/kg	1360	420.	10
4-Methyl-1-pentene	ND		ug/kg	1360	212.	10
Cyclopentane	5090		ug/kg	1360	354.	10
2,3-Dimethylbutane	8950		ug/kg	1360	563.	10
2-Methylpentane	30100		ug/kg	1360	369.	10
Methyl tert butyl ether	ND		ug/kg	1360	281.	10
3-Methylpentane	24500		ug/kg	1360	216.	10
1-Hexene	ND		ug/kg	1360	191.	10
n-Hexane	4490		ug/kg	1360	224.	10
Isopropyl Ether	ND		ug/kg	1360	165.	10
trans-2-Hexene	ND		ug/kg	1360	178.	10
2-Methyl-2-pentene	6310		ug/kg	1360	208.	10
cis-2-Hexene	ND		ug/kg	1360	184.	10
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1360	206.	10
2,2-Dimethylpentane	1430		ug/kg	1360	183.	10
Methylcyclopentane	46400		ug/kg	1360	182.	10
2,4-Dimethylpentane	8110		ug/kg	1360	168.	10
2,2,3-Trimethylbutane	742	J	ug/kg	1360	184.	10
1,2-Dichloroethane	ND		ug/kg	1360	201.	10

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 D
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3,3-Dimethylpentane	1280	J	ug/kg	1360	253.	10
Cyclohexane	36100		ug/kg	1360	168.	10
2-Methylhexane	30600		ug/kg	1360	214.	10
Benzene	2940		ug/kg	1360	208.	10
2,3-Dimethylpentane	16800		ug/kg	1360	180.	10
Thiophene	ND		ug/kg	1360	193.	10
1,1-Dimethylcyclopentane	7280		ug/kg	1360	163.	10
3-Methylhexane	34400		ug/kg	1360	218.	10
Tertiary-Amyl Methyl Ether	ND		ug/kg	1360	168.	10
1,3-Dimethylcyclopentane (cis)	23200		ug/kg	1360	205.	10
3-Ethylpentane	4190		ug/kg	1360	197.	10
1-Heptene/1,2-DMCP (trans)	41100		ug/kg	2720	398.	10
Isooctane	33000		ug/kg	1360	148.	10
trans-3-Heptene	ND		ug/kg	1360	212.	10
Heptane	2780		ug/kg	1360	237.	10
trans-2-Heptene	ND		ug/kg	1360	174.	10
cis-2-Heptene	ND		ug/kg	1360	264.	10
2,2-Dimethylhexane	1980		ug/kg	1360	198.	10
Methylcyclohexane	117000		ug/kg	1360	184.	10
2,5-Dimethylhexane	12700		ug/kg	1360	237.	10
2,4-Dimethylhexane	13400		ug/kg	1360	166.	10
Ethylcyclopentane	12800		ug/kg	1360	180.	10
2,2,3-Trimethylpentane	2880		ug/kg	1360	236.	10
2,3,4-Trimethylpentane	23300		ug/kg	1360	178.	10
Xylene (Total)[1]	1020	J	ug/kg	1360	142.	10
2,3,3-Trimethylpentane	27100		ug/kg	1360	270.	10
2,3-Dimethylhexane	11700		ug/kg	1360	330.	10
2-Methylheptane	45300		ug/kg	1360	230.	10
4-Methylheptane	14800		ug/kg	1360	234.	10
3-Methylheptane	28500		ug/kg	1360	194.	10
3-Ethylhexane	5510		ug/kg	1360	244.	10
Toluene	977	J	ug/kg	1360	184.	10
2-Methylthiophene	ND		ug/kg	1360	116.	10
1,4-Dimethylcyclohexane (trans)	17400		ug/kg	1360	177.	10
3-Methylthiophene	ND		ug/kg	1360	159.	10
1-Octene	ND		ug/kg	3400	209.	10
Octane	5080		ug/kg	1360	160.	10

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 D
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
1,2-Dimethylcyclohexane (trans)	24200		ug/kg	1360	200.	10
1,2-Dibromoethane	ND		ug/kg	1360	218.	10
cis-2-Octene	ND		ug/kg	1360	156.	10
Isopropylcyclopentane	1850		ug/kg	1360	200.	10
1,2-Dimethylcyclohexane (cis)	11300		ug/kg	1360	396.	10
2,5-Dimethylheptane	19000		ug/kg	1360	228.	10
3,5-Dimethylheptane	3510		ug/kg	1360	192.	10
3,3-Dimethylheptane	1880		ug/kg	1360	165.	10
1,1,4-Trimethylcyclohexane	ND		ug/kg	1360	136.	10
2,3-Dimethylheptane	19300		ug/kg	1360	155.	10
3,4-Dimethylheptane	8690		ug/kg	1360	232.	10
4-Methyloctane	20700		ug/kg	1360	228.	10
2-Methyloctane	26000		ug/kg	1360	349.	10
Ethylbenzene	445	J	ug/kg	1360	147.	10
2-Ethylthiophene	ND		ug/kg	1360	120.	10
3-Methyloctane	28900		ug/kg	1360	152.	10
3,3-Diethylpentane	ND		ug/kg	1360	159.	10
p/m-Xylene	871	J	ug/kg	2720	260.	10
1-Nonene	ND		ug/kg	3400	184.	10
trans-3-Nonene	ND		ug/kg	1360	161.	10
cis-3-Nonene	ND		ug/kg	1360	255.	10
Nonane (C9)	1180	J	ug/kg	1360	212.	10
Styrene	ND		ug/kg	1360	138.	10
o-Xylene	146	J	ug/kg	1360	142.	10
2-Nonene	ND		ug/kg	3400	173.	10
Isopropylcyclohexane	ND		ug/kg	1360	144.	10
Isopropylbenzene	4930		ug/kg	1360	127.	10
3,3-Dimethyloctane	3220		ug/kg	1360	138.	10
n-Propylbenzene	10900		ug/kg	1360	120.	10
2-Methylnonane	20100		ug/kg	1360	193.	10
3-Methylnonane	17200		ug/kg	1360	190.	10
1-Methyl-3-Ethylbenzene	ND		ug/kg	1360	215.	10
1-Methyl-4-Ethylbenzene	426	J	ug/kg	1360	192.	10
1,3,5-Trimethylbenzene	546	J	ug/kg	1360	157.	10
1-Decene	ND		ug/kg	1360	177.	10
Isobutylcyclohexane	ND		ug/kg	1360	111.	10
1-Methyl-2-Ethylbenzene	1560		ug/kg	1360	116.	10

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 D
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
Decane (C10)	ND		ug/kg	1360	184.	10
tert-Butylbenzene	513	J	ug/kg	1360	144.	10
1,2,4-Trimethylbenzene	234	J	ug/kg	1360	141.	10
Isobutylbenzene	2040		ug/kg	1360	184.	10
sec-Butylbenzene	2760		ug/kg	1360	176.	10
1-Methyl-3-Isopropylbenzene	1250	J	ug/kg	1360	176.	10
1-Methyl-4-Isopropylbenzene	ND		ug/kg	1360	144.	10
1,2,3-Trimethylbenzene	878	J	ug/kg	1360	152.	10
1-Methyl-2-Isopropylbenzene	758	J	ug/kg	1360	148.	10
Indane	5900		ug/kg	1360	83.8	10
1,3-Diethylbenzene	5150		ug/kg	1360	170.	10
1-Methyl-3-N-Propylbenzene	191	J	ug/kg	1360	138.	10
Indene	364	J	ug/kg	1360	79.0	10
1-Methyl-4-N-Propylbenzene	2010		ug/kg	1360	170.	10
n-Butylbenzene	3970		ug/kg	1360	134.	10
1,2-Dimethyl-4-Ethylbenzene	270	J	ug/kg	1360	167.	10
1,2-Diethylbenzene	1260	J	ug/kg	1360	202.	10
1-Methyl-2-N-Propylbenzene	704	J	ug/kg	1360	170.	10
1,4-Dimethyl-2-Ethylbenzene	2300		ug/kg	1360	127.	10
Undecane	1030	J	ug/kg	1360	151.	10
1,3-Dimethyl-4-Ethylbenzene	ND		ug/kg	1360	132.	10
1,3-Dimethyl-5-Ethylbenzene	13100		ug/kg	1360	161.	10
1,3-Dimethyl-2-Ethylbenzene	1740		ug/kg	1360	101.	10
1,2-Dimethyl-3-Ethylbenzene	ND		ug/kg	1360	86.5	10
1,2,4,5-Tetramethylbenzene	7790		ug/kg	1360	106.	10
1,2,3,5-Tetramethylbenzene	ND		ug/kg	1360	104.	10
N-Pentylbenzene	1220	J	ug/kg	1360	170.	10
1,2,3,4-Tetramethylbenzene	7740		ug/kg	1360	146.	10
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	1360	194.	10
Dodecane (C12)	ND		ug/kg	3400	448.	10
1,3,5-Triethylbenzene	ND		ug/kg	1360	259.	10
Naphthalene	ND		ug/kg	1360	569.	10
Benzothiophene	ND		ug/kg	1360	720.	10
1,2,4-Triethylbenzene	460	J	ug/kg	1360	232.	10
Hexylbenzene	1080	J	ug/kg	1360	262.	10
MMT	ND		ug/kg	3400	876.	10
Tridecane	ND		ug/kg	3400	949.	10

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 D
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
2-Methylnaphthalene	ND		ug/kg	3400	900.	10
1-Methylnaphthalene	9700		ug/kg	3400	1000	10
Tetradecane (C14)	ND		ug/kg	3400	417.	10
Pentadecane	ND		ug/kg	3400	759.	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	92		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 D2
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260B
Analytical Date: 01/30/21 16:02
Analyst: RY
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
Benzene	977000		ug/kg	31500	4800	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	102		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 D
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260B
Analytical Date: 01/30/21 00:01
Analyst: RY
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3-Methyl-1-butene	ND		ug/kg	7870	1170	50
Isopentane	5690	J	ug/kg	7870	1440	50
1-Pentene	ND		ug/kg	7870	1440	50
2-Methyl-1-Butene	ND		ug/kg	7870	1220	50
Pentane	ND		ug/kg	7870	2460	50
trans-2-Pentene	ND		ug/kg	7870	1060	50
Isoprene	ND		ug/kg	7870	1400	50
cis-2-Pentene	ND		ug/kg	7870	1270	50
Tertiary Butanol	ND		ug/kg	98400	12800	50
2,2-Dimethylbutane	ND		ug/kg	7870	2430	50
4-Methyl-1-pentene	ND		ug/kg	7870	1220	50
Cyclopentane	ND		ug/kg	7870	2040	50
2,3-Dimethylbutane	ND		ug/kg	7870	3250	50
2-Methylpentane	9820		ug/kg	7870	2130	50
Methyl tert butyl ether	ND		ug/kg	7870	1620	50
3-Methylpentane	15000		ug/kg	7870	1250	50
1-Hexene	ND		ug/kg	7870	1110	50
n-Hexane	35900		ug/kg	7870	1300	50
Isopropyl Ether	ND		ug/kg	7870	952.	50
trans-2-Hexene	ND		ug/kg	7870	1030	50
2-Methyl-2-pentene	ND		ug/kg	7870	1200	50
cis-2-Hexene	ND		ug/kg	7870	1070	50
Ethyl-Tert-Butyl-Ether	ND		ug/kg	7870	1190	50
2,2-Dimethylpentane	ND		ug/kg	7870	1060	50
Methylcyclopentane	49000		ug/kg	7870	1050	50
2,4-Dimethylpentane	4580	J	ug/kg	7870	972.	50
2,2,3-Trimethylbutane	ND		ug/kg	7870	1060	50
1,2-Dichloroethane	ND		ug/kg	7870	1160	50

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 D
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3,3-Dimethylpentane	ND		ug/kg	7870	1460	50
Cyclohexane	21800		ug/kg	7870	972.	50
2-Methylhexane	18600		ug/kg	7870	1240	50
Benzene	1380000	E	ug/kg	7870	1200	50
2,3-Dimethylpentane	10200		ug/kg	7870	1040	50
Thiophene	ND		ug/kg	7870	1120	50
1,1-Dimethylcyclopentane	ND		ug/kg	7870	945.	50
3-Methylhexane	19800		ug/kg	7870	1260	50
Tertiary-Amyl Methyl Ether	ND		ug/kg	7870	968.	50
1,3-Dimethylcyclopentane (cis)	6640	J	ug/kg	7870	1180	50
3-Ethylpentane	2610	J	ug/kg	7870	1140	50
1-Heptene/1,2-DMCP (trans)	14800	J	ug/kg	15700	2300	50
Isooctane	2240	J	ug/kg	7870	858.	50
trans-3-Heptene	ND		ug/kg	7870	1220	50
Heptane	89100		ug/kg	7870	1370	50
trans-2-Heptene	ND		ug/kg	7870	1010	50
cis-2-Heptene	ND		ug/kg	7870	1520	50
2,2-Dimethylhexane	2530	J	ug/kg	7870	1140	50
Methylcyclohexane	118000		ug/kg	7870	1060	50
2,5-Dimethylhexane	21500		ug/kg	7870	1370	50
2,4-Dimethylhexane	14700		ug/kg	7870	956.	50
Ethylcyclopentane	14600		ug/kg	7870	1040	50
2,2,3-Trimethylpentane	ND		ug/kg	7870	1360	50
2,3,4-Trimethylpentane	ND		ug/kg	7870	1030	50
Xylene (Total)[1]	216000		ug/kg	7870	823.	50
2,3,3-Trimethylpentane	ND		ug/kg	7870	1560	50
2,3-Dimethylhexane	6640	J	ug/kg	7870	1910	50
2-Methylheptane	27500		ug/kg	7870	1330	50
4-Methylheptane	7250	J	ug/kg	7870	1350	50
3-Methylheptane	22200		ug/kg	7870	1120	50
3-Ethylhexane	ND		ug/kg	7870	1410	50
Toluene	202000		ug/kg	7870	1070	50
2-Methylthiophene	ND		ug/kg	7870	669.	50
1,4-Dimethylcyclohexane (trans)	6240	J	ug/kg	7870	1020	50
3-Methylthiophene	ND		ug/kg	7870	921.	50
1-Octene	ND		ug/kg	19700	1210	50
Octane	28700		ug/kg	7870	925.	50

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 D
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
1,2-Dimethylcyclohexane (trans)	5300	J	ug/kg	7870	1160	50
1,2-Dibromoethane	ND		ug/kg	7870	1260	50
cis-2-Octene	ND		ug/kg	7870	901.	50
Isopropylcyclopentane	ND		ug/kg	7870	1150	50
1,2-Dimethylcyclohexane (cis)	ND		ug/kg	7870	2290	50
2,5-Dimethylheptane	198000		ug/kg	7870	1320	50
3,5-Dimethylheptane	19400		ug/kg	7870	1110	50
3,3-Dimethylheptane	ND		ug/kg	7870	952.	50
1,1,4-Trimethylcyclohexane	ND		ug/kg	7870	783.	50
2,3-Dimethylheptane	46000		ug/kg	7870	897.	50
3,4-Dimethylheptane	20800		ug/kg	7870	1340	50
4-Methyloctane	21200		ug/kg	7870	1310	50
2-Methyloctane	38800		ug/kg	7870	2020	50
Ethylbenzene	49000		ug/kg	7870	850.	50
2-Ethylthiophene	ND		ug/kg	7870	693.	50
3-Methyloctane	32200		ug/kg	7870	882.	50
3,3-Diethylpentane	ND		ug/kg	7870	917.	50
p/m-Xylene	152000		ug/kg	15700	1500	50
1-Nonene	ND		ug/kg	19700	1060	50
trans-3-Nonene	ND		ug/kg	7870	933.	50
cis-3-Nonene	ND		ug/kg	7870	1470	50
Nonane (C9)	2440	J	ug/kg	7870	1220	50
Styrene	ND		ug/kg	7870	795.	50
o-Xylene	64000		ug/kg	7870	823.	50
2-Nonene	ND		ug/kg	19700	1000	50
Isopropylcyclohexane	ND		ug/kg	7870	834.	50
Isopropylbenzene	48600		ug/kg	7870	736.	50
3,3-Dimethyloctane	ND		ug/kg	7870	795.	50
n-Propylbenzene	2050	J	ug/kg	7870	697.	50
2-Methylnonane	6010	J	ug/kg	7870	1110	50
3-Methylnonane	3750	J	ug/kg	7870	1100	50
1-Methyl-3-Ethylbenzene	2310	J	ug/kg	7870	1240	50
1-Methyl-4-Ethylbenzene	ND		ug/kg	7870	1110	50
1,3,5-Trimethylbenzene	3100	J	ug/kg	7870	905.	50
1-Decene	ND		ug/kg	7870	1020	50
Isobutylcyclohexane	ND		ug/kg	7870	642.	50
1-Methyl-2-Ethylbenzene	787	J	ug/kg	7870	669.	50

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 D
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
Decane (C10)	11900		ug/kg	7870	1070	50
tert-Butylbenzene	288000		ug/kg	7870	830.	50
1,2,4-Trimethylbenzene	4580	J	ug/kg	7870	815.	50
Isobutylbenzene	ND		ug/kg	7870	1060	50
sec-Butylbenzene	5340	J	ug/kg	7870	1020	50
1-Methyl-3-Isopropylbenzene	ND		ug/kg	7870	1020	50
1-Methyl-4-Isopropylbenzene	ND		ug/kg	7870	834.	50
1,2,3-Trimethylbenzene	1770	J	ug/kg	7870	878.	50
1-Methyl-2-Isopropylbenzene	ND		ug/kg	7870	854.	50
Indane	496	J	ug/kg	7870	484.	50
1,3-Diethylbenzene	ND		ug/kg	7870	980.	50
1-Methyl-3-N-Propylbenzene	ND		ug/kg	7870	795.	50
Indene	ND		ug/kg	7870	457.	50
1-Methyl-4-N-Propylbenzene	ND		ug/kg	7870	984.	50
n-Butylbenzene	ND		ug/kg	7870	775.	50
1,2-Dimethyl-4-Ethylbenzene	1610	J	ug/kg	7870	964.	50
1,2-Diethylbenzene	ND		ug/kg	7870	1160	50
1-Methyl-2-N-Propylbenzene	ND		ug/kg	7870	980.	50
1,4-Dimethyl-2-Ethylbenzene	882	J	ug/kg	7870	736.	50
Undecane	7440	J	ug/kg	7870	874.	50
1,3-Dimethyl-4-Ethylbenzene	ND		ug/kg	7870	764.	50
1,3-Dimethyl-5-Ethylbenzene	1520	J	ug/kg	7870	929.	50
1,3-Dimethyl-2-Ethylbenzene	ND		ug/kg	7870	586.	50
1,2-Dimethyl-3-Ethylbenzene	ND		ug/kg	7870	500.	50
1,2,4,5-Tetramethylbenzene	4190	J	ug/kg	7870	610.	50
1,2,3,5-Tetramethylbenzene	6690	J	ug/kg	7870	598.	50
N-Pentylbenzene	ND		ug/kg	7870	980.	50
1,2,3,4-Tetramethylbenzene	ND		ug/kg	7870	842.	50
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	7870	1120	50
Dodecane (C12)	ND		ug/kg	19700	2590	50
1,3,5-Triethylbenzene	ND		ug/kg	7870	1500	50
Naphthalene	ND		ug/kg	7870	3290	50
Benzothiophene	ND		ug/kg	7870	4160	50
1,2,4-Triethylbenzene	ND		ug/kg	7870	1340	50
Hexylbenzene	ND		ug/kg	7870	1520	50
MMT	ND		ug/kg	19700	5060	50
Tridecane	6560	J	ug/kg	19700	5480	50

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 D
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
2-Methylnaphthalene	ND		ug/kg	19700	5200	50
1-Methylnaphthalene	ND		ug/kg	19700	5780	50
Tetradecane (C14)	7710	J	ug/kg	19700	2410	50
Pentadecane	4960	J	ug/kg	19700	4390	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 01/26/21 17:25
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01-02 Batch: WG1460144-5					
3-Methyl-1-butene	ND		ug/kg	100	14.8
Isopentane	ND		ug/kg	100	18.3
1-Pentene	ND		ug/kg	100	18.2
2-Methyl-1-Butene	ND		ug/kg	100	15.6
Pentane	ND		ug/kg	100	31.2
trans-2-Pentene	ND		ug/kg	100	13.5
Isoprene	ND		ug/kg	100	17.8
cis-2-Pentene	ND		ug/kg	100	16.1
Tertiary Butanol	ND		ug/kg	1250	162.
2,2-Dimethylbutane	ND		ug/kg	100	30.8
4-Methyl-1-pentene	ND		ug/kg	100	15.6
Cyclopentane	ND		ug/kg	100	26.0
2,3-Dimethylbutane	ND		ug/kg	100	41.3
2-Methylpentane	ND		ug/kg	100	27.1
Methyl tert butyl ether	ND		ug/kg	100	20.6
3-Methylpentane	ND		ug/kg	100	15.8
1-Hexene	ND		ug/kg	100	14.0
n-Hexane	ND		ug/kg	100	16.4
Isopropyl Ether	ND		ug/kg	100	12.1
trans-2-Hexene	ND		ug/kg	100	13.0
2-Methyl-2-pentene	ND		ug/kg	100	15.3
cis-2-Hexene	ND		ug/kg	100	13.6
Ethyl-Tert-Butyl-Ether	ND		ug/kg	100	15.2
2,2-Dimethylpentane	ND		ug/kg	100	13.4
Methylcyclopentane	ND		ug/kg	100	13.4
2,4-Dimethylpentane	ND		ug/kg	100	12.4
2,2,3-Trimethylbutane	ND		ug/kg	100	13.5
1,2-Dichloroethane	ND		ug/kg	100	14.8
3,3-Dimethylpentane	ND		ug/kg	100	18.6

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 01/26/21 17:25
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01-02 Batch: WG1460144-5					
Cyclohexane	ND		ug/kg	100	12.4
2-Methylhexane	ND		ug/kg	100	15.8
Benzene	ND		ug/kg	100	15.2
2,3-Dimethylpentane	ND		ug/kg	100	13.2
Thiophene	ND		ug/kg	100	14.2
1,1-Dimethylcyclopentane	ND		ug/kg	100	12.0
3-Methylhexane	ND		ug/kg	100	16.0
Tertiary-Amyl Methyl Ether	ND		ug/kg	100	12.3
1,3-Dimethylcyclopentane (cis)	ND		ug/kg	100	15.0
3-Ethylpentane	ND		ug/kg	100	14.4
1-Heptene/1,2-DMCP (trans)	ND		ug/kg	200	29.2
Isooctane	ND		ug/kg	100	10.9
trans-3-Heptene	ND		ug/kg	100	15.6
Heptane	ND		ug/kg	100	17.4
trans-2-Heptene	ND		ug/kg	100	12.8
cis-2-Heptene	ND		ug/kg	100	19.4
2,2-Dimethylhexane	ND		ug/kg	100	14.5
Methylcyclohexane	ND		ug/kg	100	13.5
2,5-Dimethylhexane	ND		ug/kg	100	17.4
2,4-Dimethylhexane	ND		ug/kg	100	12.2
Ethylcyclopentane	ND		ug/kg	100	13.2
2,2,3-Trimethylpentane	ND		ug/kg	100	17.4
2,3,4-Trimethylpentane	ND		ug/kg	100	13.0
Xylene (Total)[1]	ND		ug/kg	100	10.4
2,3,3-Trimethylpentane	ND		ug/kg	100	19.8
2,3-Dimethylhexane	ND		ug/kg	100	24.2
2-Methylheptane	ND		ug/kg	100	16.9
4-Methylheptane	ND		ug/kg	100	17.2
3-Methylheptane	ND		ug/kg	100	14.2

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 01/26/21 17:25
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01-02 Batch: WG1460144-5					
3-Ethylhexane	ND		ug/kg	100	17.9
Toluene	ND		ug/kg	100	13.6
2-Methylthiophene	ND		ug/kg	100	8.50
1,4-Dimethylcyclohexane (trans)	ND		ug/kg	100	13.0
3-Methylthiophene	ND		ug/kg	100	11.7
1-Octene	ND		ug/kg	250	15.4
Octane	ND		ug/kg	100	11.8
1,2-Dimethylcyclohexane (trans)	ND		ug/kg	100	14.7
1,2-Dibromoethane	ND		ug/kg	100	16.0
cis-2-Octene	ND		ug/kg	100	11.4
Isopropylcyclopentane	ND		ug/kg	100	14.6
1,2-Dimethylcyclohexane (cis)	ND		ug/kg	100	29.0
2,5-Dimethylheptane	ND		ug/kg	100	16.8
3,5-Dimethylheptane	ND		ug/kg	100	14.1
3,3-Dimethylheptane	ND		ug/kg	100	12.1
1,1,4-Trimethylcyclohexane	ND		ug/kg	100	9.95
2,3-Dimethylheptane	ND		ug/kg	100	11.4
3,4-Dimethylheptane	ND		ug/kg	100	17.0
4-Methyloctane	ND		ug/kg	100	16.7
2-Methyloctane	ND		ug/kg	100	25.6
Ethylbenzene	ND		ug/kg	100	10.8
2-Ethylthiophene	ND		ug/kg	100	8.80
3-Methyloctane	ND		ug/kg	100	11.2
3,3-Diethylpentane	ND		ug/kg	100	11.6
p/m-Xylene	ND		ug/kg	200	19.0
1-Nonene	ND		ug/kg	250	13.5
trans-3-Nonene	ND		ug/kg	100	11.8
cis-3-Nonene	ND		ug/kg	100	18.7
Nonane (C9)	ND		ug/kg	100	15.6

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 01/26/21 17:25
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01-02 Batch: WG1460144-5					
Styrene	ND		ug/kg	100	10.1
o-Xylene	ND		ug/kg	100	10.4
2-Nonene	ND		ug/kg	250	12.7
Isopropylcyclohexane	ND		ug/kg	100	10.6
Isopropylbenzene	ND		ug/kg	100	9.35
3,3-Dimethyloctane	ND		ug/kg	100	10.1
n-Propylbenzene	ND		ug/kg	100	8.85
2-Methylnonane	ND		ug/kg	100	14.2
3-Methylnonane	ND		ug/kg	100	14.0
1-Methyl-3-Ethylbenzene	ND		ug/kg	100	15.8
1-Methyl-4-Ethylbenzene	ND		ug/kg	100	14.1
1,3,5-Trimethylbenzene	ND		ug/kg	100	11.5
1-Decene	ND		ug/kg	100	13.0
Isobutylcyclohexane	ND		ug/kg	100	8.15
1-Methyl-2-Ethylbenzene	ND		ug/kg	100	8.50
Decane (C10)	ND		ug/kg	100	13.6
tert-Butylbenzene	ND		ug/kg	100	10.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	10.4
Isobutylbenzene	ND		ug/kg	100	13.5
sec-Butylbenzene	ND		ug/kg	100	13.0
1-Methyl-3-Isopropylbenzene	ND		ug/kg	100	12.9
1-Methyl-4-Isopropylbenzene	ND		ug/kg	100	10.6
1,2,3-Trimethylbenzene	ND		ug/kg	100	11.2
1-Methyl-2-Isopropylbenzene	ND		ug/kg	100	10.8
Indane	ND		ug/kg	100	6.15
1,3-Diethylbenzene	ND		ug/kg	100	12.4
1-Methyl-3-N-Propylbenzene	ND		ug/kg	100	10.1
Indene	ND		ug/kg	100	5.80
1-Methyl-4-N-Propylbenzene	ND		ug/kg	100	12.5

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 01/26/21 17:25
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01-02 Batch: WG1460144-5					
n-Butylbenzene	ND		ug/kg	100	9.85
1,2-Dimethyl-4-Ethylbenzene	ND		ug/kg	100	12.2
1,2-Diethylbenzene	ND		ug/kg	100	14.8
1-Methyl-2-N-Propylbenzene	ND		ug/kg	100	12.4
1,4-Dimethyl-2-Ethylbenzene	ND		ug/kg	100	9.35
Undecane	ND		ug/kg	100	11.1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/kg	100	9.70
1,3-Dimethyl-5-Ethylbenzene	ND		ug/kg	100	11.8
1,3-Dimethyl-2-Ethylbenzene	ND		ug/kg	100	7.45
1,2-Dimethyl-3-Ethylbenzene	ND		ug/kg	100	6.35
1,2,4,5-Tetramethylbenzene	ND		ug/kg	100	7.75
1,2,3,5-Tetramethylbenzene	ND		ug/kg	100	7.60
N-Pentylbenzene	ND		ug/kg	100	12.4
1,2,3,4-Tetramethylbenzene	ND		ug/kg	100	10.7
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	100	14.2
Dodecane (C12)	ND		ug/kg	250	32.8
1,3,5-Triethylbenzene	ND		ug/kg	100	19.0
Naphthalene	ND		ug/kg	100	41.8
Benzothiophene	ND		ug/kg	100	52.8
1,2,4-Triethylbenzene	ND		ug/kg	100	17.0
Hexylbenzene	ND		ug/kg	100	19.2
MMT	ND		ug/kg	250	64.3
Tridecane	ND		ug/kg	250	69.6
2-Methylnaphthalene	ND		ug/kg	250	66.1
1-Methylnaphthalene	ND		ug/kg	250	73.4
Tetradecane (C14)	ND		ug/kg	250	30.6
Pentadecane	ND		ug/kg	250	55.8

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 01/26/21 17:25
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01-02 Batch: WG1460144-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	91		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2103943

Report Date: 03/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01-02 Batch: WG1460144-3 WG1460144-4								
1-Pentene	93		95		50-130	2		30
Pentane	82		84		50-130	2		30
Tertiary Butanol	100		104		50-130	4		30
Cyclopentane	87		89		50-130	2		30
2-Methylpentane	84		87		50-130	4		30
Methyl tert butyl ether	91		93		50-130	2		30
3-Methylpentane	89		92		50-130	3		30
1-Hexene	96		97		50-130	1		30
n-Hexane	88		90		50-130	2		30
Isopropyl Ether	91		93		50-130	2		30
Ethyl-Tert-Butyl-Ether	88		89		50-130	1		30
Methylcyclopentane	92		96		50-130	4		30
2,4-Dimethylpentane	91		94		50-130	3		30
Cyclohexane	99		100		50-130	1		30
2-Methylhexane	94		95		50-130	1		30
Benzene	96		98		50-130	2		30
2,3-Dimethylpentane	96		98		50-130	2		30
3-Methylhexane	83		83		50-130	0		30
Tertiary-Amyl Methyl Ether	86		88		50-130	2		30
Isooctane	95		96		50-130	1		30
Heptane	97		98		50-130	1		30
Methylcyclohexane	90		92		50-130	2		30
2-Methylheptane	88		89		50-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2103943

Report Date: 03/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01-02 Batch: WG1460144-3 WG1460144-4								
3-Methylheptane	90		92		50-130	2		30
Toluene	90		91		50-130	1		30
Octane	95		96		50-130	1		30
Ethylbenzene	88		89		50-130	1		30
p/m-Xylene	93		94		50-130	1		30
Nonane (C9)	80		81		50-130	1		30
o-Xylene	92		94		50-130	2		30
Isopropylbenzene	93		94		50-130	1		30
n-Propylbenzene	92		93		50-130	1		30
1-Methyl-3-Ethylbenzene	92		93		50-130	1		30
1-Methyl-4-Ethylbenzene	98		100		50-130	2		30
1,3,5-Trimethylbenzene	95		96		50-130	1		30
1-Decene	80		84		50-130	5		30
1-Methyl-2-Ethylbenzene	92		94		50-130	2		30
Decane (C10)	106		108		50-130	2		30
1,2,4-Trimethylbenzene	91		91		50-130	0		30
sec-Butylbenzene	97		97		50-130	0		30
1-Methyl-4-N-Propylbenzene	84		86		50-130	2		30
n-Butylbenzene	88		89		50-130	1		30
1,2-Diethylbenzene	91		91		50-130	0		30
Undecane	98		100		50-130	2		30
N-Pentylbenzene	90		92		50-130	2		30
Dodecane (C12)	120		121		50-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2103943
Report Date: 03/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01-02 Batch: WG1460144-3 WG1460144-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	102		102		70-130
Toluene-d8	101		102		70-130
4-Bromofluorobenzene	99		100		70-130

SEMIVOLATILES

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/04/21 10:35
Analyst: CC
Percent Solids: 79%

Extraction Method: ALPHA OP-013
Extraction Date: 01/28/21 19:30
Cleanup Method: EPA 3611B
Cleanup Date: 02/03/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
cis/trans-Decalin	5940	E	ug/kg	2.47	1.24	1
C1-Decalins	9700		ug/kg	4.94	1.24	1
C2-Decalins	7940		ug/kg	4.94	1.24	1
C3-Decalins	3920		ug/kg	4.94	1.24	1
C4-Decalins	4420		ug/kg	4.94	1.24	1
Naphthalene	332.		ug/kg	4.94	1.42	1
C1-Naphthalenes	4340	E	ug/kg	4.94	1.42	1
C2-Naphthalenes	12400		ug/kg	4.94	1.42	1
C3-Naphthalenes	9470		ug/kg	4.94	1.42	1
C4-Naphthalenes	4580		ug/kg	4.94	1.42	1
2-Methylnaphthalene	260.		ug/kg	4.94	1.27	1
1-Methylnaphthalene	6700	E	ug/kg	4.94	1.56	1
Benzothiophene	70.1		ug/kg	4.94	1.54	1
C1-Benzo(b)thiophenes	876.		ug/kg	4.94	1.54	1
C2-Benzo(b)thiophenes	650.		ug/kg	4.94	1.54	1
C3-Benzo(b)thiophenes	830.		ug/kg	4.94	1.54	1
C4-Benzo(b)thiophenes	535.		ug/kg	4.94	1.54	1
Biphenyl	21.2		ug/kg	4.94	1.52	1
2,6-Dimethylnaphthalene	6200		ug/kg	4.94	1.17	1
Dibenzofuran	316.		ug/kg	4.94	1.55	1
Acenaphthylene	61.4		ug/kg	4.94	0.942	1
Acenaphthene	212.		ug/kg	4.94	0.870	1
2,3,5-Trimethylnaphthalene	1550		ug/kg	4.94	0.807	1
Fluorene	498.		ug/kg	4.94	1.32	1
C1-Fluorenes	938.		ug/kg	4.94	1.32	1
C2-Fluorenes	1280		ug/kg	4.94	1.32	1
C3-Fluorenes	923.		ug/kg	4.94	1.32	1
Dibenzothiophene	312.		ug/kg	4.94	1.36	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 Date Collected: 01/25/21 15:00

Client ID: ARCO-BH-21-01 (28-30) Date Received: 01/26/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	342.		ug/kg	4.94	1.36	1
2/3-Methyldibenzothiophene(2MDT)	296.		ug/kg	4.94	1.36	1
1-Methyldibenzothiophene(1MDT)	96.1		ug/kg	4.94	1.36	1
C1-Dibenzothiophenes BS	766.		ug/kg	4.94	1.36	1
C2-Dibenzothiophenes	894.		ug/kg	4.94	1.36	1
C3-Dibenzothiophenes	650.		ug/kg	4.94	1.36	1
C4-Dibenzothiophenes	303.		ug/kg	4.94	1.36	1
Phenanthrene	863.		ug/kg	4.94	1.64	1
3-Methylphenanthrene (3MP)	342.		ug/kg	4.94	1.64	1
2-Methylphenanthrene (2MP)	368.		ug/kg	4.94	1.64	1
2-Methylanthracene (2MA)	61.0		ug/kg	4.94	1.64	1
9/4-Methylphenanthrene (9MP)	400.		ug/kg	4.94	1.64	1
1-Methylphenanthrene (1MP)	262.		ug/kg	4.94	1.64	1
C1-Phenanthrenes/Anthracenes	1440		ug/kg	4.94	1.64	1
C2-Phenanthrenes/Anthr BS	1340		ug/kg	4.94	1.64	1
C3-Phenanthrenes/Anthracenes	710.		ug/kg	4.94	1.64	1
C4-Phenanthrenes/Anthracenes	296.		ug/kg	4.94	1.64	1
Retene	ND		ug/kg	4.94	1.21	1
Anthracene	103.		ug/kg	4.94	1.02	1
Carbazole	16.6		ug/kg	4.94	1.61	1
1-Methylphenanthrene	376.		ug/kg	4.94	1.30	1
Fluoranthene	60.0		ug/kg	4.94	1.57	1
Benzo(b)fluorene	23.1		ug/kg	4.94	1.43	1
7H-Benzo(c)fluorene	10.8		ug/kg	4.94	1.43	1
2-Methylpyrene[1]	24.2		ug/kg	4.94	1.30	1
4-Methylpyrene[1]	29.2		ug/kg	4.94	1.30	1
1-Methylpyrene[1]	20.5		ug/kg	4.94	1.30	1
Pyrene	95.3		ug/kg	4.94	1.30	1
C1-Fluoranthenes/Pyrenes	171.		ug/kg	4.94	1.30	1
C2-Fluoranthenes/Pyrenes	175.		ug/kg	4.94	1.30	1
C3-Fluoranthenes/Pyrenes	177.		ug/kg	4.94	1.30	1
C4-Fluoranthenes/Pyrenes	138.		ug/kg	4.94	1.30	1
Naphthobenzothiophenes	39.7	J	ug/kg	4.94	1.38	1
C1-Naphthobenzothiophenes	95.1		ug/kg	4.94	1.38	1
C2-Naphthobenzothiophenes	138.		ug/kg	4.94	1.38	1
C3-Naphthobenzothiophenes	109.		ug/kg	4.94	1.38	1
C4-Naphthobenzothiophenes	91.9		ug/kg	4.94	1.38	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 Date Collected: 01/25/21 15:00

Client ID: ARCO-BH-21-01 (28-30) Date Received: 01/26/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Benz(a)anthracene	30.4		ug/kg	4.94	1.01	1
Chrysene/Triphenylene	46.8		ug/kg	4.94	0.998	1
C1-Chrysenes	97.3		ug/kg	4.94	0.998	1
C2-Chrysenes BS	128.		ug/kg	4.94	0.998	1
C3-Chrysenes	122.		ug/kg	4.94	0.998	1
C4-Chrysenes	90.7		ug/kg	4.94	0.998	1
Benzo(b)fluoranthene	10.7		ug/kg	4.94	1.28	1
Benzo(j)+(k)fluoranthene	7.32		ug/kg	4.94	0.980	1
Benzo(a)fluoranthene	2.45	J	ug/kg	4.94	0.980	1
Benzo(e)pyrene	14.7		ug/kg	4.94	1.02	1
Benzo(a)pyrene	11.6		ug/kg	4.94	1.41	1
Perylene	3.37	J	ug/kg	4.94	0.953	1
Indeno(1,2,3-cd)pyrene	4.63	J	ug/kg	4.94	1.34	1
Dibenz(a,h)+(a,c)anthracene	3.34	J	ug/kg	4.94	1.33	1
Benzo(g,h,i)perylene	7.19		ug/kg	4.94	1.31	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	77		50-130
Phenanthrene-d10	89		50-130
Benzo(a)pyrene-d12	95		50-130

Project Name: BELMONT CONFIRMATION DRILLING
Lab Number: L2103943
Project Number: 0166
Report Date: 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 D
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/07/21 12:46
Analyst: CC
Percent Solids: 79%

Extraction Method: ALPHA OP-013
Extraction Date: 01/28/21 19:30
Cleanup Method: EPA 3611B
Cleanup Date: 02/03/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
cis/trans-Decalin	6550		ug/kg	9.87	4.96	4
C1-Naphthalenes	4930		ug/kg	19.7	5.67	4
1-Methylnaphthalene	7600		ug/kg	19.7	6.22	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	82		50-130
Phenanthrene-d10	99		50-130
Benzo(a)pyrene-d12	106		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/04/21 12:01
Analyst: CC
Percent Solids: 77%

Extraction Method: ALPHA OP-013
Extraction Date: 01/28/21 19:30
Cleanup Method: EPA 3611B
Cleanup Date: 02/03/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
cis/trans-Decalin	520.		ug/kg	4.37	2.20	1
C1-Decalins	1440		ug/kg	8.74	2.20	1
C2-Decalins	3910		ug/kg	8.74	2.20	1
C3-Decalins	3930		ug/kg	8.74	2.20	1
C4-Decalins	5060		ug/kg	8.74	2.20	1
Naphthalene	1240		ug/kg	8.74	2.51	1
C1-Naphthalenes	2140		ug/kg	8.74	2.51	1
C2-Naphthalenes	2970		ug/kg	8.74	2.51	1
C3-Naphthalenes	2220		ug/kg	8.74	2.51	1
C4-Naphthalenes	1830		ug/kg	8.74	2.51	1
2-Methylnaphthalene	1900		ug/kg	8.74	2.25	1
1-Methylnaphthalene	1430		ug/kg	8.74	2.75	1
Benzothiophene	125.		ug/kg	8.74	2.74	1
C1-Benzo(b)thiophenes	1360		ug/kg	8.74	2.74	1
C2-Benzo(b)thiophenes	1390		ug/kg	8.74	2.74	1
C3-Benzo(b)thiophenes	1380		ug/kg	8.74	2.74	1
C4-Benzo(b)thiophenes	1460		ug/kg	8.74	2.74	1
Biphenyl	280.		ug/kg	8.74	2.70	1
2,6-Dimethylnaphthalene	1220		ug/kg	8.74	2.08	1
Dibenzofuran	207.		ug/kg	8.74	2.75	1
Acenaphthylene	84.0		ug/kg	8.74	1.67	1
Acenaphthene	161.		ug/kg	8.74	1.54	1
2,3,5-Trimethylnaphthalene	178.		ug/kg	8.74	1.43	1
Fluorene	334.		ug/kg	8.74	2.33	1
C1-Fluorenes	204.		ug/kg	8.74	2.33	1
C2-Fluorenes	236.		ug/kg	8.74	2.33	1
C3-Fluorenes	218.		ug/kg	8.74	2.33	1
Dibenzothiophene	102.		ug/kg	8.74	2.41	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 Date Collected: 01/26/21 09:30

Client ID: BT-18B-S-11-20210126 Date Received: 01/26/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	64.8		ug/kg	8.74	2.41	1
2/3-Methyldibenzothiophene(2MDT)	64.0		ug/kg	8.74	2.41	1
1-Methyldibenzothiophene(1MDT)	16.5		ug/kg	8.74	2.41	1
C1-Dibenzothiophenes BS	162.		ug/kg	8.74	2.41	1
C2-Dibenzothiophenes	154.		ug/kg	8.74	2.41	1
C3-Dibenzothiophenes	242.		ug/kg	8.74	2.41	1
C4-Dibenzothiophenes	229.		ug/kg	8.74	2.41	1
Phenanthrene	1130		ug/kg	8.74	2.90	1
3-Methylphenanthrene (3MP)	132.		ug/kg	8.74	2.90	1
2-Methylphenanthrene (2MP)	150.		ug/kg	8.74	2.90	1
2-Methylanthracene (2MA)	44.5		ug/kg	8.74	2.90	1
9/4-Methylphenanthrene (9MP)	120.		ug/kg	8.74	2.90	1
1-Methylphenanthrene (1MP)	79.1		ug/kg	8.74	2.90	1
C1-Phenanthrenes/Anthracenes	533.		ug/kg	8.74	2.90	1
C2-Phenanthrenes/Anthr BS	492.		ug/kg	8.74	2.90	1
C3-Phenanthrenes/Anthracenes	355.		ug/kg	8.74	2.90	1
C4-Phenanthrenes/Anthracenes	298.		ug/kg	8.74	2.90	1
Retene	536.		ug/kg	8.74	2.14	1
Anthracene	285.		ug/kg	8.74	1.80	1
Carbazole	58.5		ug/kg	8.74	2.86	1
1-Methylphenanthrene	114.		ug/kg	8.74	2.31	1
Fluoranthene	847.		ug/kg	8.74	2.78	1
Benzo(b)fluorene	106.		ug/kg	8.74	2.53	1
7H-Benzo(c)fluorene	44.8		ug/kg	8.74	2.53	1
2-Methylpyrene[1]	60.6		ug/kg	8.74	2.30	1
4-Methylpyrene[1]	48.5		ug/kg	8.74	2.30	1
1-Methylpyrene[1]	32.8		ug/kg	8.74	2.30	1
Pyrene	740.		ug/kg	8.74	2.30	1
C1-Fluoranthenes/Pyrenes	750.		ug/kg	8.74	2.30	1
C2-Fluoranthenes/Pyrenes	217.		ug/kg	8.74	2.30	1
C3-Fluoranthenes/Pyrenes	236.		ug/kg	8.74	2.30	1
C4-Fluoranthenes/Pyrenes	125.		ug/kg	8.74	2.30	1
Naphthobenzothiophenes	81.7		ug/kg	8.74	2.44	1
C1-Naphthobenzothiophenes	95.8		ug/kg	8.74	2.44	1
C2-Naphthobenzothiophenes	133.		ug/kg	8.74	2.44	1
C3-Naphthobenzothiophenes	153.		ug/kg	8.74	2.44	1
C4-Naphthobenzothiophenes	160.		ug/kg	8.74	2.44	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 Date Collected: 01/26/21 09:30

Client ID: BT-18B-S-11-20210126 Date Received: 01/26/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Benz(a)anthracene	356.		ug/kg	8.74	1.78	1
Chrysene/Triphenylene	361.		ug/kg	8.74	1.77	1
C1-Chrysenes	215.		ug/kg	8.74	1.77	1
C2-Chrysenes BS	186.		ug/kg	8.74	1.77	1
C3-Chrysenes	187.		ug/kg	8.74	1.77	1
C4-Chrysenes	175.		ug/kg	8.74	1.77	1
Benzo(b)fluoranthene	256.		ug/kg	8.74	2.27	1
Benzo(j)+(k)fluoranthene	256.		ug/kg	8.74	1.73	1
Benzo(a)fluoranthene	53.3		ug/kg	8.74	1.73	1
Benzo(e)pyrene	207.		ug/kg	8.74	1.80	1
Benzo(a)pyrene	258.		ug/kg	8.74	2.50	1
Perylene	88.6		ug/kg	8.74	1.69	1
Indeno(1,2,3-cd)pyrene	148.		ug/kg	8.74	2.37	1
Dibenz(a,h)+(a,c)anthracene	49.9		ug/kg	8.74	2.36	1
Benzo(g,h,i)perylene	154.		ug/kg	8.74	2.32	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	60		50-130
Phenanthrene-d10	70		50-130
Benzo(a)pyrene-d12	81		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/04/21 06:21
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 01/28/21 19:30
Cleanup Method: EPA 3611B
Cleanup Date: 02/03/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01-02 Batch: WG1459768-1					
Cis/Trans-Decalin	ND		ug/kg	0.500	0.251
C1-Decalins	ND		ug/kg	1.00	0.251
C2-Decalins	ND		ug/kg	1.00	0.251
C3-Decalins	ND		ug/kg	1.00	0.251
C4-Decalins	ND		ug/kg	1.00	0.251
Naphthalene	ND		ug/kg	1.00	0.287
C1-Naphthalenes	ND		ug/kg	1.00	0.287
C2-Naphthalenes	ND		ug/kg	1.00	0.287
C3-Naphthalenes	ND		ug/kg	1.00	0.287
C4-Naphthalenes	ND		ug/kg	1.00	0.287
2-Methylnaphthalene	ND		ug/kg	1.00	0.258
1-Methylnaphthalene	ND		ug/kg	1.00	0.315
Benzothiophene	ND		ug/kg	1.00	0.313
C1-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C2-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C3-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C4-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
Biphenyl	ND		ug/kg	1.00	0.309
2,6-Dimethylnaphthalene	ND		ug/kg	1.00	0.238
Dibenzofuran	ND		ug/kg	1.00	0.315
Acenaphthylene	ND		ug/kg	1.00	0.191
Acenaphthene	ND		ug/kg	1.00	0.176
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.00	0.164
Fluorene	ND		ug/kg	1.00	0.267
C1-Fluorenes	ND		ug/kg	1.00	0.267
C2-Fluorenes	ND		ug/kg	1.00	0.267
C3-Fluorenes	ND		ug/kg	1.00	0.267
Dibenzothiophene	ND		ug/kg	1.00	0.276
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.00	0.276

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/04/21 06:21
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 01/28/21 19:30
Cleanup Method: EPA 3611B
Cleanup Date: 02/03/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01-02 Batch: WG1459768-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.00	0.276
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.00	0.276
C1-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C2-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C3-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C4-Dibenzothiophenes	ND		ug/kg	1.00	0.276
Phenanthrene	ND		ug/kg	1.00	0.331
3-Methylphenanthrene (3MP)	ND		ug/kg	1.00	0.331
2-Methylphenanthrene (2MP)	ND		ug/kg	1.00	0.331
2-Methylanthracene (2MA)	ND		ug/kg	1.00	0.331
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.00	0.331
1-Methylphenanthrene (1MP)	ND		ug/kg	1.00	0.331
C1-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C2-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
Retene	ND		ug/kg	1.00	0.245
Anthracene	ND		ug/kg	1.00	0.206
Carbazole	ND		ug/kg	1.00	0.327
1-Methylphenanthrene	ND		ug/kg	1.00	0.264
Fluoranthene	ND		ug/kg	1.00	0.318
Benzo(b)fluorene	ND		ug/kg	1.00	0.290
7H-Benzo(c)fluorene	ND		ug/kg	1.00	0.290
2-Methylpyrene[1]	ND		ug/kg	1.00	0.263
4-Methylpyrene[1]	ND		ug/kg	1.00	0.263
1-Methylpyrene[1]	ND		ug/kg	1.00	0.263
Pyrene	ND		ug/kg	1.00	0.263
C1-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/04/21 06:21
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 01/28/21 19:30
Cleanup Method: EPA 3611B
Cleanup Date: 02/03/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01-02 Batch: WG1459768-1					
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
Naphthobenzothiophene	ND		ug/kg	1.00	0.280
C1-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C2-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C3-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C4-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
Benz(a)anthracene	ND		ug/kg	1.00	0.204
Chrysene/Triphenylene	ND		ug/kg	1.00	0.202
C1-Chrysenes	ND		ug/kg	1.00	0.202
C2-Chrysenes	ND		ug/kg	1.00	0.202
C3-Chrysenes	ND		ug/kg	1.00	0.202
C4-Chrysenes	ND		ug/kg	1.00	0.202
Benzo(b)fluoranthene	ND		ug/kg	1.00	0.260
Benzo(j)+(k)Fluoranthene	ND		ug/kg	1.00	0.198
Benzo(a)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(e)Pyrene	ND		ug/kg	1.00	0.206
Benzo(a)pyrene	ND		ug/kg	1.00	0.285
Perylene	ND		ug/kg	1.00	0.193
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	1.00	0.271
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.00	0.270
Benzo(ghi)perylene	ND		ug/kg	1.00	0.266

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	66		50-130
Phenanthrene-d10	97		50-130
Benzo(a)pyrene-d12	99		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2103943

Report Date: 03/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01-02 Batch: WG1459768-2 WG1459768-3								
Naphthalene	91		68		50-130	29		30
2-Methylnaphthalene	79		74		50-130	7		30
Acenaphthylene	86		96		50-130	11		30
Acenaphthene	84		87		50-130	4		30
Fluorene	87		80		50-130	8		30
Phenanthrene	89		83		50-130	7		30
Anthracene	97		90		50-130	7		30
Fluoranthene	97		90		50-130	7		30
Pyrene	95		98		50-130	3		30
Benz(a)anthracene	89		92		50-130	3		30
Chrysene/Triphenylene	84		86		50-130	2		30
Benzo(b)fluoranthene	80		83		50-130	4		30
Benzo(j)+(k)Fluoranthene	83		86		50-130	4		30
Benzo(a)pyrene	79		76		50-130	4		30
Indeno(1,2,3-cd)Pyrene	67		70		50-130	4		30
Dibenz(a,h)+(a,c)anthracene	76		78		50-130	3		30
Benzo(ghi)perylene	64		65		50-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2103943
Report Date: 03/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01-02 Batch: WG1459768-2 WG1459768-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	96		73		50-130
Phenanthrene-d10	100		92		50-130
Benzo(a)pyrene-d12	96		93		50-130

PETROLEUM HYDROCARBONS

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 02/10/21 17:47
Analyst: WR
Percent Solids: 79%

Extraction Method: ALPHA OP-013
Extraction Date: 02/08/21 21:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	4.64		mg/kg	0.319	0.095	1
n-Decane (C10)	2.36		mg/kg	0.319	0.102	1
n-Undecane (C11)	2.67		mg/kg	0.319	0.095	1
n-Dodecane (C12)	5.14		mg/kg	0.319	0.070	1
n-Tridecane (C13)	ND		mg/kg	0.319	0.088	1
2,6,10-Trimethyldodecane (1380)	17.3		mg/kg	0.319	0.048	1
n-Tetradecane (C14)	2.47		mg/kg	0.319	0.048	1
2,6,10-Trimethyltridecane (1470)	20.0		mg/kg	0.319	0.038	1
n-Pentadecane (C15)	3.47		mg/kg	0.319	0.038	1
n-Hexadecane (C16)	2.65		mg/kg	0.319	0.048	1
Norpristane (1650)	14.5		mg/kg	0.319	0.105	1
n-Heptadecane (C17)	1.83		mg/kg	0.319	0.105	1
Pristane	24.4		mg/kg	0.319	0.068	1
n-Octadecane (C18)	1.31		mg/kg	0.319	0.064	1
Phytane	10.7		mg/kg	0.319	0.040	1
n-Nonadecane (C19)	0.422		mg/kg	0.319	0.082	1
n-Eicosane (C20)	ND		mg/kg	0.319	0.045	1
n-Heneicosane (C21)	ND		mg/kg	0.319	0.038	1
n-Docosane (C22)	ND		mg/kg	0.319	0.033	1
n-Tricosane (C23)	ND		mg/kg	0.319	0.041	1
n-Tetracosane (C24)	ND		mg/kg	0.319	0.053	1
n-Pentacosane (C25)	ND		mg/kg	0.319	0.169	1
n-Hexacosane (C26)	ND		mg/kg	0.319	0.047	1
n-Heptacosane (C27)	ND		mg/kg	0.319	0.038	1
n-Octacosane (C28)	ND		mg/kg	0.319	0.069	1
n-Nonacosane (C29)	ND		mg/kg	0.319	0.213	1
n-Triacontane (C30)	ND		mg/kg	0.319	0.037	1
n-Hentriacontane (C31)	ND		mg/kg	0.319	0.045	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 Date Collected: 01/25/21 15:00

Client ID: ARCO-BH-21-01 (28-30) Date Received: 01/26/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.319	0.040	1
n-Tritriacontane (C33)	ND		mg/kg	0.319	0.045	1
n-Tetratriacontane (C34)	ND		mg/kg	0.319	0.051	1
n-Pentatriacontane (C35)	ND		mg/kg	0.319	0.056	1
n-Hexatriacontane (C36)	ND		mg/kg	0.319	0.064	1
n-Heptatriacontane (C37)	ND		mg/kg	0.319	0.071	1
n-Octatriacontane (C38)	ND		mg/kg	0.319	0.074	1
n-Nonatriacontane (C39)	ND		mg/kg	0.319	0.104	1
n-Tetracontane (C40)	ND		mg/kg	0.319	0.104	1
Total Petroleum Hydrocarbons (C9-C44)	3700		mg/kg	10.5	2.32	1
Total Saturated Hydrocarbons	114		mg/kg	0.319	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	95		50-130
d50-Tetracosane	94		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 RE
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 02/18/21 22:59
Analyst: WR
Percent Solids: 79%

Extraction Method: ALPHA OP-013
Extraction Date: 02/15/21 16:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	3.50		mg/kg	0.327	0.097	1
n-Decane (C10)	2.02		mg/kg	0.327	0.104	1
n-Undecane (C11)	1.62		mg/kg	0.327	0.098	1
n-Dodecane (C12)	3.93		mg/kg	0.327	0.071	1
n-Tridecane (C13)	ND		mg/kg	0.327	0.090	1
2,6,10-Trimethyldodecane (1380)	13.1		mg/kg	0.327	0.049	1
n-Tetradecane (C14)	1.63		mg/kg	0.327	0.049	1
2,6,10-Trimethyltridecane (1470)	15.6		mg/kg	0.327	0.039	1
n-Pentadecane (C15)	2.84		mg/kg	0.327	0.039	1
n-Hexadecane (C16)	1.81		mg/kg	0.327	0.049	1
Norpristane (1650)	12.4		mg/kg	0.327	0.108	1
n-Heptadecane (C17)	ND		mg/kg	0.327	0.108	1
Pristane	19.9		mg/kg	0.327	0.070	1
n-Octadecane (C18)	0.579		mg/kg	0.327	0.066	1
Phytane	8.25		mg/kg	0.327	0.041	1
n-Nonadecane (C19)	0.365		mg/kg	0.327	0.084	1
n-Eicosane (C20)	ND		mg/kg	0.327	0.046	1
n-Heneicosane (C21)	ND		mg/kg	0.327	0.039	1
n-Docosane (C22)	ND		mg/kg	0.327	0.034	1
n-Tricosane (C23)	ND		mg/kg	0.327	0.042	1
n-Tetracosane (C24)	ND		mg/kg	0.327	0.055	1
n-Pentacosane (C25)	ND		mg/kg	0.327	0.173	1
n-Hexacosane (C26)	ND		mg/kg	0.327	0.048	1
n-Heptacosane (C27)	ND		mg/kg	0.327	0.039	1
n-Octacosane (C28)	ND		mg/kg	0.327	0.070	1
n-Nonacosane (C29)	ND		mg/kg	0.327	0.218	1
n-Triacontane (C30)	ND		mg/kg	0.327	0.038	1
n-Hentriacontane (C31)	ND		mg/kg	0.327	0.046	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01 RE
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA

Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	0.327	0.041	1
n-Tritriacontane (C33)	ND		mg/kg	0.327	0.046	1
n-Tetratriacontane (C34)	ND		mg/kg	0.327	0.052	1
n-Pentatriacontane (C35)	ND		mg/kg	0.327	0.057	1
n-Hexatriacontane (C36)	ND		mg/kg	0.327	0.065	1
n-Heptatriacontane (C37)	ND		mg/kg	0.327	0.073	1
n-Octatriacontane (C38)	ND		mg/kg	0.327	0.076	1
n-Nonatriacontane (C39)	ND		mg/kg	0.327	0.106	1
n-Tetracontane (C40)	ND		mg/kg	0.327	0.106	1
Total Petroleum Hydrocarbons (C9-C44)	2870		mg/kg	10.8	2.38	1
Total Saturated Hydrocarbons	87.5		mg/kg	0.327	0.034	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	99		50-130
d50-Tetracosane	94		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 02/10/21 19:17
Analyst: WR
Percent Solids: 77%

Extraction Method: ALPHA OP-013
Extraction Date: 02/08/21 21:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	8.73		mg/kg	1.78	0.527	1
n-Decane (C10)	17.7		mg/kg	1.78	0.566	1
n-Undecane (C11)	54.6		mg/kg	1.78	0.530	1
n-Dodecane (C12)	24.4		mg/kg	1.78	0.387	1
n-Tridecane (C13)	64.9		mg/kg	1.78	0.487	1
2,6,10-Trimethyldodecane (1380)	8.65		mg/kg	1.78	0.267	1
n-Tetradecane (C14)	84.3		mg/kg	1.78	0.267	1
2,6,10-Trimethyltridecane (1470)	11.2		mg/kg	1.78	0.212	1
n-Pentadecane (C15)	82.3		mg/kg	1.78	0.212	1
n-Hexadecane (C16)	48.8		mg/kg	1.78	0.267	1
Norpristane (1650)	50.2		mg/kg	1.78	0.586	1
n-Heptadecane (C17)	27.4		mg/kg	1.78	0.586	1
Pristane	38.4		mg/kg	1.78	0.379	1
n-Octadecane (C18)	22.8		mg/kg	1.78	0.356	1
Phytane	7.76		mg/kg	1.78	0.223	1
n-Nonadecane (C19)	17.0		mg/kg	1.78	0.456	1
n-Eicosane (C20)	9.73		mg/kg	1.78	0.251	1
n-Heneicosane (C21)	8.29		mg/kg	1.78	0.212	1
n-Docosane (C22)	4.50		mg/kg	1.78	0.185	1
n-Tricosane (C23)	3.61		mg/kg	1.78	0.226	1
n-Tetracosane (C24)	2.49		mg/kg	1.78	0.297	1
n-Pentacosane (C25)	ND		mg/kg	1.78	0.940	1
n-Hexacosane (C26)	1.56	J	mg/kg	1.78	0.261	1
n-Heptacosane (C27)	0.811	J	mg/kg	1.78	0.214	1
n-Octacosane (C28)	0.516	J	mg/kg	1.78	0.381	1
n-Nonacosane (C29)	ND		mg/kg	1.78	1.18	1
n-Triacontane (C30)	ND		mg/kg	1.78	0.204	1
n-Hentriacontane (C31)	ND		mg/kg	1.78	0.252	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 Date Collected: 01/26/21 09:30

Client ID: BT-18B-S-11-20210126 Date Received: 01/26/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	1.78	0.224	1
n-Tritriacontane (C33)	ND		mg/kg	1.78	0.250	1
n-Tetratriacontane (C34)	ND		mg/kg	1.78	0.282	1
n-Pentatriacontane (C35)	ND		mg/kg	1.78	0.310	1
n-Hexatriacontane (C36)	ND		mg/kg	1.78	0.353	1
n-Heptatriacontane (C37)	ND		mg/kg	1.78	0.394	1
n-Octatriacontane (C38)	ND		mg/kg	1.78	0.414	1
n-Nonatriacontane (C39)	ND		mg/kg	1.78	0.576	1
n-Tetracontane (C40)	ND		mg/kg	1.78	0.576	1
Total Petroleum Hydrocarbons (C9-C44)	9100		mg/kg	58.6	12.9	1
Total Saturated Hydrocarbons	601	J	mg/kg	1.78	0.185	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	95		50-130
d50-Tetracosane	96		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 RE
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 02/19/21 00:28
Analyst: WR
Percent Solids: 77%

Extraction Method: ALPHA OP-013
Extraction Date: 02/15/21 16:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	7.98		mg/kg	1.25	0.371	1
n-Decane (C10)	17.3		mg/kg	1.25	0.399	1
n-Undecane (C11)	45.2		mg/kg	1.25	0.374	1
n-Dodecane (C12)	28.9		mg/kg	1.25	0.273	1
n-Tridecane (C13)	73.7		mg/kg	1.25	0.343	1
2,6,10-Trimethyldodecane (1380)	6.89		mg/kg	1.25	0.188	1
n-Tetradecane (C14)	87.4		mg/kg	1.25	0.188	1
2,6,10-Trimethyltridecane (1470)	12.2		mg/kg	1.25	0.149	1
n-Pentadecane (C15)	82.3		mg/kg	1.25	0.149	1
n-Hexadecane (C16)	56.2		mg/kg	1.25	0.188	1
Norpristane (1650)	50.7		mg/kg	1.25	0.413	1
n-Heptadecane (C17)	29.7		mg/kg	1.25	0.413	1
Pristane	36.8		mg/kg	1.25	0.267	1
n-Octadecane (C18)	26.6		mg/kg	1.25	0.251	1
Phytane	8.16		mg/kg	1.25	0.157	1
n-Nonadecane (C19)	17.6		mg/kg	1.25	0.322	1
n-Eicosane (C20)	10.8		mg/kg	1.25	0.177	1
n-Heneicosane (C21)	9.06		mg/kg	1.25	0.150	1
n-Docosane (C22)	5.25		mg/kg	1.25	0.130	1
n-Tricosane (C23)	3.95		mg/kg	1.25	0.159	1
n-Tetracosane (C24)	2.85		mg/kg	1.25	0.209	1
n-Pentacosane (C25)	1.97		mg/kg	1.25	0.662	1
n-Hexacosane (C26)	1.22	J	mg/kg	1.25	0.184	1
n-Heptacosane (C27)	0.987	J	mg/kg	1.25	0.151	1
n-Octacosane (C28)	0.701	J	mg/kg	1.25	0.268	1
n-Nonacosane (C29)	ND		mg/kg	1.25	0.833	1
n-Triacontane (C30)	0.570	J	mg/kg	1.25	0.144	1
n-Hentriacontane (C31)	2.03		mg/kg	1.25	0.177	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02 RE
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	0.246	J	mg/kg	1.25	0.158	1
n-Tritriacontane (C33)	0.789	J	mg/kg	1.25	0.176	1
n-Tetratriacontane (C34)	ND		mg/kg	1.25	0.199	1
n-Pentatriacontane (C35)	ND		mg/kg	1.25	0.218	1
n-Hexatriacontane (C36)	0.666	J	mg/kg	1.25	0.249	1
n-Heptatriacontane (C37)	ND		mg/kg	1.25	0.278	1
n-Octatriacontane (C38)	ND		mg/kg	1.25	0.292	1
n-Nonatriacontane (C39)	ND		mg/kg	1.25	0.406	1
n-Tetracontane (C40)	ND		mg/kg	1.25	0.406	1
Total Petroleum Hydrocarbons (C9-C44)	8770		mg/kg	41.3	9.08	1
Total Saturated Hydrocarbons	629	J	mg/kg	1.25	0.130	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	95		50-130
d50-Tetracosane	91		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/10/21 11:48
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 02/08/21 21:23

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01-02 Batch: WG1462898-1					
n-Nonane (C9)	ND		mg/kg	0.067	0.020
n-Decane (C10)	ND		mg/kg	0.067	0.021
n-Undecane (C11)	ND		mg/kg	0.067	0.020
n-Dodecane (C12)	ND		mg/kg	0.067	0.015
n-Tridecane (C13)	ND		mg/kg	0.067	0.018
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.067	0.010
n-Tetradecane (C14)	ND		mg/kg	0.067	0.010
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.067	0.008
n-Pentadecane (C15)	ND		mg/kg	0.067	0.008
n-Hexadecane (C16)	ND		mg/kg	0.067	0.010
Norpristane (1650)	ND		mg/kg	0.067	0.022
n-Heptadecane (C17)	ND		mg/kg	0.067	0.022
Pristane	ND		mg/kg	0.067	0.014
n-Octadecane (C18)	ND		mg/kg	0.067	0.013
Phytane	ND		mg/kg	0.067	0.008
n-Nonadecane (C19)	ND		mg/kg	0.067	0.017
n-Eicosane (C20)	ND		mg/kg	0.067	0.009
n-Heneicosane (C21)	ND		mg/kg	0.067	0.008
n-Docosane (C22)	ND		mg/kg	0.067	0.007
n-Tricosane (C23)	ND		mg/kg	0.067	0.008
n-Tetracosane (C24)	ND		mg/kg	0.067	0.011
n-Pentacosane (C25)	ND		mg/kg	0.067	0.035
n-Hexacosane (C26)	ND		mg/kg	0.067	0.010
n-Heptacosane (C27)	ND		mg/kg	0.067	0.008
n-Octacosane (C28)	ND		mg/kg	0.067	0.014
n-Nonacosane (C29)	ND		mg/kg	0.067	0.044
n-Triacontane (C30)	ND		mg/kg	0.067	0.008
n-Hentriacontane (C31)	ND		mg/kg	0.067	0.009
n-Dotriacontane (C32)	ND		mg/kg	0.067	0.008

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/10/21 11:48
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 02/08/21 21:23

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01-02 Batch: WG1462898-1					
n-Tritriacontane (C33)	ND		mg/kg	0.067	0.009
n-Tetratriacontane (C34)	ND		mg/kg	0.067	0.011
n-Pentatriacontane (C35)	ND		mg/kg	0.067	0.012
n-Hexatriacontane (C36)	ND		mg/kg	0.067	0.013
n-Heptatriacontane (C37)	ND		mg/kg	0.067	0.015
n-Octatriacontane (C38)	ND		mg/kg	0.067	0.016
n-Nonatriacontane (C39)	ND		mg/kg	0.067	0.022
n-Tetracontane (C40)	ND		mg/kg	0.067	0.022
Total Petroleum Hydrocarbons (C9-C44)	3.89		mg/kg	2.20	0.484
Total Saturated Hydrocarbons	ND		mg/kg	0.067	0.007

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	88		50-130
d50-Tetracosane	91		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/18/21 17:02
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 02/15/21 16:58

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01-02 Batch: WG1464940-1					
n-Nonane (C9)	ND		mg/kg	0.067	0.020
n-Decane (C10)	ND		mg/kg	0.067	0.021
n-Undecane (C11)	ND		mg/kg	0.067	0.020
n-Dodecane (C12)	ND		mg/kg	0.067	0.015
n-Tridecane (C13)	ND		mg/kg	0.067	0.018
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.067	0.010
n-Tetradecane (C14)	ND		mg/kg	0.067	0.010
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.067	0.008
n-Pentadecane (C15)	ND		mg/kg	0.067	0.008
n-Hexadecane (C16)	ND		mg/kg	0.067	0.010
Norpristane (1650)	ND		mg/kg	0.067	0.022
n-Heptadecane (C17)	ND		mg/kg	0.067	0.022
Pristane	ND		mg/kg	0.067	0.014
n-Octadecane (C18)	ND		mg/kg	0.067	0.013
Phytane	ND		mg/kg	0.067	0.008
n-Nonadecane (C19)	ND		mg/kg	0.067	0.017
n-Eicosane (C20)	ND		mg/kg	0.067	0.009
n-Heneicosane (C21)	ND		mg/kg	0.067	0.008
n-Docosane (C22)	ND		mg/kg	0.067	0.007
n-Tricosane (C23)	ND		mg/kg	0.067	0.008
n-Tetracosane (C24)	ND		mg/kg	0.067	0.011
n-Pentacosane (C25)	ND		mg/kg	0.067	0.035
n-Hexacosane (C26)	ND		mg/kg	0.067	0.010
n-Heptacosane (C27)	ND		mg/kg	0.067	0.008
n-Octacosane (C28)	ND		mg/kg	0.067	0.014
n-Nonacosane (C29)	ND		mg/kg	0.067	0.044
n-Triacontane (C30)	ND		mg/kg	0.067	0.008
n-Hentriacontane (C31)	ND		mg/kg	0.067	0.009
n-Dotriacontane (C32)	ND		mg/kg	0.067	0.008

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2103943

Project Number: 0166 **Report Date:** 03/03/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/18/21 17:02
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 02/15/21 16:58

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01-02 Batch: WG1464940-1					
n-Tritriacontane (C33)	ND		mg/kg	0.067	0.009
n-Tetratriacontane (C34)	ND		mg/kg	0.067	0.011
n-Pentatriacontane (C35)	ND		mg/kg	0.067	0.012
n-Hexatriacontane (C36)	ND		mg/kg	0.067	0.013
n-Heptatriacontane (C37)	ND		mg/kg	0.067	0.015
n-Octatriacontane (C38)	ND		mg/kg	0.067	0.016
n-Nonatriacontane (C39)	ND		mg/kg	0.067	0.022
n-Tetracontane (C40)	ND		mg/kg	0.067	0.022
Total Petroleum Hydrocarbons (C9-C44)	1.68	J	mg/kg	2.20	0.484
Total Saturated Hydrocarbons	ND		mg/kg	0.067	0.007

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	97		50-130
d50-Tetracosane	96		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2103943

Report Date: 03/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01-02 Batch: WG1462898-2 WG1462898-3								
Nonane (C9)	75		74		50-130	1		30
n-Decane (C10)	83		83		50-130	0		30
n-Dodecane (C12)	91		93		50-130	2		30
n-Tetradecane (C14)	90		90		50-130	0		30
n-Hexadecane (C16)	99		100		50-130	1		30
n-Octadecane (C18)	106		104		50-130	2		30
n-Nonadecane (C19)	97		96		50-130	1		30
n-Eicosane (C20)	96		95		50-130	1		30
n-Docosane (C22)	98		97		50-130	1		30
n-Tetracosane (C24)	101		100		50-130	1		30
n-Hexacosane (C26)	102		101		50-130	1		30
n-Octacosane (C28)	100		99		50-130	1		30
n-Triacontane (C30)	102		101		50-130	1		30
n-Hexatriacontane (C36)	91		91		50-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	93		92		50-130
d50-Tetracosane	96		95		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2103943
Report Date: 03/03/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01-02 Batch: WG1464940-2 WG1464940-3								
Nonane (C9)	73		72		50-130	1		30
n-Decane (C10)	79		79		50-130	0		30
n-Dodecane (C12)	81		93		50-130	14		30
n-Tetradecane (C14)	90		92		50-130	2		30
n-Hexadecane (C16)	100		102		50-130	2		30
n-Octadecane (C18)	104		106		50-130	2		30
n-Nonadecane (C19)	96		97		50-130	1		30
n-Eicosane (C20)	100		101		50-130	1		30
n-Docosane (C22)	98		99		50-130	1		30
n-Tetracosane (C24)	102		101		50-130	1		30
n-Hexacosane (C26)	102		102		50-130	0		30
n-Octacosane (C28)	100		101		50-130	1		30
n-Triacontane (C30)	101		102		50-130	1		30
n-Hexatriacontane (C36)	89		88		50-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	99		100		50-130
d50-Tetracosane	97		98		50-130

INORGANICS
&
MISCELLANEOUS

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166
Lab Number: L2103943
Report Date: 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-01
Client ID: ARCO-BH-21-01 (28-30)
Sample Location: PHILADELPHIA, PA
Date Collected: 01/25/21 15:00
Date Received: 01/26/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	79.4		%	0.100	0.100	1	-	01/29/21 10:06	121,2540G	AL

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166
Lab Number: L2103943
Report Date: 03/03/21

SAMPLE RESULTS

Lab ID: L2103943-02
Client ID: BT-18B-S-11-20210126
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 01/26/21 09:30
Date Received: 01/26/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	77.3		%	0.100	0.100	1	-	01/29/21 10:06	121,2540G	AL

Lab Duplicate Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2103943

Report Date: 03/03/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1460016-1 QC Sample: L2103965-01 Client ID: DUP Sample						
Solids, Total	81.1	81.1	%	0		10

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2103943
Report Date: 03/03/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2103943-01A	Vial MeOH preserved	A	NA		3.5	Y	Absent		A2-PIANO8260H(14)
L2103943-01A1	Vial MeOH preserved	A	NA		3.5	Y	Absent		A2-PIANO8260H(14)
L2103943-01B	Vial water preserved	A	NA		3.5	Y	Absent	27-JAN-21 12:11	A2-PIANO8260H(14)
L2103943-01B1	Vial water preserved	A	NA		3.5	Y	Absent	27-JAN-21 12:11	A2-PIANO8260H(14)
L2103943-01C	Vial water preserved	A	NA		3.5	Y	Absent	27-JAN-21 12:11	A2-PIANO8260H(14)
L2103943-01C1	Vial water preserved	A	NA		3.5	Y	Absent	27-JAN-21 12:11	A2-PIANO8260H(14)
L2103943-01D	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		A2-SHC(14),A2-ALKPAH/BIOMARKER(14)
L2103943-01E	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		A2-TS(7)
L2103943-01F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		SUB-ORGLEAD()
L2103943-02A	Vial MeOH preserved	A	NA		3.5	Y	Absent		A2-PIANO8260H(14)
L2103943-02A1	Vial MeOH preserved	A	NA		3.5	Y	Absent		A2-PIANO8260H(14)
L2103943-02B	Vial water preserved	A	NA		3.5	Y	Absent	27-JAN-21 12:11	A2-PIANO8260H(14)
L2103943-02B1	Vial water preserved	A	NA		3.5	Y	Absent	27-JAN-21 12:11	A2-PIANO8260H(14)
L2103943-02C	Vial water preserved	A	NA		3.5	Y	Absent	27-JAN-21 12:11	A2-PIANO8260H(14)
L2103943-02C1	Vial water preserved	A	NA		3.5	Y	Absent	27-JAN-21 12:11	A2-PIANO8260H(14)
L2103943-02D	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		A2-SHC(14),A2-ALKPAH/BIOMARKER(14)
L2103943-02E	Plastic 2oz unpreserved for TS	A	NA		3.5	Y	Absent		A2-TS(7)
L2103943-02F	Glass 120ml/4oz unpreserved	A	NA		3.5	Y	Absent		HOLD-SUB()
L2103943-03A	Vial HCl preserved	A	NA		3.5	Y	Absent		HOLD()
L2103943-03B	Vial HCl preserved	A	NA		3.5	Y	Absent		HOLD()

*Values in parentheses indicate holding time in days

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2103943
Project Number:	0166	**Report Date:**	03/03/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2103943
Project Number:	0166	**Report Date:**	03/03/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2103943
Project Number:	0166	**Report Date:**	03/03/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2103943
Project Number:	0166	**Report Date:**	03/03/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 1-27-21

ALPHA Job #: L2103943

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Dr Suite 140 West Chester, PA 19380
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.kilgoil@stantec.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Belmont Drilling Sampling
Project Location: Philadelphia, PA
Project #: 213402.7497
Project Manager: Andrew Kilgoil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 213402.7497

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

⊗ = Analyze Pending Authorization

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Hold PAH 8270D-SIM(21) + Biomarkers Ethno volatiles Ethno semivolatiles Ethno Sat/SGS PAH EPA 8015D(M) Sim MEE - Organic Lead by 6020 Total Solids SM2540	SAMPLE HANDLING: Filtration ☐ Done ☐ Not needed ☐ Lab to do Preservation ☐ Lab to do (Please specify below)	Sample Specific Comments	TOTAL # BOTTLES
03943-01	ARLO-BH-21-01(22-30)	1/25/21	1520	SO	DPH	⊗ ⊗ ⊗ ⊗ ⊗			23
02	BT-186-S-11-20210126	1/26/21	0930	SO	DPH	⊗ ⊗ ⊗ ⊗ ⊗			
03	TRIP BLANK	1/1/20	—	—	—				

Container Type											
Preservative											

Relinquished By:	Date/Time	Received By:	Date/Time
	1/26/21 1008		1/26/21 1008
	1/26/21 1715		1/26/21 1710
DHA AAL	1/23/21 01:10	DHA AAL	1/26/21 21:00
			1/27/21 01:10

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburg, CA 94565

Alpha Job Number
L2103943

Client Information

Client: Alpha Analytical Labs
Address: 320 Forbes Boulevard
Mansfield, MA 02048-1806

Phone: 508.844.4117
Email: soneil@alphalab.com

Project Information

Project Location: PA
Project Manager: Susan O'Neil

Turnaround & Deliverables Information

Due Date: 03/03/21
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2103943

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com TML and TEL

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	ARCO-BH-21-01 (28-30)	01-25-21 15:00	SOIL	Organic Lead by Method 8270	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature]	2/23/21 1700	[signature]	
Form No: AL_subcoc				

Quantitation Report (QT Reviewed)

File :O:\Forensics\Data\FID17\2021\FEB\FEB08\F1702082174.D
Operator : FID17:WR
Acquired : 10 Feb 2021 17:47 using AcqMethod FID17A.M
Sample Name: l2103943-01,42,,
Instrument: FID17
Misc Info : WG1466486,WG1462898,ICAL17174
Vial Number: 37
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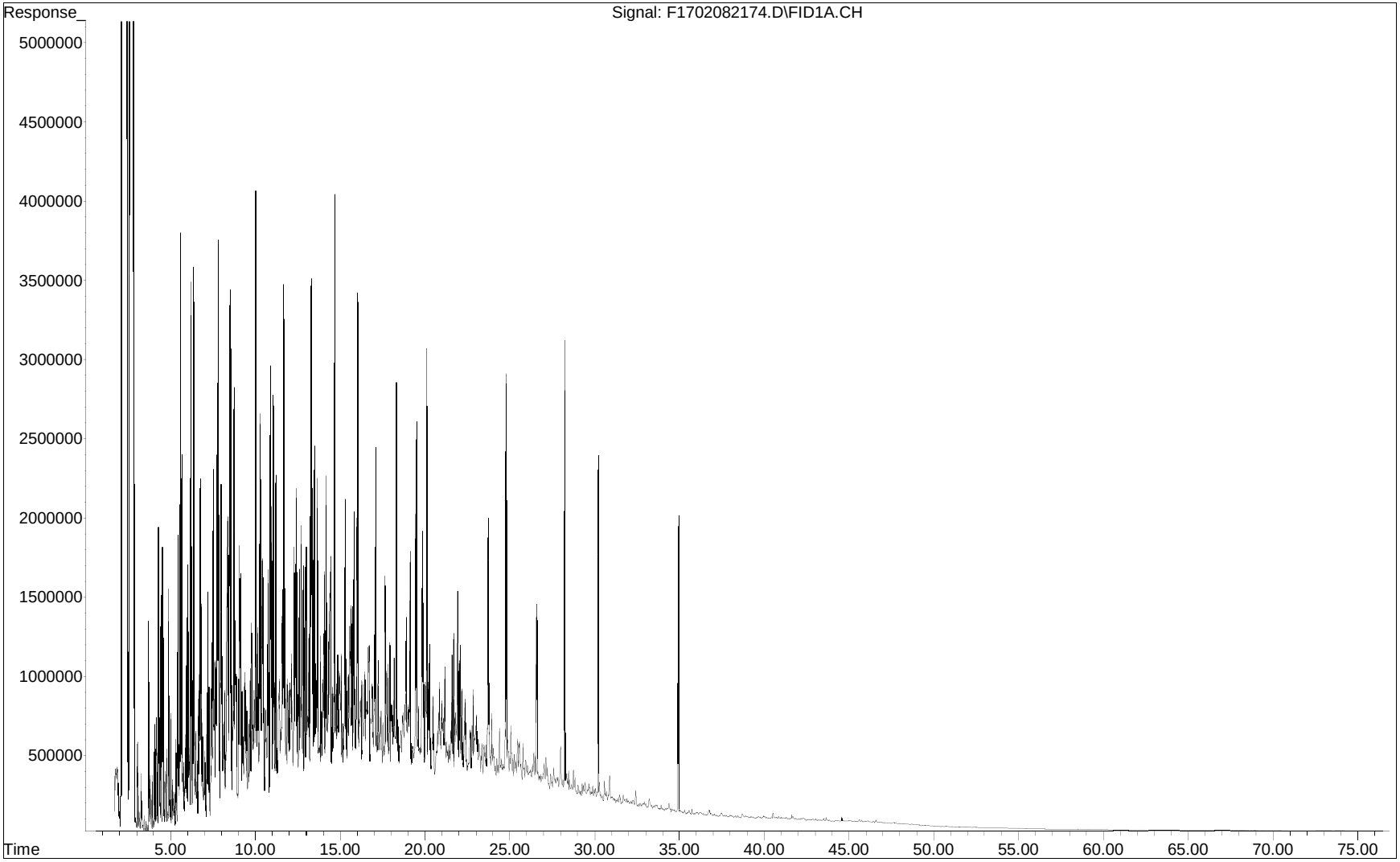

Quantitation Report (QT Reviewed)

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Operator : FID17:WR
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Sample Name: L2103943-01RE
Instrument: FID17
Misc Info : WG1466055,WG1464940,ICAL17174
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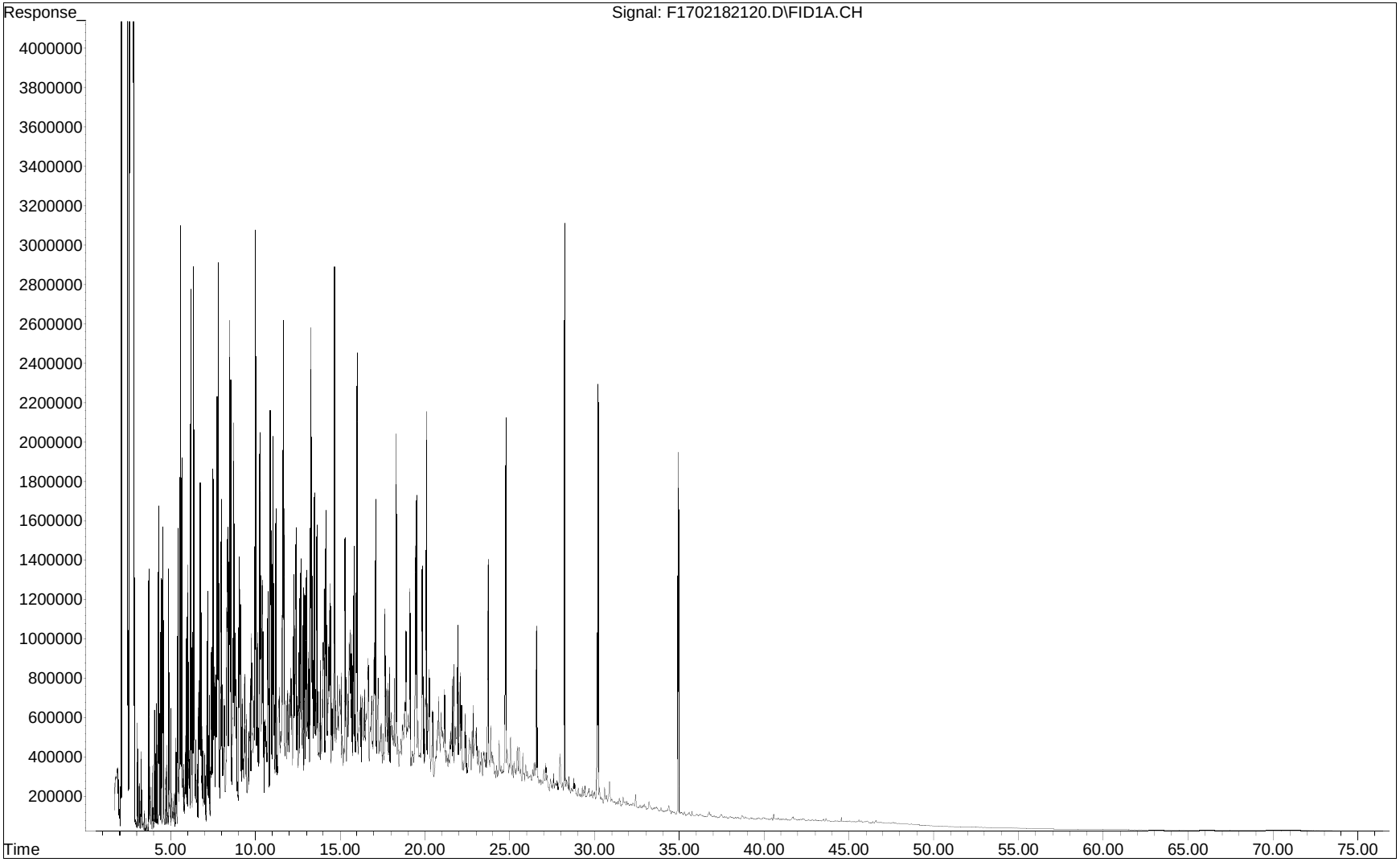

Quantitation Report (QT Reviewed)

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Sample Name: l2103943-02,42,,
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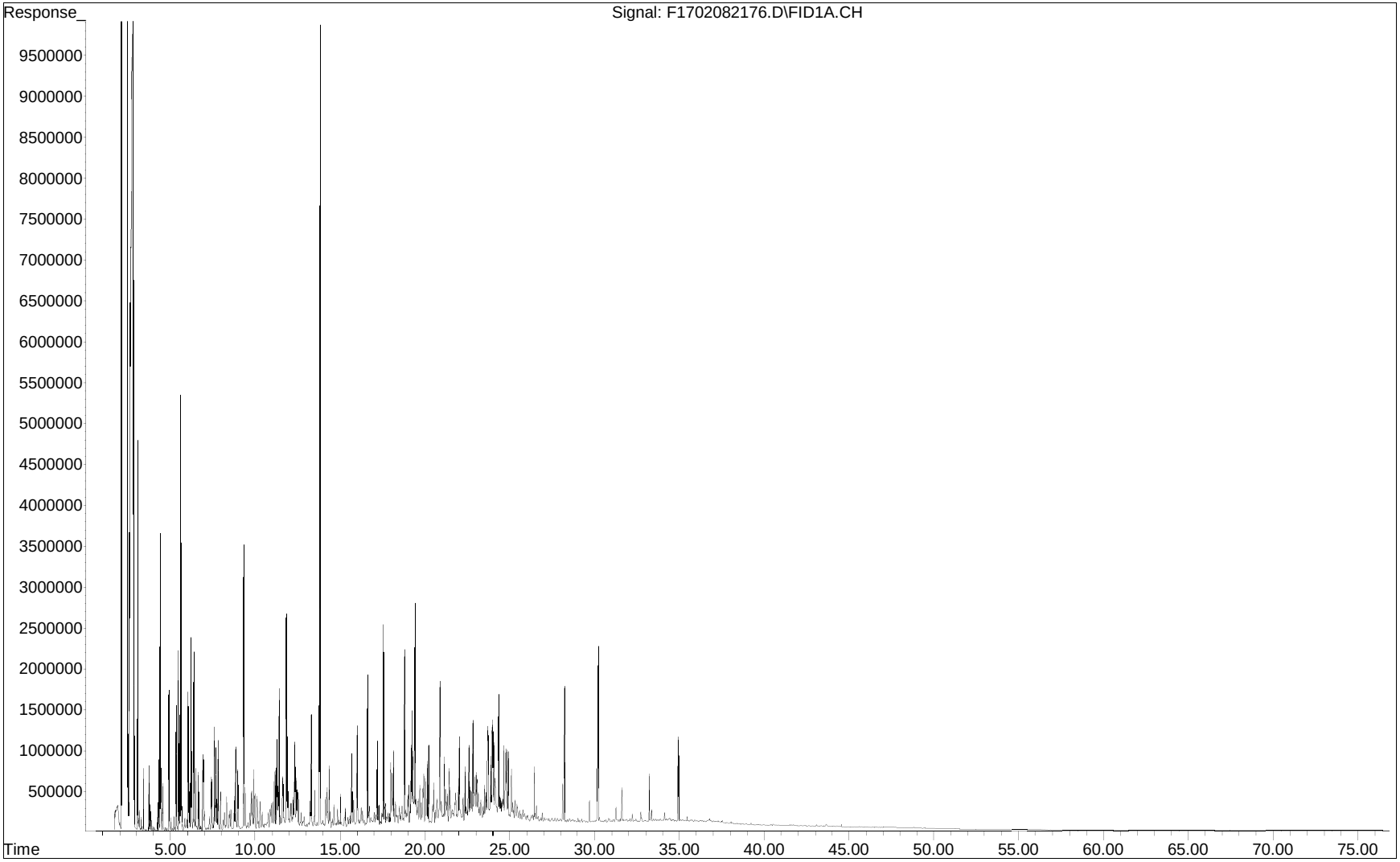

Quantitation Report (QT Reviewed)

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Acquired : 19 Feb 2021 00:28 using AcqMethod FID17A.M
Sample Name: L2103943-02RE
Instrument: FID17
Misc Info : WG1466055,WG1464940,ICAL17174
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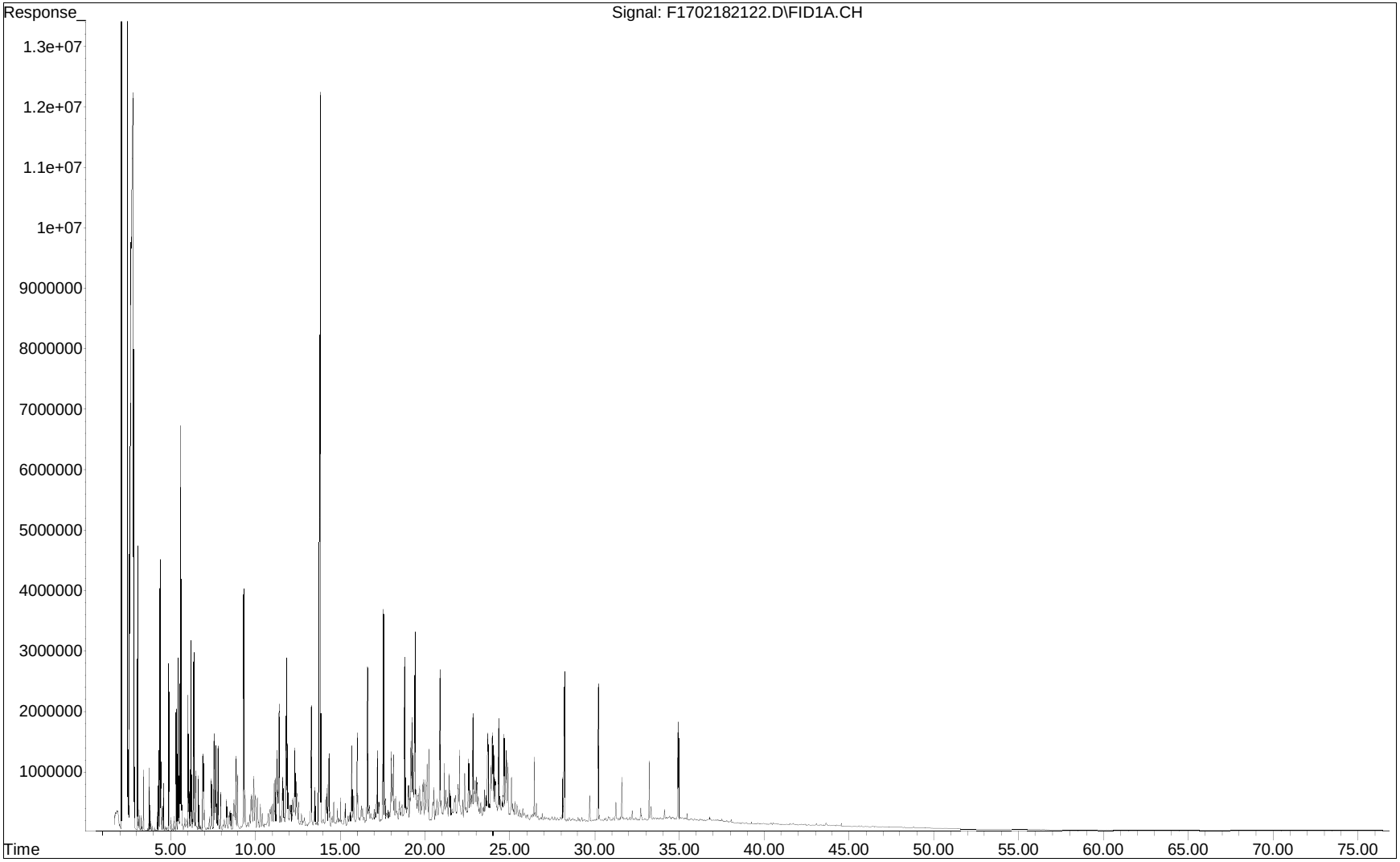

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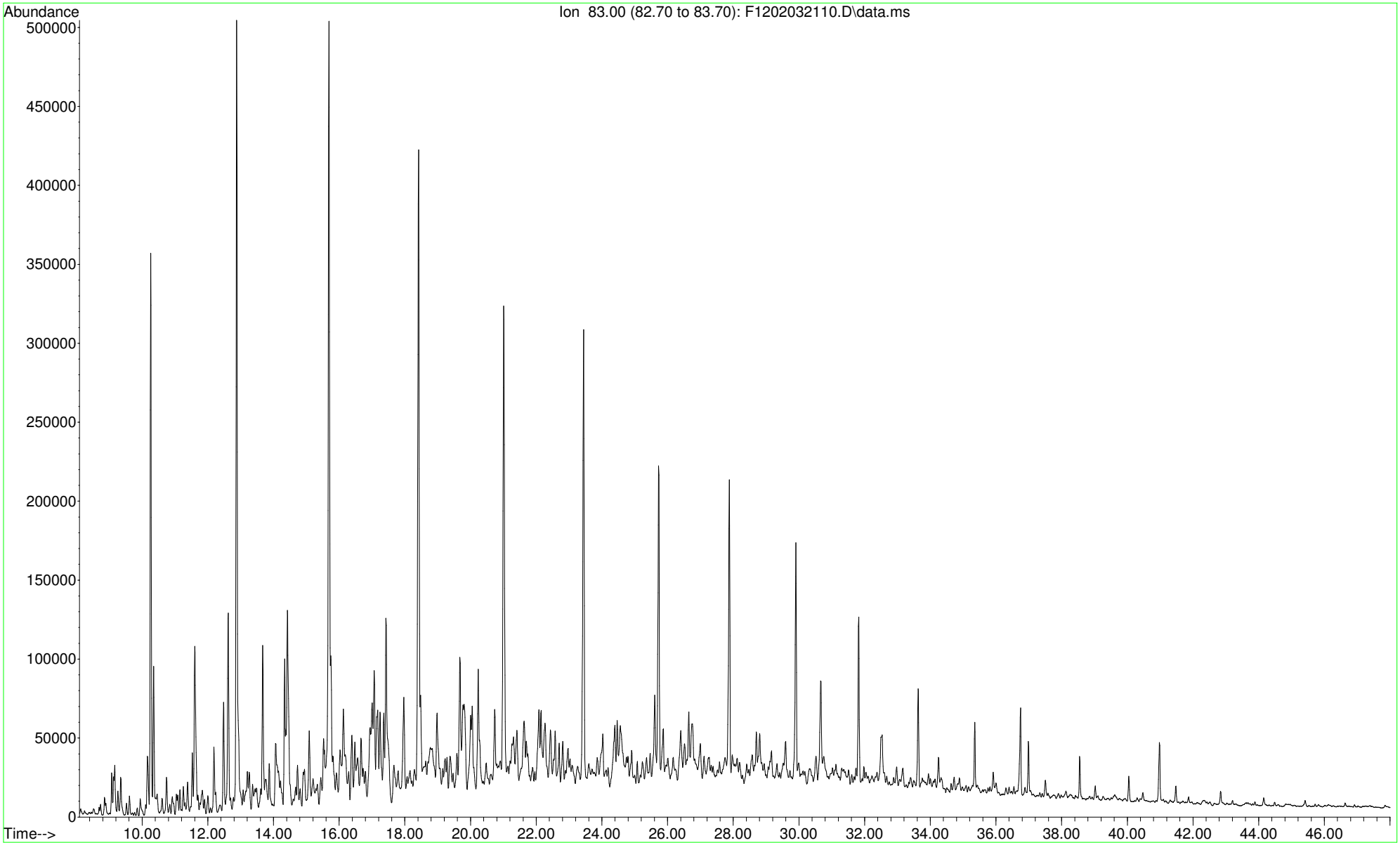
Operator : PAH12:CC
Acquired : 4 Feb 2021 10:35 am using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: L2103943-01,32
Misc Info : WG1461481,WG1459768,ICAL17375
Vial Number: 9



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Instrument : PAH12
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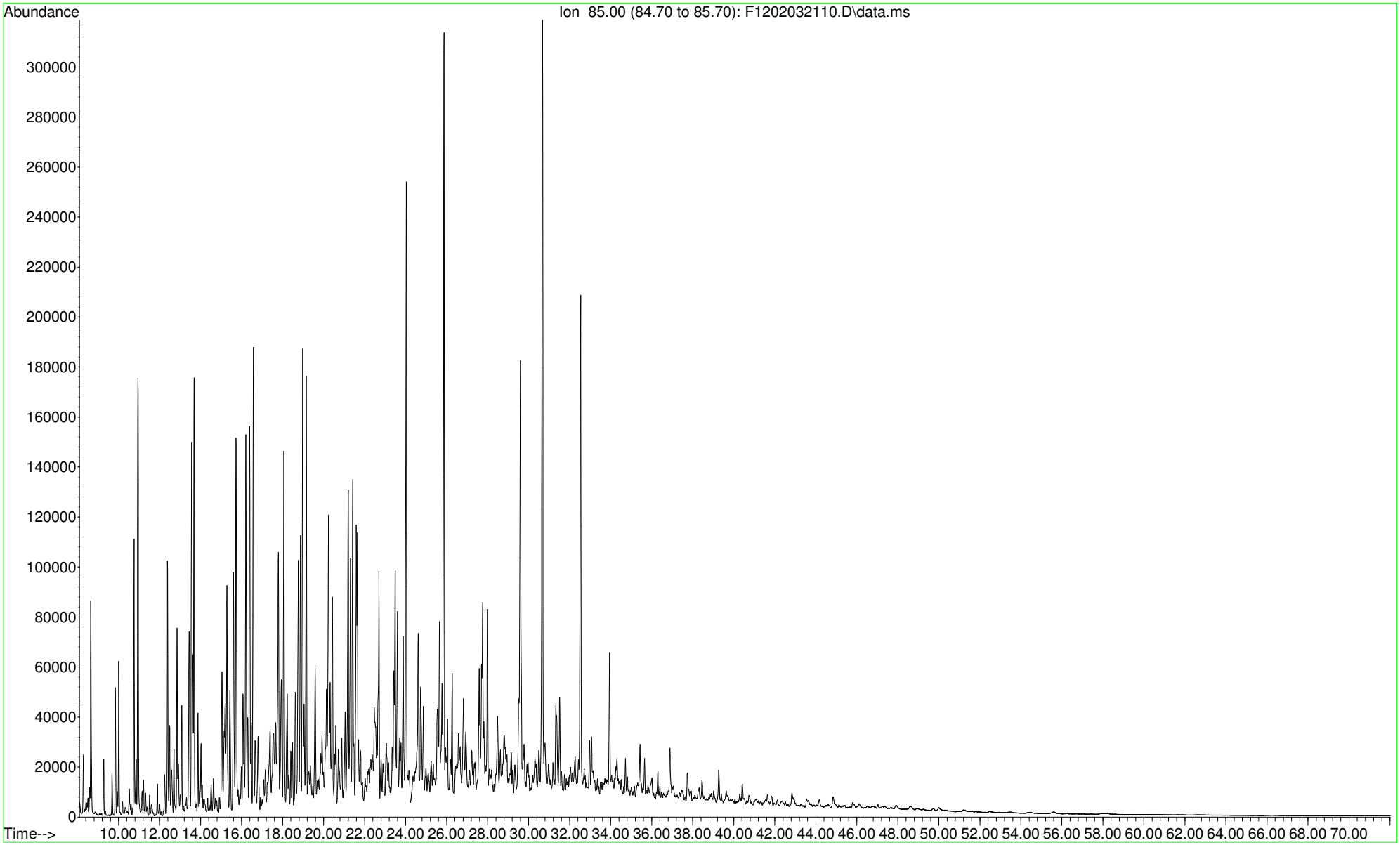

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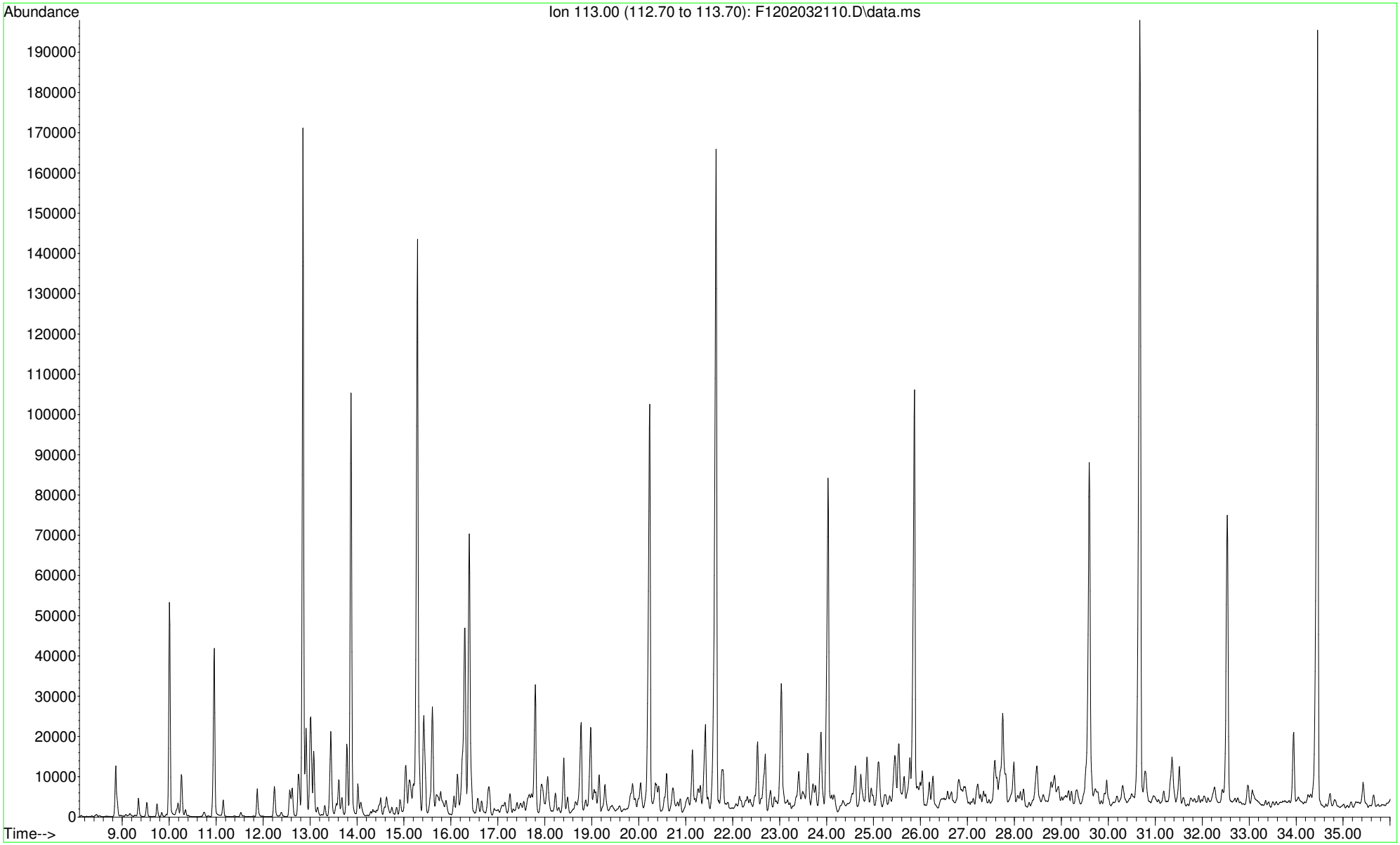

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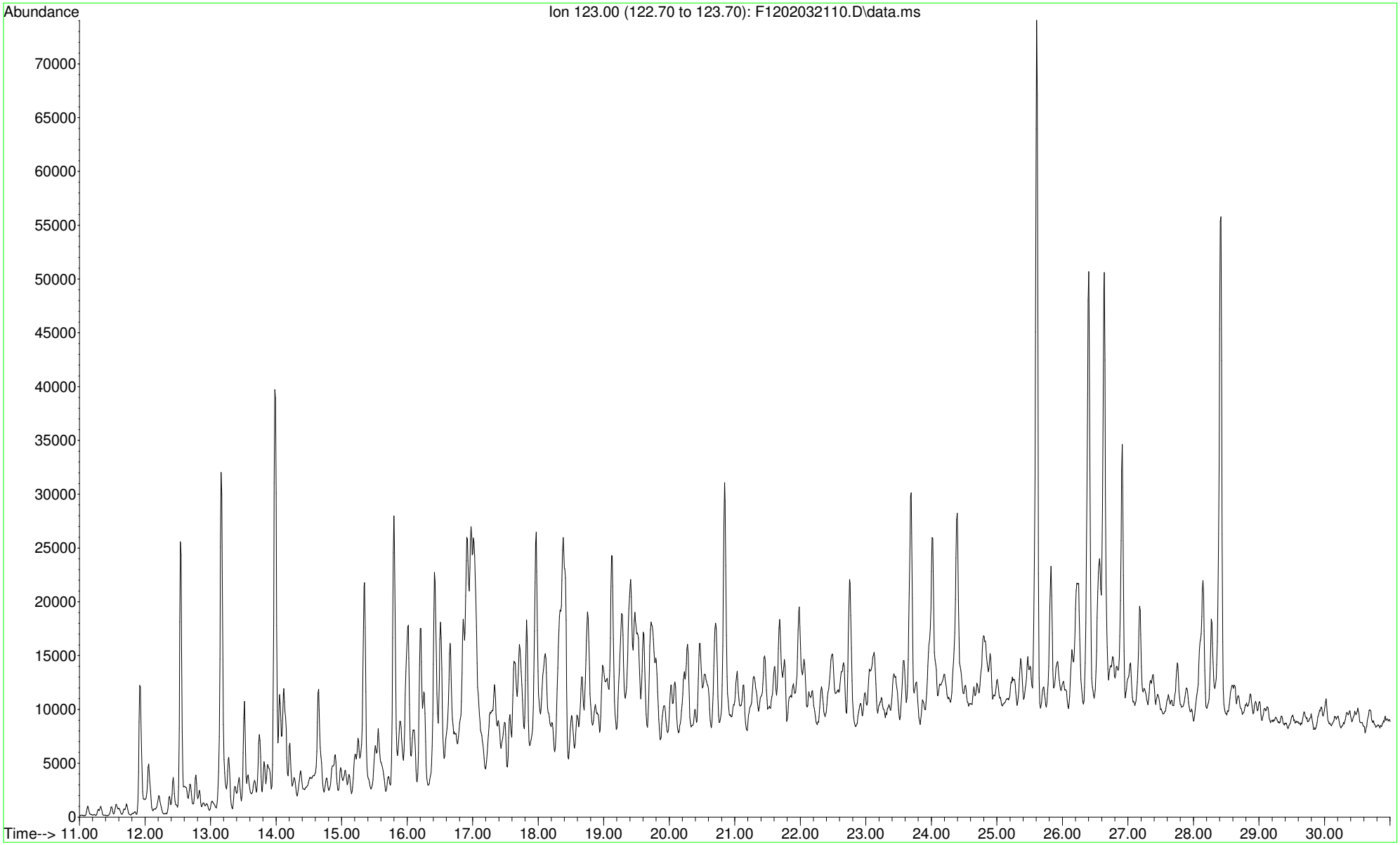

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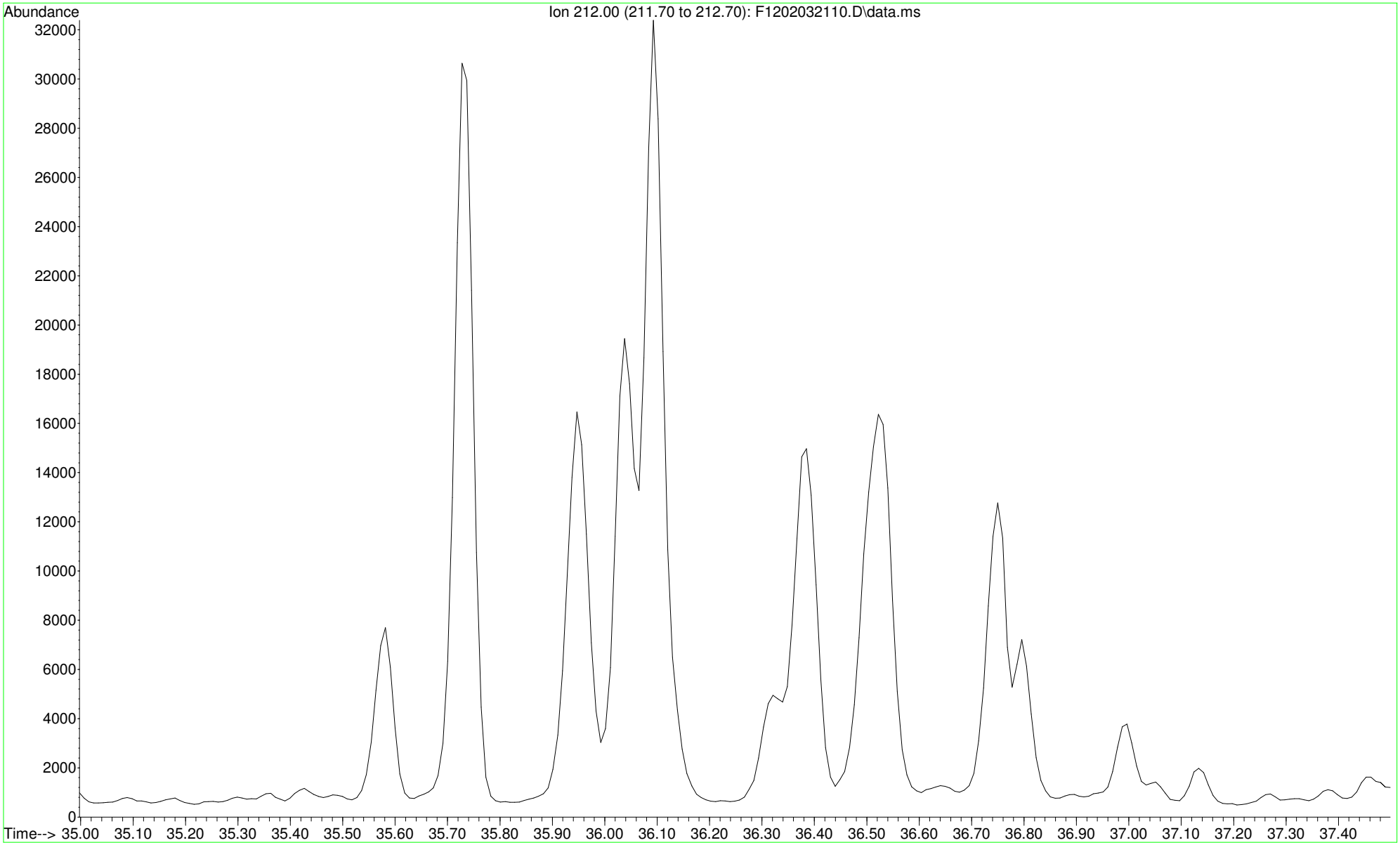

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Misc Info  : WG1461481,WG1459768,ICAL17375
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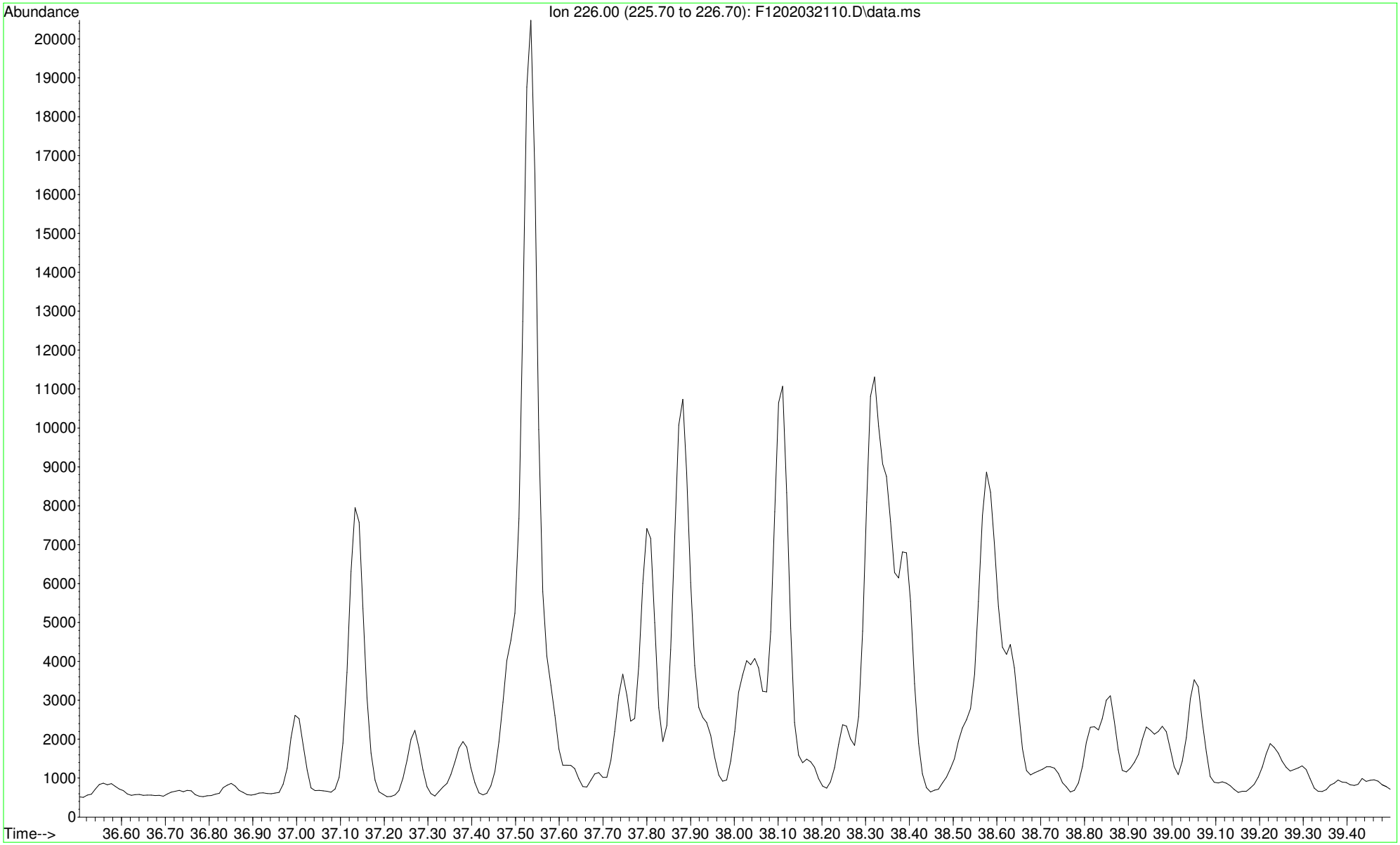

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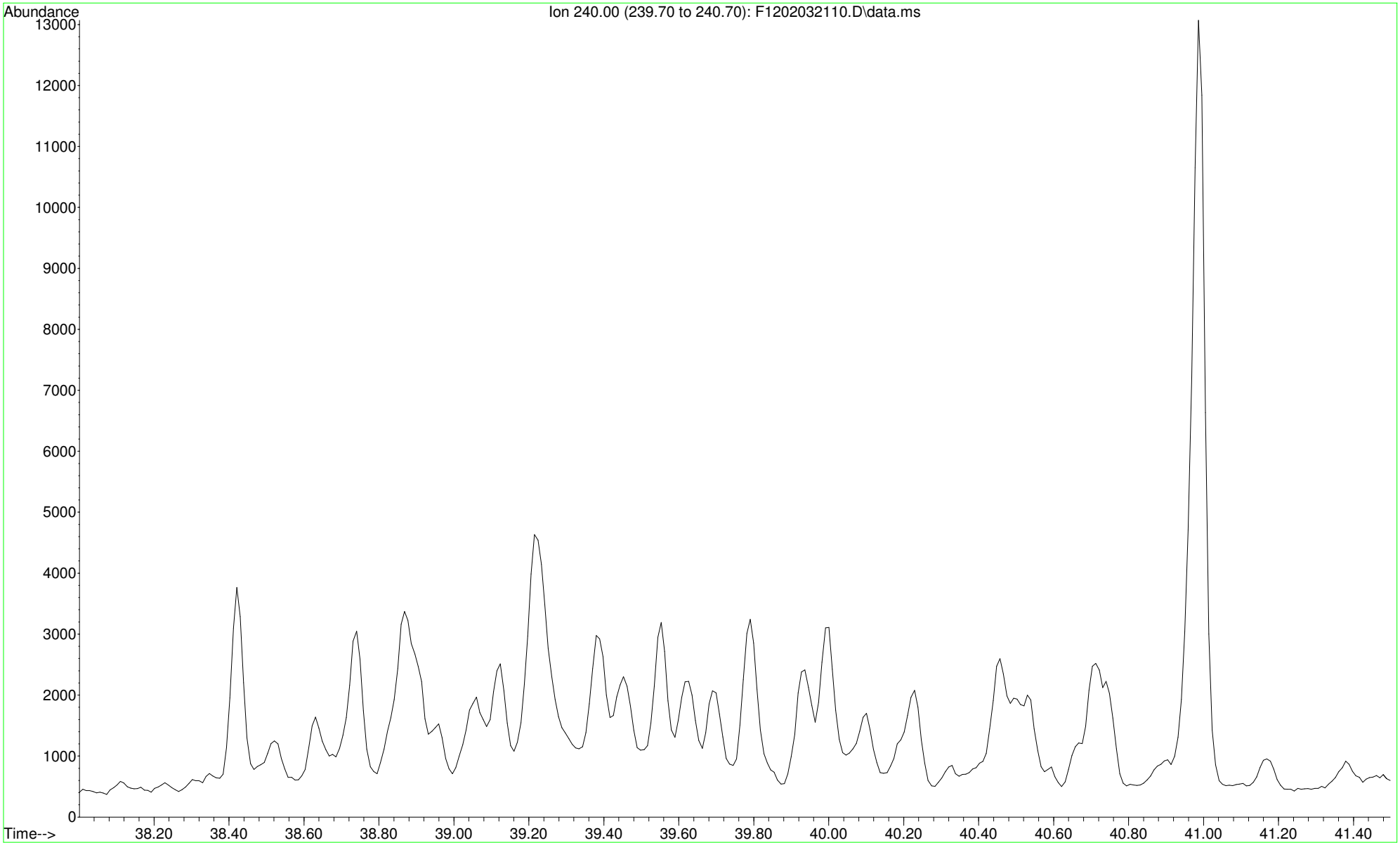

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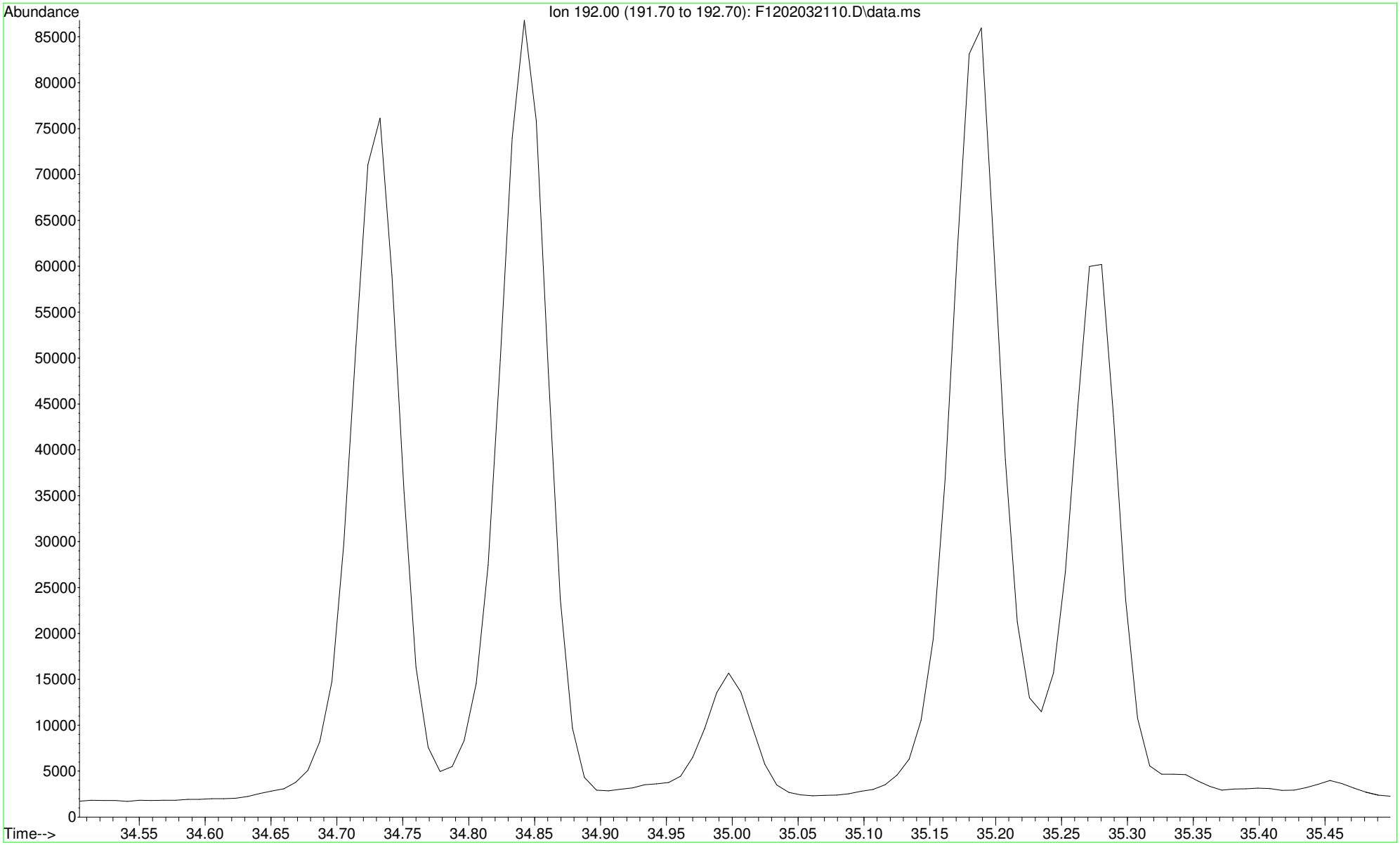

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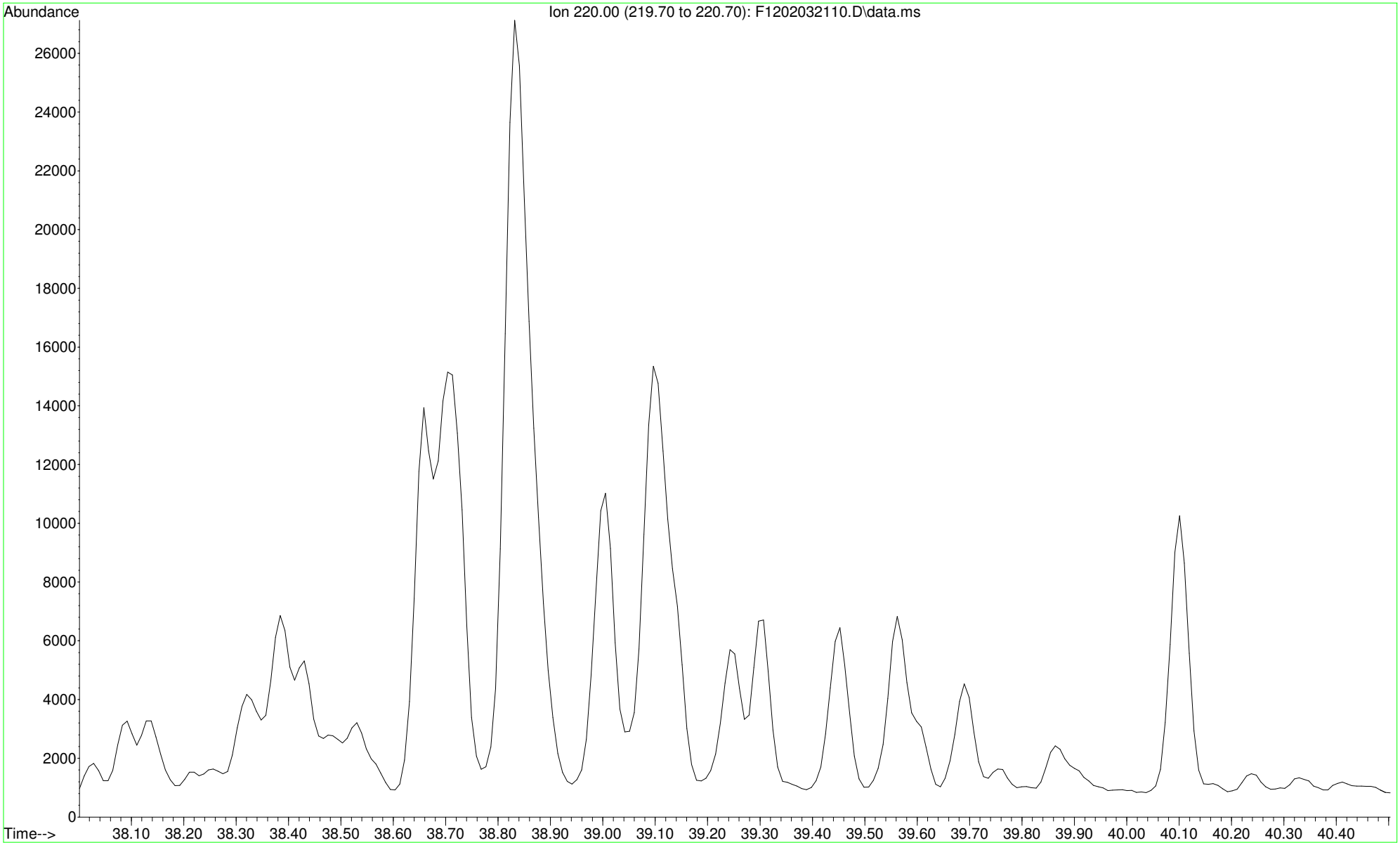

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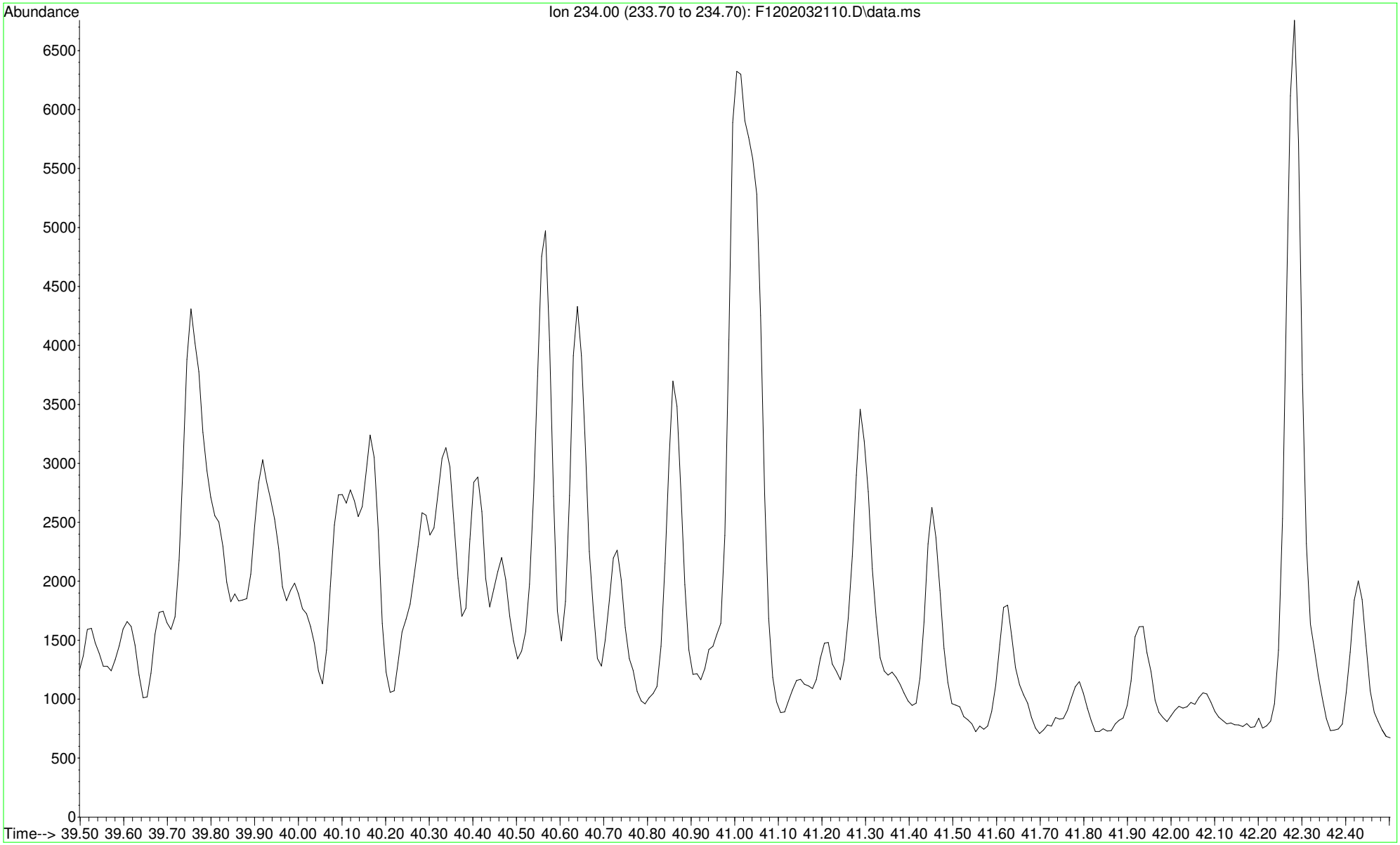

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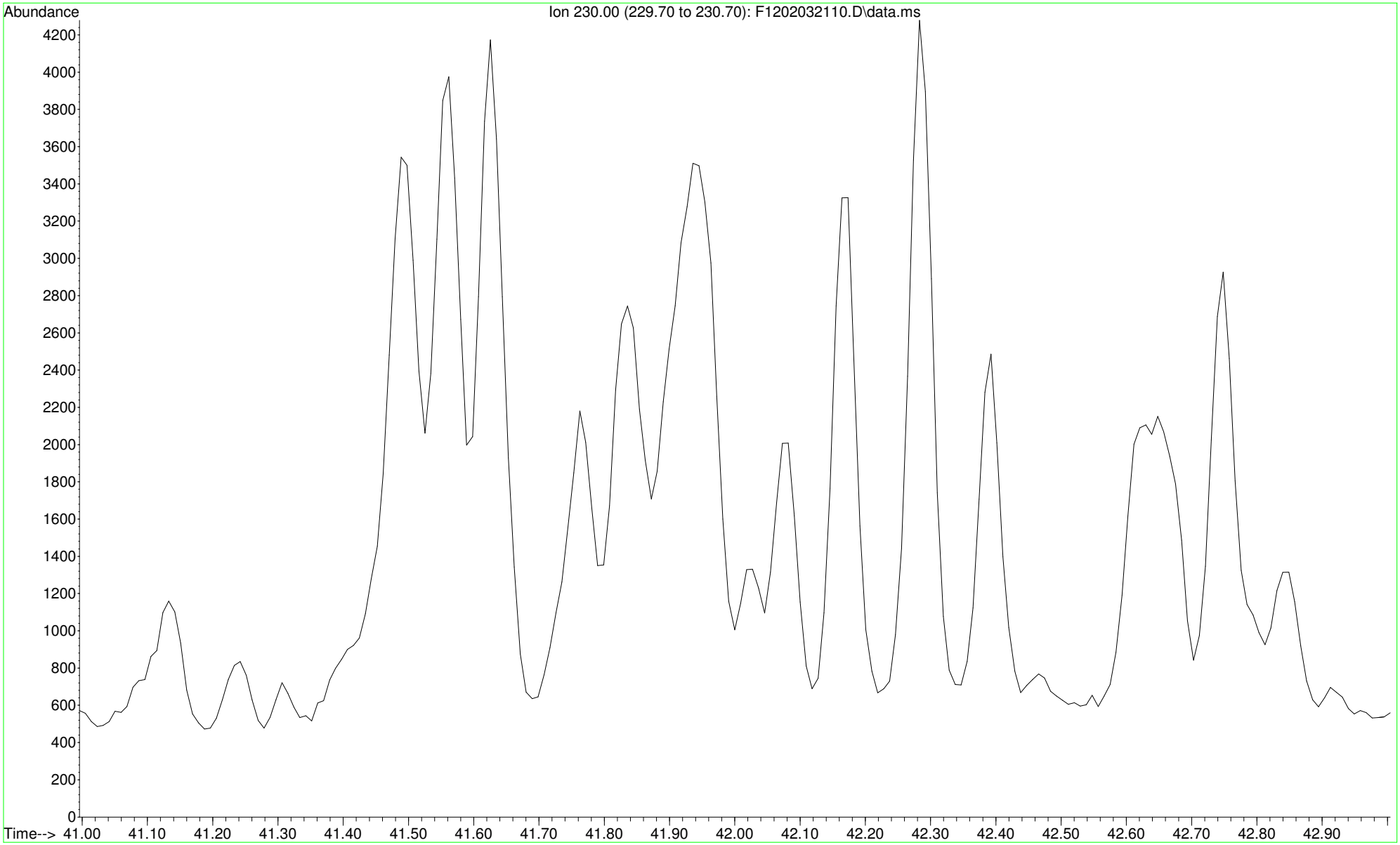

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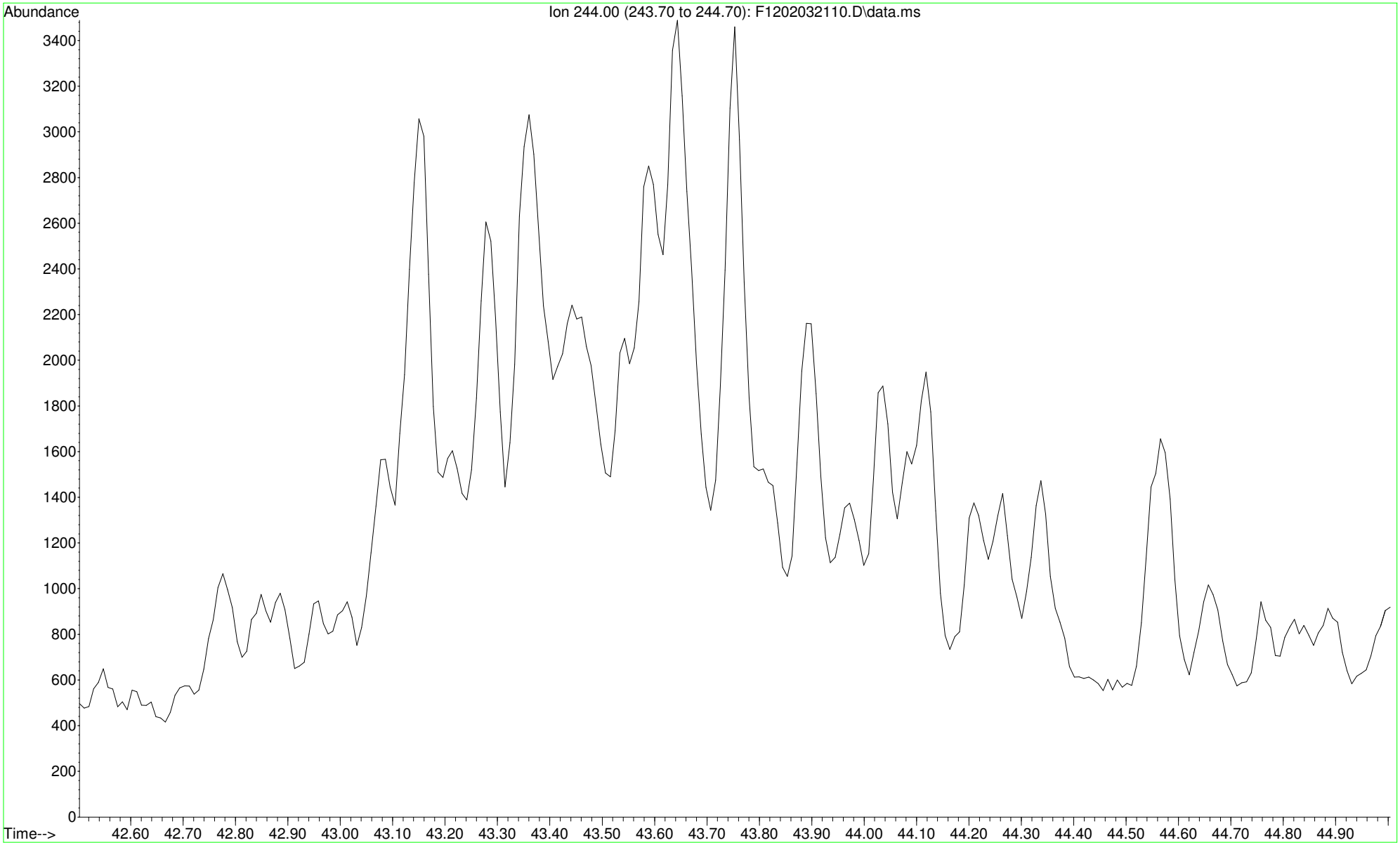

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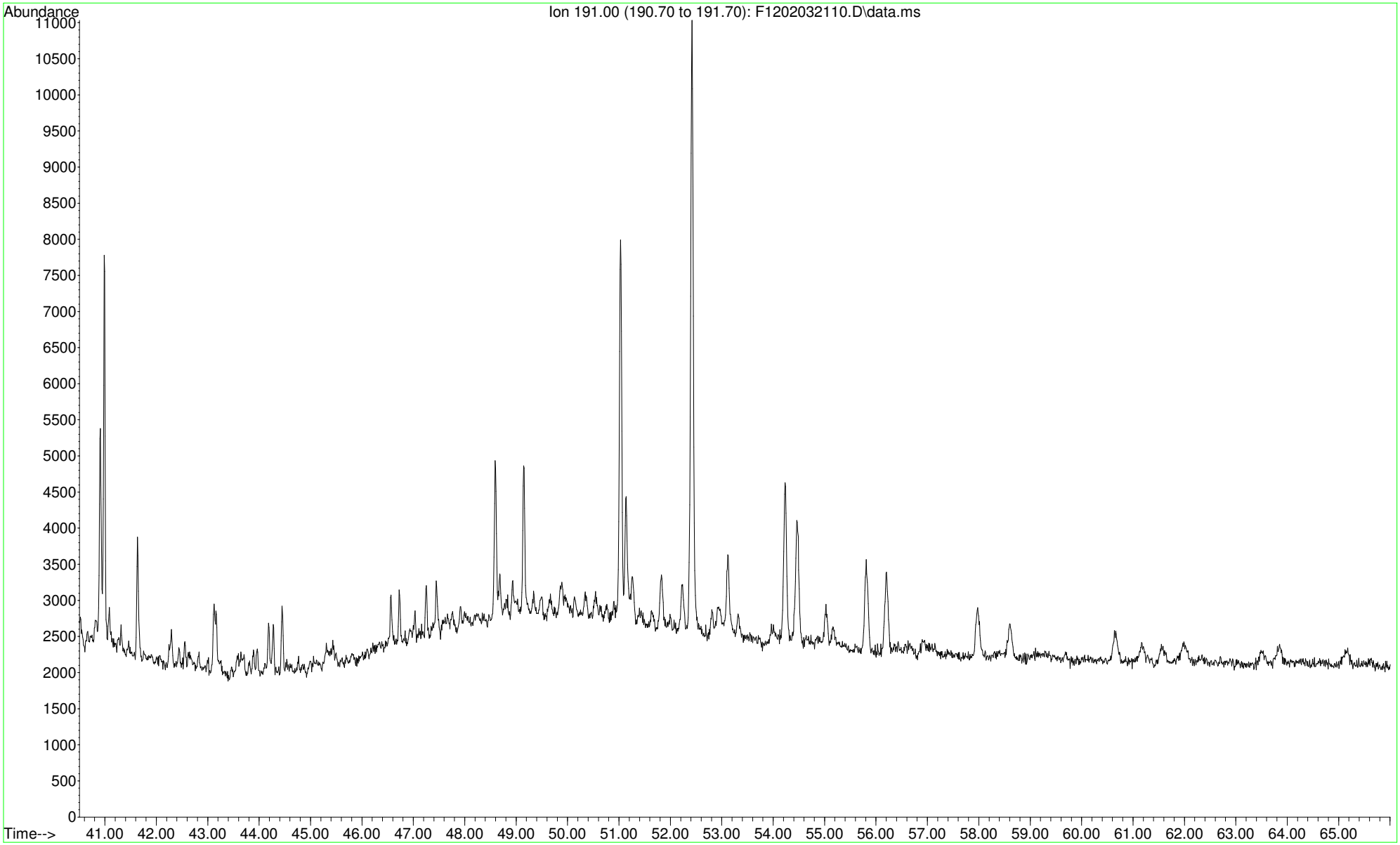

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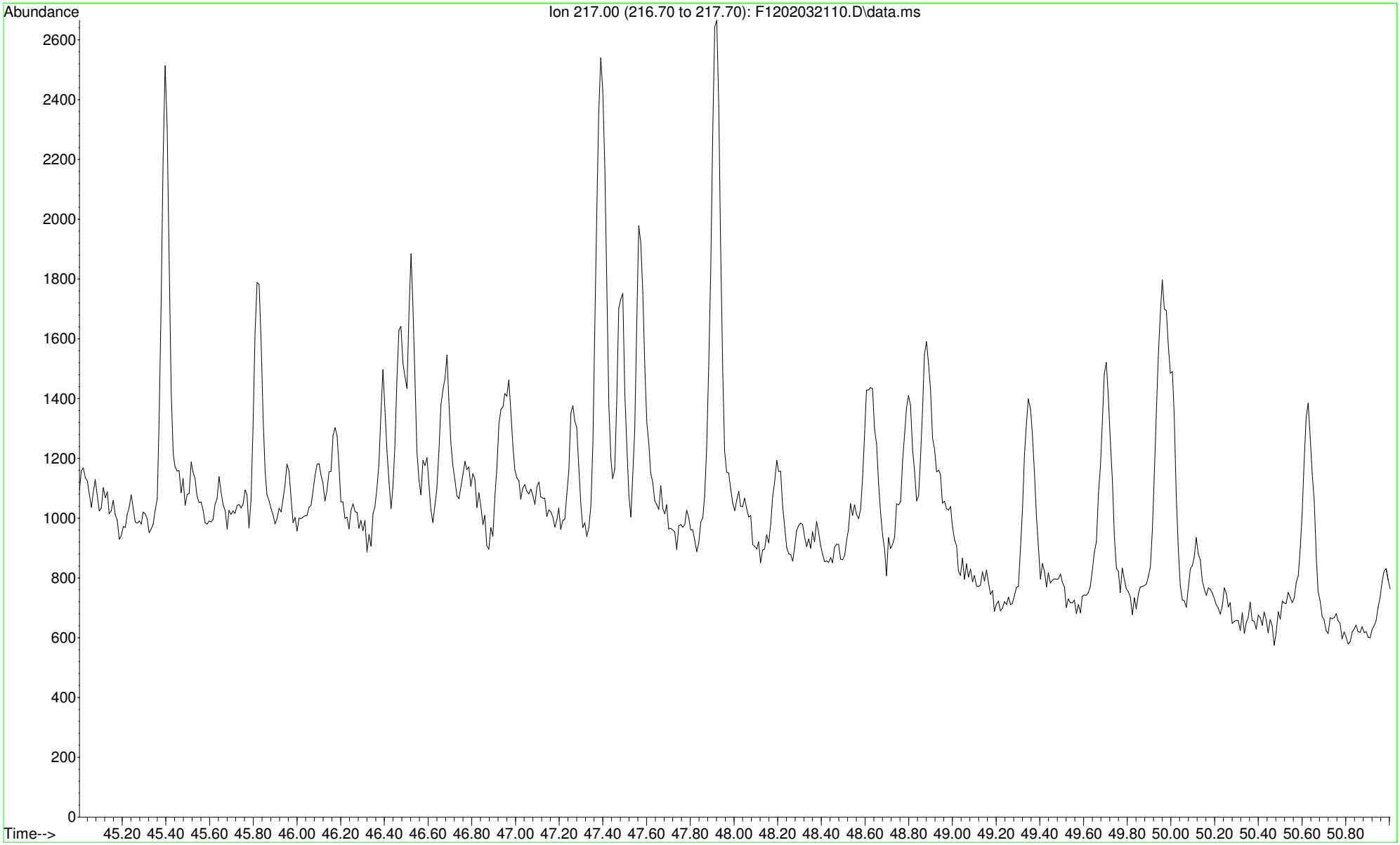

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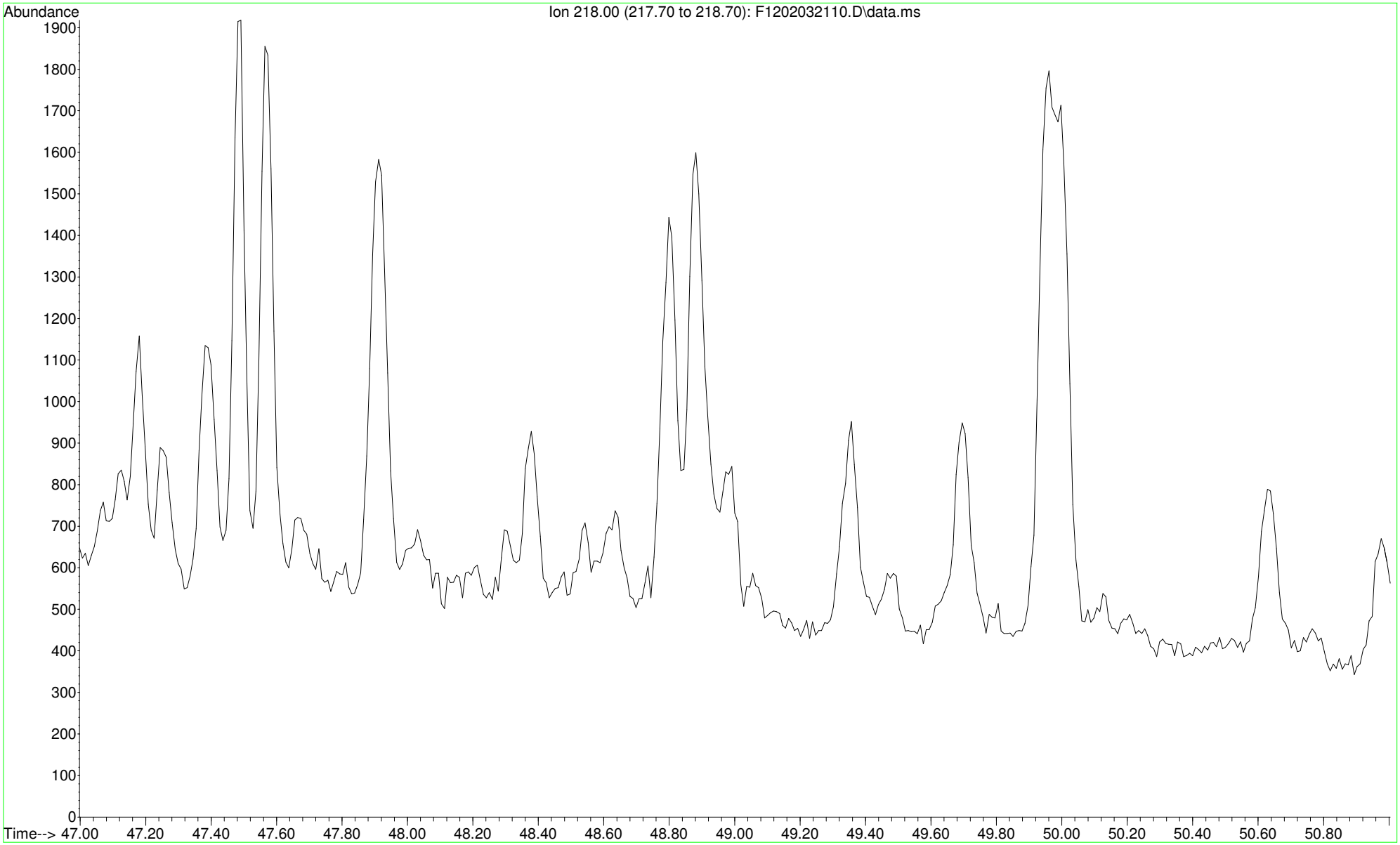

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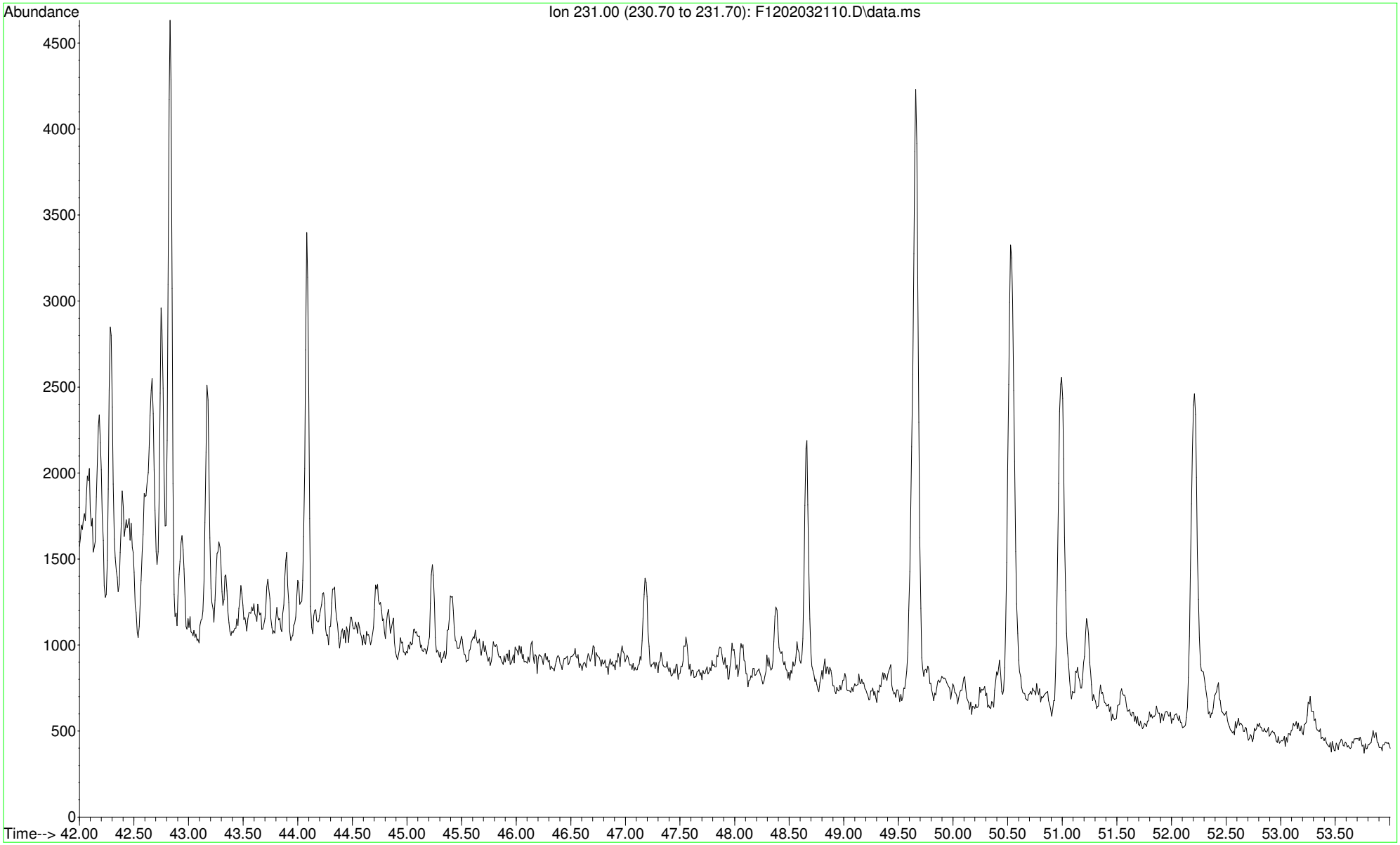

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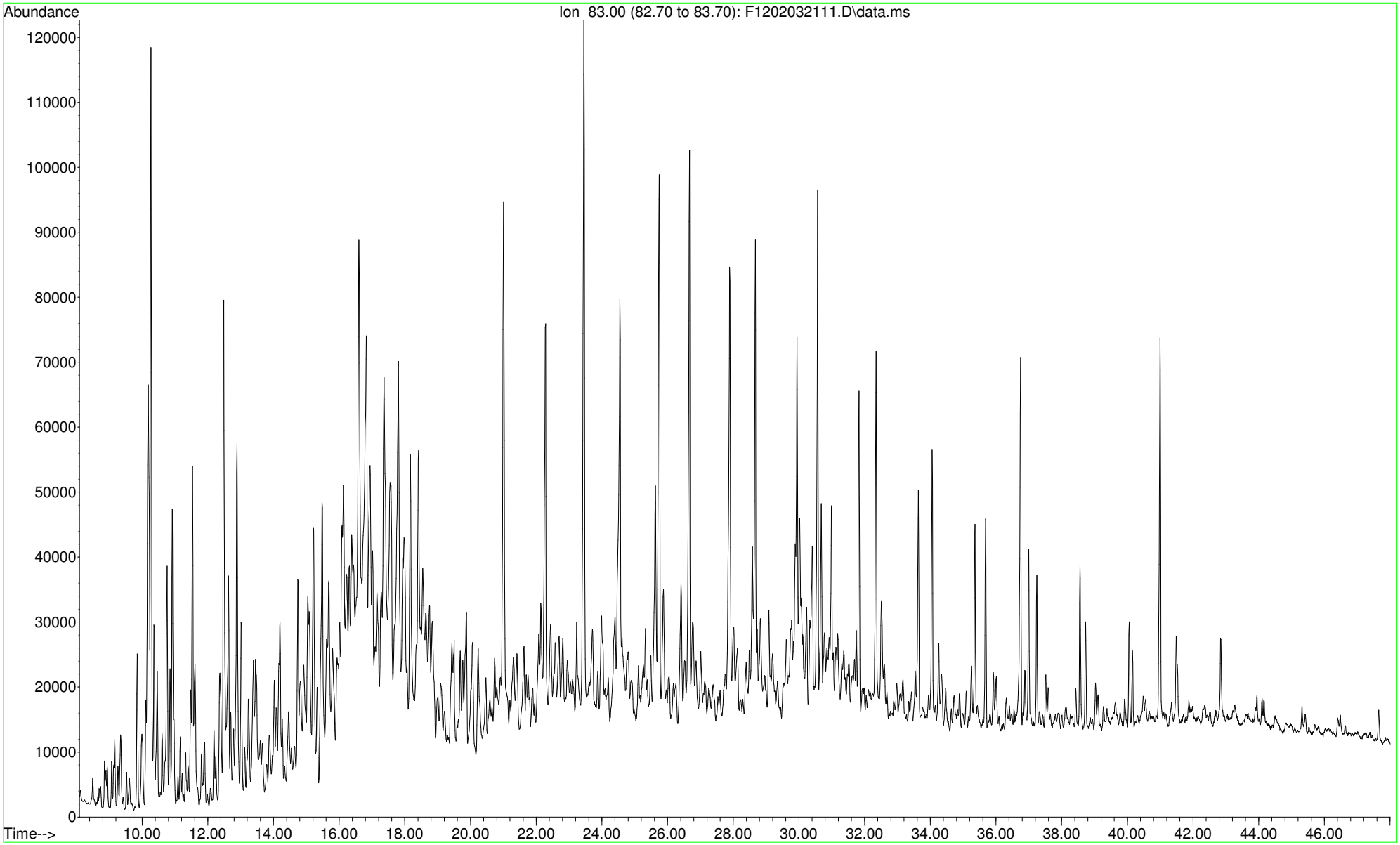

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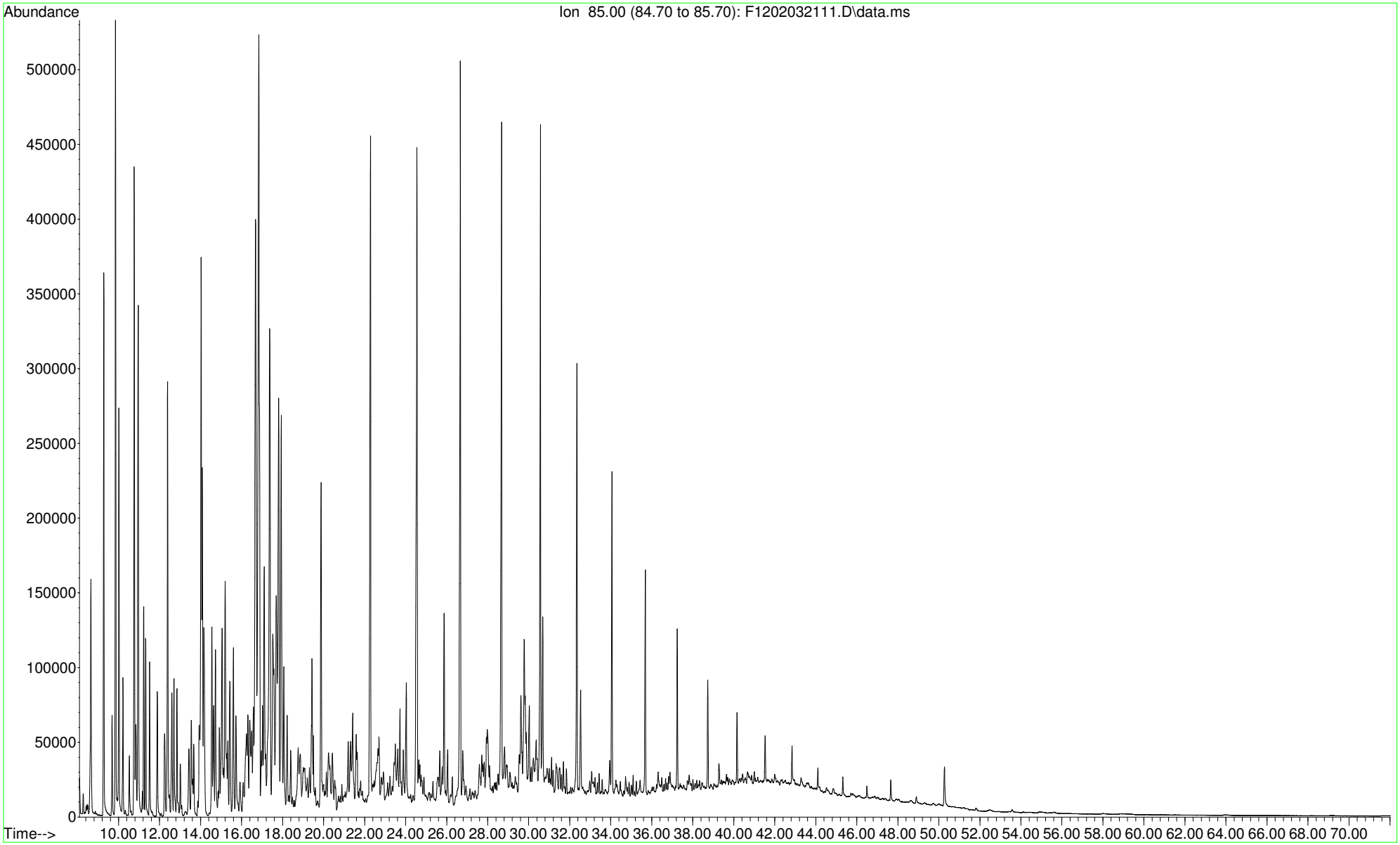

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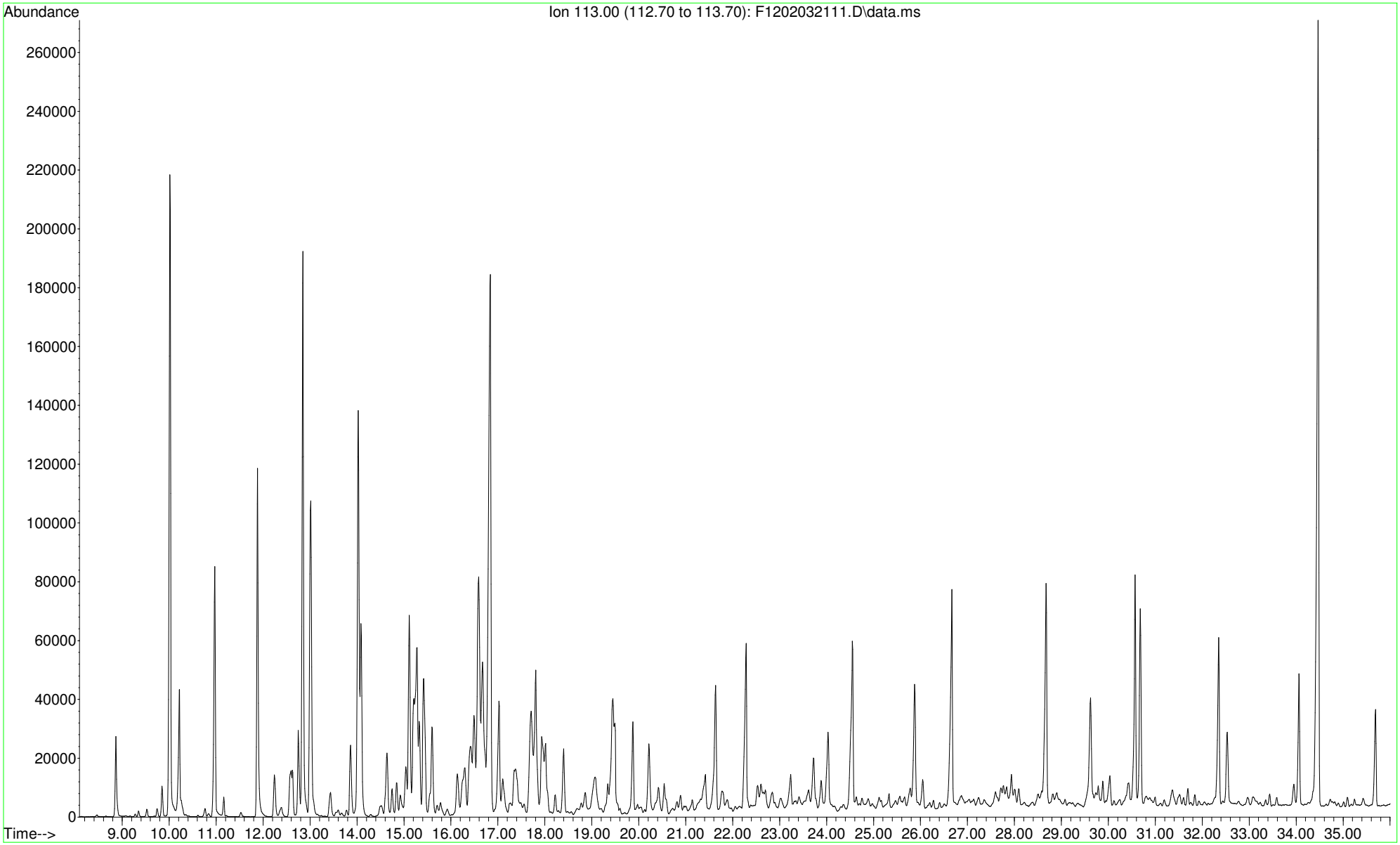

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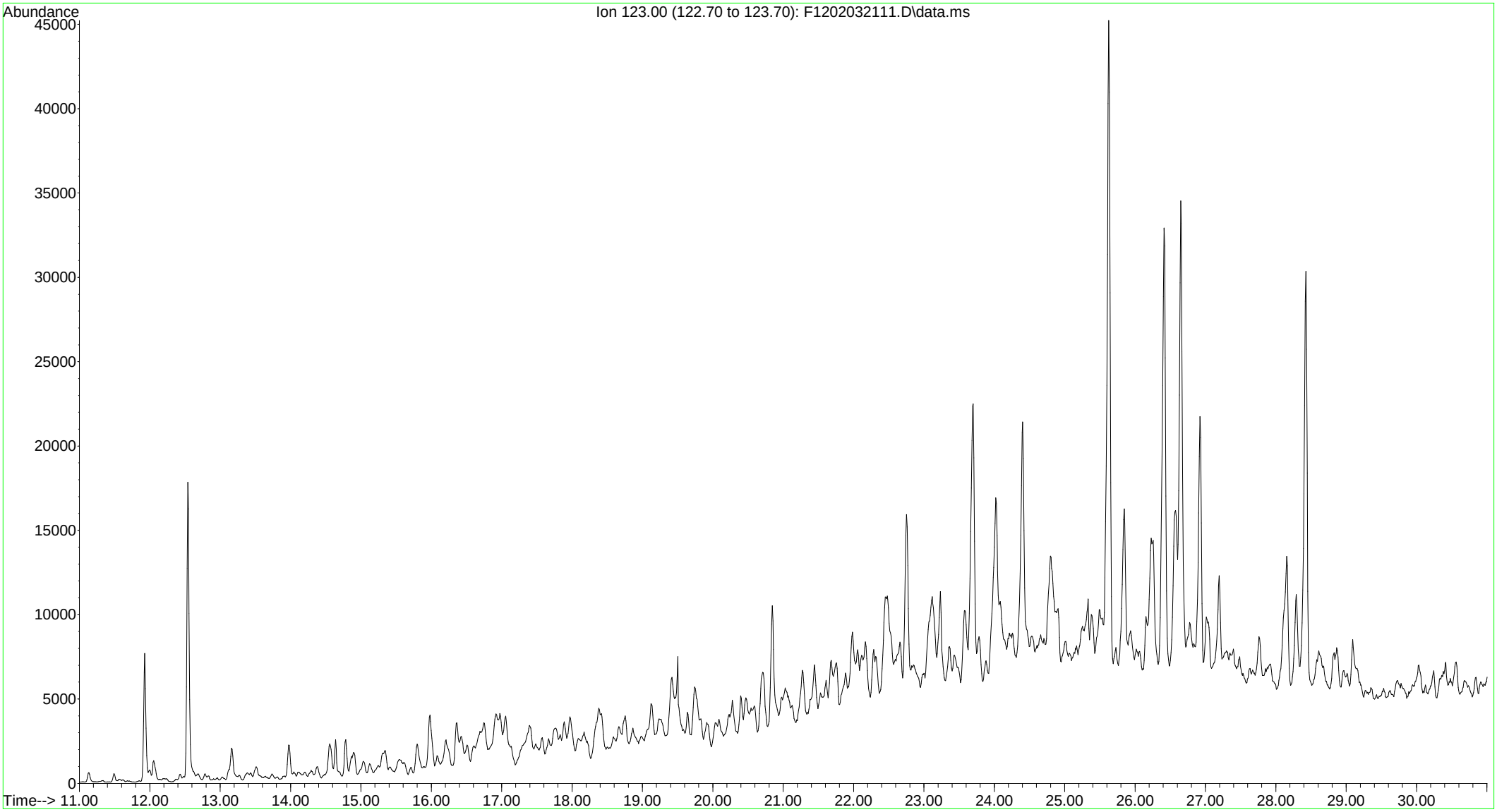

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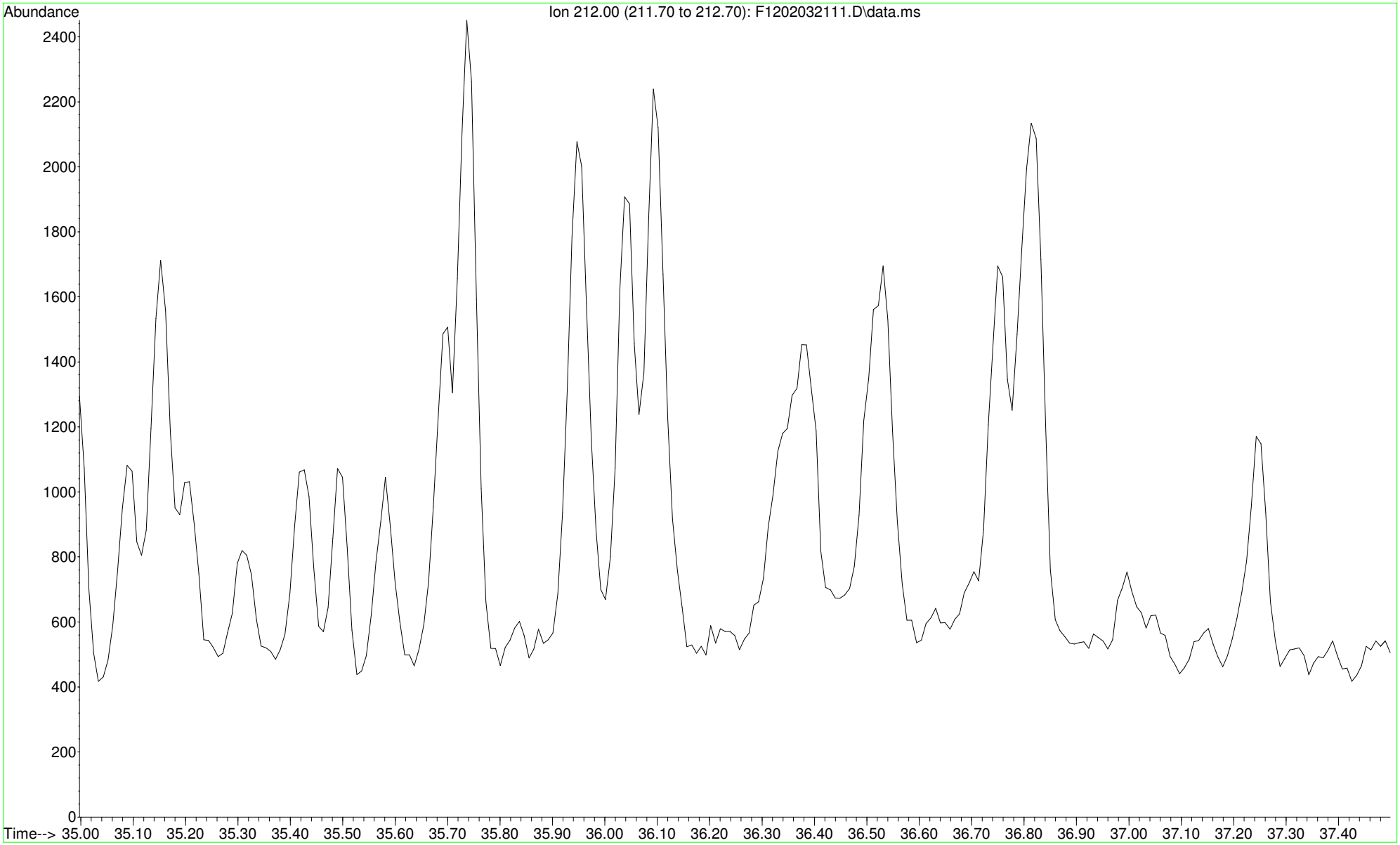

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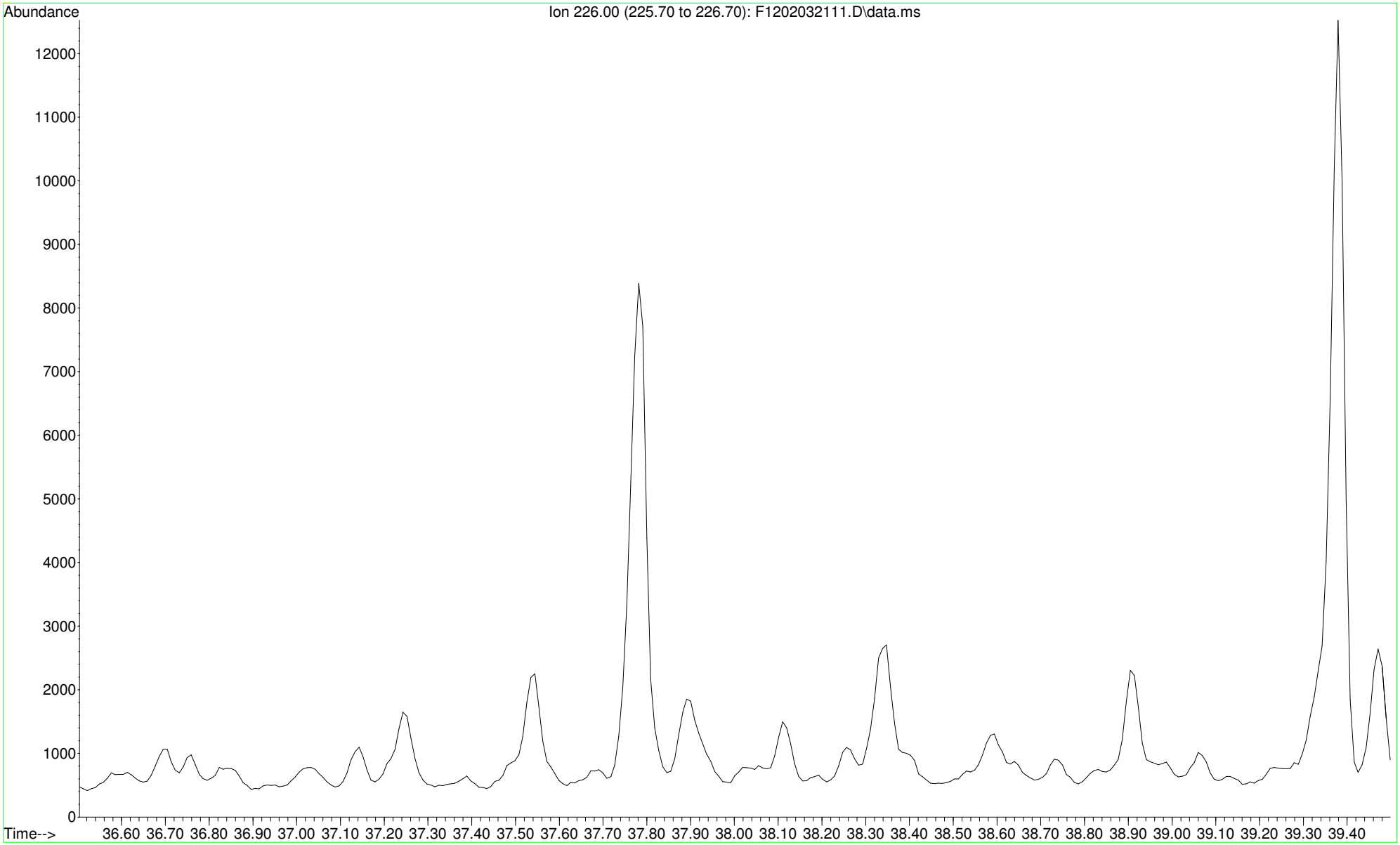

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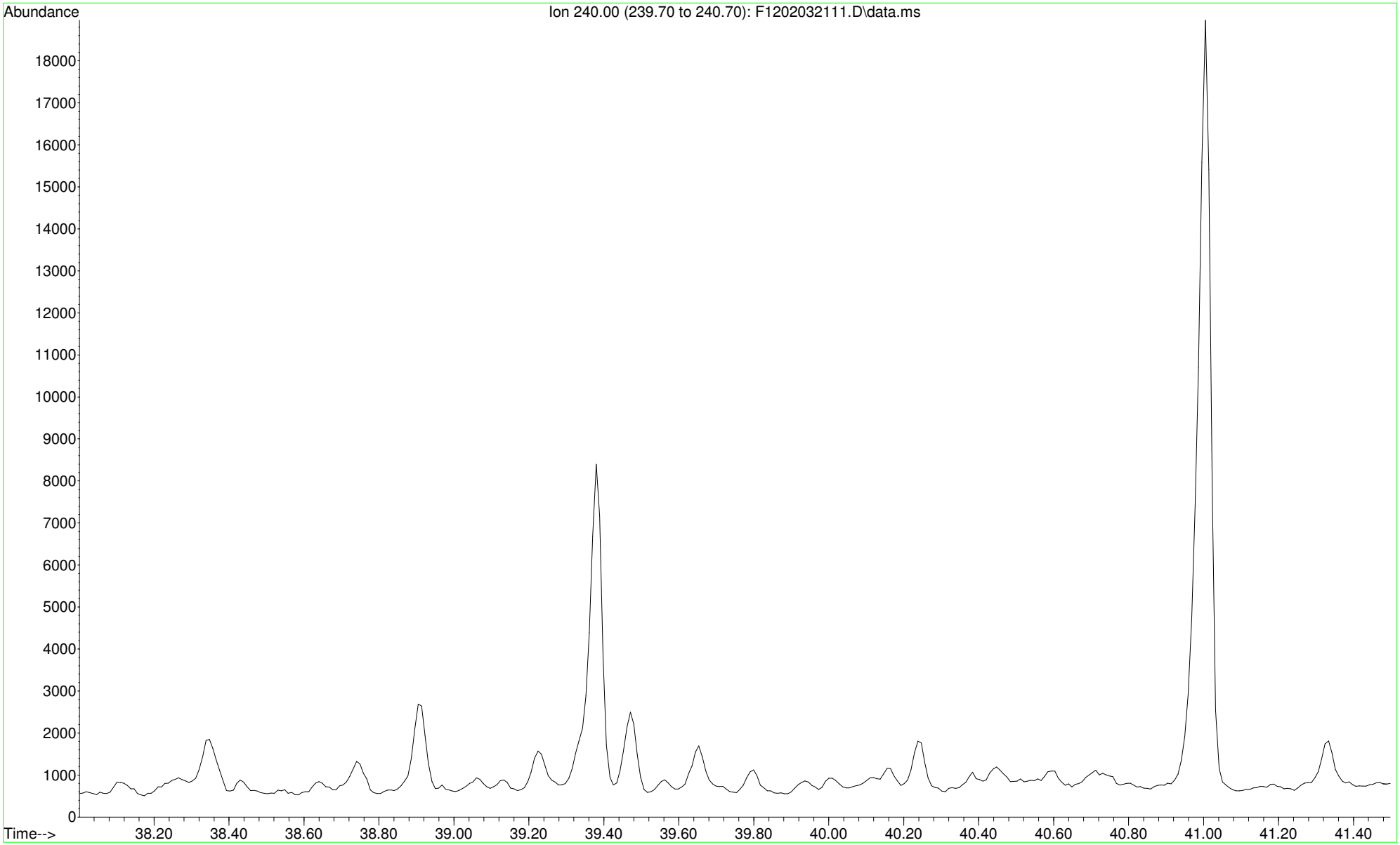

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Sample Name: L2103943-02,32
Misc Info  : WG1461481,WG1459768,ICAL17375
Vial Number: 10
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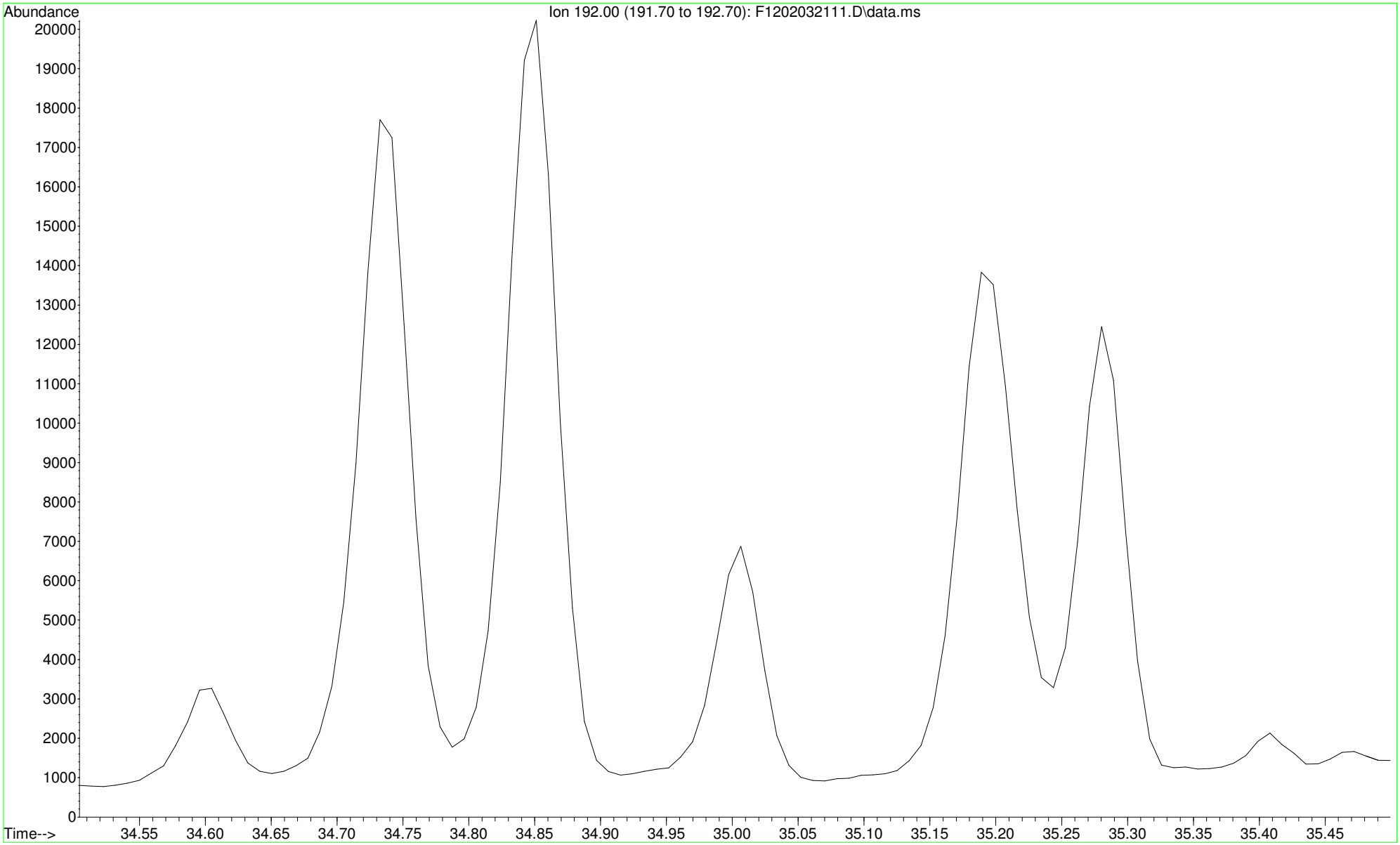

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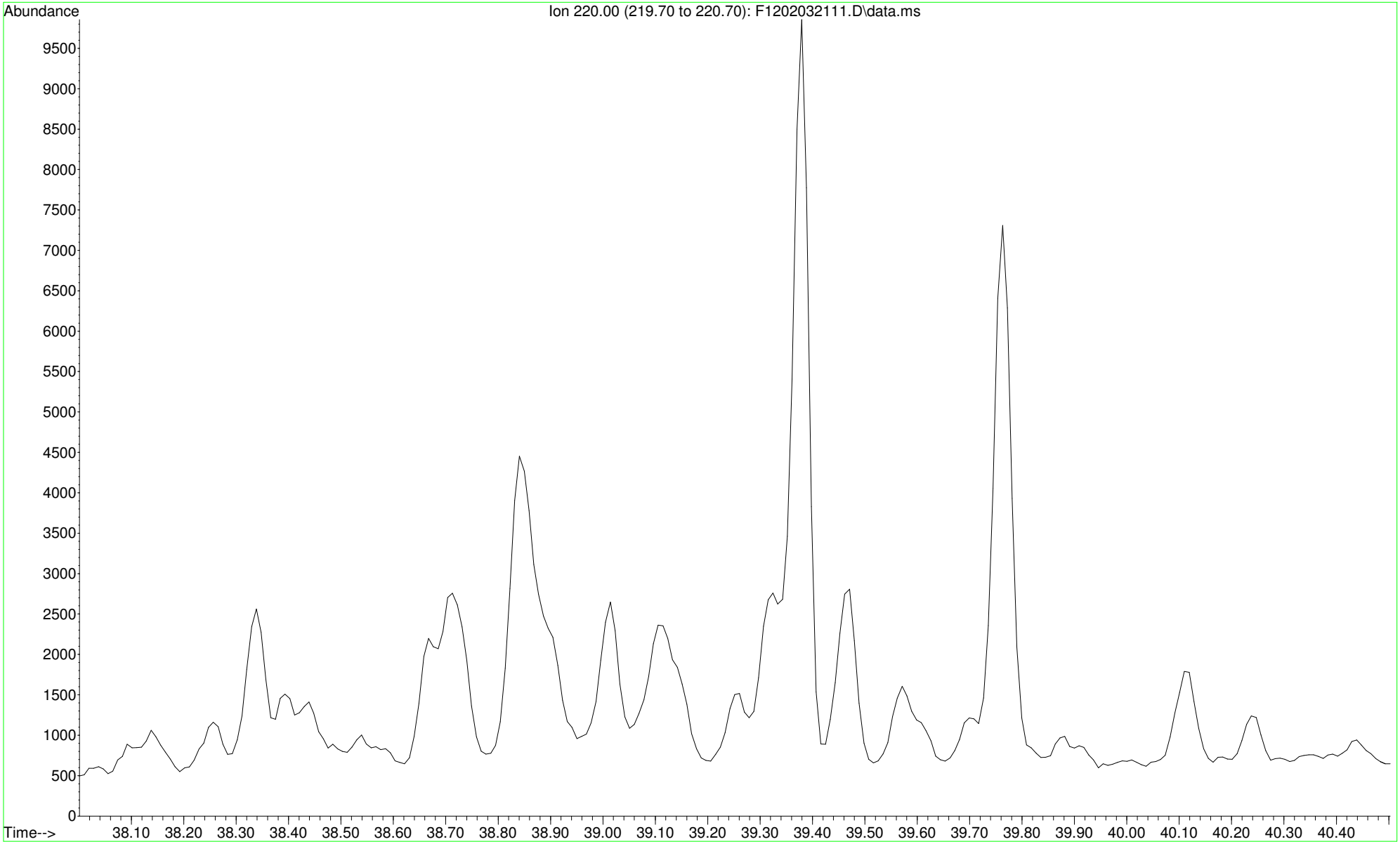

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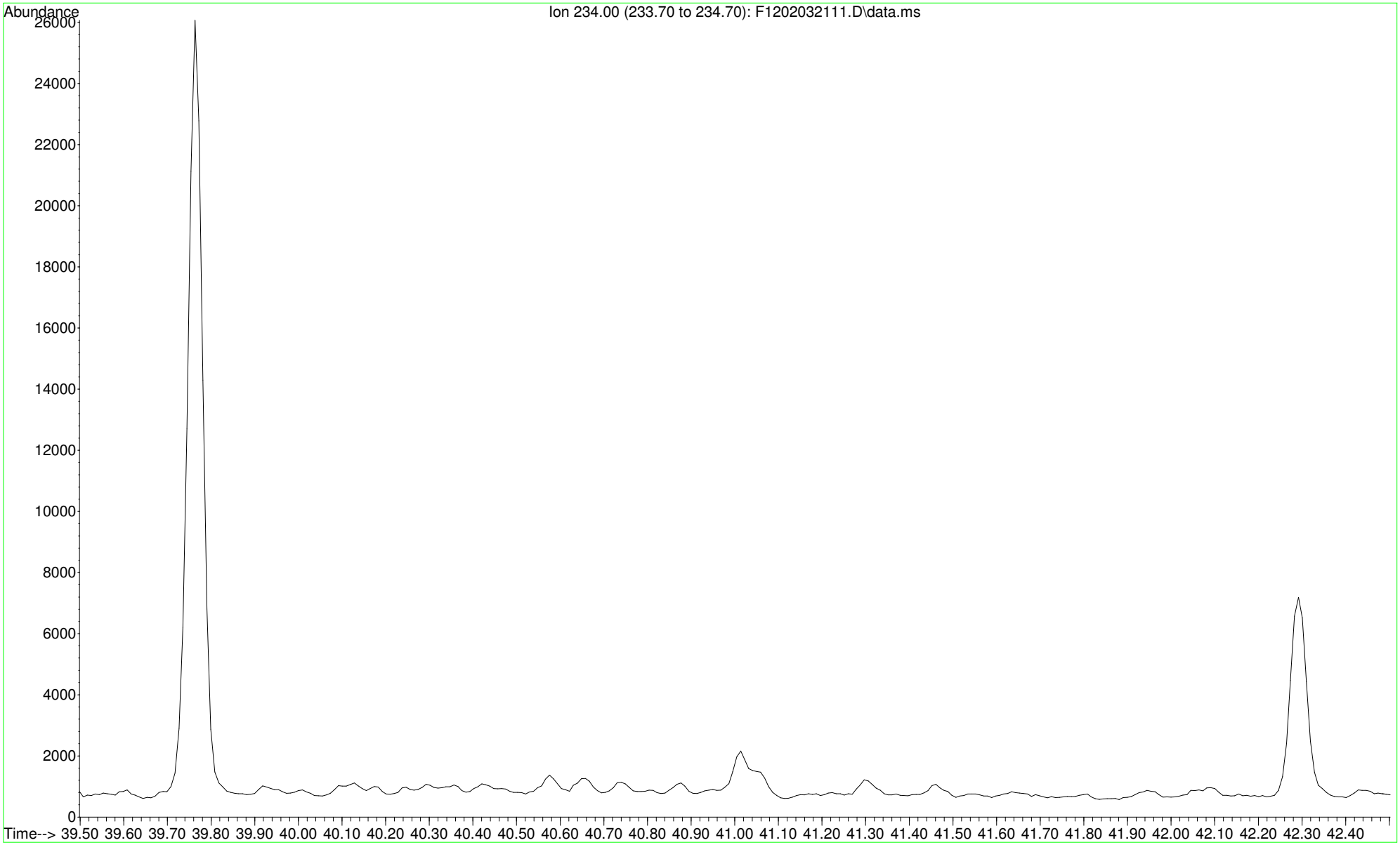
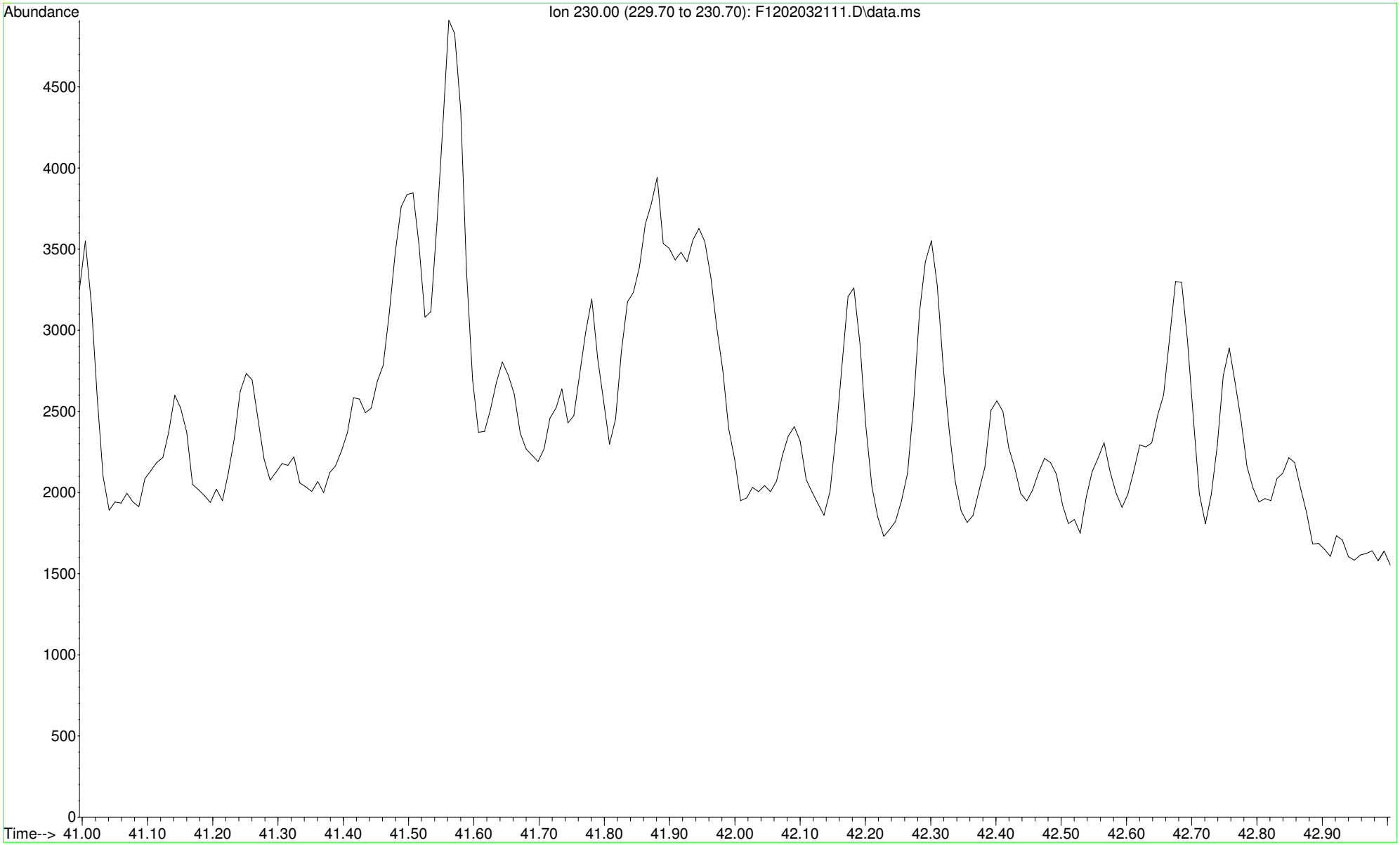
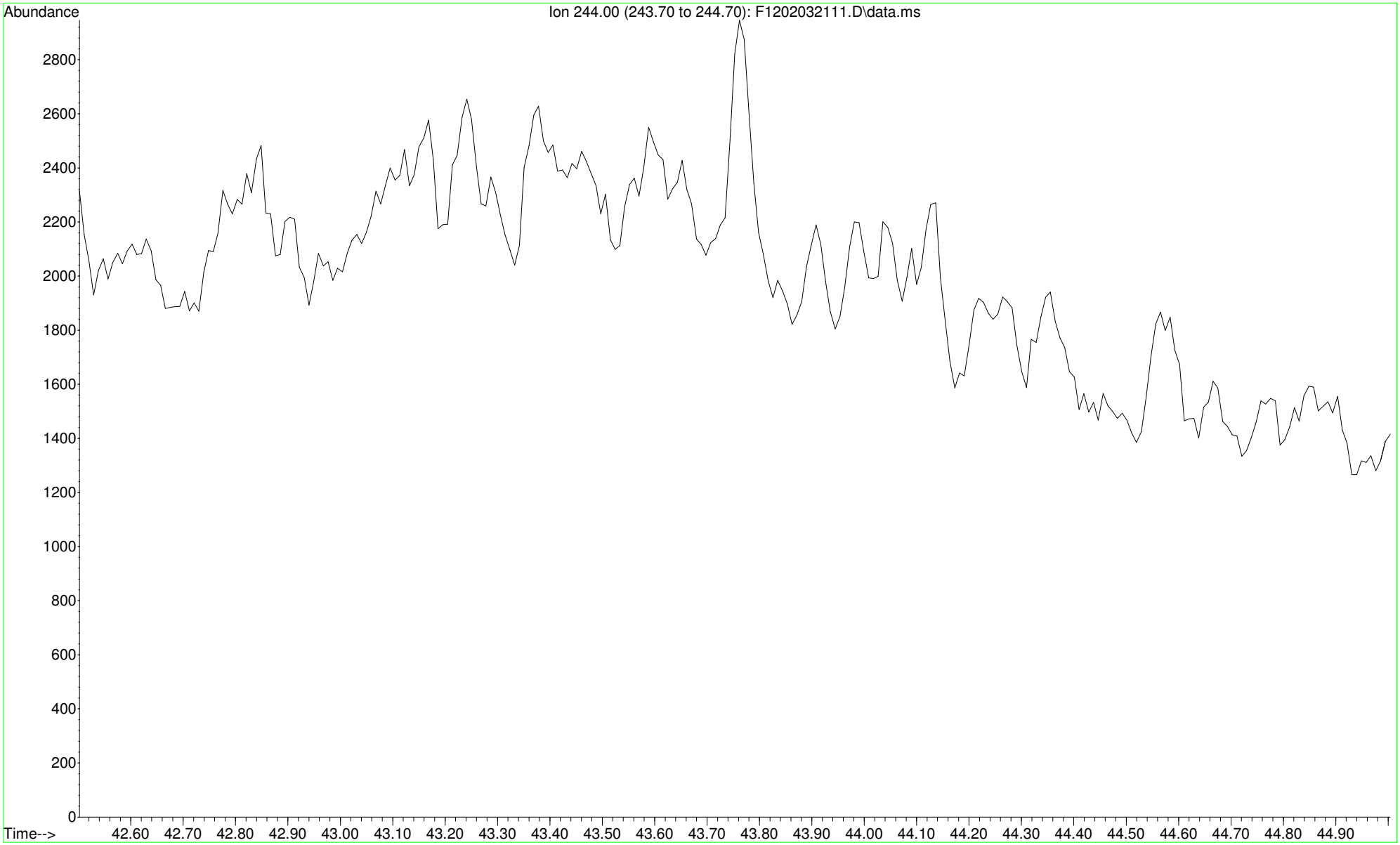
Misc Info : WG1461481,WG1459768,ICAL17375
Vial Number: 10



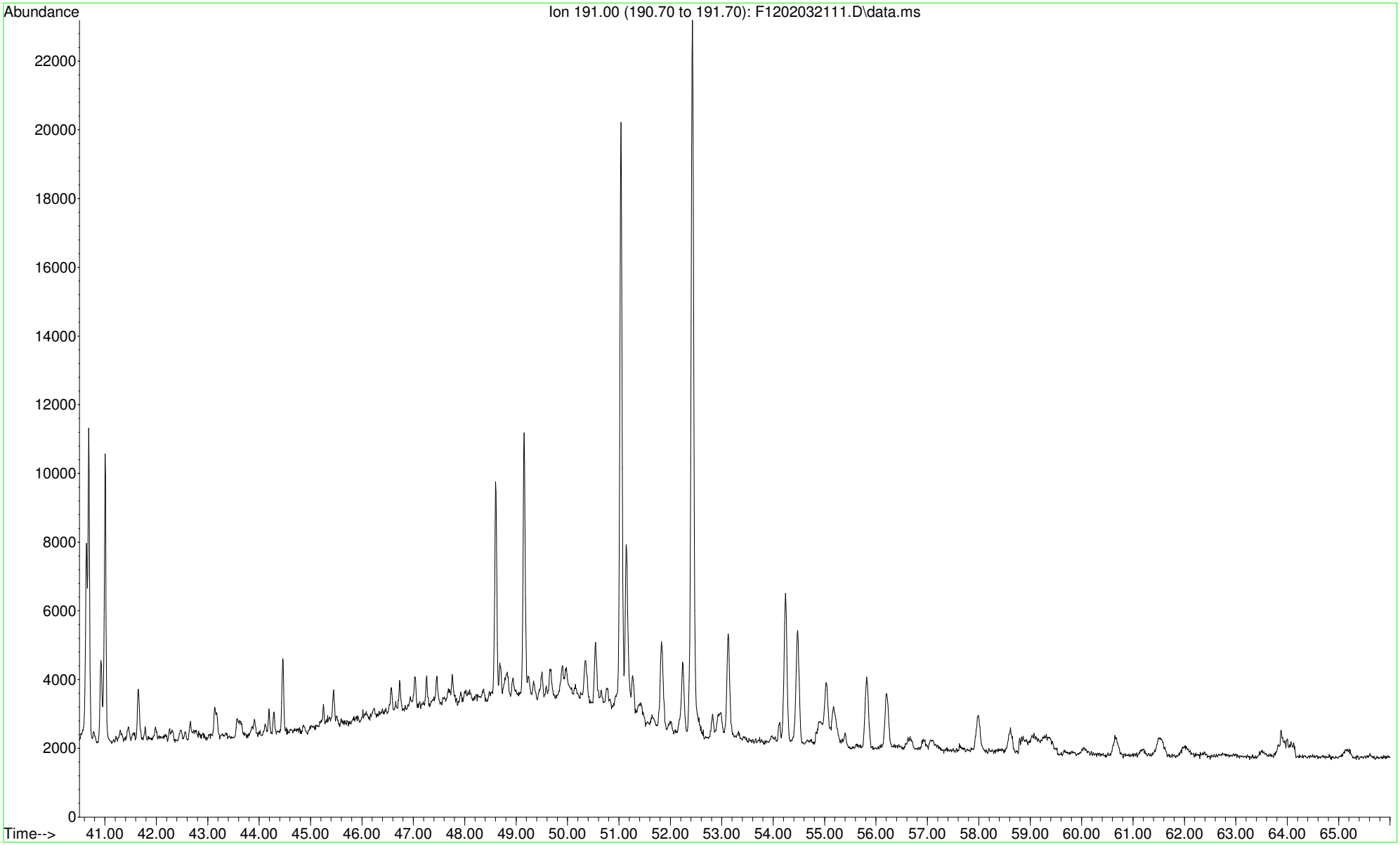
File :O:\Forensics\Data\PAH12\2021\FEB21\FEB03\F1202032111.D
Operator : PAH12:CC
Acquired : 4 Feb 2021 12:01 pm using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: L2103943-02,32
Misc Info : WG1461481,WG1459768,ICAL17375
Vial Number: 10



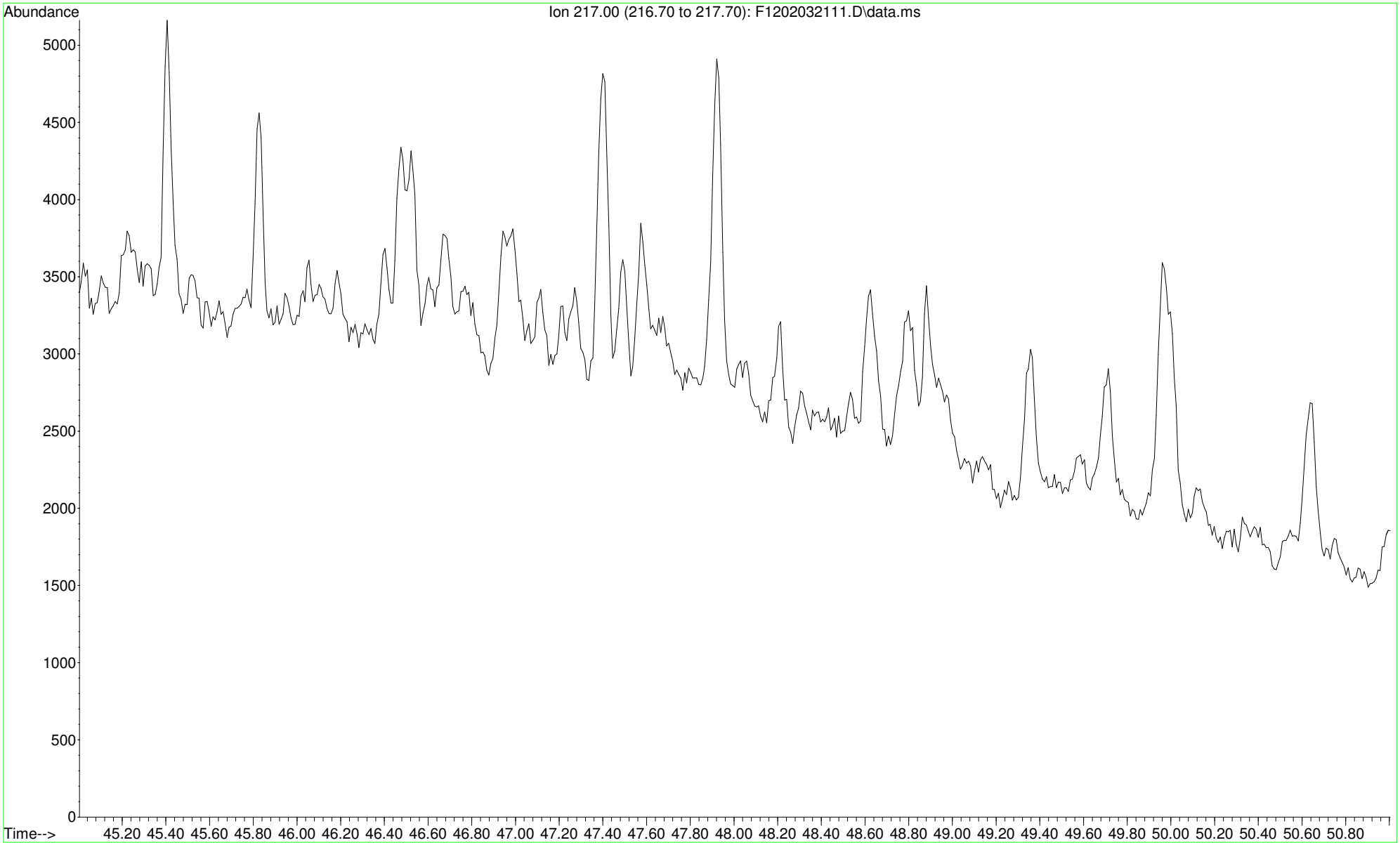
File :O:\Forensics\Data\PAH12\2021\FEB21\FEB03\F1202032111.D
Operator : PAH12:CC
Acquired : 4 Feb 2021 12:01 pm using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: L2103943-02,32
Misc Info : WG1461481,WG1459768,ICAL17375
Vial Number: 10



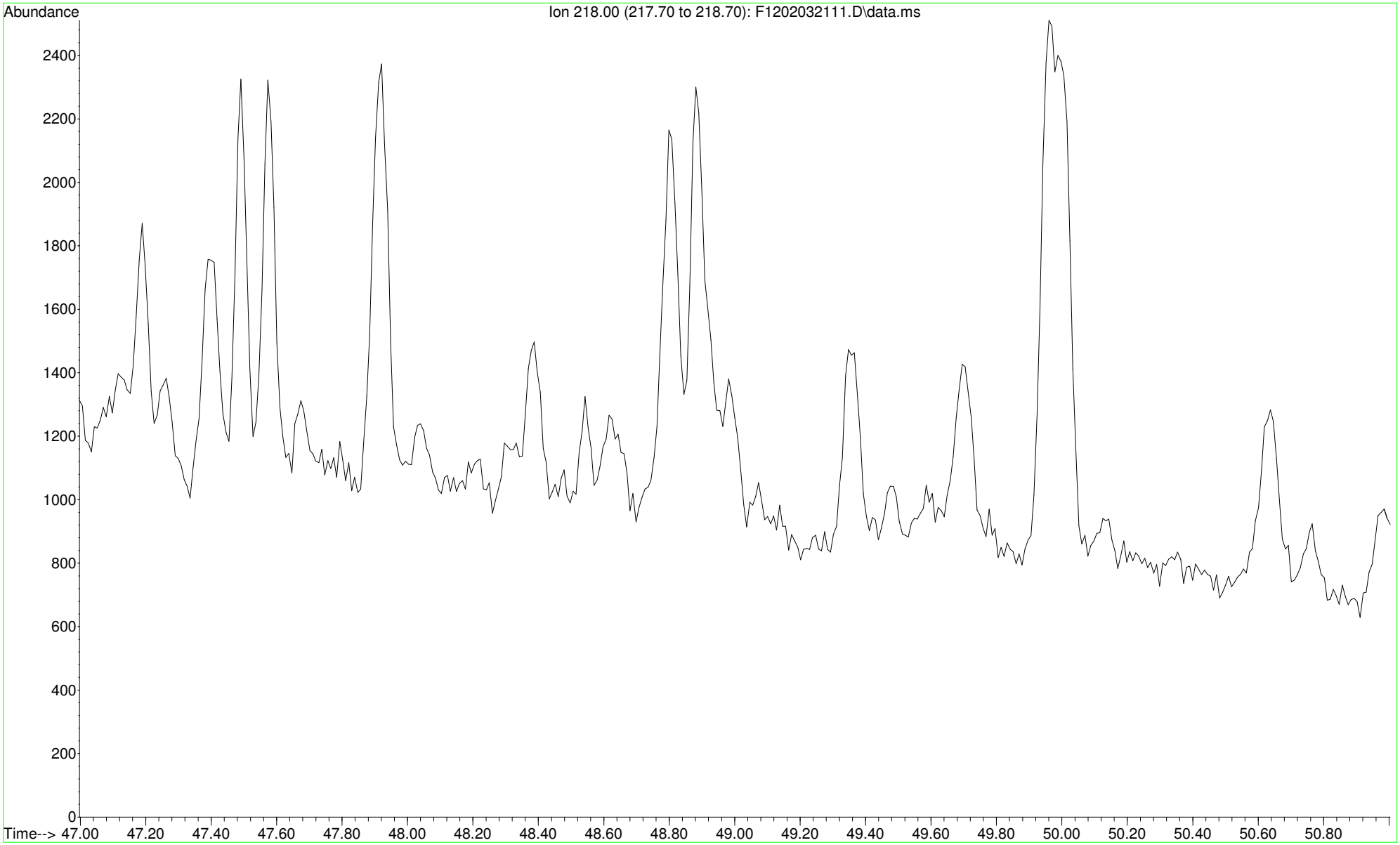
File :O:\Forensics\Data\PAH12\2021\FEB21\FEB03\F1202032111.D
Operator : PAH12:CC
Acquired : 4 Feb 2021 12:01 pm using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: L2103943-02,32
Misc Info : WG1461481,WG1459768,ICAL17375
Vial Number: 10



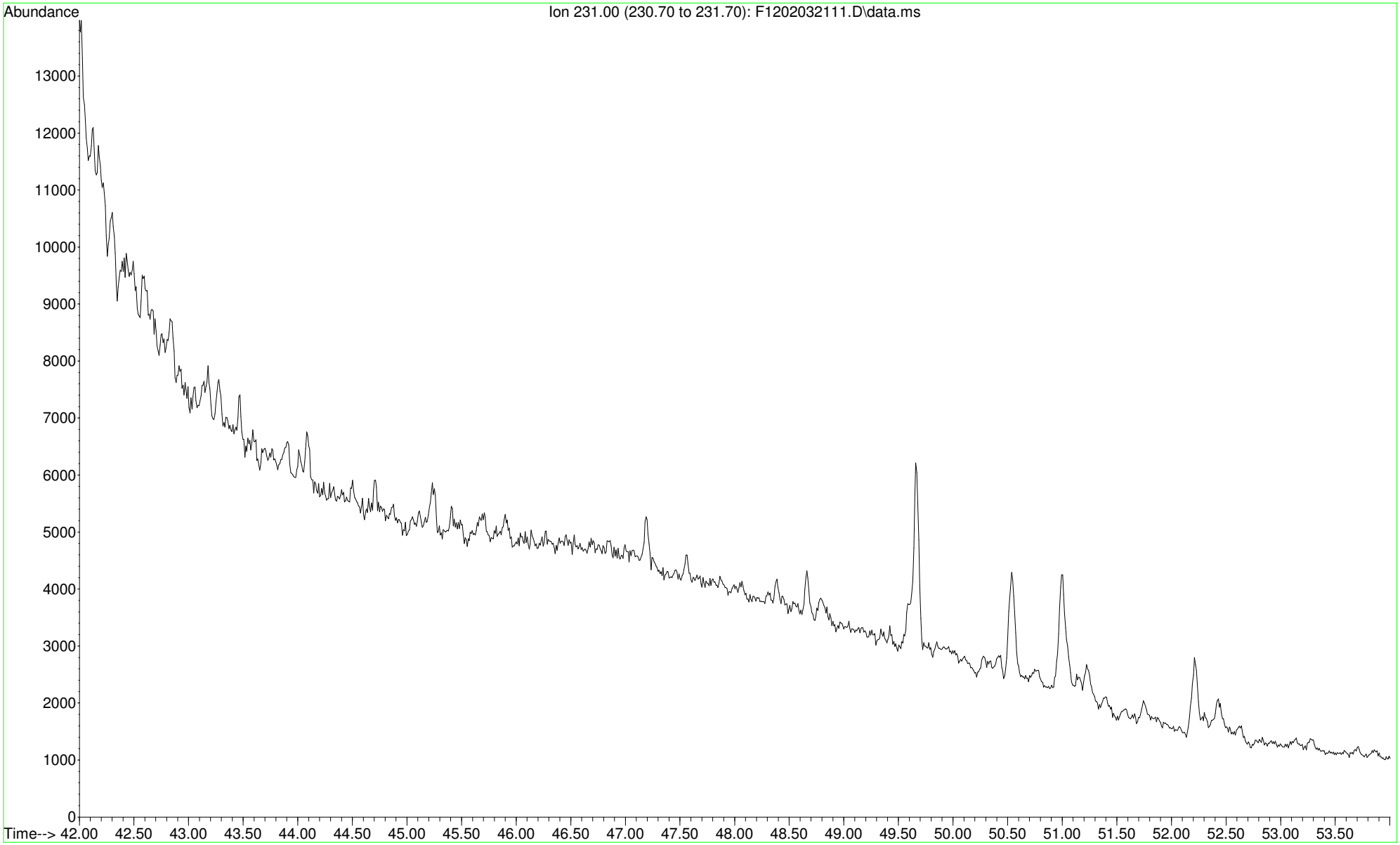
File :O:\Forensics\Data\PAH12\2021\FEB21\FEB03\F1202032111.D
Operator : PAH12:CC
Acquired : 4 Feb 2021 12:01 pm using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: L2103943-02,32
Misc Info : WG1461481,WG1459768,ICAL17375
Vial Number: 10



File :O:\Forensics\Data\PAH12\2021\FEB21\FEB03\F1202032111.D
Operator : PAH12:CC
Acquired : 4 Feb 2021 12:01 pm using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: L2103943-02,32
Misc Info : WG1461481,WG1459768,ICAL17375
Vial Number: 10



File :O:\Forensics\Data\PAH12\2021\FEB21\FEB03\F1202032111.D
Operator : PAH12:CC
Acquired : 4 Feb 2021 12:01 pm using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: L2103943-02,32
Misc Info : WG1461481,WG1459768,ICAL17375
Vial Number: 10



McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2102F14

Report Created for: Alpha Analytical, Inc.

320 Forbes Blvd
Mansfield, MA 02048

Project Contact: Susan O'Neil
Project P.O.:
Project: L2103943

Project Received: 02/24/2021

Analytical Report reviewed & approved for release on 03/03/2021 by:

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033 ORELAP

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Alpha Analytical, Inc.
Project: L2103943
WorkOrder: 2102F14

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Alpha Analytical, Inc.	**WorkOrder:**	2102F14
Date Received:	02/24/2021 10:08	**Extraction Method:**	SW3550B
Date Prepared:	02/26/2021	**Analytical Method:**	SW8270C
Project:	L2103943	**Unit:**	mg/Kg

Organic Lead (speciated) by GC-MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ARCO-BH-21-01 (28-30)	**2102F14-001A**	**Soil**	**01/25/2021 15:00**	**GC46 F0226210205.D**	**216220**

Analytes	Result	MDL	RL	DF	Date Analyzed
Tetraethyl Lead	**0.067**	0.0012	0.0020	1	02/26/2021 16:37
Tetramethyl Lead	ND	0.00059	0.0020	1	02/26/2021 16:37

Surrogates	REC (%)	Limits	
2-Fluorobiphenyl	86	50-150	02/26/2021 16:37

Analyst(s): TD

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Quality Control Report

Client:	Alpha Analytical, Inc.	**WorkOrder:**	2102F14
Date Prepared:	02/26/2021	**BatchID:**	216220
Date Analyzed:	02/26/2021	**Extraction Method:**	SW3550B
Instrument:	GC46	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	L2103943	**Sample ID:**	MB/LCS/LCSD-216220 2102F14-001AMS/MSD

QC Summary Report for Organic Lead by GC-MS

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Tetraethyl Lead	ND	0.00120	0.00200	-	-	-
Tetramethyl Lead	ND	0.000590	0.00200	-	-	-
Surrogate Recovery						
2-Fluorobiphenyl	0.194			0.2	97	30-150

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Tetraethyl Lead	0.0818	0.0867	0.10	82	87	50-150	5.87	30
Tetramethyl Lead	0.0882	0.0849	0.10	88	85	50-150	3.79	30
Surrogate Recovery								
2-Fluorobiphenyl	0.189	0.189	0.20	94	94	50-150	0.0455	30

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Tetraethyl Lead	1	0.178	0.159	0.10	0.06696	111	92	50-150	11.4	30
Tetramethyl Lead	1	0.0928	0.0880	0.10	ND	93	88	50-150	5.36	30
Surrogate Recovery										
2-Fluorobiphenyl	1	0.172	0.173	0.20		86	87	50-150	0.659	30

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2102F14 **ClientCode: AAMA**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ EQuIS ☑ Dry-Weight ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Excel

Report to:
Susan O'Neil
Alpha Analytical, Inc.
320 Forbes Blvd
Mansfield, MA 02048
(508) 844-4117 FAX:

Email: #Error
cc/3rd Party:
PO:
Project: L2103943; ARCO-BH-21-01 (28-30)

Bill to:
Finance
Alpha Analytical, Inc.
320 Forbes Blvd
Mansfield, MA 02048
ap@alphalab.com

Requested TAT: **5 days;**

Date Received: **02/24/2021**
Date Logged: **02/25/2021**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2102F14-001	ARCO-BH-21-01 (28-30)	Soil	1/25/2021 15:00	☐	A	A										

Test Legend:

1	MAI_OPBMS_S [J]	2	PRDisposal Fee	3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Angela Rydelius

Prepared by: Lilly Ortiz

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: ALPHA ANALYTICAL, INC.
Client Contact: Susan O'Neil
Contact's Email: #Error

Project: L2103943; ARCO-BH-21-01 (28-30)
Comments

Work Order: 2102F14
QC Level: LEVEL 2
Date Logged: 2/25/2021

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001A	ARCO-BH-21-01 (28-30)	Soil	SW8270C - Organic Lead (speciated) <Tetraethyl Lead, Tetramethyl Lead>	1	4OZ aGJ, Unpres	☐	☐	1/25/2021 15:00	5 days	3/3/2021		☐	

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

7102 F14

Subcontract Chain of Custody

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburg, CA 94565

Alpha Job Number
L2103943

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: 320 Forbes Boulevard Mansfield, MA 02048-1806 Phone: 508.844.4117 Email: soneil@alphalab.com	Project Location: PA Project Manager: Susan O'Neil **Turnaround & Deliverables Information** Due Date: 03/03/21 Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2103943

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com TML and TEL

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	ARCO-BH-21-01 (28-30)	01-25-21 15:00	SOIL	Organic Lead by Method 8270	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature]	2/23/21 1700	[signature]	
	[signature]	2/24/21 1008	[signature]	14:32
Form No: AL_subcoc				

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name: **Alpha Analytical, Inc.**
Project: **L2103943; ARCO-BH-21-01 (28-30)**

WorkOrder №: **2102F14** Matrix: Soil
Carrier: UPS

Date and Time Received: **2/24/2021 10:08**
Date Logged: **2/25/2021**
Received by: Lilly Ortiz
Logged by: Lilly Ortiz

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☐	No	☑		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA	☑
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
(Ice Type: WET ICE)						
Sample/Temp Blank temperature	Temp: 14.3°C				NA	☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA	☑
UCMR Samples:						
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA	☑

Comments:

ChemQuants™
ENVIRONMENTAL FORENSICS

Client: Stantec Consulting Services, Inc.

ATTN: Andrew Klingbeil

CQ Project#: 0166

Project name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Laboratory#: L2104678

Advisor

ChemQuants™
ENVIRONMENTAL FORENSICS

CQ Quote # 0166 CQ PM: Mark Cejas

Dear Andrew,

ChemQuants is pleased to deliver this CQ Advisor package that consists of a simple petroleum characterization, a data visualization summary of the chemistry, methods strategy summary, and the chemistry data deliverable. The CQ Interpreter workstream will be quoted and invoiced separately.

Date of Delivery: 2/24/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Company Address: 1060 Andrew Drive Suite 140

Email: Andrew.klingbeil@stantec.com

Project Name: CQ Project # 0166

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Laboratory#: L2104678

CQ Methods Summary

Phase 1 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
1	Saturated Hydrocarbons 8015D (M)	Soil	1
1	PIANO VOCs EPA 8260D (M)	Soil	1
1	VOCs - EPA 8260C/5035 High & Low	Soil	1
1	Alkylated PAHs (w/ Scan) EPA 8270D(M)	Soil	1

Phase 2 Forensic Method(s)

None

CQ Interpreter Stage

CQ Interpreter Authorized (check if yes)?: ∨

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
1338 Kenwood Rd.
Santa Barbara, CA 93109

Advisor

Phase 1 Basic Characterization # 0166

Dear Andrew,

Please find below a basic characterization of petroleum in the project samples. The following characterization was supported by the chromatographic results from three analytical methods – 1) VOC range PIANO 8260B (M), 2) saturated hydrocarbons 8015D (M), and 3) alkylated PAHs w/ Qualitative biomarkers 8270D (M). A GC/FID chromatogram and bar graphs were produced from these data and included to support a basic characterization of the petroleum in the soil sample.

Phase 1 Data Delivery: 2/19/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Email: Andrew.klingbeil@stantec.com

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Sample - L2104678-01 (BT-03-S-41-20210129)

This project sample exhibits petroleum that spans the light distillate range to the residual range (figure 1).The signature is pyrogenic and likely related to a manufactured gas plant (MGP) residue (figures 2 to 4).

Recommendation for Phase 2

CQ Quote #0166 lists the analytical methods that were tentatively recommended for phase 2 forensics. Phase 2 methods are not required. A final invoice will be delivered to you along with the complete chemistry data package, if an interpretive report and the CQ Interpreter phase is not desired – please advise ASAP.

Mark J. Cejas
Principal



[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

ChemQuants™
ENVIRONMENTAL FORENSICS

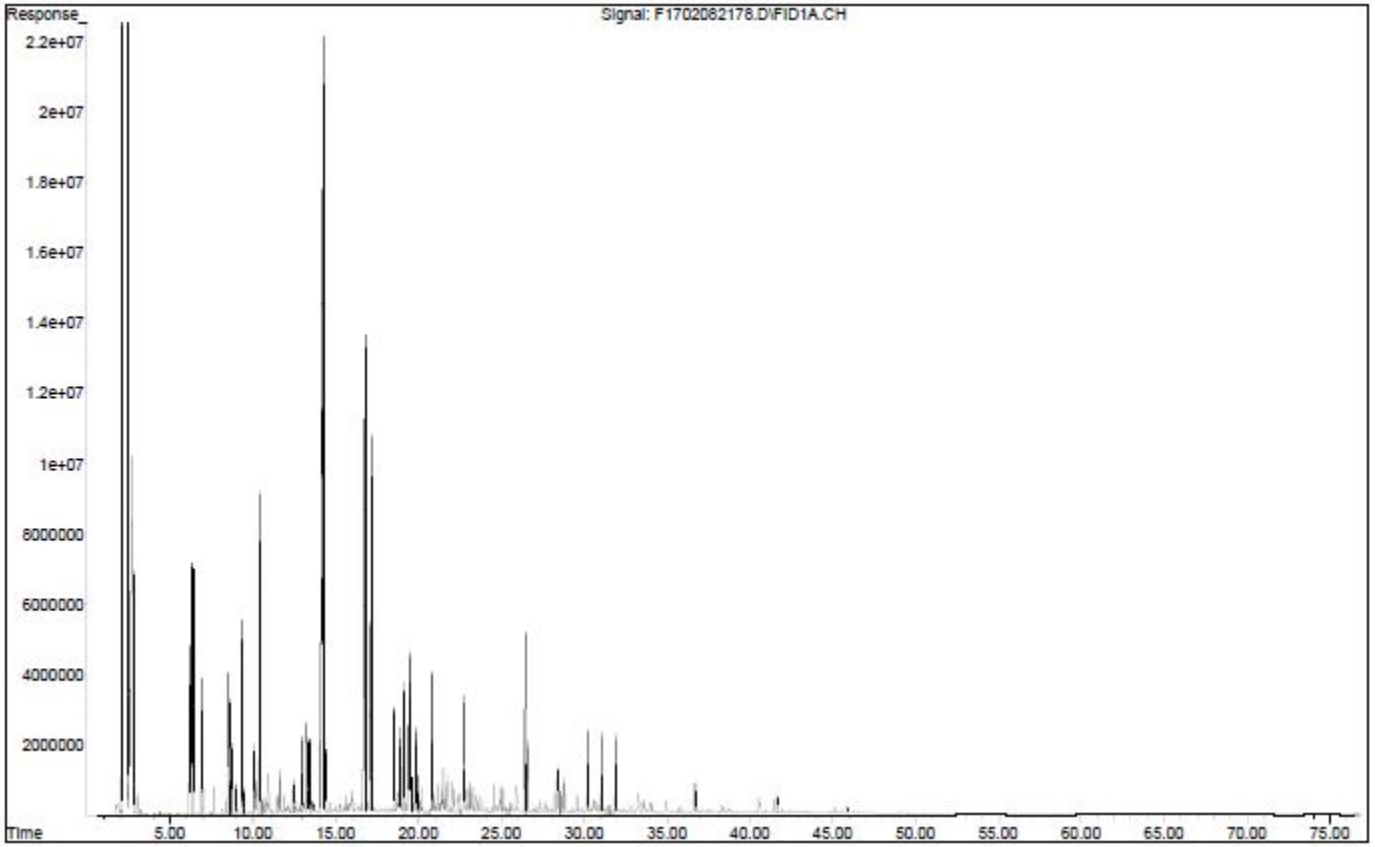

Figure 1- SVOC GC/FID chromatogram of (L2104678-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor

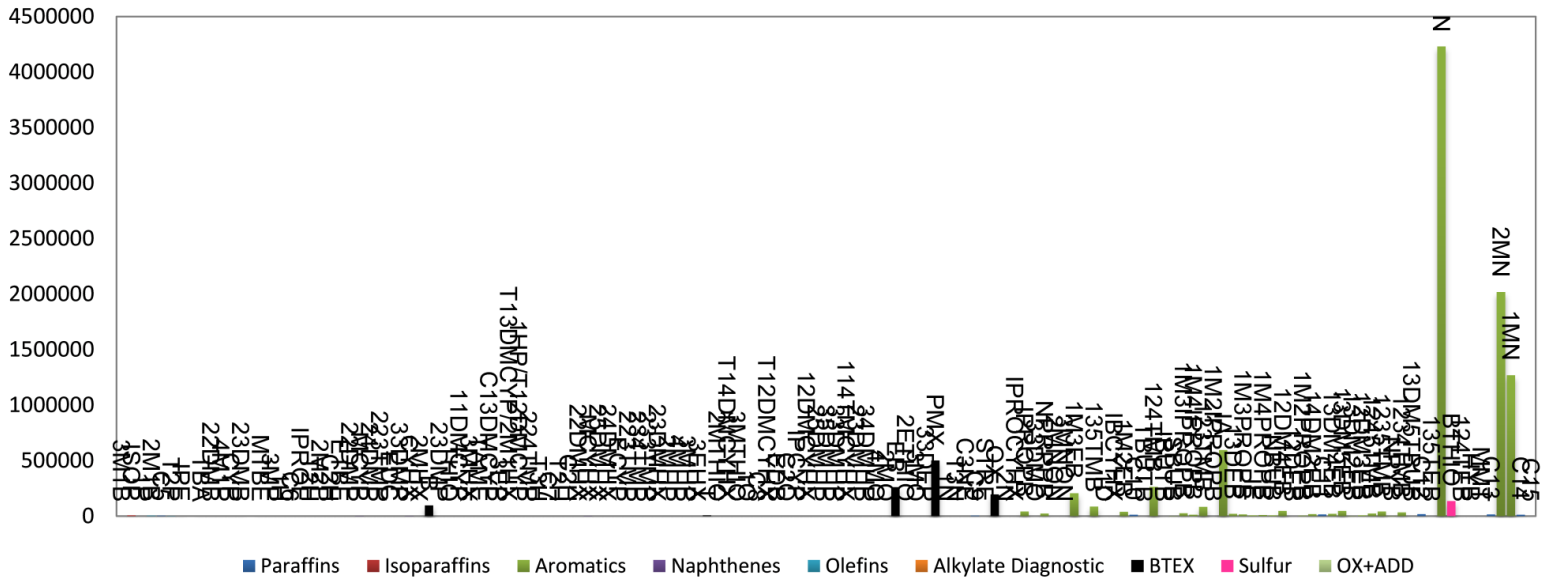

Figure 2 – Bar Graph of VOC PIANO constituents - (L2104678-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

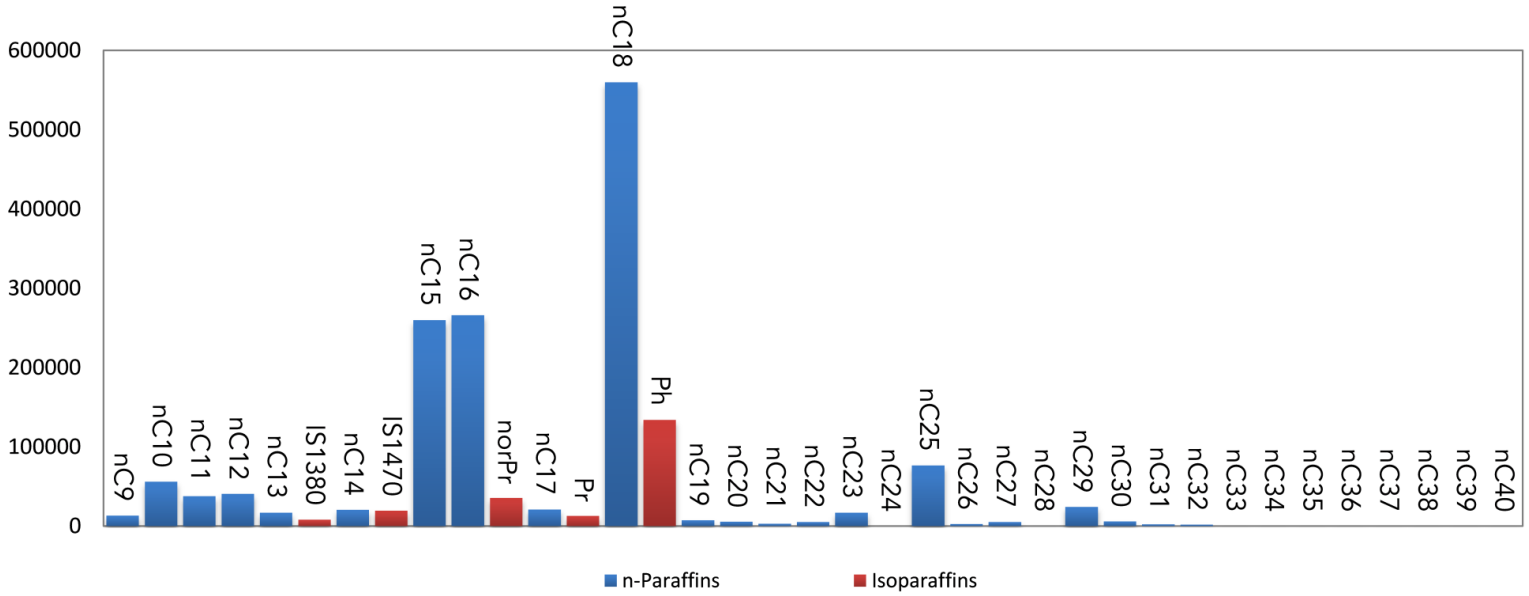

Figure 3 – Bar Graph of Saturated Hydrocarbons GC/FID - (L2104678-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

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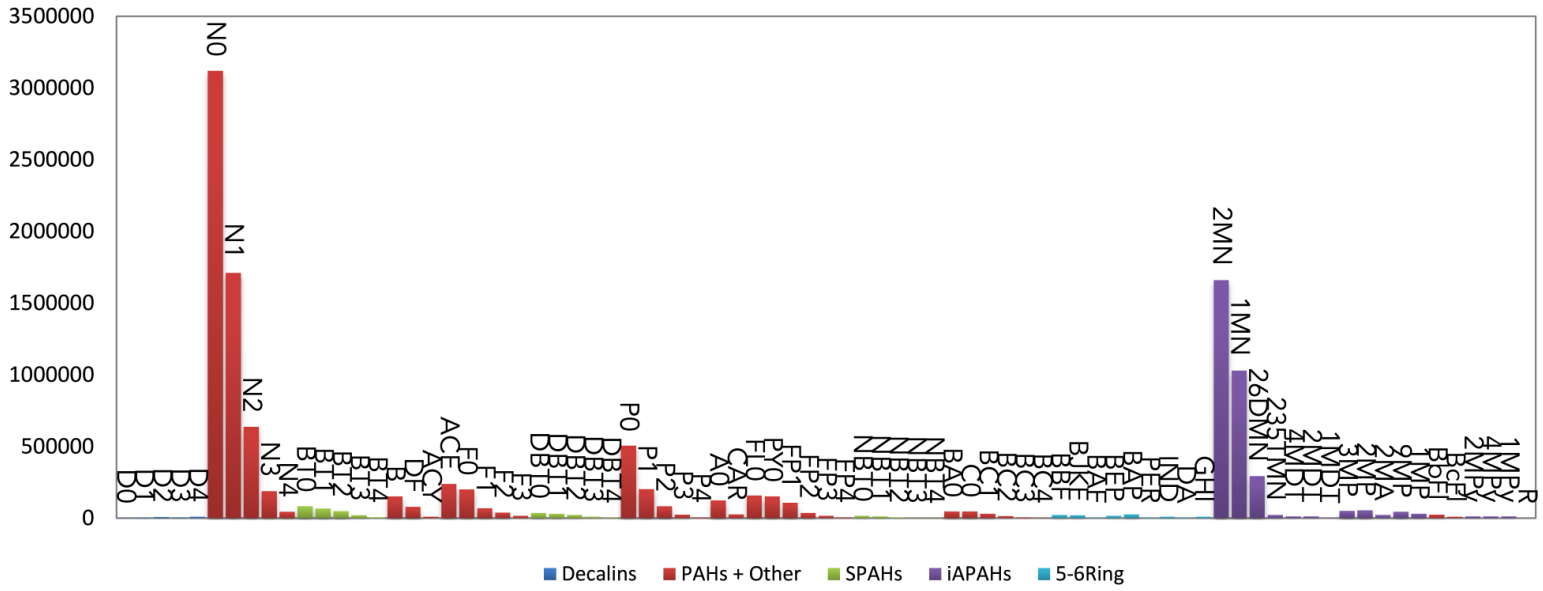

Figure 4 – Bar Graph of Alkylated PAHs - (L2104578-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor™

ANALYTICAL REPORT

Lab Number:	L2104678
Client:	ChemQuants, LLC 1338 Kenwood Rd. Santa Barbara, CA 93109
ATTN:	Mark Cejas
Phone:	(305) 342-2250
Project Name:	BELMONT CONFIRMATION DRILLING
Project Number:	0166
Report Date:	02/24/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2104678
Report Date: 02/24/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2104678-01	BT-03-S-41-20210129	SOIL	PHILADELPHIA, PA	01/29/21 11:20	01/29/21

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2104678
Project Number:	0166	**Report Date:**	02/24/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2104678
Project Number:	0166	**Report Date:**	02/24/21

Case Narrative (continued)

Report Submission

February 24, 2021: This final report includes the results of all requested analyses.

February 19, 2021: Preliminary report pending the decision regarding phase 2 analyses.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

PIANO Volatile Organics

L2104678-01D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L2104678-01D2: The sample was re-analyzed on dilution in order to quantify the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

Alkylated PAHs

L2104678-01D: The sample has elevated detection limits due to the dilution required by the sample matrix.

Saturated Hydrocarbons

L2104678-01: The sample was re-extracted with the method required holding time exceeded due to suspected solvent contamination in the original extraction. The results of both extractions are reported.

The WG1462898-1 Method Blank, associated with L2104678-01, has a concentration above the reporting limit for TPH (C9-C44). Since the associated sample concentrations are greater than 10x the blank concentration for this analyte, no corrective action is required.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 02/24/21

ORGANICS

VOLATILES

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D2 Date Collected: 01/29/21 11:20
Client ID: BT-03-S-41-20210129 Date Received: 01/29/21
Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260B
Analytical Date: 02/11/21 01:41
Analyst: RY
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
Naphthalene	4230000		ug/kg	141000	59000	1000
2-Methylnaphthalene	2020000		ug/kg	354000	93500	1000
1-Methylnaphthalene	1270000		ug/kg	354000	104000	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	109		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	91		70-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260B
Analytical Date: 02/11/21 00:29
Analyst: RY
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3-Methyl-1-butene	ND		ug/kg	14100	2100	100
Isopentane	8750	J	ug/kg	14100	2590	100
1-Pentene	ND		ug/kg	14100	2580	100
2-Methyl-1-Butene	5190	J	ug/kg	14100	2200	100
Pentane	5370	J	ug/kg	14100	4410	100
trans-2-Pentene	3060	J	ug/kg	14100	1910	100
Isoprene	ND		ug/kg	14100	2520	100
cis-2-Pentene	ND		ug/kg	14100	2280	100
Tertiary Butanol	ND		ug/kg	177000	22900	100
2,2-Dimethylbutane	ND		ug/kg	14100	4360	100
4-Methyl-1-pentene	ND		ug/kg	14100	2200	100
Cyclopentane	ND		ug/kg	14100	3670	100
2,3-Dimethylbutane	ND		ug/kg	14100	5840	100
2-Methylpentane	ND		ug/kg	14100	3830	100
Methyl tert butyl ether	ND		ug/kg	14100	2910	100
3-Methylpentane	ND		ug/kg	14100	2240	100
1-Hexene	ND		ug/kg	14100	1990	100
n-Hexane	ND		ug/kg	14100	2330	100
Isopropyl Ether	ND		ug/kg	14100	1710	100
trans-2-Hexene	ND		ug/kg	14100	1840	100
2-Methyl-2-pentene	ND		ug/kg	14100	2160	100
cis-2-Hexene	ND		ug/kg	14100	1920	100
Ethyl-Tert-Butyl-Ether	ND		ug/kg	14100	2140	100
2,2-Dimethylpentane	ND		ug/kg	14100	1900	100
Methylcyclopentane	4380	J	ug/kg	14100	1900	100
2,4-Dimethylpentane	ND		ug/kg	14100	1750	100
2,2,3-Trimethylbutane	ND		ug/kg	14100	1910	100
1,2-Dichloroethane	ND		ug/kg	14100	2090	100

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3,3-Dimethylpentane	ND		ug/kg	14100	2630	100
Cyclohexane	3850	J	ug/kg	14100	1750	100
2-Methylhexane	ND		ug/kg	14100	2230	100
Benzene	96800		ug/kg	14100	2160	100
2,3-Dimethylpentane	ND		ug/kg	14100	1870	100
Thiophene	ND		ug/kg	14100	2010	100
1,1-Dimethylcyclopentane	ND		ug/kg	14100	1700	100
3-Methylhexane	ND		ug/kg	14100	2260	100
Tertiary-Amyl Methyl Ether	ND		ug/kg	14100	1740	100
1,3-Dimethylcyclopentane (cis)	ND		ug/kg	14100	2130	100
3-Ethylpentane	ND		ug/kg	14100	2040	100
1-Heptene/1,2-DMCP (trans)	ND		ug/kg	28300	4140	100
Isooctane	ND		ug/kg	14100	1540	100
trans-3-Heptene	ND		ug/kg	14100	2200	100
Heptane	ND		ug/kg	14100	2460	100
trans-2-Heptene	ND		ug/kg	14100	1810	100
cis-2-Heptene	ND		ug/kg	14100	2740	100
2,2-Dimethylhexane	ND		ug/kg	14100	2050	100
Methylcyclohexane	4070	J	ug/kg	14100	1910	100
2,5-Dimethylhexane	ND		ug/kg	14100	2460	100
2,4-Dimethylhexane	ND		ug/kg	14100	1720	100
Ethylcyclopentane	ND		ug/kg	14100	1870	100
2,2,3-Trimethylpentane	ND		ug/kg	14100	2450	100
2,3,4-Trimethylpentane	ND		ug/kg	14100	1840	100
Xylene (Total)[1]	700000		ug/kg	14100	1480	100
2,3,3-Trimethylpentane	ND		ug/kg	14100	2810	100
2,3-Dimethylhexane	ND		ug/kg	14100	3430	100
2-Methylheptane	ND		ug/kg	14100	2390	100
4-Methylheptane	ND		ug/kg	14100	2430	100
3-Methylheptane	ND		ug/kg	14100	2020	100
3-Ethylhexane	ND		ug/kg	14100	2530	100
Toluene	8370	J	ug/kg	14100	1920	100
2-Methylthiophene	ND		ug/kg	14100	1200	100
1,4-Dimethylcyclohexane (trans)	ND		ug/kg	14100	1840	100
3-Methylthiophene	ND		ug/kg	14100	1650	100
1-Octene	ND		ug/kg	35400	2170	100
Octane	ND		ug/kg	14100	1660	100

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
1,2-Dimethylcyclohexane (trans)	ND		ug/kg	14100	2080	100
1,2-Dibromoethane	ND		ug/kg	14100	2260	100
cis-2-Octene	ND		ug/kg	14100	1620	100
Isopropylcyclopentane	ND		ug/kg	14100	2070	100
1,2-Dimethylcyclohexane (cis)	ND		ug/kg	14100	4110	100
2,5-Dimethylheptane	ND		ug/kg	14100	2370	100
3,5-Dimethylheptane	ND		ug/kg	14100	1990	100
3,3-Dimethylheptane	ND		ug/kg	14100	1710	100
1,1,4-Trimethylcyclohexane	ND		ug/kg	14100	1410	100
2,3-Dimethylheptane	ND		ug/kg	14100	1610	100
3,4-Dimethylheptane	ND		ug/kg	14100	2400	100
4-Methyloctane	ND		ug/kg	14100	2360	100
2-Methyloctane	ND		ug/kg	14100	3620	100
Ethylbenzene	263000		ug/kg	14100	1530	100
2-Ethylthiophene	ND		ug/kg	14100	1240	100
3-Methyloctane	ND		ug/kg	14100	1580	100
3,3-Diethylpentane	ND		ug/kg	14100	1650	100
p/m-Xylene	503000		ug/kg	28300	2690	100
1-Nonene	ND		ug/kg	35400	1910	100
trans-3-Nonene	ND		ug/kg	14100	1680	100
cis-3-Nonene	ND		ug/kg	14100	2640	100
Nonane (C9)	6940	J	ug/kg	14100	2200	100
Styrene	ND		ug/kg	14100	1430	100
o-Xylene	197000		ug/kg	14100	1480	100
2-Nonene	ND		ug/kg	35400	1800	100
Isopropylcyclohexane	ND		ug/kg	14100	1500	100
Isopropylbenzene	41300		ug/kg	14100	1320	100
3,3-Dimethyloctane	ND		ug/kg	14100	1430	100
n-Propylbenzene	24200		ug/kg	14100	1250	100
2-Methylnonane	ND		ug/kg	14100	2000	100
3-Methylnonane	ND		ug/kg	14100	1970	100
1-Methyl-3-Ethylbenzene	207000		ug/kg	14100	2230	100
1-Methyl-4-Ethylbenzene	110000		ug/kg	14100	1990	100
1,3,5-Trimethylbenzene	87400		ug/kg	14100	1630	100
1-Decene	ND		ug/kg	14100	1840	100
Isobutylcyclohexane	ND		ug/kg	14100	1150	100
1-Methyl-2-Ethylbenzene	38900		ug/kg	14100	1200	100

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
Decane (C10)	13100	J	ug/kg	14100	1920	100
tert-Butylbenzene	ND		ug/kg	14100	1490	100
1,2,4-Trimethylbenzene	265000		ug/kg	14100	1460	100
Isobutylbenzene	ND		ug/kg	14100	1910	100
sec-Butylbenzene	2330	J	ug/kg	14100	1830	100
1-Methyl-3-Isopropylbenzene	26100		ug/kg	14100	1820	100
1-Methyl-4-Isopropylbenzene	14400		ug/kg	14100	1500	100
1,2,3-Trimethylbenzene	85300		ug/kg	14100	1580	100
1-Methyl-2-Isopropylbenzene	ND		ug/kg	14100	1530	100
Indane	596000		ug/kg	14100	870.	100
1,3-Diethylbenzene	21200		ug/kg	14100	1760	100
1-Methyl-3-N-Propylbenzene	16300		ug/kg	14100	1430	100
Indene	8170	J	ug/kg	14100	820.	100
1-Methyl-4-N-Propylbenzene	9690	J	ug/kg	14100	1770	100
n-Butylbenzene	7330	J	ug/kg	14100	1390	100
1,2-Dimethyl-4-Ethylbenzene	47000		ug/kg	14100	1730	100
1,2-Diethylbenzene	ND		ug/kg	14100	2090	100
1-Methyl-2-N-Propylbenzene	5150	J	ug/kg	14100	1760	100
1,4-Dimethyl-2-Ethylbenzene	19300		ug/kg	14100	1320	100
Undecane	17200		ug/kg	14100	1570	100
1,3-Dimethyl-4-Ethylbenzene	21800		ug/kg	14100	1370	100
1,3-Dimethyl-5-Ethylbenzene	48000		ug/kg	14100	1670	100
1,3-Dimethyl-2-Ethylbenzene	4190	J	ug/kg	14100	1050	100
1,2-Dimethyl-3-Ethylbenzene	9560	J	ug/kg	14100	898.	100
1,2,4,5-Tetramethylbenzene	23400		ug/kg	14100	1100	100
1,2,3,5-Tetramethylbenzene	41500		ug/kg	14100	1070	100
N-Pentylbenzene	2760	J	ug/kg	14100	1760	100
1,2,3,4-Tetramethylbenzene	33700		ug/kg	14100	1510	100
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	14100	2020	100
Dodecane (C12)	19900	J	ug/kg	35400	4650	100
1,3,5-Triethylbenzene	ND		ug/kg	14100	2690	100
Naphthalene	5150000	E	ug/kg	14100	5900	100
Benzothiophene	136000		ug/kg	14100	7470	100
1,2,4-Triethylbenzene	ND		ug/kg	14100	2400	100
Hexylbenzene	ND		ug/kg	14100	2720	100
MMT	ND		ug/kg	35400	9090	100
Tridecane	17400	J	ug/kg	35400	9850	100

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
2-Methylnaphthalene	2660000	E	ug/kg	35400	9350	100
1-Methylnaphthalene	1640000	E	ug/kg	35400	10400	100
Tetradecane (C14)	13800	J	ug/kg	35400	4330	100
Pentadecane	ND		ug/kg	35400	7880	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	110		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	93		70-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 02/10/21 12:30
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1463565-5					
3-Methyl-1-butene	ND		ug/kg	100	14.8
Isopentane	ND		ug/kg	100	18.3
1-Pentene	ND		ug/kg	100	18.2
2-Methyl-1-Butene	ND		ug/kg	100	15.6
Pentane	ND		ug/kg	100	31.2
trans-2-Pentene	ND		ug/kg	100	13.5
Isoprene	ND		ug/kg	100	17.8
cis-2-Pentene	ND		ug/kg	100	16.1
Tertiary Butanol	ND		ug/kg	1250	162.
2,2-Dimethylbutane	ND		ug/kg	100	30.8
4-Methyl-1-pentene	ND		ug/kg	100	15.6
Cyclopentane	ND		ug/kg	100	26.0
2,3-Dimethylbutane	ND		ug/kg	100	41.3
2-Methylpentane	ND		ug/kg	100	27.1
Methyl tert butyl ether	ND		ug/kg	100	20.6
3-Methylpentane	ND		ug/kg	100	15.8
1-Hexene	ND		ug/kg	100	14.0
n-Hexane	ND		ug/kg	100	16.4
Isopropyl Ether	ND		ug/kg	100	12.1
trans-2-Hexene	ND		ug/kg	100	13.0
2-Methyl-2-pentene	ND		ug/kg	100	15.3
cis-2-Hexene	ND		ug/kg	100	13.6
Ethyl-Tert-Butyl-Ether	ND		ug/kg	100	15.2
2,2-Dimethylpentane	ND		ug/kg	100	13.4
Methylcyclopentane	ND		ug/kg	100	13.4
2,4-Dimethylpentane	ND		ug/kg	100	12.4
2,2,3-Trimethylbutane	ND		ug/kg	100	13.5
1,2-Dichloroethane	ND		ug/kg	100	14.8
3,3-Dimethylpentane	ND		ug/kg	100	18.6

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 02/10/21 12:30
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1463565-5					
Cyclohexane	ND		ug/kg	100	12.4
2-Methylhexane	ND		ug/kg	100	15.8
Benzene	ND		ug/kg	100	15.2
2,3-Dimethylpentane	ND		ug/kg	100	13.2
Thiophene	ND		ug/kg	100	14.2
1,1-Dimethylcyclopentane	ND		ug/kg	100	12.0
3-Methylhexane	ND		ug/kg	100	16.0
Tertiary-Amyl Methyl Ether	ND		ug/kg	100	12.3
1,3-Dimethylcyclopentane (cis)	ND		ug/kg	100	15.0
3-Ethylpentane	ND		ug/kg	100	14.4
1-Heptene/1,2-DMCP (trans)	ND		ug/kg	200	29.2
Isooctane	ND		ug/kg	100	10.9
trans-3-Heptene	ND		ug/kg	100	15.6
Heptane	ND		ug/kg	100	17.4
trans-2-Heptene	ND		ug/kg	100	12.8
cis-2-Heptene	ND		ug/kg	100	19.4
2,2-Dimethylhexane	ND		ug/kg	100	14.5
Methylcyclohexane	ND		ug/kg	100	13.5
2,5-Dimethylhexane	ND		ug/kg	100	17.4
2,4-Dimethylhexane	ND		ug/kg	100	12.2
Ethylcyclopentane	ND		ug/kg	100	13.2
2,2,3-Trimethylpentane	ND		ug/kg	100	17.4
2,3,4-Trimethylpentane	ND		ug/kg	100	13.0
Xylene (Total)[1]	ND		ug/kg	100	10.4
2,3,3-Trimethylpentane	ND		ug/kg	100	19.8
2,3-Dimethylhexane	ND		ug/kg	100	24.2
2-Methylheptane	ND		ug/kg	100	16.9
4-Methylheptane	ND		ug/kg	100	17.2
3-Methylheptane	ND		ug/kg	100	14.2

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 02/10/21 12:30
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1463565-5					
3-Ethylhexane	ND		ug/kg	100	17.9
Toluene	ND		ug/kg	100	13.6
2-Methylthiophene	ND		ug/kg	100	8.50
1,4-Dimethylcyclohexane (trans)	ND		ug/kg	100	13.0
3-Methylthiophene	ND		ug/kg	100	11.7
1-Octene	ND		ug/kg	250	15.4
Octane	ND		ug/kg	100	11.8
1,2-Dimethylcyclohexane (trans)	ND		ug/kg	100	14.7
1,2-Dibromoethane	ND		ug/kg	100	16.0
cis-2-Octene	ND		ug/kg	100	11.4
Isopropylcyclopentane	ND		ug/kg	100	14.6
1,2-Dimethylcyclohexane (cis)	ND		ug/kg	100	29.0
2,5-Dimethylheptane	ND		ug/kg	100	16.8
3,5-Dimethylheptane	ND		ug/kg	100	14.1
3,3-Dimethylheptane	ND		ug/kg	100	12.1
1,1,4-Trimethylcyclohexane	ND		ug/kg	100	9.95
2,3-Dimethylheptane	ND		ug/kg	100	11.4
3,4-Dimethylheptane	ND		ug/kg	100	17.0
4-Methyloctane	ND		ug/kg	100	16.7
2-Methyloctane	ND		ug/kg	100	25.6
Ethylbenzene	ND		ug/kg	100	10.8
2-Ethylthiophene	ND		ug/kg	100	8.80
3-Methyloctane	ND		ug/kg	100	11.2
3,3-Diethylpentane	ND		ug/kg	100	11.6
p/m-Xylene	ND		ug/kg	200	19.0
1-Nonene	ND		ug/kg	250	13.5
trans-3-Nonene	ND		ug/kg	100	11.8
cis-3-Nonene	ND		ug/kg	100	18.7
Nonane (C9)	ND		ug/kg	100	15.6

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 02/10/21 12:30
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1463565-5					
Styrene	ND		ug/kg	100	10.1
o-Xylene	ND		ug/kg	100	10.4
2-Nonene	ND		ug/kg	250	12.7
Isopropylcyclohexane	ND		ug/kg	100	10.6
Isopropylbenzene	ND		ug/kg	100	9.35
3,3-Dimethyloctane	ND		ug/kg	100	10.1
n-Propylbenzene	ND		ug/kg	100	8.85
2-Methylnonane	ND		ug/kg	100	14.2
3-Methylnonane	ND		ug/kg	100	14.0
1-Methyl-3-Ethylbenzene	ND		ug/kg	100	15.8
1-Methyl-4-Ethylbenzene	ND		ug/kg	100	14.1
1,3,5-Trimethylbenzene	ND		ug/kg	100	11.5
1-Decene	ND		ug/kg	100	13.0
Isobutylcyclohexane	ND		ug/kg	100	8.15
1-Methyl-2-Ethylbenzene	ND		ug/kg	100	8.50
Decane (C10)	ND		ug/kg	100	13.6
tert-Butylbenzene	ND		ug/kg	100	10.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	10.4
Isobutylbenzene	ND		ug/kg	100	13.5
sec-Butylbenzene	ND		ug/kg	100	13.0
1-Methyl-3-Isopropylbenzene	ND		ug/kg	100	12.9
1-Methyl-4-Isopropylbenzene	ND		ug/kg	100	10.6
1,2,3-Trimethylbenzene	ND		ug/kg	100	11.2
1-Methyl-2-Isopropylbenzene	ND		ug/kg	100	10.8
Indane	ND		ug/kg	100	6.15
1,3-Diethylbenzene	ND		ug/kg	100	12.4
1-Methyl-3-N-Propylbenzene	ND		ug/kg	100	10.1
Indene	ND		ug/kg	100	5.80
1-Methyl-4-N-Propylbenzene	ND		ug/kg	100	12.5

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 02/10/21 12:30
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1463565-5					
n-Butylbenzene	ND		ug/kg	100	9.85
1,2-Dimethyl-4-Ethylbenzene	ND		ug/kg	100	12.2
1,2-Diethylbenzene	ND		ug/kg	100	14.8
1-Methyl-2-N-Propylbenzene	ND		ug/kg	100	12.4
1,4-Dimethyl-2-Ethylbenzene	ND		ug/kg	100	9.35
Undecane	ND		ug/kg	100	11.1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/kg	100	9.70
1,3-Dimethyl-5-Ethylbenzene	ND		ug/kg	100	11.8
1,3-Dimethyl-2-Ethylbenzene	ND		ug/kg	100	7.45
1,2-Dimethyl-3-Ethylbenzene	ND		ug/kg	100	6.35
1,2,4,5-Tetramethylbenzene	ND		ug/kg	100	7.75
1,2,3,5-Tetramethylbenzene	ND		ug/kg	100	7.60
N-Pentylbenzene	ND		ug/kg	100	12.4
1,2,3,4-Tetramethylbenzene	ND		ug/kg	100	10.7
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	100	14.2
Dodecane (C12)	ND		ug/kg	250	32.8
1,3,5-Triethylbenzene	ND		ug/kg	100	19.0
Naphthalene	ND		ug/kg	100	41.8
Benzothiophene	ND		ug/kg	100	52.8
1,2,4-Triethylbenzene	ND		ug/kg	100	17.0
Hexylbenzene	ND		ug/kg	100	19.2
MMT	ND		ug/kg	250	64.3
Tridecane	ND		ug/kg	250	69.6
2-Methylnaphthalene	ND		ug/kg	250	66.1
1-Methylnaphthalene	ND		ug/kg	250	73.4
Tetradecane (C14)	ND		ug/kg	250	30.6
Pentadecane	ND		ug/kg	250	55.8

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 02/10/21 12:30
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1463565-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	106		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2104678

Report Date: 02/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1463565-3 WG1463565-4								
1-Pentene	98		98		50-130	0		30
Pentane	91		92		50-130	1		30
Tertiary Butanol	100		96		50-130	4		30
Cyclopentane	89		89		50-130	0		30
2-Methylpentane	93		92		50-130	1		30
Methyl tert butyl ether	100		100		50-130	0		30
3-Methylpentane	93		94		50-130	1		30
1-Hexene	92		92		50-130	0		30
n-Hexane	88		86		50-130	2		30
Isopropyl Ether	96		95		50-130	1		30
Ethyl-Tert-Butyl-Ether	98		97		50-130	1		30
Methylcyclopentane	98		99		50-130	1		30
2,4-Dimethylpentane	97		95		50-130	2		30
Cyclohexane	99		97		50-130	2		30
2-Methylhexane	97		96		50-130	1		30
Benzene	104		104		50-130	0		30
2,3-Dimethylpentane	95		95		50-130	0		30
3-Methylhexane	84		89		50-130	6		30
Tertiary-Amyl Methyl Ether	94		93		50-130	1		30
Isooctane	99		99		50-130	0		30
Heptane	102		101		50-130	1		30
Methylcyclohexane	99		99		50-130	0		30
2-Methylheptane	94		91		50-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2104678

Report Date: 02/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1463565-3 WG1463565-4								
3-Methylheptane	95		96		50-130	1		30
Toluene	99		100		50-130	1		30
Octane	99		99		50-130	0		30
Ethylbenzene	98		97		50-130	1		30
p/m-Xylene	101		101		50-130	0		30
Nonane (C9)	82		82		50-130	0		30
o-Xylene	97		96		50-130	1		30
Isopropylbenzene	97		96		50-130	1		30
n-Propylbenzene	98		96		50-130	2		30
1-Methyl-3-Ethylbenzene	96		95		50-130	1		30
1-Methyl-4-Ethylbenzene	99		97		50-130	2		30
1,3,5-Trimethylbenzene	92		91		50-130	1		30
1-Decene	81		80		50-130	1		30
1-Methyl-2-Ethylbenzene	92		90		50-130	2		30
Decane (C10)	98		98		50-130	0		30
1,2,4-Trimethylbenzene	89		88		50-130	1		30
sec-Butylbenzene	94		92		50-130	2		30
1-Methyl-4-N-Propylbenzene	81		80		50-130	1		30
n-Butylbenzene	86		85		50-130	1		30
1,2-Diethylbenzene	84		82		50-130	2		30
Undecane	92		93		50-130	1		30
N-Pentylbenzene	85		82		50-130	4		30
Dodecane (C12)	110		110		50-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2104678

Report Date: 02/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1463565-3 WG1463565-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	105		104		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	96		94		70-130

SEMIVOLATILES

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166
Lab Number: L2104678
Report Date: 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/09/21 05:00
Analyst: CC
Percent Solids: 78%

Extraction Method: ALPHA OP-013
Extraction Date: 02/02/21 21:49
Cleanup Method: EPA 3611B
Cleanup Date: 02/04/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Naphthalene	3120000		ug/kg	2870	825.	100
C1-Naphthalenes	1710000		ug/kg	2870	825.	100
2-Methylnaphthalene	1660000		ug/kg	2870	740.	100
1-Methylnaphthalene	1030000		ug/kg	2870	905.	100
Phenanthrene	505000		ug/kg	2870	951.	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	91		50-130
Phenanthrene-d10	119		50-130
Benzo(a)pyrene-d12	128		50-130

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166
Lab Number: L2104678
Report Date: 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/09/21 06:25
Analyst: CC
Percent Solids: 78%

Extraction Method: ALPHA OP-013
Extraction Date: 02/02/21 21:49
Cleanup Method: EPA 3611B
Cleanup Date: 02/04/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
cis/trans-Decalin	2060		ug/kg	144	72.1	10
C1-Decalins	4810		ug/kg	287	72.1	10
C2-Decalins	8220		ug/kg	287	72.1	10
C3-Decalins	6270		ug/kg	287	72.1	10
C4-Decalins	10200		ug/kg	287	72.1	10
Naphthalene	2890000	E	ug/kg	287	82.5	10
C1-Naphthalenes	1660000	E	ug/kg	287	82.5	10
C2-Naphthalenes	638000		ug/kg	287	82.5	10
C3-Naphthalenes	188000		ug/kg	287	82.5	10
C4-Naphthalenes	45500		ug/kg	287	82.5	10
2-Methylnaphthalene	1630000	E	ug/kg	287	74.0	10
1-Methylnaphthalene	984000	E	ug/kg	287	90.5	10
Benzothiophene	83300		ug/kg	287	89.9	10
C1-Benzo(b)thiophenes	67200		ug/kg	287	89.9	10
C2-Benzo(b)thiophenes	48700		ug/kg	287	89.9	10
C3-Benzo(b)thiophenes	20600		ug/kg	287	89.9	10
C4-Benzo(b)thiophenes	6920		ug/kg	287	89.9	10
Biphenyl	151000		ug/kg	287	88.7	10
2,6-Dimethylnaphthalene	294000		ug/kg	287	68.2	10
Dibenzofuran	79000		ug/kg	287	90.4	10
Acenaphthylene	10900		ug/kg	287	54.8	10
Acenaphthene	238000		ug/kg	287	50.6	10
2,3,5-Trimethylnaphthalene	22100		ug/kg	287	47.0	10
Fluorene	200000		ug/kg	287	76.6	10
C1-Fluorenes	69600		ug/kg	287	76.6	10
C2-Fluorenes	38900		ug/kg	287	76.6	10
C3-Fluorenes	17000		ug/kg	287	76.6	10
Dibenzothiophene	37200		ug/kg	287	79.2	10

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	12300		ug/kg	287	79.2	10
2/3-Methyldibenzothiophene(2MDT)	11600		ug/kg	287	79.2	10
1-Methyldibenzothiophene(1MDT)	3350		ug/kg	287	79.2	10
C1-Dibenzothiophenes BS	31500		ug/kg	287	79.2	10
C2-Dibenzothiophenes	22300		ug/kg	287	79.2	10
C3-Dibenzothiophenes	10800		ug/kg	287	79.2	10
C4-Dibenzothiophenes	3750		ug/kg	287	79.2	10
Phenanthrene	425000	E	ug/kg	287	95.1	10
3-Methylphenanthrene (3MP)	49900		ug/kg	287	95.1	10
2-Methylphenanthrene (2MP)	54300		ug/kg	287	95.1	10
2-Methylanthracene (2MA)	23000		ug/kg	287	95.1	10
9/4-Methylphenanthrene (9MP)	44100		ug/kg	287	95.1	10
1-Methylphenanthrene (1MP)	31000		ug/kg	287	95.1	10
C1-Phenanthrenes/Anthracenes	202000		ug/kg	287	95.1	10
C2-Phenanthrenes/Anthr BS	84200		ug/kg	287	95.1	10
C3-Phenanthrenes/Anthracenes	24600		ug/kg	287	95.1	10
C4-Phenanthrenes/Anthracenes	6620		ug/kg	287	95.1	10
Retene	ND		ug/kg	287	70.4	10
Anthracene	123000		ug/kg	287	59.2	10
Carbazole	25800		ug/kg	287	93.9	10
1-Methylphenanthrene	44700		ug/kg	287	75.8	10
Fluoranthene	158000		ug/kg	287	91.2	10
Benzo(b)fluorene	24800		ug/kg	287	83.2	10
7H-Benzo(c)fluorene	10600		ug/kg	287	83.2	10
2-Methylpyrene[1]	13300		ug/kg	287	75.5	10
4-Methylpyrene[1]	11700		ug/kg	287	75.5	10
1-Methylpyrene[1]	11500		ug/kg	287	75.5	10
Pyrene	152000		ug/kg	287	75.5	10
C1-Fluoranthenes/Pyrenes	108000		ug/kg	287	75.5	10
C2-Fluoranthenes/Pyrenes	36800		ug/kg	287	75.5	10
C3-Fluoranthenes/Pyrenes	16100		ug/kg	287	75.5	10
C4-Fluoranthenes/Pyrenes	6010		ug/kg	287	75.5	10
Naphthobenzothiophenes	16600		ug/kg	287	80.3	10
C1-Naphthobenzothiophenes	12000		ug/kg	287	80.3	10
C2-Naphthobenzothiophenes	6560		ug/kg	287	80.3	10
C3-Naphthobenzothiophenes	2980		ug/kg	287	80.3	10
C4-Naphthobenzothiophenes	1660		ug/kg	287	80.3	10

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 D
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs/Biomarkers - Mansfield Lab						
Benz(a)anthracene	46600		ug/kg	287	58.5	10
Chrysene/Triphenylene	46100		ug/kg	287	58.0	10
C1-Chrysenes	31200		ug/kg	287	58.0	10
C2-Chrysenes BS	13900		ug/kg	287	58.0	10
C3-Chrysenes	6870		ug/kg	287	58.0	10
C4-Chrysenes	3300		ug/kg	287	58.0	10
Benzo(b)fluoranthene	23400		ug/kg	287	74.7	10
Benzo(j)+(k)fluoranthene	20300		ug/kg	287	57.0	10
Benzo(a)fluoranthene	4240		ug/kg	287	57.0	10
Benzo(e)pyrene	17200		ug/kg	287	59.2	10
Benzo(a)pyrene	27000		ug/kg	287	82.0	10
Perylene	5430		ug/kg	287	55.4	10
Indeno(1,2,3-cd)pyrene	10700		ug/kg	287	77.9	10
Dibenz(a,h)+(a,c)anthracene	4140		ug/kg	287	77.6	10
Benzo(g,h,i)perylene	10100		ug/kg	287	76.3	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	82		50-130
Phenanthrene-d10	99		50-130
Benzo(a)pyrene-d12	99		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/05/21 14:51
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 02/02/21 21:49
Cleanup Method: EPA 3611B
Cleanup Date: 02/04/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1461056-1					
cis/trans-Decalin	ND		ug/kg	0.500	0.251
C1-Decalins	ND		ug/kg	1.00	0.251
C2-Decalins	ND		ug/kg	1.00	0.251
C3-Decalins	ND		ug/kg	1.00	0.251
C4-Decalins	ND		ug/kg	1.00	0.251
Naphthalene	0.871	J	ug/kg	1.00	0.287
C1-Naphthalenes	0.393	J	ug/kg	1.00	0.287
C2-Naphthalenes	ND		ug/kg	1.00	0.287
C3-Naphthalenes	ND		ug/kg	1.00	0.287
C4-Naphthalenes	ND		ug/kg	1.00	0.287
2-Methylnaphthalene	0.306	J	ug/kg	1.00	0.258
1-Methylnaphthalene	ND		ug/kg	1.00	0.315
Benzothiophene	ND		ug/kg	1.00	0.313
C1-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C2-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C3-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C4-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
Biphenyl	ND		ug/kg	1.00	0.309
2,6-Dimethylnaphthalene	ND		ug/kg	1.00	0.238
Dibenzofuran	ND		ug/kg	1.00	0.315
Acenaphthylene	ND		ug/kg	1.00	0.191
Acenaphthene	ND		ug/kg	1.00	0.176
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.00	0.164
Fluorene	ND		ug/kg	1.00	0.267
C1-Fluorenes	ND		ug/kg	1.00	0.267
C2-Fluorenes	ND		ug/kg	1.00	0.267
C3-Fluorenes	ND		ug/kg	1.00	0.267
Dibenzothiophene	ND		ug/kg	1.00	0.276
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.00	0.276

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/05/21 14:51
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 02/02/21 21:49
Cleanup Method: EPA 3611B
Cleanup Date: 02/04/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1461056-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.00	0.276
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.00	0.276
C1-Dibenzothiophenes BS	ND		ug/kg	1.00	0.276
C2-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C3-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C4-Dibenzothiophenes	ND		ug/kg	1.00	0.276
Phenanthrene	ND		ug/kg	1.00	0.331
3-Methylphenanthrene (3MP)	ND		ug/kg	1.00	0.331
2-Methylphenanthrene (2MP)	ND		ug/kg	1.00	0.331
2-Methylanthracene (2MA)	ND		ug/kg	1.00	0.331
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.00	0.331
1-Methylphenanthrene (1MP)	ND		ug/kg	1.00	0.331
C1-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C2-Phenanthrenes/Anthr BS	ND		ug/kg	1.00	0.331
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
Retene	ND		ug/kg	1.00	0.245
Anthracene	ND		ug/kg	1.00	0.206
Carbazole	ND		ug/kg	1.00	0.327
1-Methylphenanthrene	ND		ug/kg	1.00	0.264
Fluoranthene	ND		ug/kg	1.00	0.318
Benzo(b)fluorene	ND		ug/kg	1.00	0.290
7H-Benzo(c)fluorene	ND		ug/kg	1.00	0.290
2-Methylpyrene[1]	ND		ug/kg	1.00	0.263
4-Methylpyrene[1]	ND		ug/kg	1.00	0.263
1-Methylpyrene[1]	ND		ug/kg	1.00	0.263
Pyrene	ND		ug/kg	1.00	0.263
C1-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 02/05/21 14:51
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 02/02/21 21:49
Cleanup Method: EPA 3611B
Cleanup Date: 02/04/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs/Biomarkers - Mansfield Lab for sample(s): 01 Batch: WG1461056-1					
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C1-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C2-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C3-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C4-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
Benz(a)anthracene	ND		ug/kg	1.00	0.204
Chrysene/Triphenylene	ND		ug/kg	1.00	0.202
C1-Chrysenes	ND		ug/kg	1.00	0.202
C2-Chrysenes BS	ND		ug/kg	1.00	0.202
C3-Chrysenes	ND		ug/kg	1.00	0.202
C4-Chrysenes	ND		ug/kg	1.00	0.202
Benzo(b)fluoranthene	ND		ug/kg	1.00	0.260
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(a)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(e)pyrene	ND		ug/kg	1.00	0.206
Benzo(a)pyrene	ND		ug/kg	1.00	0.285
Perylene	ND		ug/kg	1.00	0.193
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.00	0.271
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.00	0.270
Benzo(g,h,i)perylene	ND		ug/kg	1.00	0.266

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	67		50-130
Phenanthrene-d10	80		50-130
Benzo(a)pyrene-d12	73		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2104678

Report Date: 02/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1461056-2 WG1461056-3								
Naphthalene	67		67		50-130	0		30
2-Methylnaphthalene	72		74		50-130	3		30
Acenaphthylene	74		79		50-130	7		30
Acenaphthene	80		79		50-130	1		30
Fluorene	82		82		50-130	0		30
Phenanthrene	82		87		50-130	6		30
Anthracene	91		96		50-130	5		30
Fluoranthene	89		100		50-130	12		30
Pyrene	88		97		50-130	10		30
Benz(a)anthracene	82		84		50-130	2		30
Chrysene/Triphenylene	80		78		50-130	3		30
Benzo(b)fluoranthene	70		76		50-130	8		30
Benzo(j)+(k)fluoranthene	73		77		50-130	5		30
Benzo(a)pyrene	66		75		50-130	13		30
Indeno(1,2,3-cd)pyrene	60		77		50-130	25		30
Dibenz(a,h)+(a,c)anthracene	67		86		50-130	25		30
Benzo(g,h,i)perylene	61		71		50-130	15		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2104678

Report Date: 02/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs/Biomarkers - Mansfield Lab Associated sample(s): 01 Batch: WG1461056-2 WG1461056-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	70		69		50-130
Phenanthrene-d10	89		96		50-130
Benzo(a)pyrene-d12	82		95		50-130

PETROLEUM HYDROCARBONS

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166
Lab Number: L2104678
Report Date: 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 02/10/21 20:47
Analyst: WR
Percent Solids: 78%

Extraction Method: ALPHA OP-013
Extraction Date: 02/08/21 21:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	10.6		mg/kg	3.34	0.991	1
n-Decane (C10)	49.1		mg/kg	3.34	1.06	1
n-Undecane (C11)	34.1		mg/kg	3.34	0.998	1
n-Dodecane (C12)	38.9		mg/kg	3.34	0.728	1
n-Tridecane (C13)	21.4		mg/kg	3.34	0.917	1
2,6,10-Trimethyldodecane (1380)	7.60		mg/kg	3.34	0.502	1
n-Tetradecane (C14)	27.6		mg/kg	3.34	0.502	1
2,6,10-Trimethyltridecane (1470)	18.9		mg/kg	3.34	0.399	1
n-Pentadecane (C15)	270		mg/kg	3.34	0.399	1
n-Hexadecane (C16)	35.1		mg/kg	3.34	0.503	1
Norpristane (1650)	31.5		mg/kg	3.34	1.10	1
n-Heptadecane (C17)	20.6		mg/kg	3.34	1.10	1
Pristane	11.6		mg/kg	3.34	0.714	1
n-Octadecane (C18)	505		mg/kg	3.34	0.671	1
Phytane	122		mg/kg	3.34	0.420	1
n-Nonadecane (C19)	7.06		mg/kg	3.34	0.859	1
n-Eicosane (C20)	5.18		mg/kg	3.34	0.473	1
n-Heneicosane (C21)	2.70	J	mg/kg	3.34	0.400	1
n-Docosane (C22)	5.30		mg/kg	3.34	0.348	1
n-Tricosane (C23)	16.9		mg/kg	3.34	0.425	1
n-Tetracosane (C24)	ND		mg/kg	3.34	0.559	1
n-Pentacosane (C25)	69.7		mg/kg	3.34	1.77	1
n-Hexacosane (C26)	4.38		mg/kg	3.34	0.491	1
n-Heptacosane (C27)	ND		mg/kg	3.34	0.402	1
n-Octacosane (C28)	ND		mg/kg	3.34	0.717	1
n-Nonacosane (C29)	ND		mg/kg	3.34	2.23	1
n-Triacontane (C30)	ND		mg/kg	3.34	0.383	1
n-Hentriacontane (C31)	ND		mg/kg	3.34	0.474	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 Date Collected: 01/29/21 11:20

Client ID: BT-03-S-41-20210129 Date Received: 01/29/21

Sample Location: PHILADELPHIA, PA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	3.34	0.421	1
n-Tritriacontane (C33)	ND		mg/kg	3.34	0.470	1
n-Tetratriacontane (C34)	ND		mg/kg	3.34	0.532	1
n-Pentatriacontane (C35)	ND		mg/kg	3.34	0.583	1
n-Hexatriacontane (C36)	ND		mg/kg	3.34	0.665	1
n-Heptatriacontane (C37)	ND		mg/kg	3.34	0.742	1
n-Octatriacontane (C38)	ND		mg/kg	3.34	0.779	1
n-Nonatriacontane (C39)	ND		mg/kg	3.34	1.08	1
n-Tetracontane (C40)	ND		mg/kg	3.34	1.08	1
Total Petroleum Hydrocarbons (C9-C44)	21500		mg/kg	110	24.3	1
Total Saturated Hydrocarbons	1320	J	mg/kg	3.34	0.348	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	93		50-130
d50-Tetracosane	111		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 RE
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 02/19/21 01:57
Analyst: WR
Percent Solids: 78%

Extraction Method: ALPHA OP-013
Extraction Date: 02/15/21 16:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	13.3		mg/kg	3.06	0.907	1
n-Decane (C10)	56.2		mg/kg	3.06	0.975	1
n-Undecane (C11)	37.9		mg/kg	3.06	0.913	1
n-Dodecane (C12)	40.5		mg/kg	3.06	0.666	1
n-Tridecane (C13)	17.0		mg/kg	3.06	0.839	1
2,6,10-Trimethyldodecane (1380)	8.30		mg/kg	3.06	0.460	1
n-Tetradecane (C14)	20.5		mg/kg	3.06	0.460	1
2,6,10-Trimethyltridecane (1470)	19.5		mg/kg	3.06	0.365	1
n-Pentadecane (C15)	260		mg/kg	3.06	0.365	1
n-Hexadecane (C16)	266		mg/kg	3.06	0.460	1
Norpristane (1650)	35.6		mg/kg	3.06	1.01	1
n-Heptadecane (C17)	21.1		mg/kg	3.06	1.01	1
Pristane	13.0		mg/kg	3.06	0.653	1
n-Octadecane (C18)	560		mg/kg	3.06	0.614	1
Phytane	134		mg/kg	3.06	0.384	1
n-Nonadecane (C19)	7.41		mg/kg	3.06	0.786	1
n-Eicosane (C20)	5.51		mg/kg	3.06	0.433	1
n-Heneicosane (C21)	2.89	J	mg/kg	3.06	0.366	1
n-Docosane (C22)	5.37		mg/kg	3.06	0.319	1
n-Tricosane (C23)	16.8		mg/kg	3.06	0.389	1
n-Tetracosane (C24)	ND		mg/kg	3.06	0.511	1
n-Pentacosane (C25)	76.7		mg/kg	3.06	1.62	1
n-Hexacosane (C26)	2.56	J	mg/kg	3.06	0.449	1
n-Heptacosane (C27)	5.10		mg/kg	3.06	0.368	1
n-Octacosane (C28)	ND		mg/kg	3.06	0.656	1
n-Nonacosane (C29)	24.2		mg/kg	3.06	2.04	1
n-Triacontane (C30)	5.98		mg/kg	3.06	0.351	1
n-Hentriacontane (C31)	2.15	J	mg/kg	3.06	0.433	1

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01 RE
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	1.76	J	mg/kg	3.06	0.385	1
n-Tritriacontane (C33)	ND		mg/kg	3.06	0.430	1
n-Tetratriacontane (C34)	ND		mg/kg	3.06	0.486	1
n-Pentatriacontane (C35)	ND		mg/kg	3.06	0.534	1
n-Hexatriacontane (C36)	ND		mg/kg	3.06	0.608	1
n-Heptatriacontane (C37)	ND		mg/kg	3.06	0.679	1
n-Octatriacontane (C38)	ND		mg/kg	3.06	0.713	1
n-Nonatriacontane (C39)	ND		mg/kg	3.06	0.993	1
n-Tetracontane (C40)	ND		mg/kg	3.06	0.993	1
Total Petroleum Hydrocarbons (C9-C44)	24500		mg/kg	101	22.2	1
Total Saturated Hydrocarbons	1660	J	mg/kg	3.06	0.319	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	95		50-130
d50-Tetracosane	105		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/10/21 11:48
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 02/08/21 21:23

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1462898-1					
n-Nonane (C9)	ND		mg/kg	0.067	0.020
n-Decane (C10)	ND		mg/kg	0.067	0.021
n-Undecane (C11)	ND		mg/kg	0.067	0.020
n-Dodecane (C12)	ND		mg/kg	0.067	0.015
n-Tridecane (C13)	ND		mg/kg	0.067	0.018
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.067	0.010
n-Tetradecane (C14)	ND		mg/kg	0.067	0.010
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.067	0.008
n-Pentadecane (C15)	ND		mg/kg	0.067	0.008
n-Hexadecane (C16)	ND		mg/kg	0.067	0.010
Norpristane (1650)	ND		mg/kg	0.067	0.022
n-Heptadecane (C17)	ND		mg/kg	0.067	0.022
Pristane	ND		mg/kg	0.067	0.014
n-Octadecane (C18)	ND		mg/kg	0.067	0.013
Phytane	ND		mg/kg	0.067	0.008
n-Nonadecane (C19)	ND		mg/kg	0.067	0.017
n-Eicosane (C20)	ND		mg/kg	0.067	0.009
n-Heneicosane (C21)	ND		mg/kg	0.067	0.008
n-Docosane (C22)	ND		mg/kg	0.067	0.007
n-Tricosane (C23)	ND		mg/kg	0.067	0.008
n-Tetracosane (C24)	ND		mg/kg	0.067	0.011
n-Pentacosane (C25)	ND		mg/kg	0.067	0.035
n-Hexacosane (C26)	ND		mg/kg	0.067	0.010
n-Heptacosane (C27)	ND		mg/kg	0.067	0.008
n-Octacosane (C28)	ND		mg/kg	0.067	0.014
n-Nonacosane (C29)	ND		mg/kg	0.067	0.044
n-Triacontane (C30)	ND		mg/kg	0.067	0.008
n-Hentriacontane (C31)	ND		mg/kg	0.067	0.009
n-Dotriacontane (C32)	ND		mg/kg	0.067	0.008

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/10/21 11:48
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 02/08/21 21:23

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1462898-1					
n-Tritriacontane (C33)	ND		mg/kg	0.067	0.009
n-Tetratriacontane (C34)	ND		mg/kg	0.067	0.011
n-Pentatriacontane (C35)	ND		mg/kg	0.067	0.012
n-Hexatriacontane (C36)	ND		mg/kg	0.067	0.013
n-Heptatriacontane (C37)	ND		mg/kg	0.067	0.015
n-Octatriacontane (C38)	ND		mg/kg	0.067	0.016
n-Nonatriacontane (C39)	ND		mg/kg	0.067	0.022
n-Tetracontane (C40)	ND		mg/kg	0.067	0.022
Total Petroleum Hydrocarbons (C9-C44)	3.89		mg/kg	2.20	0.484
Total Saturated Hydrocarbons	ND		mg/kg	0.067	0.007

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	88		50-130
d50-Tetracosane	91		50-130

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/18/21 17:02
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 02/15/21 16:58

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1464940-1					
n-Nonane (C9)	ND		mg/kg	0.067	0.020
n-Decane (C10)	ND		mg/kg	0.067	0.021
n-Undecane (C11)	ND		mg/kg	0.067	0.020
n-Dodecane (C12)	ND		mg/kg	0.067	0.015
n-Tridecane (C13)	ND		mg/kg	0.067	0.018
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	0.067	0.010
n-Tetradecane (C14)	ND		mg/kg	0.067	0.010
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	0.067	0.008
n-Pentadecane (C15)	ND		mg/kg	0.067	0.008
n-Hexadecane (C16)	ND		mg/kg	0.067	0.010
Norpristane (1650)	ND		mg/kg	0.067	0.022
n-Heptadecane (C17)	ND		mg/kg	0.067	0.022
Pristane	ND		mg/kg	0.067	0.014
n-Octadecane (C18)	ND		mg/kg	0.067	0.013
Phytane	ND		mg/kg	0.067	0.008
n-Nonadecane (C19)	ND		mg/kg	0.067	0.017
n-Eicosane (C20)	ND		mg/kg	0.067	0.009
n-Heneicosane (C21)	ND		mg/kg	0.067	0.008
n-Docosane (C22)	ND		mg/kg	0.067	0.007
n-Tricosane (C23)	ND		mg/kg	0.067	0.008
n-Tetracosane (C24)	ND		mg/kg	0.067	0.011
n-Pentacosane (C25)	ND		mg/kg	0.067	0.035
n-Hexacosane (C26)	ND		mg/kg	0.067	0.010
n-Heptacosane (C27)	ND		mg/kg	0.067	0.008
n-Octacosane (C28)	ND		mg/kg	0.067	0.014
n-Nonacosane (C29)	ND		mg/kg	0.067	0.044
n-Triacontane (C30)	ND		mg/kg	0.067	0.008
n-Hentriacontane (C31)	ND		mg/kg	0.067	0.009
n-Dotriacontane (C32)	ND		mg/kg	0.067	0.008

Project Name: BELMONT CONFIRMATION DRILLING **Lab Number:** L2104678

Project Number: 0166 **Report Date:** 02/24/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 02/18/21 17:02
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 02/15/21 16:58

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1464940-1					
n-Tritriacontane (C33)	ND		mg/kg	0.067	0.009
n-Tetratriacontane (C34)	ND		mg/kg	0.067	0.011
n-Pentatriacontane (C35)	ND		mg/kg	0.067	0.012
n-Hexatriacontane (C36)	ND		mg/kg	0.067	0.013
n-Heptatriacontane (C37)	ND		mg/kg	0.067	0.015
n-Octatriacontane (C38)	ND		mg/kg	0.067	0.016
n-Nonatriacontane (C39)	ND		mg/kg	0.067	0.022
n-Tetracontane (C40)	ND		mg/kg	0.067	0.022
Total Petroleum Hydrocarbons (C9-C44)	1.68	J	mg/kg	2.20	0.484
Total Saturated Hydrocarbons	ND		mg/kg	0.067	0.007

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	97		50-130
d50-Tetracosane	96		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2104678

Report Date: 02/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01 Batch: WG1462898-2 WG1462898-3								
Nonane (C9)	75		74		50-130	1		30
n-Decane (C10)	83		83		50-130	0		30
n-Dodecane (C12)	91		93		50-130	2		30
n-Tetradecane (C14)	90		90		50-130	0		30
n-Hexadecane (C16)	99		100		50-130	1		30
n-Octadecane (C18)	106		104		50-130	2		30
n-Nonadecane (C19)	97		96		50-130	1		30
n-Eicosane (C20)	96		95		50-130	1		30
n-Docosane (C22)	98		97		50-130	1		30
n-Tetracosane (C24)	101		100		50-130	1		30
n-Hexacosane (C26)	102		101		50-130	1		30
n-Octacosane (C28)	100		99		50-130	1		30
n-Triacontane (C30)	102		101		50-130	1		30
n-Hexatriacontane (C36)	91		91		50-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	93		92		50-130
d50-Tetracosane	96		95		50-130

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Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

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Report Date: 02/24/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01 Batch: WG1464940-2 WG1464940-3								
Nonane (C9)	73		72		50-130	1		30
n-Decane (C10)	79		79		50-130	0		30
n-Dodecane (C12)	81		93		50-130	14		30
n-Tetradecane (C14)	90		92		50-130	2		30
n-Hexadecane (C16)	100		102		50-130	2		30
n-Octadecane (C18)	104		106		50-130	2		30
n-Nonadecane (C19)	96		97		50-130	1		30
n-Eicosane (C20)	100		101		50-130	1		30
n-Docosane (C22)	98		99		50-130	1		30
n-Tetracosane (C24)	102		101		50-130	1		30
n-Hexacosane (C26)	102		102		50-130	0		30
n-Octacosane (C28)	100		101		50-130	1		30
n-Triacontane (C30)	101		102		50-130	1		30
n-Hexatriacontane (C36)	89		88		50-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	99		100		50-130
d50-Tetracosane	97		98		50-130

INORGANICS
&
MISCELLANEOUS

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166
Lab Number: L2104678
Report Date: 02/24/21

SAMPLE RESULTS

Lab ID: L2104678-01
Client ID: BT-03-S-41-20210129
Sample Location: PHILADELPHIA, PA
Sample Depth:
Matrix: Soil

Date Collected: 01/29/21 11:20
Date Received: 01/29/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	78.4		%	0.100	0.100	1	-	02/02/21 14:36	121,2540G	

Lab Duplicate Analysis

Batch Quality Control

Project Name: BELMONT CONFIRMATION DRILLING

Project Number: 0166

Lab Number: L2104678

Report Date: 02/24/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1460923-1 QC Sample: L2104472-01 Client ID: DUP Sample						
Solids, Total	59.9	59.6	%	1		10

Project Name: BELMONT CONFIRMATION DRILLING
Project Number: 0166

Lab Number: L2104678
Report Date: 02/24/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2104678-01A	Vial MeOH preserved	A	NA		2.4	Y	Absent		A2-PIANO8260H(14)
L2104678-01A1	Vial MeOH preserved	A	NA		2.4	Y	Absent		A2-PIANO8260H(14)
L2104678-01B	Vial water preserved	A	NA		2.4	Y	Absent	30-JAN-21 11:37	A2-PIANO8260H(14)
L2104678-01B1	Vial water preserved	A	NA		2.4	Y	Absent	30-JAN-21 11:37	A2-PIANO8260H(14)
L2104678-01C	Vial water preserved	A	NA		2.4	Y	Absent	30-JAN-21 11:37	A2-PIANO8260H(14)
L2104678-01C1	Vial water preserved	A	NA		2.4	Y	Absent		A2-PIANO8260H(14)
L2104678-01D	Glass 250ml/8oz unpreserved	A	NA		2.4	Y	Absent		A2-SHC(14),A2-ALKPAH/BIOMARKER(14)
L2104678-01E	Plastic 2oz unpreserved for TS	A	NA		2.4	Y	Absent		A2-TS(7)
L2104678-01F	Glass 120ml/4oz unpreserved	A	NA		2.4	Y	Absent		HOLD-SUB()
L2104678-01G	Plastic 120ml unpreserved	A	NA		2.4	Y	Absent		HOLD-SUB()

Container Comments

L2104678-01C1	recieved broken

*Values in parentheses indicate holding time in days

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2104678
Project Number:	0166	**Report Date:**	02/24/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2104678
Project Number:	0166	**Report Date:**	02/24/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2104678
Project Number:	0166	**Report Date:**	02/24/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name:	BELMONT CONFIRMATION DRILLING	**Lab Number:**	L2104678
Project Number:	0166	**Report Date:**	02/24/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/30/21

ALPHA Job #: L2104678

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Dr Suite 140 West Chester, PA 19380
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.klingbeil@stantec.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Belmont Drilling Sampling
Project Location: Philadelphia, PA
Project #: 213402797
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO # 213402797

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

⊗ = analyze pending authorization

ANALYSIS: Alkylated PAH (8270D-SIM(M)) + Biomarkers; PIANO Volatile Organics; EPA 8260B/5035 DCM; Saturated Hydrocarbons; EPA 8015D(M); Subcontract-organic lead by 8270; Total Solids SM2540

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Alkylated PAH (8270D-SIM(M))	Biomarkers	EPA 8260B/5035 DCM	Saturated Hydrocarbons	EPA 8015D(M)	Subcontract-organic lead by 8270	Total Solids SM2540	Sample Specific Comments	TOTAL # BOTTLES
4678-01	BT-03-S-41-20210129	1/29/21	1120	SO	DPH	⊗	⊗	⊗	⊗	⊗				

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	1/29/21 1133	[signature]	1/29/21 1133
[signature]	1/29/21	[signature]	1/29/21 2200
[signature] AAC	1/30/21 0750	[signature]	1/30/21 02:50
[signature]	1.30.21 9:36	[signature]	1/30/21 09:36

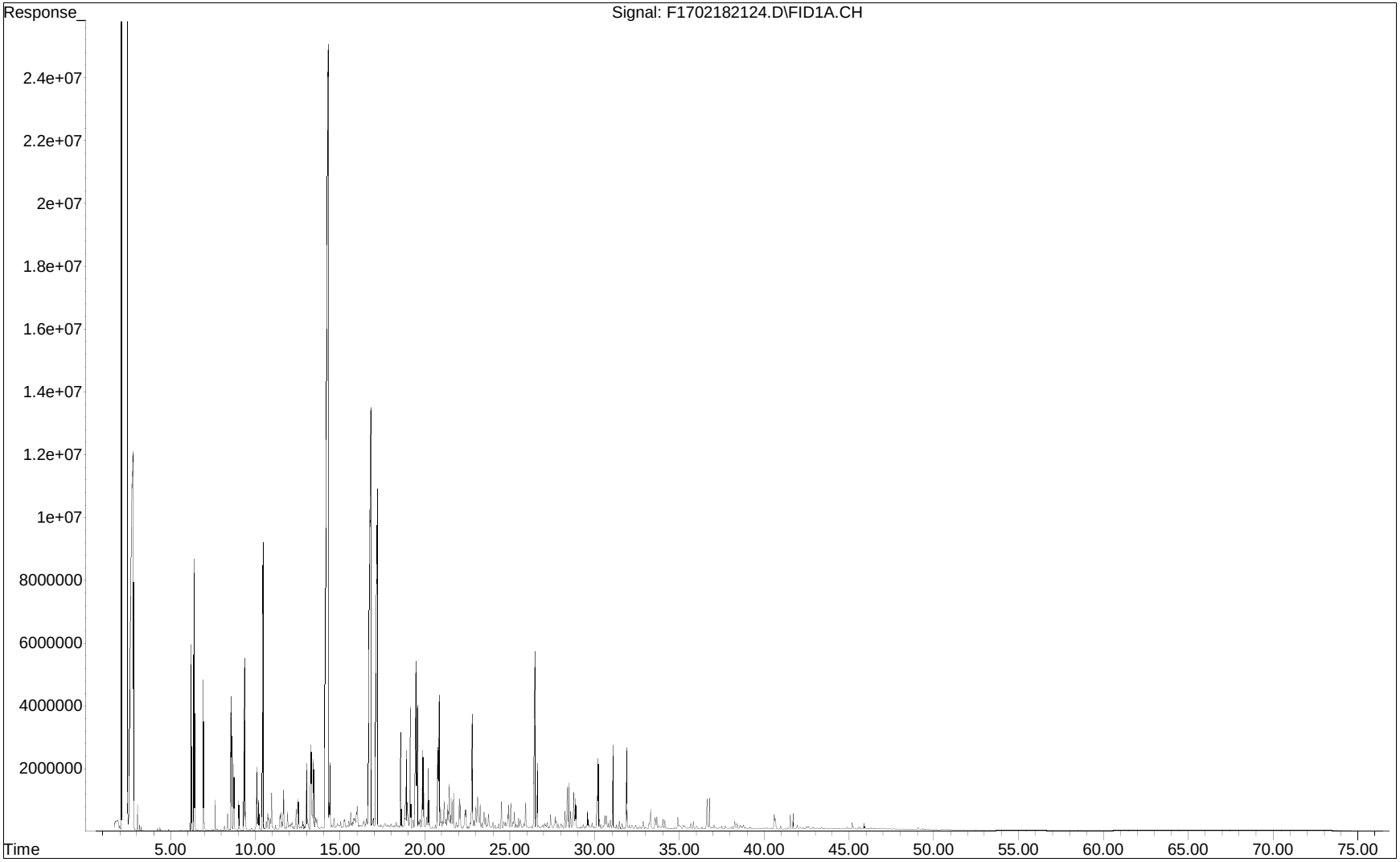
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Rel: C Sylvean 1/30/21 Relinq Creation 1-30-21 8:15

ev. 14-OCT-07)

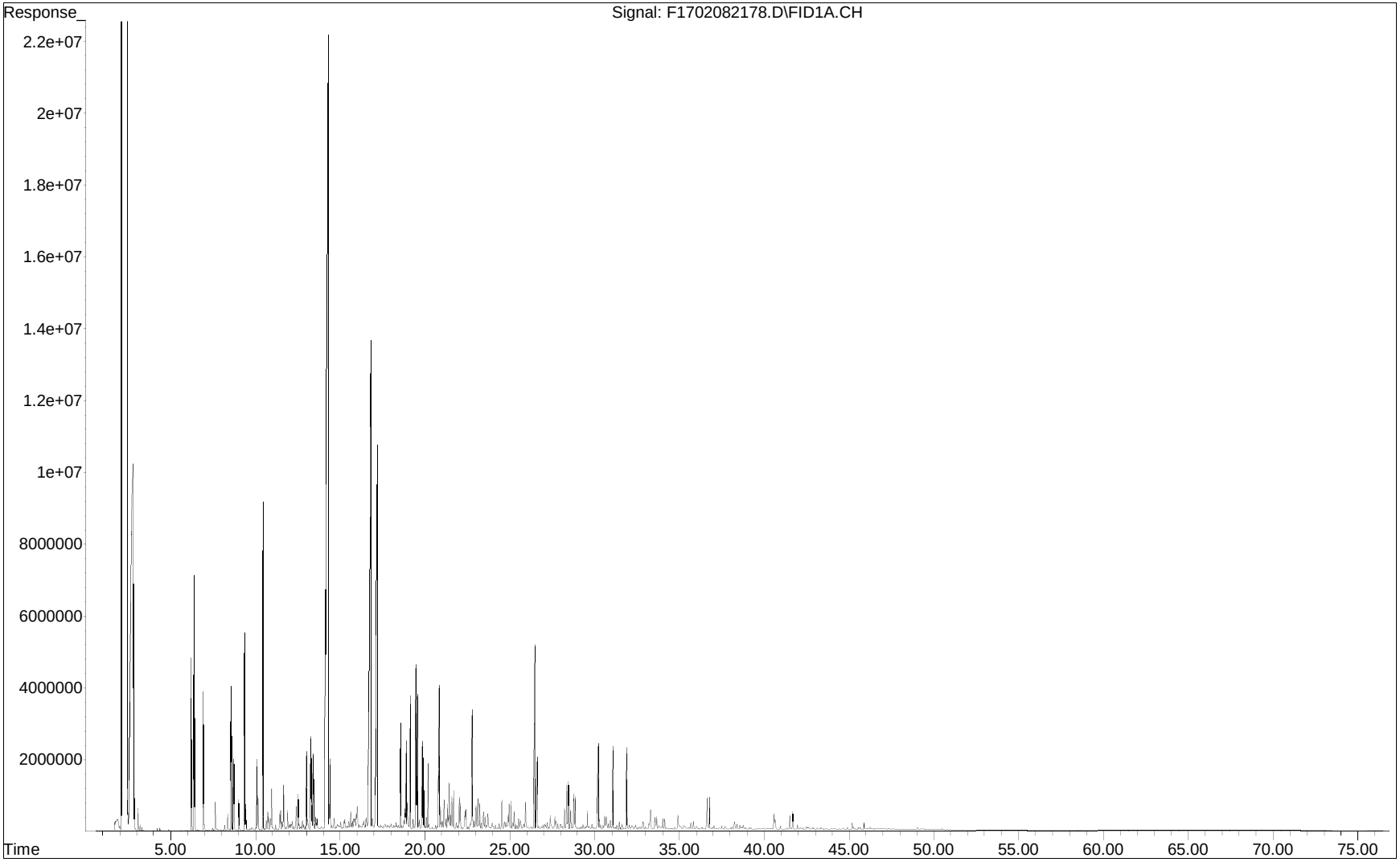
Quantitation Report (QT Reviewed)

File :O:\Forensics\Data\FID17\2021\FEB\FEB18\F1702182124.D
Operator : FID17:WR
Acquired : 19 Feb 2021 1:57 using AcqMethod FID17A.M
Sample Name: L2104678-01RE
Instrument: FID17
Misc Info : WG1466055,WG1464940,ICAL17174
Vial Number: 12
CurrentMeth: O:\Forensics\Data\FID17\2021\FEB\FEB18\HC17092520F_DRO.M

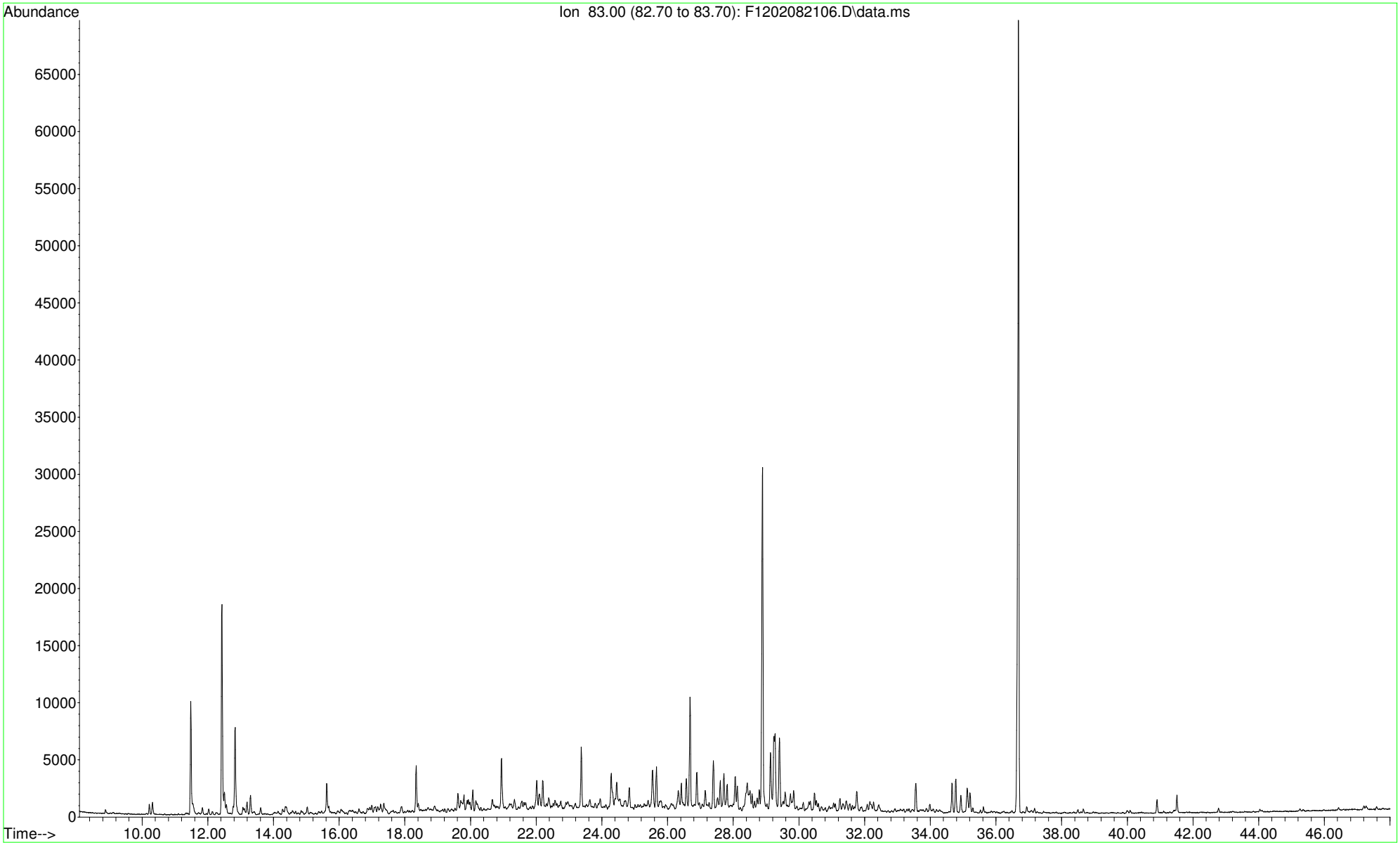


Quantitation Report (QT Reviewed)

File :O:\Forensics\Data\FID17\2021\FEB\FEB08\F1702082178.D
Operator : FID17:WR
Acquired : 10 Feb 2021 20:47 using AcqMethod FID17A.M
Sample Name: l2104678-01,42,,
Instrument: FID17
Misc Info : WG1466486,WG1462898,ICAL17174
Vial Number: 39
CurrentMeth: O:\Forensics\Data\FID17\2021\FEB\FEB08\HC17092520F_DRO.M



File :O:\Forensics\Data\PAH12\2021\FEB21\FEB08\F1202082106.D
Operator : PAH12:CC
Acquired : 9 Feb 2021 6:25 am using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: l2104678-01D,32,10
Misc Info : WG1461908,WG1461056,ICAL17375
Vial Number: 6



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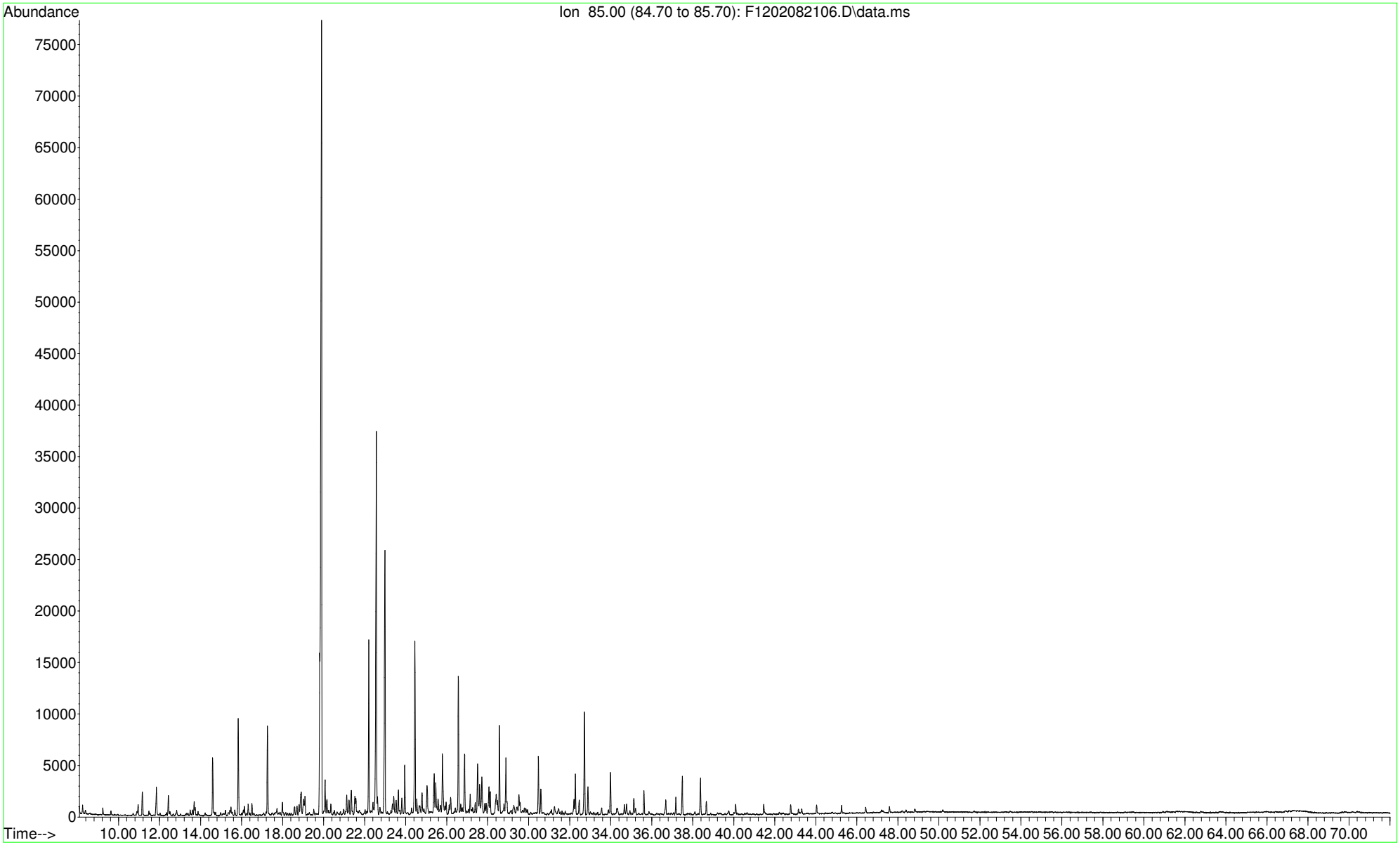

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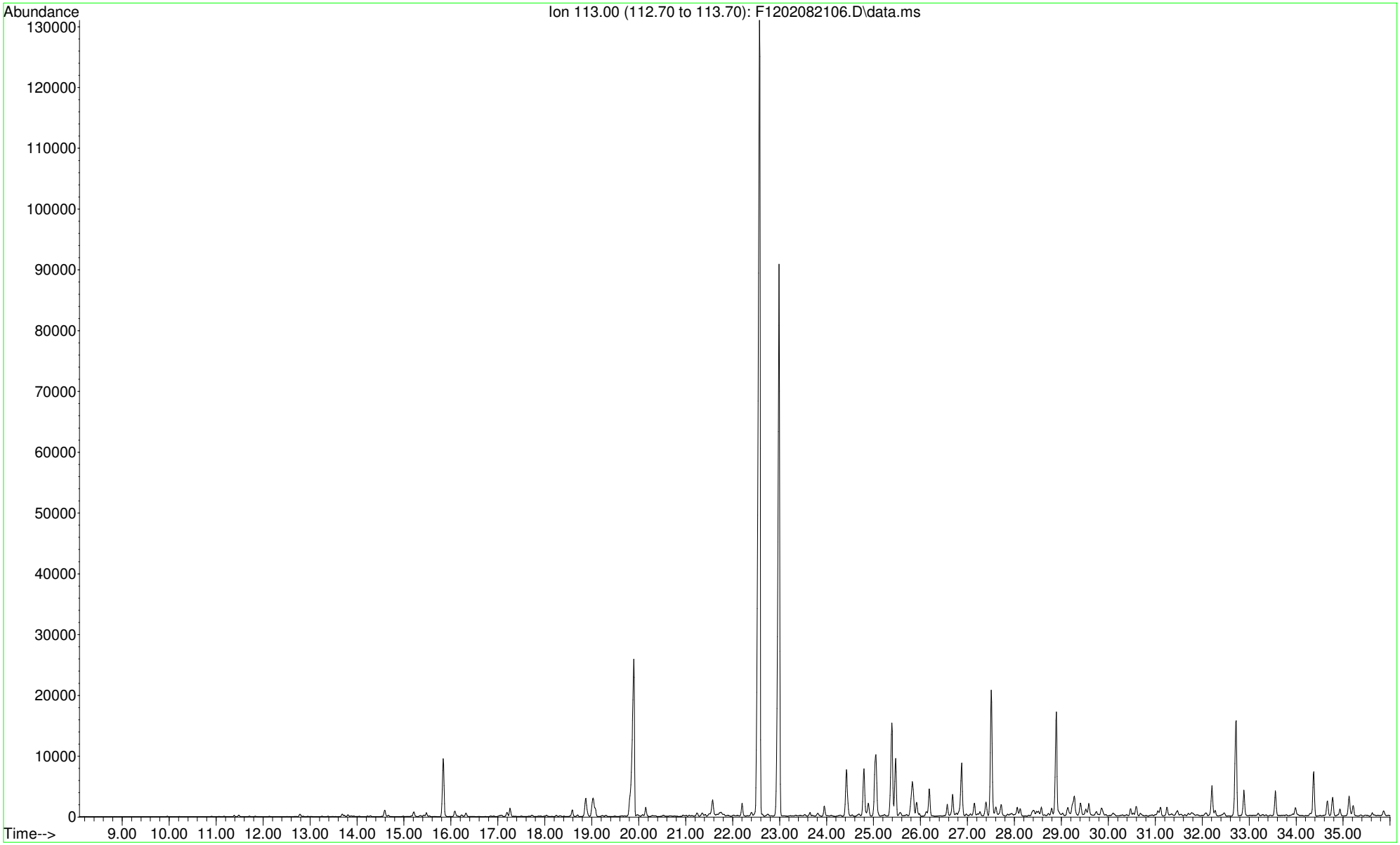

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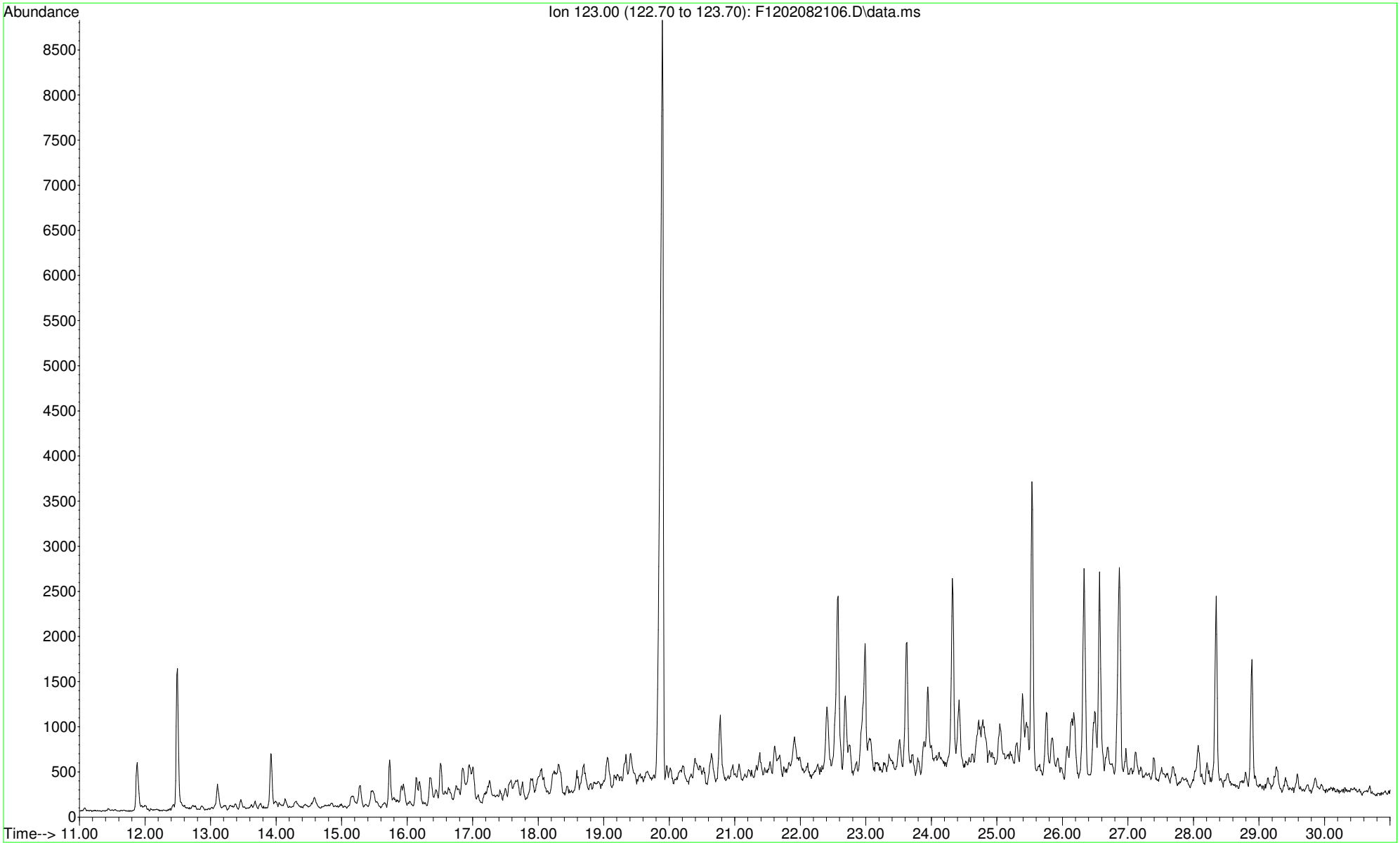
Vial Number: 6



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Acquired : 9 Feb 2021 6:25 am using AcqMethod FRNC12ALT.M
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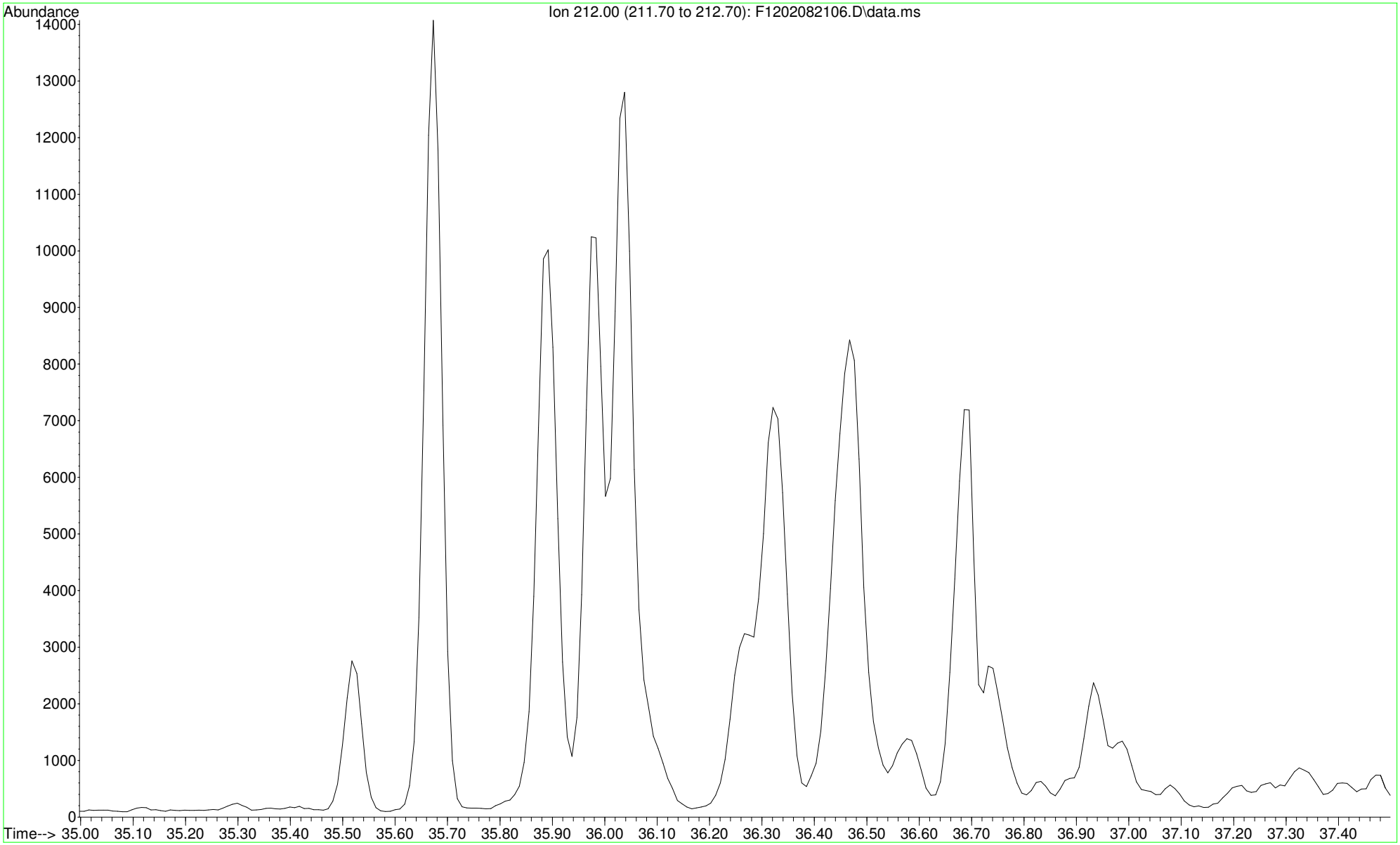

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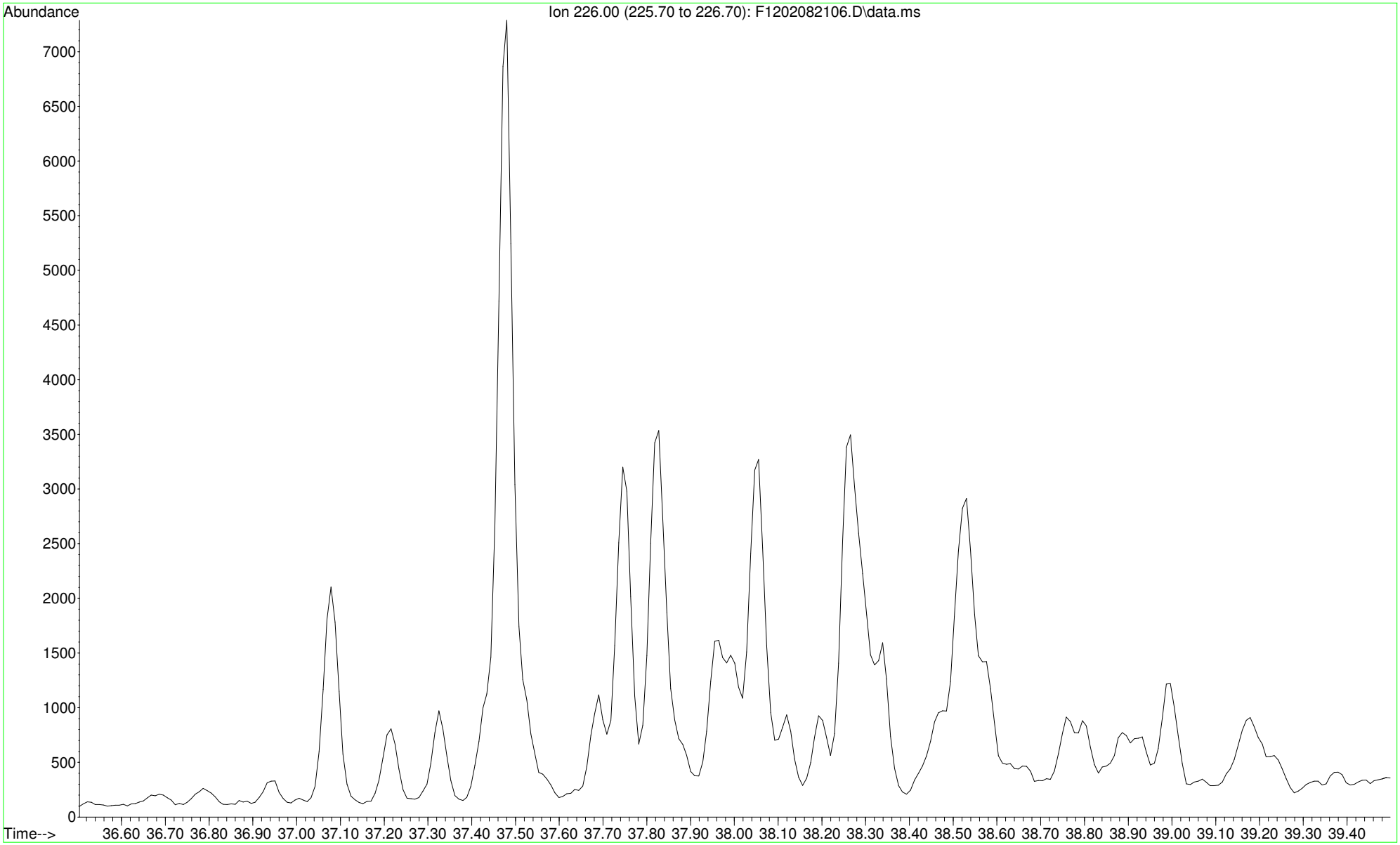

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Sample Name: l2104678-01D,32,10
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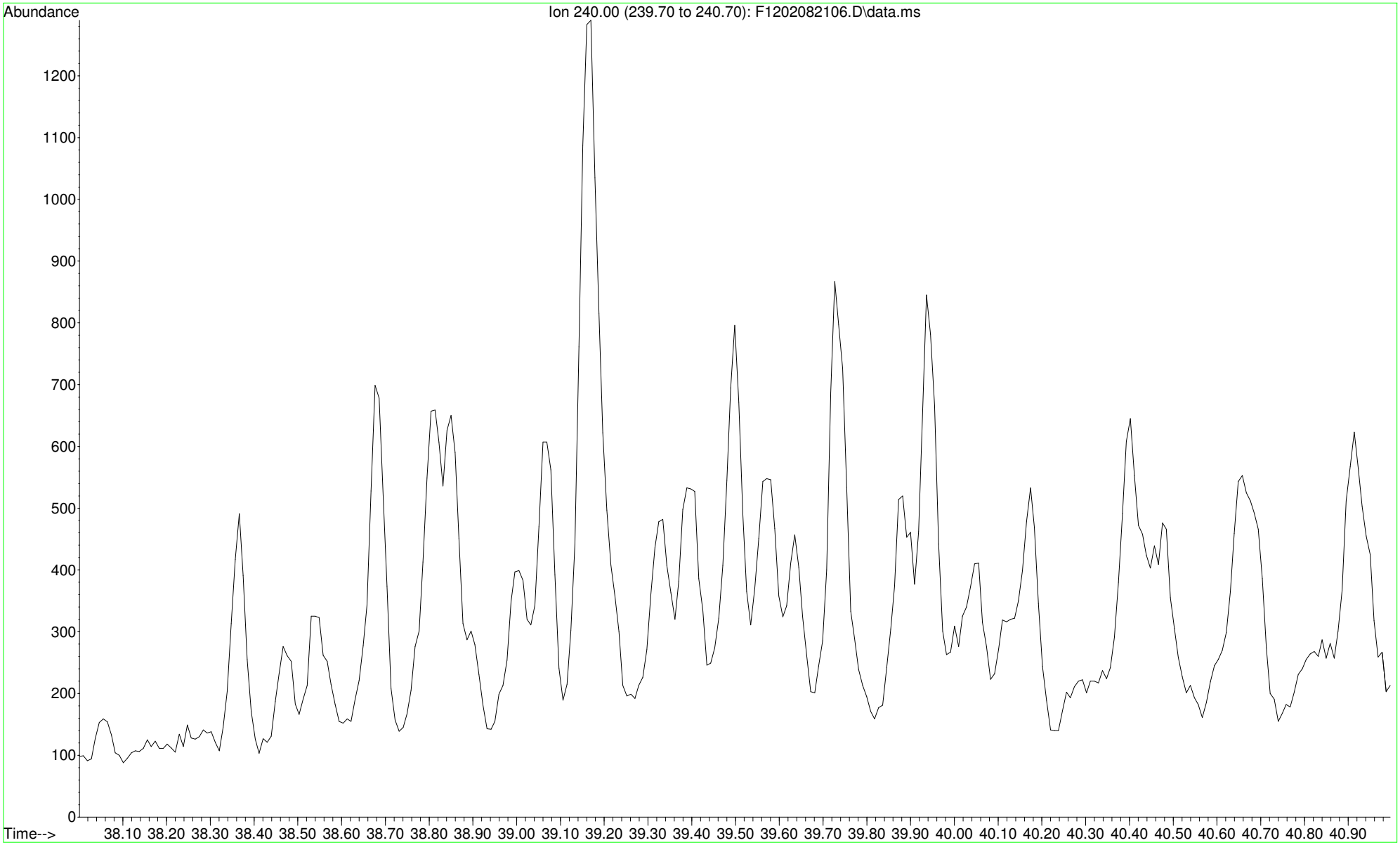
Vial Number: 6



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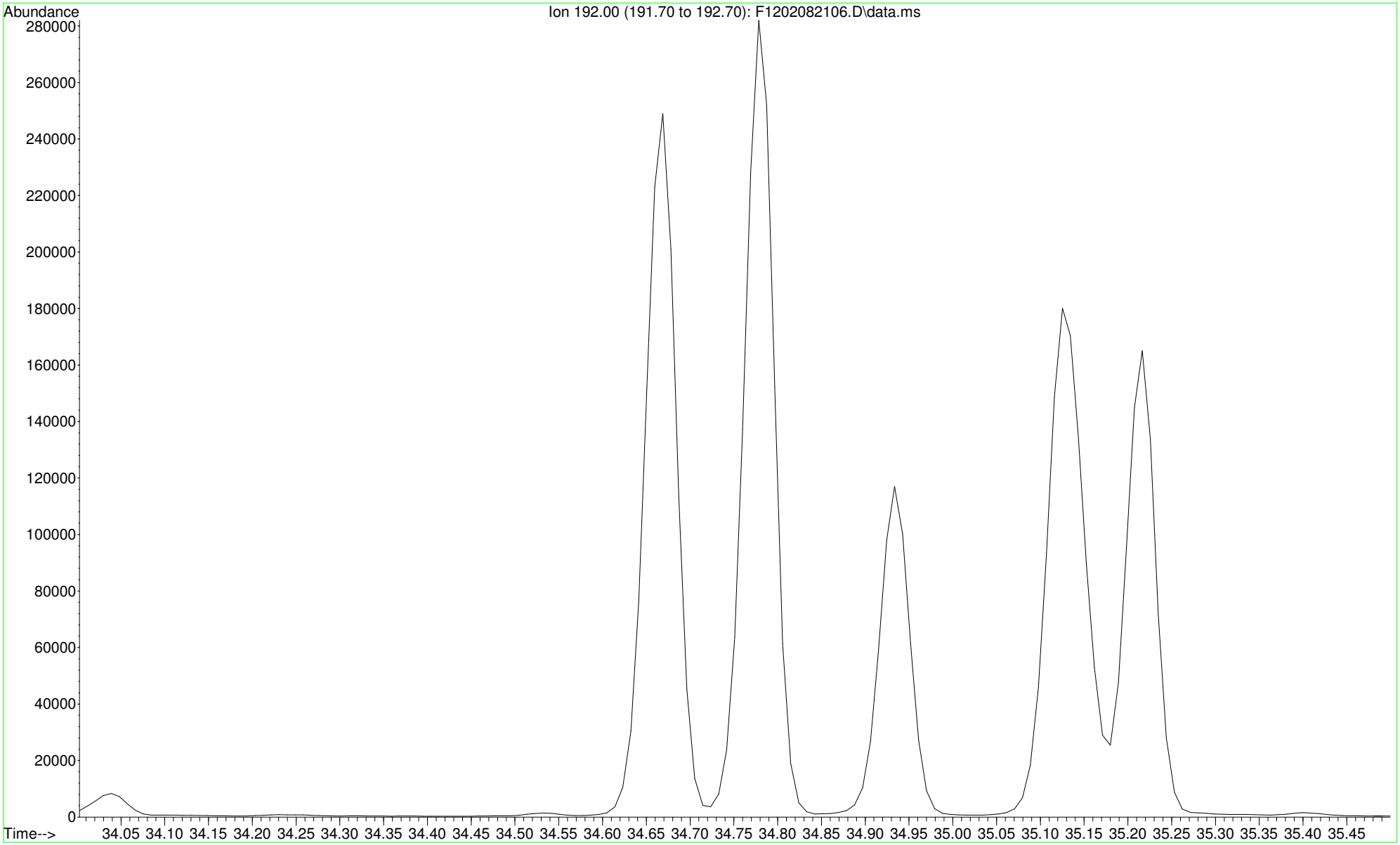

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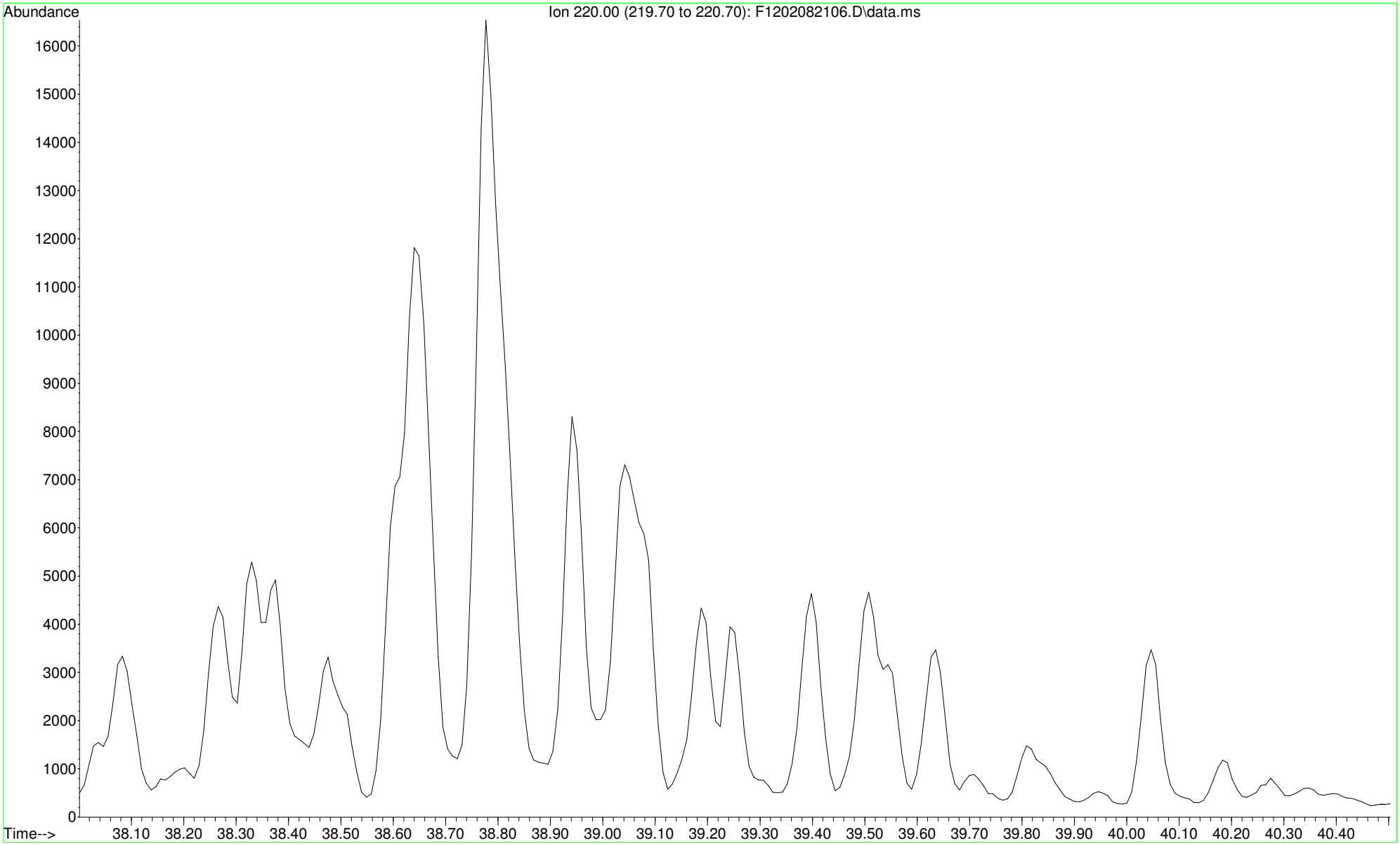

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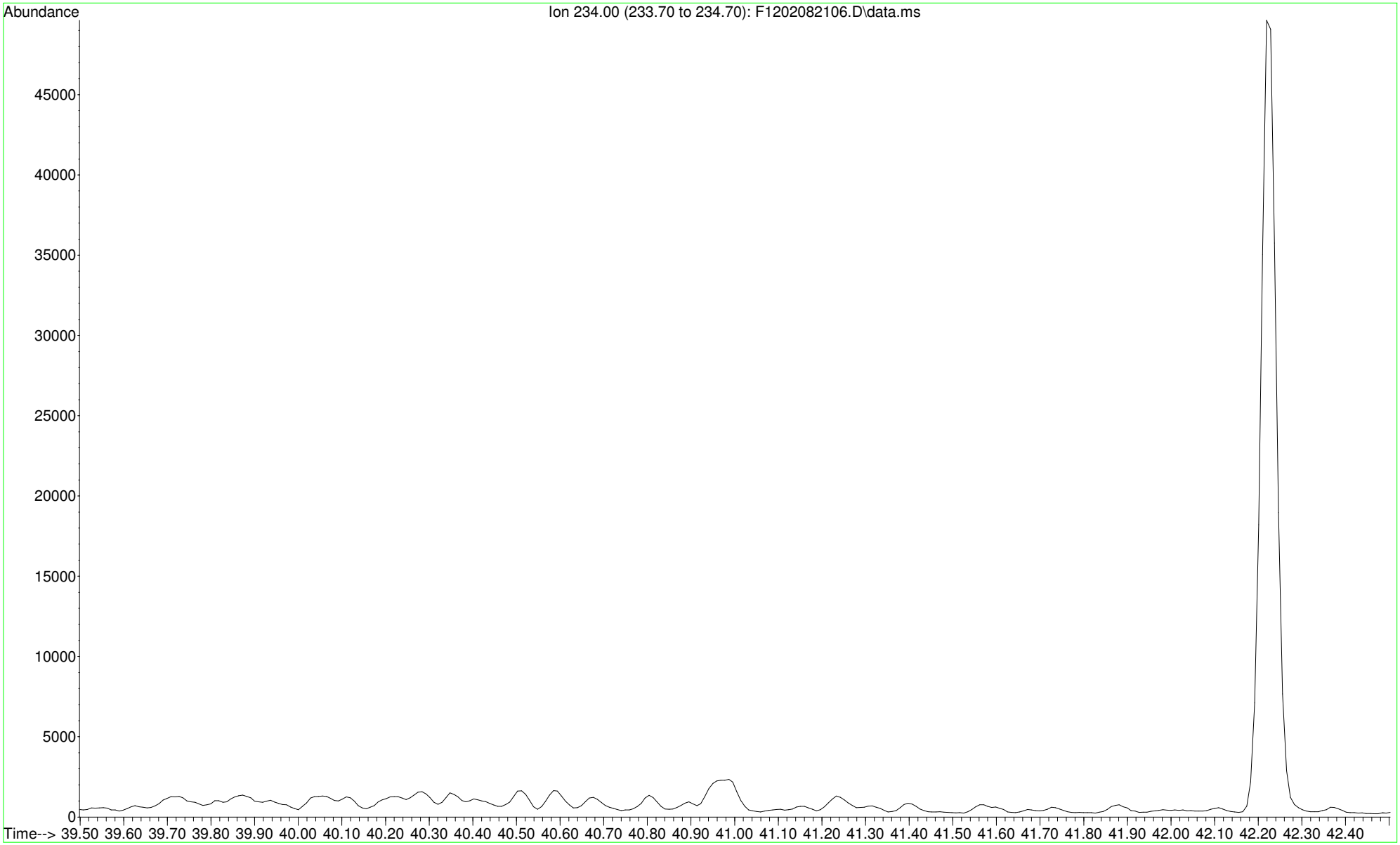

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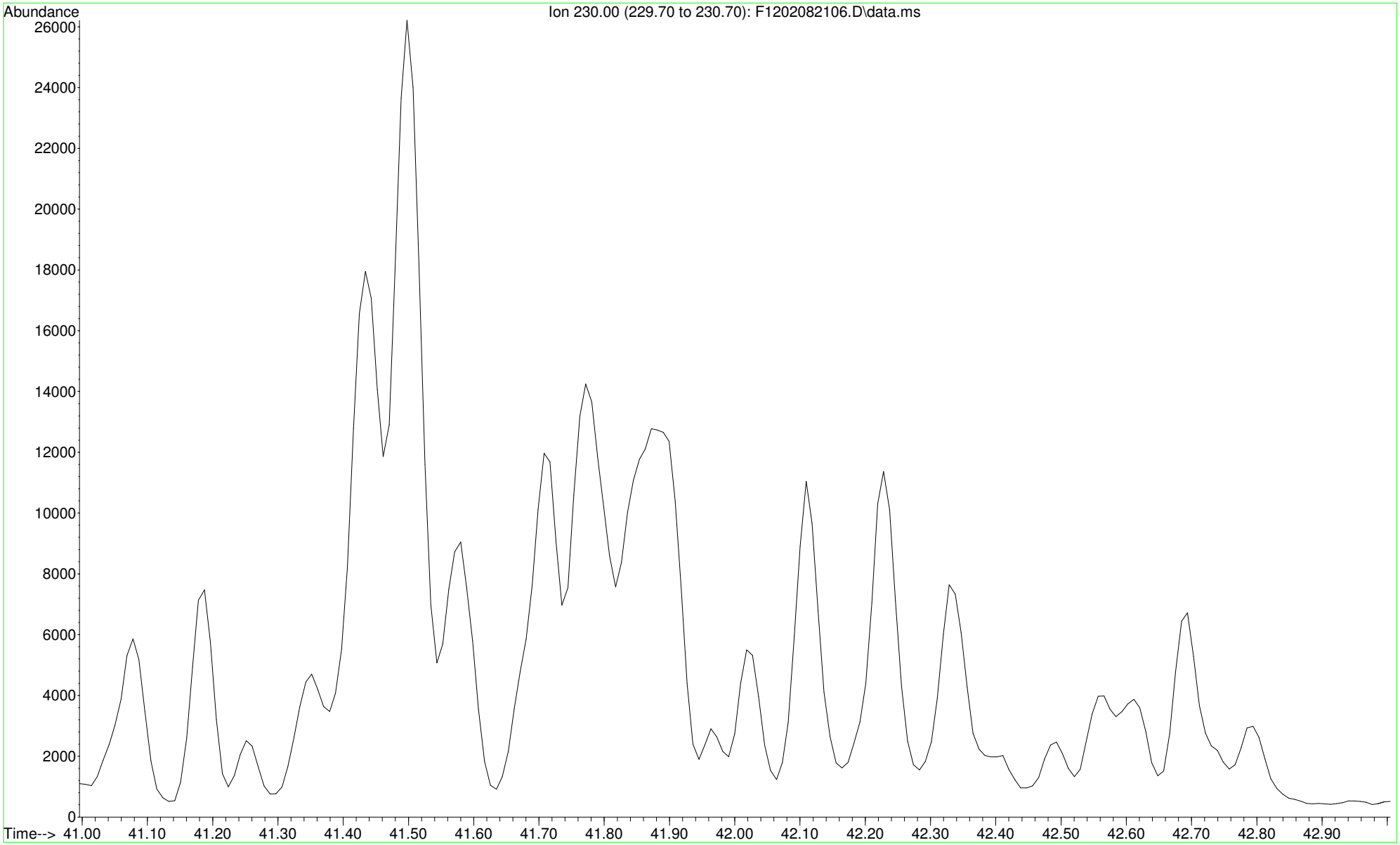

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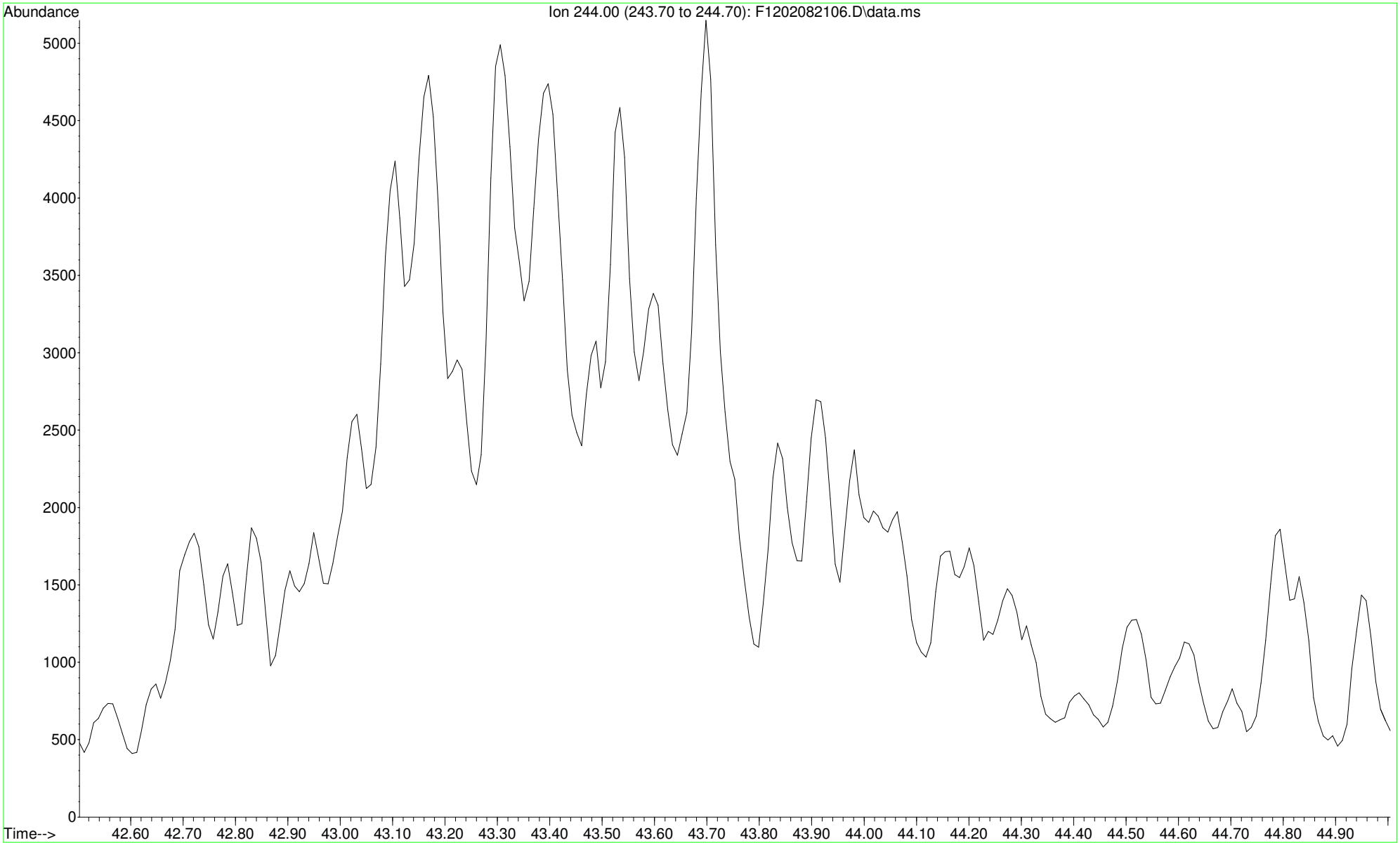

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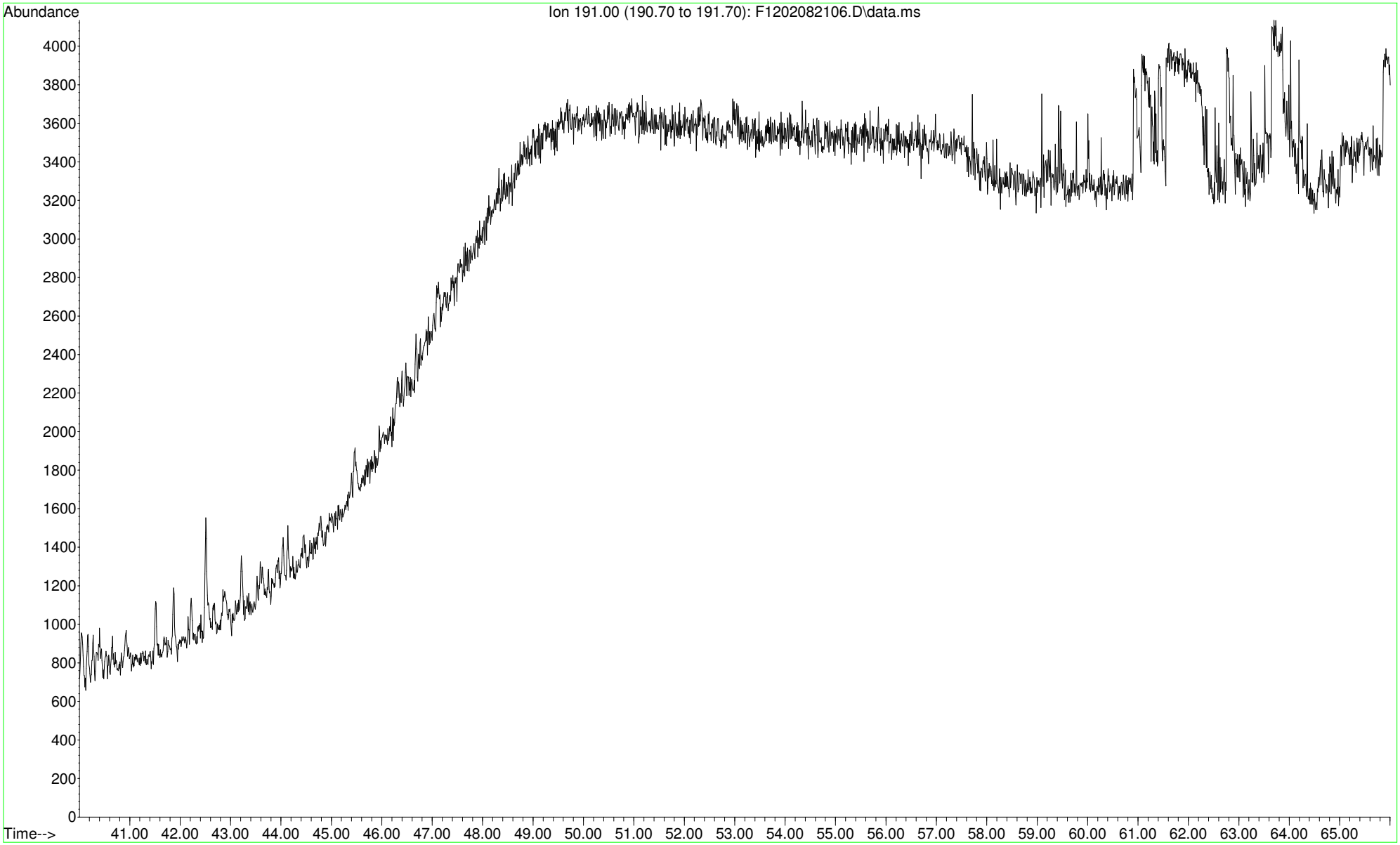

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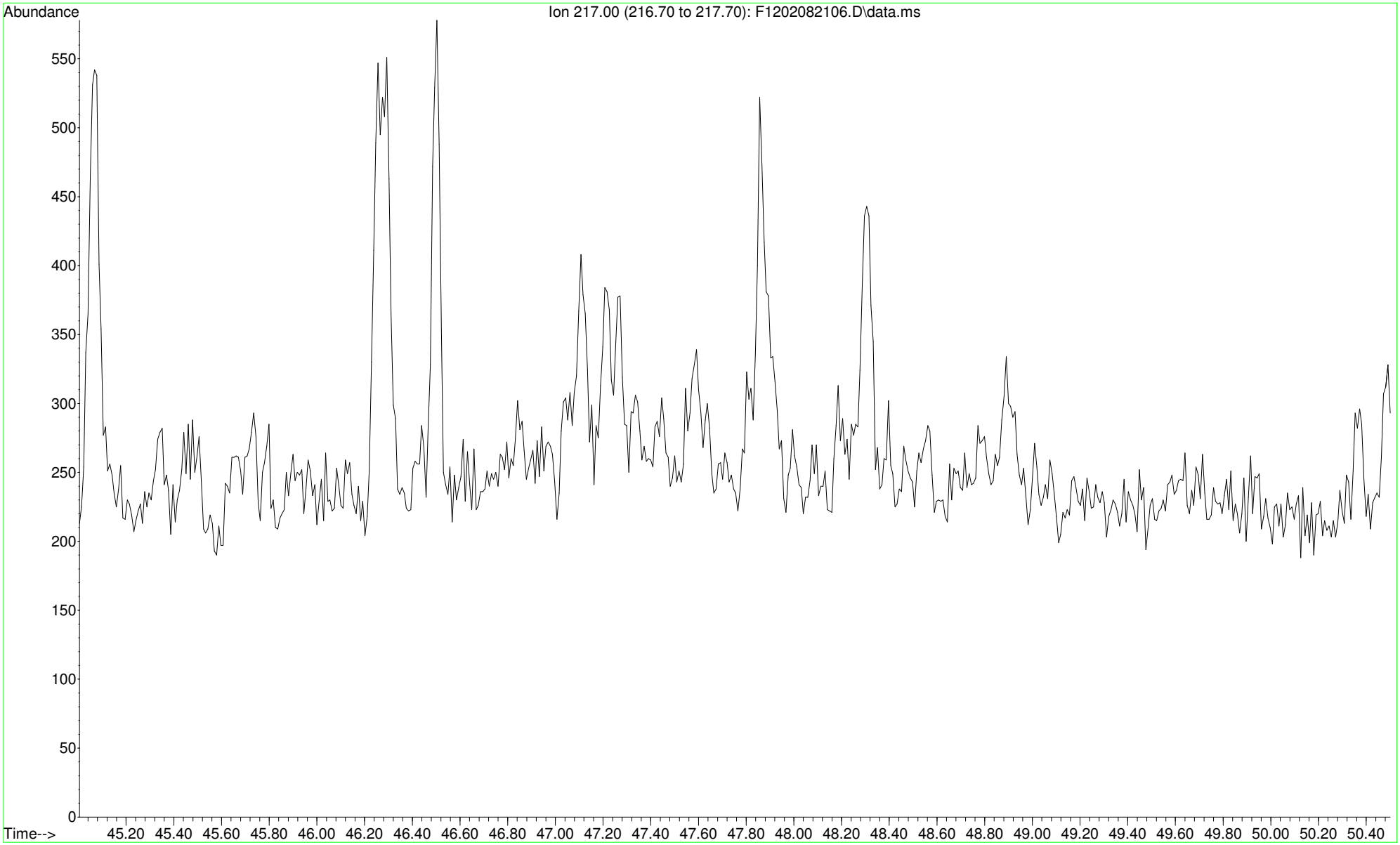

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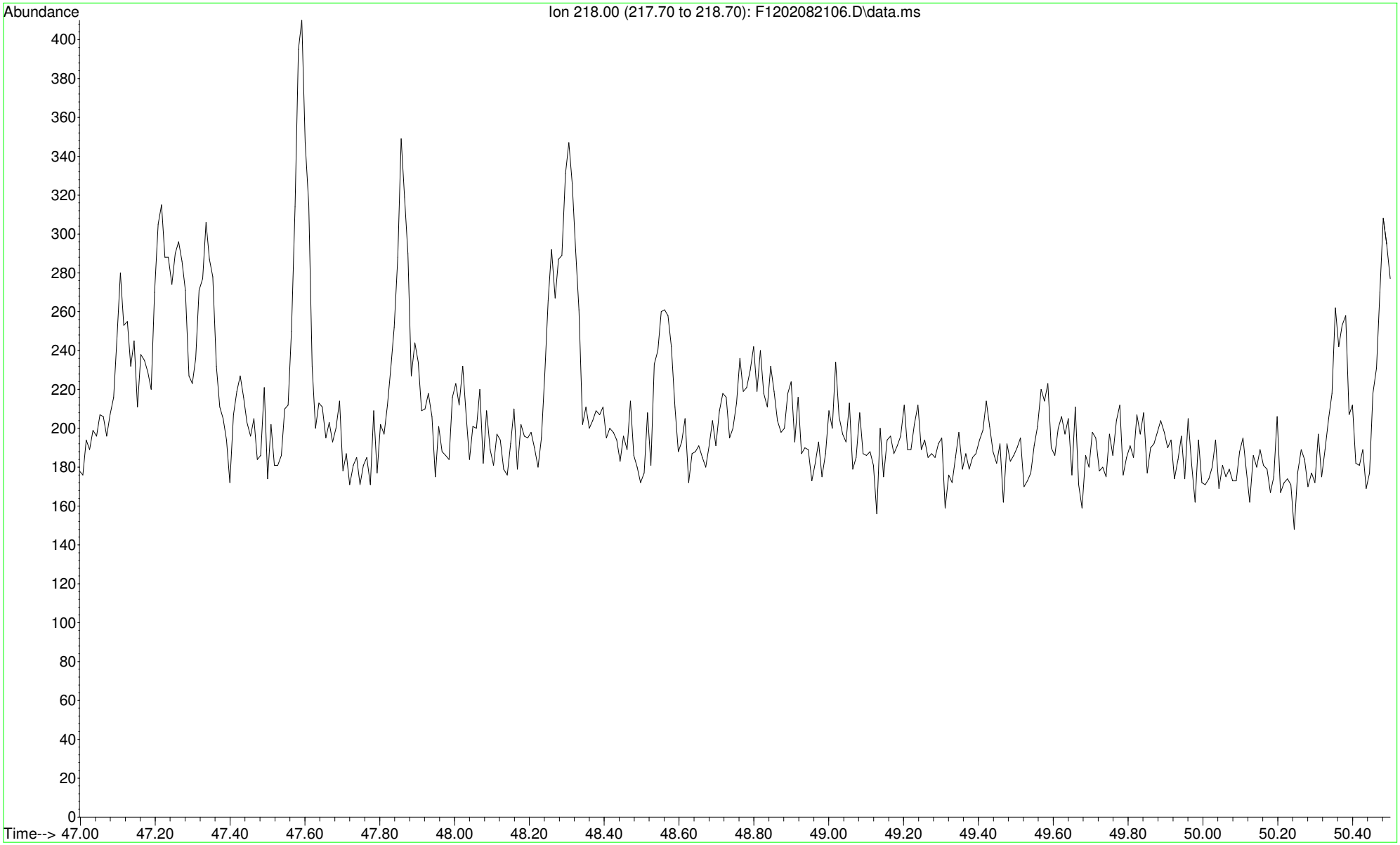

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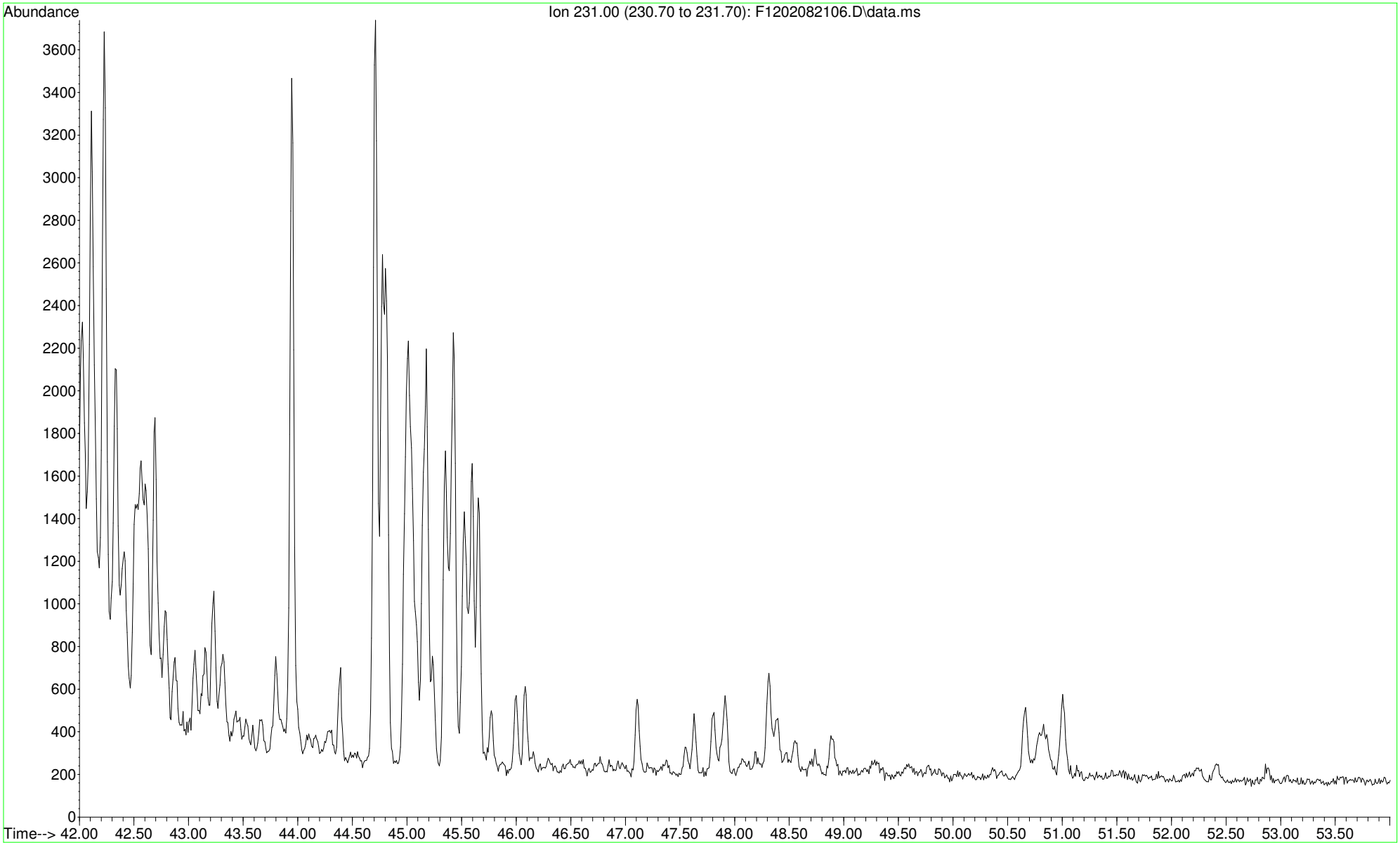

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/30/21

ALPHA Job #: L2104678

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Dr Suite 140 West Chester, PA 19380
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.klingbeil@stantec.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Belmont Drilling Sampling
Project Location: Philadelphia, PA
Project #: 213402797
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO # 213402797

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

⊗ = analyze pending authorization

ANALYSIS: Alkylated PAH (8270D-SIM(M)) + Biomarkers; PIANO Volatile Organics; EPA 8260B/5035 DCM; Saturated Hydrocarbons; EPA 8015D(M); Subcontract-organic lead by 8270; Total Solids SM2540

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Alkylated PAH (8270D-SIM(M))	Biomarkers	EPA 8260B/5035 DCM	Saturated Hydrocarbons	EPA 8015D(M)	Subcontract-organic lead by 8270	Total Solids SM2540	Sample Specific Comments	TOTAL # BOTTLES
4678-01	BT-03-S-41-20210129	1/29/21	1120	SO	DPH	⊗	⊗	⊗	⊗	⊗				

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
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[signature] AAC	1/30/21 0750	[signature]	1/30/21 02:50
[signature]	1.30.21 9:36	[signature]	1/30/21 09:36

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Rel: C Sylvean 1/30/21 Relinq Creation 1.30.21 8:15

ev. 14-OCT-07)

ChemQuants™
ENVIRONMENTAL FORENSICS

Client: Stantec Consulting Services, Inc.

ATTN: Andrew Klingbeil

CQ Project#: 0166

Project name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Laboratory#: L2110583

Advisor™

ChemQuants™
ENVIRONMENTAL FORENSICS

CQ Quote # 0166

CQ PM: Mark Cejas

Dear Andrew,

ChemQuants is pleased to deliver this CQ Advisor package that consists of a simple petroleum characterization, a data visualization summary of the chemistry, methods strategy summary, and the chemistry data deliverable. The CQ Interpreter workstream will be quoted and invoiced separately.

Date of Delivery: 3/31/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Company Address: 1060 Andrew Drive Suite 140

Email: Andrew.klingbeil@stantec.com

Project Name: CQ Project # 0166

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Laboratory#: L2110583

CQ Methods Summary

Phase 1 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
1	Saturated Hydrocarbons 8015D (M)	Soil	1
1	PIANO VOCs EPA 8260D (M)	Soil	1
1	Alkylated PAHs (w/ Scan) EPA 8270D(M)	Soil	1

Phase 2 Forensic Method(s)

CQ Interpreter Stage

CQ Interpreter Authorized (check if yes)?: ∨

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor

ChemQuants™
ENVIRONMENTAL FORENSICS

Phase 1 Basic Characterization # 0166

Dear Andrew,

Please find below a basic characterization of petroleum in the project samples. The following characterization was supported by the chromatographic results from three analytical methods – 1) VOC range PIANO 8260B (M), 2) saturated hydrocarbons 8015D (M), and 3) alkylated PAHs w/ Qualitative biomarkers 8270D (M). A GC/FID chromatogram and bar graphs were produced from these data and included to support a basic characterization of the petroleum in the soil sample.

Phase 1 Data Delivery: 3/24/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Email: Andrew.klingbeil@stantec.com

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Soil Sample - L2110583-01 (BT-22A-S-32-20210303)

This project sample exhibits a pyrogenic signature that is likely related to an MGP type source.

Recommendation for Phase 2

CQ Quote #0166 lists the analytical methods that were tentatively recommended for phase 2 forensics. Quantitative biomarkers are recommended if you feel it is need to complete a comparative dataset. A final invoice will be delivered to you along with the complete chemistry data package, if an interpretive report and the CQ Interpreter phase is not desired – please advise ASAP.

Mark J. Cejas
Principal



[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor™

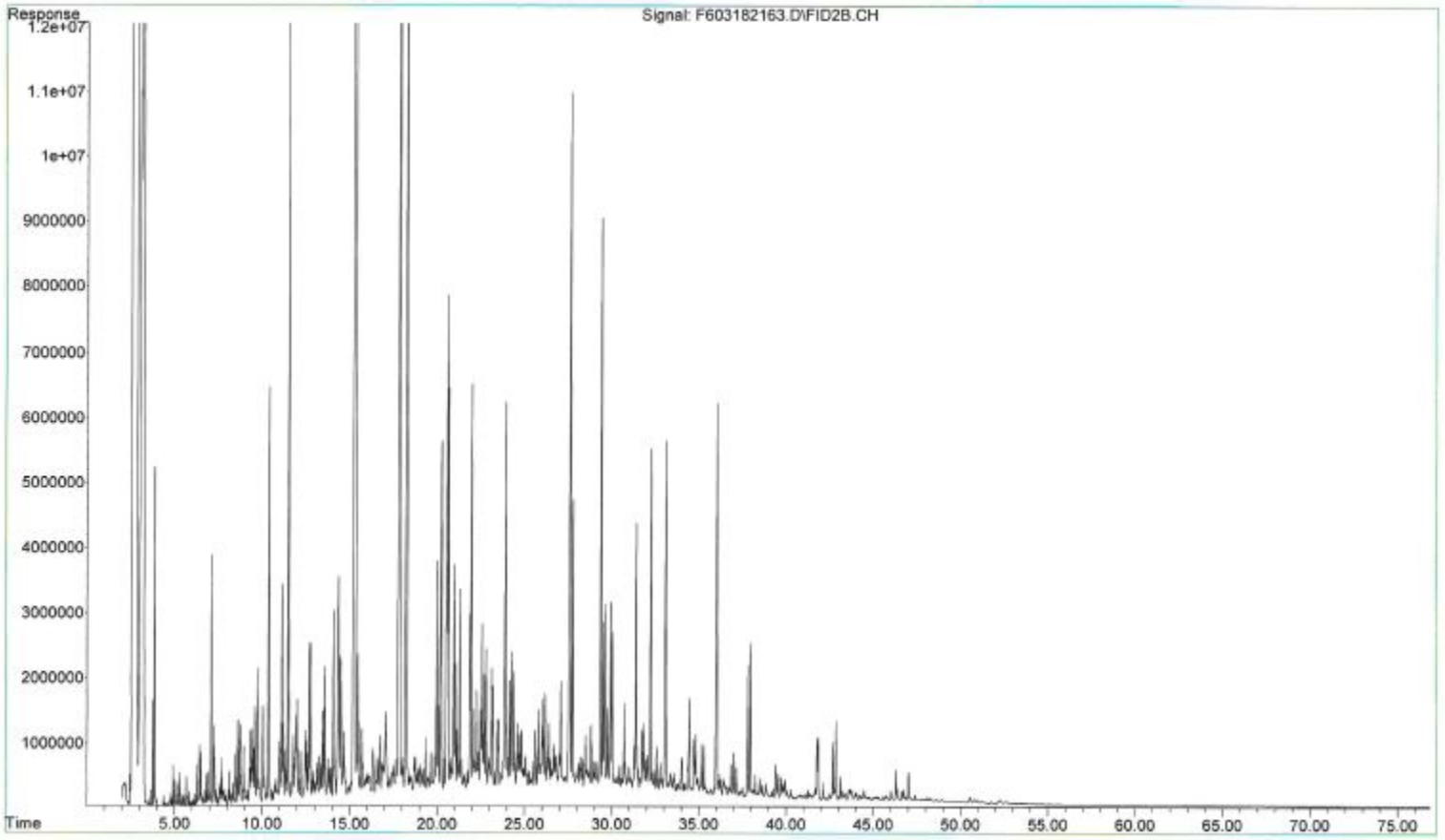

Figure 1- SVOC GC/FID chromatogram of (L2110583-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

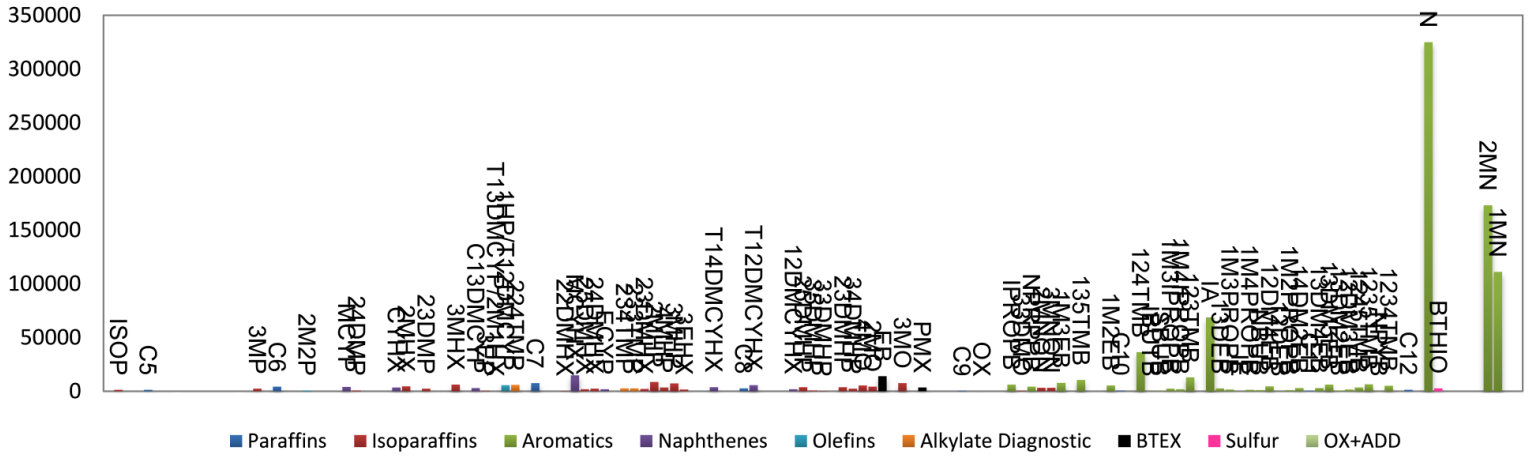

Figure 2 – Bar Graph of VOC PIANO constituents - (L2110583-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

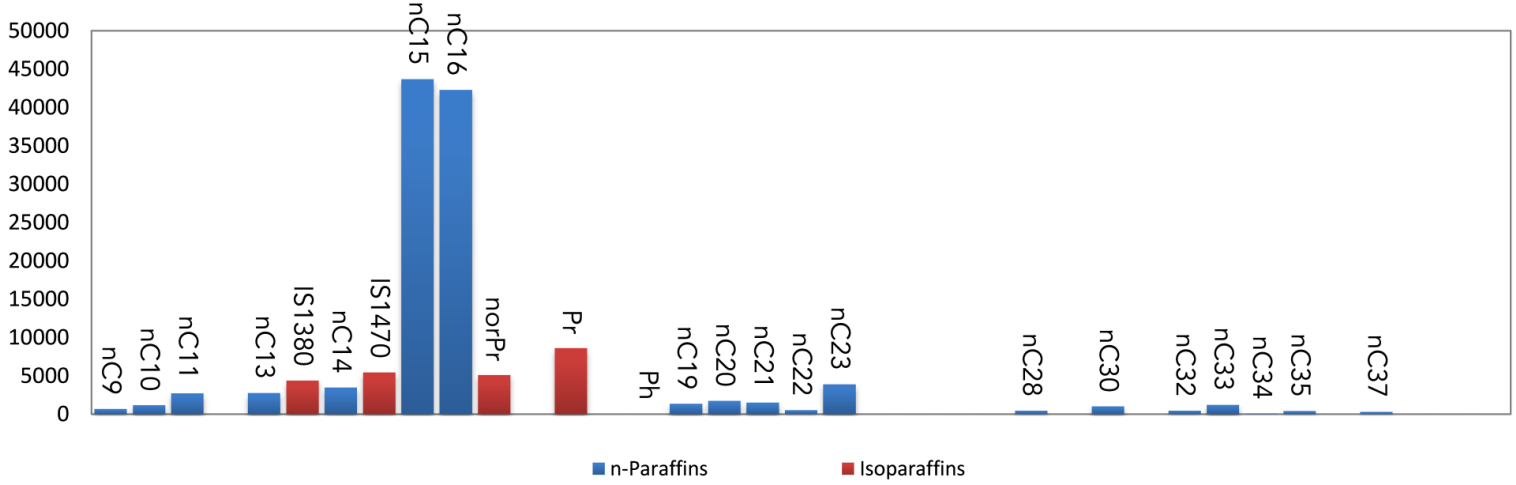

Figure 3 – Bar Graph of Saturated Hydrocarbons GC/FID - (L2110583-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

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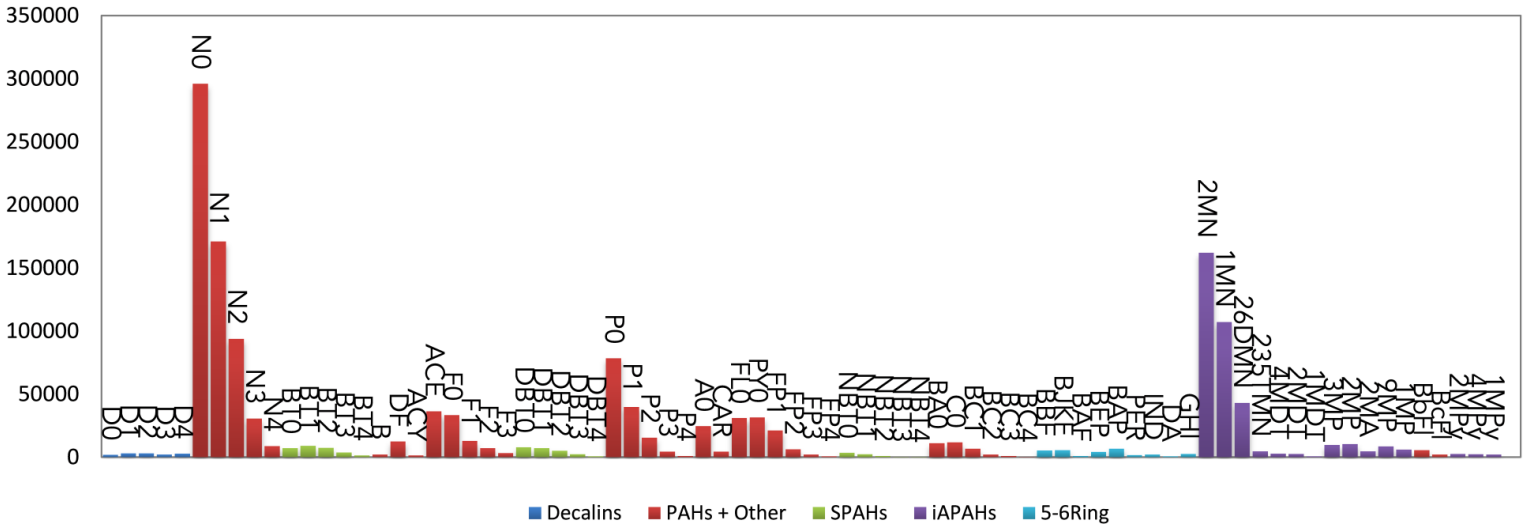

Figure 4 – Bar Graph of Alkylated PAHs - (L2110583-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 3/5/21

ALPHA Job #: L2110583

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Evergreen c/o Stantec
Address: 1000 Andrew Drive Ste 140
West Chester, PA 19380
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.klingbeil@stantec.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Belmont Drilling Sampling
Project Location: PHL
Project #: 213402797
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

(X) = analyze pending authorization

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: 1,4-Dioxane (SIM) (1+1)	1,4-Dioxane PAHs (SIM) + Biomarkers	PIANO Volatile Organics EPA 8260B/5035 DCM	Saturated Hydrocarbons EPA 8015 D(M)	Surrogate Recovery Test 8270 Organic Lead	Total Solids SM 2540	SAMPLE HANDLING: Filtration ☐ Done ☐ Not needed ☐ Lab to do Preservation ☐ Lab to do (Please specify below)	Sample Specific Comments	TOTAL # BOTTLES
10583-01	BT-22A-S-32-20210303	3/3/21	1410	SO	DPH	(X)	(X)	(X)	(X)	(X)				

ARL - AAL 3/5/21 - 0530

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
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	3/4/21 1730		3/4/21 1730
	3-4-21 2100		
	3/5/21 0130		3/5/21 0130

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

Wendy Hennessy 3/5/21 4:00 T. Hall 3/5/21 0410 T. Hall 3/5/21 0530

ChemQuants™
ENVIRONMENTAL FORENSICS

Phase 1 Basic Characterization # 0166

Dear Andrew,

Please find below a basic characterization of petroleum in the project samples. The following characterization was supported by the chromatographic results from three analytical methods – 1) VOC range PIANO 8260B (M), 2) saturated hydrocarbons 8015D (M), and 3) alkylated PAHs w/ Qualitative biomarkers 8270D (M). A GC/FID chromatogram and bar graphs were produced from these data and included to support a basic characterization of the petroleum in the soil sample.

Phase 1 Data Delivery: 3/19/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Email: Andrew.klingbeil@stantec.com

Client Project Name: SPMT Belmont Terminal – Confirmation Drilling and Sampling Program

Soil Sample - L2107577-01 (BT-01-S-33-20210216)

This project sample exhibits a pyrogenic signature that is likely related to an MGP type source.

Recommendation for Phase 2

CQ Quote #0166 lists the analytical methods that were tentatively recommended for phase 2 forensics. Quantitative biomarkers are recommended if you feel it is need to complete a comparative dataset. A final invoice will be delivered to you along with the complete chemistry data package, if an interpretive report and the CQ Interpreter phase is not desired – please advise ASAP.

Mark J. Cejas
Principal



[C] 305-342-2250
markcejas@chemquants.com
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Santa Barbara, CA 93109

Advisor™

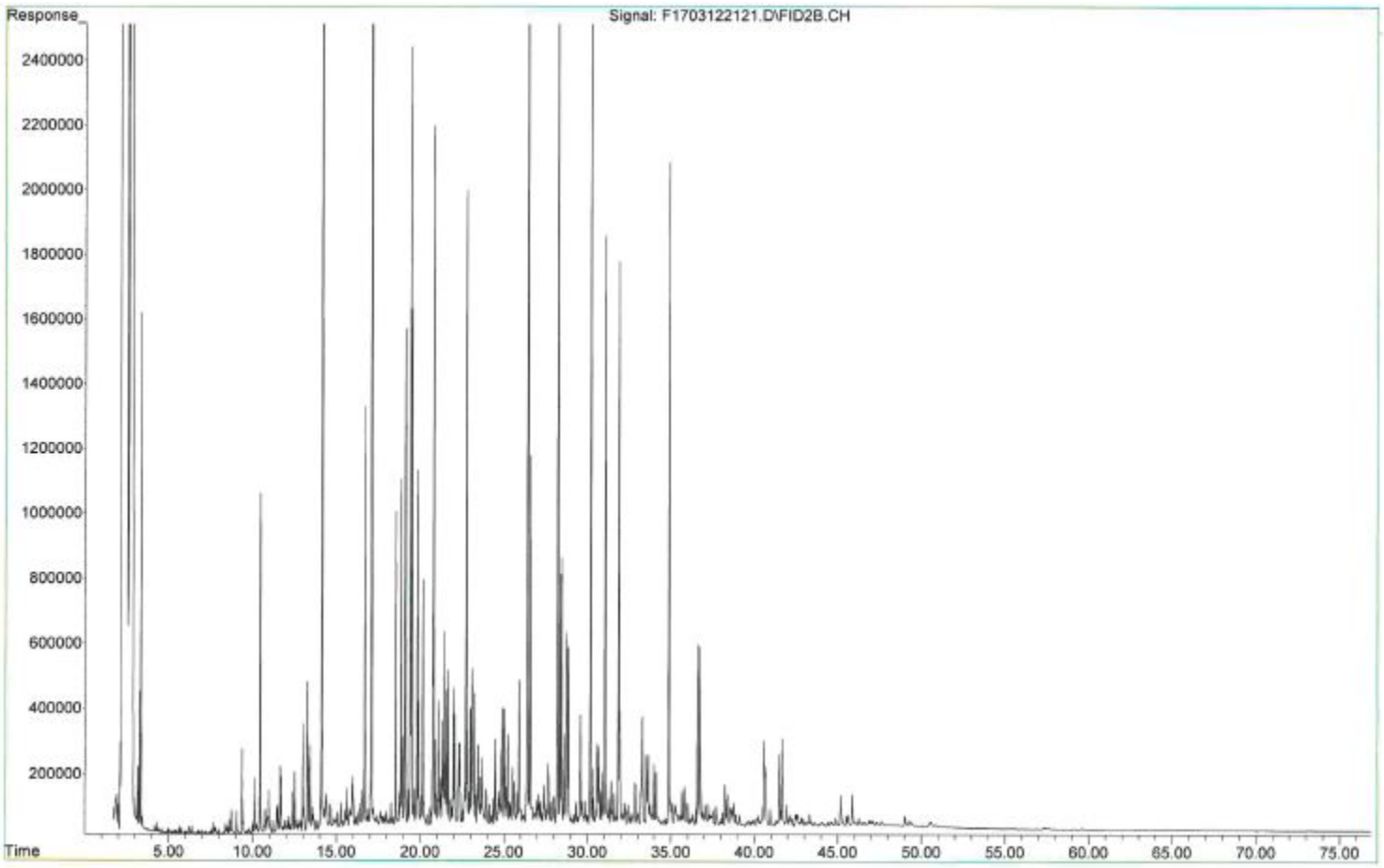

Figure 1- SVOC GC/FID chromatogram of (L2107577-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

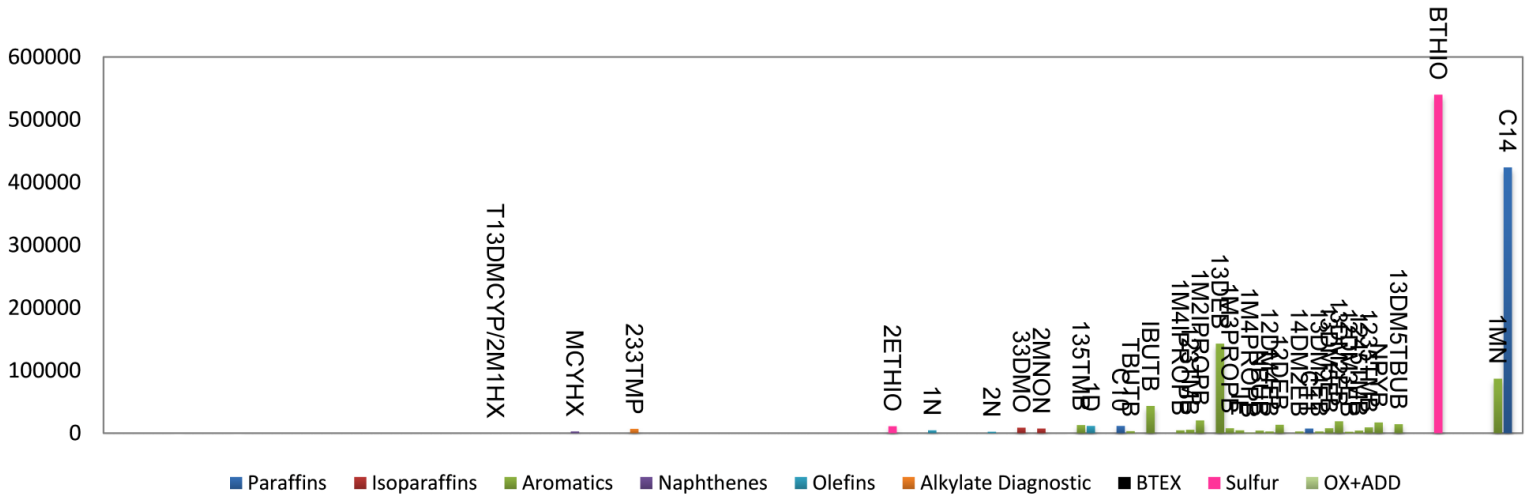

Figure 2 – Bar Graph of VOC PIANO constituents - (L2103943-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

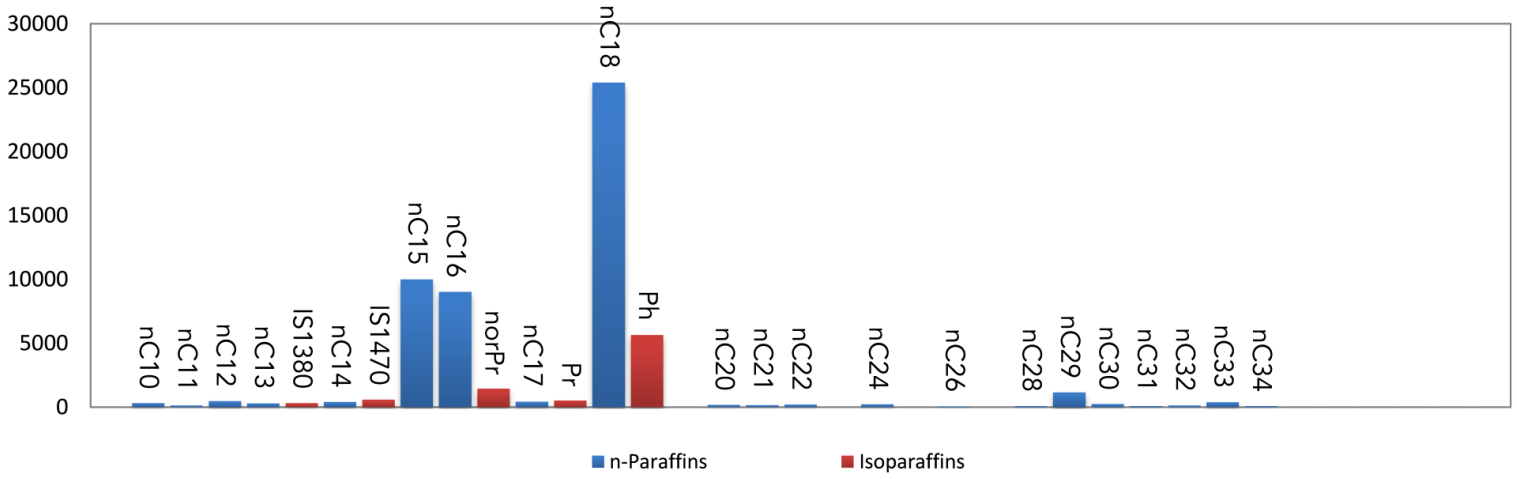

Figure 3 – Bar Graph of Saturated Hydrocarbons GC/FID - (L2103943-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

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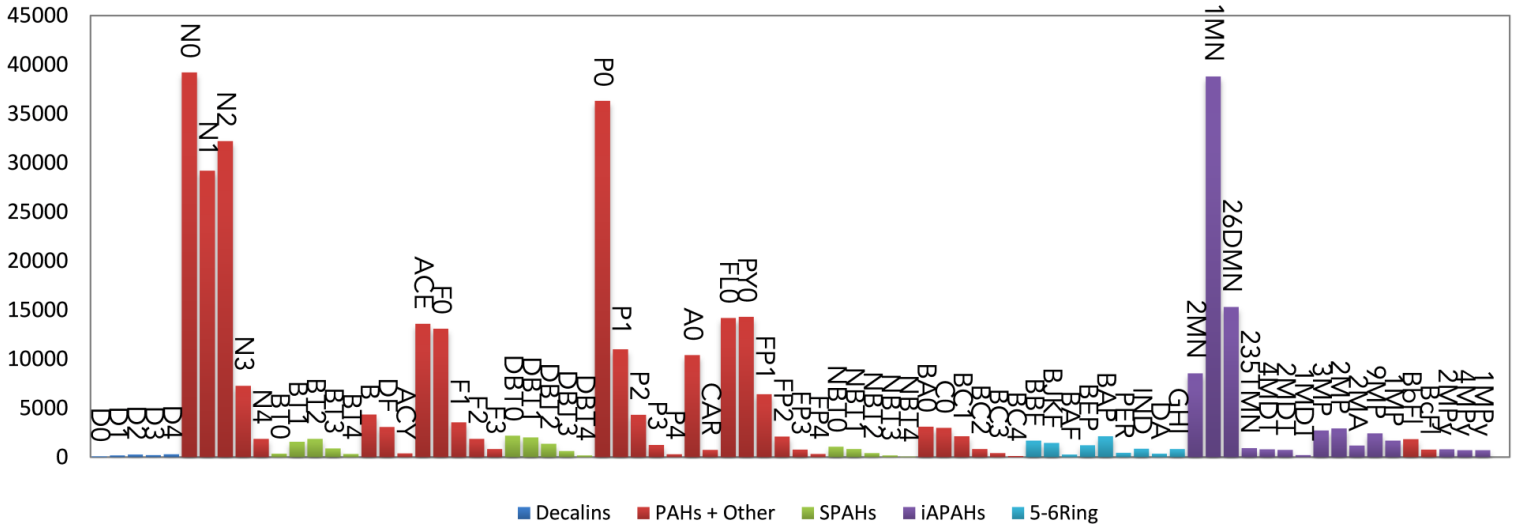


Figure 4 – Bar Graph of Alkylated PAHs - (L2107577-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

ATTACHMENT C

Environmental Forensics Reports

June 29, 2022

Andrew Klingbeil
Stantec Consulting Services, Inc.
1060 Andrew Dr. Suite 140
West Chester, PA 19380

CQ Project: Exploration of MGP Waste
Project Name: Site-Wide Fate & Transport Report RIR Part 2

Introduction

ChemQuants, LLC is gratified to provide you with this report that focuses on the chemical fingerprinting results conducted recently on behalf of Stantec Consulting Services, Inc. The chemical fingerprinting analysis was carried out on one water sample and three product samples. The study was initiated to understand the chemical source nature of the contamination exhibited in the samples and time of release estimation, if possible.

I am the principal at ChemQuants, LLC, an environmental forensics firm in Santa Barbara, California. I received bachelor's degrees in Chemistry and Environmental Science from Florida International University and a Masters's in Analytical Chemistry from Florida International University. My professional experience has focused on oil spill environmental forensics. My specialties include petroleum release investigations on coastal waterways, subsurface environments at petroleum terminals and fueling stations, and "big environmental data" chemometrics and data visualization. Besides being chair at a scientific conference, I have authored numerous publications and presentations to my peers. A complete description of my professional background is available upon request.

I have been asked to answer the following questions:

- What are the petroleum characteristics expressed in the five soil and eight product samples listed below?
- What is the geographic distribution of pyrogenic residues and other manufactured gas plant-derived waste?

Client ID	Lab ID	Date Collected	Date Received	Matrix	Saturated Hydrocarbons EPA 8015D (Mod.)	Alkylated PAHs 8270D (Mod.)	VOC PIANO
S-77-P-20200528	L2037017-01	5/28/2020	9/18/2020	Product	X	X	X
MW-29-P-20210126	L2110983-10	5/28/2020	9/18/2020	Product	X	X	X
BT-5-S-9-20201210	L2055267-01	12/10/2020	12/10/2020	Soil	X	X	X
BT-18B-S-11-20210126	L2103943-02	1/25/2021	1/26/2021	Soil	X	X	X
BT-03-S-41-20210129	L2104678-01	1/29/2021	1/29/2021	Soil	X	X	X
BT-01-S-33-20210216	L2107577-01	2/16/2021	2/17/2021	Soil	X	X	X
BT-22A-S-32-20210303	L2110583-01	3/3/2021	3/4/2021	Soil	X	X	X
PGW-RW-3-P-20201210	L2055423-01	12/10/2020	12/11/2020	Product	X	X	X

RW-225-P-20200319	L2055423-02	3/19/2020	12/11/2020	Product	X	X	X
RW-209-P-20200319	L2055423-03	3/19/2020	12/11/2020	Product	X	X	X
RW-210-P-20200319	L2055423-04	3/19/2020	12/11/2020	Product	X	X	X
RW-206-P-20200319	L2055423-05	3/19/2020	12/11/2020	Product	X	X	X
S-294 (PAES)	32437-01	3/12/2020	3/14/2020	Product	X	X	X

The samples were delivered to Alpha Analytical, Inc. (Mansfield, MA) and analyzed with the following analytical methods[1]:

1) Alkylated PAHs by GC/MS (SIM) / EPA 8270D (Mod.)
2) Saturated Hydrocarbons by GC/FID / EPA 8015D (Mod.)
3) C5-C12 PIANO w/ Oxygenates and additives quantification and fingerprinting by GC/MS – full scan mode / EPA 8260B (Mod.)

Investigative methodology

The forensics quality chemical data employed data analysis techniques typically used in petroleum investigations. Petroleum refinery process and properties lines of evidence were applied and based on well-established process forensics insights. The contaminants' characterization in the product and soil samples relied on the diagnosis of petrogenic and pyrolytic (pyrogenic) signatures.

Results and Discussion

Pyrogenicity means being derived from a carbonization or combustion process. The following chemical attributes indicate pyrogenicity in the sample: a) enrichments of 5-6 ringed PAHs – illustrated as teal blue bars in figures 8,9,10; b) Greater enrichments of non-alkylated parent PAHs relative to the higher alkylated isomer series – parent PAHs are denoted with a "0" following the analyte abbreviation in the figure label; conversely, alkylated PAHs are indicated with a # > 0 following the analyte abbreviation in figure label (figures 8,9,10). Manufactured gas plant (MGP) processes are myriad[2]. The feedstock used for gas production is one of the main variables that impact the tar byproduct's chemical fingerprint. The feedstock used at an MGP plant varies from coal to oil-based. Oil-based feedstocks range from Naphtha to middle distillate gas oil to crude oil. Trace levels of the hydrocarbon feedstock used during gas production are often present at low tar byproduct levels[3].

Multiple lines of chemical evidence were employed to assess the petroleum source types and feedstock properties of petrogenic and pyrogenic residues expressed in the soil and product samples collected from the Passyunk facility (PGW) and Belmont Terminal environs (figure 1). The primary questions posed in this investigation were listed above. Chemical lines of evidence included the following: GC/FID chromatograms (figures 2,3,4); VOC range PIANO bar graphs (figures 5,6,7); parent and alkylated PAH bar graphs (figure 8,9,10); EICP profiles of light distillate range petroleum biomarkers alkylcyclohexanes

[1] Douglas, G.D., Emsbo-Mattingly, S.D., Stout, S.A., Uhler, A.D., and McCarthy, K.J. (2007) Chemical fingerprinting of hydrocarbons and polychlorinated biphenyls. In: *Introduction to Environmental Forensics, 2nd Ed.*, B. Murphy and R. Morrison, Eds., Academic Press, New York, pp. 317-459.
[2] Uhler, A. D., and S. D. Emsbo-Mattingly. "Environmental stability of PAH source indices in pyrogenic tars." *Bulletin of environmental contamination and toxicology* 76.4 (2006): 689-696.
[3] Emsbo-Mattingly, Stephen, et al. "Identifying Manufactured Gas Plant Tar in the Environment Using Chemical Fingerprinting." *Environmental Claims Journal* 15.4 (2003): 477-490.

(83 m/z) (figures 11,12,13) and bicyclanes (123 m/z) (Figures 14,15,16); and EICPs of residual range petroleum biomarkers terpanes (191 m/z) (figures 17,18,19).

A geospatial map overlaid with proportional pie charts was produced to illustrate the spatial distribution of the six chemical source types (figure 1). One soil sample (BT-5) showed a mixture of three petrogenic signatures and a pyrogenic signature. One soil sample (BT-18B) showed a mixture of two petrogenic signatures and a pyrogenic signature. Three soil samples – BT-03, BT-01, and BT-22A – exhibit primarily pyrogenic residues. One product sample (MW-29) exhibited a two-part petrogenic and pyrogenic residue composition. One product sample (S-77) showed a mixture of two petrogenic signatures with one pyrogenic residue signature. One product sample (PGW-RW-3) exhibited a mixture of three petrogenic signatures and one pyrogenic signature. One product sample (S-294) was composed of a pyrogenic residue. Four product samples (RW-225, RW-209, RW-210, RW-206) were composed of two petrogenic signatures. Altogether, the following six chemical source types were exhibited with variable proportional attributes in the 13 project samples: 1) gasoline, 2) Light Naphtha-like product, 3) Benzene or Toluene enrichments, 4) Middle distillate range petroleum, 5) Residual range petroleum, and 6) Pyrogenic residue.

S-77 The GC/FID chromatogram, alkylcyclohexanes ion trace (83 m/z), bicyclanes ion trace (123 m/z), and VOC PIANO bar graph displayed the dominance and compositional attributes of a moderately weathered alkylate poor gasoline. It was evident in the GC/FID chromatogram that the additional petrogenic and pyrogenic signatures occurred at significantly lower levels relative to the gasoline. The alkylated PAH bar graph and terpanes ion-trace (191 m/z) revealed the presence of residual range petroleum laden with trace pyrogenicity.

MW-29 The GC/FID chromatogram, alkylcyclohexanes ion-trace (83 m/z), and VOC PIANO bar graph displayed the dominance and compositional attributes of a moderate to heavily weathered alkylate poor and SRG rich gasoline. It was evident in the GC/FID chromatogram that the additional pyrogenic residue occurred at a comparable proportion to the gasoline. The compositional attributes of the pyrogenic signature were evident in the PAH bar graph, the alkylcyclohexanes ion trace (83 m/z), and the bicyclanes ion trace (123 m/z).

BT-5 The GC/FID chromatogram, alkylcyclohexanes ion trace (83 m/z), and VOC PIANO bar graph displayed the dominance and compositional attributes of a VOC range mixture of a severely weathered alkylate-rich gasoline (or alkylate feedstock) with a light naphtha-like product. Relatively lower levels of a middle distillate range petroleum aspect and a pyrogenic residue were evident in the GC/FID chromatogram. Compositional attributes of the SVOC range aspects were evident in the PAH bar graph, the alkylcyclohexanes ion trace (83 m/z), and the bicyclanes ion trace (123 m/z).

BT-18B VOC PIANO bar graph displayed the dominance of a dissolved phase C2 aromatics (Benzene and Toluene) signature. The GC/FID chromatogram exhibited the different expression of a light distillate to residual range signature. The PAH bar graph, alkylcyclohexanes ion trace (83 m/z), and the bicyclanes ion trace (123 m/z) exhibited the character of the pyrogenic residue. A relatively low-level residual range petrogenic signature was apparent in terpanes ion trace (191 m/z).

BT-03, BT-01, BT-22A, and S-294 The GC/FID chromatograms and PAH bar graphs exhibited the dominance of pyrogenicity in these samples. The character of the pyrogenic residues was evident in the PAH bar graphs, alkylcyclohexanes ion traces (83 m/z), and the bicyclanes ion traces (123 m/z).

PGW-RW-3 The GC/FID chromatogram and PAH bar graphs presented the dominance of a pyrogenic residue and residual range petroleum aspect in the sample. The compositional attributes of the pyrogenic residue were apparent in the PAH bar graph, alkylcyclohexanes ion trace (83 m/z), and bicyclanes ion trace (123 m/z). The VOC PIANO bar graph showed the lower levels of alkylate-rich gasoline (or alkylate feedstock) and light naphtha-like products.

RW-225, RW-209, RW-210, RW-206, the GC/FID chromatograms, and PAH bar graphs presented the dominance of a sulfur-rich residual range petrogenic signature in the product samples. The VOC PIANO bar graph exhibited a relatively lower-level presence of a naphtha-like product. The terpanes ion traces (191 m/z) and the shape and boiling range of the UCM in the GC/FID chromatograms exhibited the compositional attributes of the residual range petrogenic chemistry.

Conclusion

MGP pyrogenic residues were evident in two product samples and five soil samples. MGP pyrogenic residues occurred as mixtures in four samples. Three samples exhibited only MGP pyrogenic residues. One sample PGW-RW-3 from the PGW area exhibited an MGP pyrogenic residue, while seven samples collected from the Bellmont Terminal area exhibited pyrogenic residues. The MGP residues from both locations shared a similar naphtha range to the light distillate range petroleum feedstock backbone.

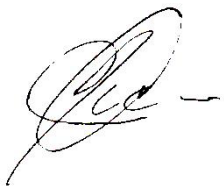
Sulfur-rich residual range petroleum aspects were evident in seven samples. Sulfur-rich residual range petroleum aspects were dominant in four samples collected from the PGW area. All seven samples from the PGW area exhibited a sulfur-rich residual range petroleum aspect.

Sulfur-rich residual range petroleum aspects were evident in one soil and product sample collected from the Bellmont area. Both samples were mutually enriched with pyrogenic MGP residues. These findings show the co-occurrence of MGP and sulfur-rich residual range petroleum in Belmont terminal samples that were likely related to known MGP waste sources in the PGW Site.

Upon receiving additional information, I reserve the right to modify and supplement my opinions outlined in this report.

You may email any questions or concerns to markcejas@chemquants.com regarding chemistry data or interpretation.

Respectfully submitted,



Mark Jonathan Cejas
Principal

ChemQuants, LLC
Santa Barbara, CA 93101
www.ChemQuants.com

Figures

GIS Map of Chemical Fingerprint Classifications as (Estimated) Proportional Pie Charts

CQ Project

Exploration of MGP Waste

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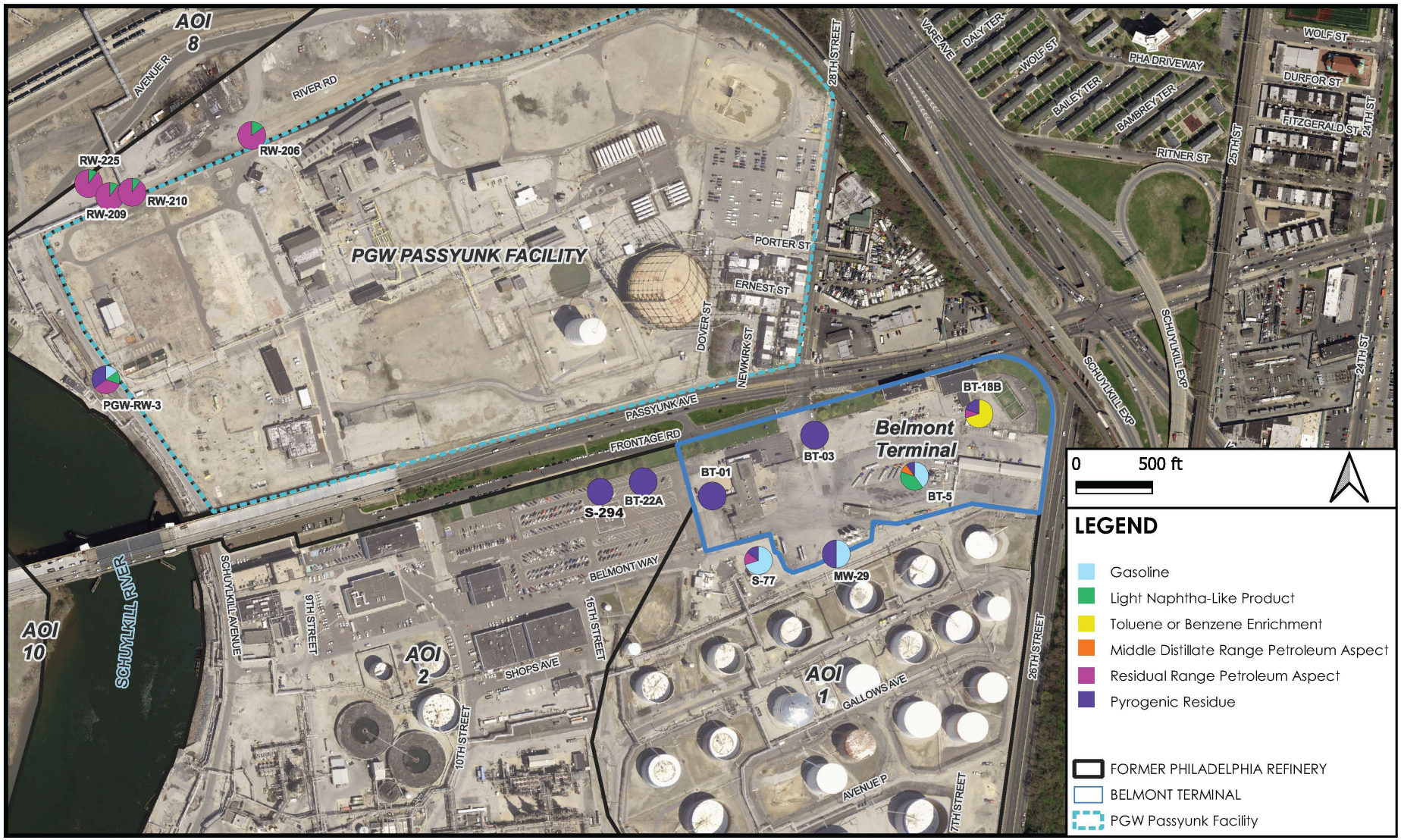

Figure 1. Aerial map of pie charts of proportions of petroleum types mixed in water samples.

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Santa Barbara, CA 93101
www.ChemQuants.com

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Figures

Fingerprint Mosaics for Soil and NAPL Samples

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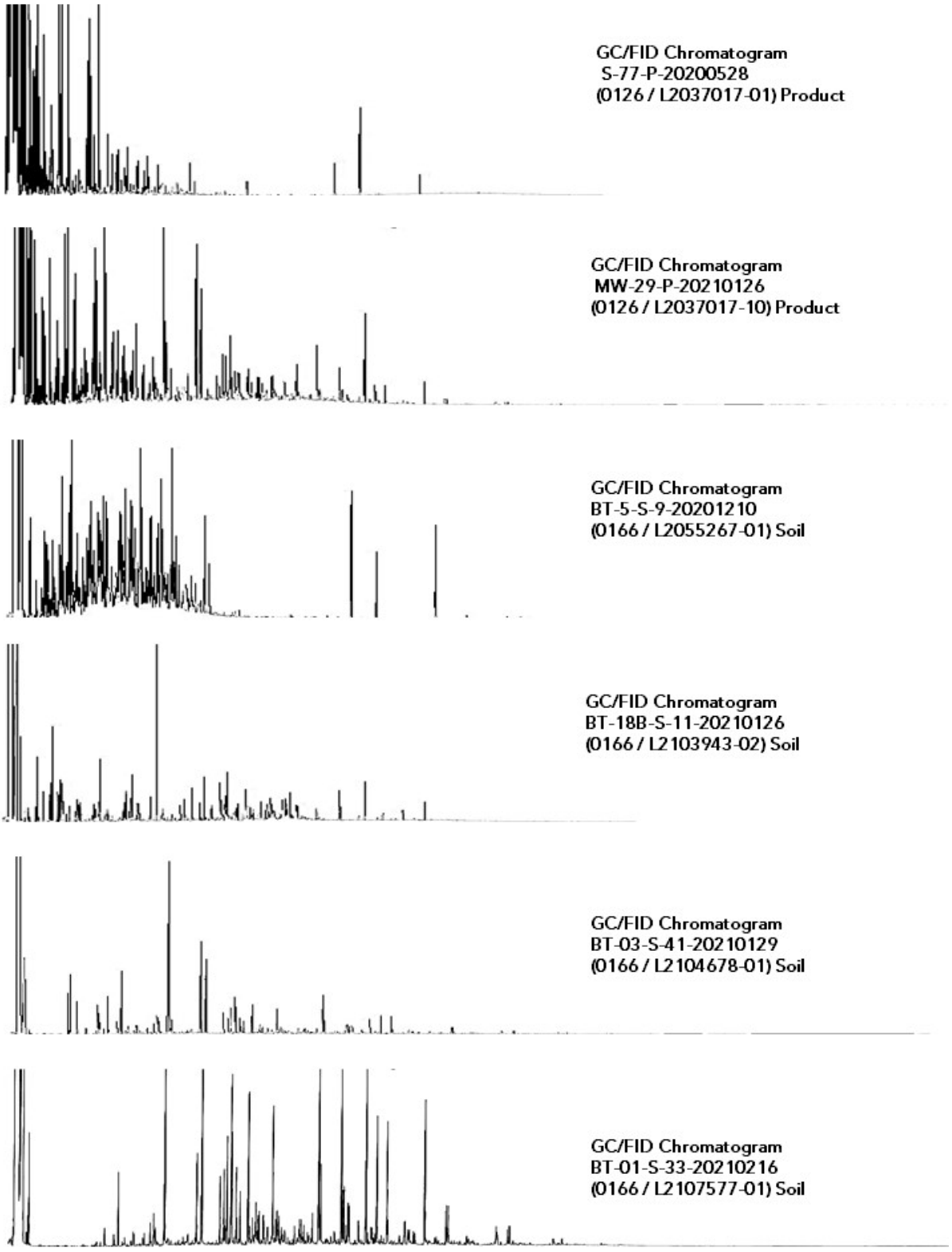

Figure 2. Fingerprint Mosaics™ for product samples (GC/FID Chromatograms.

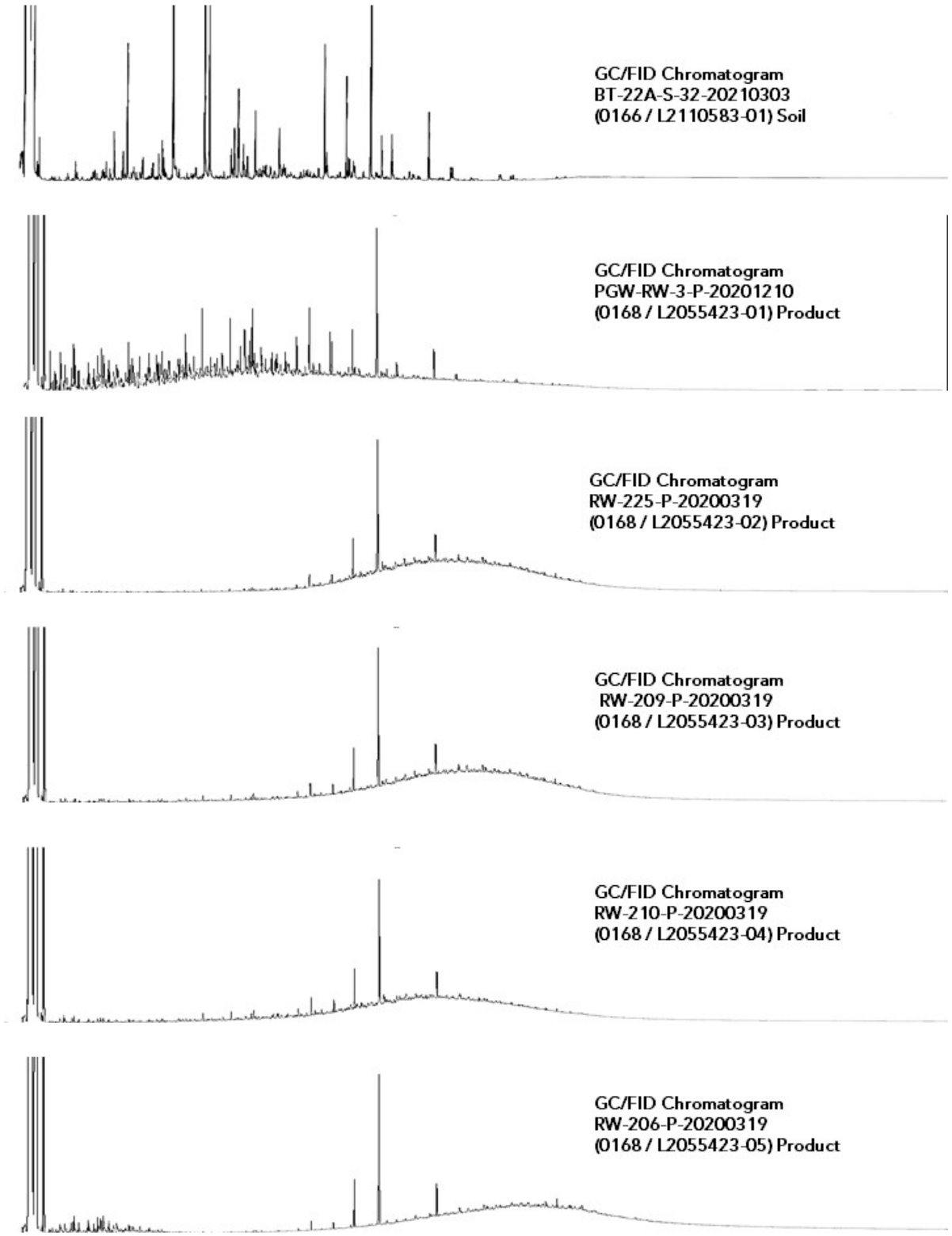

Figure 3. Fingerprint Mosaics™ for product samples (GC/FID Chromatograms).

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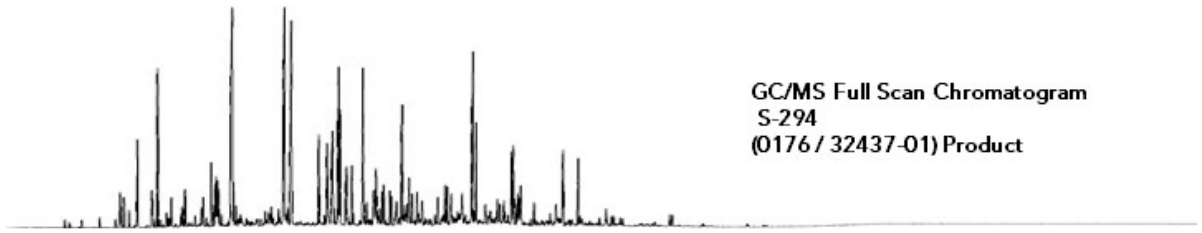

Figure 4. Fingerprint Mosaics™ for product samples (GC/FID Chromatograms).

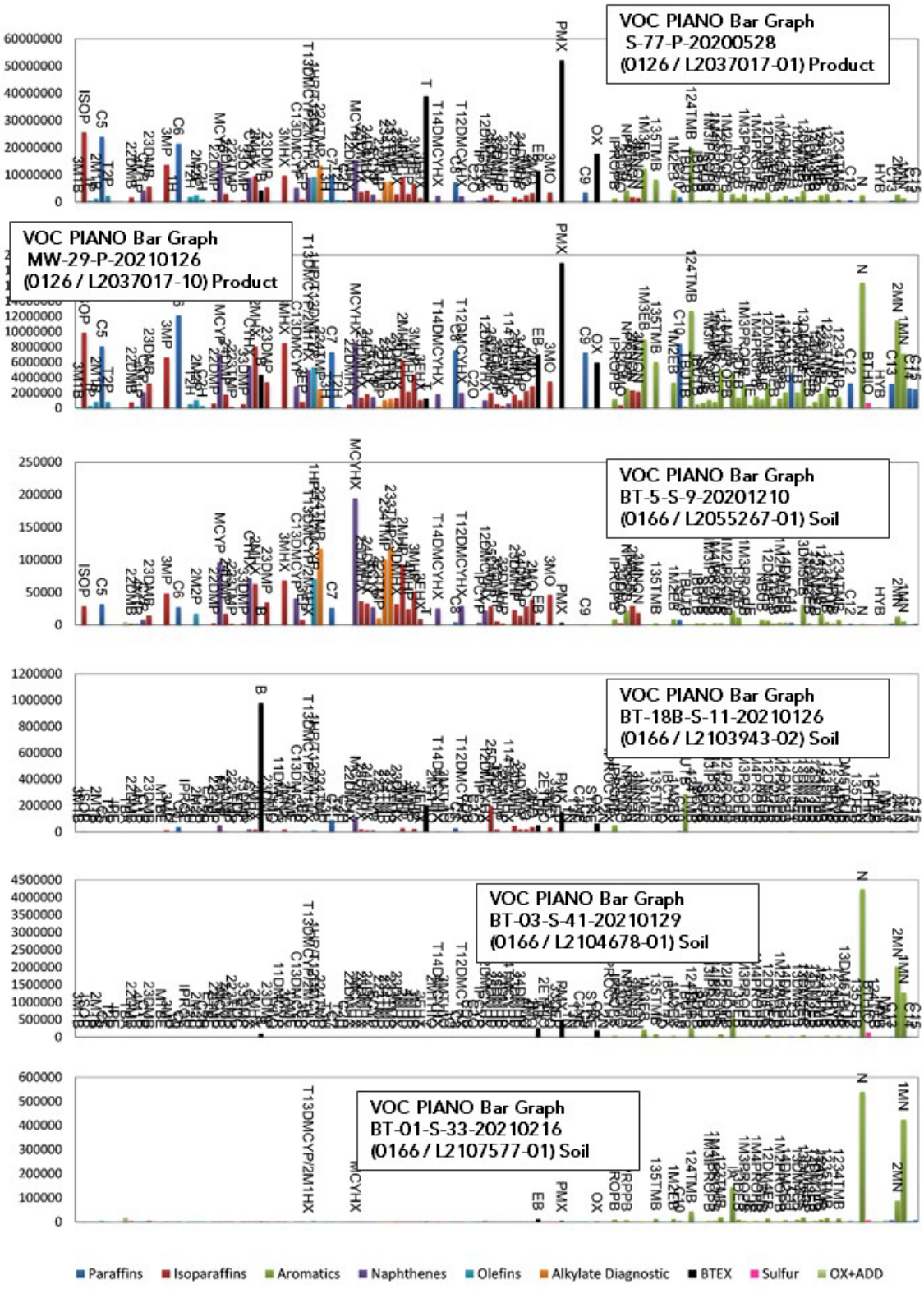

Figure 5. Fingerprint Mosaics™ for product samples (VOC PIANO Bar Graphs).

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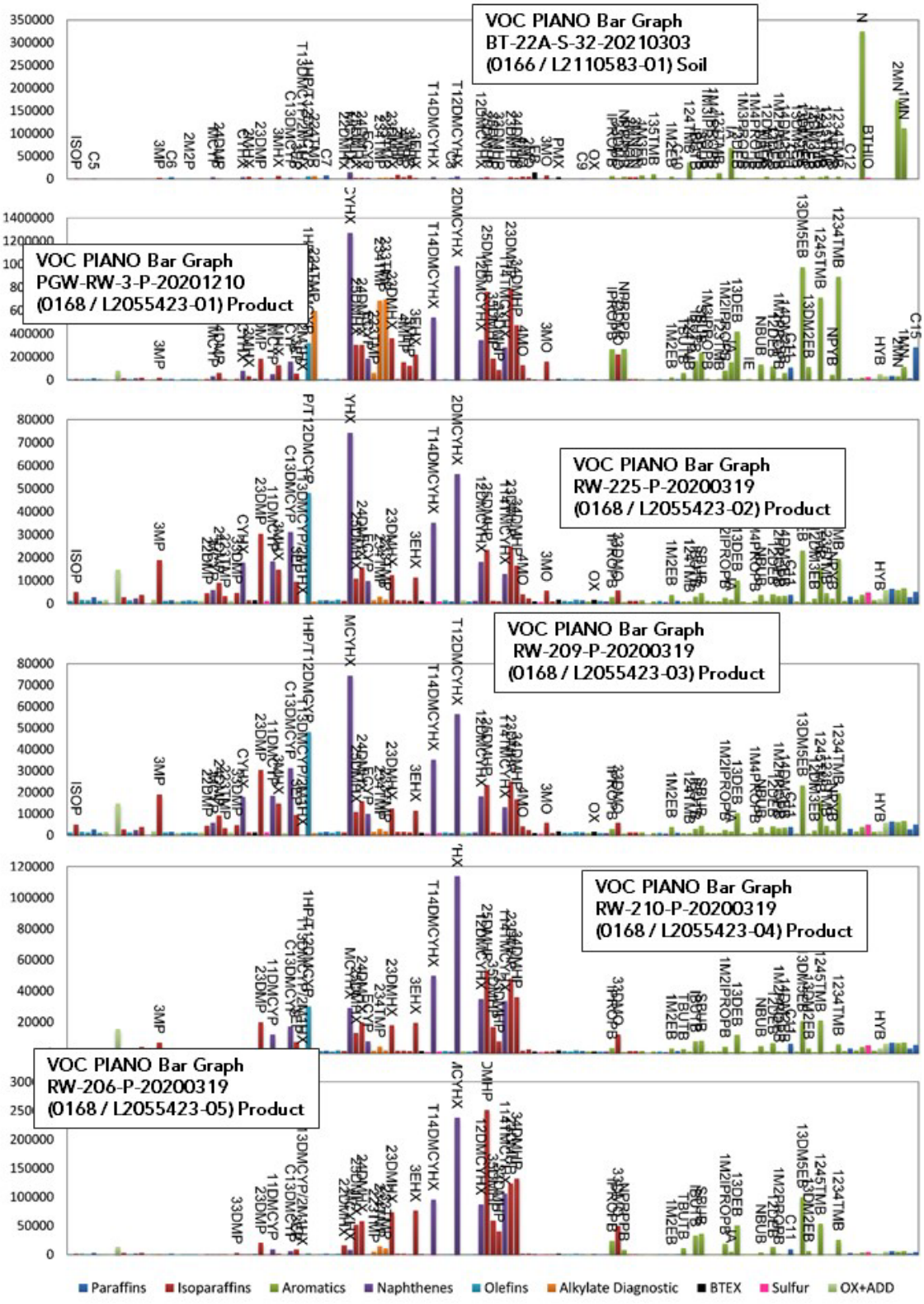

Figure 6. Fingerprint Mosaics™ for product samples (VOC PIANO Bar Graphs).

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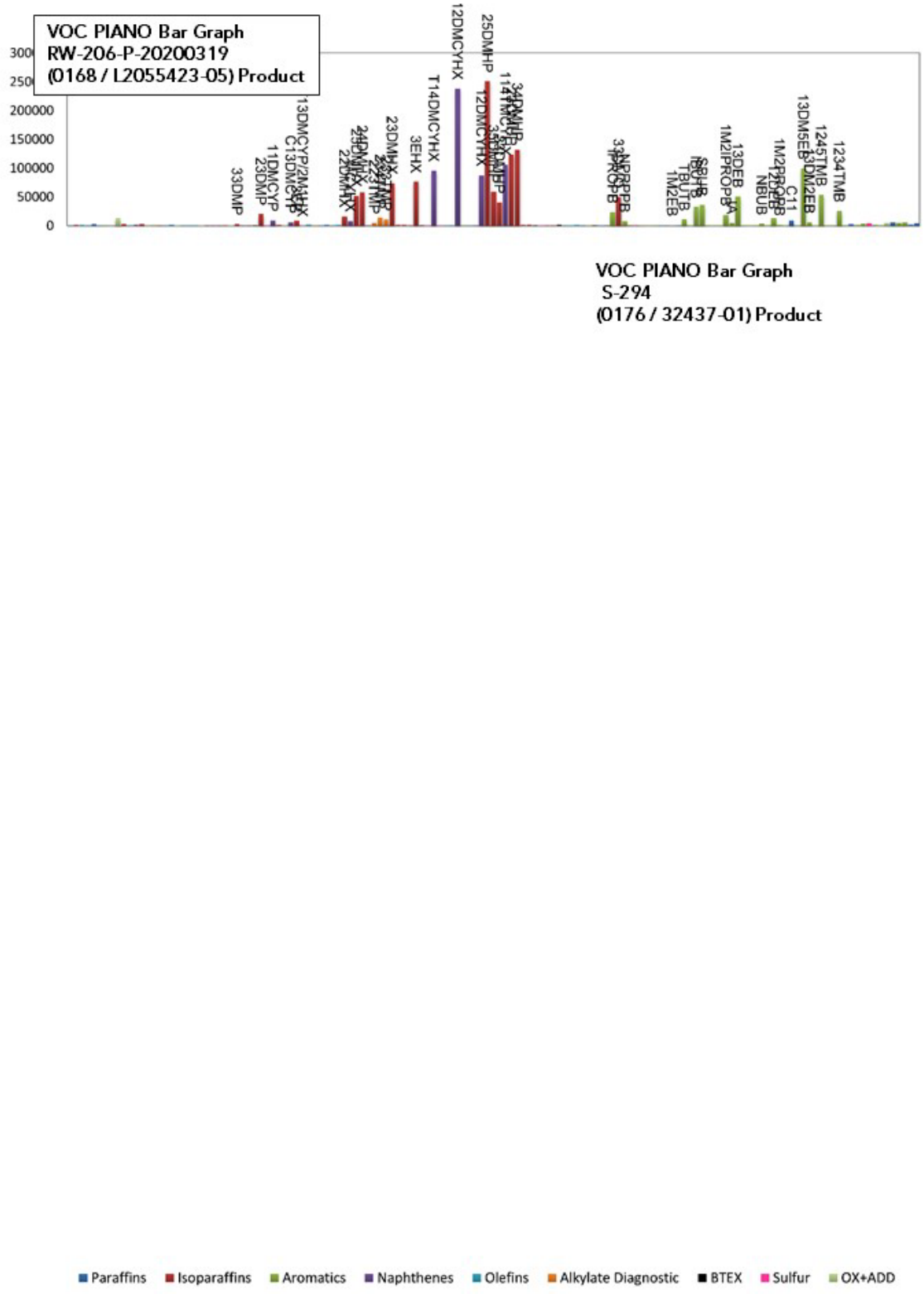

Figure 7. Fingerprint Mosaics™ for product samples (VOC PIANO Bar Graphs).

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www.ChemQuants.com

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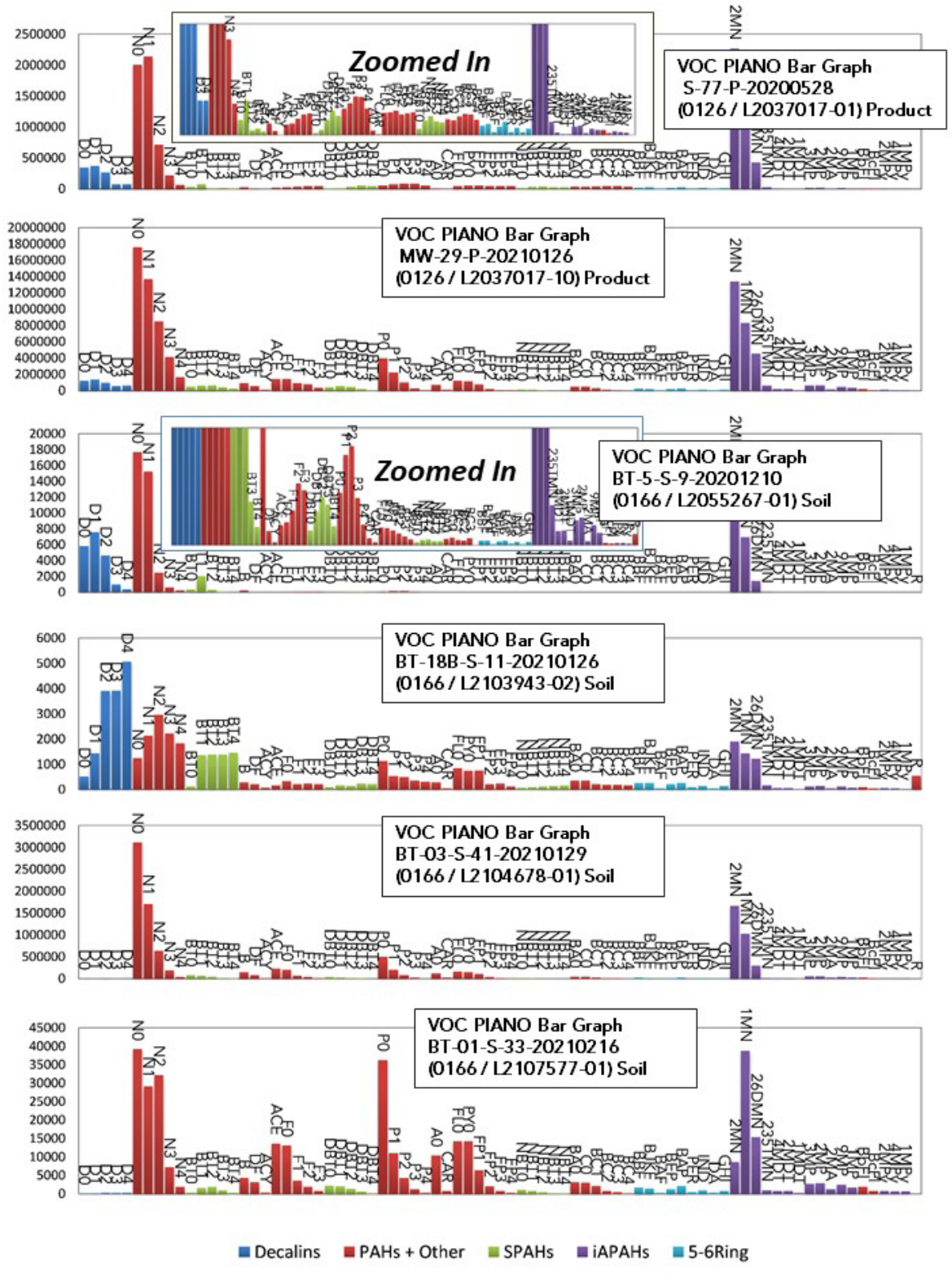

Figure 8. Fingerprint Mosaics™ for product samples (SVOC PAH Bar Graphs).

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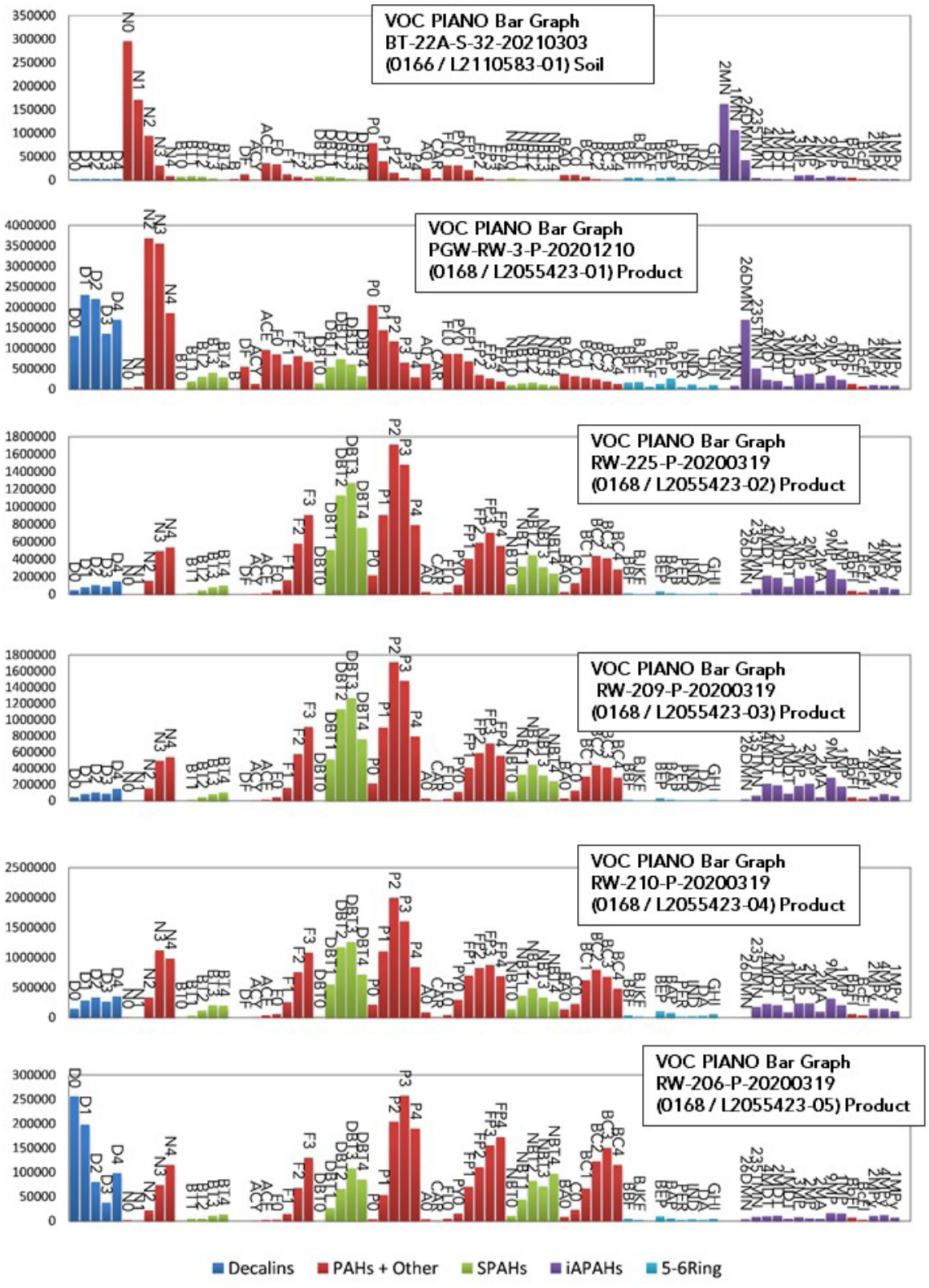

Figure 9. Fingerprint Mosaics™ for product samples (SVOC PAH Bar Graphs).

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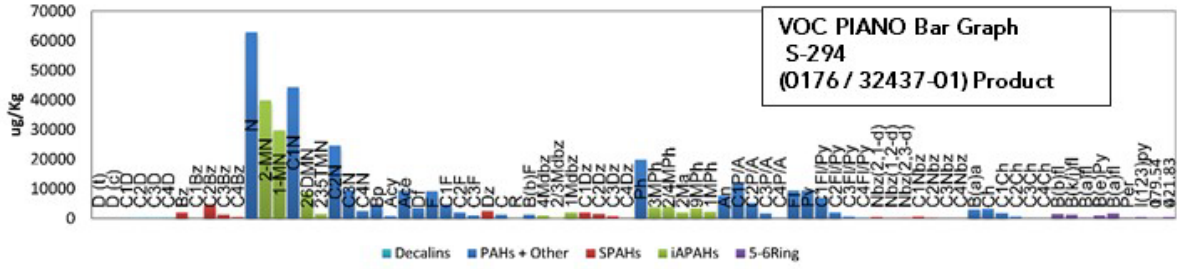

Figure 10. Fingerprint Mosaics™ for product samples (SVOC PAH Bar Graphs).

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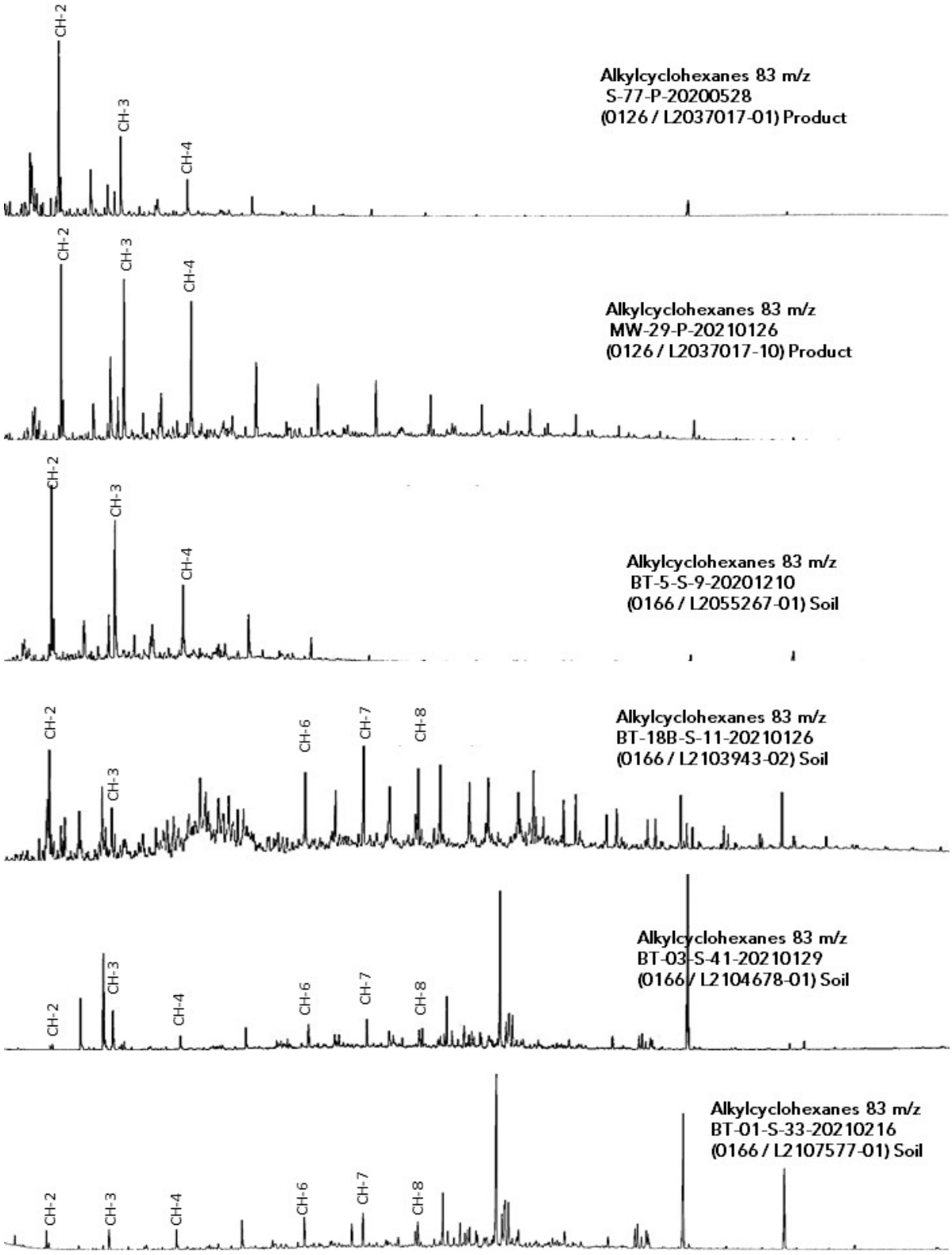

Figure 11. Fingerprint Mosaics™ for product samples (Alkylcyclohexanes 83 m/z).

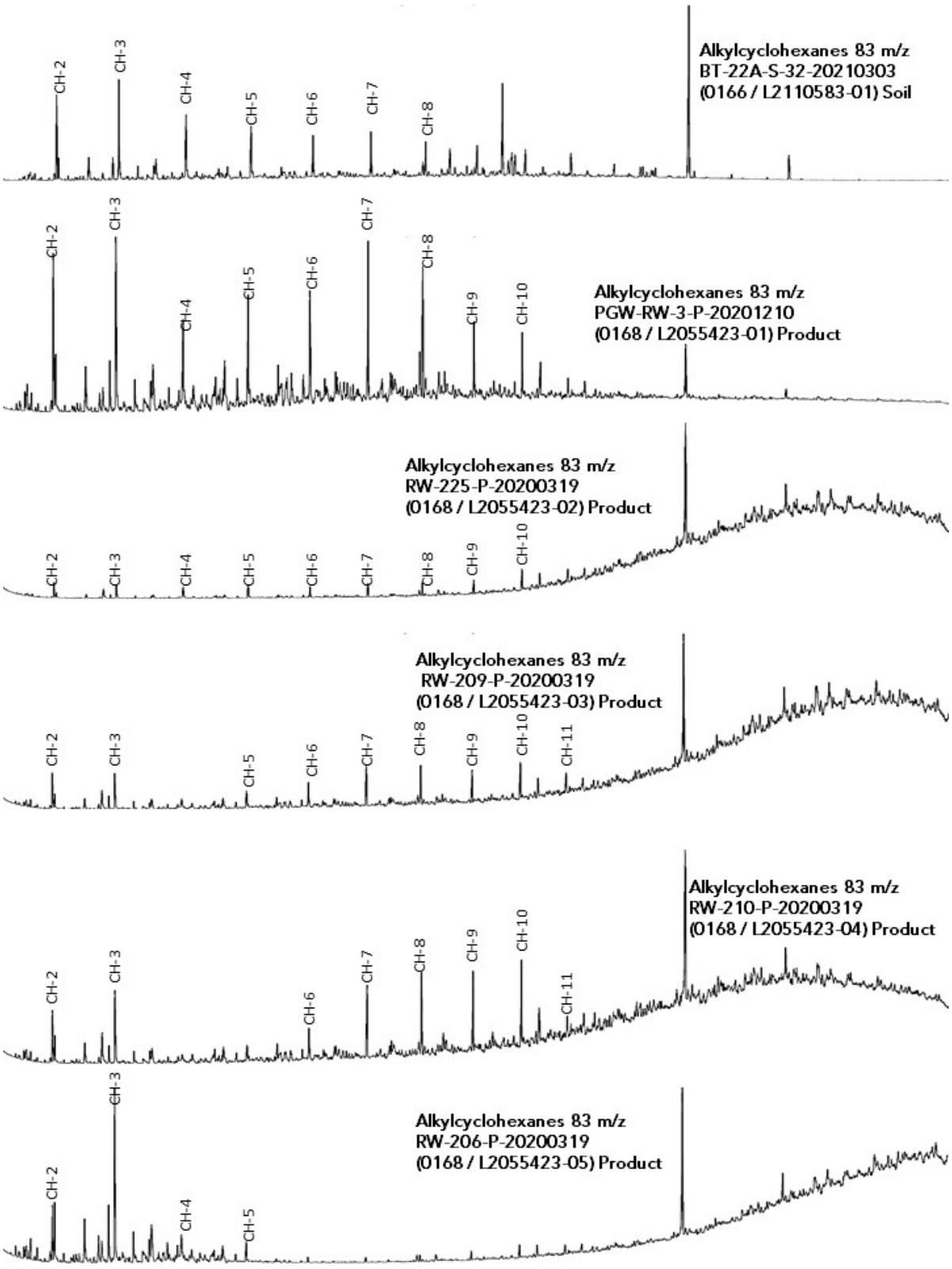

Figure 12. Fingerprint Mosaics™ for product samples (Alkylcyclohexanes 83 m/z).

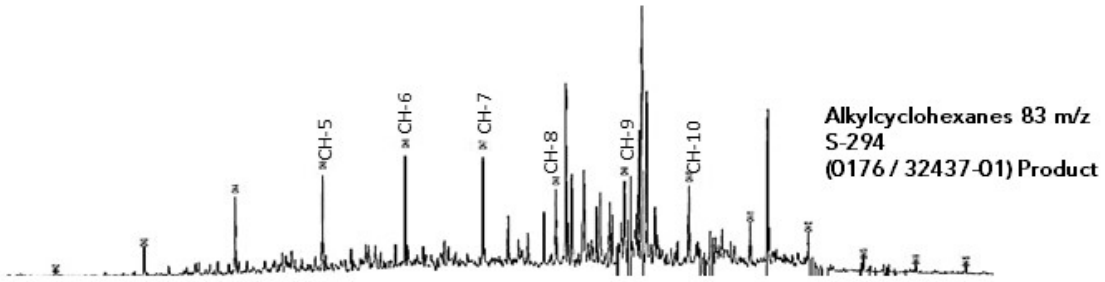

Figure 13. Fingerprint Mosaics™ for product samples (Alkylcyclohexanes 83 m/z).

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www.ChemQuants.com

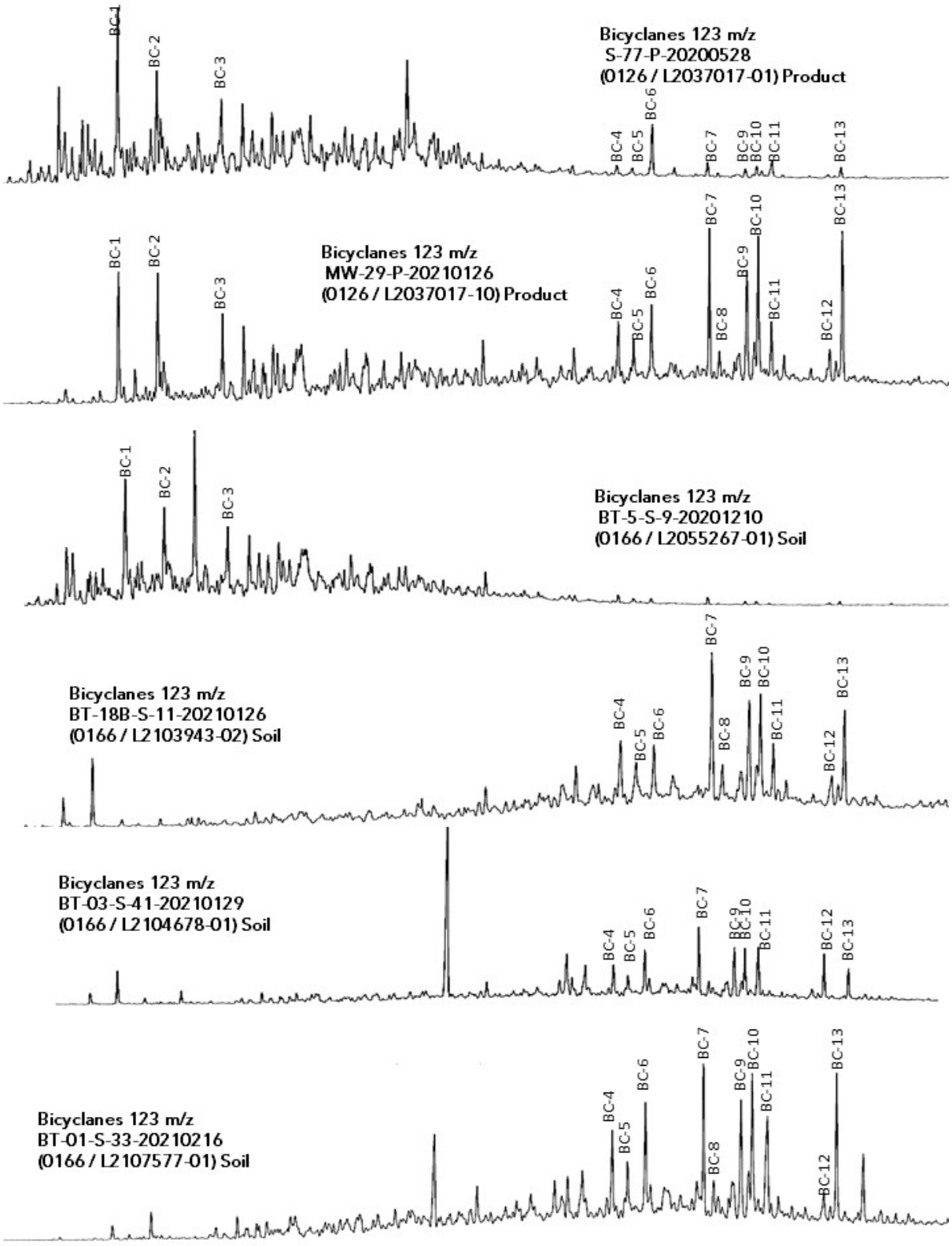

Figure 14. Fingerprint Mosaics™ for product samples (Bicyclanes 123 m/z).

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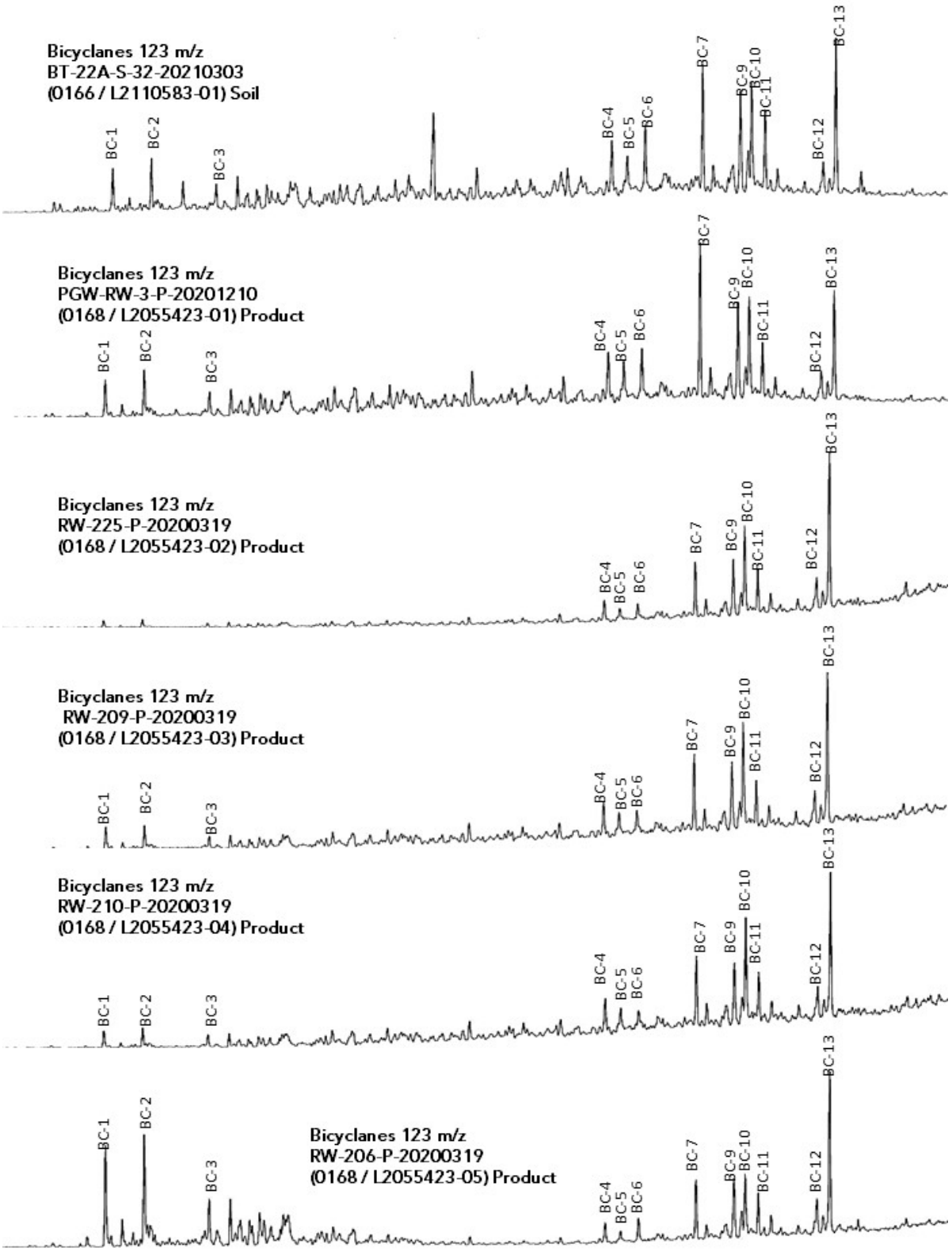

Figure 15. Fingerprint Mosaics™ for product samples (Bicyclanes 123 m/z).

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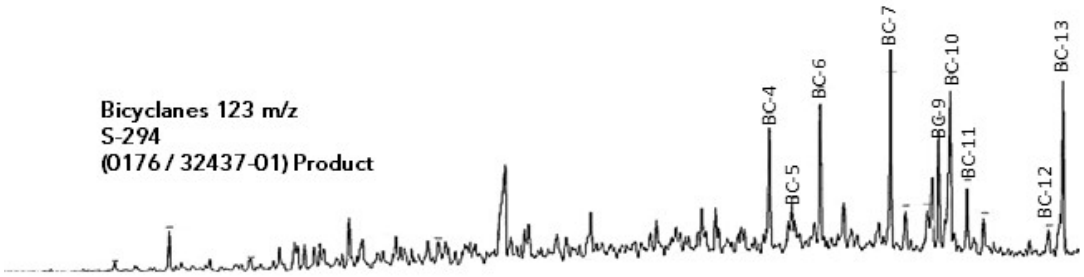

Figure 16. Fingerprint Mosaics™ for product samples (Bicyclanes 123 m/z).

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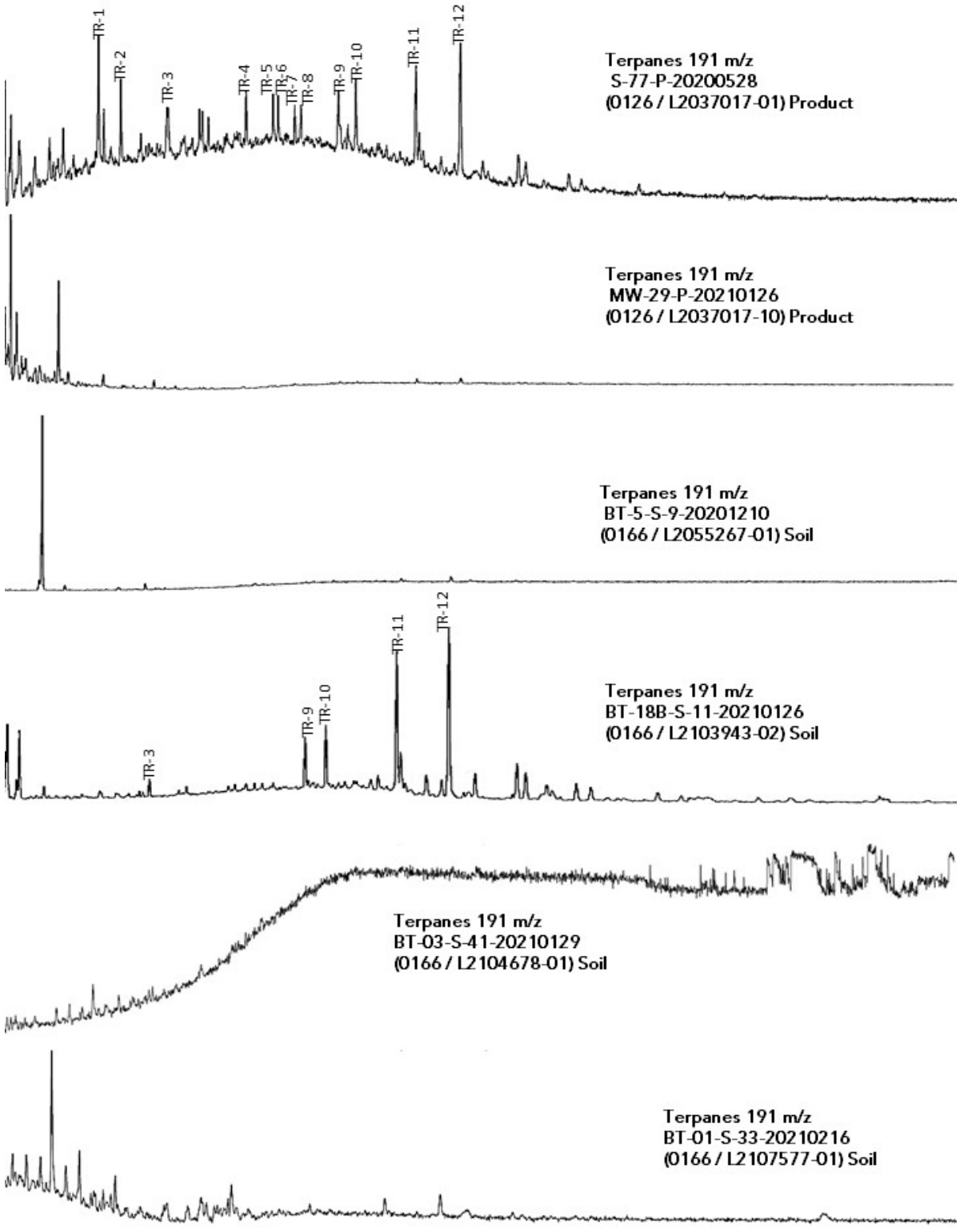


Figure 17. Fingerprint Mosaics™ for product samples (Terpanes 191 m/z).

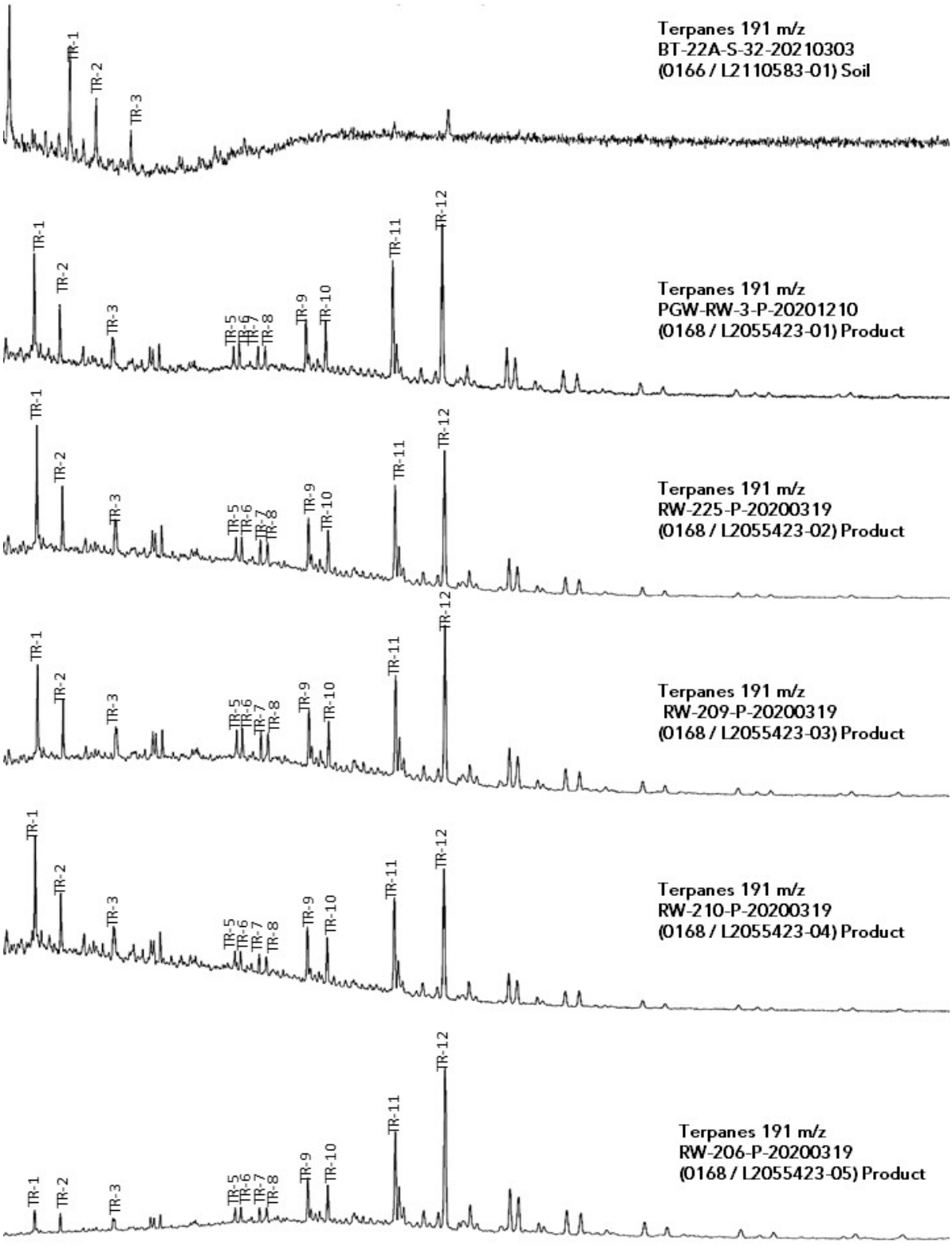


Figure 18. Fingerprint Mosaics™ for product samples (Terpanes 191 m/z).



Figure 19. Fingerprint Mosaics™ for product samples (Terpanes 191 m/z).

June 23, 2022

Andrew Klingbeil
Stantec Consulting Services, Inc.
1060 Andrew Dr. Suite 140
West Chester, PA 19380

CQ Project# 0185
Project Name: Schuylkill River Sheen St.

Introduction

ChemQuants, LLC is gratified to provide you with this report that focuses on the chemical fingerprinting results conducted recently on behalf of Stantec Consulting Services, Inc. The chemical fingerprinting analysis was carried out on one water sample and three product samples. The study was initiated to understand the chemical source nature of the contamination exhibited in the samples and time of release estimation, if possible.

I am the principal at ChemQuants, LLC, an environmental forensics firm in Santa Barbara, California. I received bachelor's degrees in Chemistry and Environmental Science from Florida International University and a Masters's in Analytical Chemistry from Florida International University. My professional experience has focused on oil spill environmental forensics. My specialties include petroleum release investigations on coastal waterways, subsurface environments at petroleum terminals and fueling stations, and "big environmental data" chemometrics and data visualization. Besides being chair at a scientific conference, I have authored numerous publications and presentations to my peers. A complete description of my professional background is available upon request.

I have been asked to answer the following questions:

- What are the petroleum characteristics expressed in the water and product samples listed below?
- What is the possible time of release, if at all possible, for the samples listed below?
- Do any chemical signatures relate to the chemical signatures expressed in samples from the PACE Energy report 33248 (Appendix 1).

Client ID	Lab ID	Date Collected	Date Received	Matrix	Saturated Hydrocarbons EPA 8015D (Mod.)	Alkylated PAHs 8270D (Mod.)	VOC PIANO
AOI2-SR-21-01	L2110356-01	2/26/2021	3/3/2021	Water	X	X	X
AOI2-SR-21-02	L2110983-01	3/23/2021	3/5/2021	Product	X	X	X
S-423-P-20210304	L2110983-02	3/23/2021	3/5/2021	Product	X	X	X
AOI2-TUNNEL-BILCO-2021	L2110983-03	3/23/2021	3/5/2021	Product	X	X	X

The samples were delivered to Alpha Analytical, Inc. (Mansfield, MA) and analyzed with the following analytical methods[1]:

[1] Douglas, G.D., Emsbo-Mattingly, S.D., Stout, S.A., Uhler, A.D., and McCarthy, K.J. (2007) Chemical fingerprinting of hydrocarbons and polychlorinated biphenyls. In: *Introduction to Environmental Forensics, 2nd Ed.*, B. Murphy and R. Morrison, Eds., Academic Press, New York, pp. 317-459.

1) Alkylated PAHs by GC/MS (SIM) / EPA 8270D (Mod.)
2) Saturated Hydrocarbons by GC/FID / EPA 8015D (Mod.)
3) C5-C12 PIANO w/ Oxygenates and additives quantification and fingerprinting by GC/MS – full scan mode / EPA 8260B (Mod.)

Investigative methodology

The forensics quality chemical data were evaluated with data analysis techniques typically used in a subsurface middle distillate to residual range petroleum investigations[2]. The chemical results were reviewed as a first step to determine the petroleum type(s) present in the samples. Weathering characteristics of the petroleum were then determined by reviewing proportions of chemistry with different susceptibility to evaporation or aqueous disolution (waterwashing). Biodegradation of petroleum was also assessed. Subsequently, the information gathered was used to determine a suitable strategy for alterations due to weathering, proper age estimations, and chemical source forensics investigation.

A site map is provided in figure 1.

Results and Discussion

Weathering and Biodegradation Properties of Middle Distillate Fuels

Weathering properties were assessed with a qualitative and ratio-based quantitative review (table 1) of the aromatic compounds in the sample. The prominent aromatic compounds were alkylated naphthalenes and phenanthrenes (figure 6). Among middle distillate hydrocarbons, n-paraffins are the first to be depleted by biodegradation and serve as the primary determinant for biodegradation (Table 1 nC17/Pr ratio & Figure 5)[3]. The middle distillate range components in AOI2-SR-21-01, AOI2-SR-21-02, and S-423-P-20210304 exhibited >95% removal of n-paraffins > 50% depletion state of the more biodegradation resistant alkylcyclohexanes (table 1; figures 5, 7). The results of the biodegradation and weathering ratios, and a review of the corresponding chemical fingerprints, suggest that the petroleum in AOI2-SR-21-01, AOI2-SR-21-02, and S-423-P-20210304 was severely impacted by biodegradation and general weathering effects.

General Petroleum Type Determinations

Petroleum mixtures were evident in AOI2-SR-21-01, AOI2-SR-21-02, and S-423-P-20210304 (see table 1 and Figure 7,8 for proportional attributes of the samples). AOI-2-TUNNEL-BILCO-2021 exhibited a residual range product.

AOI2-SR-21-01 mixture of middle distillate range and residual range petroleum. The middle distillate range aspect was dominant in the sample (figure 3). The residual range petroleum was evident in the enrichments of 3-4 ring PAHs (figure 6) and residual range biomarkers (191 m/z) (figure 9).

AOI2-SR-21-02 mixture of middle distillate range and residual range petroleum. The middle distillate range aspect was dominant in the sample (figure 3). The residual range petroleum was evident in the enrichments of 3-4 ring PAHs (figure 6) and residual range biomarkers (191 m/z) (figure 9). A VOC range severely weathered gasoline or alkylate intermediate refinery product was evident as a minor component of the mixture (Figure 3,4).

[2] Morrison, Robert D., and Brian L. Murphy. *Environmental forensics: contaminant specific guide*. Academic Press, 2010.and
[3] Wenger, Lloyd M., Cara L. Davis, and Gary H. Isaksen. "Multiple controls on petroleum biodegradation and impact on oil quality." *SPE Reservoir Evaluation & Engineering* 5.05 (2002): 375-383.

S-423-P-20210304 was a mixture of middle distillate range and residual range petroleum. The middle distillate range aspect was dominant in the sample (figure 3). The residual range petroleum was evident in the enrichments of 3-4 ring PAHs (figure 6) and residual range biomarkers (191 m/z) (figure 9). A VOC range severely weathered gasoline or alkylate intermediate refinery product was evident at a proportion comparable to the middle distillate range product (figures 3,4).

Age Estimation of the Middle Distillate Range Petroleum

Multiple lines of evidence were attempted to estimate the middle distillate fuel containing samples. The lines of evidence included organic sulfur diagnostics, signatures of HDS impacts, and a biodegradation model [4][5]. The organic sulfur diagnostics results include the fingerprint character of heterocyclic sulfur dibenzothiophenes and decalins enrichment (Table 1) and corresponding diagnostic ratios (ratios 2 to 3 – table 1; figure 2). The diagnostics suggest the presence of sulfur-rich middle distillate fuel in the three samples. The sulfur-based lines of evidence suggest a middle distillate fuel that was likely manufactured before ~1993.

A biodegradation-based index was used as an additional line of evidence to assess the middle distillate fuels' approximate age. The well-documented time-based model is a biodegradation index based on the relationship between nC17 and Pristane. Also, biodegradation-based age proxies were reinforced with a general review of biodegradation characteristics in light of the Site's potential weathering regime - as determined by the physical attributes and conditions (table 1). *Note: The weathering regime at the Site was assumed to be moderate.* The >95% depletion of n-paraffins and ~>50% depletion of Isoparaffins and Alklycyclohexanes signal biodegradation severity. The biodegradation-based age constraining line of evidence invites the interpretation that the petroleum may have exhibited a residence time of >24 years in the environment (table 1).

Middle Distillate Range Fingerprints

Middle distillate range petroleum biomarker fingerprints, specifically bicyclanes (figure 8 – 123 m/z) and Pristane and phytane (table 1 ratio 4) were reviewed to afford additional lines of evidence for source comparison. Bicyclanes and isoprenoids are among the most recalcitrant (resistant to biodegradation) hydrocarbons in the middle distillate petroleum range; thus, their signatures are valuable for exploring potential "genetic" relationships between petroleum feedstock properties. There were no appreciable differences between the middle distillate fingerprint aspects of the three samples.

Residual Range Petroleum

AOI2-TUNNEL-BILCO-2021 exhibited a residual range product "genetically" distinct from the residual range components present as mixtures in AOI2-SR-21-01, AOI2-SR-21-02, and S-423-P-20210304 (figures 6, 9). Fingerprint differences are notable in the leftward skewing of the 3 to 4-ring PAHs, enrichments of biogenic and thermally less mature PAH constituents – perylene and retene, and distributions of terpanes (191 m/z). These chemical attributes suggest contributions from a coal source.

Comparison to PAES Report 33248 (Appendix 1)

Samples SSL1 20200312 and SSL2 20200312 were evaluated in the PAES Report 33248. The middle distillate range products in AOI2-SR-21-01, AOI2-SR-21-02, and S-423-P-20210304 were similar to the middle distillate range product expressed in the water sample SSL2 20200312. Upon evaluated product samples in this report, the time of release for the middle distillate range components in water sample SSL2 20200312 was updated to ~>24 years. In addition, the residual range product expressed in SSL1 exhibited contributions of residues from the BILCO TUNNEL.

---

[4] Schade, Thomas, Benedikte Roberz, and Jan T. Andersson. "Polycyclic aromatic sulfur heterocycles in desulfurized diesel fuels and their separation on a novel palladium (II)-complex stationary phase." *Polycyclic Aromatic Compounds* 22.3-4 (2002): 311-320.

[5] Wade, Michael J. "Age-dating diesel fuel spills: Using the European empirical time-based model in the USA." *Environmental Forensics* 2.4 (2001): 347-358.

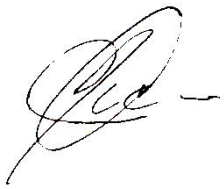
Conclusion

Multiple lines of evidence suggest that AOI2-SR-21-01, AOI2-SR-21-02, and S-423-P-20210304 contained mixtures of petrogenic sources, yet AOI2-TUNNEL-BILCO-2021 exhibited only residual range chemistry. The middle distillate range source features were intrinsically similar in the three samples. The middle distillate range products exhibited a reasonable residence time in the subsurface of ~>24 years. The residual range petroleum in AOI2-TUNNEL-BILCO-2021 was "genetically" different from the residual range petroleum in AOI2-SR-21-01, AOI2-SR-21-02, and S-423-P-20210304.

Upon receiving additional information, I reserve the right to modify and supplement my opinions outlined in this report.

You may email any questions or concerns to markcejas@chemquants.com regarding chemistry data or interpretation.

Respectfully submitted,



Mark Jonathan Cejas
Principal

Tables

Petroleum Diagnostics for Water and Product Samples

CQ Project

#0185

Interpreter

ChemQuants project ID	185	185	185	185
Project Name	Schuylkill River Sheen Study	Schuylkill River Sheen Study	Schuylkill River Sheen Study	Schuylkill River Sheen Study
Sample ID	AOI2-SR-21-01	AOI2-SR-21-02	S-423-P-20210304	AOI2-TUNNEL-BILCO-2021
Laboratory ID	L2110356-01	L2110983-01	L2110983-02	L2110983-03
Sample Type	Water	OIL	OIL	OIL
Saturated HC ratios				
1) n-C17 / Pristane	NR	NR	NR	NR
Petrogenic Ratios				
2) D2 / P2	0.67	0.69	0.59	0.71
3) D3 / P3	0.77	0.75	0.66	0.57
4) Pristane / Phytane	2.66	2.71	2.74	1.73
5) 2-Methylphenanthrene / 1-Methylphenanthrene	0.94	0.94	1.50	NR
Middle Distillate Weathering Parameters				
n-paraffins (85 m/z)	>95% Depleted	>95% Depleted	>95% Depleted	Not a Middle Distillate Range Product
Alkylcyclohexanes (83 m/z)	>50% Depleted	>50% Depleted	>50% Depleted	
2-3 ring PAHs	Weathered	Weathered	Weathered	
Petroleum Attributes				
DBTs and Decalins	HDS not apparent	HDS not apparent	HDS not apparent	
Potential Weathering Regime at Site	Moderate	Moderate	Moderate	Moderate
Approximate Proportionality of Petroleum Products	Residual Range Product << Middle Distillate Range Product	Residual Range Product <<Alkylate Product << Middle Distillate Range Product	Middle Distillate Range Product <<Alkylate Product << Residual Range Product	Residual Range Product
Middle Distillate Biodegredation Classification	Severely Biodegraded	Severely Biodegraded	Severely Biodegraded	Not a Middle Distillate Range Product
Approximate Age Estimation of Middle Distillate Range (Via. Biodegredation LOE)	>24 yrs	>24 yrs	>24 yrs	Not a Middle Distillate Range Product

Note: If field is "NR" a ratio was not calculable.
LOE = Line of Evidence
HDS = Hydrodesulfurization
nC17 = n-heptadecane
P=Phenanthrene/Anthracenes
DBTs= Dibenzothiophenes
D2 = C2 - Dibenzothiophenes
P2 = C2 - Phenanthrenes / Anthracenes
DEC=Decalins

Table 1. Table of diagnostic VOC properties.

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Figures

Aerial map of site

Scatter plot of PAH ratios for middle distillate range sulfur diagnostics

CQ Project

#0185

Interpreter

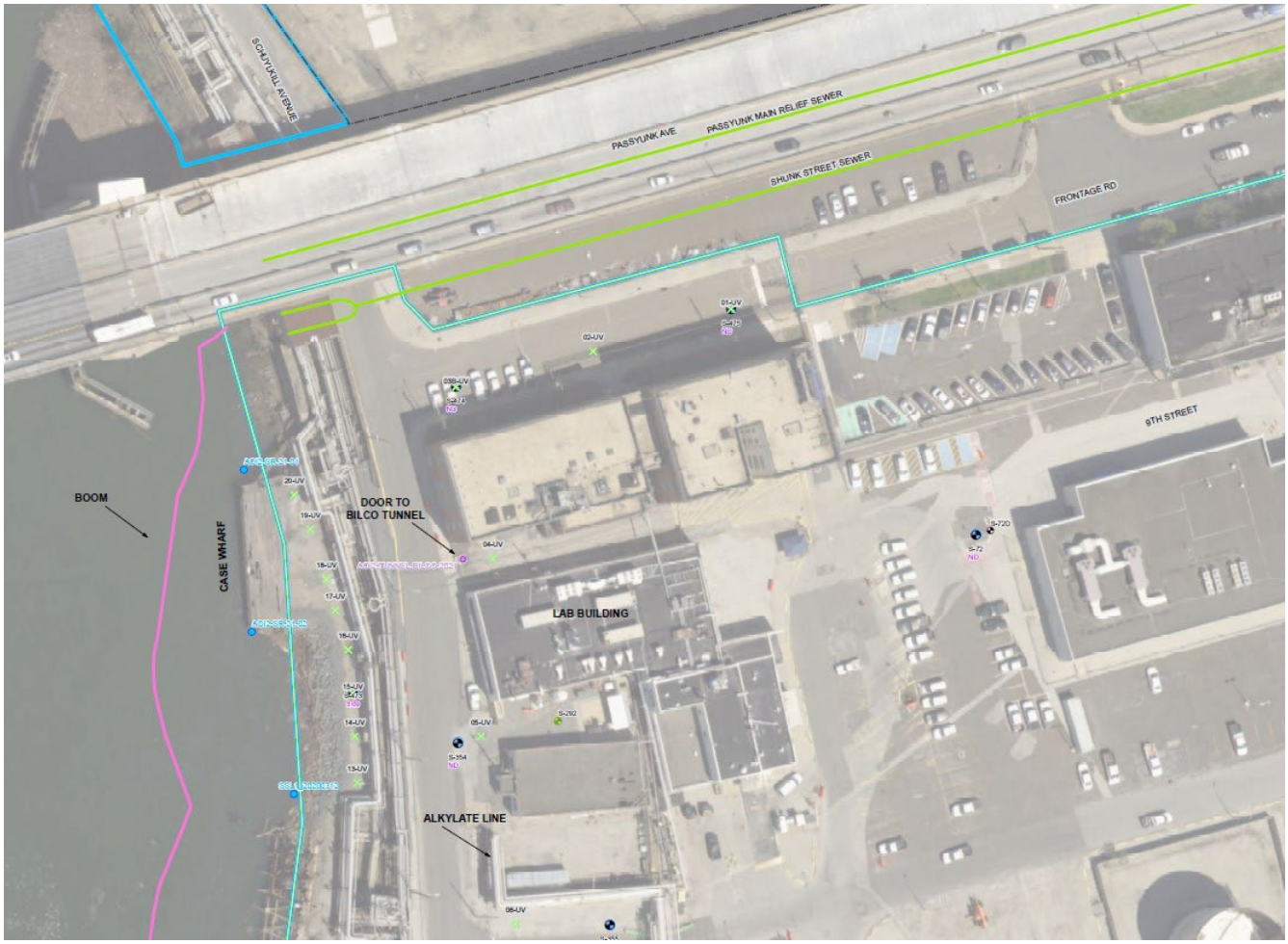

Figure 1. Aerial map of Site.

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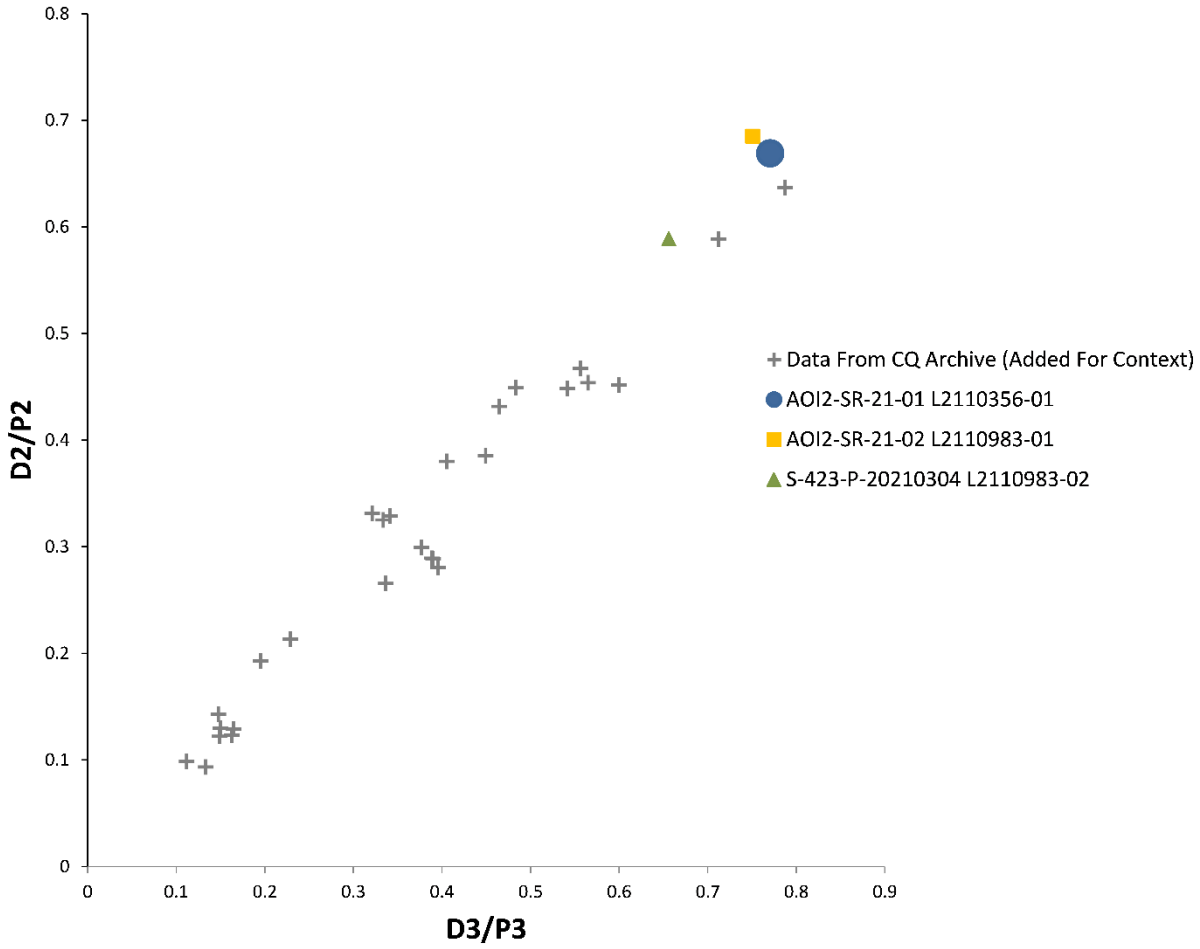

Figure 2. Middle distillate range petroleum sulfur diagnostic.

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Figures

Fingerprint Mosaics for Water and NAPL Samples

CQ Project

Interpreter Report #0185 L2210356; L2110983

Interpreter

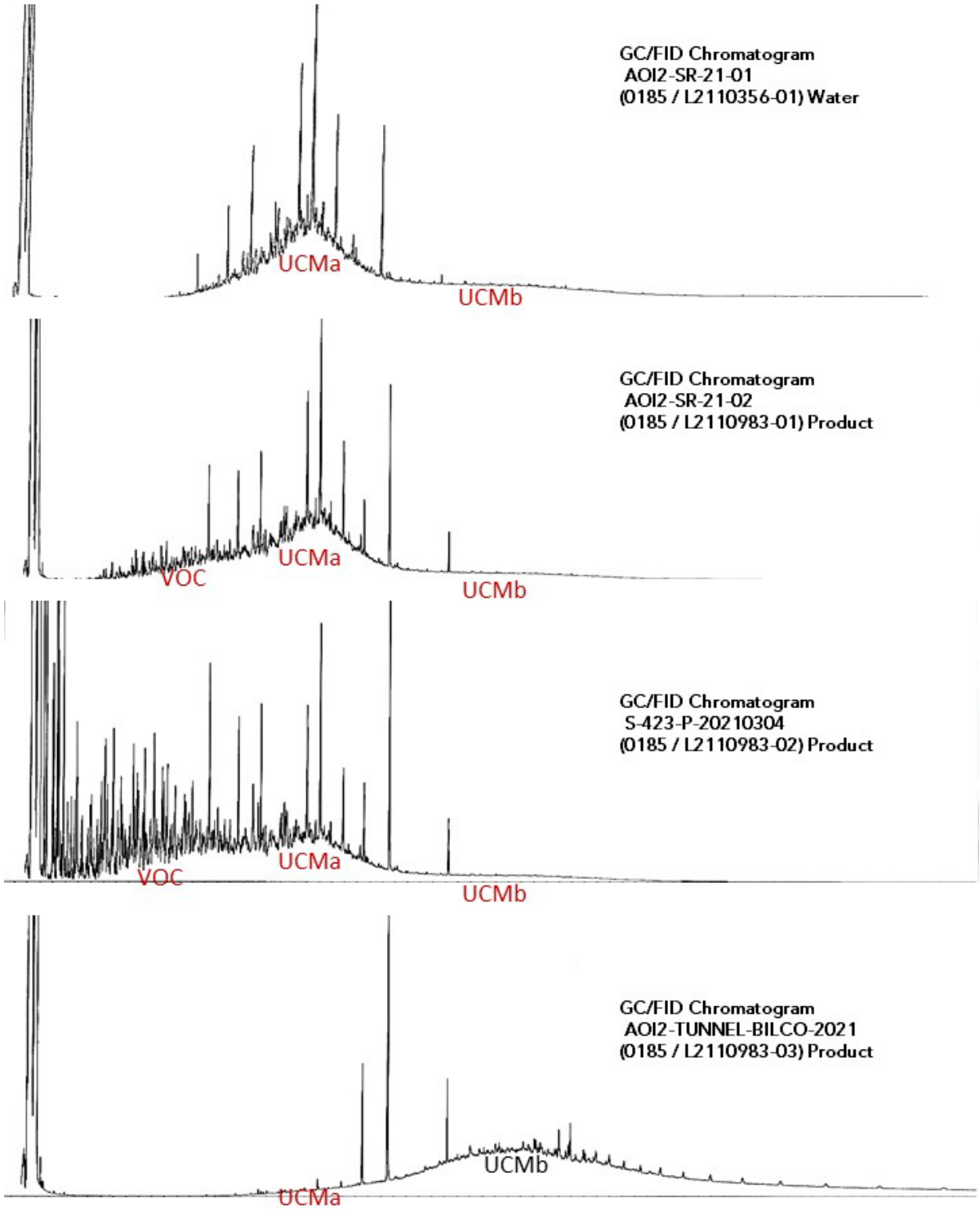

Figure 3. Fingerprint Mosaics™ for water and product samples (GC/FID Chromatograms).

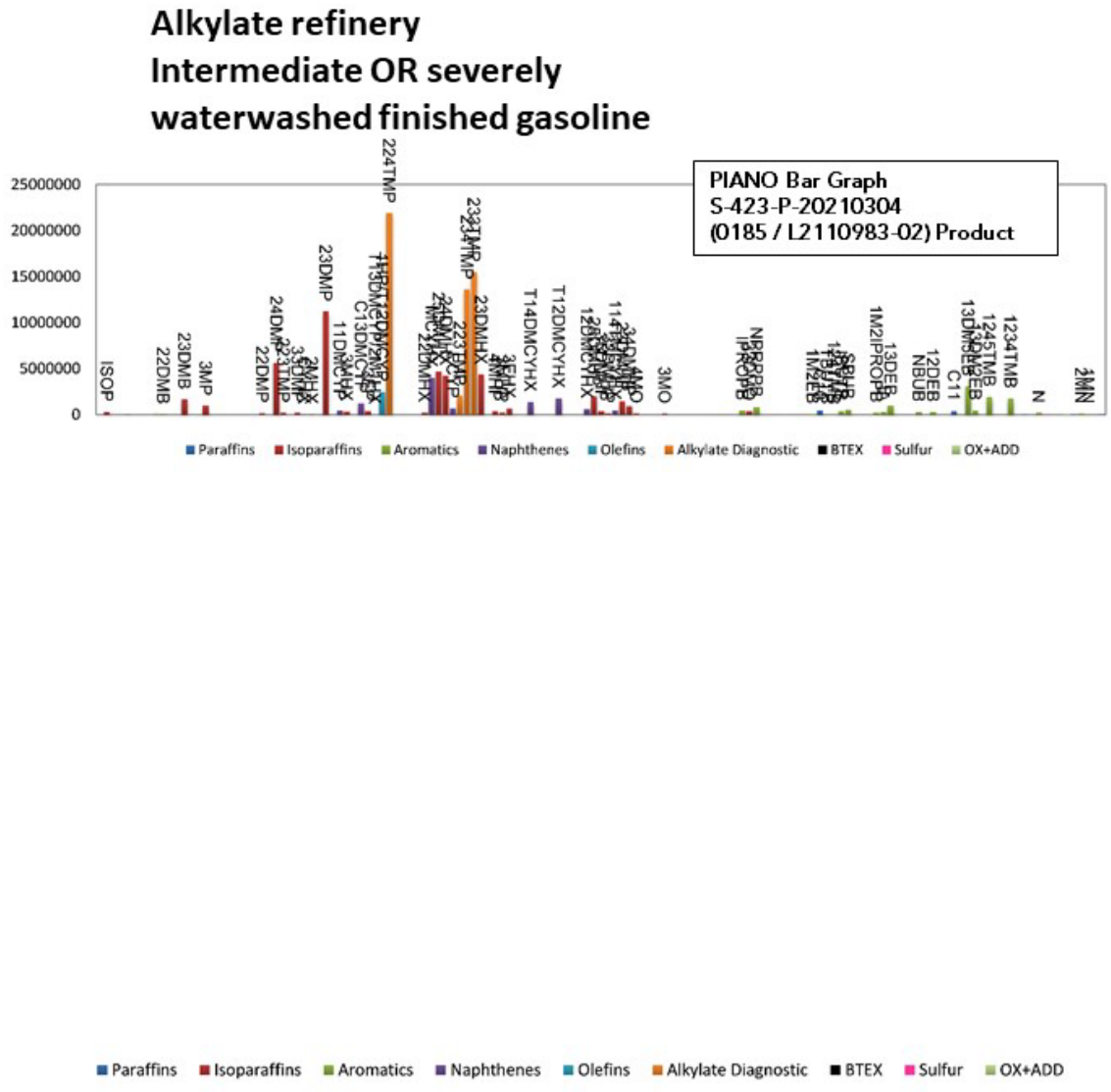

Figure 4. Fingerprint Mosaics™ for water and product samples (VOC PIANO Bar Graphs).

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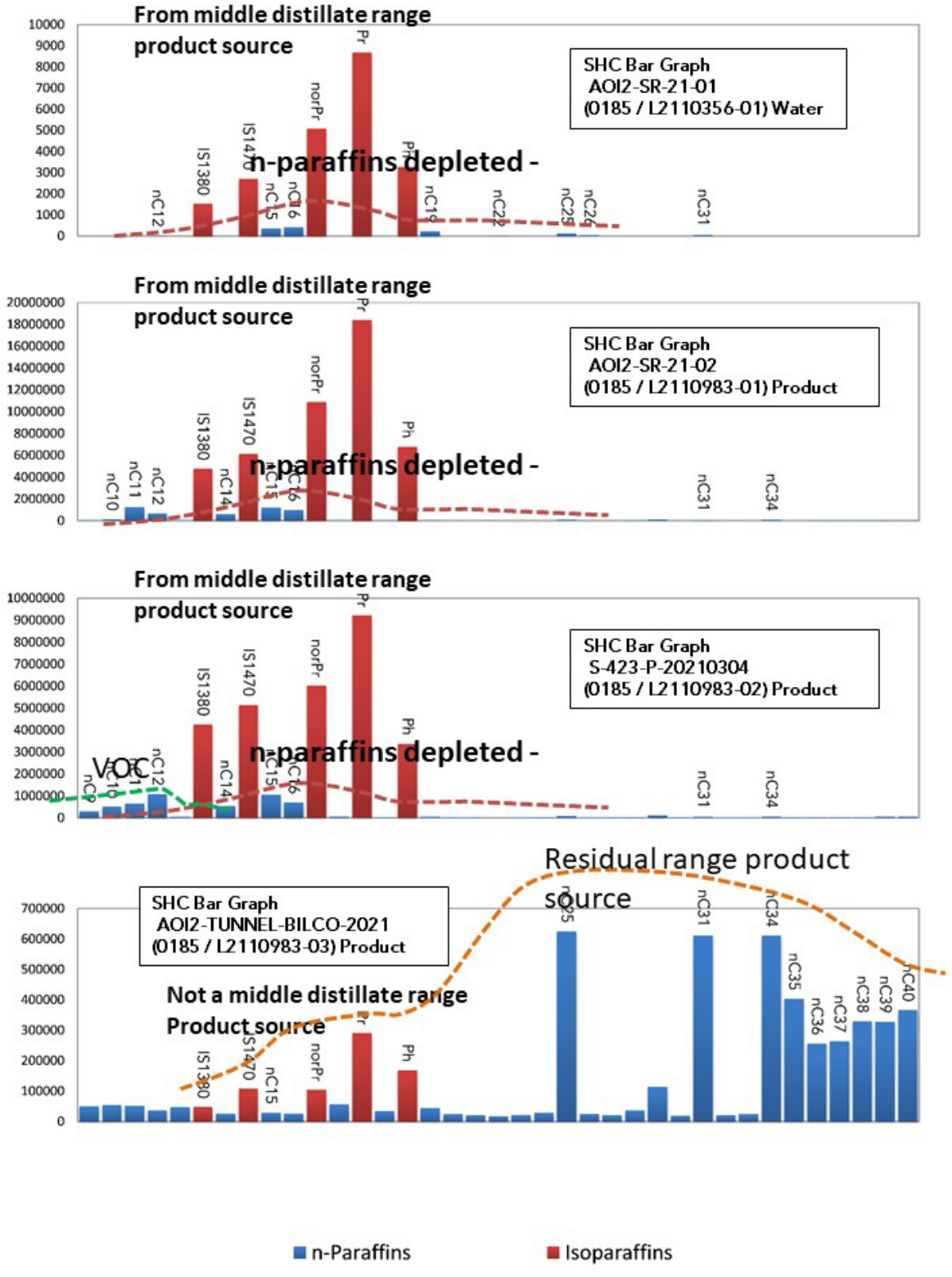

Figure 5. Fingerprint Mosaics™ for water and product samples (SVOC SHC Bar Graphs).

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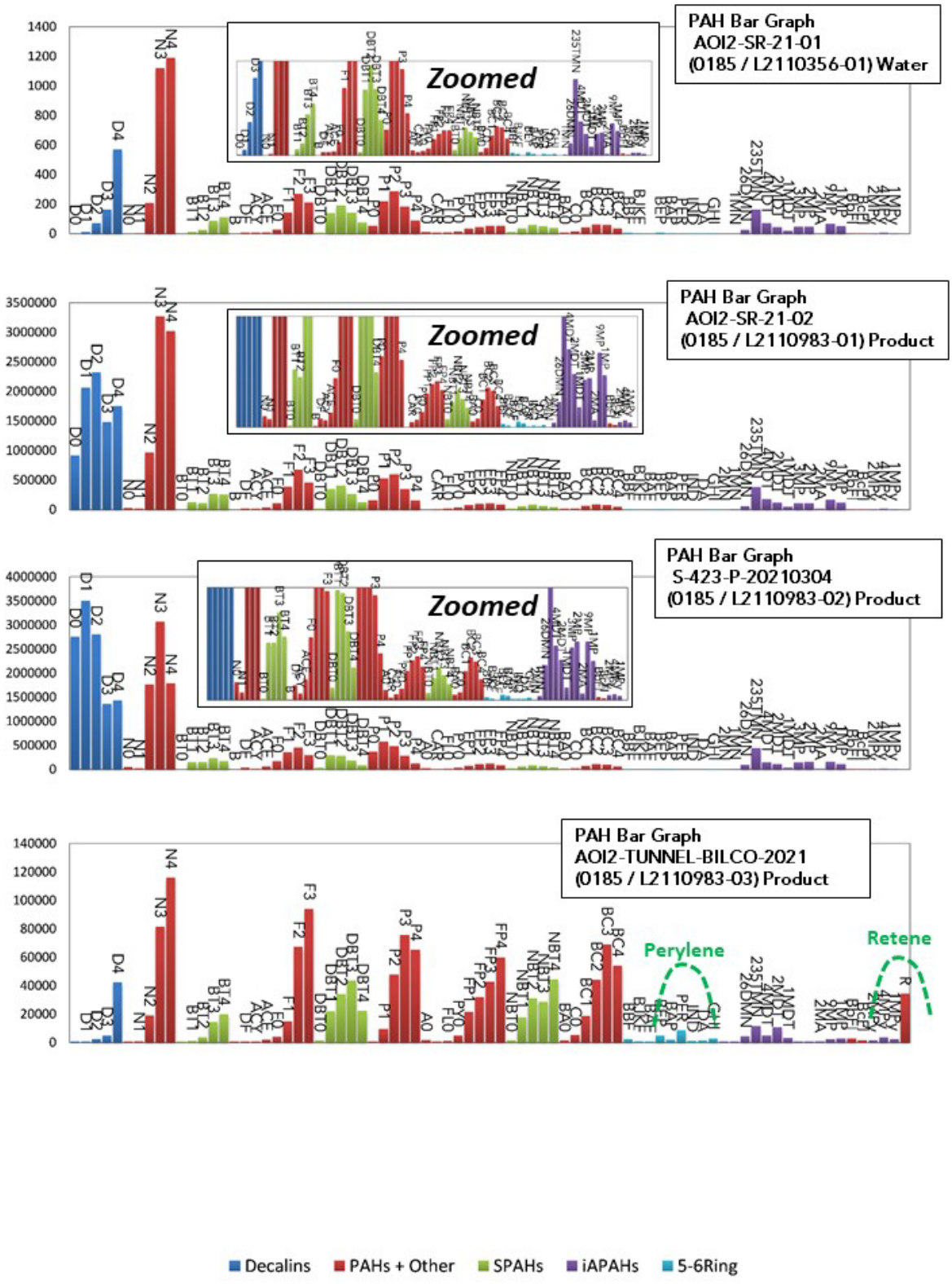

Figure 6. Fingerprint Mosaics™ for water and product samples (SVOC PAH Bar Graphs).

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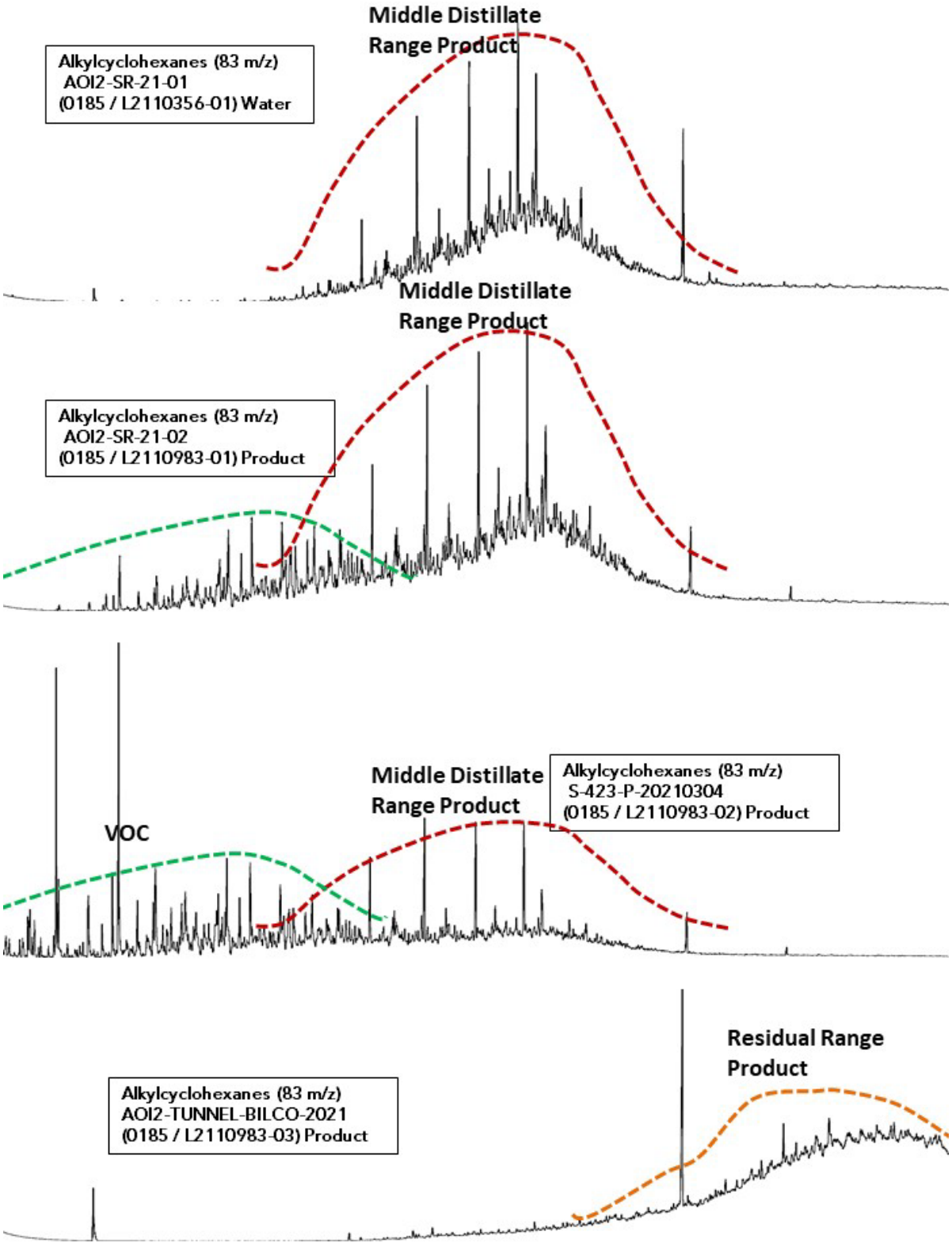


Figure 7. Fingerprint Mosaics™ for water and product samples (Alkylcyclohexanes 83 m/z).

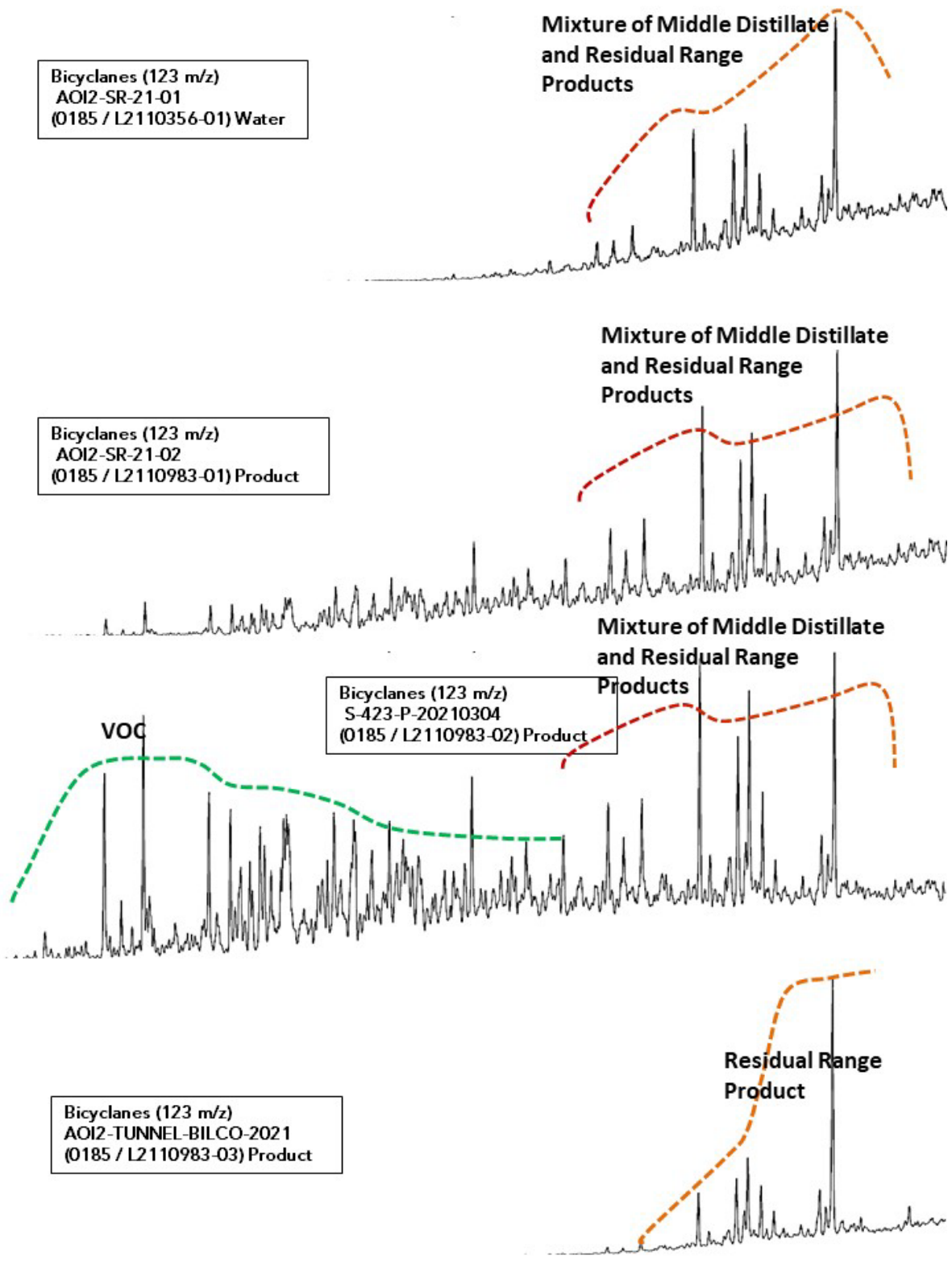


Figure 8. Fingerprint Mosaics™ for water and product samples (Bicyclanes 123 m/z).

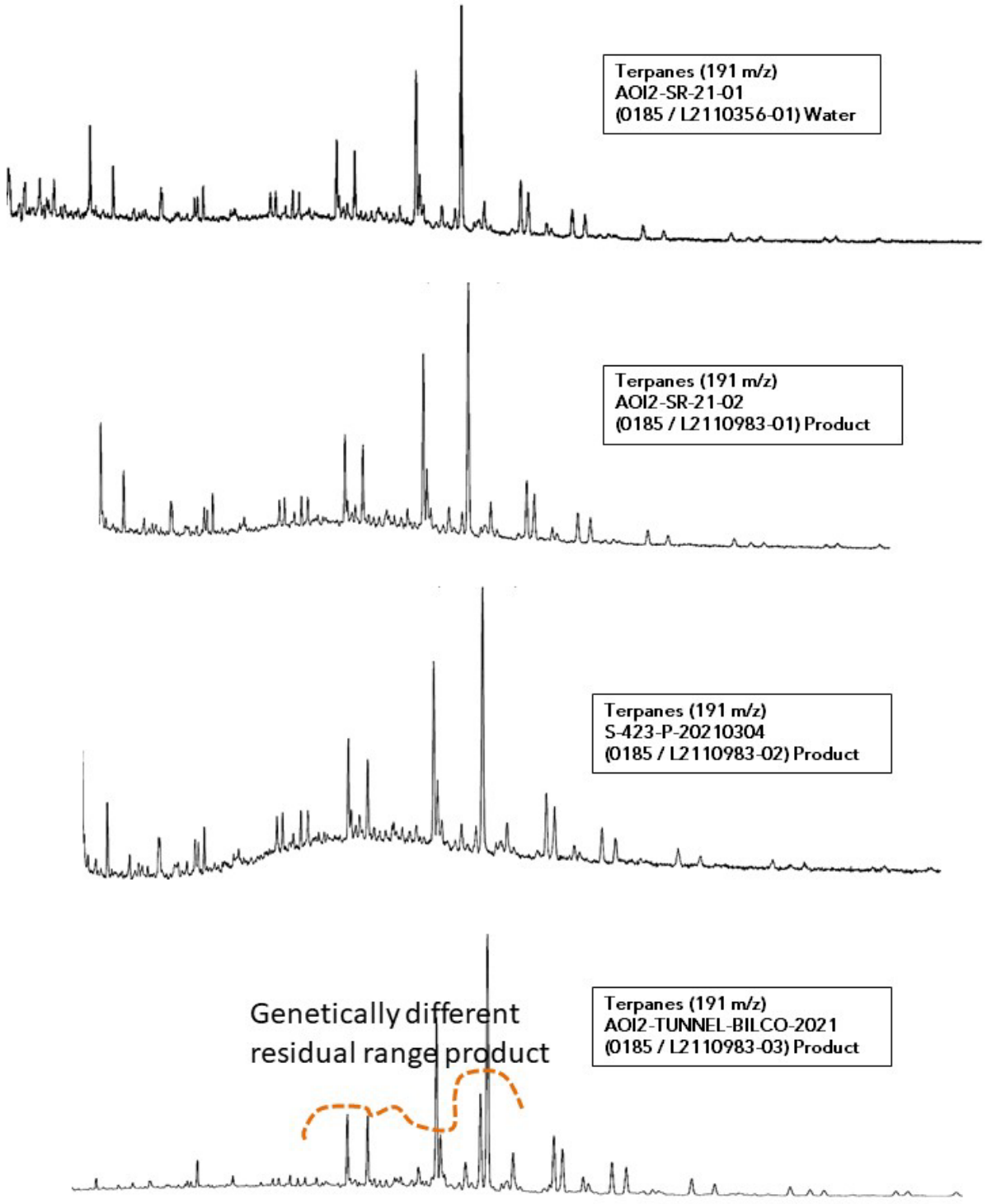


Figure 9. Fingerprint Mosaics™ for water and product samples (Terpanes 191 m/z).

Appendix 1

Interpretive Report from PACE Energy - #33248

PES / Evergreen

Report Prepared for:

Stantec Consulting
1060 Andrew Drive
Suite 140
Westchester, PA 19380

Report Prepared By:

Mark Jonathan Cejas

220 William Pitt Way

Pittsburgh, PA 15238

22 May 2020

Table of Contents

1) **INTRODUCTION**
2) **INVESTIGATIVE METHODOLOGY**
3) **RESULTS AND DISCUSSIONS**
4) **CONCLUSION**

Introduction

PACE-Energy is pleased to deliver this report that focuses on the chemical fingerprinting results conducted recently on behalf of Stantec Consulting. The chemical fingerprinting analysis was carried out on two water / sheen samples. This forensics investigation was initiated to characterize and compare the hydrocarbon "fingerprints."

The following information was shared by the client:

Client ID	Lab ID	Date Collected	Date Received	Matrix	C8-C40+ SVOC Fingerprinting GC/MS
SSL1 20200312	33248-1	3/12/2020	3/14/2020	Water	X
SSL2 20200312	33248-2	3/12/2020	3/14/2020	Water	X

Aside from a brief discussion, this investigation was conducted with site and historical information provided by the client. The samples were submitted to PACE Energy Forensics Laboratory (Pittsburgh, PA) and analyzed with the following analytical method:

1) C8-C40+ Semi-Volatile Range Fingerprinting by GC/MS full scan (ASTM D5739)
2) Parent and Alkylated PAHs by GC/MS (SIM (EPA 8270 Mod)

Investigative methodology

The forensics quality chemical data were evaluated by an experienced environmental forensics expert that employed investigation techniques typically used to understand the nature of petroleum releases in the environment. The primary lines of evidence used for this report involve visual fingerprint inspection and the calculation of diagnostic ratios and that are developed from compounds of the most weathering and biodegradation resistant hydrocarbon families in petroleum. Namely – Terpanes, steranes, intra alkyl series PAHs and SPAHs, and isoprenoids.

Results and Discussion

Petroleum Characterization

Detailed Chemical Fingerprinting of SSL1 20200312 and SSL1 20200312

The shape and boiling range of the UCM in the TICs revealed the dominance of a petroleum type with hydrocarbons spanning the middle distillate range to residual range. A thorough investigation of critical chemical properties in both samples shows evidence of 1) distinct feedstock properties in both the middle distillate and residual petroleum ranges as apparent in the middle distillate UCM width, location and shape (figure 2), PAH "fingerprints" and associated diagnostic ratios (table 2 and figure 1), bicyclanes (123 m/z), terpane (191 m/z), and sterane (217 m/z) fingerprints (figures 6,7,8,9). 2) There is some evidence of unrefined middle distillate petroleum aspects in SSL1 vs distinct refinery induced stresses in SSL2. 3) There is some evidence of pyrogenic admixtures in both samples. The pyrogenic features occur at lower relative proportions to the petrogenic features in the samples. The actual source type of the pyrogenic residue is uncertain. The mixture properties of the petroleum in the samples are presented in table 1.

Middle Distillate Range Petroleum - The most apparent diagnostic signs of distinct refinery effects in the samples are a) SSL1 - lack of evidence of refinery induced stresses that are comparable to catalytic cracking, as apparent in C1-phenanthrene/anthracenes ion profiles (not shown) and ratio #5 in table 1 and figure 1. SSL2 - Diagnostic signs of thermal or catalytic cracking refinery effects are evident in the rightward skewed distribution of C1-phenanthracenes/anthracene (C1 P/A) isomers, with 1-Methylphenanthrene and 9/4 methylphenanthrene more depleted due to the associated thermal stresses. Multiple lines of evidence are presented to suggest that the middle distillate component in SSL1 is intrinsically different from the middle distillate component in SSL2. Fundamental fingerprint differences are summarized in figure 1 as well as in the following chemical diagnostic features: a) the location and shape of the middle distillate segment of the unresolved complex mixture (UCM) (figure 2); b) the relationships between two isoprenoids pristane and phytane (figures 1, 4 and table 2); c) differences in the light to middle distillate range biomarkers (figures 1, 6 and table 2); c) and differences in the relative proportions of C2-phenanthrenes and C2 dibenzothiophenes (table 2). These diagnostic differences and specific qualities of the fingerprints invite the interpretation that SSL1 may have been derived from an unrefined source, whereas SSL2 may have been derived from a refined #2 middle distillate source.

The relative proportions of C2-phenanthrenes and C2 dibenzothiophenes in combination with the distribution of C2 dibenzothiophenes isomers (not shown) suggest that the refined middle

distillate petroleum in SSL2 was likely not hydro desulfurized. This information is commonly a valuable line of evidence for age discriminations of middle distillate fuel releases. However, in this particular context there is historical evidence suggesting the storage of unfinished middle distillate fuel in the vicinity. As such, the organic sulfur based line of evidence cannot be applied defensibly for age discriminations. Biodegradation aspects of the middle distillate petroleum may be applied cautiously to gain perspective of residence time in the environment. However, it needs to be expressed that the samples were entrained petroleum in water. As such a very aggressive weathering potential regime needs to be assumed. The biodegraded character of SSL1 suggests that the sample could have been exposed to approximately 4-12 years of residence time, and the biodegraded character of SSL2 suggests that the petroleum may have experienced approximately 2-8 years of residence time in the environment (figure 3 and table 2). However, it needs to be mentioned that the petroleum in the water samples could have experienced residence time in different environmental media – from subsurface to surface settings. As such, there is a great deal of uncertainty associated to these times of release estimates that do not gain additional support from organic sulfur lines of evidence.

Residual Range Petroleum – Residual range petroleum features are evident as likely mixtures in both samples. These features are evident in the heavier UCM expression (figure 2), and presence of residual range biomarkers (figures 7, 8, 9). The relative proportions of these recalcitrant biomarkers suggest that the residual range petroleum was likely released from different sources with different feedstock attributes.

Pyrogenic Residues – Pyrogenic residues derive from combustion and pyrolysis of petroleum or coal derived feedstocks. Pyrogenicity signals the presence of residues from manufactured gas plant derived sources, or petroleum combustion sources that are ubiquitous in urban settings. These are only key examples among many possible sources of pyrogenic substances. The presence of 5-6 ring PAHs in both samples suggest the presence of pyrogenicity as an admixture in both samples (figure 10). A PAH bar graph of S-294 was shown for context. The fingerprint in S-294 was characterized as pyrogenic residue likely derived from an MGP source.

Conclusion

Multiple lines of evidence suggest that both samples contained mixtures of petrogenic and pyrogenic type sources, yet the pyrogenic features were relatively lower level admixtures. The chemical source features were intrinsically distinct in both samples, yet both samples exhibited similar relative abundances and general boiling ranges of petroleum. Both samples were dominated by middle distillate range components that were likely from different sources. Both samples contained residual range petroleum that was likely from different sources. Both samples were slightly enriched with pyrogenic residues.

Please call the lab at 412-826-4481, or you may email any questions or concerns to mark.cejas@pacelabs.com regarding any analytical data reports or interpretations.

Respectfully submitted,



Mark Jonathan Cejas
Technical Director of Petroleum Forensics

TABLES

	33248-1 33248-1 [SSL1_20200312]	33248-2 33248-2 [SSL2_20200312]
Matrix	Water	Water
General Petroleum Classification	3 Part - Mixture	3 Part - Mixture
Approximate Proportionality of Petroleum Products	Middle Distillate Range Component >> Residual Range Component >> Pyrogenic Residue	Middle Distillate Range Component >> Residual Range Component >> Pyrogenic Residue

Table 1. General properties of petroleum in the samples.

Abbrev.	Bulk Parameter/Ratios/Classifications	33248-1 [SSL1_20200312]	33248-2 [SSL2_20200312]
	Sample Matrix	Water	Water
	Weathering Parameters		
85 m/z	n-Paraffins	>95% Removed	~40% Removed
1) nC17/Pr	nC17 / Pristane	0.10	0.87
	Source Diagnostic Parameters		
2) D2/P2	C2-DBT / C2-Phenanthrenes	0.63	0.14
3) D3/P3	C3-DBT / C3-Phenanthrenes	0.55	0.11
4) Pr/Ph	Pristane / Phytane	1.39	1.14
5) 2MP/1MP	2-Methylphenanthrene / 1-Methylphenanthrene	0.87	0.99
	Distillation Range and HDS Attributes		
Alkyl DBTs	C1, C2, & C3 DBTs	(HDS) not apparent	(HDS) not apparent
	Potential weathering regime at site	Aggressive	Aggressive
	Classifications		
	Approximate age estimation (via. Sulfur LOE)	NP	NP
	Approximate age estimation (via. Biodegredation parameters assuming aggresive to very aggressive weathering potential regime)	Approx. 4-12 yrs	Approx. 2-8 yrs

DBT=Dibenzothiophenes
HDS=Hydrodesulfurization
LOE=Line of Evidence
N=Naphthalenes
Ph=Phenathrenes
NP=Not possible due to storage of unfinished middle distillate in the vicinity

Table 2. Ratios and classifications of the middle distillate range components of the mixtures.

FIGURES

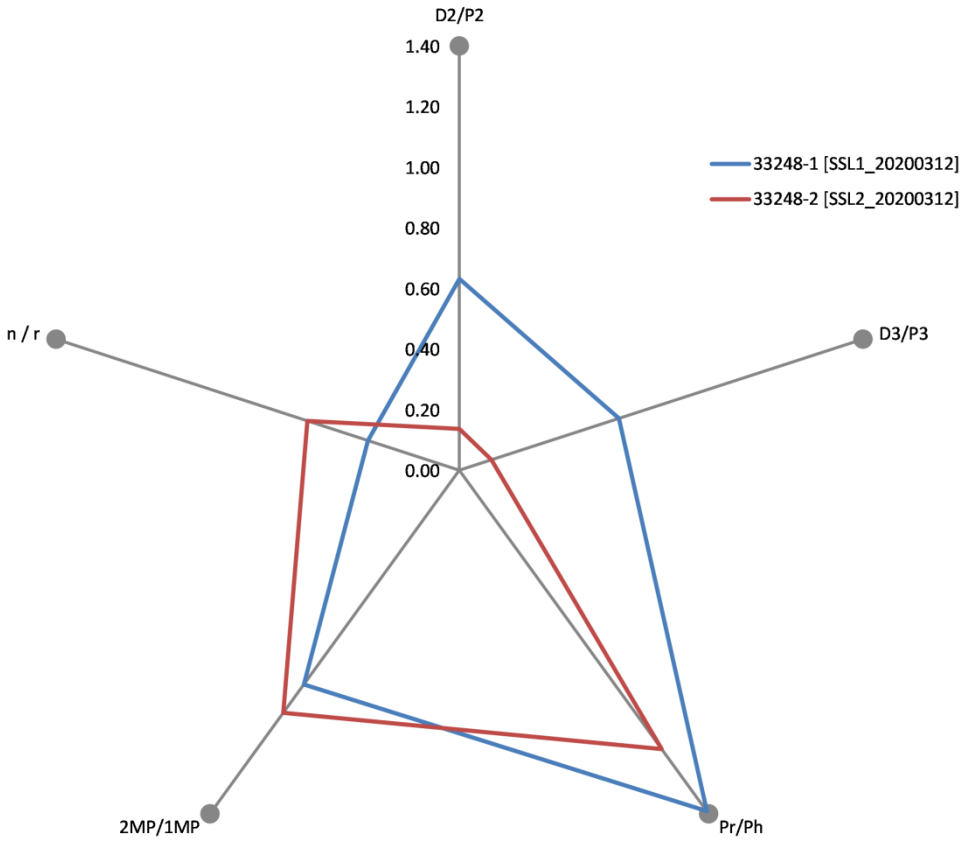


Figure 1. Star plot of diagnostic ratios.

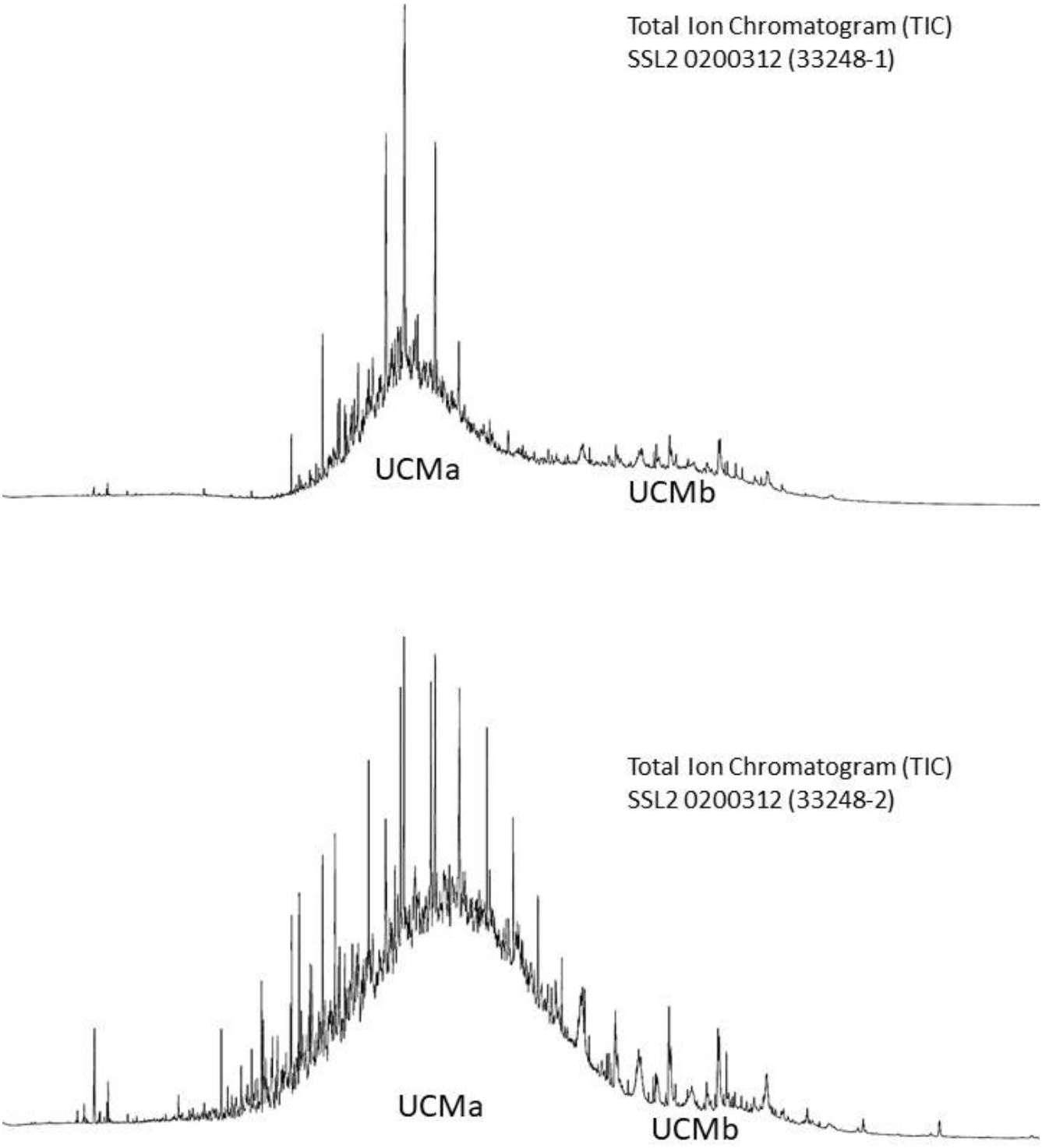


Figure 2.Distributions of diagnostic chemistry – Total Ion Chromatogram (TIC)

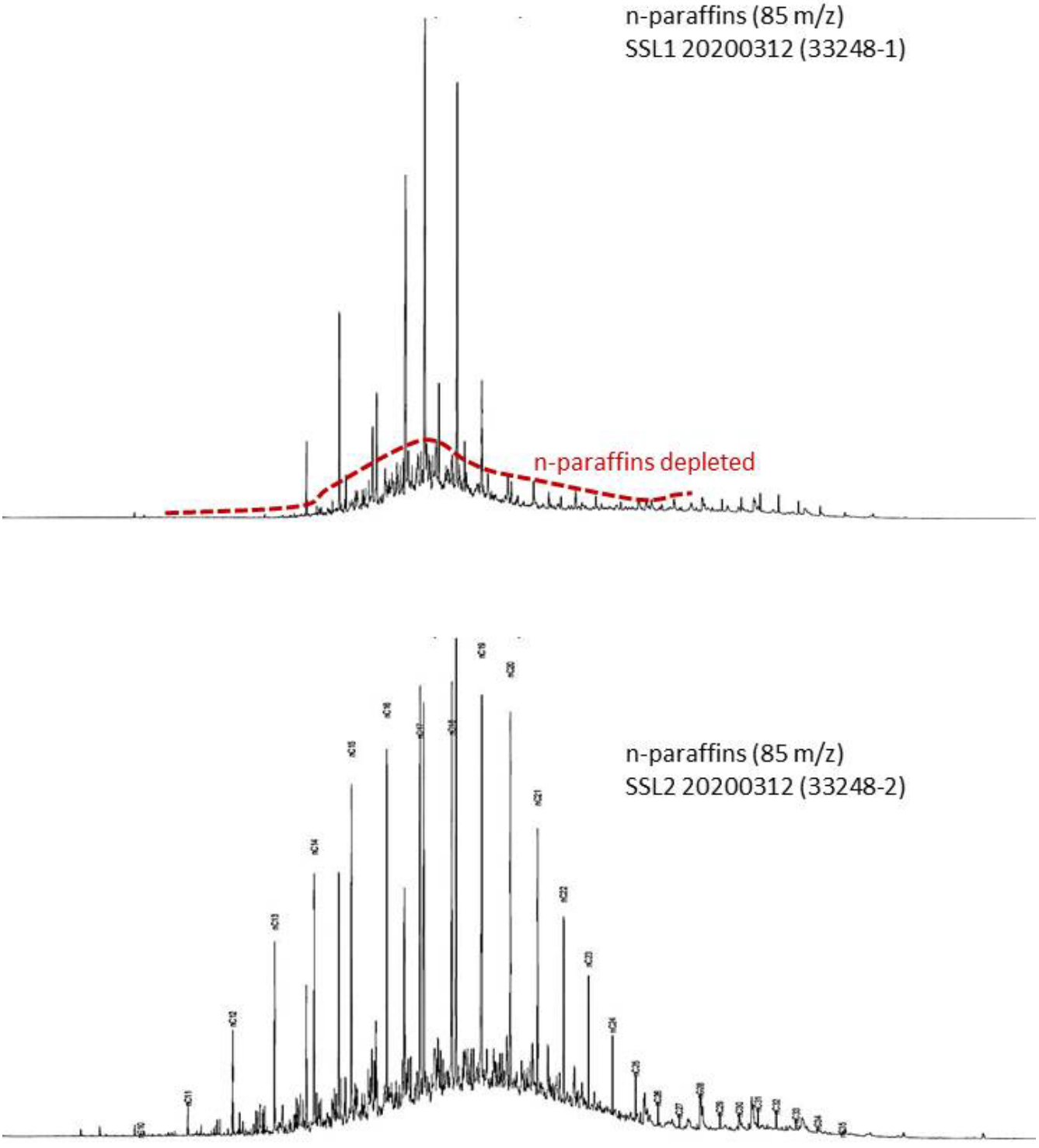
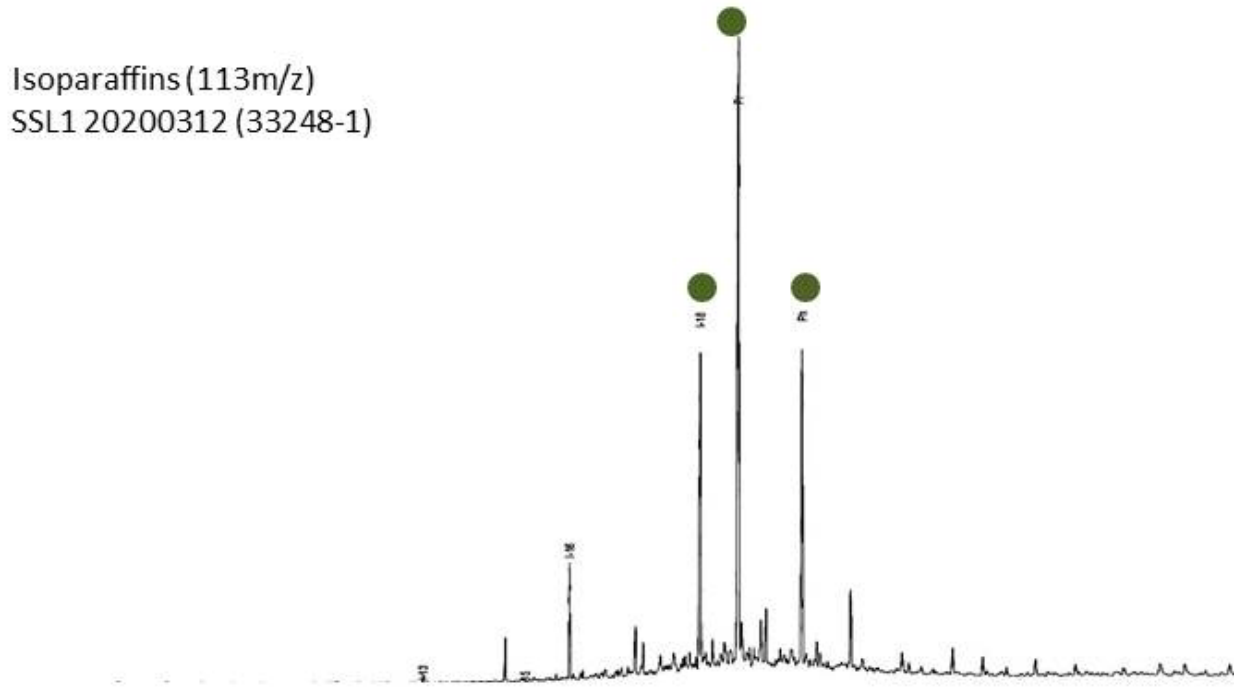


Figure 3.Distributions of diagnostic chemistry – n-paraffins (85 m/z)



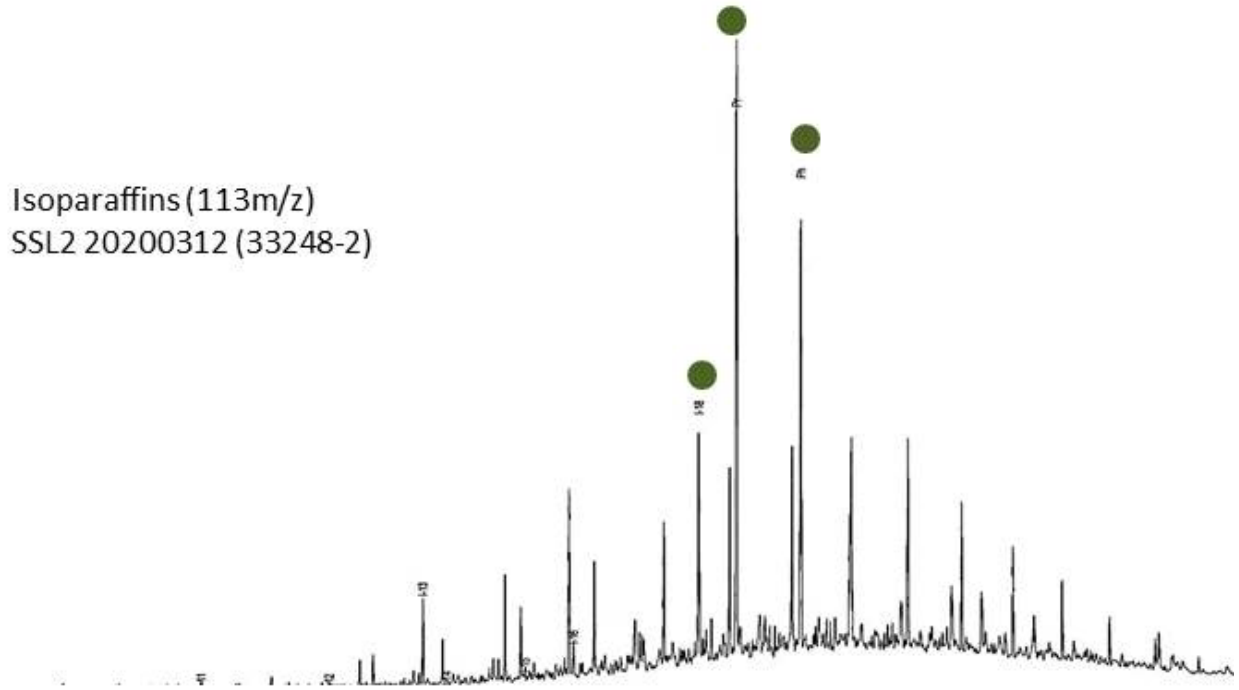


Figure 4. Distributions of diagnostic chemistry – isoparaffins (83 m/z),

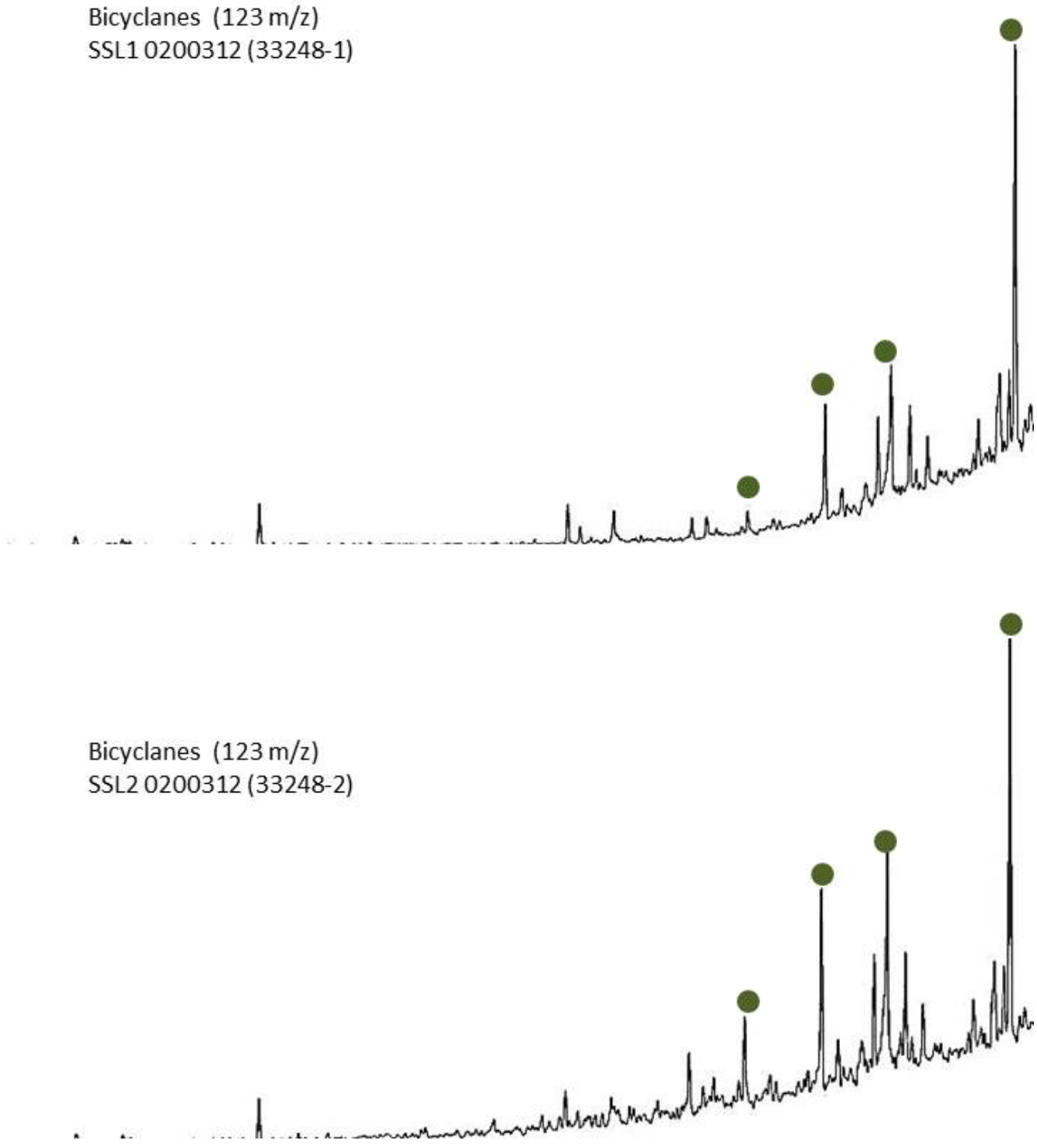


Figure 6.Distributions of diagnostic chemistry - bicyclanes (123 m/z).

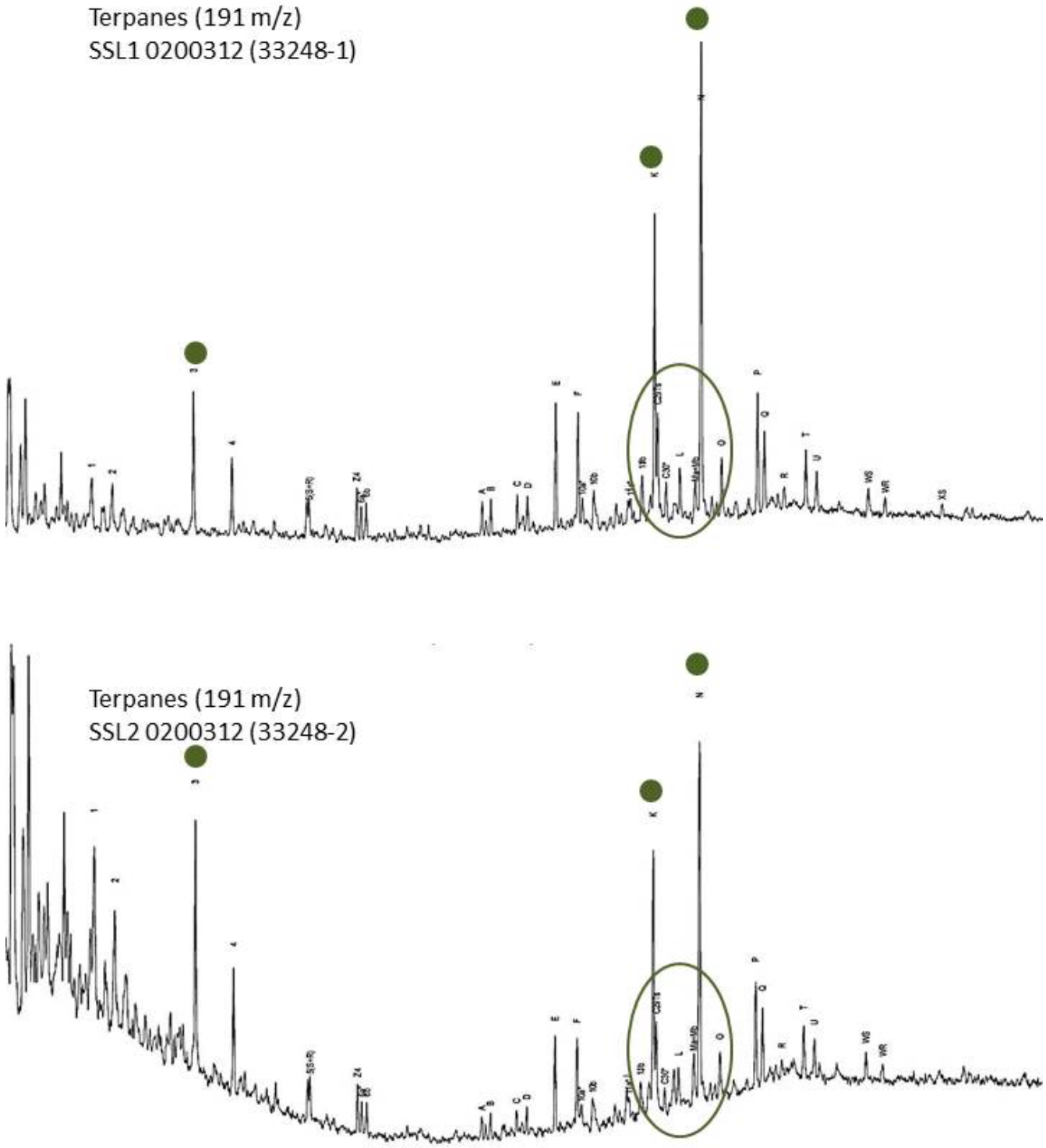


Figure 7.Distributions of diagnostic chemistry - terpanes (191 m /z).

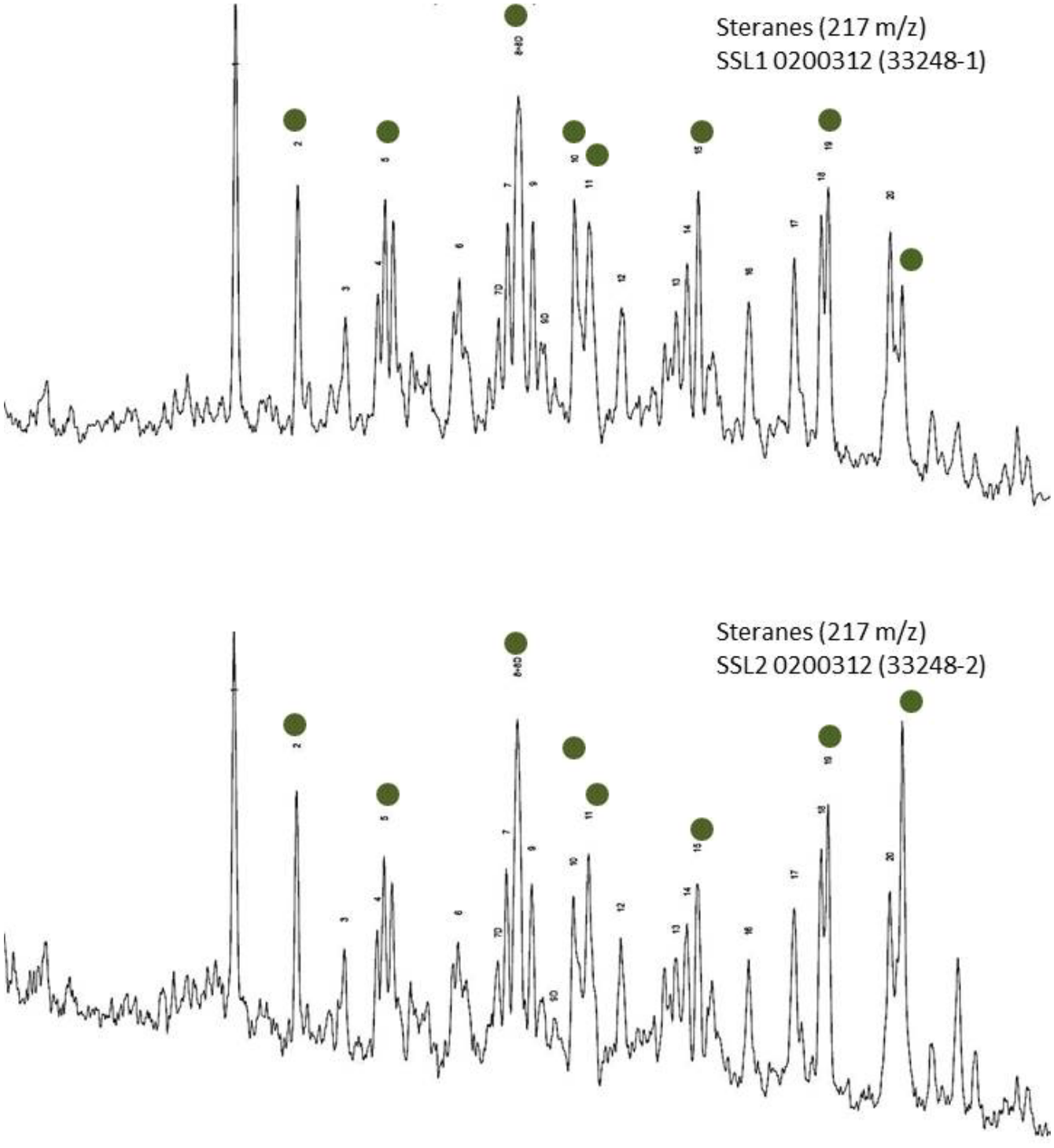
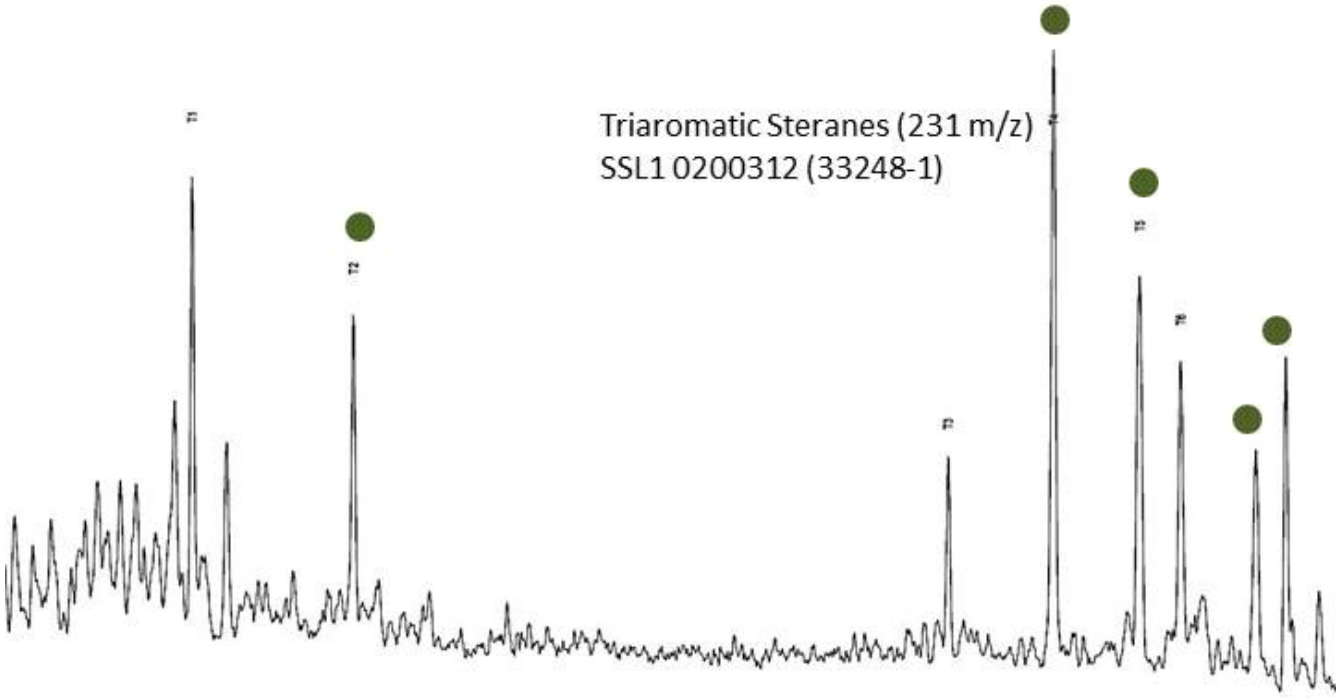


Figure 8.Distributions of diagnostic chemistry – steranes (217 m/z).



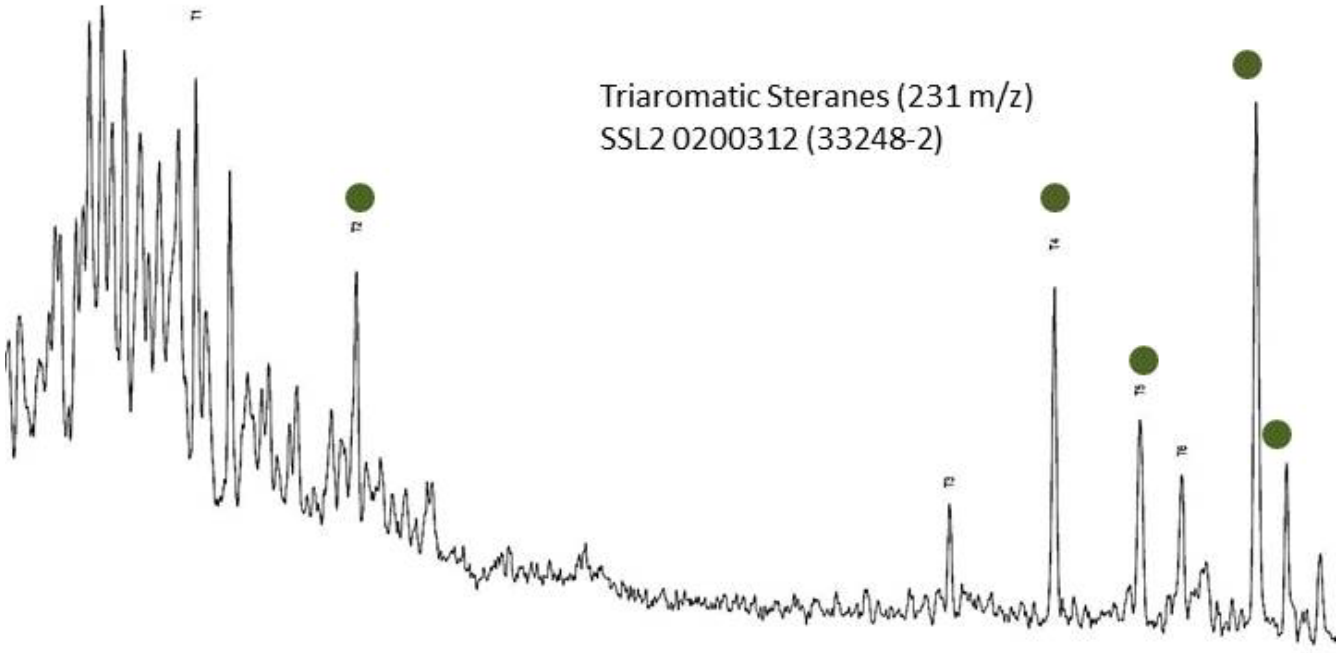
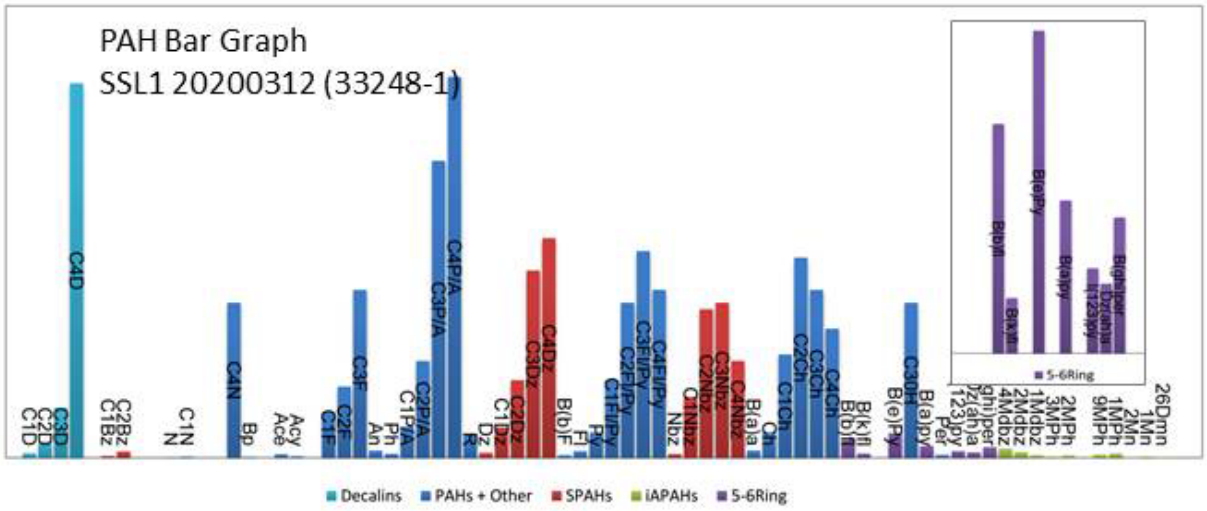


Figure 9.Distributions of diagnostic chemistry – triaromatic steranes (231 m/z).



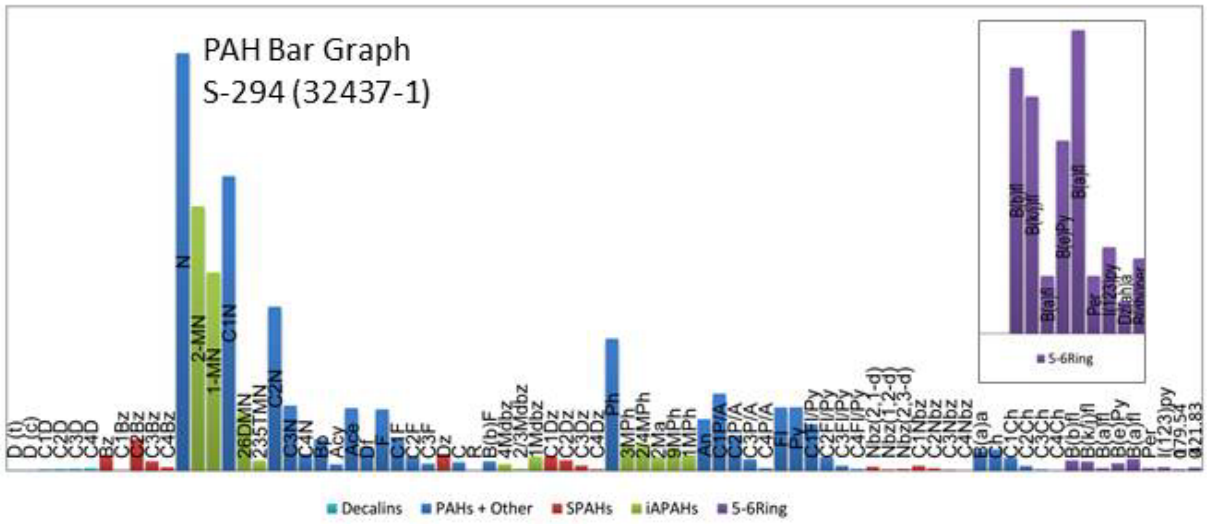


Figure 10.PAH Bar Graph

APPENDIX C
Environmental Forensics Reports

June 28, 2022

Andrew Klingbeil
Stantec Consulting Inc.
1060 Andrew Drive, Suite 140
West Chester, PA

CQ Project: MVA Water Expansion Report
Project Name: Site Wide Fate & Transport Report RIR Part 2

Introduction

I am the principal at ChemQuants, LLC, an environmental forensics firm located in Santa Barbara, California. I received a bachelor's degree in Chemistry, a second bachelor's degree in Environmental Science, and a Master's degree in Analytical Chemistry from Florida International University. My professional experience has focused on oil spill environmental forensics. My specialties include petroleum release investigations on coastal waterways, subsurface environments at petroleum terminals and fueling stations, and "big environmental data" chemometrics and data visualization. Besides being chair at a scientific conference, I have authored numerous publications and presentations to my peers.

ChemQuants, LLC. was hired by Stantec Consulting, Inc. to incorporate the chemistry data reports in the tables below to the overall scope presented in AOI 4 Focus Report-Evergreen Former PA Refinery Characterization (The Former Report) [1]. Expressly, this report will incorporate the VOC range PIANO chemistry, generated for water samples, to the VOC/water multivariate analysis (MVA) conducted in The Former Report. In addition, this report will review and expand on opinions generated in the said report related to water samples, including recently generated compound-specific isotope analysis (CSIA) of carbon and hydrogen for benzene, cyclohexane (CYX), and methylcyclohexane (MCYX). This review and expansion report will also consider recent additions of sucralose occurrence data from water samples.

MVA was conducted in this report to efficiently explore the chemical compositional patterns of the water data set to understand probable source patterns as a function of the overall project context that included all relevant chemical and historical information (details are included in The Former Report. The project context for this expansion report involved only the water samples.

The Fingerprint Mosaics presented the chemical distributions (figures 4 to 28). The water sample's geospatial attributes are exhibited in figure 1. Proportional petroleum type attributes expressed in the water samples were presented as geospatially overlaid pie charts in figure 2. The proportion values were estimated and provided a quick visualization of the water samples' geospatial distribution of mixture aspects.

This forensics report expanded on the molecular chemistry lines of evidence (LOEs), CSIA results for benzene and MCYX, and Sucralose. The LOEs were structured by the problem-set below. Historical background information and other details concerning the Site are contained in The Former Report. The Site and off-Site locations were associated with or adjoined to complex infrastructures, i.e., sewers, which served as probable chemical transport pathways considered in this forensics evaluation of potential source relationships and source end-members. *Aside from likely transport pathway dynamics of contaminants, this forensics report does not evaluate the possible sources of the most dissolved phase VOC constituents, i.e., benzene, toluene, and*

[1] AOI 4 Focus Report-Evergreen Former PA Refinery Characterization (Forensics Focus Report by ChemQuants)

MTBE. The potential fate, transport, environmental alterations, and sources of volatile chemical constituents were the subject of another expert report that included compounds specific isotopes (CSIA) fractionation patterns in the Former Report and the more recent Sitewide Fate and Transport RIR Part 2 – Contaminant Fate and Transport Assessment.

Problem-set definitions:

Chemical data from water samples were analyzed to address contamination concerns in the southeast zone of AOI-4. The SE zone of AOI-4 is a complex sub-surface setting of petroleum contamination that may have been derived from on-Site or off-Site sources. Possible sources of petroleum in the lower portion of the AOI-4 environs are the following (figure 1):

- Potential sources from historical off-site locations, i.e., adjacent service stations, etc., were within possible reach to AOI-4 locations from a contiguous plume geometry.

- Potential sources from historical off-site locations, i.e., adjacent service stations, etc., are not within possible reach to AOI-4 locations from a contiguous plume geometry that may have been transported by sewer-related infrastructure.

- Distant on-Site potential sources that were/are not within possible reach to AOI-4 locations from a contiguous plume geometry, i.e., on-Site potential sources (different AOI boundary) of petroleum that may have been transported by sewer or pipeline infrastructure.

- Distant off-Site potential sources that were/are not within possible reach to AOI-4 locations from a contiguous plume geometry, i.e., off-Site industrial or refinery operations that may have been transported by sewer-related infrastructure.

This problem set was investigated in The Former Report by considering historical LOEs from the IST Report, review of documents delivered by associated Site experts, and review of a remedial investigation report (Review references in The Former Report). The chemical LOEs generated in The Former Report were based on MVA and sample-by-sample reviews of water, product, and soil Fingerprint Mosaics. For this report, one MVA model was constructed with VOC PIANO data from water samples in The Former Report and three recently collected water samples (In the table below). The chemical LOEs were based on MVA, CSIA data for benzene and methylcyclohexane, occurrence data for Sucralose, and Fingerprint Mosaics. The key questions are the following:

- What are the petroleum-type characteristics of the water samples?

- What samples exhibit petroleum with potential sources from on-Site AOI-4?

- What samples in AOI-4 environs exhibit petroleum with potential sources from historical off-Site locations within possible reach of a contiguous plume geometry?

- What samples in AOI-4 environs exhibit petroleum with potential sources from distant historical off-Site locations that may have been transported by sewer-related infrastructure?

Background Material

See The Former Report

Analytical Chemistry (Water Samples)

See The Former Report for the complete list of water samples associated with this report. The table below only includes water samples recently included in the investigation.

The samples were analyzed at one of the following laboratories: a) Alpha Analytical, Inc. (Mansfield, MA).

1) *Saturated Hydrocarbons by GC/FID / EPA 8015D*
2) *Alkylated PAHs w/ Full Scan TICs by GC/MS / EPA 8270D-SIM(M)*
3) *C5-C12 PIANO w/ Oxygenates and additives quantification and fingerprinting by GC/MS / EPA 8260B (Mod.)*

Client ID	Lab ID	Lab	CQ Project	Matrix	8015D GC/FID	VOC PIANO	Alkylated PAHs
DSCP MW-14 20220419	L2220781-02	Alpha	0166	Water	X	X	X
PH IW-10 20220413	L2219191-02	Alpha	0166	Water	X	X	X
DSCP MW-65 20220425	L2221612-01	Alpha	0166	Water	X	X	X

Investigative methodology

MVA analysis output, historical chemical data, expert opinions, and general Site and off-Site information were considered during formulating views in this report. Details regarding background information and results/opinions for soil and product samples are contained in The Former Report. This report expands on the multivariate analysis (MVA) and opinions for the VOC PIANO analysis in water after the inclusion of three water samples analyzed with the methods above collected in 2022. Recent results and expert opinions on the compound-specific isotope analysis (CSIA) dataset, which focused on carbon and hydrogen isotopes of benzene, toluene, cyclohexane (CYX), and methylcyclohexane (MCYX), were also considered. In addition, this report considers recent chemical occurrence data of Sucralose in water samples.

Fingerprint Mosaics

Fingerprint Mosaics™ exhibited critical fingerprint features of the samples and served as technical references for MVA and sample-by-sample evaluations (figures 4-28). Fingerprint Mosaics contain essential chemical information from the analytical chemistry reports employed for this investigation and historical documents. Respectively for the MVA model, the order of Fingerprint Mosaics followed the MVA dendrogram order from top to bottom to afford a systematic and efficient fingerprint review process. Fingerprint Mosaics consist of the following elements:

- Chemical chromatograms from GC/FID methods. The chromatograms span the VOC and SVOC ranges for product samples and only the SVOC range for water and soil samples.

- Total Ion Chromatograms (TICs) served as analogs to the chemical chromatograms from the SVOC GC/FID methods – Relevant for SVOC Full Scan data from PACE Energy data.

- Color annotated bar graphs of VOC PIANO data. The bar graph contains a color key describing the chemical classes in the data.

- Color annotated bar graphs of SVOC parent and alkylated PAH and SPAH data. The bar graph contains color keys that describe the chemical classes included in the data.

- EICPs from the SVOC analysis represent diagnostic ion scan fingerprints for different petroleum biomarker classes – Alkylcyclohexanes (83 m/z); Bicyclanes (123 m/z); Terpanes (191 m/z); Steranes (217 m/z).

Twelve water samples analyzed with the SVOC Full Scan method at PACE Energy exhibited chemical patterns annotated by colored oval shapes. PACE Energy confirmed that the chemical patterns were exogenous and derived from a sodium sulfate reagent used for sample desiccation. The laboratory noted that the chemical peaks were not saturate hydrocarbons but polar hydrocarbons co-extracted from a non-analytical grade of the reagent. The laboratory conducted tests on the reagent batches in isolation and concluded that the extracts – were blank – and did not exhibit hydrocarbons that register as petroleum-specific chemistry.

Multivariate Analysis (MVA)

One integrated MVA model was conducted for VOC data explorations on water samples. MVA, in conjunction with the review of Fingerprint Mosaics, afforded an efficient exploration of petroleum characteristics and potential similarities/dissimilarities relative to their geospatial attributes.

Data Treatment and Data Reduction

MVA models of VOC PIANO data were based on chemical concentrations data as dependent variables. Analytes excluded from the model were determined with regression analysis between Coefficient of Determination (CD) variable diagnostics vs. values derived from back-calculated concentrations. This analysis is called Miesch Scatter Plot Diagnostics[2][3]. The technique evaluated the fit of the model on a compound-by-compound basis. Essentially, compounds with poor fits to model outcomes are excluded. In addition, the most volatile and soluble compounds in the VOC PIANO dataset were excluded to minimize the effects of weathering on MVA model variances; thus, the objective of variable exclusions was to maximize the diagnostic power (DP) of the MVA model[4][5].

[2] Ehrlich, R., et al. "A mixing model for polychlorinated dibenzo-p-dioxins and dibenzofurans in surface sediments from Newark Bay, New Jersey using polytopic vector analysis." *Archives of environmental contamination and toxicology* 27.4 (1994): 486-500.
[3] Miesch, Alfred T., and MIESCH AT. "Q-MODE FACTOR ANALYSIS OF GEOCHEMICAL AND PETROLOGIC DATA MATRICES WITH CONSTANT ROW-SUMS." (1976).
[4] Sauer, Ted C., and Helder J. Costa. "Fingerprinting of gasoline and coal tar NAPL volatile hydrocarbons dissolved in groundwater." *Environmental Forensics* 4.4 (2003): 319-329.

Integration of Methods and Workflow

After applying data treatment and reduction techniques, Principal Components Analysis (PCA), Hierarchical Cluster Analysis (HCA), and t-Distributed Stochastic Neighbor Embedding (tSNE) were integrated to facilitate a concise and visually interpretable exploration and discovery of potentially related or distinct groups of petroleum signatures. ChemQuants' (CQ) chemometrics division specializes in integrations of multivariate environmental forensics techniques[6]. PCA and HCA are conventional multivariate techniques commonly employed for data exploration and pattern recognition exercises[7]. tSNE is a non-parametric technique that is a variation of Stochastic Neighbor Embedding[8]. tSNE has been used for visualization in various applications, including genomics, computer security research, natural language processing, bioinformatics, etc.[9] CQ was the first to incorporate tSNE for an environmental chemistry data-based chemometrics workflow [6,7,8].

HCA was applied to develop an objective classification of sample fingerprint groupings. The MVA sample groups were defined from iterative reviews of HCA structures and tSNE shape expressions (Figure 3). PCA was utilized to generate loadings data to appreciate the compounds or ratios (dependent variables) that correlate with signifying the PCs of the dataset. tSNE served as a visualization tool to accurately represent and communicate the multidimensional chemometrics results as a three-dimensional map (figure 3). HCA classifications were presented as dendrograms and were symbolically integrated into the tSNE maps (figure 3). PCA output was generated as bar graphs for each PC (result not shown for brevity).

Practical perspectives:

- MVA is a tool to aid interpretations of the data to appraise potential source similarities/dissimilarities, among other possible relationships that may emerge from the inherent "structure" of the chemistry dataset. CQ should avoid deriving potential relationships between samples solely from MVA output without considering LOEs from analytical chemistry, geochemistry, and environmental forensics principles. MVA is an essential line of evidence for posing critical questions about potential relationships between sample fingerprint sources, etc. Nonetheless, CQ constantly evaluates the possible effects of mixtures, weathering, and analytical errors on MVA output before concluding expert opinions. In cases where mixtures, weathering, and analytical errors impact results from MVA, the output may result in false positive or false negative sample groupings or classifications. Essentially, MVA output does not determine the final opinion since effects from the mixture, weathering, or analytical error may result in false-negative sample source classifications or groupings. The final expert opinion regarding similarities/dissimilarities of source classifications is always rectified and reinforced with multiple LOEs.

- PCA was utilized to assess the fingerprint correlations driving the dataset's fingerprint differentiation. The correlation among compounds or diagnostic ratios is exhibited as

[5] Christensen, Jan H., and Giorgio Tomasi. "Practical aspects of chemometrics for oil spill fingerprinting." *Journal of Chromatography A* 1169.1-2 (2007): 1-22.
[6] Robert C. Barrick, and Mark J. Cejas. "Integrated Chemometric Assessment PCDD/F Contamination and Sources in the Passaic River, New Jersey." (Article in Review).
[7] Varmuza, Kurt, and Peter Filzmoser. *Introduction to multivariate statistical analysis in chemometrics*. CRC press, 2016.
[8] Van der Maaten, Laurens, and Geoffrey Hinton. "Visualizing data using t-SNE." *Journal of machine learning research* 9.11 (2008).
[9] t-distributed stochastic neighbor embedding - Wikipedia

bar graphs (output not shown), whereas the highest values signify significant correlation among principal components. The scores matrix of PCA was not employed to visualize the sample distribution across PC space; instead, tSNE was used to visualize the fingerprints differentiation scheme.

- HCA was utilized to generate objective classifications of the sample's fingerprints. Essentially, HCA was used to establish an empirical schema of fingerprint similarity/dissimilarity. The HCA numerical schema was exhibited color-coded in dendrograms and 3D tSNE maps.

- tSNE multidimensional mapping was utilized to exhibit the dataset's similarity/dissimilarity fingerprint structure color-coded with HCA classifications. The 3D map was rendered as a rotating movie for ease of review and cross-referencing.

CSIA and Sucralose to Assess Potential Transport and Intrusions of Petroleum Mass by Proximal Sewage Infrastructures.

Considering the petroleum contamination complexity historically recognized throughout on-Site and off-Site investigations, additional phases of chemical lines of evidence were warranted to study the potential transport and intrusion of petroleum mass via—proximal sewage infrastructures. Consequently, CSIA analyses of benzene, toluene, xylenes, MTBE, cyclohexane, and methylcyclohexane were conducted as a subsequent phase of chemical analysis to support VOC range molecular LOEs[10]. A complete interpretive report of CSIA chemistry data is contained in Appendix H[11].

Furthermore, to address chemical sources from sewage in the most specific manner possible, samples were collected from relevant locations and analyzed for the artificial sweetener Sucralose[12,13,14]. The sucralose investigations results were included in the main body of this report. This particular petroleum forensics focus report considers all water sample VOC range MVA output, CSIA of hydrogen and carbon for benzene, cyclohexane, and methylcyclohexane (Appendix H), and occurrence data of Sucralose in water (Main body of this report).

Results and Discussion

This investigation applies MVA methods to help develop an empirical framework for efficiently characterizing potential similarities/dissimilarities among petroleum types present in the samples. Opinion generation in this report was based on the preponderance of evidence available during the investigation. It is essential to communicate that the MVA model was based on VOC PIANO, prone to volatilization, aqueous dissolution, and biodegradation. Even though care was given to remove environmental alteration-prone compounds among the VOC range compounds available, it's essential to communicate that MVA results showing potential

[10] Hunkeler, Daniel, et al. "A guide for assessing biodegradation and source identification of organic ground water contaminants using compound specific isotope analysis (CSIA)." *US EPA, Ada* (2008).
[11] Forensic, Biodegradation and NSZD Implications from a Geochemistry, CSIA and Molecular Biology Study at the former Philadelphia Refinery. Appendix H in this report.
[12] Cantwell, Mark G., et al. "Evaluation of the artificial sweetener sucralose as a sanitary wastewater tracer in Narragansett Bay, Rhode Island, USA." *Marine pollution bulletin* 146 (2019): 711-717.
[13] Cejas, Mark Jonathan. "Sucralose: a unique tracer for wastewater intrusion." (2010).
[14] Henderson, Autumn, et al. "Assessment of sucralose, caffeine and acetaminophen as anthropogenic tracers in aquatic systems across Florida." *Bulletin of Environmental Contamination and Toxicology* 105.3 (2020): 351-357.

similarities/dissimilarities among samples may have been impacted by environmental alteration or petroleum mixing effects.

Thus, samples exhibiting different HCA classifications and separation in the tSNE maps may have been differentially weathered variants of a similar petroleum type or impacted by mixing other products. Conversely, samples that classify in a joint MVA group may have general source type characteristics but not consistent source origins. The output of the HCA model represents a tier of evidence that affords a systematic and efficient fingerprint review process. Forensics opinions generated in this report were based on multiple levels of evidence from the HCA model, then reconciled with information from Fingerprint Mosaics, Geospatial maps, and historical project and Site documents (References in The Former Report).

Petroleum Characteristics of Water Samples

Results from the MVA analysis are illustrated in figure 3. The MVA results were shown as dendrogram's from HCA analysis, color-coded by five groups of sample fingerprints. The most soluble and volatile constituents, isopentane, MTBE, benzene, and toluene, were not included as variables in the MVA model. Biodegradation and potential source dynamics of MTBE, benzene, and toluene were evaluated in a separate report in Appendix H. Each MVA group exhibited some degree of fingerprint commonality relative to samples with registration in other groups. The results of MVA were also illustrated with 3D tSNE plots that shared consistent color annotated fingerprint group classification. The geospatial distribution of the sampling locations is shown in figure 1. The sampling points in the map were color-coded with the MVA group structure. The MVA group structure afforded an efficient exploration of petroleum characteristics and potential similarities/dissimilarities relative to their geospatial attributes.

Furthermore, the water samples were composed of petroleum mixtures. Figure 2 exhibits geospatial distributions of the mixed petroleum types as proportional pie charts. The proportions were estimated from visual inspections of chemical fingerprints in Fingerprint Mosaics (figures 4-28).

MVA Group 1:

ARCO-1 (2019) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. The SVOC range exhibited a proportionately low level of entrained petroleum likely derived from a product containing light to middle distillate range hydrocarbons (Figure 4).

S-44 (2019) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. The SVOC range exhibited a proportionately low level of entrained petroleum likely derived from a product containing light to middle distillate range hydrocarbons (Figure 5).

S-369 (2019) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. As a likely secondary mixture, the sample exhibited benzene enrichment. The SVOC range demonstrated a proportionately low level of entrained petroleum likely derived from a product containing light to middle distillate range hydrocarbons (Figure 6).

ARCO-2 (2019) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. As a likely secondary mixture, the sample exhibited benzene enrichment. The SVOC range showed a proportionately low entrained petroleum likely derived from a product containing light to middle distillate range hydrocarbons (Figure 7).

ARCO-3 (2019) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. As a likely secondary mixture, the sample exhibited benzene enrichment. The SVOC range showed a proportionately low entrained petroleum likely derived from a product containing light to middle distillate range hydrocarbons (Figure 8).

S-369 (2021) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum (Figure 9).

N-163 (2021) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. As a likely secondary mixture, the sample exhibited benzene enrichment (Figure 10).

DSCP-MW14 (2022) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. The sample exhibited benzene enrichment as a likely secondary mixture (Figure 11).

MVA Group 2:

PH-IW-10 (2022) The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. The sample exhibited benzene enrichment as a likely secondary mixture (Figure 12).

ARCO-3 (2021) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum (Figure 13).

S-449 (2020) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. As a mixture, the sample showed significant enrichment of benzene (Figure 14).

S-378 (2021) exhibited a severely weathered VOC range petroleum aspect. The signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum (Figure 15).

S-377 (2019) exhibited a severely weathered VOC range aspect. As a likely mixture, the signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum (Figure 16).

MVA Group 3:

S-279 (2019) exhibited a significant VOC enrichment of benzene. The sample showed a severely weathered xylenes, ethylbenzene, and C3 monoaromatics aspect as a likely mixture. As a likely secondary mixture, the sample showed enrichments of naphthene's that were likely derived from dissolved phase partitioning of naphtha-like petroleum. The VOC range was enriched with thiophenes (Table 1). The SVOC range exhibited entrained petroleum likely derived from a middle distillate fuel oil (Figure 17).

S-279 (2021) exhibited a significant VOC range enrichment of benzene. The sample showed a severely weathered xylenes, ethylbenzene, and C3 monoaromatics aspect as a likely mixture. As a likely secondary mixture, the sample showed enrichments of naphthene's that were likely derived from dissolved phase partitioning of naphtha-like petroleum. The VOC range was enriched with thiophenes (Table 1). The SVOC range exhibited entrained petroleum likely derived from a middle distillate fuel oil (Figure 18).

MVA Group 4:

DSCP-MW65 (2022) exhibited significant VOC range enrichments of TBA and benzene. As a likely mixture, the sample showed a severely weathered VOC range aspect reflected in the EX C2 monoaromatics complex. The SVOC range showed entrained petroleum likely derived from a light distillate range petroleum (Figure 19).

S-240 (2019) exhibited significant VOC range enrichments of MTBE and benzene. As a likely mixture, the sample showed a severely weathered VOC range aspect. The SVOC range showed entrained petroleum likely derived from a light cycle oil or heavy gas oil (Figure 15).

S-378 (2019) exhibited a significant VOC range enrichment of benzene. As a likely mixture, the sample showed a severely weathered VOC range aspect. As a likely secondary mixture, the signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. The sample was enriched with VOC range sulfur thiophenes. The SVOC range exhibited entrained petroleum likely derived from a product containing light to middle distillate range hydrocarbons (Figure 18).

S-223 exhibited a significant VOC range enrichment of benzene. As a likely mixture, the sample showed a severely weathered VOC range aspect. As a likely secondary mixture, the signature was enriched with naphthene's that were likely derived from dissolved phase partitioning of naphtha-like petroleum. The sample was enriched with VOC range sulfur thiophenes. The SVOC range exhibited entrained petroleum likely derived from a product containing light to middle distillate range hydrocarbons (Figure 19).

S-374 (2019) exhibited a significant VOC range enrichment of toluene. As a likely mixture, the sample exhibited a severely weathered VOC range aspect. As a likely secondary mixture, the signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. The SVOC range exhibited entrained petroleum likely derived from a product containing light to middle distillate range hydrocarbons (Figure 20).

S-376 (2019) exhibited a significant VOC range enrichment of toluene. As a likely mixture, the sample showed a severely weathered VOC range aspect. As a likely secondary mixture, the signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. The SVOC range exhibited entrained petroleum likely derived from a product containing light distillate range hydrocarbons (Figure 21).

S-375 (2019) exhibited a significant VOC range enrichment of benzene and toluene. As a likely mixture, the sample showed a severely weathered VOC range aspect. As a likely secondary mixture, the signature was enriched with naphthene's likely derived from dissolved phase partitioning of naphtha-like petroleum. The SVOC range exhibited entrained petroleum likely derived from a product containing light distillate range hydrocarbons (Figure 22).

MVA Group 5:

RW-703 exhibited a significant VOC range enrichment of C2 monoaromatics toluene and benzene. As likely a low-level mixture, the sample showed a severely weathered C3 monoaromatics aspect. The SVOC range exhibited entrained petroleum probably derived from a light cycle oil or heavy gas oil (Figure 8).

Penrose System Effluent exhibited a significant VOC range enrichment of C2 monoaromatics toluene and benzene. As likely a low-level mixture, the sample showed a severely weathered C3 monoaromatics aspect. The SVOC range exhibited entrained petroleum probably derived from a middle distillate fuel oil product (Figure 9).

Exploring Potential Origins of Petroleum Contamination in the Southeast AOI-4 Environs (Expansion Report)

See The Former Report for the broader extent of opinions and discussions. This report will expand on the MVA for VOC in water results after the addition of three new samples and the generation of new CSIA chemistry data and sucralose occurrence data.

Shared VOC Chemical Fingerprint Attributes in the Water Samples

MVA data explorations led to the discovery of five groups of samples that shared source fingerprint attributes.

MVA Group 1 water samples ARCO-1 (2019), S-44 (2019), S-369 (2019), ARCO-3 (2019), ARCO-2 (2019), S-369 (2021), N-163 (2021), and DSCP MW-14 (2022) shared common fingerprint aspects explained visually in the HCA group structure and clustering in tSNE space (Figure 3). A review of PCA loadings and Fingerprint Mosaics shows two hidden variables related to the samples. The first hidden variable was explained by the dominance of the naphthene's aspect in the sample's fingerprints relative to the entire population of water samples. The second hidden variable was defined by the relative magnitude of the naphthene's aspect relevant to the Group 3 samples. The only difference between group 1 and group 2 samples was the absence of the minor source aspect in Group 1 samples. Group 2 is a source "end member," and its mixing with Group 1 samples is evident in the radial orientation of the points in the tSNE space (Figure 3). Implications of these findings were discussed in the final sections of this report (Figures 1, 2, 3).

MVA Group 2 water samples S-378 (2021), ARCO-3 (2021), S-449 (2020), S-377 (2019), and PH-IW-10 (2022) shared common chemical fingerprints aspects explained visually in the HCA group structure and clustering in tSNE space (Figure 3). A review of PCA loadings and Fingerprint Mosaics shows two hidden variables related to the samples. The first hidden variable was explained by the significant enrichments of the naphthene's aspect. Notably, the main difference between Group 1 and group 2 samples was the magnitude of the naphthene's aspect relative to other minor source aspects present in Group 1 samples. Essentially, the only difference between group 1 and group 3 samples was an additional minor source aspect in Group 1 samples. This

linear mixing gradient is evident in the radial orientation of the points in tSNE space (Figures 1,2,3).

MVA Group 3 water samples S-279 (2019) and S-279 (2021) shared common chemical fingerprint aspects explained visually in the HCA group structure and clustering in tSNE space (figure 3). A review of PCA loadings and Fingerprint Mosaics shows three hidden variables related to the samples. The severely depleted ethylbenzene and xylenes aspect explained the first hidden variable. The unique attributes of the C3 explained the second hidden variable of the C4 monoaromatics complex. The third hidden variable was described by the more significant relative enrichments of the naphthene's aspect: the Group 3 and Group 4 water samples clustered on-Site in the southeastern zone of AOI-4. (Figures 1, 2, 3).

The second hidden variable was explained by the relatively lower-level unique assemblages of C2-monoaromatics toluene, ethylbenzene, xylenes, and C3 to C4 monoaromatics. Two Group 4 samples, S-449 and S-378, clustered of-Site from the southeastern AOI-4 boundary near the intersection of Penrose Sewer and Side Intercepting Sewer. The third sample in the MVA group, ARCO-3 (2021), was collected from an off-Site location near the intersection of the Side Intercepting Sewer and Pollock Street Sewer. Multiple evidence lines, including CSIA of the naphthene's and reconnaissance of Sucralose occurrences from on-Site and off-Site locations, indicated that the ARCO-3 environs likely represented the source origin naphthene's aspect. Implications of these findings were discussed in the final sections of this report (Figures 1, 2, 3).

MVA Group 4 contains the greatest number of water samples with shared fingerprint aspects. The common features were explained visually in the HCA group structure and point distributions in the tSNE space (Figure 6). Group 4 contained S-240 (2019), CD-14 (2020), S-377 (2019), S-378 (2019), S-223 (2019), S-374 (2019), S-376 (2019), S-375 (2019), and DSCP-MW65 (2022). A review of PCA loadings and Fingerprint Mosaics shows four hidden variables related to the samples. The first hidden variable was explained by the unique distribution of severely weathered gasoline-like C3-monoaromatics. The second hidden variable was explained by the intermediate levels of the naphthene's aspect relative to the entire population of water samples. (Figures 1, 2, 3).

The third hidden variable was explained by variations of the xylenes and ethylbenzene C2 monoaromatic complex relative to the C3-monoaromatics complex. The fourth hidden variable was defined by the specific properties and relative enrichments of olefins and other nC4 to nC5 boiling range isoparaffins. Multiple evidence lines, including non-chemistry weights of evidence, CSIA of benzene, xylenes, and toluene, and a survey of Sucralose occurrences from on-Site and off-Site locations, indicated that source origins of finished gasoline were likely derived from environs off-Site from AOI-4. Implications of these findings were discussed in the final sections of this report (Figures 1, 2, 3).

MVA Group 5 water samples RW-703 (2019) and Penrose System Effluent (2019) shared common chemical fingerprint aspects explained visually in the HCA group structure and clustering in tSNE space (figure 3). A review of PCA loadings and Fingerprint Mosaics shows two hidden variables related to the samples. The first hidden variable was explained by the near absence of a naphthene's fingerprint aspect. The unique attributes of the xylenes, ethylbenzene, and C3 to C4 monoaromatics complex described the second hidden variable. The Group 3 and Group 5 water samples are clustered on-Site in the southeastern zone of AOI-4. (Figures 1, 2, 3).

Source Origins of Benzene, Toluene, and MTBE

See Appendix H.

Reconnaissance of Sucralose Occurrences in Water from AOI-4 On-Site and Offsite Locations

Sucralose served as a specific tracer for wastewater intrusions to groundwater bodies within the AOI-4 boundary, other locations within the boundary of the former refinery, and off-Site locations. Results from the surveillance of Sucralose occurrences were presented in the main body of this report. Sucralose occurrences in water from areas adjacent to off-Site sewage infrastructure, in conjunction with other weights of evidence presented in this report, the CSIA report in Appendix H, the main body of this report, and The Former Report, provided defensible weights of evidence of sewer leaks into groundwater, and consequently alternative transport pathways of contaminants via. Off-Site sewage infrastructure.

Transport of Dissolved Phase Naphtha-like Signature (Naphthene's Enrichment) via. Sewer Infrastructure

This report expanded on the MVA analysis conducted on VOC range PIANO analysis on water samples. This report considered new information from CSIA analysis (Appendix H) and sucralose occurrence data (main body of this report). The MVA analysis shows that the dissolved phase naphthene's signature and its mixing with other petroleum types explained most of the numerical variation of the model. The proportional pies map in figure 2 supports the MVA investigation and corresponding groupings in figure 1 by illustrating the geographical distribution of the naphthene's dominant part of the petroleum mixtures in the water samples. The geographical distributions and probable source dynamics of the benzene and toluene, were discussed in Appendix H. In contrast, the geographical distributions, and probable sources, of the middle distillate and residual range petroleum aspects, were discussed in The Former Report.

Figure 2 illustrates the mixing dominance of the dissolved phase naphthene's signature in water samples collected from the AOI-4 and on-site and off-site environs more proximal to AOI-1. The commonality of the molecular naphthene's fingerprint was apparent in the groupings structure of the MVA analysis along with the Fingerprint Mosaics in figures 4 to 28. CSIA of hydrogen and carbon, for benzene, toluene, and naphthene's (CYX and MCYX), in addition to determinations of Sucralose from co-located samples, were conducted to afford additional tiers of evidence to explore chemical source similarities or dissimilarities.

The results of sucralose survey indicated that "Hot Spots" of Sucralose were detected in locations concomitant with enrichments of the naphthene's aspect and probable zones of wastewater intrusions Outfalls from the leaking sewer infrastructure (see the main body of this report). Results and expert interpretation of CSIA results of naphthene's CYX showed scatter plot "clustering" of chemical fractionation patterns (of related carbon and hydrogen atoms) for water samples - ARCO-3, S-369, S-378, PH-IW-10, DSCP-MW-14, DSCP-MW-65 and PH-DW-3 (Appendix H). Results for MCYX showed scatter plot "clustering" of chemical fractionation patterns (of related carbon and hydrogen atoms) for water samples - ARCO-3, S-369, S-378, PH-IW-10, and PH-DW-3. It is essential to recognize that CYX is more volatile than MCYX, and these physical-chemical attributes likely impacted CSIA fractionation patterns (Appendix H). CSIA results of naphthene's, in conjunction with molecular lines of evidence and sucralose reconnaissance results, showed chemical source commonalities in water samples collected from

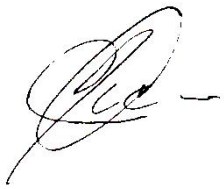
locations impacted by wastewater intrusions from the compromised sewer infrastructure. These multiple LOEs support the likely transport of contaminants by the sewer infrastructure.

Conclusion

A comprehensive forensics investigation was conducted on water samples collected from various AOIs in the Evergreen Former Philadelphia Refinery. Multivariate statistical analysis and traditional compositional analyses were conducted on all samples procured from the research initiative. Molecular petroleum chemistry lines of evidence were reviewed from The Former Report and recent efforts. CSIA chemistry lines of evidence for benzene, toluene, xylenes, ethylbenzene, MTBE, cyclohexane, and methylcyclohexane were generated for samples wherever possible and pertinent. Sucralose lines of evidence were generated from groundwater samples collected from on-Site and off-Site locations. This report provides multiple weights of evidence generated from the VOC range chemistry of water samples. The results of this investigation discovered an alternative transport pathway of contaminants through off-Site sewer infrastructure.

You may email any questions or concerns to markcejas@chemquants.com regarding chemistry data or interpretation.

Respectfully submitted,



Mark Jonathan Cejas
Principal

Figures

GIS Map of MVA Fingerprint Groups for VOC PIANO Range Chemistry from Water Samples

GIS Map of Chemical Fingerprint Classifications as (Estimated) Proportional Pie Charts

Project Name

Evergreen Former Philadelphia Refinery Characterization (MVA Expansion Report)



Figure 1. Aerial map of MVA fingerprint groups for water samples of PIANO VOC chemistry.



Figure 2. Aerial map of petroleum mixture pies for water samples.

Multivariate Analysis Output for Water Samples

3-D tSNE Multivariate Analysis Map of VOC PIANO Analytes

Hierarchical Analysis (HA) Dendrogram of VOC PIANO Analytes

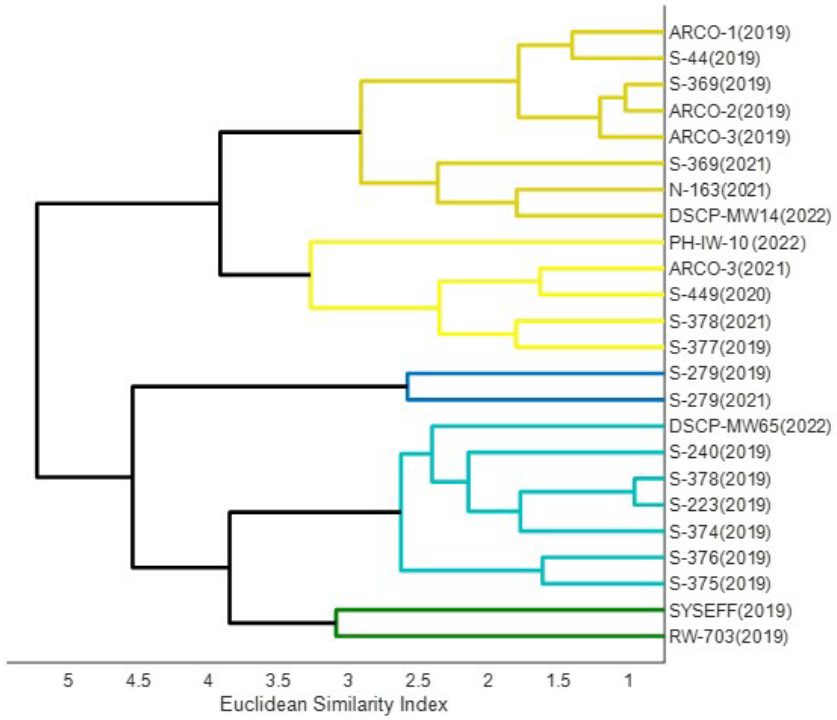
Project Name

Evergreen Former Philadelphia Refinery Characterization (MVA Expansion Report)

Interpreter

Multivariate Analysis Output – Water Matrix / VOC PIANO

Hierarchical Analysis



tSNE Visualization



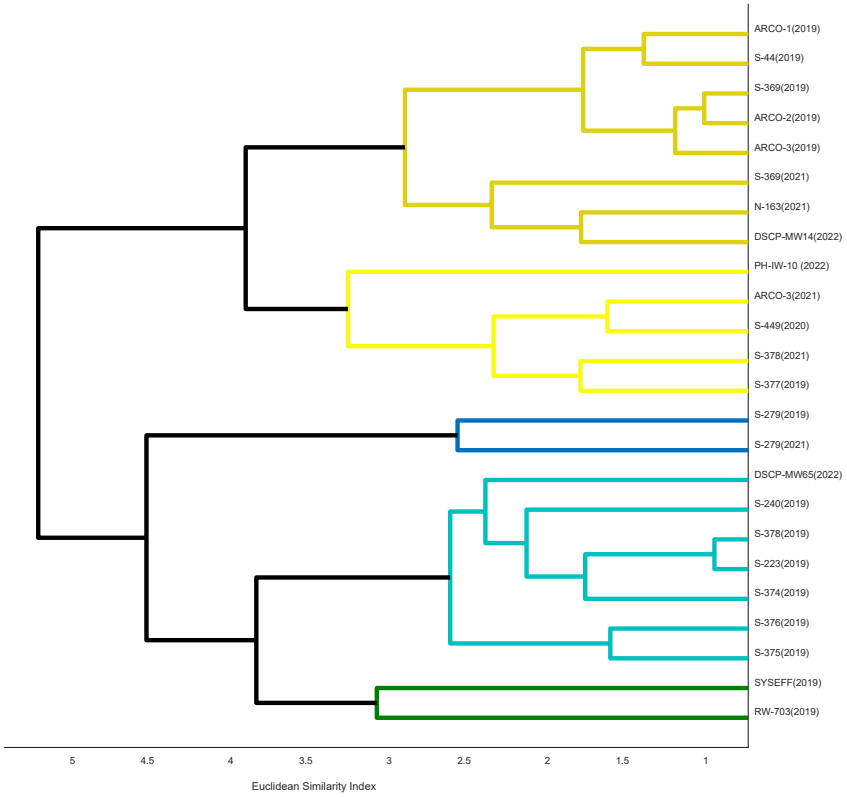
Figure 3. Chemometrics data visualization for VOC PIANO analysis of water samples (right click and select "floating window"to view 3d map in separate frame).

Figures

Fingerprint Mosaics for Water Samples

Project Name

Evergreen Former Philadelphia Refinery Characterization (MVA Expansion Report)



Order of Fingerprint Mosaics follows the dendrogram order from top to bottom.

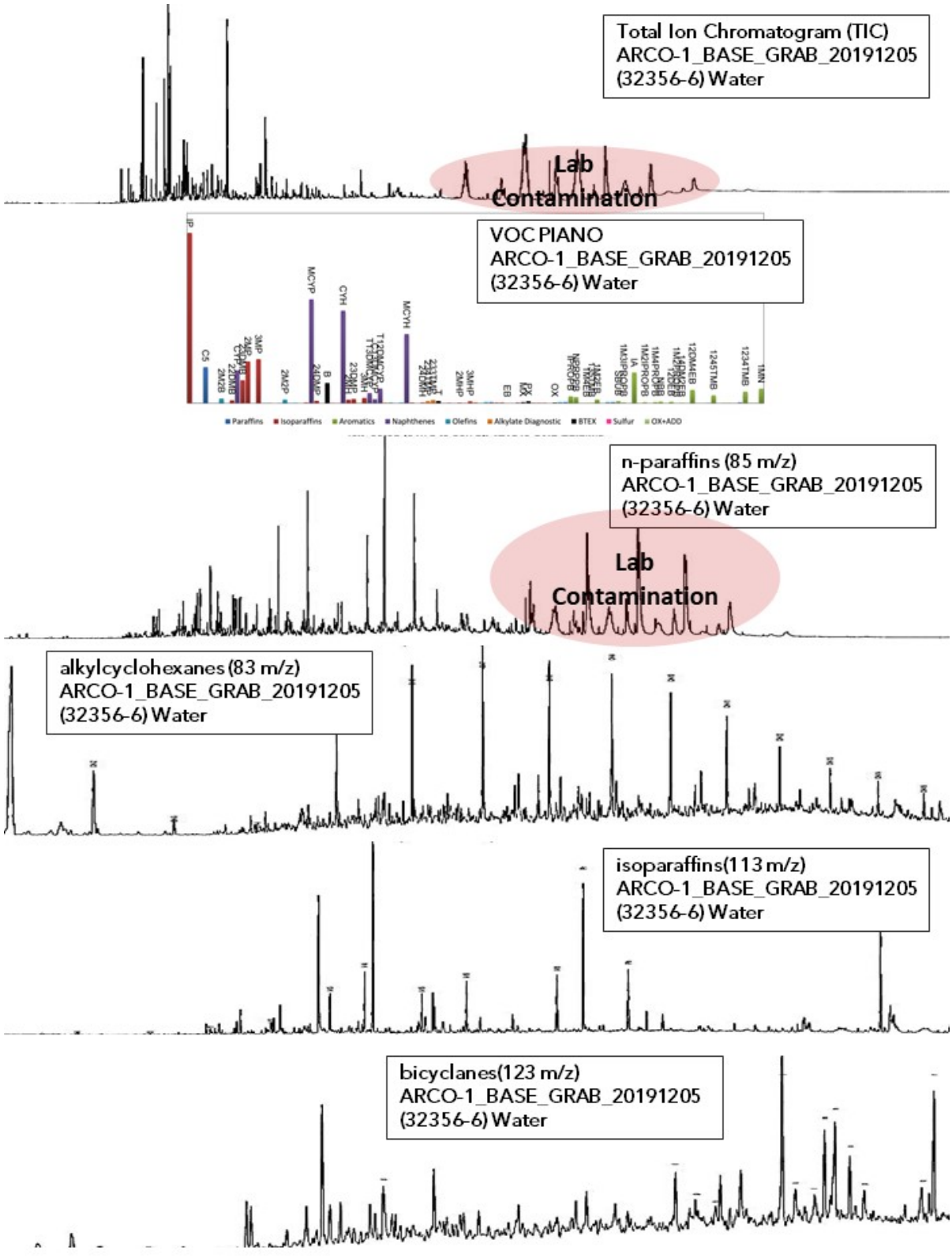


Figure 4. Fingerprint Mosaics™ for water samples.

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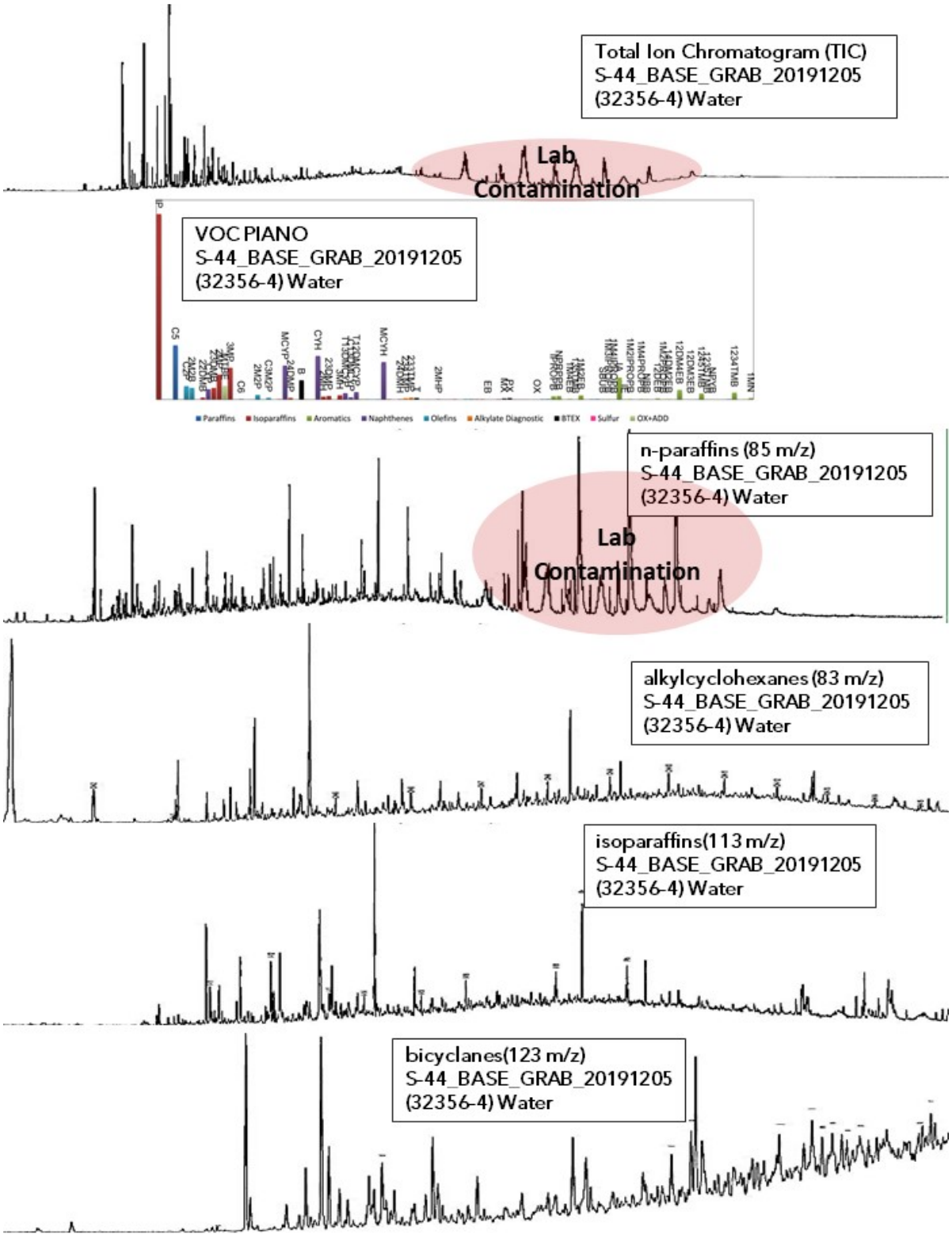

Figure 5. Fingerprint Mosaics™ for water samples.

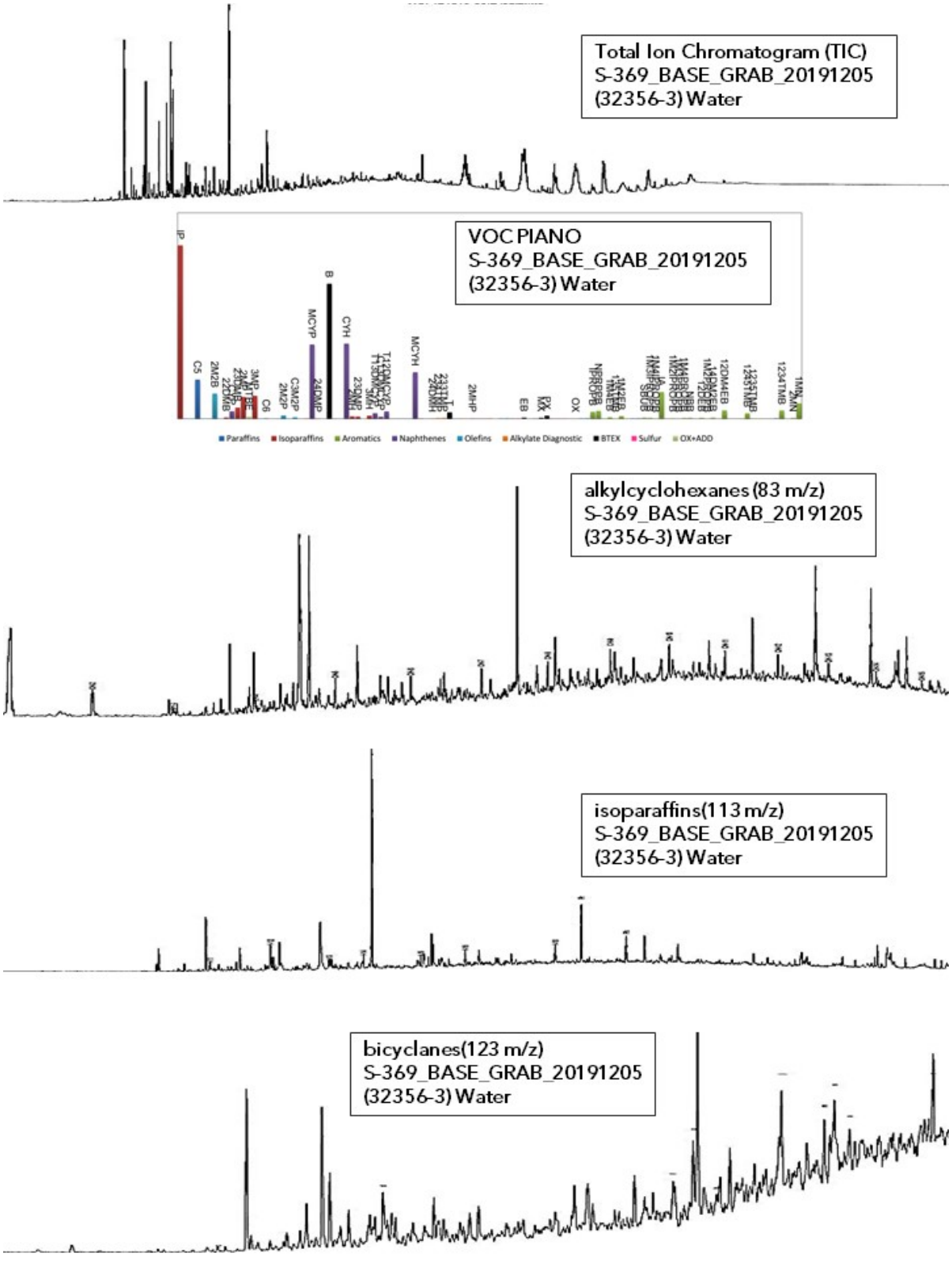

Figure 6. Fingerprint Mosaics™ for water samples.

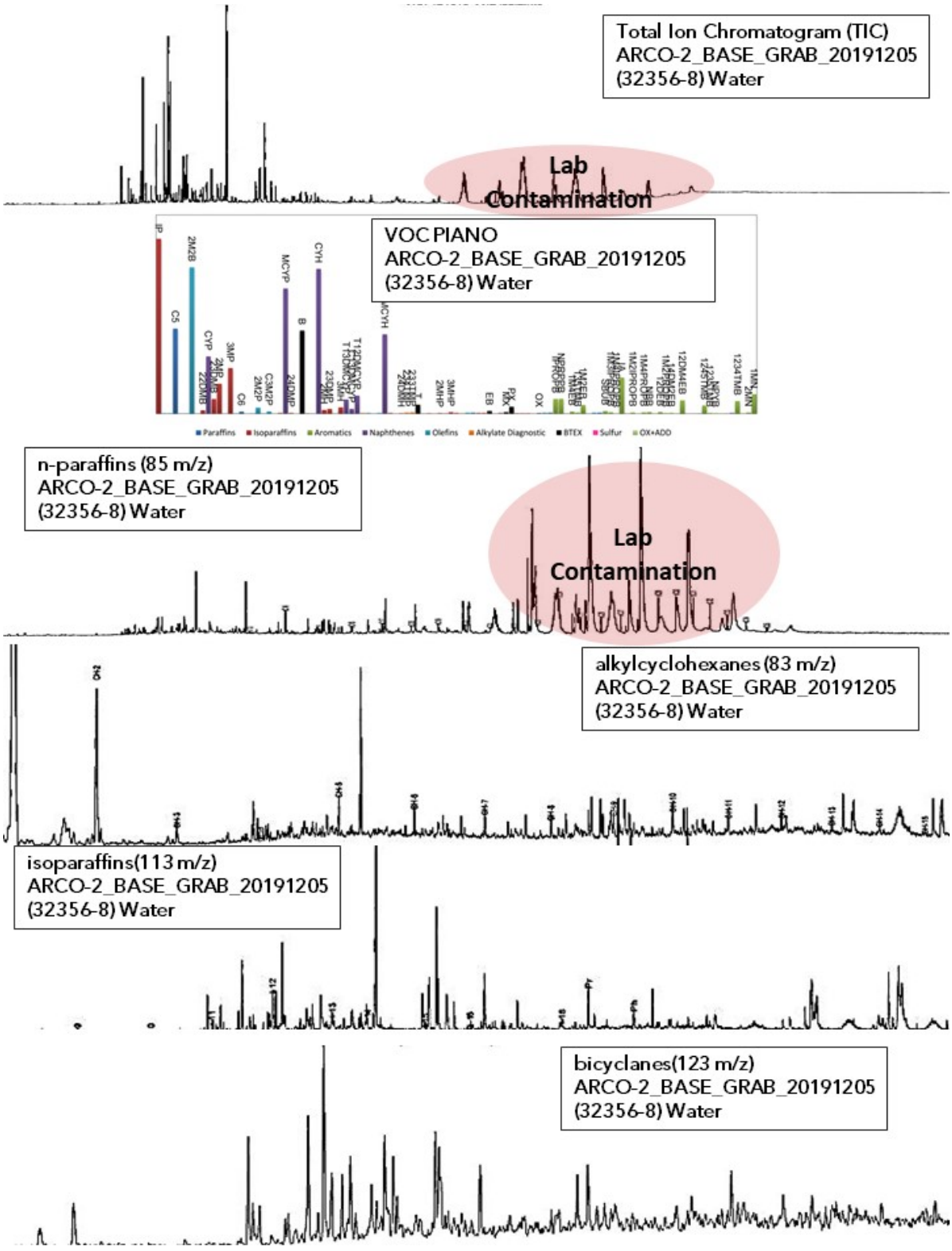

Figure 7. Fingerprint Mosaics™ for water samples.

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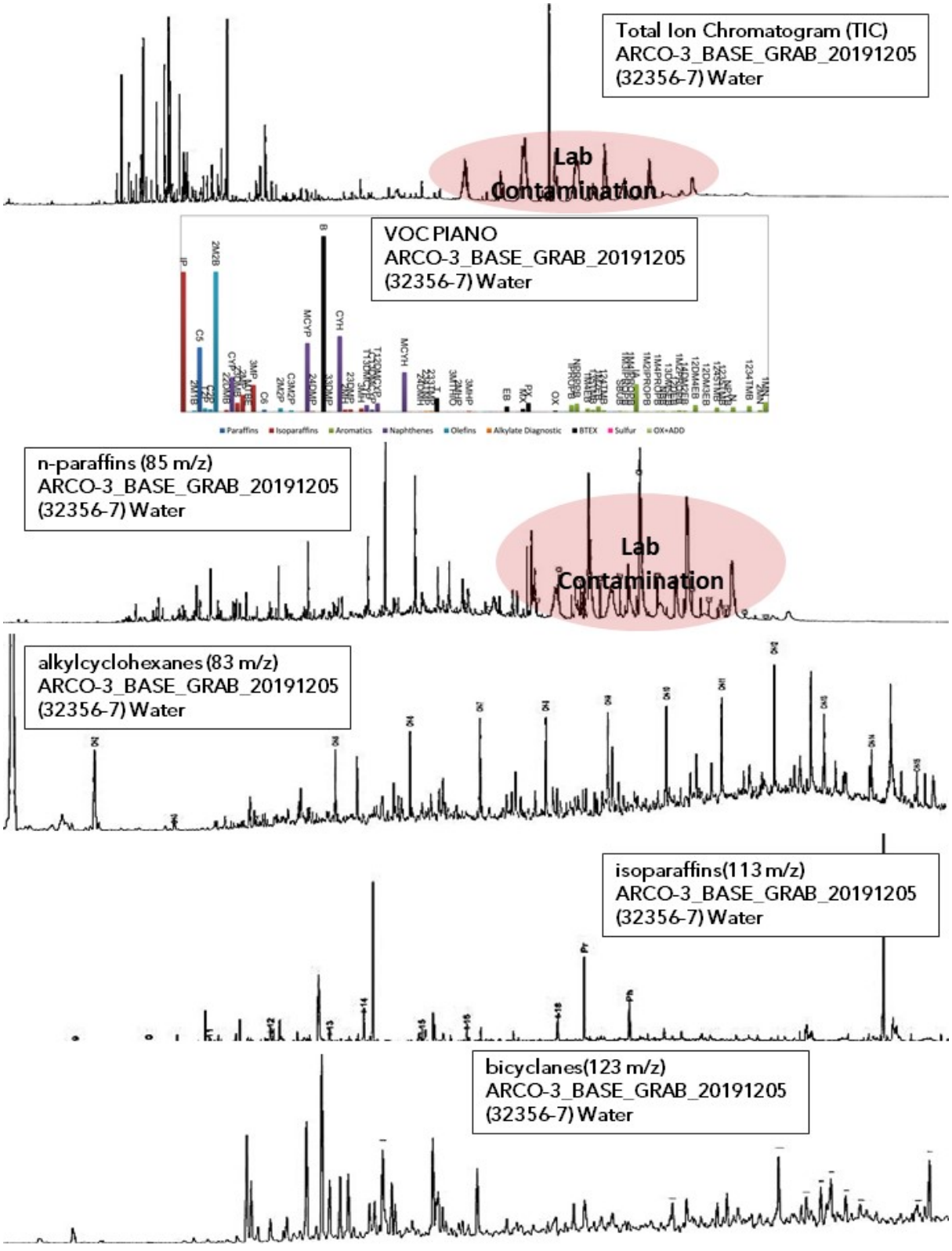

Figure 8. Fingerprint Mosaics™ for water samples.

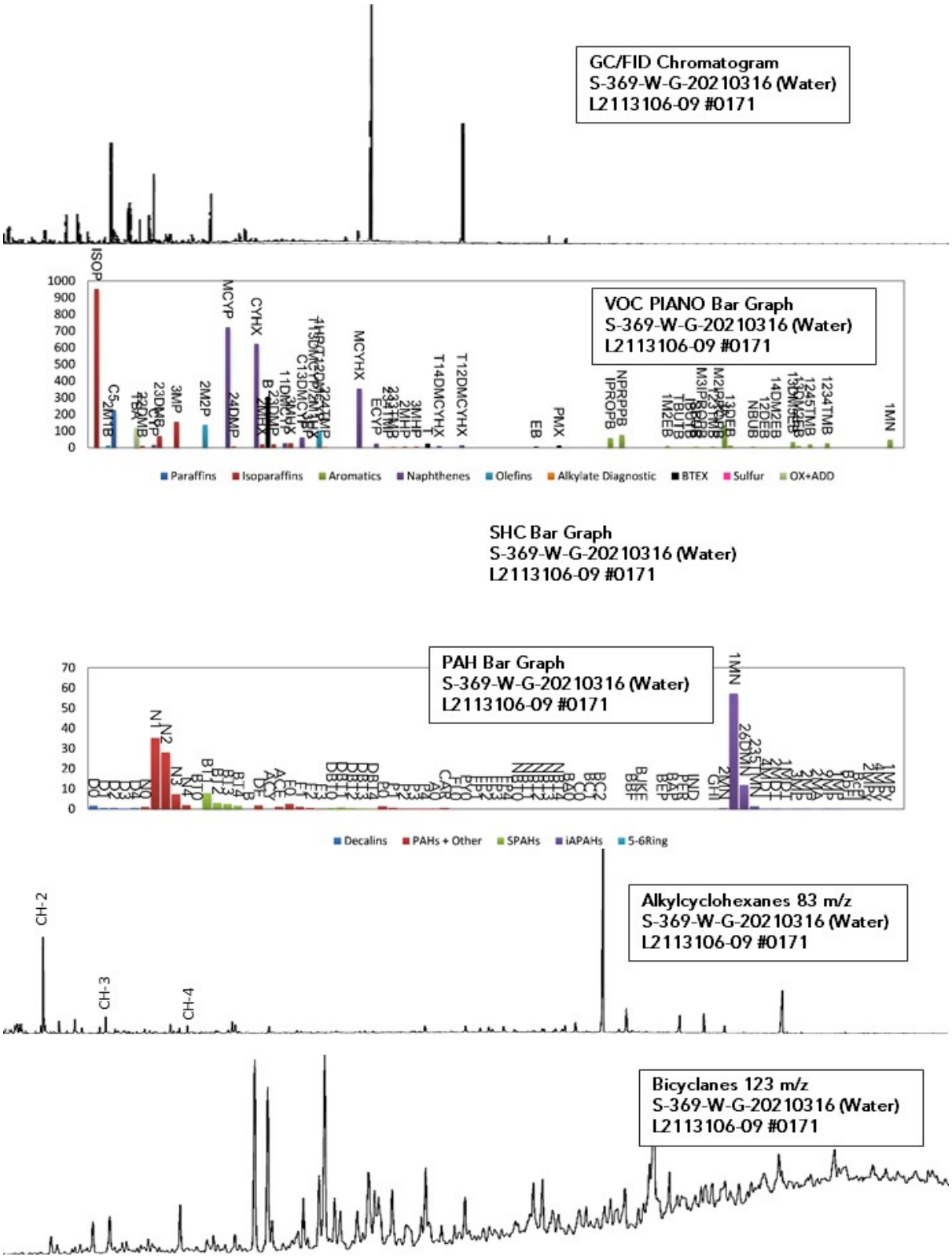

Figure 9. Fingerprint Mosaics™ for water samples.

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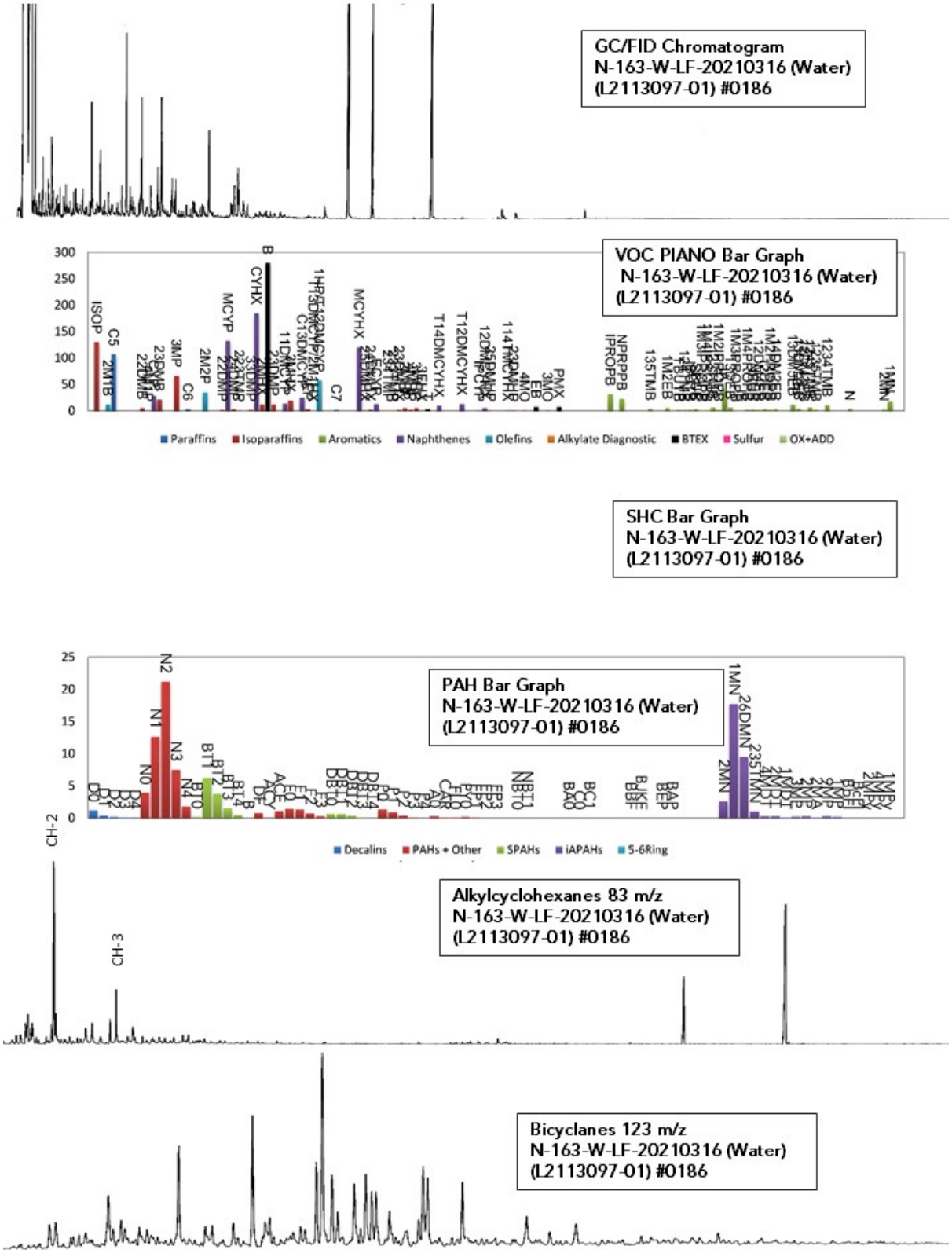

Figure 10. Fingerprint Mosaics™ for water samples.

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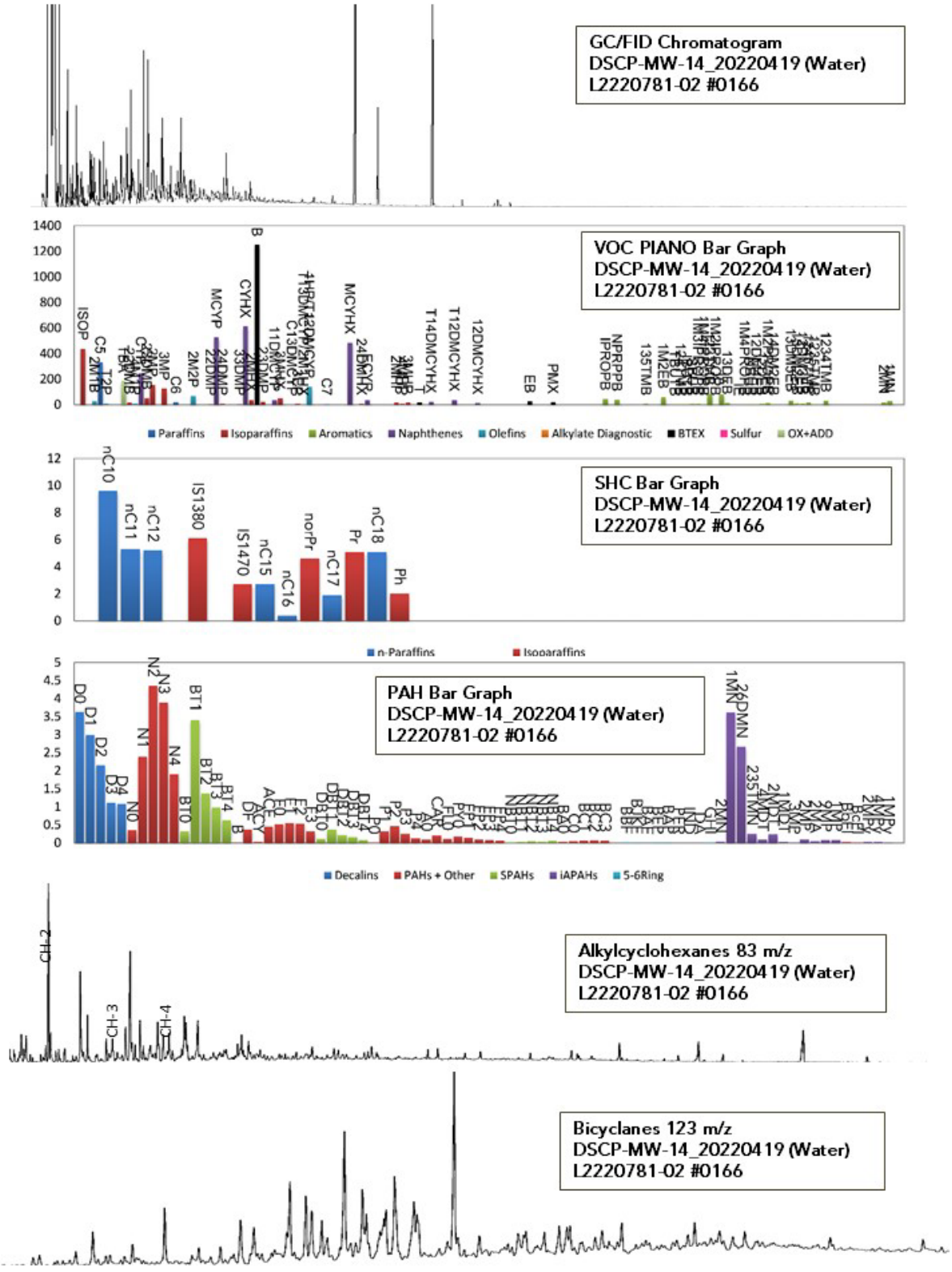

Figure 11. Fingerprint Mosaics™ for water samples.

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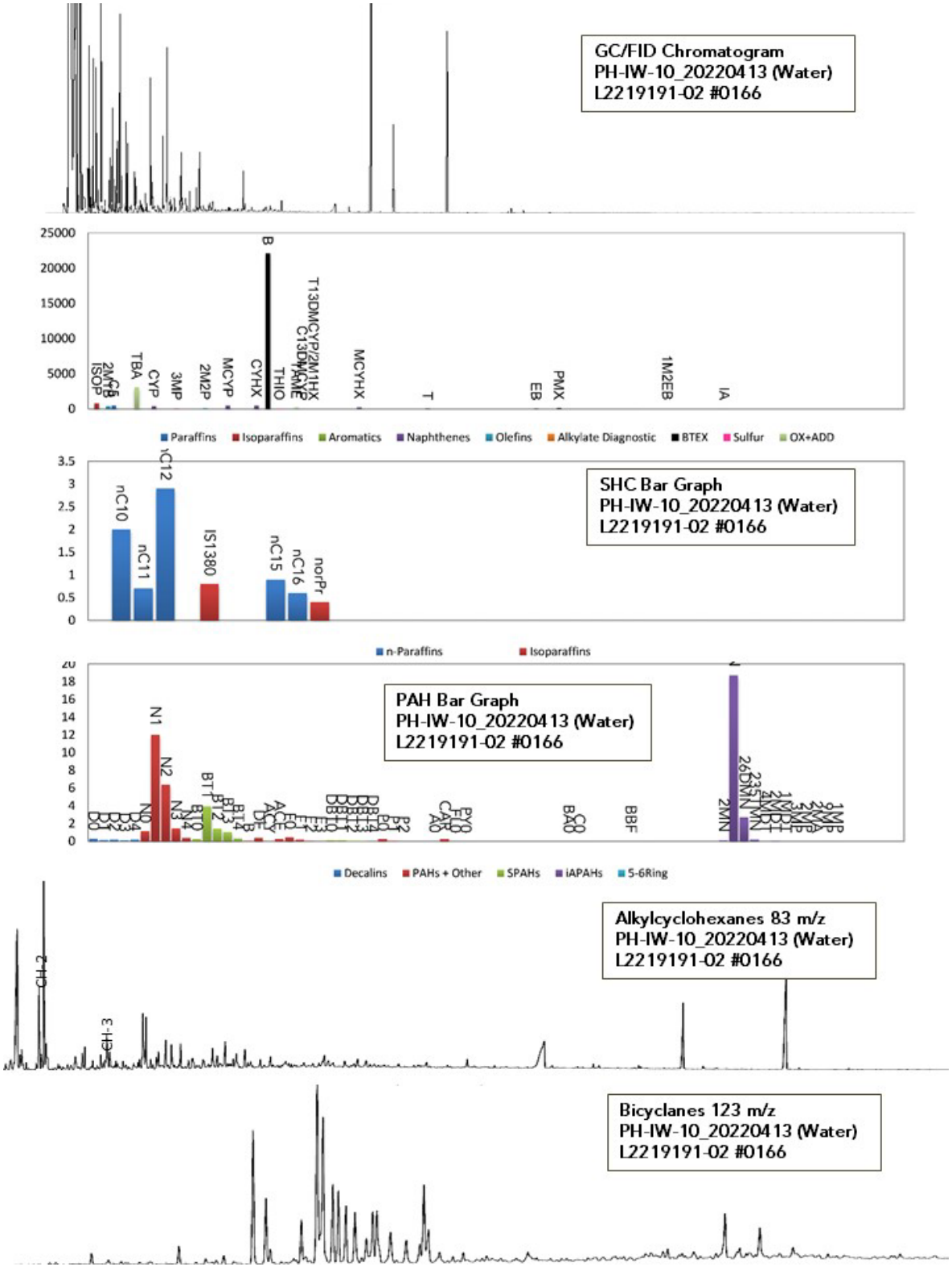

Figure 12. Fingerprint Mosaics™ for water samples.

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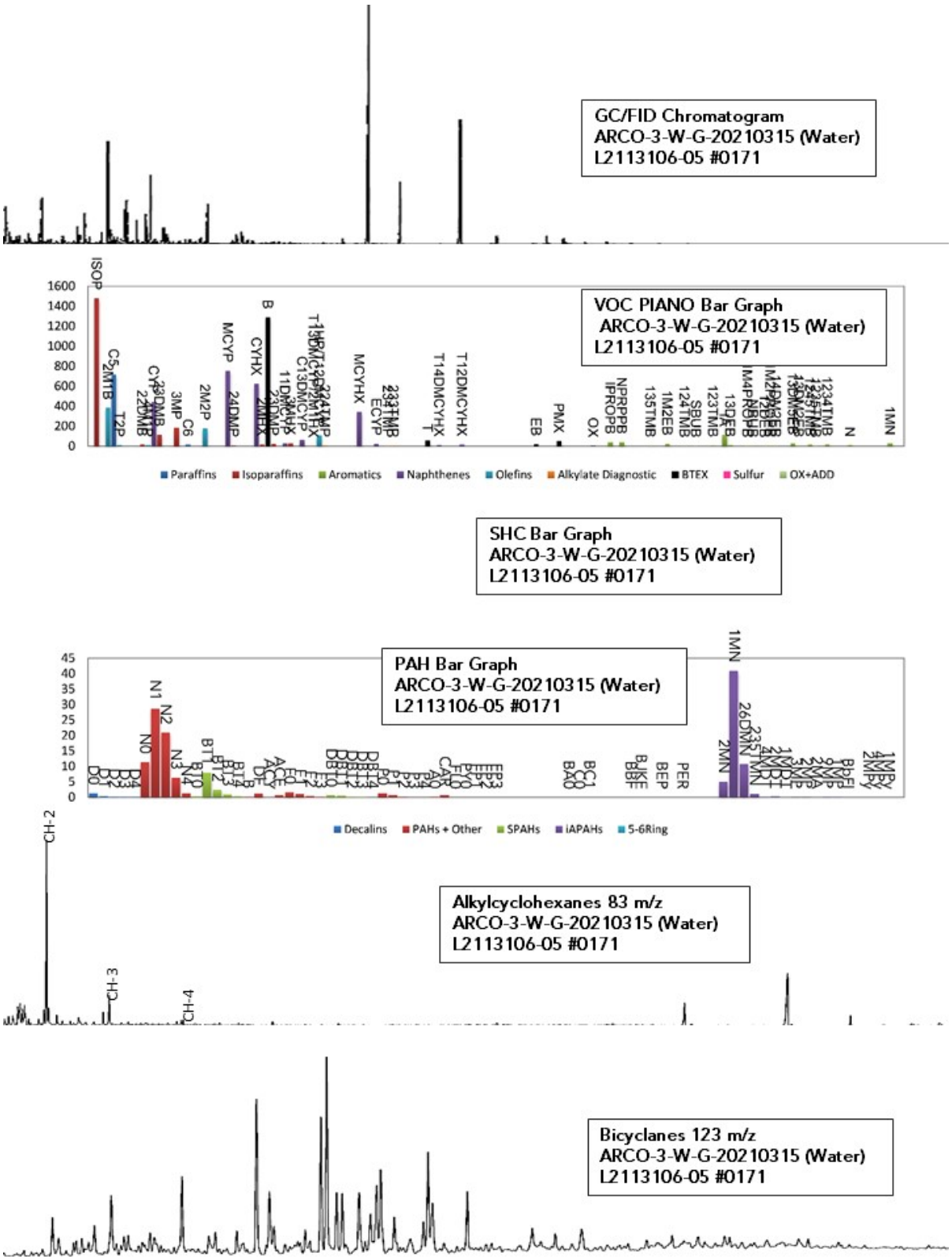

Figure 13. Fingerprint Mosaics™ for water samples.

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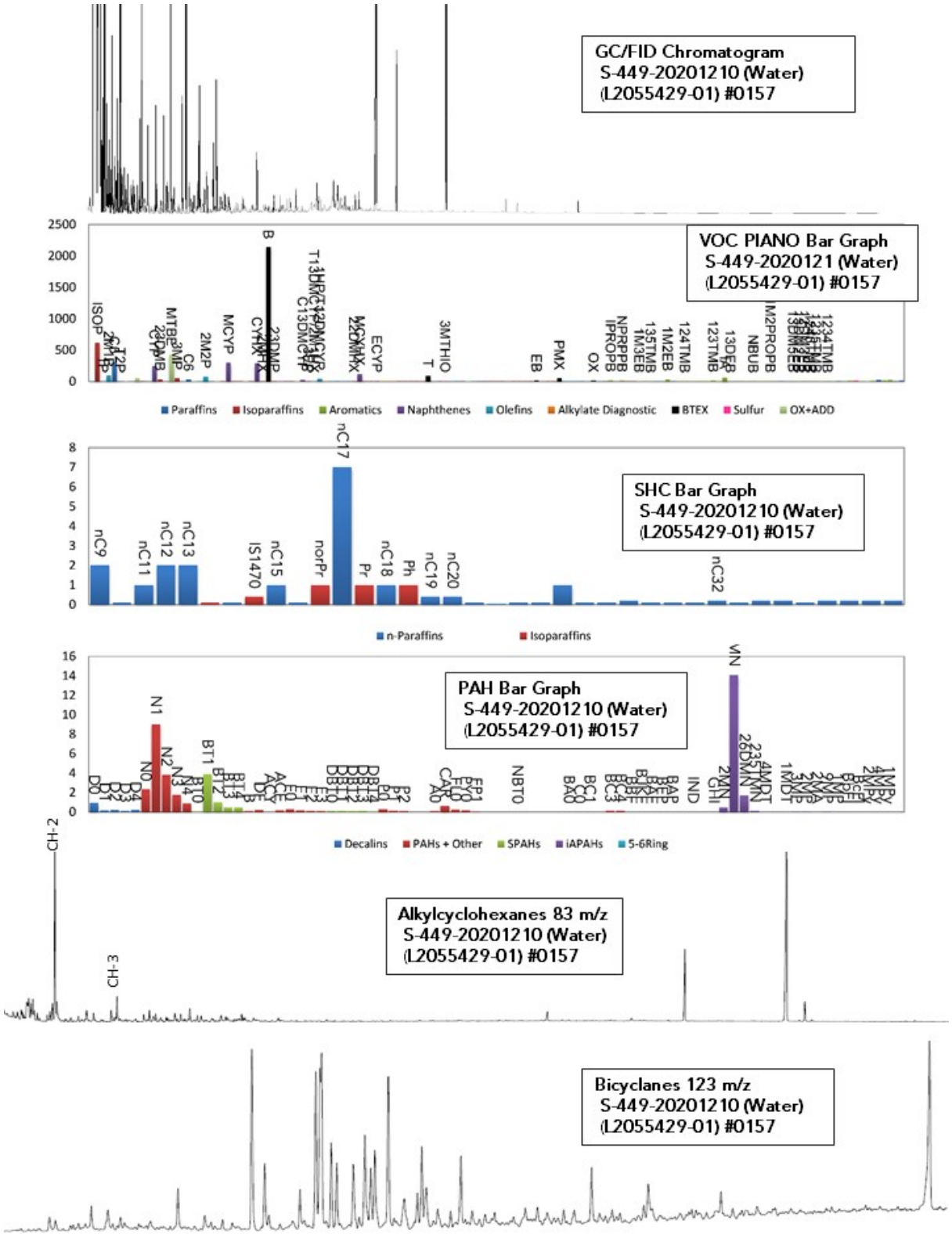

Figure 14. Fingerprint Mosaics™ for water samples.

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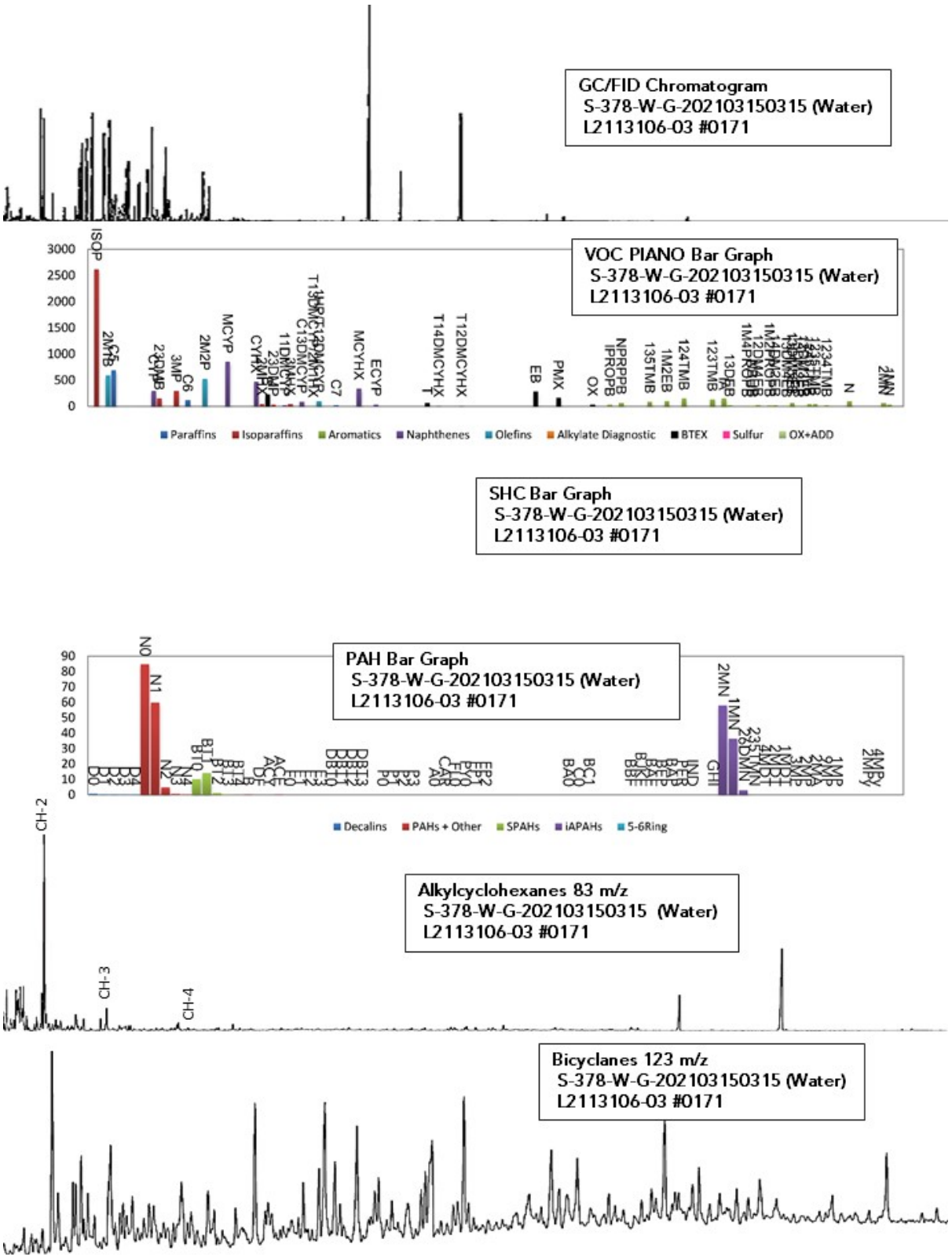

Figure 15. Fingerprint Mosaics™ for water samples.

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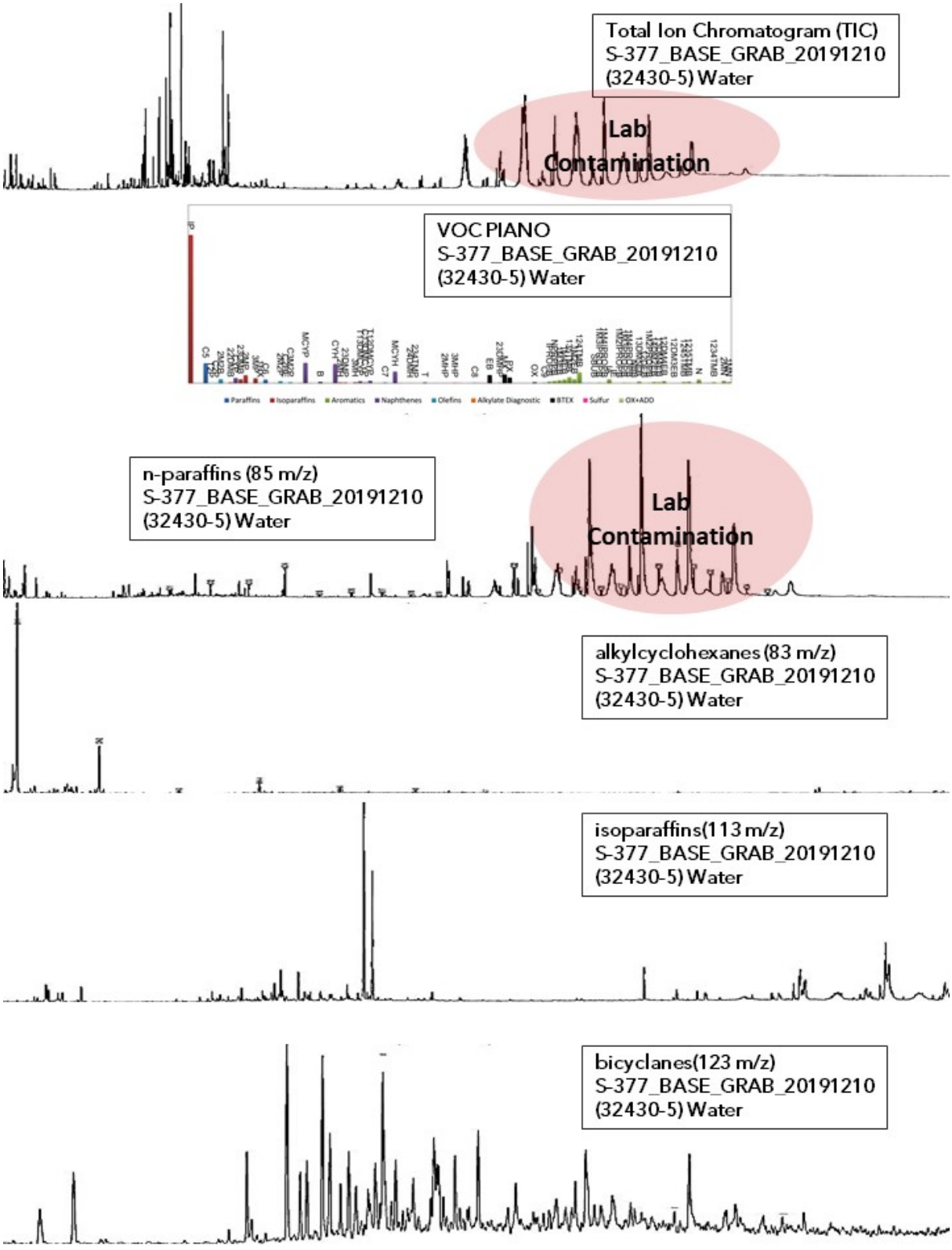

Figure 16. Fingerprint Mosaics™ for water samples.

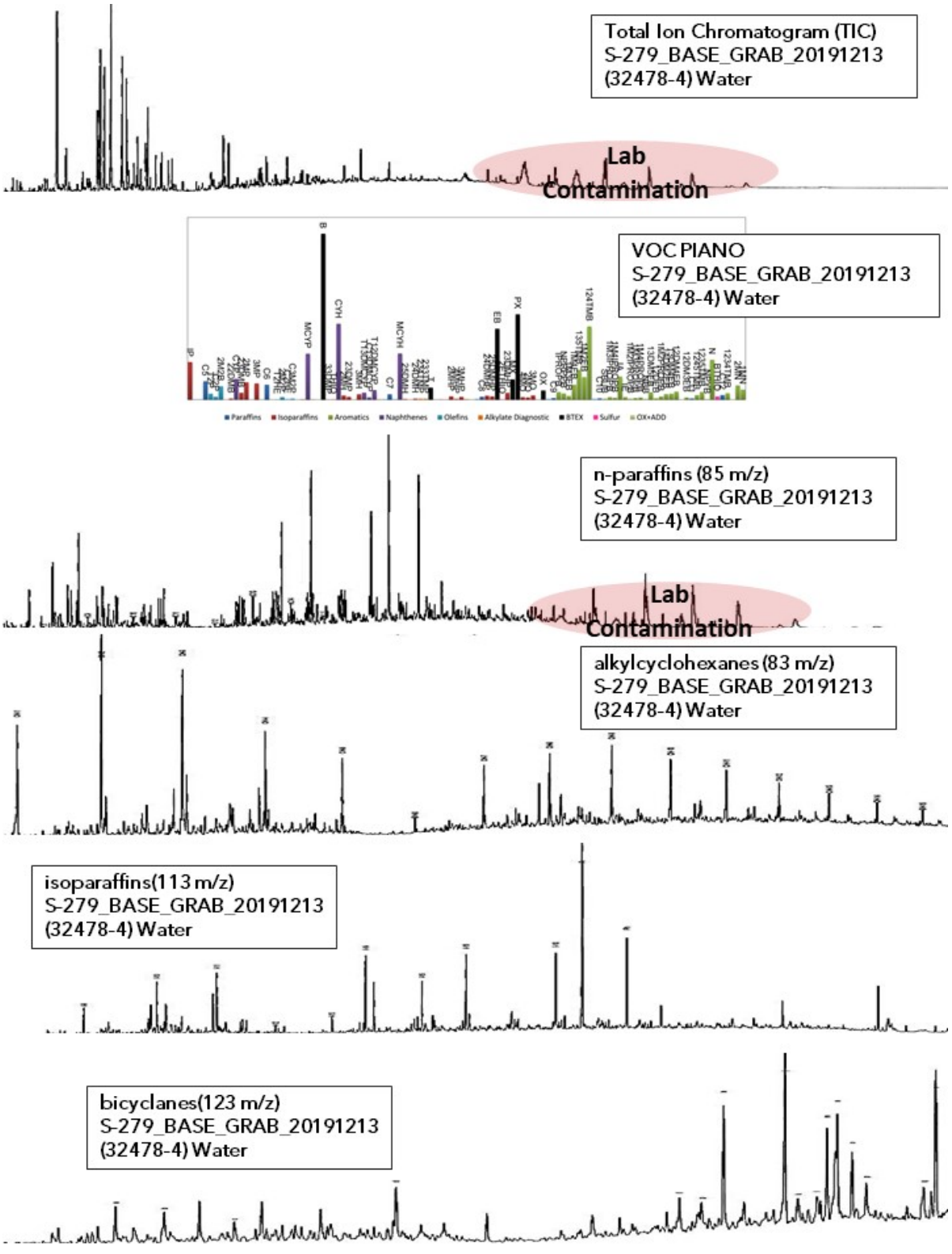

Figure 17. Fingerprint Mosaics™ for water samples.

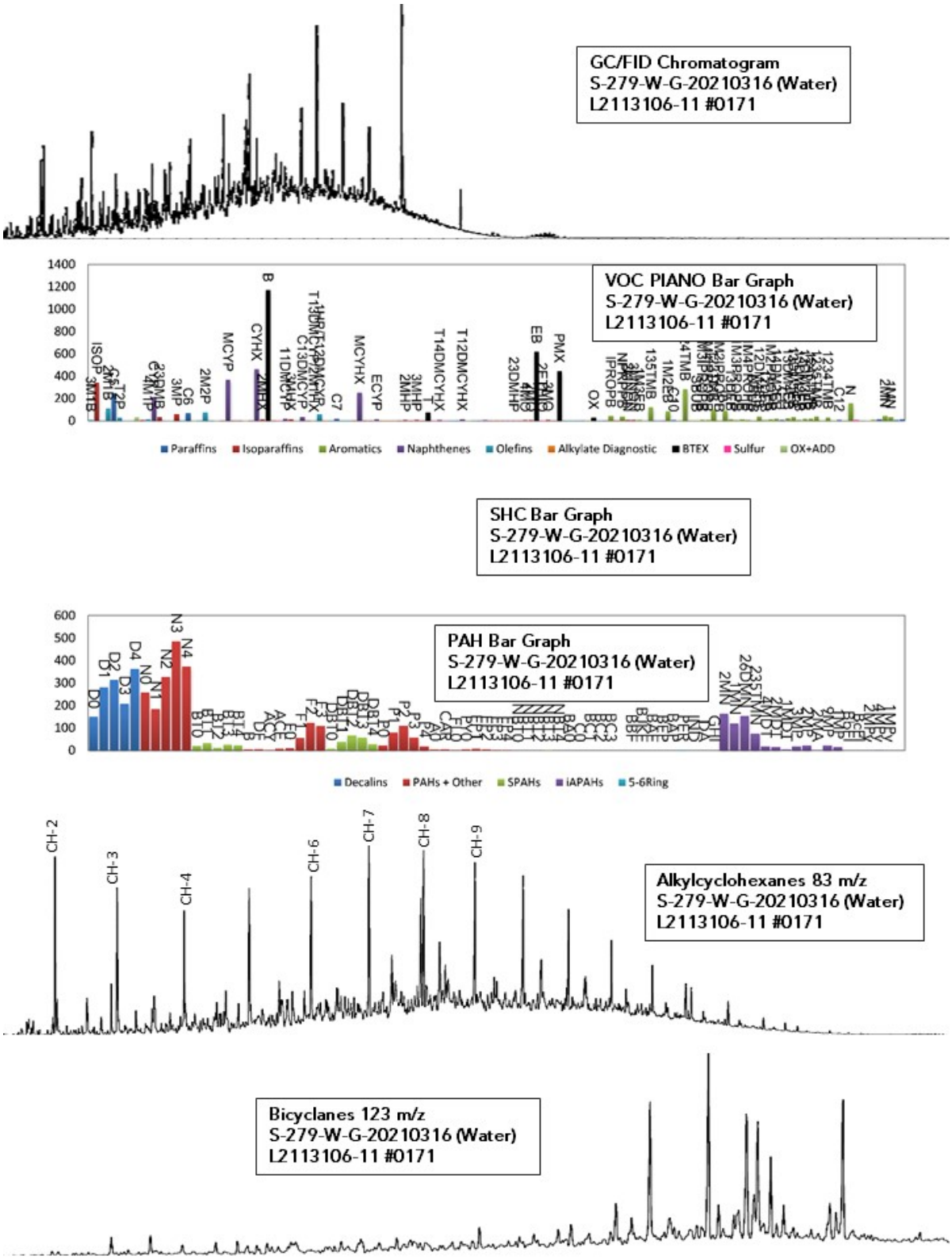

Figure 18. Fingerprint Mosaics™ for water samples.

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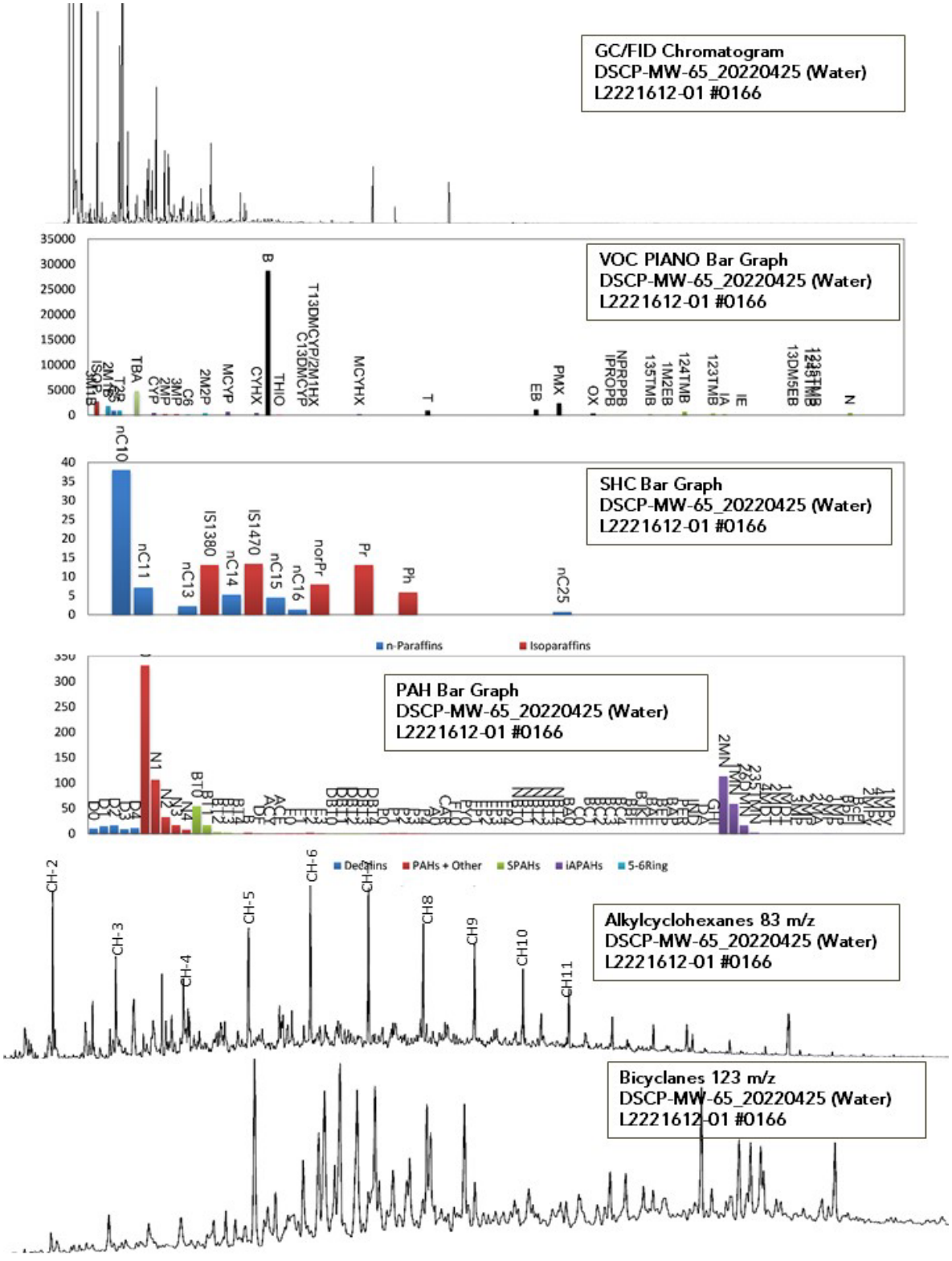

Figure 19. Fingerprint Mosaics™ for water samples.

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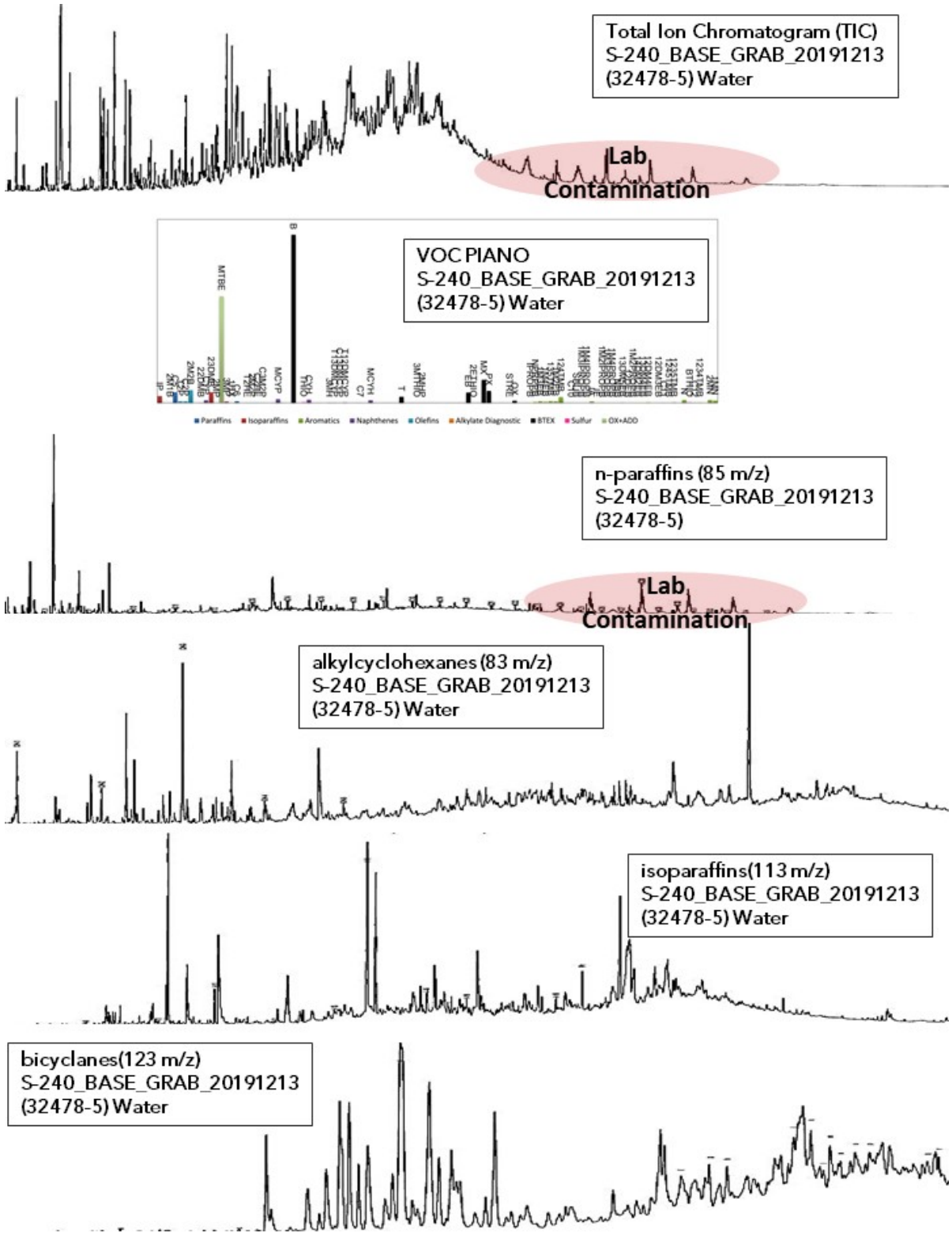

Figure 20. Fingerprint Mosaics™ for water samples.

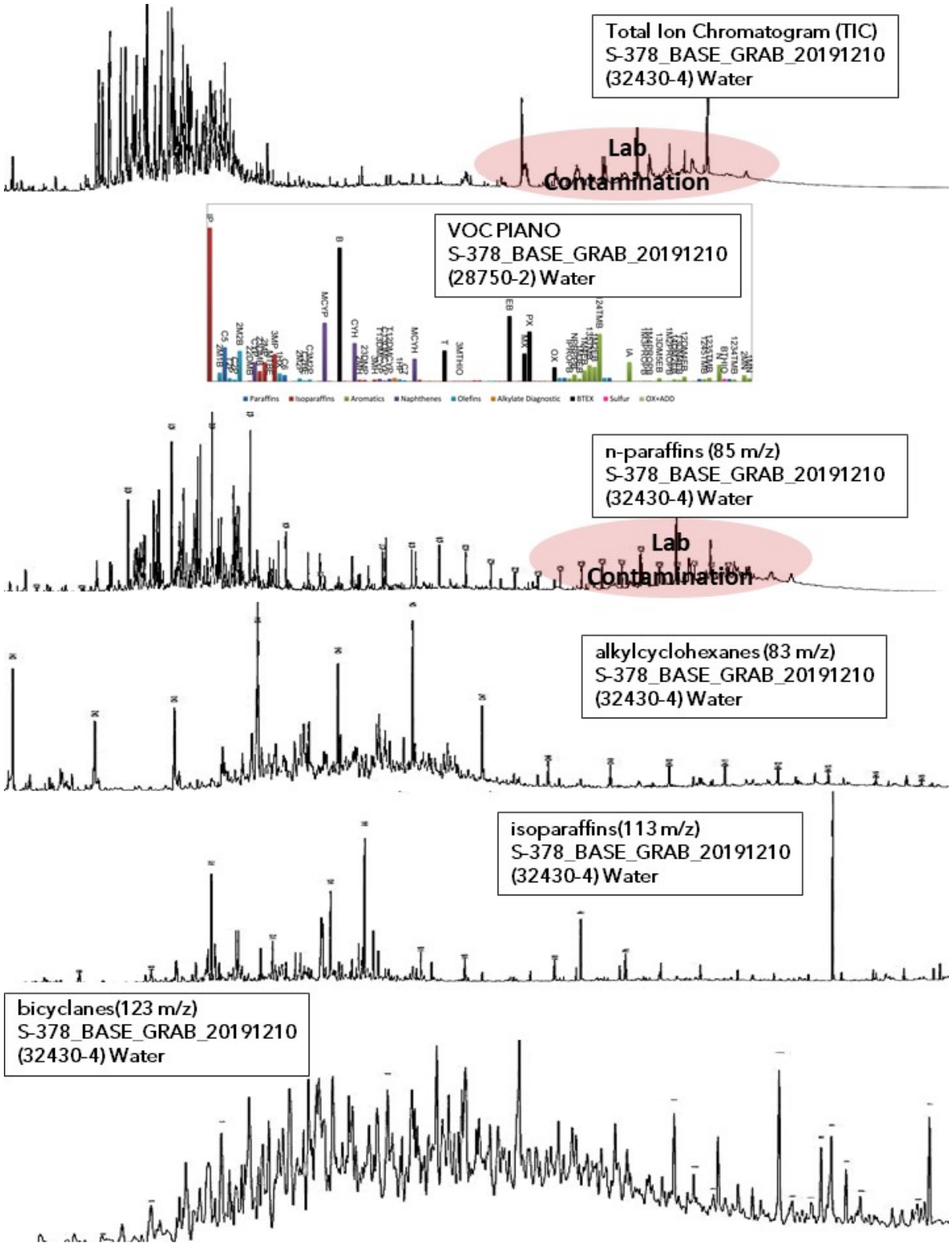

Figure 21. Fingerprint Mosaics™ for water samples.

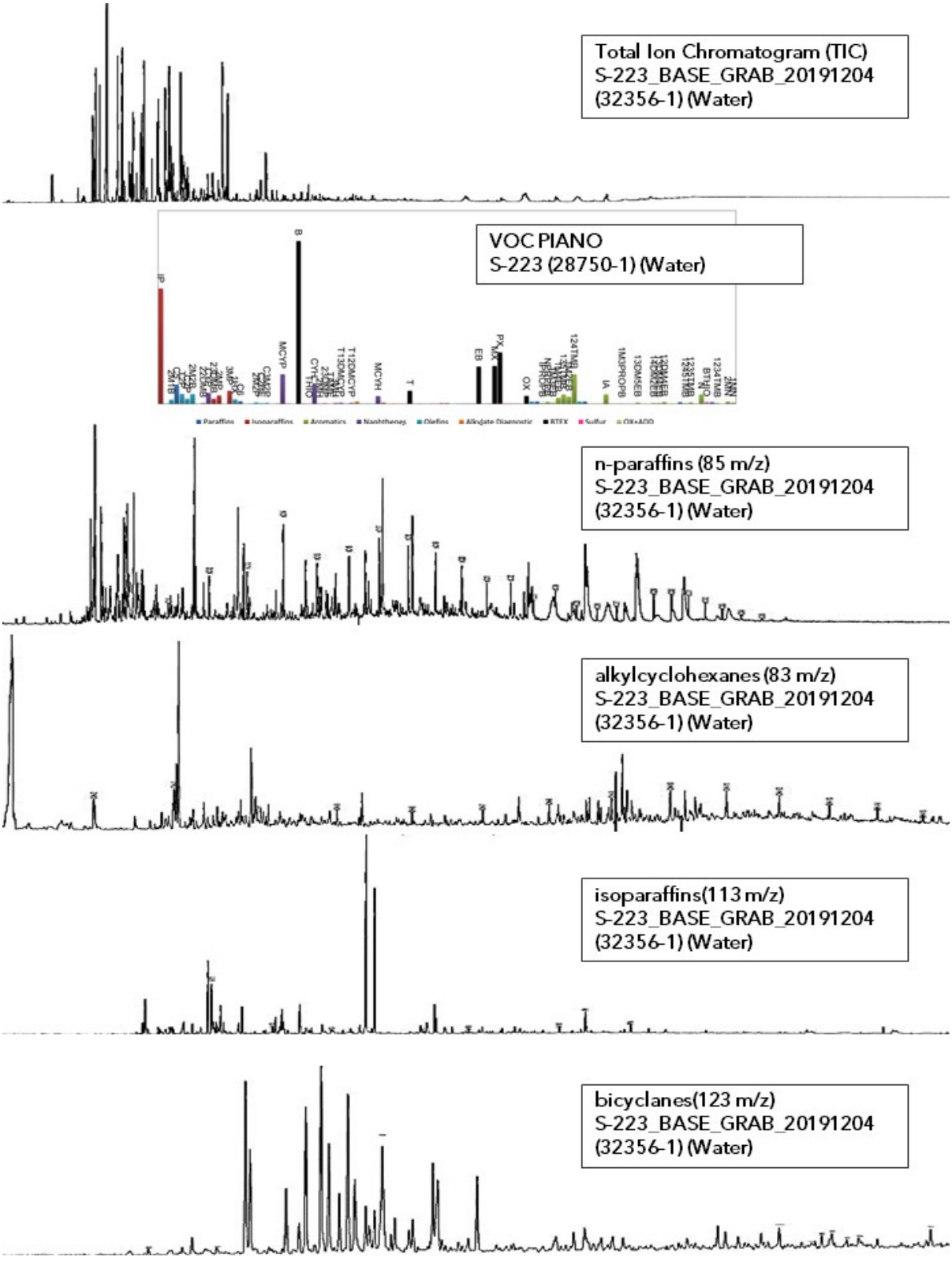

Figure 22. Fingerprint Mosaics™ for water samples.

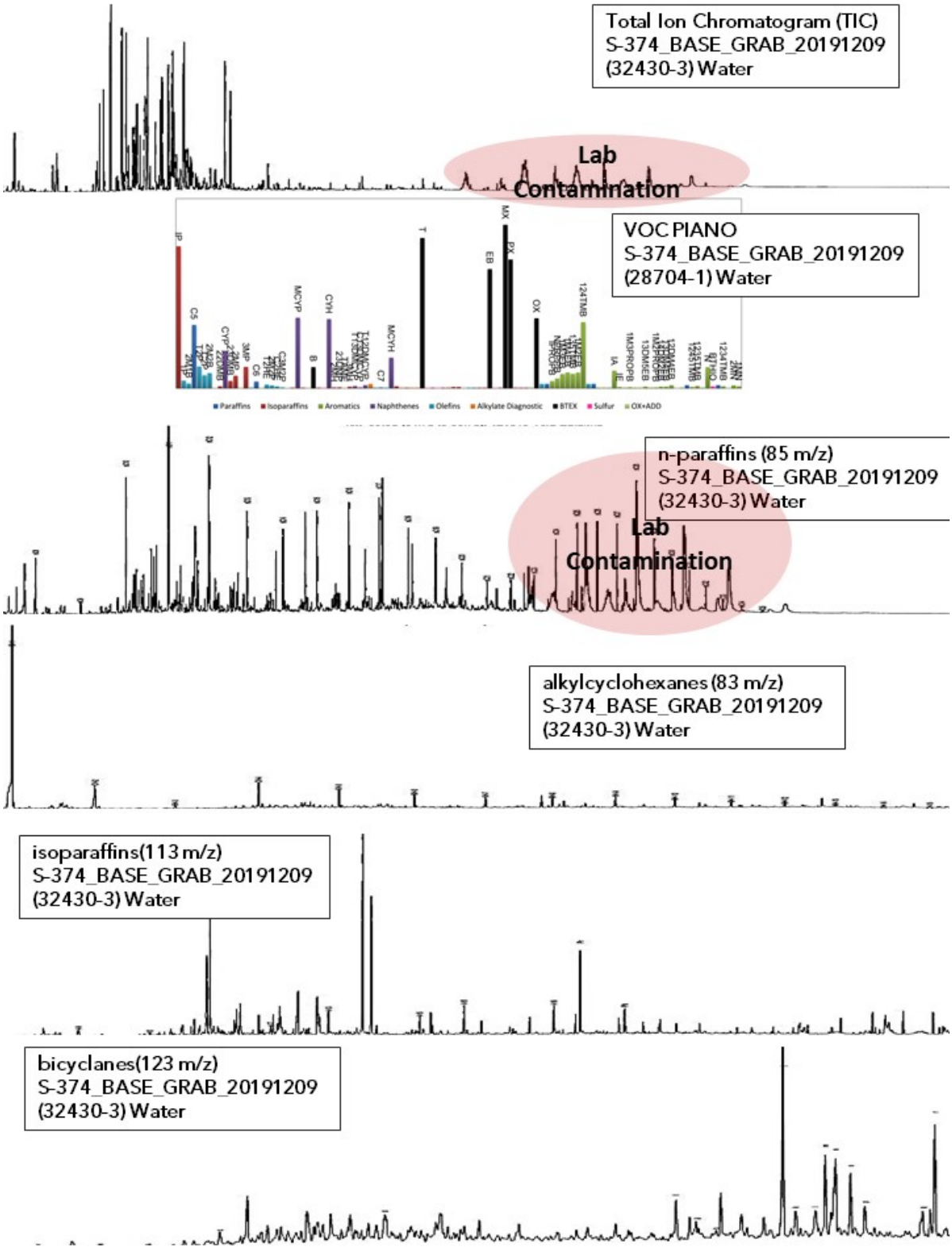

Figure 23. Fingerprint Mosaics™ for water samples.

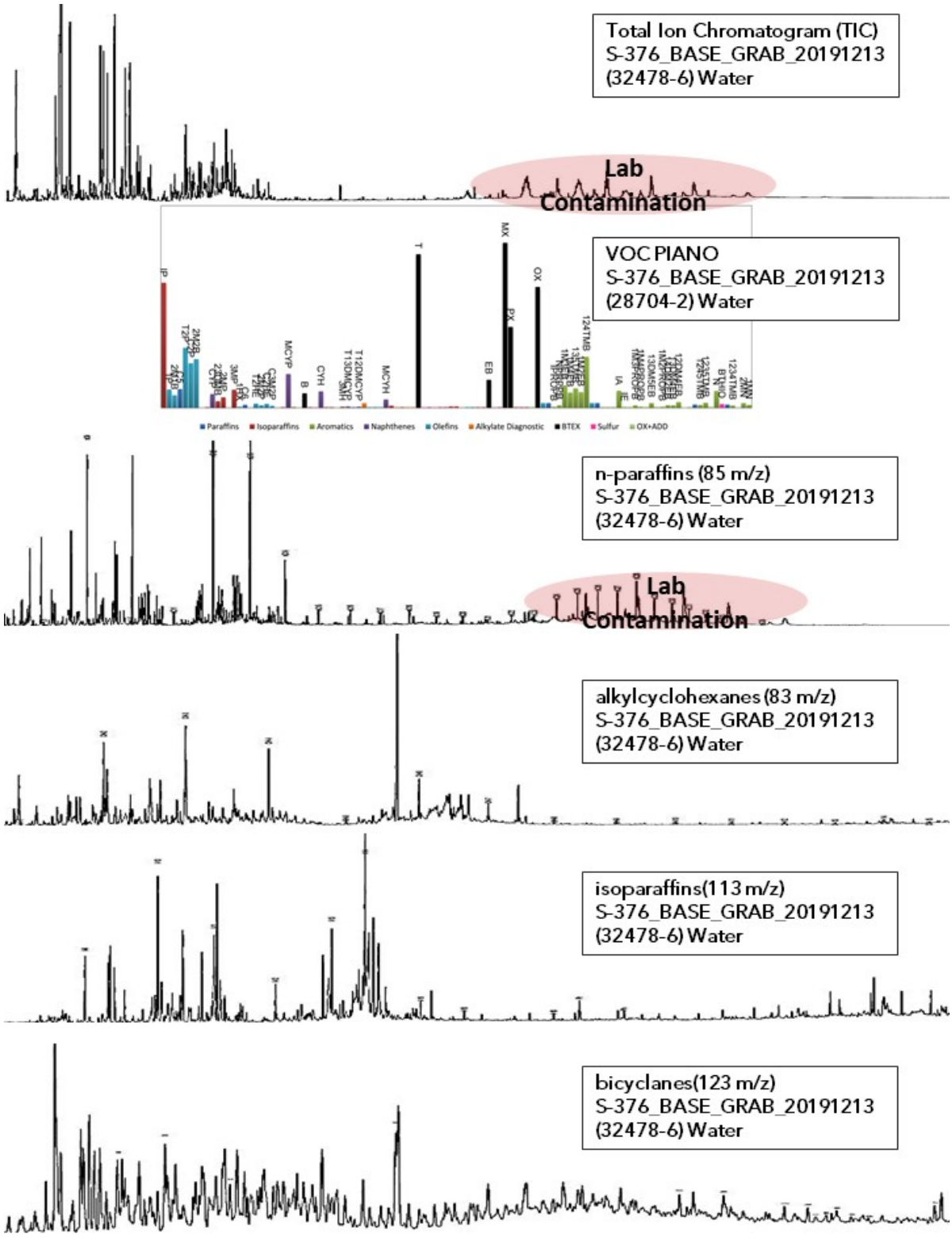

Figure 24. Fingerprint Mosaics™ for water samples.

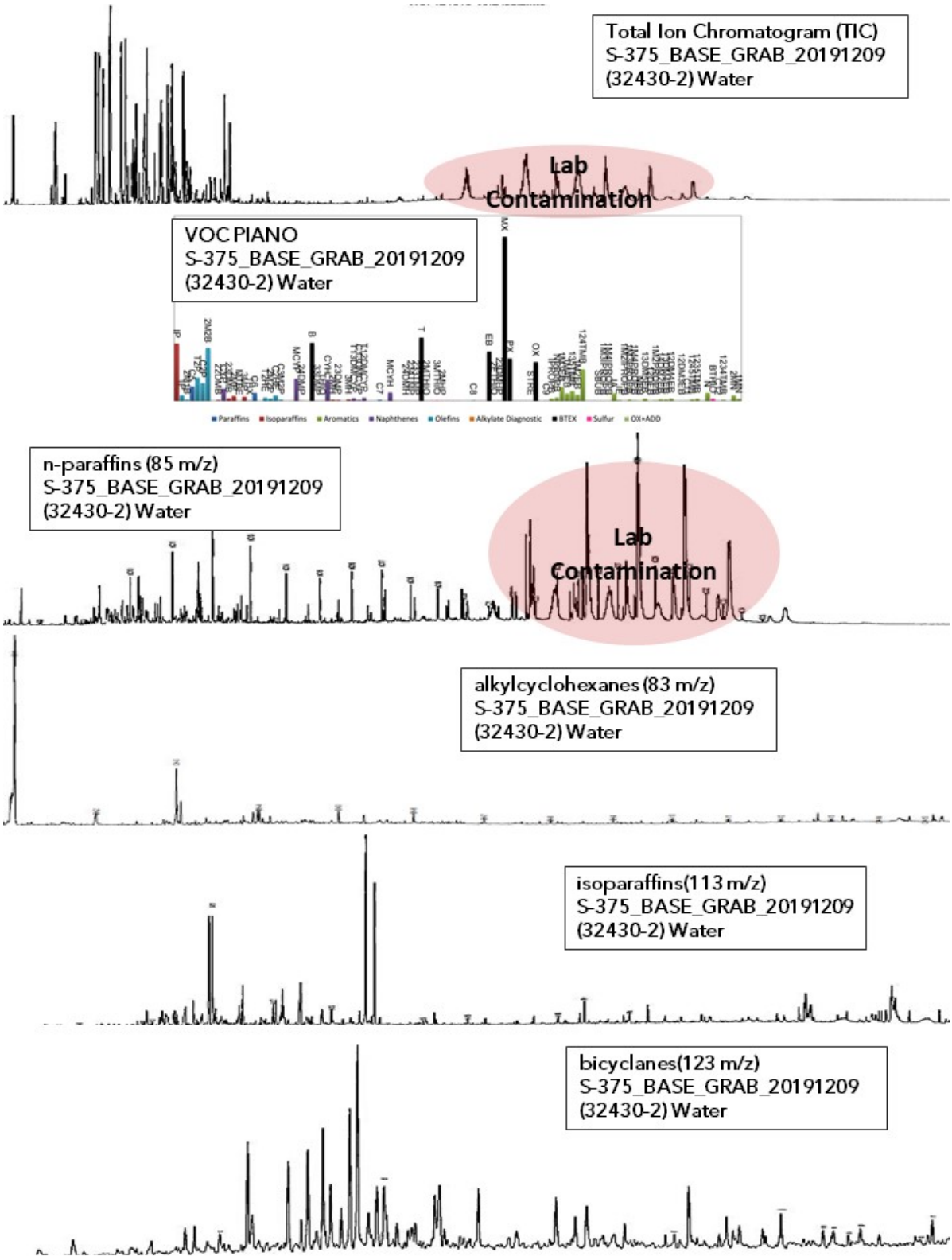

Figure 25. Fingerprint Mosaics™ for water samples

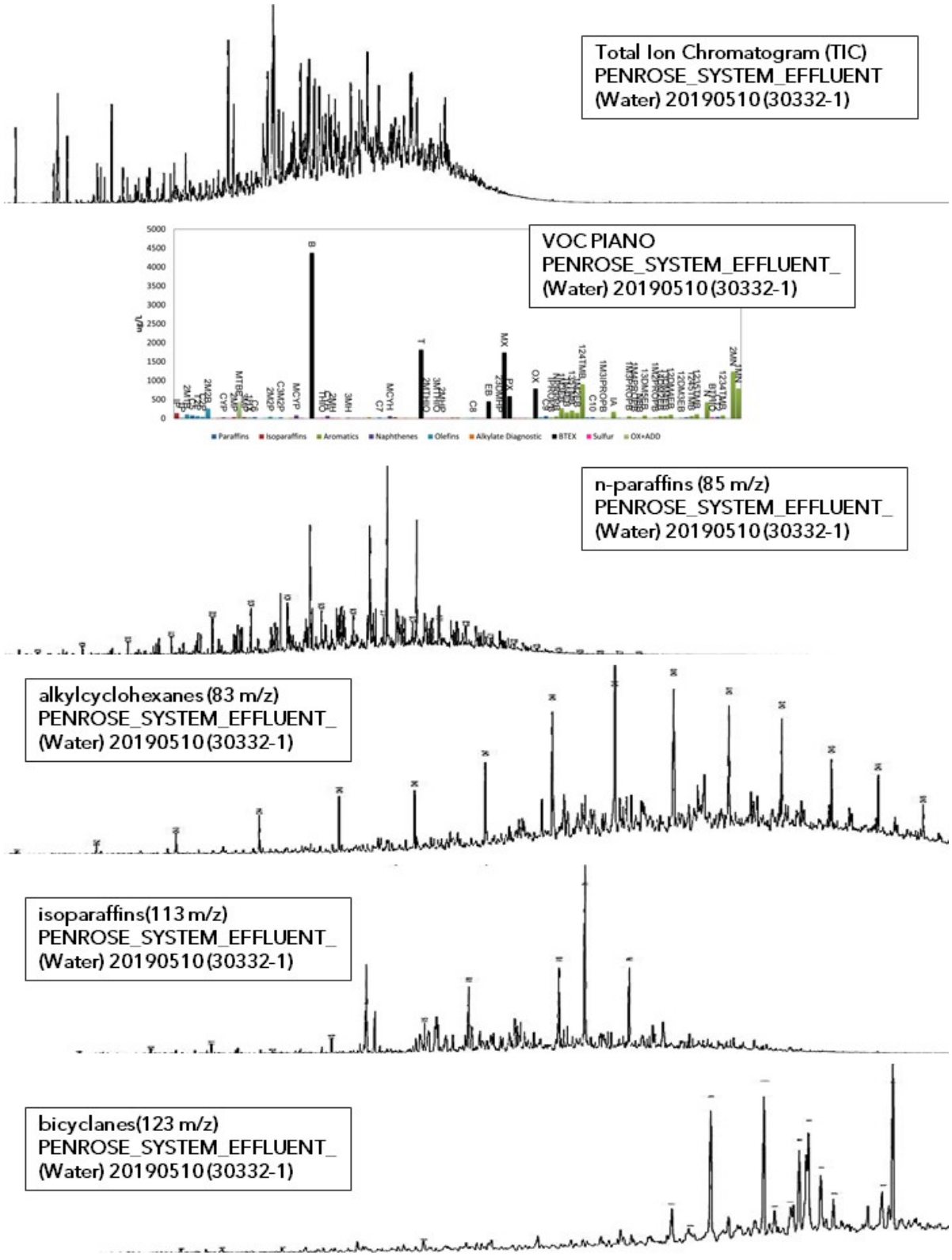

Figure 26. Fingerprint Mosaics™ for water samples.

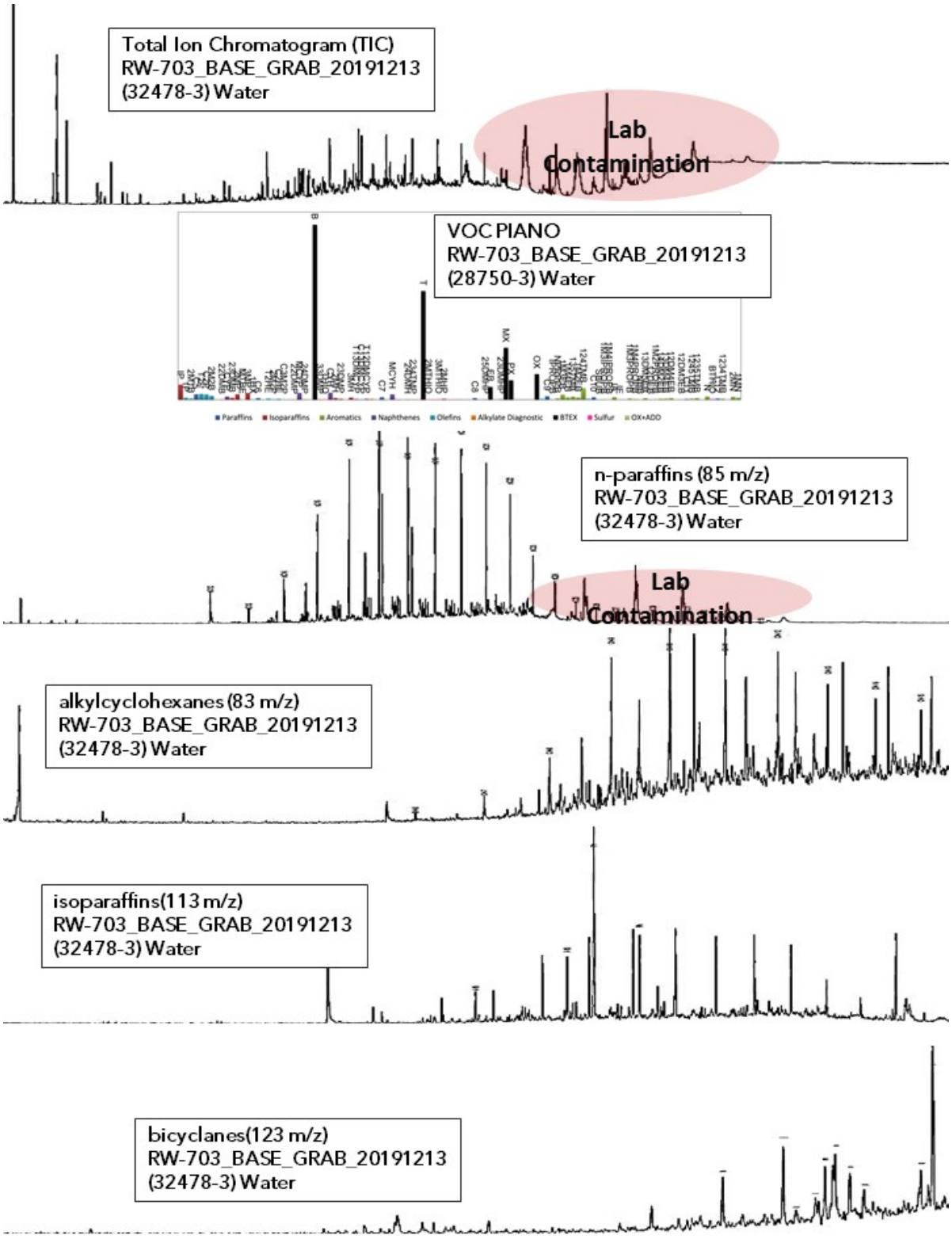

Figure 27. Fingerprint Mosaics™ for water samples.

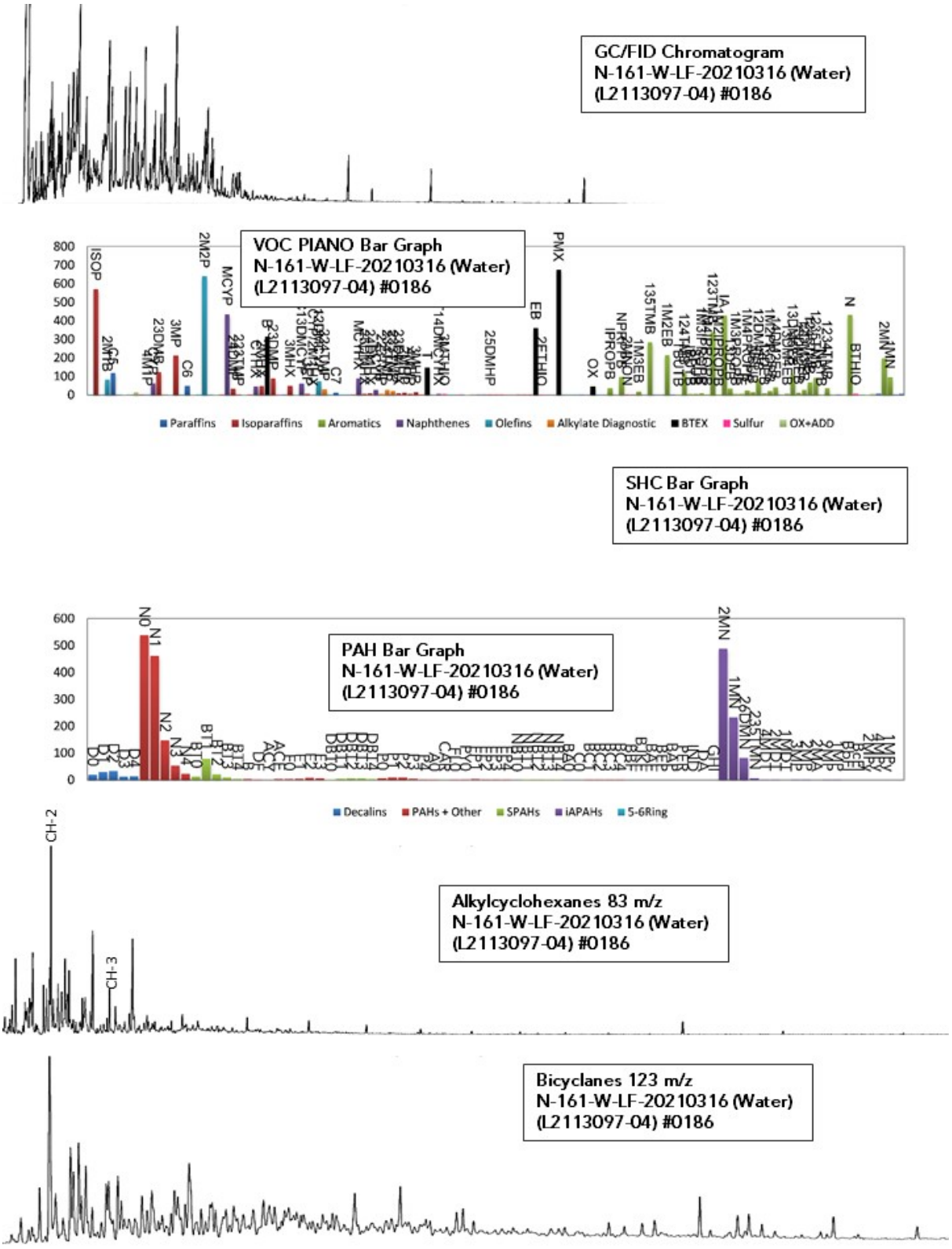

Figure 28. Fingerprint Mosaics™ for water samples.

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APPENDIX D

AOI 8 Ball Field Technical Memorandum

Stantec

Technical Memo

To:	Tiffani Doerr, Lead Specialist Evergreen Resources Operations 2 Righter Parkway, Suite 120 Wilmington, DE 19803	From:	Stantec Consulting Services Inc. 1060 Andrew Drive, Suite 140 West Chester, PA 19380
Project/File:	213403364	Date:	June 27, 2022

Reference: AOI 8 Ball Field Site Characterization/Investigation Activities, 2019-2022
Former Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, Pennsylvania

1 Introduction

Stantec Consulting Services Inc. (Stantec) has prepared this Technical Memorandum for Evergreen Resources Group, LLC (Evergreen) summarizing site characterization/investigation activities conducted in the former Philadelphia Refinery Area of Interest (AOI) 8 Ball Field (Ball Field)(**Figure 1**) since submission of the AOI 8 Remedial Investigation Report (RIR) in 2017. The primary goal of this memo is to document recent site activities and present results of investigations intended to delineate light nonaqueous phase liquid (LNAPL) in northern AOI 8 and to gain a better understanding of groundwater flow patterns and hydrostratigraphy in the Ball Field area. Information presented in this memo is intended to be supplemental to the previously submitted AOI 8 RIR and Sitewide RIR and will be included as an attachment to the Sitewide Fate and Transport RIR.

2 Investigation Activities

The conclusions of the 2017 AOI 8 RIR with respect to groundwater state, “Along the AOI 8 boundary near the Verizon South District Work Center Property, benzene is delineated in AOI 8, but lack of offsite stratigraphic control on the presence or absence of a discrete lower aquifer limits the ability to demonstrate side gradient to up gradient delineation in the offsite direction.” With the goal of refining the understanding of stratigraphy and groundwater flow direction in this area in support of the Sitewide Fate and Transport RIR, monitoring well N-163 was installed adjacent to N-100 in 2019 and screened in the depth interval where soils in the saturated zone were observed to be impacted with petroleum in the N-100 soil boring. An additional monitoring well, N-164, was installed in 2021 to delineate petroleum hydrocarbon impacts observed during installation of N-163 and dissolved concentrations of benzene detected in groundwater at N-163. Impacts were observed during the installation of N-164, and LNAPL was observed in the well during gauging activities. High resolution site characterization (HRSC) activities were initiated in late 2021 to: 1) delineate the extent of LNAPL observed in N-164; 2) characterize petroleum impacts in the Ball Field area at large to understand the potential source(s); and 3) gain a better understanding of groundwater flow and

hydrostratigraphy in the Ball Field to support the ongoing assessment of fate and transport. These activities are discussed in more detail in the following sections.

2.1 Monitoring Well Installation, 2019-2021

In December 2019, A Stantec geologist oversaw the installation of monitoring well N-163, co-located with N-100 northwest of the Maiden Lane LNAPL body (**Figure 2**). Drilling was performed by Parratt Wolff, Inc. (PWI) using hydro-excavation (0 to 8 feet below ground surface [ft bgs]), hollow-stem auger (8 to 28 ft bgs), and mud rotary (28 to 42 ft bgs) methods. Soil was continuously logged and screened for volatile organic compounds (VOCs) with a photoionization detector (PID) during boring advancement to a depth of 42 ft bgs. Petroleum impacts were visually observed in sampling spoons and confirmed via PID measurements in the 24 to 36 ft bgs interval (**Attachment A**). Based on these field observations, a 10-foot section of 2-inch, 0.020-inch slot polyvinyl chloride (PVC) screen was installed from 28 to 38 ft bgs. The annular space was filled with No. 1 sand to approximately two feet above the screen, sealed with one foot of hydrated bentonite, and finished with tremie grout to the surface (**Table 1**). N-163 was developed by PWI via pump/surge until groundwater was observed to be free of turbidity. Groundwater and sediment generated during well development was stored onsite in totes. The liquids were emptied by Total Quality Drilling (TQD) of Mullica Hill, New Jersey using a vacuum truck and the water was treated at the facility's wastewater treatment plant.

No soil samples were collected for laboratory analysis during well installation activities. Soil cuttings generated from the installation of N-163 are currently staged onsite and will be sampled for onsite soil reuse pursuant to the Hilco Redevelopment Partners (HRP) *Soil Management Plan* as approved by the Pennsylvania Department of Environmental Protection (PADEP) on June 18, 2020.

In response to petroleum impacts observed during installation of N-163 and elevated concentrations of dissolved phase petroleum hydrocarbons present in groundwater (as discussed in **Section 2.3**) monitoring well N-164 was installed northwest of N-163. In April 2021, drilling activities were coordinated with Lewis Environmental (air knife, 0 to 6.5 ft bgs) and PWI (hollow stem auger, 6.5 to 32 ft bgs) and overseen by a Stantec geologist. As with N-163, soil was continuously logged and screened for VOCs via PID during boring advancement to a depth of 32 ft bgs. Petroleum impacts were greatest in the 18 to 21 ft bgs interval. Based on these field observations, a 10-foot section of 2-inch, 0.010-inch slot PVC screen was installed from 18 to 28 ft bgs. The annular space was filled with No. 1 sand to approximately two feet above the screen, sealed with two feet of hydrated bentonite, and finished with tremie grout to the surface. N-164 was developed by PWI via pump/surge until groundwater was observed to be free of turbidity. Groundwater and sediment generated during well development was stored onsite in totes. The liquids were emptied by TQD using a vacuum truck and the water was treated at the facility's wastewater treatment plant.

A soil sample was collected for forensics analysis in the 18 to 20 ft bgs interval (discussed in **Section 3**). Soil cuttings generated from the installation of N-164 are currently staged onsite and will be sampled for onsite soil reuse per the HRP *Soil Management Plan*.

The soil boring/well construction log for N-164 can be found in **Attachment A** and details summarized on **Table 1**.

2.2 High Resolution Site Characterization Activities, 2021 - 2022

As a means of demonstrating LNAPL delineation in the vicinity of monitoring well N-164, HRSC activities were undertaken in the Ball Field between December 2021 and January 2022. A secondary objective of the HRSC activities was to better understand the groundwater flow pattern and hydrostratigraphy in the Ball Field area utilizing Geoprobe® Direct Image® tools and through the installation of strategically placed monitoring wells.

2.2.1 OIHPT-UV TEST BORINGS

In December 2021, Stantec staked out 29 proposed boring locations in a grid-like pattern encompassing the Ball Field and surrounding area; the distance between each boring was measured at approximately 100 feet. Ground Penetrating Radar Systems LLC (GPRS) performed utility locating and mapping of underground utilities or objects in the area of the proposed borings prior to initiating ground disturbance activities. An underground utility map generated by GPRS is included as **Attachment B**. Boring locations were adjusted based on the presence of field-marked electrical, sewer, or unidentified underground lines (see **Figure 3** for final boring locations).

PWI was contracted to perform the HRSC drilling activities via Geoprobe® Direct Image® ultraviolet-range optical image profiler and hydraulic profiling tools (combination OIHPT-UV setup). As the probe tip is advanced into the subsurface, the ultraviolet (UV) light source induces fluorescence of polycyclic aromatic hydrocarbons (PAHs) if present in soil. Prior to initiating drilling, PWI tested the Geoprobe's® UV laser on LNAPL hand bailed from N-164 to confirm the LNAPL present in this monitoring well would fluoresce during vertical profiling activities as intended. Fluorescence was observed over approximately 71% of the camera lens area.

Between December 23, 2021 and January 13, 2021, a Stantec geologist oversaw the advancement of 29 soil borings using OIHPT-UV vertical profiling methods up to 40 ft bgs at each pre-selected location. Continuous air monitoring was performed in the breathing zone of field personnel with a five-gas meter (MultiRAE). Each boring location was "pre-probed" to a maximum of 5 ft bgs with Geoprobe® direct push tooling to mitigate potential damage to Direct Image® tooling from gravel- and debris-laden fill commonly encountered in the Ball Field shallow soil. Direct Image® tooling was utilized to collect real-time measurements of soil electrical conductivity (EC), fluorescence, and pressure required to inject a set flow of water into soil as the probe was advanced. An estimate of hydraulic head (K) in saturated soil was generated at the conclusion of each electronic boring log. Direct Image® electronic boring logs depicting these four parameters at each boring location are included as **Attachment C**.

An optical, HPT pressure sensor, and EC load test were performed before and after each boring was completed to verify the integrity of the collected data and to perform necessary maintenance on the probe components.

Fluorescence was observed in 28 of the OIHPT-UV borings in the saturated zone, and extensively in one OIHPT-UV boring in the unsaturated zone, AOI8-OIP-04 (see **Section 2.2.3** for further discussion on this boring). A discussion and interpretation of the Direct Image® data follows in **Section 4**.

2.2.2 MONITORING WELL INSTALLATION

Six OIHPT-UV test boring locations were selected for offset monitoring well installation based on sustained and/or peak intervals of fluorescence as recorded by Direct Image® electronic boring logs (**Attachment C**). Monitoring wells were installed via Geoprobe® direct push methods or hollow stem auger truck-mounted drilling methods where direct push methods were unsuccessful. All monitoring wells were installed by PWI using a 1-inch diameter Geoprobe® prepack well screen consisting of a standard, slotted PVC well screen pipe surrounded by a stainless-steel mesh with 20/40 mesh sand packed in between.

During soil coring activities overseen by a Stantec geologist, soil was screened with a combination of vapor monitors including a PID and/or flame ionization detector (FID) to assess for presence or absence of organic/inorganic compounds, including methane. The PID/FID was also used for continuous air monitoring in the breathing zone during well installation and soil sampling activities. Up to 5 soil samples were collected at each boring location where petroleum hydrocarbon impacts were visually confirmed or detected via PID/FID.

The wells were developed by PWI via pump/surge until groundwater was observed to be free of turbidity. Groundwater and sediment generated during well development was stored onsite in totes. The liquids were emptied by TQD using a vacuum truck and the water was treated at the facility's wastewater treatment plant. Soil cuttings generated from the installation of these wells are currently staged onsite and will be sampled for onsite soil reuse per the HRP *Soil Management Plan*.

Boring locations selected for monitoring well installation included: AOI8-OIP-08, AOI8-OIP-16, AOI8-OIP-28, AOI8-OIP-06, AOI8-OIP-07, and AOI8-OIP-23 (N-165 through N-170, respectively; see **Figure 2**). Note that two OIHPT-UV borings were performed adjacent to preexisting wells N-163 and N-164: AOI8-OIP-01 and AOI8-OIP-13, respectively. Boring/well construction logs are included as **Attachment A** and well construction details are summarized in **Table 1**. Soil analytical reports can be found in **Attachment D** and are summarized in **Table 2.** A discussion and interpretation of the laboratory results is presented in **Section 4**.

2.2.2.1 N-165

On January 18, 2022, monitoring well N-165 (**Figure 2**) was installed within five feet of OIHPT-UV boring AOI8-OIP-08 (**Figure 3**) via PWI Geoprobe® direct push methods. Per the AOI8-OIP-08 Direct Image® electronic boring log results, the initial target depth for screen installation was 24 to 34 ft bgs to capture the peak interval of fluorescence; however, persistent refusal was encountered at approximately 28 ft bgs at this location. To compromise, a 5-foot section of 1-inch diameter, 0.01-inch slot PVC prepack screen was installed between 23 to 28 ft bgs within five feet of the original borehole location where refusal was repeatedly encountered. The monitoring well was finished at ground surface with a 6-inch diameter flush-mounted cover and concrete pad.

Soil samples were collected at the following depths via dual tube liner: 24, 27, 30, and 36 ft bgs. Samples were submitted to Pace Analytical Services, LLC (Pace) of Greensburg, PA for analysis of total petroleum hydrocarbons (TPH) separated by carbon number into the gasoline (GRO; C6-C10), diesel (DRO; C10-C28), and heavier ranges for crude oil (ORO; C28-C40). The boring ID assigned to this location was AOI8-BH-22-01.

2.2.2.2 N-166

On January 19, 2022, attempts were made to install monitoring well N-166 within five feet of OIHPT-UV boring AOI8-OIP-16 via PWI Geoprobe® direct push methods. Persistent refusal was encountered at 28 ft bgs, and PWI returned on January 25, 2022, to finish the installation with a truck-mounted hollow-stem auger drill rig. Per the AOI8-OIP-16 Direct Image® electronic boring log results, a 10-foot section of 1-inch diameter, 0.01-inch slot PVC prepack screen was installed between 27 to 37 ft bgs to capture the peak interval of fluorescence observed between 27 and 35 ft bgs. The monitoring well was finished at ground surface with a 6-inch diameter flush-mounted cover and concrete pad.

Soil was continuously logged and sampled at pre-determined intervals via split-spoon. Depths selected for sampling were as follows: 27, 29, 31, 33, and 35 ft bgs. Samples were submitted to Pace for analysis of TPH separated by carbon number into the gasoline, diesel, and heavier ranges for crude oil. The boring ID assigned to this location was AOI8-BH-22-02.

2.2.2.3 N-167

On January 19, 2022, attempts were made to install monitoring well N-167 within five feet of OIHPT-UV boring AOI8-OIP-28 via PWI Geoprobe® direct push methods. Persistent refusal was encountered at 28 ft bgs, and PWI returned on January 25, 2022, to finish the installation with a truck-mounted hollow-stem auger drill rig. Per the AOI8-OIP-28 Direct Image® electronic boring log results, a 10-foot section of 1-inch diameter, 0.01-inch slot PVC prepack screen was installed between 26 to 36 ft bgs to capture the peak interval of fluorescence observed between 28 and 33 ft bgs. The monitoring well was finished at ground surface with a 6-inch diameter flush-mounted cover and concrete pad.

Soil was continuously logged and sampled at pre-determined intervals via split-spoon. Depths selected for sampling were as follows: 29, 30, and 31 ft bgs. Samples were submitted to Pace for analysis of TPH separated by carbon number into the gasoline, diesel, and heavier ranges for crude oil. The boring ID assigned to this location was AOI8-BH-22-03.

2.2.2.4 N-168

On January 26, 2022, monitoring well N-168 was installed 15 feet east of OIHPT-UV boring AOI8-OIP-06 via PWI truck-mounted hollow-stem auger drill rig. Per the AOI8-OIP-06 Direct Image® electronic boring log results, a 10-foot section of 1-inch diameter, 0.01-inch slot PVC prepack screen was installed between 17 to 27 ft bgs to capture the initial peak interval of fluorescence observed between 17 and 21 ft bgs and the second peak interval of fluorescence observed between 23 and 32 ft bgs. The monitoring well was finished at ground surface with a 6-inch diameter flush-mounted cover and concrete pad.

Soil was intermittently logged and sampled at pre-determined intervals via split-spoon. Depths selected for sampling were as follows: 20, 22, 24, 26, and 28 ft bgs. Samples were submitted to Pace for analysis of TPH separated by carbon number into the gasoline, diesel, and heavier ranges for crude oil. The boring ID assigned to this location was AOI8-BH-22-04.

2.2.2.5 N-169

On January 26, 2022, monitoring well N-169 was installed 15 feet east of OIHPT-UV boring AOI8-OIP-07, which was not advanced beyond 19 ft bgs due to persistent refusal via PWI truck-mounted hollow-stem auger drill rig. Based on field PID readings collected during soil coring, a 10-foot section of 1-inch diameter, 0.01-inch slot PVC prepack screen was installed between 25 to 35 ft bgs where impacts were observed visually and confirmed by elevated VOC concentrations via PID. Fluorescence was initially observed beginning at 14.5 ft bgs per the incomplete Direct Image® electronic boring log results for AOI8-OIP-07. The monitoring well was finished at ground surface with a 6-inch diameter flush-mounted cover and concrete pad.

Soil was intermittently logged and sampled based on visual/PID impacts via split-spoon. Depths selected for sampling were as follows: 22, 26, 28, 30, and 32 ft bgs. Samples were submitted to Pace for analysis of TPH separated by carbon number into the gasoline, diesel, and heavier ranges for crude oil. The boring ID assigned to this location was AOI8-BH-22-05.

2.2.2.6 N-170

On January 27, 2022, monitoring well N-170 was installed within five feet of OIHPT-UV boring AOI8-OIP-23 via PWI truck-mounted hollow-stem auger drill rig. Per the AOI8-OIP-23 Direct Image® electronic boring log results, a 10-foot section of 1-inch diameter, 0.01-inch slot PVC prepack screen was installed between 25 to 35 ft bgs to capture the peak interval of fluorescence observed between 29 and 35 ft bgs. The monitoring well was finished at ground surface with a 6-inch diameter flush-mounted cover and concrete pad.

Soil was continuously logged and sampled at pre-determined intervals via split-spoon. Depths selected for sampling were as follows: 23, 29, 31, 33, and 35 ft bgs. Samples were submitted to Pace for analysis of TPH separated by carbon number into the gasoline, diesel, and heavier ranges for crude oil. The boring ID assigned to this location was AOI8-BH-22-06.

2.2.3 SOIL DELINEATION SAMPLING

To collect concentration data for constituents of concern (COCs) in soil where impacts were observed in the unsaturated zone, soil delineation sampling was conducted. On May 19, 2022, Stantec remobilized to the Ball Field to oversee the advancement of three soil borings, AOI8-BH-22-10, AOI8-BH-22-09, and AOI8-BH-22-08 offset from OIHPT-UV borings AOI8-OIP-06, AOI8-OIP-07, and AOI8-OIP-04, respectively. The original OIHPT-UV boring locations were inaccessible due to the presence of a stormwater swale running parallel to the Philadelphia Water Department (PWD) sewer; therefore, the soil borings were offset approximately 15 feet to the east of each OIHPT-UV boring. A Stantec geologist estimated an elevation difference of one to three feet between the ground surface of the bottom of the swale where the OIHPT-UV borings were originally advanced in comparison the ground surface of the top of the swale where the offset soil borings were installed.

During Geoprobe® Direct Image® boring activities conducted in December 2021, fluorescence was observed above the water table in the 5 to 13 ft bgs interval in OIHPT-UV boring AOI8-OIP-04 near the western facility boundary. The nearest OIHPT-UV borings to the north (AOI8-OIP-06) and south (AOI8-OIP-07) did not exhibit fluorescence in this depth interval; therefore, to characterize and delineate the impacts

observed in OIHPT-UV boring AOI8-OIP-04 within the former Philadelphia Refinery boundaries, one soil boring was advanced, and one soil sample was collected near each of the three OIHPT-UV boring locations in the unsaturated zone.

Soil was continuously logged and screened in split-spoons with a PID by a Stantec geologist, and borings were advanced by TQD using a truck-mounted hollow stem auger drill rig to approximately 15 ft bgs at each boring location. Sample depth was initially planned to be biased based on visual (staining) or PID impacts, though no impacts were noted in any of the split-spoons during drilling. Instead, the Geoprobe® Direct Image® electronic boring log results for AOI8-OIP-04 guided the sampling depth in the absence of observable impacts. To account for the elevation difference between the original OIHPT-UV borings and the offset soil boring locations, samples were collected at a depth of 6 to 8 ft bgs to capture the fluorescence observed in the 5 to 7 ft bgs interval at AOI8-OIP-04.

Samples were submitted to SGS North America Inc. (SGS) for analysis of Evergreen Petroleum Short List compounds. The analytical laboratory report is in **Attachment D** and a detailed discussion and interpretation of results is in **Section 4.** Soil boring locations are depicted on **Figure 3**, and soil analytical results are summarized on **Table 3**. Soil results are screened against the PADEP soil to groundwater (S to GW) Medium Specific Concentrations (MSCs) and the non-residential direct contact (NRDC) MSCs.

2.3 Groundwater Sampling and Gauging

Groundwater sampling and gauging activities were conducted in the Ball Field between 2020 and 2022 in accordance with the *Evergreen Field Operations Manual* provided in **Attachment E**. Low-flow sampling methodology was employed, and purge water was field filtered through granular activated carbon (GAC) onto the ground surface via submersible pump or 0.85-inch diameter bladder pump for smaller (1-inch diameter) wells and wells with measurable product (sub-LNAPL sampling). A multi-parameter sonde with flow cell was utilized to collect field parameters during purging and until stabilization was achieved. Groundwater samples collected in April 2021 and April 2022 were analyzed for the following compounds (**Table 4**):

- Evergreen Petroleum Short List (with dissolved lead being field filtered)
- Tertiary butyl alcohol (TBA)
- Total inorganic carbon (TIC)
- Total organic carbon (TOC)
- Sulfate
- Dissolved headspace gases (methane, ethane, ethene)
- Total iron
- Total calcium
- Total Kjeldahl nitrogen (TKN)
- Alkalinity as $CaCO_3$

Samples were submitted to Pace, Eurofins Lancaster Laboratories Environmental (ELLE), or SGS for analysis. Groundwater samples collected subsequent and prior to the April 2021 and April 2022 sampling events were generally analyzed for a reduced list of compounds. Analytical results for the sampling events conducted in the Ball Field have been summarized in **Table 4** and exceedances of PADEP MSCs for non-

residential properties overlying used aquifers with total dissolved solids (TDS) less than or equal to 2,500 milligrams per liter (mg/L) are depicted on **Figure 2**.

Select groundwater samples were also analyzed as part of the forensics sampling program which will be described in further detail in **Section 3**. A more detailed discussion of groundwater analytical results in the context of delineation and petroleum sources can be found in **Section 4**.

According to liquid level measurements collected by Stantec in the Ball Field area since 2020, groundwater to flows generally to the southeast consistent with previous interpretations of groundwater flow in the area. **Figure 2** depicts groundwater elevation contours corresponding to a sitewide gauging event conducted in March 2022. Ball Field gauging records have been tabulated as **Table 5**.

2.3.1 N-163

Following installation of N-163 in December 2019, an initial round of groundwater sampling was performed by Aquaterra in February 2020. The sample was analyzed for Evergreen Petroleum Short List VOCs and results indicated benzene above the MSC of 5 micrograms per liter (µg/L) at a concentration of 398 µg/L and low levels of other VOCs. Two groundwater sampling events conducted by Stantec in September 2020 and December 2020 showed similarly elevated concentrations of benzene and low levels of other VOCs and semi-volatile organic compounds (SVOCs). Concentrations of benzene in the two most recent groundwater sampling events conducted in April 2021 and April 2022, while still exceeding the PADEP MSC of 5 µg/L, appear to be on a decline.

A groundwater sample was collected on March 16, 2021, for forensics analysis. This sample was submitted to Alpha Analytical Inc. (Alpha) of Westboro, Massachusetts for analysis of paraffins, isoparaffins, aromatics, naphthenes and olefins (PIANO) VOCs; TPH-ORO; tetraethyllead (TEL); tetramethyllead (TML); and ethanol. These results are discussed in **Section 3**.

Eight rounds of liquid level data were collected at N-163 since February 2020. Corrected groundwater elevation (CGWE) ranges from 9.5 to 7.3 ft relative to the North American Vertical Datum of 1988 (NAVD88). LNAPL has not been detected in this well.

2.3.2 N-164

An initial round of groundwater sampling was conducted at N-164 by Stantec in April 2021. Groundwater was sampled below the LNAPL (sub-LNAPL) to mitigate entrainment of free-phase petroleum into the samples. Exceedances of relevant PADEP MSCs were noted for benzene (2,700 µg/L), benzo(a)pyrene (0.33 µg/L), and naphthalene (290 µg/L) during the initial sampling event. Two subsequent groundwater sampling events conducted by Stantec in February and April 2022 indicated similar results, though benzo(a)pyrene was not detected (ND) in both samples.

Six rounds of liquid level data were collected at N-164 since April 2021. Apparent LNAPL thickness ranges from 0.13 to 0.37 ft, and CGWE ranges from 9.8 to 7.5 ft NAVD88.

2.3.3 N-165

Two rounds of groundwater sampling were conducted at N-165 by Stantec in February and April 2022. Benzene exceeded the PADEP MSC of 5 µg/L during both events; however, no other MSC exceedances were noted.

Three rounds of liquid level data were collected at N-165 since February 2022. CGWE ranges from 8.1 to 7.3 ft NAVD88. LNAPL was detected on February 17, 2022, with an apparent thickness of 0.01 ft, but has not been detected since.

2.3.4 N-166

Two rounds of groundwater sampling were conducted at N-166 by Stantec in February and April 2022. Benzene exceeded the PADEP MSC of 5 µg/L during both events. Benzo(a)pyrene (0.791 µg/L) and benzo(g,h,i)perylene (0.566 µg/L) exceeded their respective PADEP MSCs in February 2022 but were below MSCs during the April 2022 groundwater sampling event. No other exceedances were noted.

Three rounds of liquid level data were collected at N-166 since February 2022. CGWE ranges from 7.7 to 7.1 ft NAVD88. LNAPL has not been detected at this well.

2.3.5 N-167

Two rounds of groundwater sampling were conducted at N-167 by Stantec in February and April 2022. Lead (11.7 µg/L) exceeded the PADEP MSC of 5 µg/L in April 2022. No other exceedances were noted.

Three rounds of liquid level data were collected at N-167 since February 2022 CGWE ranges from 8.2 to 7.5 ft NAVD88. LNAPL has not been detected at this well.

2.3.6 N-168

Two rounds of groundwater sampling were conducted at N-168 by Stantec in February and April 2022. Benzo(a)pyrene (0.295 µg/L) and benzo(g,h,i)perylene (0.274 µg/L) exceeded their respective PADEP MSCs in February 2022; however these analytes were detected in the laboratory's method blank. Both compounds were below MSCs during the April 2022 groundwater sampling event.

Three rounds of liquid level data were collected at N-168 since February 2022. CGWE ranges from 8.7 to 7.7 ft NAVD88. LNAPL has not been detected at this well.

2.3.7 N-169

Two rounds of groundwater sampling were conducted at N-169 by Stantec in February and April 2022. Benzene exceeded the PADEP MSC of 5 µg/L during both events. Results were similar in the duplicate sample collected in April 2022. No other exceedances were noted.

Three rounds of liquid level data have been collected at N-169 since February 2022. CGWE ranges from 8.3 to 7.4 ft NAVD88. LNAPL has not been detected at this well with the exception of a single observation of product on an interface probe in February 2022.

2.3.8 N-170

Two rounds of sub-LNAPL groundwater sampling were conducted at N-170 by Stantec in February and April 2022. Benzene exceeded the PADEP MSC of 5 µg/L during both events. Benzo(a)pyrene (0.937 µg/L) and benzo(g,h,i)perylene (0.926 µg/L) exceeded their respective PADEP MSCs in April 2022. No other exceedances were noted.

Three rounds of liquid level data were collected at N-170 since February 2022. Apparent LNAPL thickness ranges from 0.02 to 0.60 ft, and CGWE ranges from 8.2 to 7.4 ft NAVD88.

3 Forensics Program

An environmental forensics sampling program was completed to bolster the routine chemistry data with a comprehensive characterization and statistical analysis of chemical compositional patterns exploring various sample media to support the characterization and delineation of AOI 8 Ball Field contaminant sources. Compound-specific isotope analysis (CSIA) samples were collected to support the environmental forensics lines of information by investigating forensic differences in stable isotope chemistry of groundwater samples.

3.1 Sucralose Sampling

In 2021 and 2022, select monitoring wells in proximity to City of Philadelphia combined sewers were sampled for sucralose as a line of information supporting groundwater and sewage interactions (sewer leaks). Groundwater samples collected at N-163 and N-164 were submitted to the Environmental Analysis Research Laboratory (EARL) Southeast Environmental Research Center at Florida International University of Miami, Florida for sucralose analysis in April 2021. Five additional Ball Field area samples (N-163, N-164, N-166, N-168, and N-169) were submitted to EARL for sucralose analysis in April 2022, and those results are included in Part 2 of the Sitewide Fate and Transport RIR. Sucralose 2021 results are included in **Table 3**.

3.2 Molecular Data Exploration and Interpretive Reporting

ChemQuants was retained by Stantec on behalf of Evergreen to perform an environmental forensics investigation in support of the AOI 8 Ball Field area investigation. The initial objective was to fingerprint selected samples from the drilling program to explore the various sources identified in initial CSIA samples, establish or refute a potential relationship with Maiden Lane area contamination sources, and where possible, to age-constrain the timing of petroleum releases.

In the AOI 8 Ball Field area, the following samples were collected for forensic analysis:

- N-163 (groundwater)
- N-164 (soil)
- N-161 (product)
- N-161 (groundwater)

Attachment F includes ChemQuants reports that describe basic forensics interpretations for these samples. The Sitewide Fate and Transport RIR, to which this memo is an appendix, includes as another attachment, interpretive reporting of these data prepared by ChemQuants. **Section 4.4** includes some discussion of the results.

3.3 CSIA Petroleum Source Implications and Biodegradation

CSIA is a powerful forensics tool that complements environmental forensics as an additional line of information regarding differentiation of sources, extent of biodegradation, and biodegradation pathways which often associate with other pathways of groundwater flow. Stantec retained MES, LLC (MES) on behalf of Evergreen to interpret the CSIA dataset and provide expertise in geochemistry on the project.

In the AOI 8 Ball Field area, the following groundwater samples were collected for CSIA analysis:

- N-161
- N-163

The Sitewide Fate and Transport RIR, to which this memo is an appendix, includes as another attachment, interpretive reporting of these data prepared by MES. **Section 4.4** includes some discussion of the results.

4 Discussion of Results and Conceptual Site Model Update

The information discussed in this section is intended to be an update to the data analysis included in the 2017 AOI 8 RIR.

4.1 Constituents of Concern

4.1.1 SOIL

- Soil sampling for the Evergreen Petroleum Short List was targeted at the location where fluorescence was observed in the unsaturated zone (AOI8-OIP-04) with the intention of collecting analytical data to characterize any onsite petroleum sources in the area and delineate them according to the selected standard.

- One sample was collected in the boring adjacent to AOI8-OIP-04, and one sample was collected from each adjacent location to the north and south. These three samples were collected from the approximate depth of observed fluorescence in AOI8-OIP-04.

- In the sampling event, concentrations of 5 SVOCs and lead were detected above the S to GW MSC, but no concentrations of COCs were detected above the NRDC MSCs.
- No volatile organic compounds (VOCS) were detected in the soil samples.

4.1.2 GROUNDWATER

- Benzene is observed in the AOI 8 PES Ball Field area at concentrations above the SHS, with the highest concentrations detected in groundwater samples collected from below LNAPL in N-164.
- SVOCs benzo(a)pyrene and benzo(g,h,i)perylene were detected at concentrations above their respective SHS in three wells.
- Naphthalene was detected above the SHS in N-164 from groundwater samples collected from below LNAPL.
- Lead was detected in N-167 at a concentration above the SHS in one of the two sampling events.

The additional investigation work confirmed groundwater flow direction to the southeast in the AOI 8 PES Ball Field area therefore delineating the downgradient impacts to the former Philadelphia Refinery.

4.2 Potential Migration Pathways and Receptors

- Access to AOI 8 is restricted by fencing and security measures. HRP is responsible for overall security and oversight of contractor safety including implementation of PPE and work plan/permitting protocols that mitigate the potential for worker exposure to impacted soil, groundwater, and/or LNAPL through the direct contact pathway. Exceedances of the NRDC MSC were ND in soil samples collected during this investigation.
- Downgradient concentrations of benzene in groundwater exceeding the SHS are delineated within the former Philadelphia Refinery. The vertical proximity distance for petroleum compounds in groundwater is 5 ft. In this area, groundwater is present deeper than this vertical proximity distance, indicating that volatilization of VOCs from groundwater is not of concern in this area.
- PWD sewers, which could serve as a preferential pathway for vapor intrusion, are present in this area. A sitewide evaluation of preferential pathways for vapor intrusion is planned as a part of a future Act 2 deliverable.

4.3 Data Analysis/Summary of Investigation Findings

- A new monitoring well (N-163) was installed adjacent to existing well N-100 in 2019 and screened discretely to target an apparent petroleum impacted zone recognized on the N-100 well log. The impacted zone was just below the N-100 screen setting in an approximately 10-foot-thick sand and gravel layer. Groundwater sampling of N-163 indicated that petroleum hydrocarbon impacts were present.

Reference: AOI 8 Ball Field Site Characterization/Investigation Activities, 2019-2022, Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

- An additional monitoring well, N-164, was installed in 2021 to delineate the petroleum hydrocarbon impacts observed at N-163 in a direction that would be plausible if there were to be a groundwater flow path towards the Schuylkill River. Petroleum impacts were observed during the installation of N-164 and were found to be more elevated compared to N-163. Additionally, LNAPL was observed in the well during gauging activities.

- In early 2021, preliminary forensics of the LNAPL in soil at N-164, groundwater at N-163, groundwater at N-161, and product at N-161 indicated that the area was impacted by gasoline to naphtha range petroleum.

- In September 2021, CSIA was performed on groundwater samples from N-161 and N-163 to add another line of evidence to support source relationships. It was found that the two wells likely have different benzene sources. As explained in the AOI 4 RIR Addendum, well N-161 appears to share a common benzene source with well S-378, located on South 26th Street near Penrose Avenue. Moreover, while well N-163 appears to have a different benzene source, a biomarker naphthene compound methylcyclohexane found in the groundwater appears to have a common source to wells near Hartranft Street and well S-378. These data suggest a City sewer transport pathway as a likely source to the AOI 8 Ball Field and Maiden Lane area. These data are additionally discussed in the CSIA report appendix to the Sitewide Fate and Transport RIR.

- In 2021, groundwater samples were collected from wells N-161, N-163, N-164, N-3, V-MW-2, and N-157 for sucralose analysis and results documented in the AOI 4 RIR Addendum forensics reporting. One of the highest sucralose concentrations reported for the 65 sitewide wells sampled was for well N-161, and sucralose was also detected in N-163, N-157, and V-MW-2. These data support the sewer transport pathway to the area.

- Complexity of the AOI 8 Ball Field conditions warranted a HRSC which commenced in December 2021. Twenty-nine direct push soil borings were advanced to depths up to approximately 40 ft bgs using Geoprobe® Direct Image® ultraviolet-range optical image profiler and hydraulic profiling tools (combination OIHPT-UV setup). Fuel fluorescence data in combination with permeability data and electrical conductivity indicated that the primary LNAPL zone impacting wells N-163 and N-164 is confined below shallow mud deposits of the Pleistocene alluvium and a deeper clay deposit. Through confirmation coring at select locations, the deeper clay deposit appears consistent with an aquitard of the Potomac-Raritan-Magothy (PRM) sequence, likely the middle clay near its up-dip limit. This finding vertically delineates the AOI 8 Ball Field petroleum impacts to a confined zone of the water table.

- Twenty-seven soil samples were collected from confirmation cores at select borings to estimate the magnitude of LNAPL saturations present in the hydrocarbon impacted zones. Laboratory analysis for TPH in the gasoline, diesel, and oil ranges was performed. NAPL saturation estimates were calculated from the TPH data and indicated that residual saturations are present, from less than 1 percent to under 12 percent.

- Monitoring wells were installed at six of the boring locations and were used to evaluate groundwater flow patterns and characterize groundwater impacts from the residual LNAPL. Groundwater elevation data available to date support a southeasterly flow direction across the AOI 8 Ball Field with convergence in the general vicinity of the Maiden Lane sewer.

Reference: AOI 8 Ball Field Site Characterization/Investigation Activities, 2019-2022, Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

- Additional soil samples were collected in 2022 from targeted depths and borings along the western Ball Field perimeter to understand Short List compound concentrations in the fluorescence intervals in subsurface soil. No VOCs were detected, and SVOCs and lead detections were below the selected standard for subsurface soil at the facility.

Thank you,

STANTEC CONSULTING SERVICES INC.

Jenny Kachel, P.G.
Geologist
Phone: (610) 840-2561
Mobile: (484) 757-7890
jenny.kachel@stantec.com

Andrew Klingbeil, P.G.
Associate Geologist
Phone: (610) 840-2525
Mobile: (610) 850-1420
andrew.klingbeil@stantec.com

Attachment: Table 1: Well Construction Information
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Attachment C: OIHPT-UV Electronic Boring Logs
Attachment D: Laboratory Analytical Reports
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Attachment F: Forensics Reports

TABLES

Table 1: Well Construction Information
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Well ID	Associated Boring IDs	Northing[1]	Easting[1]	Hydrostratigraphic Unit[2]	Soil Boring Log Available (Y/N)	Construction Detail Available (Y/N)	Date of Well Completion	Well Construction Details							
								Well Completion Depth (ft bgs)	Well Diameter (in)	Top of Inner Casing Elevation (ft NAVD88)	Ground Surface Elevation (ft NAVD88)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Elevation (ft NAVD88)	Depth to Screen (ft bgs)	Screen Length (ft)
N-100	N/A	228209.79	2682716.19	perched	Y	Y	13-Jun-08	20	2	27.01	24.99	14.99	4.99	10	10
N-163	N/A	228202.00	2682714.50	unconfined	Y	Y	12-Dec-19	38	2	27.23	25.16	-2.84	-12.84	28	10
N-164	N/A	228314.68	2682437.54	unconfined	Y	Y	01-Apr-21	28	2	25.22	22.05	4.05	-5.95	18	10
N-165	AOI8-BH-22-01	228196.56	2682520.14	unconfined	Y	Y	18-Jan-22	28	1	25.92	26.2	4.2	-0.8	22	5
N-166	AOI8-BH-22-02	228074.67	2682583.92	unconfined	Y	Y	25-Jan-22	37	1	25.22	25.5	-1.5	-11.5	27	10
N-167	AOI8-BH-22-03	228601.96	2682508.79	unconfined	Y	Y	25-Jan-22	36	1	22.31	22.5	-3.5	-13.5	26	10
N-168	AOI8-BH-22-04, AOI8-BH-22-10	228426.38	2682398.92	unconfined	Y	Y	26-Jan-22	27	1	21.46	21.7	4.7	-5.3	17	10
N-169	AOI8-BH-22-05, AOI8-BH-22-09	228230.78	2682357.10	unconfined	Y	Y	27-Jan-22	35	1	21.49	21.6	-3.4	-13.4	25	10
N-170	AOI8-BH-22-06	228452.97	2682680.85	unconfined	Y	Y	27-Jan-22	36	1	25.72	25.9	-0.1	-10.1	26	10

Notes:
1. Coordinate pairs are projected in the Pennsylvania State Plane Coordinate System (feet), referenced to the North American Datum of 1983 (NAD83).
2. The hydrostratigraphic unit denotes the aquifer and/or mappable water-bearing stratum in which the well is interpreted to be screened by Stantec.
in = inches
ft = feet
bgs = below ground surface
NAVD88 = North American Vertical Datum of 1988
Y = Yes; N = No
N/A = not applicable/available

Table 2: Soil Analytical Results Summary, TPH (2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location		AOI8-BH-22-01				AOI8-BH-22-02				
Corresponding OIHPT Boring ID / Well ID		AOI8-OIP-08 / N-165				AOI8-OIP-16 / N-166				
Sample Date		18-Jan-22	18-Jan-22	18-Jan-22	18-Jan-22	19-Jan-22	19-Jan-22	25-Jan-22	25-Jan-22	25-Jan-22
Sample ID		AOI8-BH-22-01-24_20220118	AOI8-BH-22-01-27_20220118	AOI8-BH-22-01-30_20220118	AOI8-BH-22-01-36_20220118	AOI8-BH-22-02-27_20220119	AOI8-BH-22-02-29_20220119	AOI8-BH-22-02-31-20220125	AOI8-BH-22-02-33-20220125	AOI8-BH-22-02-35-20220125
Sample Depth		24 ft	27 ft	30 ft	36 ft	27 ft	29 ft	31 ft	33 ft	35 ft
Sampling Company		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory		PACE	PACE	PACE	PACE	PACE	PACE	PACE	PACE	PACE
Laboratory Work Order		30460228	30460228	30460228	30460228	30460228	30460228	30461349	30461349	30461349
Laboratory Sample ID	Units	30460228001	30460228002	30460228003	30460228004	30460228005	30460228006	30461349001	30461349002	30461349003
Petroleum Hydrocarbons										
TPH-GRO soil C6-C10	mg/kg	5,650	6,270	1,310	14.9	ND (12.1)	2,910	210	1,160	2,420
TPH-DRO soil C10-C28	mg/kg	13,400	5,890	3,380	125	11.7 J	3,770	1,190	1,030	2,060
TPH-ORO soil C28-C40	mg/kg	ND (3,130)	2,240	732 J	29.9	10.7 J	545 J	305	ND (277)	ND (730)
TPH	mg/kg	19,050	14,400	5,422	170	22	7,225	1,705	2,190	4,480
NAPL Saturation	%	11.42	8.63	3.25	0.10	0.01	4.33	1.02	1.31	2.69
General Chemistry										
MOISTURE, PERCENT	%	15.3	22.0	20.8	14.3	16.7	8.1	10.6	5.6	10.5

See notes on last page.

Table 2: Soil Analytical Results Summary, TPH (2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location		AOI8-BH-22-03			AOI8-BH-22-04				
Corresponding OIHPT Boring ID / Well ID			AOI8-OIP-28 / N-167				AOI8-OIP-06 / N-168		
Sample Date		19-Jan-22	19-Jan-22	25-Jan-22	26-Jan-22	26-Jan-22	26-Jan-22	26-Jan-22	26-Jan-22
Sample ID		AOI8-BH-22-03-29_20220119	AOI8-BH-22-03-30_20220119	AOI8-BH-22-03-31-20220125	AOI8-BH-22-04-20-20220126	AOI8-BH-22-04-22-20220126	AOI8-BH-22-04-24-20220126	AOI8-BH-22-04-26-20220126	AOI8-BH-22-04-28-20220126
Sample Depth		29 ft	30 ft	31 ft	20 ft	22 ft	24 ft	26 ft	28 ft
Sampling Company		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory		PACE	PACE	PACE	PACE	PACE	PACE	PACE	PACE
Laboratory Work Order		30460228	30460228	30461349	30461349	30461349	30461349	30461349	30461349
Laboratory Sample ID	Units	30460228007	30460228008	30461349004	30461349005	30461349006	30461349007	30461349008	30461349009
Petroleum Hydrocarbons									
TPH-GRO soil C6-C10	mg/kg	228	115	753	1,450	74.7	27.9	555	642
TPH-DRO soil C10-C28	mg/kg	926	2,180	420	94.4	546	454	303	332
TPH-ORO soil C28-C40	mg/kg	ND (305)	ND (760)	ND (164)	88.8	ND (149)	ND (153)	ND (148)	ND (143)
TPH	mg/kg	1,154	2,295	1,173	1,633	621	482	858	974
NAPL Saturation	%	0.69	1.38	0.70	0.98	0.37	0.29	0.51	0.58
General Chemistry									
MOISTURE, PERCENT	%	14.5	14.5	19.7	13.6	11.1	13.4	11.7	8.4

See notes on last page.

Table 2: Soil Analytical Results Summary, TPH (2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location		AOI8-BH-22-05					AOI8-BH-22-06				
Corresponding OIHPT Boring ID / Well ID		AOI8-OIP-07 / N-169					AOI8-OIP-23 / N-170				
Sample Date		26-Jan-22	26-Jan-22	26-Jan-22	26-Jan-22	26-Jan-22	27-Jan-22	27-Jan-22	27-Jan-22	27-Jan-22	27-Jan-22
Sample ID		AOI8-BH-22-05-22-20220126	AOI8-BH-22-05-26-20220126	AOI8-BH-22-05-28-20220126	AOI8-BH-22-05-30-20220126	AOI8-BH-22-05-32-20220126	AOI8-BH-22-06-23-20220127	AOI8-BH-22-06-29-20220127	AOI8-BH-22-06-31-20220127	AOI8-BH-22-06-33-20220127	AOI8-BH-22-06-35-20220127
Sample Depth		22 ft	26 ft	28 ft	30 ft	32 ft	23 ft	29 ft	31 ft	33 ft	35 ft
Sampling Company		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory		PACE	PACE	PACE	PACE	PACE	PACE	PACE	PACE	PACE	PACE
Laboratory Work Order		30461349	30461349	30461349	30461349	30461349	30461349	30461349	30461349	30461349	30461349
Laboratory Sample ID	Units	30461349010	30461349011	30461349012	30461349013	30461349014	30461349015	30461349016	30461349017	30461349018	30461349019
Petroleum Hydrocarbons											
TPH-GRO soil C6-C10	mg/kg	ND (11.1)	74.8	894	1,330	ND (13.7)	ND (13.7)	628	1,290	537	10.7 J
TPH-DRO soil C10-C28	mg/kg	195	142	2,290	1,280	296	321	113	1,550	455	193
TPH-ORO soil C28-C40	mg/kg	ND (72.6)	21.3	ND (703)	ND (286)	ND (150)	ND (159)	18.1	ND (721)	ND (142)	ND (73.6)
TPH	mg/kg	195	238	3,184	2,610	296	321	759	2,840	992	204
NAPL Saturation	%	0.12	0.14	1.91	1.57	0.18	0.19	0.46	1.70	0.59	0.12
General Chemistry											
MOISTURE, PERCENT	%	9.4	10	6.7	9.1	11.9	17.1	11.7	8.8	6.7	9.9

See notes on last page.

Table 2: Soil Analytical Results Summary, TPH (2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Notes:
NAPL Saturation = TPH x ((bulk density x 10^{-6}) / (porosity x LNAPL density))
bulk density = 1.7 g/cm^{3}
porosity = 0.35
LNAPL density = 0.81 g/cm^{3}
Above values are estimates. LNAPL density based on specific gravity of LNAPL measured at N-138 (primarily light and middle distillate).

ND (0.03)	indicates concentration not detected above the laboratory reporting limit (in parentheses).
J	indicates an estimated value
ft	feet
mg/kg	miligrams per kilogram
g/cm^{3}	grams per cubic centimeter
%	percent
TPH	total petroleum hydrocarbons
OIHPT-UV	Geoprobe® Direct Image® ultraviolet-range optical image profiler and hydraulic profiling tools
LNAPL	light nonaqueous phase liquid
NAPL	nonaqueous phase liquid
PACE	Pace Analytical Services, LLC

Table 3: Soil Analytical Results Summary, Evergreen Petroleum Short List (2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location				AOI8-BH-22-08	AOI8-BH-22-09	AOI8-BH-22-10
Corresponding OIHPT-UV Boring/Well ID				AOI8-OIP-04	AOI8-OIP-07 / N-169	AOI8-OIP-06 / N-168
Sample Date				19-May-22	19-May-22	19-May-22
Sample ID				AOI8-BH-22-08-6-8	AOI8-BH-22-09-6-8	AOI8-BH-22-10-6-8
Sample Depth				6 - 8 ft	6 - 8 ft	6 - 8 ft
Sampling Company				STANTEC	STANTEC	STANTEC
Laboratory				SGSA	SGSA	SGSA
Laboratory Work Order		MSC-PA	MSC-PA	JD45192	JD45192	JD45192
Laboratory Sample ID	Units	A	B	JD45192-1	JD45192-2	JD45192-3
Volatile Organic Compounds						
BENZENE	mg/kg	0.5	330	ND (0.00071)	ND (0.00046)	ND (0.00045)
1,2-DIBROMOETHANE (EDB)	mg/kg	0.005	4.2	ND (0.0014)	ND (0.00093)	ND (0.00091)
1,2-DICHLOROETHANE (EDC)	mg/kg	0.5	98	ND (0.0014)	ND (0.00093)	ND (0.00091)
ETHYLBENZENE	mg/kg	70	1,000	ND (0.0014)	ND (0.00093)	ND (0.00091)
ISOPROPYLBENZENE (CUMENE)	mg/kg	350	10,000	ND (0.0028)	ND (0.0019)	ND (0.0018)
METHYL TERTIARY BUTYL ETHER	mg/kg	2	9,800	ND (0.0014)	ND (0.00093)	ND (0.00091)
TOLUENE	mg/kg	100	10,000	ND (0.0014)	ND (0.00093)	ND (0.00091)
1,2,4-TRIMETHYLBENZENE	mg/kg	53	5,400	ND (0.0028)	ND (0.0019)	ND (0.0018)
1,3,5-TRIMETHYLBENZENE	mg/kg	53	5,400	ND (0.0028)	ND (0.0019)	ND (0.0018)
XYLENES, TOTAL (DIMETHYLBENZENE)	mg/kg	1,000	9,100	ND (0.0014)	ND (0.00093)	ND (0.00091)
Semi-Volatile Organic Compounds						
ANTHRACENE	mg/kg	6.6	190,000	0.500	0.889	ND (0.040)
BENZO(A)ANTHRACENE	mg/kg	0.39	190,000	**1.68**[A]	**2.16**[A]	0.0725
BENZO(A)PYRENE	mg/kg	0.02	190,000	**2.04**[A]	**1.84**[A]	**0.0695**[A]
BENZO(B)FLUORANTHENE	mg/kg	0.12	190,000	**3.07**[A]	**2.08**[A]	0.0897
BENZO(G,H,I)PERYLENE	mg/kg	0.026	190,000	**2.33**[A]	**0.856**[A]	**0.0557**[A]
CHRYSENE	mg/kg	0.19	190,000	**2.33**[A]	**1.75**[A]	0.0679
FLUORENE	mg/kg	190	190,000	0.185	0.226	ND (0.040)
NAPHTHALENE	mg/kg	10	77	2.70	0.381	0.0176 J
PHENANTHRENE	mg/kg	110	190,000	3.09	2.83	0.0739
PYRENE	mg/kg	13	190,000	3.18	3.00	0.0991
Metals						
LEAD, Total	mg/kg	0.5	190,000	**84,000**[A]	**214**[A]	**733**[A]

Notes:

MSC-PA	Pennsylvania Department of Environmental Protection (PADEP) - Medium Specific Concentrations
A	Medium Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Soil – Soil to Groundwater, Higher of the 100x the Groundwater MSC and the Generic Value (Unsaturated), Non-Residential
B	Medium-Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Soil – Direct Contact, Subsurface Soil (2-15 ft), Non-Residential
190[A]	Concentration exceeds standard A.
15.2	Measured concentration did not exceed the indicated standard.
ND (0.03)	Indicates concentration not detected above the laboratory reporting limit (in parentheses) except when the reporting limit is greater than the standard in which case the method detection limit is listed in parentheses.
J	Indicates an estimated value
mg/kg	milligrams per kilogram
ft	feet
SGSA	SGS North America Inc.
OIHPT-UV	Geoprobe® Direct Image® ultraviolet-range optical image profiler and hydraulic profiling tools

Table 4: Groundwater Analytical Results Summary (2020 - 2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			N-163						N-164			
Sample Date			21-Feb-20	10-Sep-20	15-Dec-20	15-Apr-21	15-Apr-21	14-Apr-22	16-Apr-21	16-Apr-21	23-Feb-22	18-Apr-22
Sample ID			N-163-20200221-WG	N-163_20200910	N-163_20201215	N-163_20210415	N-163_20210415	N-163_20220414	N-164_SL_20210416	N-164_SL_20210416	N-164_20220223	N-164_SL_20220418
Sampling Company			AQUATERRA	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			PACE	LANCASTER	LANCASTER	EARL	LANCASTER	SGSA	EARL	LANCASTER	SGSA	SGSA
Laboratory Work Order	Units	MSC-PA	30351328	410-13790-1	410-24111-1	M2104E	410-36329-1	JD43215	M2104E	410-36506-1	JD40284	JD43429
Volatile Organic Compounds												
BENZENE	µg/L	5	***398***	***340***	***780***	-	***77***	***149***	-	***2,700 SL***	***1,730 SL***	***1,150 SL***
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	-	-	-	-	-	-	-	-	-	-
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (1.0)	ND (5.0)	ND (5.0)	-	ND (1.0)	ND (1.0)	-	ND (5.0) SL	ND (4.0) SL	ND (4.0) SL
ETHYLBENZENE	µg/L	700	57.4	49	250	-	8.2	2.0	-	490 SL	481 SL	377 SL
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	63.5	56	70	-	27	33.8	-	120 SL	132 SL	109 SL
METHYL TERTIARY BUTYL ETHER	µg/L	20	ND (1.0)	ND (5.0)	ND (5.0)	-	ND (1.0)	ND (1.0)	-	6.3 SL	ND (4.0) SL	ND (4.0) SL
NAPHTHALENE	µg/L	100	-	-	-	-	-	-	-	-	***393 SL***	-
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (5.0)	ND (250)	ND (250)	-	ND (50)	ND (10)	-	ND (250) SL	ND (40) SL	ND (40) SL
TOLUENE	µg/L	1,000	4.9	ND (5.0)	10	-	2.0	2.6	-	110 SL	94.9 SL	70.4 SL
1,2,4-TRIMETHYLBENZENE	µg/L	530	9.9	5.5 J	15 J	-	1.7 J	ND (2.0)	-	380 SL	372 SL	285 SL
1,3,5-TRIMETHYLBENZENE	µg/L	530	21.4	11 J	33	-	4.3 J	1.4 J	-	120 SL	121 SL	90.3 SL
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	20.5	20 J	76	-	6.3	5.7	-	580 SL	596 SL	484 SL
Volatile Organic Compounds (SW8011)												
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.040)	ND (0.029)	ND (0.028)	-	ND (0.029)	ND (0.020)	-	ND (0.028) SL	ND (0.020) SL	ND (0.020) SL
Semi-Volatile Organic Compounds												
ANTHRACENE	µg/L	66	-	0.42 J	0.42 J B	-	0.18 J	0.176	-	1.5 SL	0.162 SL	0.249 SL
BENZO(A)ANTHRACENE	µg/L	3.9	-	ND (0.51)	ND (0.50)	-	ND (0.51)	0.0309 J	-	0.34 J SL	ND (0.040) SL	0.0505 SL
BENZO(A)PYRENE	µg/L	0.2	-	ND (0.10)	ND (0.10)	-	ND (0.11)	ND (0.040)	-	***0.33 J SL***	ND (0.040) SL	ND (0.040) SL
BENZO(B)FLUORANTHENE	µg/L	1.2	-	ND (0.51)	ND (0.50)	-	ND (0.51)	ND (0.040)	-	ND (0.50) SL	ND (0.040) SL	0.0247 J SL
BENZO(G,H,I)PERYLENE	µg/L	0.26	-	ND (0.10)	ND (0.10)	-	ND (0.10)	ND (0.080)	-	ND (0.10) SL	ND (0.080) SL	ND (0.080) SL
CHRYSENE	µg/L	1.9	-	ND (0.51)	ND (0.50)	-	ND (0.51)	ND (0.080)	-	0.42 J SL	ND (0.080) SL	0.0425 J SL
FLUORENE	µg/L	1,900	-	1.8	2.3	-	0.86	0.588	-	3.7 SL	0.870 SL	0.822 SL
NAPHTHALENE	µg/L	100	-	10	65	-	2.5	0.202	-	***290 SL***	-	***134 SL***
PHENANTHRENE	µg/L	1,100	-	1.9	2.0 B	-	0.62	0.524	-	6.1 SL	0.981 SL	1.14 SL
PYRENE	µg/L	130	-	0.27 J	0.26 J B	-	0.21 J	0.179	-	1.5 SL	0.0679 J SL	0.198 SL
Metals												
LEAD, Dissolved	µg/L	5	-	ND (0.52)	ND (0.52)	-	ND (0.52)	ND (1.0)	-	ND (0.52) SL	ND (1.0) SL	ND SL (1.0)
CALCIUM, Total	µg/L	n/v	-	-	-	-	56,000	-	-	53,000 SL	52,900 SL	-
IRON, Total	µg/L	n/v	-	-	-	-	32,000	-	-	24,000 SL	44,500 SL	-
General Chemistry												
ALKALINITY TO pH 4.5	µg/L	n/v	-	-	-	-	200,000	-	-	220,000 SL	-	-
ALKALINITY, TOTAL (AS $CACO_3$)	µg/L	n/v	-	-	-	-	-	-	-	-	239,000 SL	-
ETHANE	µg/L	n/v	-	-	-	-	ND (5.0)	-	-	ND (5.0) SL	0.55 SL	-
ETHENE	µg/L	n/v	-	-	-	-	ND (5.0)	-	-	1.1 J SL	ND (0.31) SL	-
METHANE	µg/L	n/v	-	-	-	-	4,500	-	-	8,100 SL	14,500 SL	-
SUCRALOSE	ng/L	n/v	-	-	-	32.7	-	-	ND (36.3) SL	-	-	-
SULFATE (AS SO_4)	µg/L	n/v	-	-	-	-	6,100	-	-	21,000 SL	14,500 SL	-
TOTAL CARBON	µg/L	n/v	-	-	-	-	45,000	-	-	58,000 SL	7,600 SL	-
TOTAL INORGANIC CARBON	µg/L	n/v	-	-	-	-	42,000	-	-	50,000 SL	ND (2,000) SL	-
TOTAL KJELDAHL NITROGEN	µg/L	n/v	-	-	-	-	ND (5,000)	-	-	670 J SL	440 SL	-
TOTAL ORGANIC CARBON	µg/L	n/v	-	-	-	-	2,900	-	-	8,300 SL	7,800 SL	-

See notes on last page.

Table 4: Groundwater Analytical Results Summary (2020 - 2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			N-165		N-166		N-167		N-168		N-169		
Sample Date			17-Feb-22	18-Apr-22	23-Feb-22	18-Apr-22	16-Feb-22	18-Apr-22	17-Feb-22	18-Apr-22	17-Feb-22	21-Apr-22	21-Apr-22
Sample ID			N-165_20220217	N-165_20220418	N-166_20220223	N-166_20220418	N-167_20220216	N-167_20220418	N-168_20220217	N-168_20220418	N-169_20220217	N-169_20220421	DUP-8_20220421
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			SGSA	SGSA	SGSA	SGSA	SGSA	SGSA	SGSA	SGSA	SGSA	SGSA	SGSA
Laboratory Work Order	Units	MSC-PA	JD40008	JD43429	JD40284	JD43429	JD40008	JD43429	JD40008	JD43429	JD40008	JD43617	JD43617
Volatile Organic Compounds													
BENZENE	µg/L	5	***208***	***67.2***	***913***	***899***	2.8	2.5	1.7	ND (0.50)	***46.8***	***42.4***	***40.5***
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	-	-	-	-	-	-	-	-	-	-	-
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (1.0)	ND (1.0)	ND (2.5)	ND (5.0)	ND (1.0)	ND (1.0)	ND (2.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
ETHYLBENZENE	µg/L	700	306	11.9	8.4	5.2	60.9	45.8	6.5	1.6	47.6	54.3	51.5
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	152	71.0	208	142	98.1	72.8	144	65.2	138	104	100
METHYL TERTIARY BUTYL ETHER	µg/L	20	ND (1.0)	ND (1.0)	ND (2.5)	ND (5.0)	ND (1.0)	ND (1.0)	ND (2.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
NAPHTHALENE	µg/L	100	75.5	-	48.3	-	41.3	-	ND (10)	-	42.7	-	-
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (10)	ND (10)	ND (25)	ND (50)	ND (10)	ND (10)	ND (20)	ND (10)	ND (10)	ND (10)	ND (10)
TOLUENE	µg/L	1,000	5.4	1.2	28.4	33.3	1.0	0.71 J	8.1	0.71 J	23.9	23.4	22.9
1,2,4-TRIMETHYLBENZENE	µg/L	530	239	135	5.7	ND (10)	5.4	4.6	ND (4.0)	ND (2.0)	1.6 J	1.6 J	1.5 J
1,3,5-TRIMETHYLBENZENE	µg/L	530	84.9	58.8	11.1	ND (10)	24.0	20.6	2.7 J	1.5 J	5.3	3.0	2.7
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	226	89.2	25.1	25.4	10.8	8.9	10.6	2.0	45.5	47.7	46.4
Volatile Organic Compounds (SW8011)													
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.020)	ND (0.020)	ND (0.021)	ND (0.021)	ND (0.020)	ND (0.020)	ND (0.021)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
Semi-Volatile Organic Compounds													
ANTHRACENE	µg/L	66	0.657 B	0.691	2.60	1.14	0.494 B	0.458	1.91 B	1.28	0.393 B	0.106	0.149
BENZO(A)ANTHRACENE	µg/L	3.9	0.138 B	0.149	1.44	0.357	0.0870 B	0.127	0.502 B	0.288	0.0634 B	0.0213 J	0.0229 J
BENZO(A)PYRENE	µg/L	0.2	0.0809 B	0.0673	***0.791***	0.182	0.0428 B	0.0567	***0.295 B***	0.144	0.0402 J B	ND (0.034)	ND (0.034)
BENZO(B)FLUORANTHENE	µg/L	1.2	0.101 B	0.0739	1.05	0.218	0.0476 B	0.0694	0.280 B	0.128	0.0476 B	ND (0.034)	ND (0.034)
BENZO(G,H,I)PERYLENE	µg/L	0.26	0.0663 J B	0.0532 J	***0.566***	0.124	ND (0.080)	0.0424 J	***0.274 B***	0.0901	0.0445 J B	ND (0.069)	ND (0.069)
CHRYSENE	µg/L	1.9	0.141	0.120	1.27	0.254	0.0858	0.0972	0.574	0.240	0.0618 J	ND (0.069)	ND (0.069)
FLUORENE	µg/L	1,900	2.49 B	1.79	6.46	2.37	1.58 B	1.18	3.70 B	2.61	1.50 B	0.490	0.684
NAPHTHALENE	µg/L	100	-	1.96	-	7.92	-	7.88	-	ND (0.083)	-	3.16	11.5
PHENANTHRENE	µg/L	1,100	2.95 B	2.88	13.6	4.48	2.12 B	2.19	6.64 B	4.64	1.72 B	0.132	0.531
PYRENE	µg/L	130	0.611	0.711	3.69	1.03	0.416	0.535	2.21	1.22	0.243	0.0908	0.0899
Metals													
LEAD, Dissolved	µg/L	5	ND (1.0)	ND (1.0)	1.9	ND (1.0)	4.5	***11.7***	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
CALCIUM, Total	µg/L	n/v	106,000	-	76,900	-	38,800	-	102,000	-	50,500	-	-
IRON, Total	µg/L	n/v	7,240	-	76,800	-	38,400	-	42,800	-	34,700	-	-
General Chemistry													
ALKALINITY TO pH 4.5	µg/L	n/v	-	-	-	-	-	-	-	-	-	-	-
ALKALINITY, TOTAL (AS $CACO_3$)	µg/L	n/v	533,000	-	345,000	-	156,000	-	370,000	-	270,000	-	-
ETHANE	µg/L	n/v	ND (0.23)	-	2.1	-	5.25	-	0.46	-	1.0	-	-
ETHENE	µg/L	n/v	ND (0.31)	-	1.5	-	3.12	-	0.48	-	0.70	-	-
METHANE	µg/L	n/v	556	-	11,800	-	1,980	-	547	-	8,910	-	-
SUCRALOSE	ng/L	n/v	-	-	-	-	-	-	-	-	-	-	-
SULFATE (AS SO_4)	µg/L	n/v	163,000	-	16,200	-	22,600	-	28,100	-	ND (2,000)	-	-
TOTAL CARBON	µg/L	n/v	114,000	-	96,200	-	ND (5,000)	-	9,500	-	ND (5,000)	-	-
TOTAL INORGANIC CARBON	µg/L	n/v	108,000	-	85,100	-	ND (6,000)	-	ND (6,000)	-	ND (6,000)	-	-
TOTAL KJELDAHL NITROGEN	µg/L	n/v	600	-	6,500	-	310	-	1,200	-	340	-	-
TOTAL ORGANIC CARBON	µg/L	n/v	6,300	-	11,100	-	2,700	-	11,500	-	4,700	-	-

See notes on last page.

Table 4: Groundwater Analytical Results Summary (2020 - 2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Sample Location			N-170	
Sample Date			23-Feb-22	21-Apr-22
Sample ID			N-170_20220223	N-170_SL_20220421
Sampling Company			STANTEC	STANTEC
Laboratory			SGSA	SGSA
Laboratory Work Order	Units	MSC-PA	JD40284	JD43617
Volatile Organic Compounds				
BENZENE	µg/L	5	***238 SL***	***219 SL***
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	-	-
1,2-DICHLOROETHANE (EDC)	µg/L	5	ND (1.0) SL	ND (1.0) SL
ETHYLBENZENE	µg/L	700	46.1 SL	37.9 SL
ISOPROPYLBENZENE (CUMENE)	µg/L	3,500	106 SL	103 SL
METHYL TERTIARY BUTYL ETHER	µg/L	20	ND (1.0) SL	ND (1.0) SL
NAPHTHALENE	µg/L	100	ND (5.0) SL	-
TERT-BUTYL ALCOHOL	µg/L	n/v	ND (10) SL	ND (10) SL
TOLUENE	µg/L	1,000	25.4 SL	21.2 SL
1,2,4-TRIMETHYLBENZENE	µg/L	530	ND (2.0) SL	ND (2.0) SL
1,3,5-TRIMETHYLBENZENE	µg/L	530	4.5 SL	3.0 SL
XYLENES, TOTAL (DIMETHYLBENZENE)	µg/L	10,000	56.3 SL	48.4 SL
Volatile Organic Compounds (SW8011)				
1,2-DIBROMOETHANE (EDB)	µg/L	0.05	ND (0.020) SL	ND (0.020) SL
Semi-Volatile Organic Compounds				
ANTHRACENE	µg/L	66	1.40 SL	8.88 SL
BENZO(A)ANTHRACENE	µg/L	3.9	0.294 SL	1.56 SL
BENZO(A)PYRENE	µg/L	0.2	0.146 SL	***0.937 SL***
BENZO(B)FLUORANTHENE	µg/L	1.2	0.132 SL	0.940 SL
BENZO(G,H,I)PERYLENE	µg/L	0.26	0.115 SL	***0.926 SL***
CHRYSENE	µg/L	1.9	0.301 SL	1.41 SL
FLUORENE	µg/L	1,900	3.63 SL	20.7 SL
NAPHTHALENE	µg/L	100	-	ND (0.077) SL
PHENANTHRENE	µg/L	1,100	6.16 SL	28.5 SL
PYRENE	µg/L	130	1.35 SL	6.80 SL
Metals				
LEAD, Dissolved	µg/L	5	ND (1.0) SL	ND SL (1.0)
CALCIUM, Total	µg/L	n/v	46,100 SL	-
IRON, Total	µg/L	n/v	30,700 SL	-
General Chemistry				
ALKALINITY TO pH 4.5	µg/L	n/v	-	-
ALKALINITY, TOTAL (AS $CACO_3$)	µg/L	n/v	210,000 SL	-
ETHANE	µg/L	n/v	1.3 SL	-
ETHENE	µg/L	n/v	0.69 SL	-
METHANE	µg/L	n/v	9,250 SL	-
SUCRALOSE	ng/L	n/v	-	-
SULFATE (AS SO_4)	µg/L	n/v	ND (2,000) SL	-
TOTAL CARBON	µg/L	n/v	7,700 SL	-
TOTAL INORGANIC CARBON	µg/L	n/v	ND (2,000) SL	-
TOTAL KJELDAHL NITROGEN	µg/L	n/v	200 SL	-
TOTAL ORGANIC CARBON	µg/L	n/v	8,000 SL	-

See notes on last page.

Table 4: Groundwater Analytical Results Summary (2020 - 2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Notes:

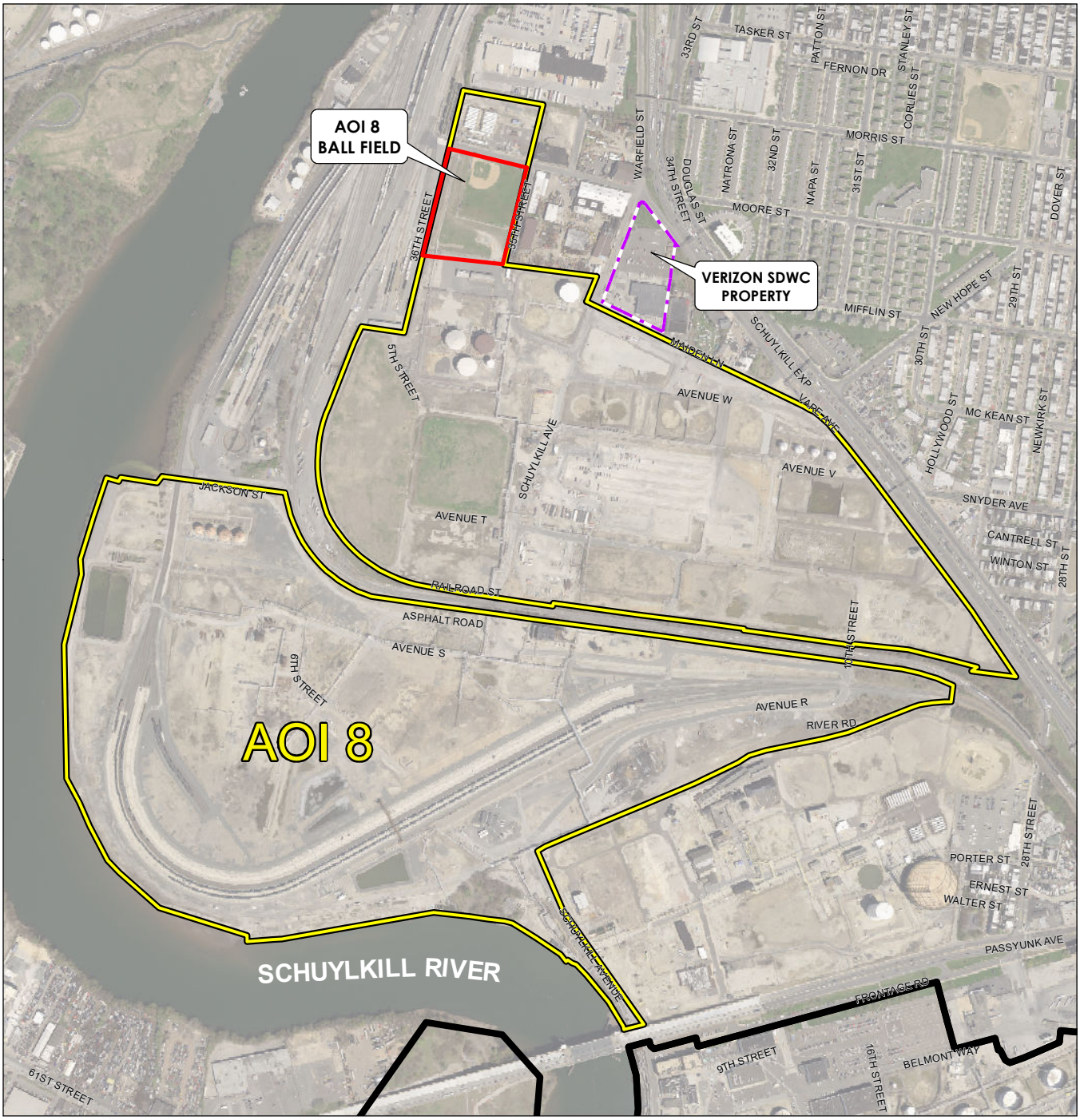
MSC-PA	Pennsylvania Department of Environmental Protection (PADEP)
	Medium-Specific Concentrations (MSCs) for Organic/Inorganic Regulated Substances in Groundwater - Used Aquifer, Non Residential, TDS ≤ 2500
6.5	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
ND (0.50)	Laboratory reporting limit was greater than the applicable standard.
ND (0.03)	Indicates concentration not detected above the laboratory reporting limit (in parentheses) except when the reporting limit is greater than the standard in which case the method detection limit is listed in parentheses.
n/v	No standard/guideline value
-	Parameter not analyzed / not available
B	Indicates the analyte is detected in the associated blank as well as in the sample.
J	Indicates an estimated value
SL	Sample was collected below LNAPL
µg/L	Micrograms per liter
EARL	Environmental Analysis Research Laboratory, Southeast Environmental Research Center, International University of Miami, Florida
SGSA	SGS North America, Inc.
PACE	Pace Analytical Services, LLC
LANCASTER	Eurofins Lancaster Laboratories Environmental

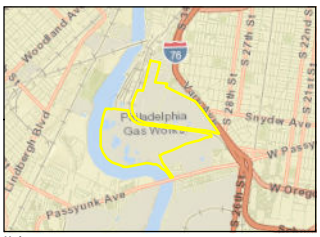
Table 5: Groundwater Gauging Data (2020 - 2022)
Area of Interest 8 Ball Field
Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC

Well ID	Date	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	Apparent LNAPL Thickness (ft)	Corrected Water Level Elevation (ft NAVD88)	LNAPL Density	Notes
N-100	6/8/2020	---	17.79	---	9.22		
N-100	4/27/2021	---	17.15	---	9.86		
N-100	10/19/2021	---	17.79	---	9.22		
N-100	3/4/2022	---	18.79	---	8.22		
N-163	2/21/2020	---	18.62	---	8.61		
N-163	6/9/2020	---	18.97	---	8.26		
N-163	9/10/2020	---	18.75	---	8.48		
N-163	12/15/2020	---	18.36	---	8.87		
N-163	4/15/2021	---	17.70	---	9.53		
N-163	4/27/2021	---	18.95	---	8.28		
N-163	10/19/2021	---	18.41	---	8.82		
N-163	3/4/2022	---	19.92	---	7.31		
N-164	4/13/2021	15.61	15.83	0.22	9.57	0.7963	
N-164	4/16/2021	15.42	15.66	0.24	9.75	0.7963	
N-164	10/20/2021	16.25	16.62	0.37	8.89	0.7963	
N-164	2/23/2022	17.55	17.70	0.15	7.64	0.7963	
N-164	3/4/2022	17.67	17.82	0.15	7.52	0.7963	
N-164	4/18/2022	16.90	17.03	0.13	8.29	0.7963	
N-165	2/17/2022	18.17	18.18	0.01	7.75	0.7963	
N-165	3/4/2022	---	18.61	---	7.31		
N-165	4/18/2022	---	17.82	---	8.10		
N-166	2/23/2022	---	17.91	---	7.31		
N-166	3/4/2022	---	18.08	---	7.14		
N-166	4/18/2022	---	17.50	---	7.72		
N-167	2/16/2022	---	14.73	---	7.58		
N-167	3/4/2022	---	14.77	---	7.54		
N-167	4/18/2022	---	14.14	---	8.17		
N-168	2/17/2022	---	13.54	---	7.92		
N-168	3/4/2022	---	13.74	---	7.72		
N-168	4/18/2022	---	12.78	---	8.68		
N-169	2/17/2022	---	13.84	---	7.65		apparent LNAPL on interface probe
N-169	3/4/2022	---	14.10	---	7.39		
N-169	4/21/2022	---	13.15	---	8.34		
N-170	2/23/2022	18.18	18.26	0.08	7.52	0.7963	
N-170	3/4/2022	18.21	18.81	0.60	7.39	0.7963	
N-170	4/21/2022	17.55	17.57	0.02	8.17	0.7963	

Notes:
ft = feet
btoc = below top of casing
NAVD88 = North American Vertical Datum of 1988
LNAPL = light nonaqueous phase liquid
--- = LNAPL not present

FIGURES





LEGEND

- AREA OF INTEREST (AOI) 8 BOUNDARY
- AOI 8 BALL FIELD
- VERIZON SOUTH DISTRICT WORK CENTER (SDWC) PROPERTY
- FORMER PHILADELPHIA REFINERY

0 400 800 Feet

1:9,600 (at original document size of 8.5x11)

N

Stantec

EVERGREEN

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Sources: Stantec
3. Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Project Location
City of Philadelphia, Philadelphia County, Pennsylvania

213403364

Prepared by GWC on 6/20/2022
Technical Review by AJW on 6/20/2022
Independent Review by JLM on 6/21/2022

Client/Project
PHILADELPHIA REFINERY OPERATIONS, A SERIES OF EVERGREEN RESOURCES GROUP, LLC
FORMER PHILADELPHIA REFINERY
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Figure No.
1

Title
SITE LOCATION MAP
AOI 8 BALL FIELD

N-167				
	Units	MSC-PA	2/16/2022	4/18/2022
LEAD	µg/L	5	4.5	***11.7***

N-168				
	Units	MSC-PA	2/17/2022	4/18/2022
BENZO(A)PYRENE	µg/L	0.2	***0.295***	0.144
BENZO(G,H,I)PERYLENE	µg/L	0.26	***0.274***	0.0901

N-170				
	Units	MSC-PA	2/23/2022	4/21/2022
BENZENE	µg/L	5	***238 SL***	***219 SL***
BENZO(A)PYRENE	µg/L	0.2	0.146 SL	***0.937 SL***
BENZO(G,H,I)PERYLENE	µg/L	0.26	0.115 SL	***0.926 SL***

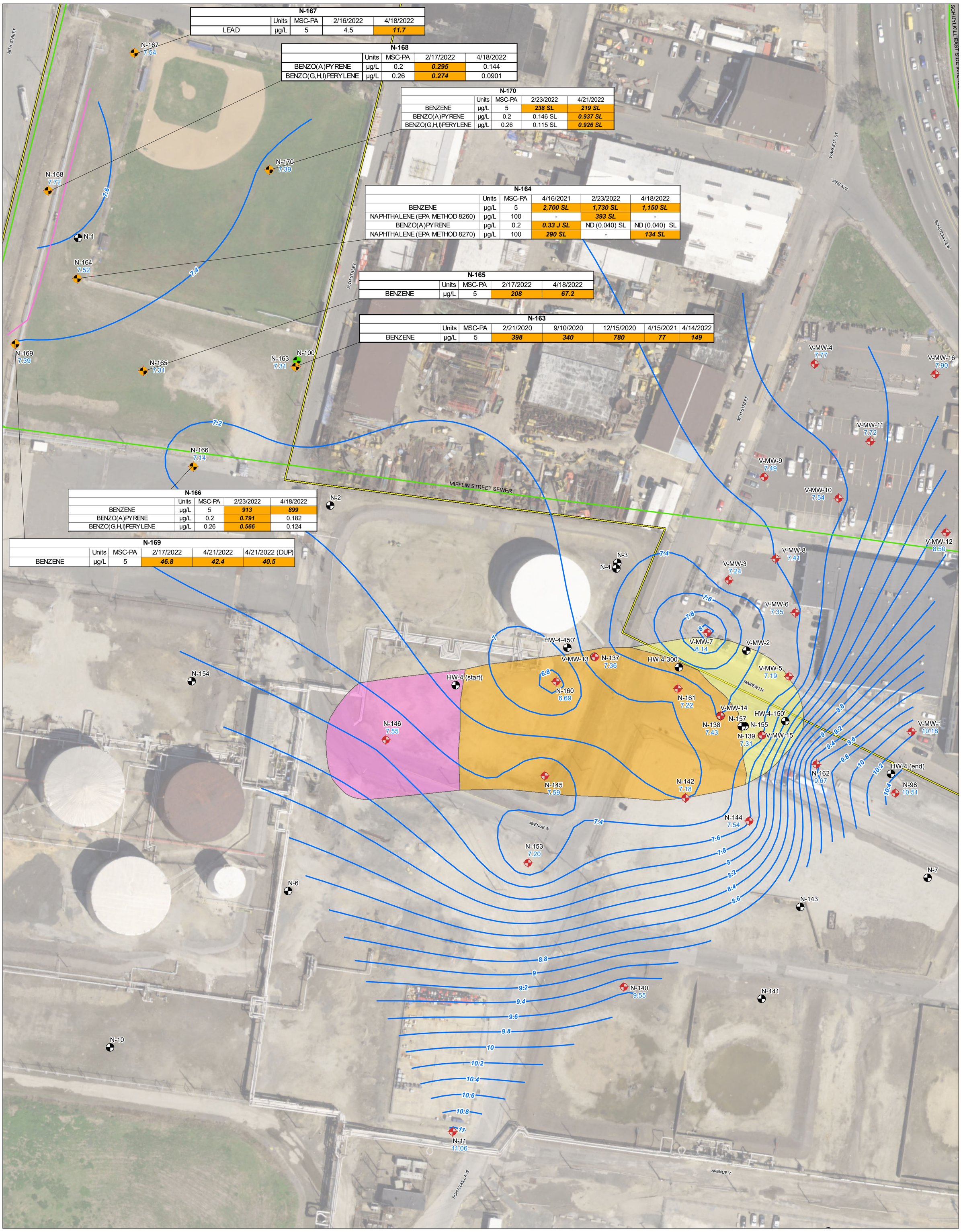
N-164					
	Units	MSC-PA	4/16/2021	2/23/2022	4/18/2022
BENZENE	µg/L	5	***2,700 SL***	***1,730 SL***	***1,150 SL***
NAPHTHALENE (EPA METHOD 8260)	µg/L	100	-	***393 SL***	-
BENZO(A)PYRENE	µg/L	0.2	***0.33 J SL***	ND (0.040) SL	ND (0.040) SL
NAPHTHALENE (EPA METHOD 8270)	µg/L	100	***290 SL***	-	***134 SL***

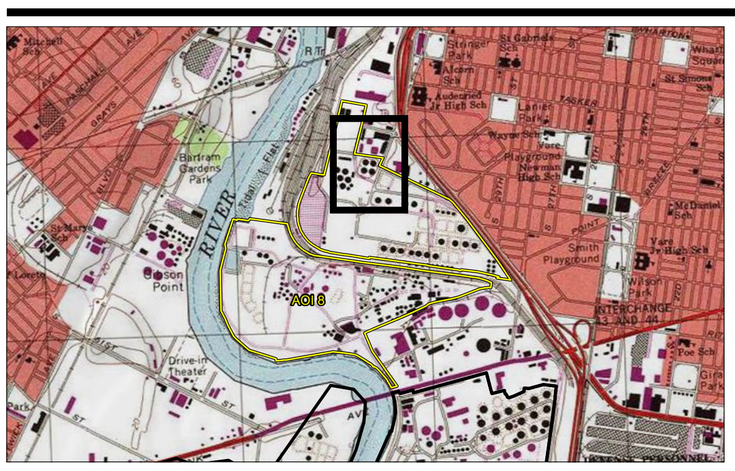
N-165				
	Units	MSC-PA	2/17/2022	4/18/2022
BENZENE	µg/L	5	***208***	***67.2***

N-163							
	Units	MSC-PA	2/21/2020	9/10/2020	12/15/2020	4/15/2021	4/14/2022
BENZENE	µg/L	5	***398***	***340***	***780***	***77***	***149***

N-166				
	Units	MSC-PA	2/23/2022	4/18/2022
BENZENE	µg/L	5	***913***	***899***
BENZO(A)PYRENE	µg/L	0.2	***0.791***	0.182
BENZO(G,H,I)PERYLENE	µg/L	0.26	***0.566***	0.124

N-169					
	Units	MSC-PA	2/17/2022	4/21/2022	4/21/2022 (DUP)
BENZENE	µg/L	5	***46.8***	***42.4***	***40.5***





Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Sources: Stantec
3. Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed PEMA Philadelphia County 2018 Aerial Imagery

LEGEND

- GROUNDWATER EXCEEDANCE OF THE PADEP NON-RESIDENTIAL, USED AQUIFER STATEWIDE HEALTH STANDARDS (SHS)
- NO GROUNDWATER EXCEEDANCE OF THE PADEP NON-RESIDENTIAL, USED AQUIFER SHS
- MONITORING WELL SCREENED IN UNCONFINED ZONE, UTILIZED FOR MARCH 2022 ELEVATION SURFACE
- MONITORING WELL
- APPROXIMATE LOCATION OF PHILADELPHIA WATER DEPARTMENT SEWER
- UNIDENTIFIED UNDERGROUND LINE
- MARCH 2022 UNCONFINED AQUIFER GROUNDWATER ELEVATION CONTOUR
- AREA OF INTEREST (AOI) 8 BOUNDARY
- FORMER PHILADELPHIA REFINERY
- 77 — CONCENTRATION EXCEEDS THE INDICATED STANDARD
- 9.55 — CORRECTED GROUNDWATER ELEVATION (FT NAVD88)
- SL — SAMPLE WAS COLLECTED BELOW LNAPL
- MSC-PA — PADEP MEDIUM-SPECIFIC CONCENTRATION (MSC) FOR ORGANIC/INORGANIC REGULATED SUBSTANCES IN GROUNDWATER - USED AQUIFER, NON RESIDENTIAL, TDS ≤ 2500
- µg/L — MICROGRAMS PER LITER

GENERALIZED LNAPL TYPES

- LIGHT DISTILLATE
- MIXES OF LIGHT/MIDDLE DISTILLATE
- MIXES OF MIDDLE/HEAVY DISTILLATE

ND NOT DETECTED

0 60 120 Feet

1:720 (At original document size of 22x34)

N

Figure No.

2

Title

GROUNDWATER SHS EXCEEDANCES (2020 – 2022) AOI 8 BALL FIELD

Client/Project

PHILADELPHIA REFINERY OPERATIONS, A SERIES OF EVERGREEN RESOURCES GROUP, LLC
FORMER PHILADELPHIA REFINERY
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Project Location

City of Philadelphia,
Philadelphia County,
Pennsylvania

213403364
Prepared by GWC on 6/20/2022
Technical Review by AJW on 6/20/2022
Independent Review by JLM on 6/21/2022

Stantec

EVERGREEN

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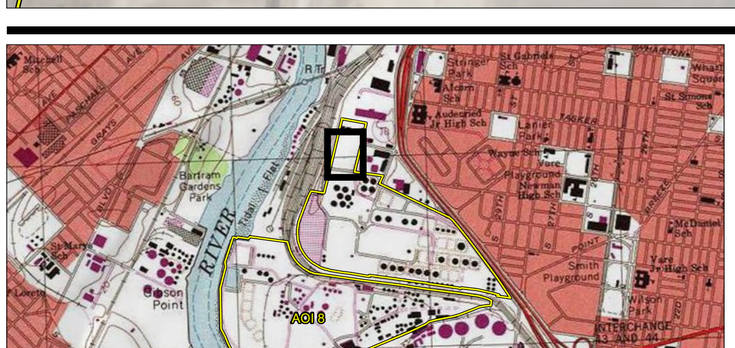

LEGEND

- SOIL BORING LOCATION
- GEOPROBE® DIRECT IMAGE® ULTRAVIOLET-RANGE OPTICAL IMAGE PROFILER AND HYDRAULIC PROFILING TOOLS (OIHPT-UV) BORING LOCATION
- DEEP SOIL EXCEEDANCE OF THE PADEP NON-RESIDENTIAL, UNSATURATED STATEWIDE HEALTH STANDARD GREATER THAN 2'
- NEWLY INSTALLED MONITORING WELL, 2019-2022
- MONITORING WELL
- DESTROYED MONITORING WELL
- APPROXIMATE LOCATION OF PHILADELPHIA WATER DEPARTMENT SEWER
- UNIDENTIFIED UNDERGROUND LINE
- AREA OF INTEREST (AOI) 8 BOUNDARY
- FORMER PHILADELPHIA REFINERY

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Sources: Stantec
3. Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed PEMA Philadelphia County 2018 Aerial Imagery

0 30 60 Feet

1:360 (At original document size of 22x34)

N

Figure No.

3

Title

BORING LOCATIONS
AOI 8 BALL FIELD

Client/Project

PHILADELPHIA REFINERY OPERATIONS, A SERIES OF
EVERGREEN RESOURCES GROUP, LLC
FORMER PHILADELPHIA REFINERY
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

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APPENDIX A

Soil Boring and Well Construction Logs

PROJECT: **PHRO - Corrective Measures Program**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213402454**

WELL / PROBEHOLE / BOREHOLE NO: **N-163**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **12/11/19** COMPLETED: **12/12/19**
INSTALLATION: STARTED **12/12/19** COMPLETED: **12/12/19**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **228202** *EASTING (ft): **2682714.5**
*GROUND ELEV (ft): **25.16** *TOC ELEV (ft): **27.23**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **42**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **38**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **A Klingbeil** CHECKED BY: **J Kachel**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–9			Hydrovac to 8' [FILL] (brick), clay/silt							
10–12		SP	SP; Reddish yellow and grayish brown, fine SAND, trace medium to coarse sand (micaceous), some silt/clay (moist to wet), clayey sand lenses (1-2") of fine sand, trace to little silt			0.9	3 3 3 2	0 0	10	
13–15		SP	SP; Light brown and gray and black (stained) fine SAND, some medium sand, trace coarse sand, trace to no silt (moist)(some black mottles)(pea gravel lens at 13.8')(wet clay at top of shoe)(trace clay with depth)			1.0	1 3 5 3	0	15	Tremie Grout 2" PVC Casing
16–20									20	
20–21		SP	SP; Very pale brown to light gray very coarse to fine SAND and coarse to fine gravel. trace to no silt (saturated)(no odor)(mostly quartz sand)			1.3	4 4 5 5	0 0		
22		SP	SP; SAME coarsens with depth to rounded quartz gravel and silt (saturated)				2	0		
23		CL	CL; Brownish yellow to reddish yellow CLAY/SILT, high plasticity clay and very coarse gravel mix in shoe			0.9	10 3 3	0		
24		CL	CL; SAME very coarse gravelly clay/silt (damp), stained weathered gravel in shoe				1	9		
25		GP	GP; Green, black, and gray very coarse to coarse GRAVEL, weathered (moderate petroleum odor)(damp)			0.8	2 8 11	79	25	Hydrated Bentonite Seal
26		GP	GP; SAME very coarse GRAVEL, weathered in situ (damp)(petroleum odor)				16 19			
27						1.8	20 24	256		
28–29		SP	SP; Greenish gray, very coarse to granular SAND, some medium to coarse gravel, trace to no silt (saturated) (mostly quartz, chert rounded to subrounded)				2 2 3 7	126		

GEO FORM 304 PHRO_AOI8_20210224.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/24/22

PROJECT: **PHRO - Corrective Measures Program**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213402454**

WELL / PROBEHOLE / BOREHOLE NO: **N-163**
PAGE 2 OF 2

Stantec

DRILLING: STARTED **12/11/19** COMPLETED: **12/12/19**
INSTALLATION: STARTED **12/12/19** COMPLETED: **12/12/19**
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger; Mud Rotary**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft): **228202**
*GROUND ELEV (ft): **25.16**
INITIAL DTW (ft): **Not Measured**
STATIC DTW (ft): **Not Measured**
WELL CASING DIAMETER (in): **2**
LOGGED BY: **A Klingbeil**

*EASTING (ft): **2682714.5**
*TOC ELEV (ft): **27.23**
BOREHOLE DEPTH (ft): **42**
WELL DEPTH (ft): **38**
BOREHOLE DIAMETER (in): **8**
CHECKED BY: **J Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		GP	GP; Very coarse, coarse to fine GRAVEL (weathered), some silt/clay from weathering (odor) (moist, sheen in macropores) stained (trace cobbles of red sandstone, white sandstone)			1.2	11 15 11 9	154 223		
32		GP	GP; SAME (sheen, odors) (saturated, sticky with petroleum, residual LNAPL, mostly gray to black gravel)				9 11			#1 Sand
33						0.8	14 17	54		2" 0.020 PVC Screen
34		GP	GP; SAME (less water, moist to wet) (tighter) (some weathered gravels)				12 14			
35						0.8	12 15	14	35	
36		GP	GP; SAME (brownish yellow to yellowish brown silty GRAVEL (more water) (wet to saturated) (rounded quartz, rip-up clasts, red mudstone)				8 9			
37						1.3	13 14	1		
38		GP	GP; SAME (trace very fine silty sand lenses) (moist to wet)				7 6			
39						0.7	11 12	4		
40		GP	GP; SAME (wet to saturated)				4		40	
41		SP	SP; Interbedded very fine SAND, to GRAVEL, some silt and very coarse to coarse sand, trace to no silt (saturated in shoe)			1.2	10 11 10	3		
42										
43										
44										
45									45	
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GEO FORM 304 PHRO_AOI8_20210224.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/24/22

PROJECT: **PHRO - Corrective Measures Program**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213402454**

WELL / PROBEHOLE / BOREHOLE NO: **N-164**
PAGE 1 OF 1

Stantec

DRILLING: STARTED **4/1/21** COMPLETED: **4/1/21**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon, Cuttings**

*NORTHING (ft):
*EASTING (ft):
*GROUND ELEV (ft):
*TOC ELEV (ft):
INITIAL DTW (ft): **Not Measured**
BOREHOLE DEPTH (ft): **32**
STATIC DTW (ft): **Not Measured**
WELL DEPTH (ft):
WELL CASING DIAMETER (in): **2**
BOREHOLE DIAMETER (in): **8**
LOGGED BY: **J. Kachel, A. Hill**
CHECKED BY: **J Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–6			FILL, Air Knife to 6.5'							
7–8		GW	GW; Black medium to fine angular GRAVEL (loose), glass fragments, little clay (moist)			1	1 1 2	0	5	Tremie Grout
9		CL	CL; Slightly orangish brown CLAY little silt (moist) (soft) (medium plasticity)			1.5	1 1 1	0		2" PVC Casing
10–11		CL	CL; SAME (friable, less plastic, coarser grained to silty clay to clayey silt 10.5 - 12')(moist to wet at 11.5 - 12')			2	1 2 2	0	10	
12–13		SP	SP; Orangish brown medium SAND, trace fines (moist to wet)			1.6	3 4 6 8	0		
14		GP	GP; Orangish brown fine to coarse GRAVEL, some fine to coarse sand, some silt, trace clay				24 24			
15		GP	GP; SAME (predominately silt, stiff)			1.3	8 15 15	0	15	Hydrated Bentonite Seal
16–17		CL	CL; Light gray grading to reddish brown very stiff CLAY (dry) (low plasticity) (some mica flakes)			0.9	8 15 13 10			
18–19		SP	SP; Fine to medium SAND, some silt (stained sand) (moderate gasoline odor)		N-164- 18-20_ 20210401	0.9	15 5 5 6	512		
20		GW	GW; Multi-colored fine to coarse GRAVEL, fine to coarse black sand, trace silt, (moderate odor)				5 12 11	69	20	
21		SP	SP; SAME (overall brown)				12	3		#1 Sand
22–23		SP	SP; Orangish to reddish brown SAND grading from fine to coarse			1.8	10 10 11	3		2" 0.010 PVC Screen
24		SP-SM	SP-SM; Orangish brown fine SAND and SILT (stiff)				17 15			
25		CL	CL; Orange and light gray laminated CLAY (dry) (stiff) (medium to low plasticity)			0.5	6 3 3	30	25	
26		CL	CL; SAME (some micaceous silt)				4 4			
27						0.5	6 6	10		
28–29		GW	GW; Multi-colored fine to coarse GRAVEL, fine to coarse sand, grayish green weathered mudstone, little silt (moist)			0.8	8 8 8 7	12.6		
30		GW	GW; SAME quartz-like cobble in shoe				15		30	
31–32								82		

GEO FORM 304 PHRO_AOI8_20210224.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/24/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-165**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **1/18/22** COMPLETED: **1/18/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push Macrocore**
SAMPLING EQUIPMENT: **Dual Tube Liner**

*NORTHING (ft): **228196.56** *EASTING (ft): **2682520.14**
*GROUND ELEV (ft): **26.2** *TOC ELEV (ft): **25.92**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **40**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **4**
LOGGED BY: **A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0–7			APPARENT FILL brown SANDY GRAVEL with broken brick, micaceous, some silt			1.5		0 0		
7–12		ML	ML; Dark gray to black SILT and GRAVEL (abundant debris, glass, cinders)			2.5		0 0 0	5 10	Tremie Grout 1" PVC Casing
12–15		ML	ML; Dark brown CLAYEY SILT (moist) (low plasticity) grading downward to red-brown color, clay content increasing with depth (high plasticity)			4		0 0 0		
15–16		ML	ML; Red-brown SILT with some sand (saturated)					0	15	
16–20		ML	ML; SAME (abundant gravel, multicolored weathered rocks)			4		0 0		
20–24		CL	CL; Red-brown tightly packed CLAY, some silt, micaceous at 21'			4		0 0.5	20	Hydrated Bentonite Seal #1 Sand
24–25		SP	SP; Dark gray to black SAND (medium) with some silt (saturated) (petroleum odor) (micaceous) (stained)		AOI8-BH-22-01-24_20220118			1100	25	1" 0.010 PVC Screen (pre-pack)
25–26		SP	SP; SAME (some small pebbles)					200/ 1200 1900		
26–27		SP	SP; Heavily stained SAND (medium)							
27–28		ML	ML; Brown SILT (little sand) (micaceous)		AOI8-BH-22-01-27_20220118	4		8.6		
28–29		SP	SP; Light brown to gray SAND with some small pebbles (medium to coarse), (micaceous) (petroleum odor)					630		

GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-165**
PAGE 2 OF 2

Stantec

DRILLING: STARTED **1/18/22** COMPLETED: **1/18/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Geoprobe**
DRILLING METHOD: **Direct Push Macrocore**
SAMPLING EQUIPMENT: **Dual Tube Liner**

*NORTHING (ft): **228196.56** *EASTING (ft): **2682520.14**
*GROUND ELEV (ft): **26.2** *TOC ELEV (ft): **25.92**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **40**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **4**
LOGGED BY: **A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		ML	ML; SANDY SILT (fine) with yellow to orange SAND lens (coarse)		AOI8-BH-22-01-30_20220118 785/169	2.5		590/145		
31		SP	SP; Dark gray SAND (medium) (micaceous, gravel abundant and varied in size) (heavily stained)							
32			No Recovery							
33										
34										
35		SP	SP; Brown SAND green weathered pebbles, some silt (medium) (poorly sorted)					0.9	35	
36		GP	GP; Brown SANDY GRAVEL (varied size gravel, some cobbles) (medium)		AOI8-BH-22-01-36_20220118			5.6		
37										
38		SP	SP; Brown to tan SAND (fine to medium) (slight petroleum odor)					26		
39										
40									40	
41										
42										
43										
44										
45									45	
46										
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GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-166**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **1/19/22** COMPLETED: **1/25/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55/Geoprobe**
DRILLING METHOD: **HSA/Direct Push Macrocore**
SAMPLING EQUIPMENT: **Dual Tube Liner/Split Spoon**

*NORTHING (ft): **228074.67** *EASTING (ft): **2682583.92**
*GROUND ELEV (ft): **25.5** *TOC ELEV (ft): **25.22**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **42**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **D. Hopkins/A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	USCS	Description	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)
1–4	ML	ML; Light brown to orange SILT with GRAVEL and DEBRIS				0	
4–5	SP-SM	SP-SM; Dark brown to gray, fine SAND with SILT and GRAVEL (moist) (low density, black, waxy cobbles)				9.5	5
5–6	SP-SM	SP-SM; SAME (gray to black cinders)					
6–10	SW	SW; Dark brown to gray coarse SAND (debris present, red grains, micaceous)				3.4	
10–11	SP-SM	SP-SM; SAME (low density, black, waxy cobbles)				1.1	10
11–15	CL	CL; Brown to gray CLAY (micaceous) (high plasticity) (becomes more sandy and silty, less plastic with depth)				1.0	
15–17	ML	ML; Brown SANDY SILT (micaceous) (moist)				0.7	15
17–18	GP	GP; SANDY GRAVEL with some silt				0.5	
18–20	ML	ML; Brown SILT with fine SAND and GRAVEL (saturated)				0.9	
20–21	CL-ML	CL-ML; Brown SILTY CLAY (tightly compacted, medium plasticity)				0/0	20
21–21	CL	CL; SANDY CLAY with multicolored gravel					
21–25	CL-ML	CL-ML; Brown SILTY CLAY (high plasticity) (silt increases with depth) (fine sand and silt in bottom 6")				0.4/24	
25–27	CL	CL; Brown CLAY (micaceous) (medium plasticity) (color gradient to gray with depth) (silt content increasing with depth)	AOI8-BH-22-02-27_20220119			0/5	25
27–29						0.4/1	
29–29	SP	SP; Gray, fine SAND (multicolored gravel) (petroleum odor)	AOI8-BH-22-02-29_20220119			1100/2200	

Well Construction: Tremie Grout; 1" PVC Casing; Hydrated Bentonite Seal

GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-166**
PAGE 2 OF 2

Stantec

DRILLING: STARTED **1/19/22** COMPLETED: **1/25/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55/Geoprobe**
DRILLING METHOD: **HSA/Direct Push Macrocore**
SAMPLING EQUIPMENT: **Dual Tube Liner/Split Spoon**

*NORTHING (ft): **228074.67** *EASTING (ft): **2682583.92**
*GROUND ELEV (ft): **25.5** *TOC ELEV (ft): **25.22**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **42**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **D. Hopkins/A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		SP	SCHIST/MUSCOVITE (crumbling), large cobbles and shards of mica. END direct push. BEGIN Hollow Stem Auger 30' at offset hole.		AOI8-BH-22-02-31_20220125	1.0	6 18 18 26	11.0/7		#1 Sand
32		SP	SP; Weak red-weak reddish gray, fine to medium SAND, some small gravel (saturated, petroleum odor, sheen on water) (brownish yellow saprolite in shoe)				30 26			1" 0.010 PVC Screen (pre-pack)
33						1.3	25 28	112.6		
34		SP	SP; Olive-weak red, very fine SAND, angular gravel (medium size) and claystone (micaceous) (saturated, petroleum odor, sheen)		AOI8-BH-22-02-33_20220125		21 11			
35		SP	SP; Weak red SAND and CLAYSTONE (compact, micaceous) and very small gravel (gray and white quartz)			1.0	13 12	4.1	35	
36		SW	SAPROLITE (slight petroleum odor) (saturated)		AOI8-BH-22-02-35_20220125		16 20			
37		SW	SW; Yellow brown, medium SAND and small rounded GRAVEL, some claystone (micaceous) (wet to moist, very slight petroleum odor)			0.9	17 15	5.4		
38		SW	SW; Yellow brown SAND (micaceous, coarse grain quartz) (moist to saturated, no impacts)				21			
39						1.0	14 11	1.6		
40		SW	SW; Weak red-yellowish brown, very fine SAND (micaceous) with very small quartz gravel gray-weak red claystone (moist to wet) (no impacts)				16 12		40	
41						0.9	16 13	0.3		
42							11			
43										
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GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANITEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-167**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **1/19/22** COMPLETED: **1/25/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55/Geoprobe**
DRILLING METHOD: **HSA/Direct Push Macrocore**
SAMPLING EQUIPMENT: **Split Spoon, Dual Tube Liner**

*NORTHING (ft): **228601.96** *EASTING (ft): **2682508.79**
*GROUND ELEV (ft): **22.5** *TOC ELEV (ft): **22.31**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **38**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **D. Hopkins/A. Hill** CHECKED BY: **J. Kachel**
*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
0–5			APPARENT FILL brown, fine to medium SAND with GRAVEL, brick, glass debris, bottom 1" dark brown SILT (low plasticity) (moist)					0 0		
5–10		CL-ML	CL-ML; Brown SILTY CLAY (low plasticity) (moist) (gradual transition to sandy silt with depth, large cobbles in bottom 1")					0	5	
10–11		SP	SP; Brown SANDY GRAVEL (multicolored) with some silt (very micaceous bottom 2")					0	10	
11–12		SP	SP; Brown, very fine SAND transitioning to gray-brown CLAYEY SILT (micaceous) (tighly compacted)					0		Tremie Grout
12–13		SP	SP; Brown-tan, medium GRAVELLY SAND (multicolored gravel, varied size)					0		
13–15		SP-SM	SP-SM; Gray, very fine SAND with SILT (micaceous)					0		1" PVC Casing
15–16		SP-SM	SP-SM; SAME (saturated) (lenses of brown-tan coarse sand) (silt content increasing with depth)					0.6	15	
16–18		MH	MH; Orange-brown CLAYEY SILT (low plasticity) (micaceous)					0		
18–20		CL	CL; Dark brown CLAY (tightly compacted, low plasticity)					0		
20–21		CL-ML	CL-ML; Orange-brown SILTY CLAY					0 0	20	
21–24		SP	SP; Orange-brown, coarse GRAVELLY SAND (poorly sorted) (gravel of varying size) (crushed/weathered mudstone) some silt					0		Hydrated Bentonite Seal
24–25		GP	GP; Tan SANDY GRAVEL, large cobbles, some silt					0		
25–26		MLS SP	MLS; Brown-dark brown SANDY SILT SP; Dark brown-gray SANDY GRAVEL (multicolored, varying size) with silt.					190	25	#1 Sand
26–27			No Recovery							
27–28			Offset borehole advanced discreetly to 25' to collect samples from 25 - 30' interval.		AOI8-BH-22-03-29_20220119					
28–29			END direct push 30'. BEGIN Hollow Stem Auger 30' at offset hole.		AOI8-BH-22-03-30_20220119					

GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-167**
PAGE 2 OF 2

Stantec

DRILLING: STARTED **1/19/22** COMPLETED: **1/25/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55/Geoprobe**
DRILLING METHOD: **HSA/Direct Push Macrocore**
SAMPLING EQUIPMENT: **Split Spoon, Dual Tube Liner**

*NORTHING (ft): **228601.96** *EASTING (ft): **2682508.79**
*GROUND ELEV (ft): **22.5** *TOC ELEV (ft): **22.31**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **38**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **D. Hopkins/A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID Method	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		SC	SC; GRAVELLY SILT (crushed mudstones) and dark brown-gray coarse sand (petroleum odor)		AOI8-BH-22-03-31_20220125	0.5	6 11 12 10	163		1" 0.010 PVC Screen (pre-pack)
32		SC	SC; Gray to very dark gray CLAYEY SAND with gravel (wet to saturated) (petroleum odor)				10 11 13 15	9.1		
33						0.5				
34		SP	SP; Pale red/gray, weak red, olive, brownish yellow SAND and GRAVEL (moist) (compact)				11 14 13 18	0.3		
35						0.8			35	
36		CH	CH; Yellowish brown to brownish yellow CLAY with sand laminations (high plasticity) (moist to dry)				8 11 14 12	0		
37						0.5				
38		SP	SP; Tan, coarse SAND with lenses of very fine brown sand, some gravel (poorly sorted) (subangular to subrounded quartz). Transitions to orange in bottom 5", silt content increases with depth					0		
39		CL-ML	CL-ML; Orange-brown SILTY CLAY (micaceous) (high plasiticty)							
40		CL-ML	CL-ML; Dark gray to black SILTY CLAY (low plasticity) (bottom 1" contains black to gray, very fine sand, micaceous)						40	
41										
42										
43										
44										
45									45	
46										
47										
48										
49										
50									50	
51										
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59										

GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-168**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **1/26/22** COMPLETED: **1/26/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon**

*NORTHING (ft): **228426.36** *EASTING (ft): **2662396.92**
*GROUND ELEV (ft): **21.7** *TOC ELEV (ft): **21.46**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **41**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
			No Sample							
14		MH	MH; Brown CLAYEY SILT (low plasticity) (silt content decreases with depth and becomes more gray)			1.8	2 5 10 11	0		
16			No Sample							
19		SM	SM; Brown SILTY SAND with large gravels (petroleum odor) (saturated)		AOI8-BH-22-04-20_20220126	1.0	5 10 11 14	672		
21		ML	ML; Brown SILTY SAND with abundant gravel (saturated)		AOI8-BH-22-04-22_20220126	1.0	21 29 15 14	94		
23		SP	SP; Fine SAND with some silt		AOI8-BH-22-04-24_20220126	1.0	11 10 14 17	96		
24		SP	SP; Medium brown SAND with small gravels and some clay		AOI8-BH-22-04-26_20220126	0.5	21 28 30 29	65		
26		SP	SP; SAME becomes more gravelly with depth (larger and more frequent)		AOI8-BH-22-04-28_20220126	1.25	15 16	1472		
28			No Sample							

Well Construction:
- Tremie Grout
- 1" PVC Casing
- Hydrated Bentonite Seal
- #1 Sand
- 1" 0.010 PVC Screen (pre-pack)

GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-168**
PAGE 2 OF 2

Stantec

DRILLING: STARTED **1/26/22** COMPLETED: **1/26/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon**

*NORTHING (ft): **228426.36** *EASTING (ft): **2662396.92**
*GROUND ELEV (ft): **21.7** *TOC ELEV (ft): **21.46**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **41**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
34		GP	GP; GRAVEL with coarse sand and silt, (transitions to coarse gray sand with some gravel with depth) (Abundant large flakes of mica and red weathered rock at nose of spoon)			0.75	8 10 12 7	1.2	35	
36			No Sample							
39		CL-ML	CL-ML; Dark brown SILTY CLAY (high plasticity) transitions to red CLAY with SILT, then gray SILT with abundant mica flakes with depth. Bottom 4" gravel with coarse sand and silt			1.5		0	40	
41										

GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANITEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-169**
PAGE 1 OF 2

Stantec

DRILLING: STARTED **1/26/22** COMPLETED: **1/26/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon**

*NORTHING (ft): **228230.78** *EASTING (ft): **2682357.1**
*GROUND ELEV (ft): **21.6** *TOC ELEV (ft): **21.49**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **39**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
1–4			No Sample							
5–7			APPARENT FILL brown, fine SAND with silt (micaceous), some gravel and debris			0.5	9 11 14 20	0	5	
7–8			No Sample							
8–10		ML	ML; Red CLAYEY SILT (low plasticity) transitions to brown clayey silt with depth (high plasticity)			1.25	2 2 2 5	0	10	Tremie Grout
10–15			No Sample							1" PVC Casing
15–16		CL-ML / SP	CL-ML; SILTY CLAY SP; GRAVELLY SAND (medium), saturated			1.5	8 9 11 10	0.1	15	
16–19		SP	SP; Brown coarse SAND with some gravel, some silt (micaceous) (saturated)				9 11 13 12	0.1		
19–20		SP	SP; Coarse SAND, multicolored, varied size gravel			1.5	14 17 20 24	2	20	
20–22		SP	SP; Brown, medium to coarse GRAVELLY SAND with some silt			1.5	19 28 31 39	2.5		Hydrated Bentonite Seal
22–23			REFUSAL at 23.5' due to large (1-2") gravels. No recovery		AOI8-BH-22-05-22_20220126					#1 Sand
23–25		SP	SP; Brown, medium to coarse SAND, middle 3" green fine sand, bottom 4" large gravel with crushed mudstone and some silt			1.0	50/3	20-350	25	
25–27		SP	SP; Medium GRAVELLY SAND (heavy petroleum odor) bottom 1" heavily compacted gravel		AOI8-BH-22-05-26_20220126			950-1117		
27–28			No Recovery		AOI8-BH-22-05-28_20220126	1.2				
28–29		SP	SP; Brown, coarse GRAVELLY SAND, becoming more gravelly with depth. Bottom 3"							

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-169**
PAGE 2 OF 2

Stantec

DRILLING: STARTED **1/26/22** COMPLETED: **1/26/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon**

*NORTHING (ft): **228230.78** *EASTING (ft): **2682357.1**
*GROUND ELEV (ft): **21.6** *TOC ELEV (ft): **21.49**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **39**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **A. Hill** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		SP	greenish-gray SILT with quartz gravel		AOI8-BH-22-05-30_20220126	1.25		260-1678		1" 0.010 PVC Screen (pre-pack)
32		ML	ML; GRAVELLY SILT with crushed mudstones		AOI8-BH-22-05-32_20220126	1.75		216		
33		ML	ML; Coarse SANDY GRAVEL with some silt. Silt content increases with depth							
34						1.0		190		
35		GP	GP; Multicolored, medium to coarse SAND with multicolored GRAVEL						35	
36						1.0		4		
37		GP	GP; SAME (silt content increasing with depth) (crushed mudstones) (tightly compacted brown CLAY in nose of shoe)							
38						1.5				
39										
40									40	
41										
42										
43										
44										
45									45	
46										
47										
48										
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50									50	
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54										
55									55	
56										
57										
58										
59										

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-170**

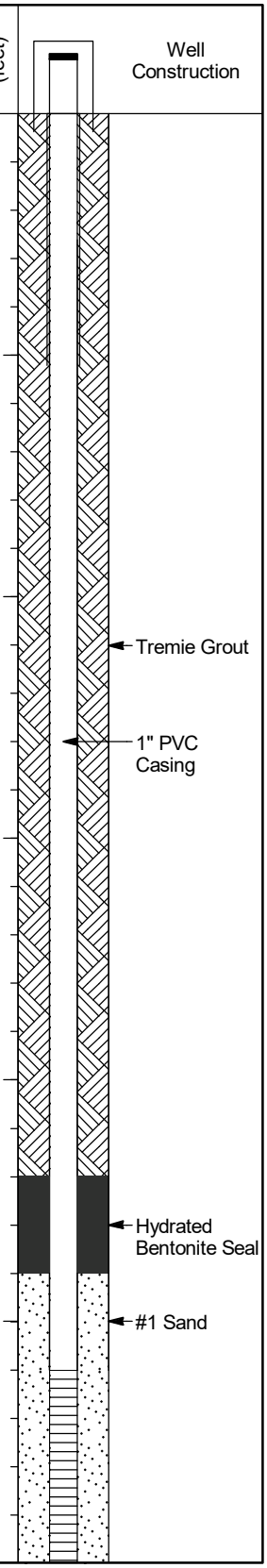
Stantec

DRILLING: STARTED **1/27/22** COMPLETED: **1/27/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon**

*NORTHING (ft): **228452.97** *EASTING (ft): **2682680.85**
*GROUND ELEV (ft): **25.9** *TOC ELEV (ft): **25.72**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **36**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **D. Hopkins** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
			No Sample							
22		CL	CL; Brownish gray-pale gray, very fine SANDY CLAY (moist)		AOI8-BH-22-06-23_20220127	0.6	2 2 2 3	0.5		
23			No Recovery							
24			No Sample							
28		GP	GP; Brown-dark gray-weak red (claystone) small muddy GRAVEL, with clayey, very fine sand (saturated) (strong petroleum odor)		AOI8-BH-22-06-29_20220127	0.7	20 16 15 13 26	514		
29			No Recovery							



GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 6/1/22

PROJECT: **Evergreen Former PES Ball Field Soil**
LOCATION: **AOI 8 - Former Philadelphia Refinery**
PROJECT NUMBER: **213403364**

WELL / PROBEHOLE / BOREHOLE NO: **N-170**
PAGE 2 OF 2

DRILLING: STARTED **1/27/22** COMPLETED: **1/27/22**
INSTALLATION: STARTED COMPLETED:
DRILLING COMPANY: **Parratt Wolff**
DRILLING EQUIPMENT: **Truck-Mounted CME-55**
DRILLING METHOD: **Hollow Stem Auger**
SAMPLING EQUIPMENT: **Split Spoon**

*NORTHING (ft): **228452.97** *EASTING (ft): **2682680.85**
*GROUND ELEV (ft): **25.9** *TOC ELEV (ft): **25.72**
INITIAL DTW (ft): **Not Measured** BOREHOLE DEPTH (ft): **36**
STATIC DTW (ft): **Not Measured** WELL DEPTH (ft):
WELL CASING DIAMETER (in): **1** BOREHOLE DIAMETER (in): **8**
LOGGED BY: **D. Hopkins** CHECKED BY: **J. Kachel**

*COORDINATE SYSTEM AND DATUMS: PA STATE PLANE SOUTH, NAD83; NAVD 88

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (ppm)	Depth (feet)	Well Construction
31		SC	SC; Brown-pale brown-gray-weak red (claystone) CLAYEY very fine SAND and GRAVEL (gravel rounded) (compact) (moist to wet, strong petroleum odor)		AOI8-BH-22-06-31_20220127	0.6	22 30 40	1115		
32		SW	No Recovery				20			
33			SW; Brown-pale brown-dark gray-weak red-gray CLAYEY very fine SAND and GRAVEL (medium to small rounded) (compact)		AOI8-BH-22-06-33_20220127	0.7	13 10 7	63.3		
34		SP	No Recovery				8			
35			SP; Brown-olive-dark gray-weak red CLAYEY fine SAND and GRAVEL (saturated/petroleum odor)		AOI8-BH-22-06-35_20220127	0.7	7 4 4	3.7	35	1" 0.010 PVC Screen (pre-pack)
36			No Recovery							
37										
38										
39										
40									40	
41										
42										
43										
44										
45									45	
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GEO FORM 304 213402602_EVERGREEN_AOI8_BALLFIELD.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 6/1/22

ATTACHMENT B

GPRS Field Map



GPRS

DISCLAIMERS

1. THIS PDF IS AN AUTOMATED OUTPUT CREATED DIRECTLY FROM DATA COLLECTED IN THE FIELD. IT IS INTENDED TO DOCUMENT MARKINGS AND COMMENTS COLLECTED BY GPRS, LLC. THE FIELD FINDINGS MAY BE CORRECTED AND/OR ADDITIONAL DELIVERABLES CREATED AFTER THE DATA IS FURTHER REVIEWED.
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6. PRIVATE UTILITY LOCATING IS NEVER A REPLACEMENT FOR ONE CALL/811 SERVICES. STATE LAW REQUIRES 811 TO BE CALLED PRIOR TO ANY AND ALL EXCAVATION ACTIVITIES.

LEGEND

- ELECTRICAL
- SANITARY
- UNKNOWN

0' 50' 100' 150' 200'

811 Know what's below. Call before you dig.

GPRS IS NOT AFFILIATED WITH 811 BUT DOES RECOMMEND THAT THE SERVICE IS USED ON EVERY PROJECT IN ADDITION TO OUR OWN. SEE NOTE #6 ABOVE.

FOR INFORMATION ONLY

GPRS FINDINGS MAP

PREPARED FOR:
STANTEC

LOCATION:
3144 PASSYUNK AVE
PHILADELPHIA, PA

PROJECT MANAGER:
BRIAN GIFFORD
BRIAN.GIFFORD@GPRSINC.COM

DATE	2021 DEC 13		
DRAWING NO.	1	REV.	0

316301

- AIR_COMPRESSOR
- AIR_CONTINUES
- AIR_EOI
- AIR_MANHOLE
- AIR_MISC
- AIR_PUMP
- AIR_RISER
- CHEM_AST
- CHEM_CONTINUES
- CHEM_EOI
- CHEM_MANHOLE
- CHEM_MISC
- CHEM_PUMP
- CHEM_TANK
- CHEM_VALVE
- COMM_BOX
- COMM_CAMERA
- COMM_CONTINUES
- COMM_EOI
- COMM_MANHOLE
- COMM_MISC
- COMM_PEDESTAL
- COMM_POLE
- COMM_VAULT
- ELEC_BOX
- ELEC_CABINET
- ELEC_CONTINUES
- ELEC_EOI
- ELEC_EQUIPMENT
- ELEC_LANDSCAPELIGHT
- ELEC_MANHOLE
- ELEC_METER
- ELEC_MISC
- ELEC_PANEL
- ELEC_POWERPOLE
- ELEC_SIGN
- ELEC_SITELIGHT
- ELEC_TRANSFORMER
- ELEC_UTILITYPOLE
- ELEC_VAULT
- FIRE_BACKFLOWPREVENTOR
- FIRE_CONTINUES
- FIRE_EOI
- FIRE_HYDRANT
- FIRE_MANHOLE
- FIRE_METER
- FIRE_MISC
- FIRE_POSTINDICATORVALVE
- FIRE_RISER
- FIRE_VALVE
- FUEL_AST
- FUEL_CONTINUES
- FUEL_EOI
- FUEL_MANHOLE
- FUEL_MISC
- FUEL_PUMP
- FUEL_RISER
- FUEL_UST
- FUEL_VALVE
- FUEL_VAULT
- FUEL_VENT
- GAS_AST
- GAS_CONTINUES
- GAS_EOI
- GAS_MANHOLE
- GAS_METER
- GAS_MISC
- GAS_PUMP
- GAS_RISER
- GAS_UST
- GAS_VALVE
- GAS_VAULT
- GAS_VENT
- IRR_BACKFLOWPREVENTOR
- IRR_CONTINUES
- IRR_CONTROL VALVE
- IRR_EOI
- IRR_MISC
- IRR_RISER
- IRR_SPRINKLER
- MISC_CONTINUES
- MISC_DEPTH
- MISC_EOI
- MISC_MANHOLE
- MISC_POINT
- MISC_VALVE
- OIL_CONTINUES
- OIL_EOI
- OIL_MANHOLE
- OIL_MISC
- OIL_PUMP
- OIL_RISER
- OIL_TANK
- OIL_UST
- OIL_VALVE
- OIL_VAULT
- OIL_VENT
- SAN_CLEANOUT
- SAN_CONTINUES
- SAN_EOI
- SAN_GREASETRAP
- SAN_INVERT
- SAN_LIFTSTATION
- SAN_MANHOLE
- SAN_MARKER
- SAN_MISC
- SAN_SEPTICTANK
- SAN_VAULT
- SAN_VENT
- STEAM_CONTINUES
- STEAM_EOI
- STEAM_MANHOLE
- STEAM_MISC
- STEAM_VALVE
- STRM_CATCHBASINROUND
- STRM_CATCHBASINSQUARE
- STRM_CLEANOUT
- STRM_CONTINUES
- STRM_CURBINLET
- STRM_ENDPIPE
- STRM_EOI
- STRM_LIFTSTATION
- STRM_MANHOLE
- STRM_MISC
- STRM_ROOFDRAIN
- STRM_TRENCHDRAIN
- STRM_UST
- STRM_VAULT
- STRM_VENT
- STRM_YARDBASIN
- TRAF_BOX
- TRAF_CABINET
- TRAF_CONTINUES
- TRAF_EOI
- TRAF_MANHOLE
- TRAF_MISC
- TRAF_PARKINGMETER
- TRAF_SIGN
- TRAF_SIGNAL
- TRAF_STREETLIGHT
- TREE_CONIFEROUS
- TREE_DECIDUOUS
- UNKN_CONTINUES
- UNKN_EOI
- UNKN_MANHOLE
- UNKN_MISC
- UNKN_VALVE
- WTR_BACKFLOWPREVENTOR
- WTR_CONTINUES
- WTR_EOI
- WTR_HYDRANT
- WTR_MANHOLE
- WTR_METER
- WTR_MISC
- WTR_POSTINDICATORVALVE
- WTR_RISER
- WTR_VALVE
- WTR_WELLHEAD
- BUILDING CORNER
- FLAGPOLE
- GRAVE
- GRAVE
- HEADSTONE NO GRAVE
- MAILBOX
- POST
- SATELLITE
- SIGN
- SOIL BORING MARKER
- SOIL BORING MARKER

GPRS

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LEGEND

- ELECTRICAL
- SANITARY
- UNKNOWN

811 Know what's below. Call before you dig.

GPRS IS NOT AFFILIATED WITH 811 BUT DOES RECOMMEND THAT THE SERVICE IS USED ON EVERY PROJECT IN ADDITION TO OUR OWN. SEE NOTE #6 ABOVE.

FOR INFORMATION ONLY

GPRS FINDINGS MAP

PREPARED FOR:
STANTEC

LOCATION:
3144 PASSYUNK AVE
PHILADELPHIA, PA

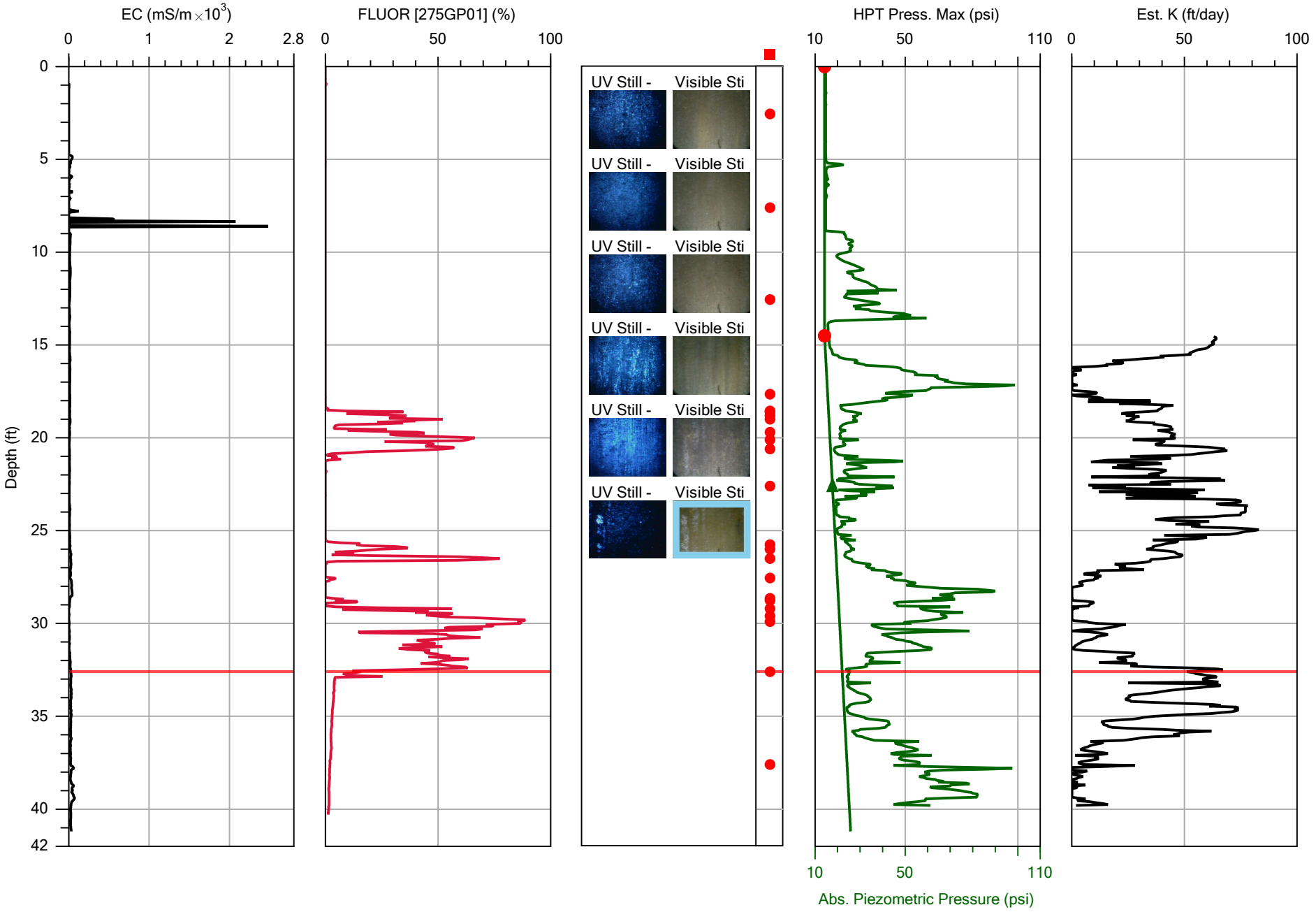
PROJECT MANAGER:
BRIAN GIFFORD
BRIAN.GIFFORD@GPRSINC.COM

DATE	2021 DEC 13		
DRAWING NO.	2	REV.	0

316301

ATTACHMENT C

OIHPT-UV Electronic Boring Logs



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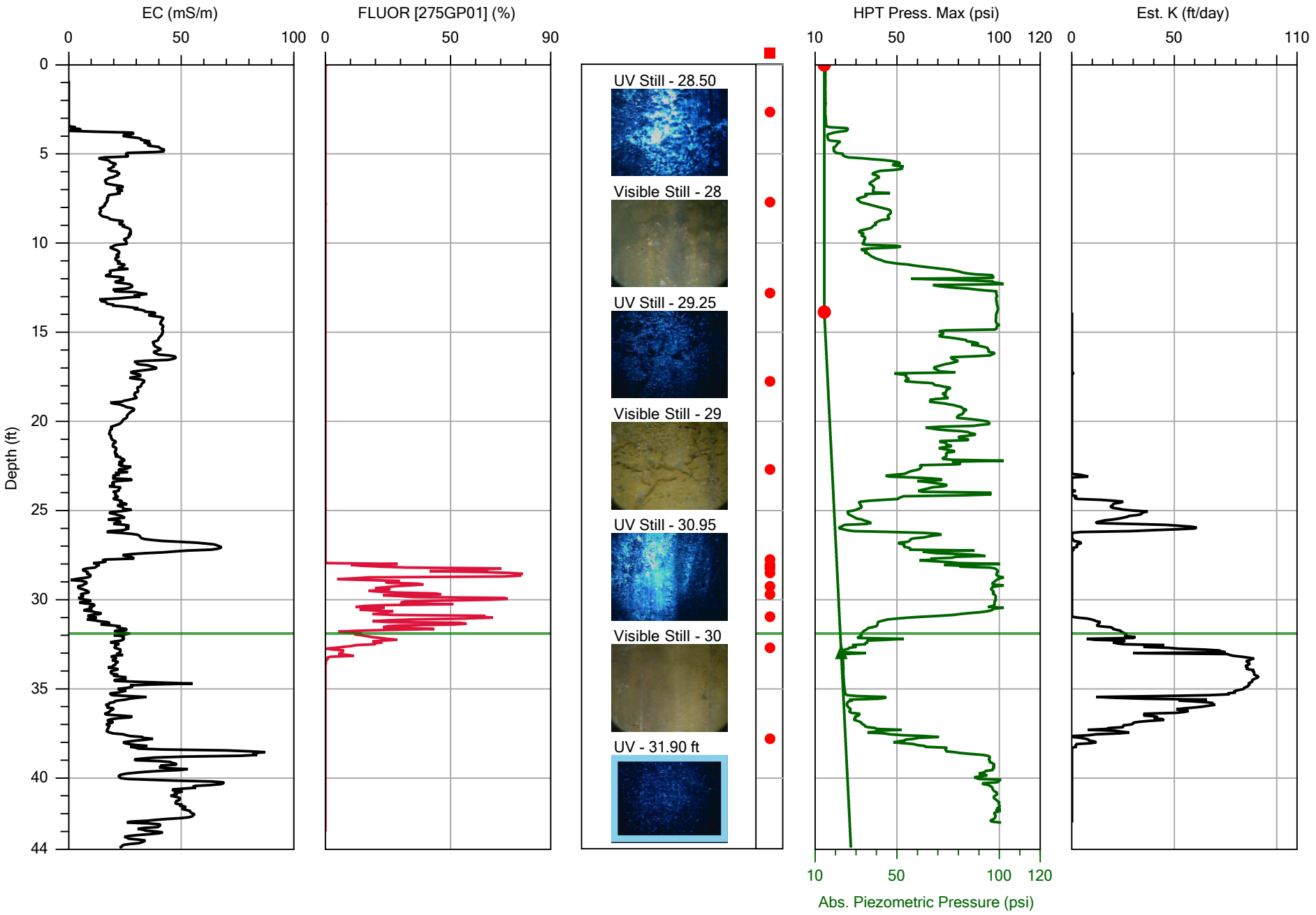
Project ID: 21701		Client: Stantec	Location: PES



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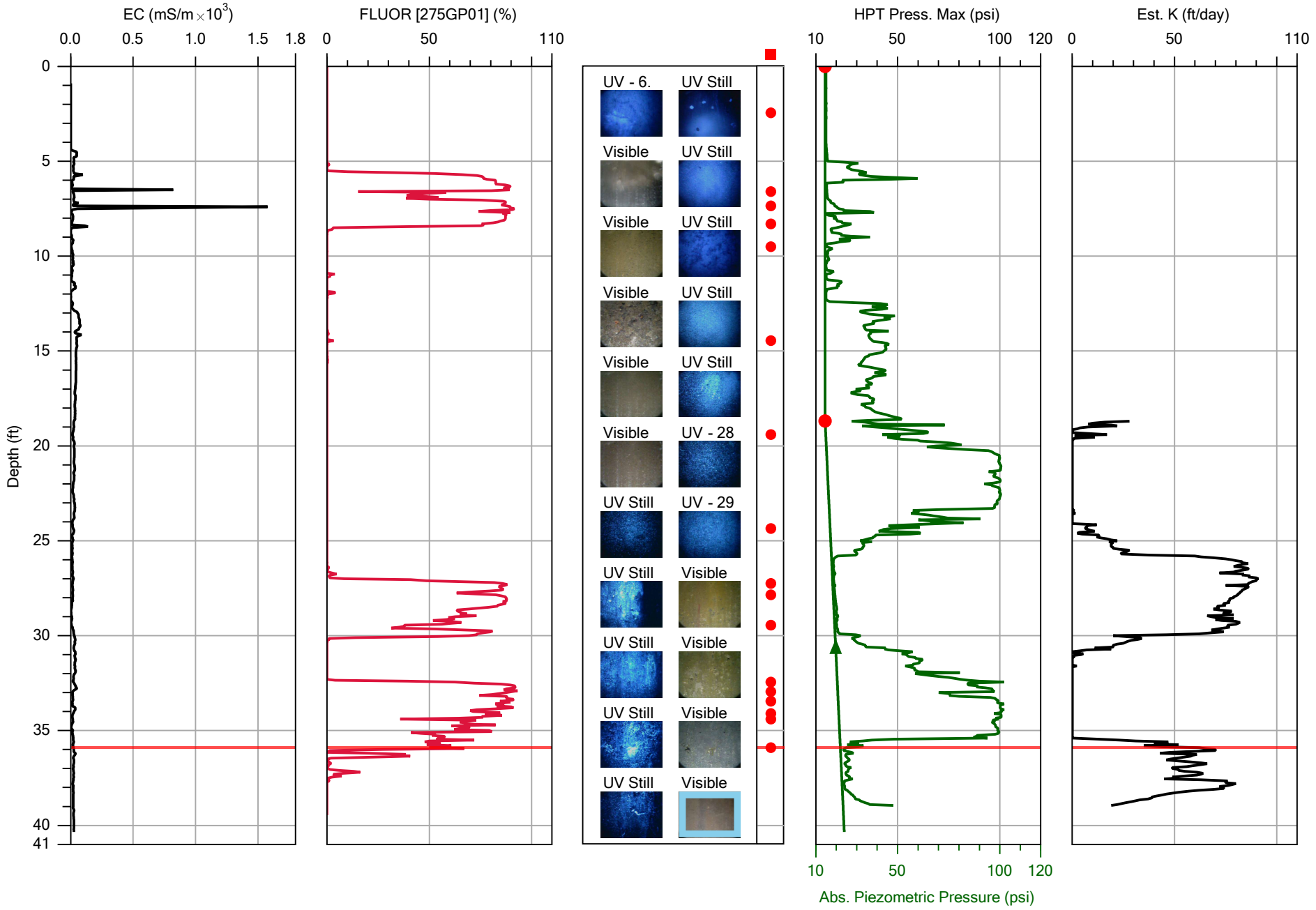

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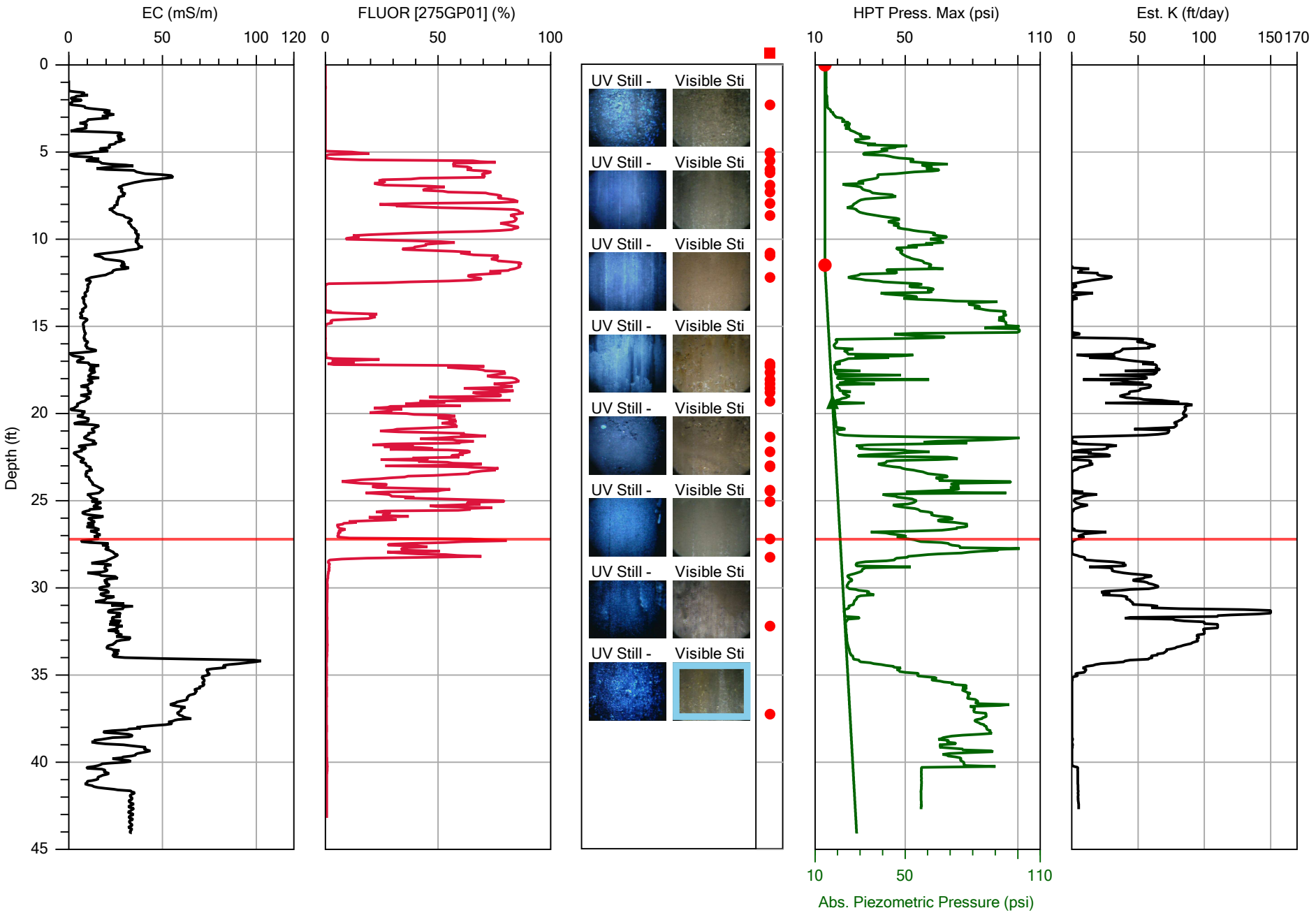

Direct Image® By Geoprobe Systems®

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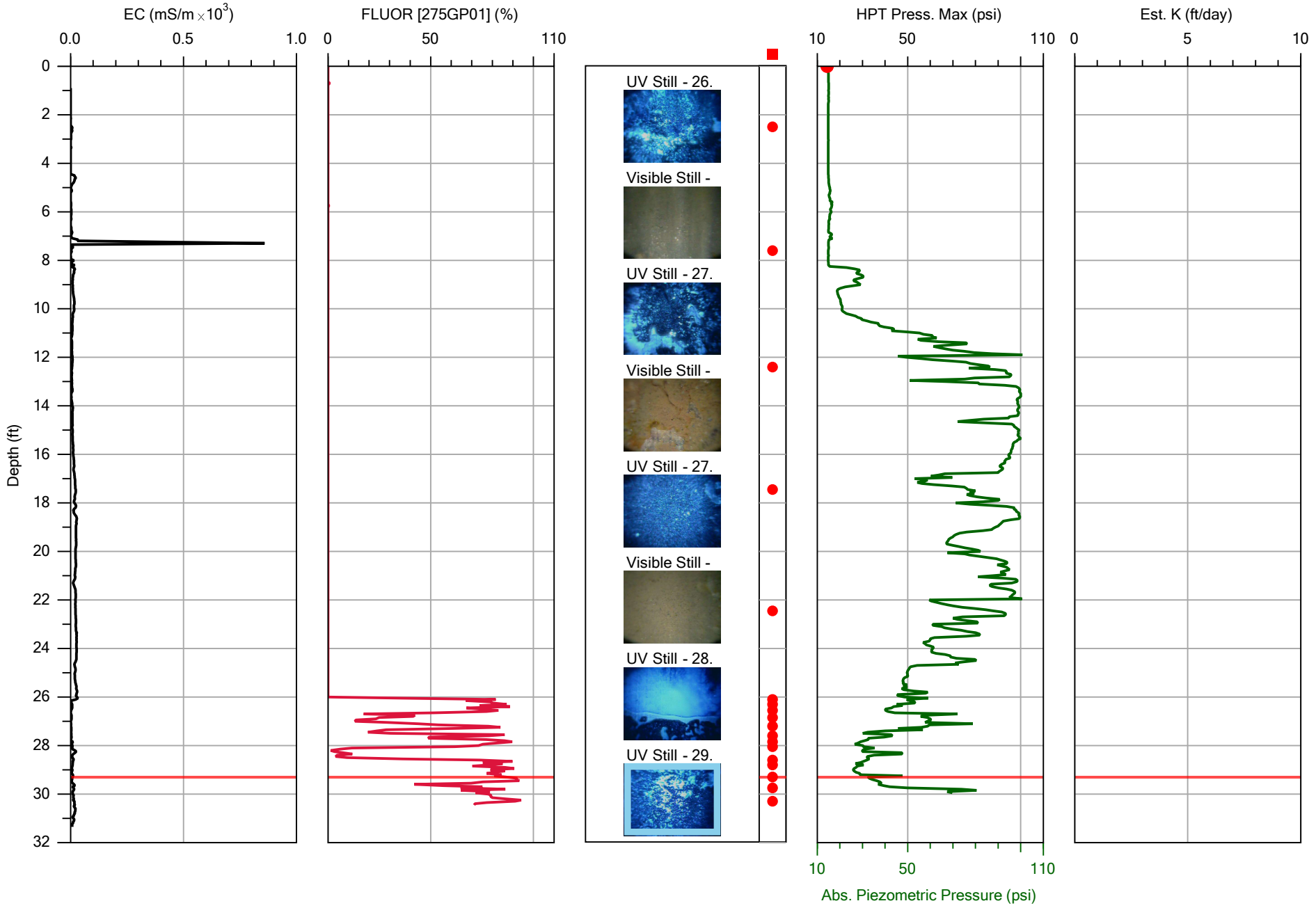
Project ID: 21701	Client: Stantec	Location: PES



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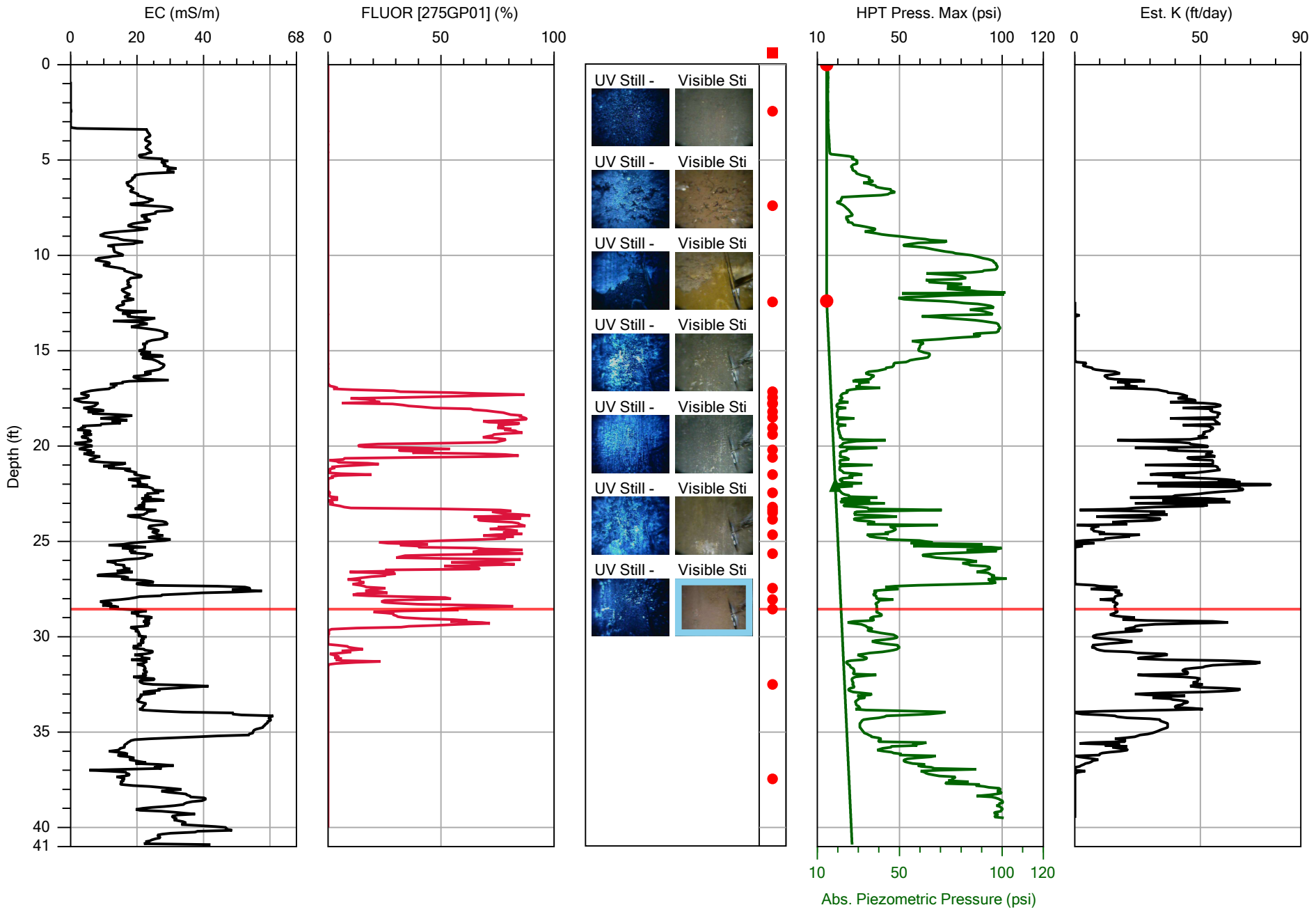

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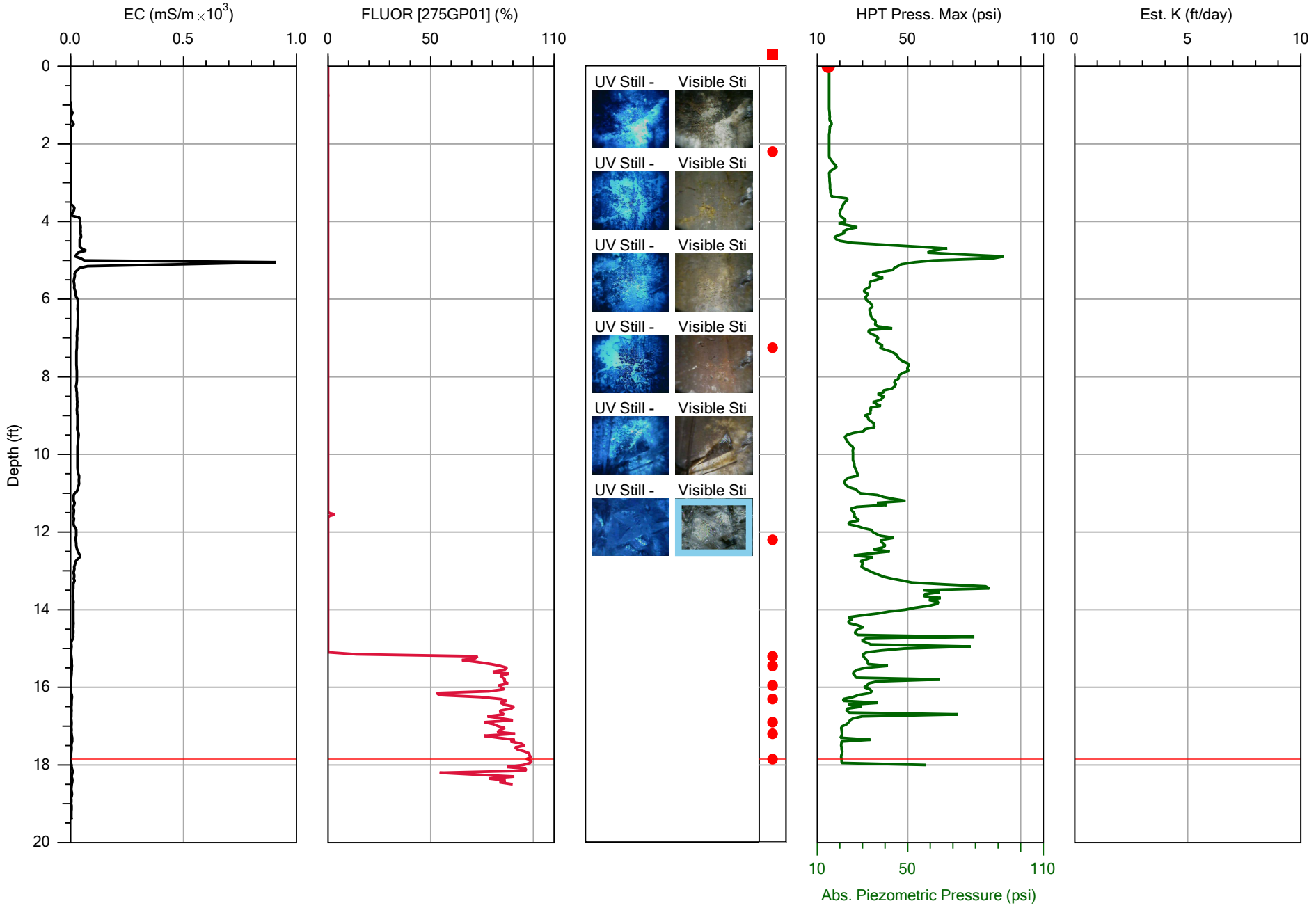

Direct Image® By Geoprobe Systems®

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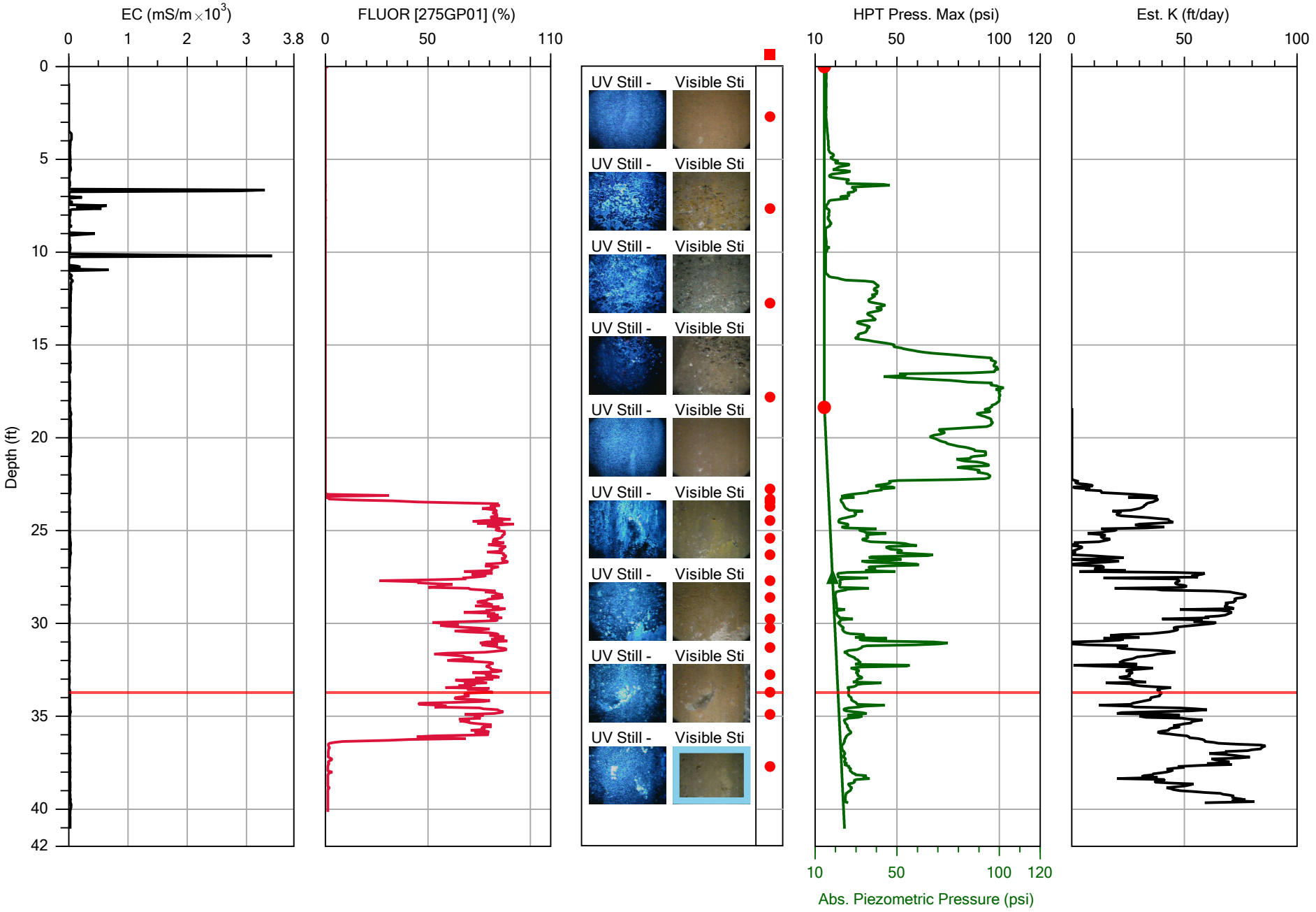
Project ID: 21701	Client: Stantec	Location: PES



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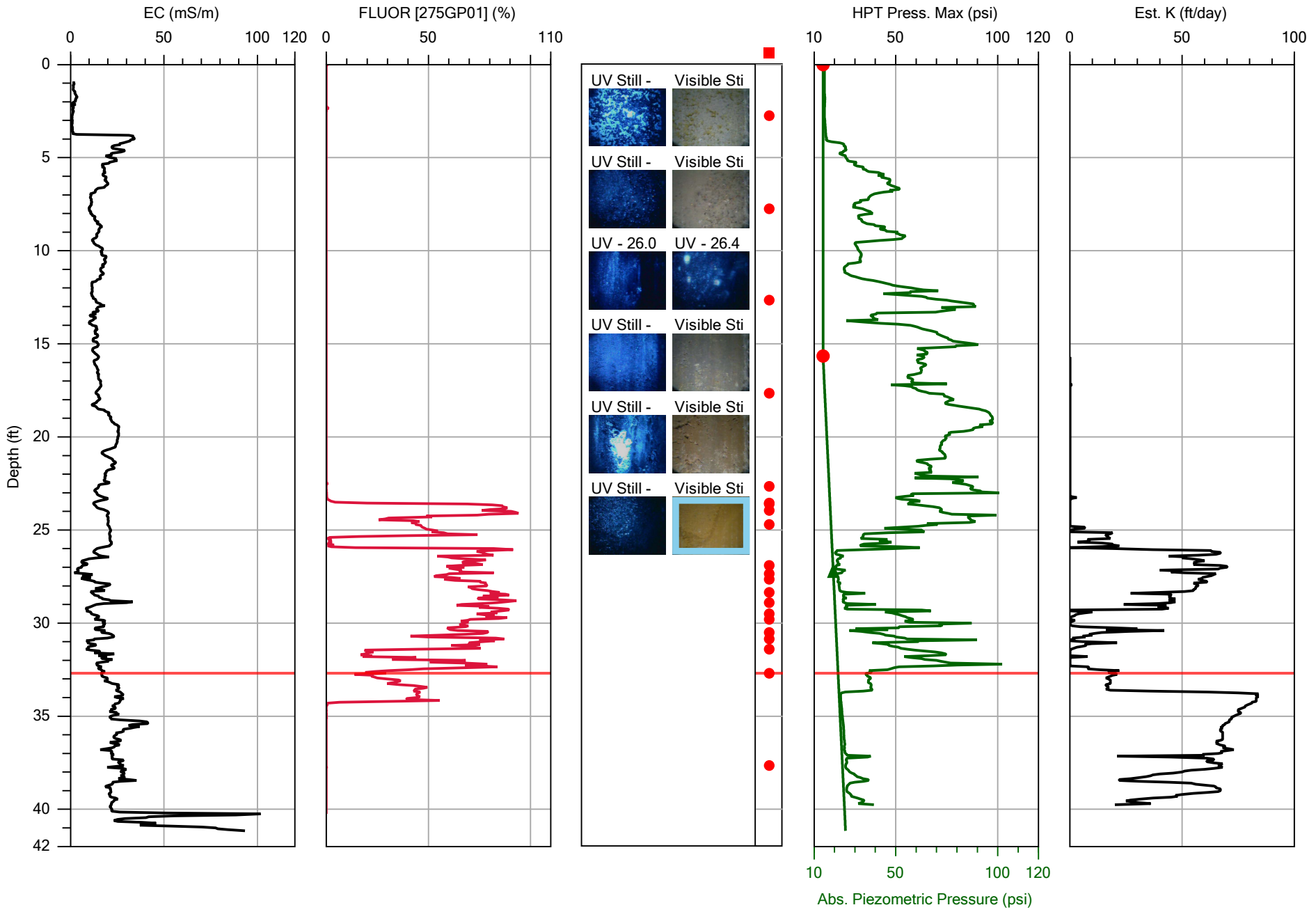

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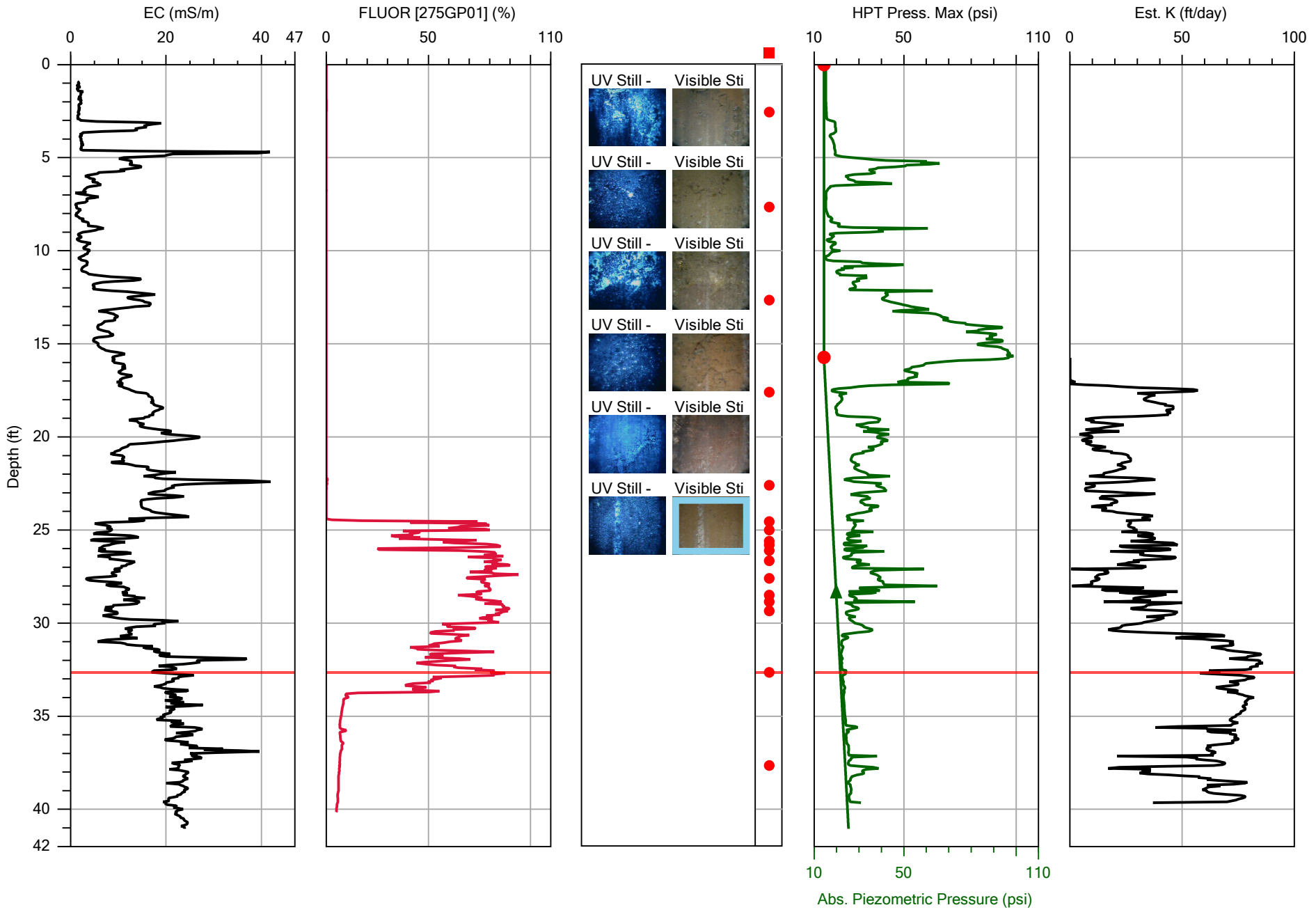
Project ID: 21701	Client: Stantec	Location: PES



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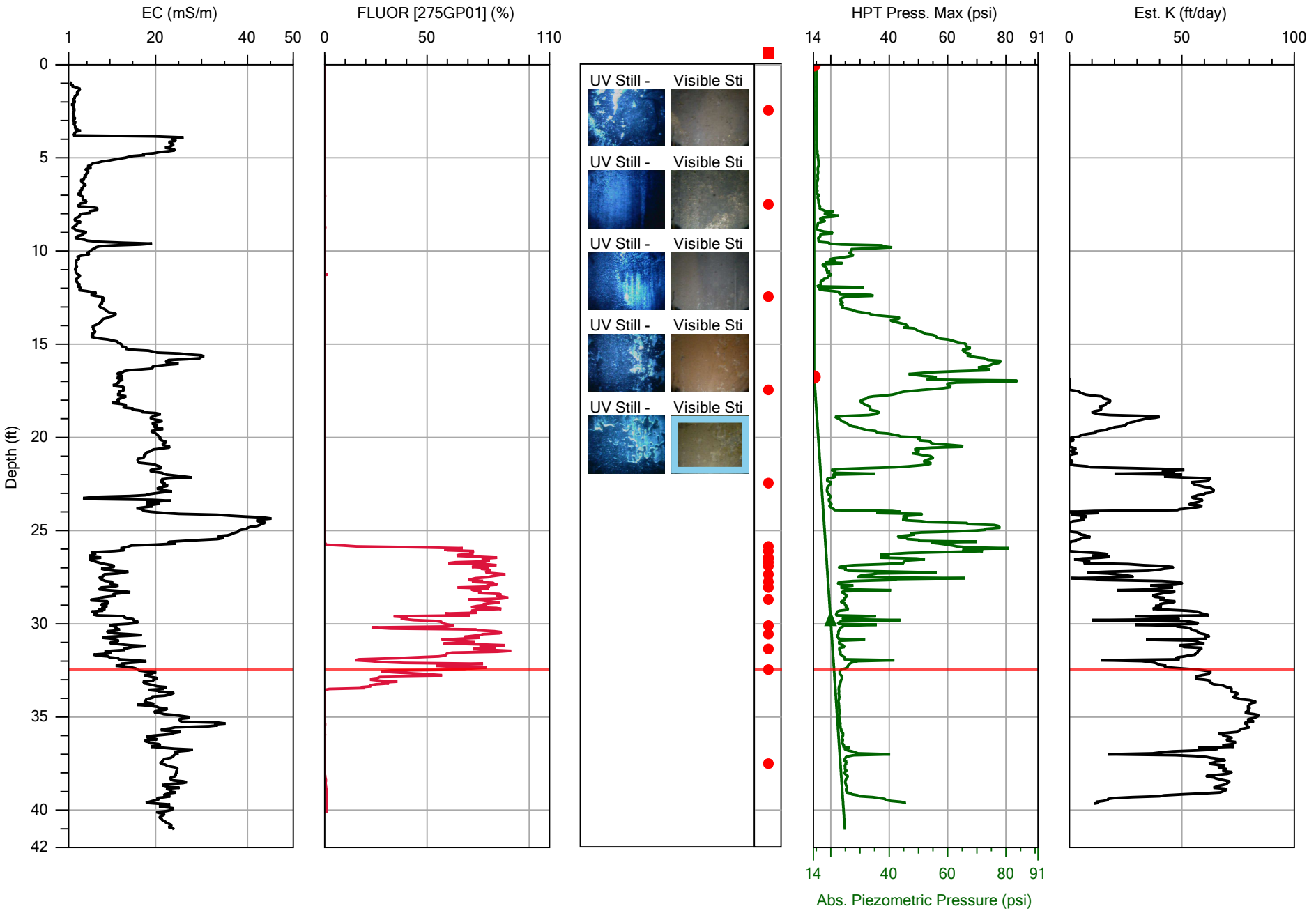

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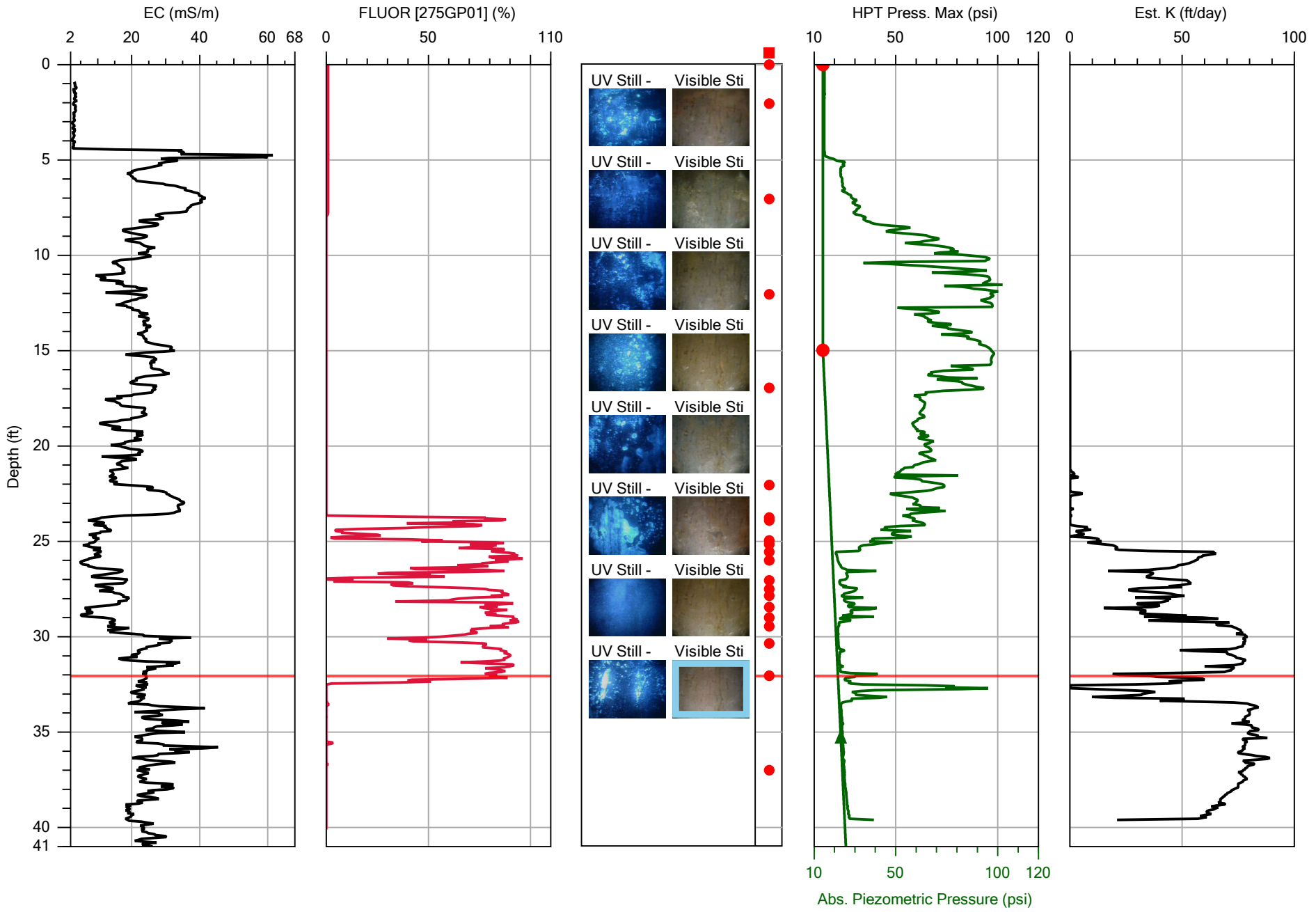

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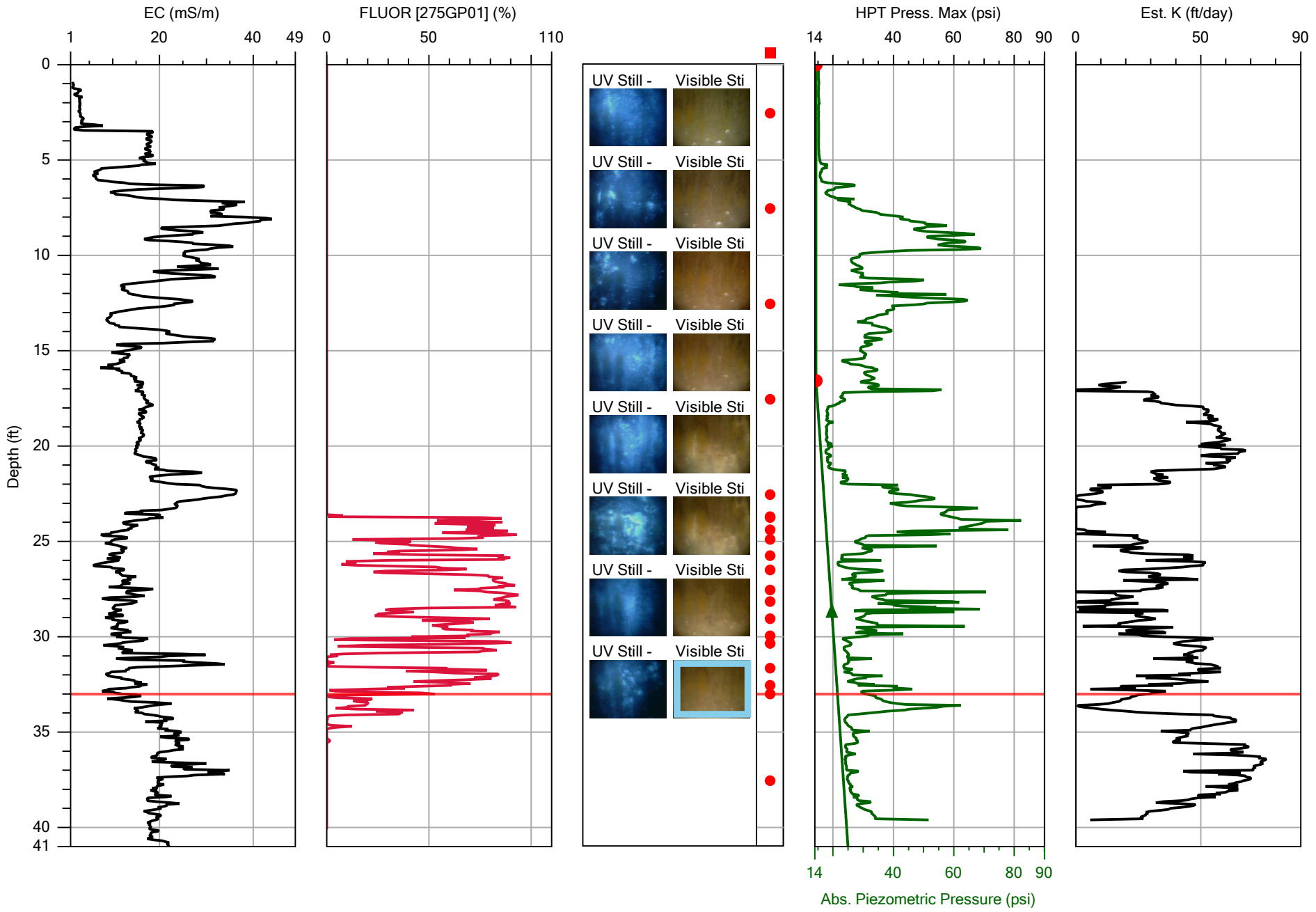

Direct Image® By Geoprobe Systems®

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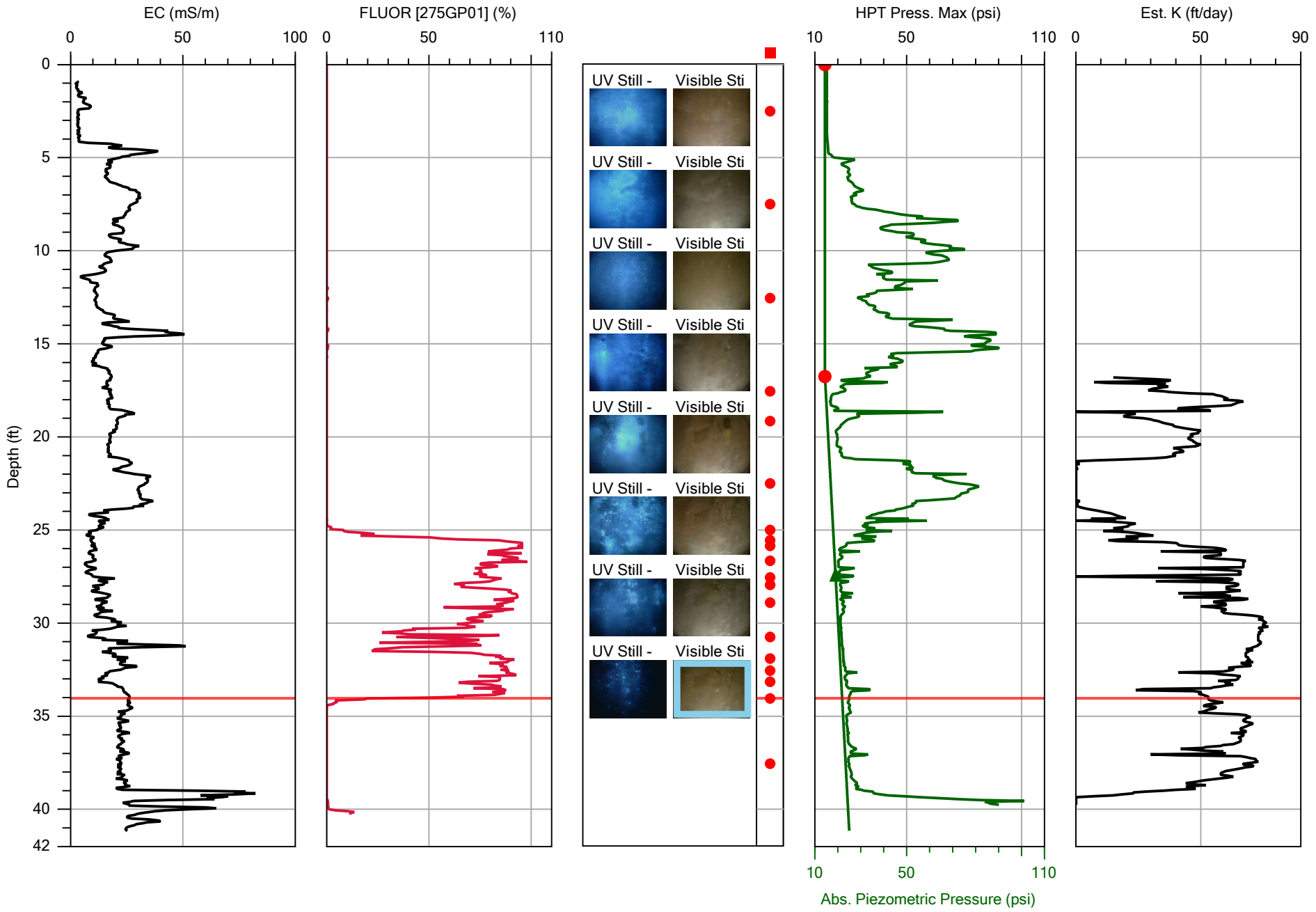

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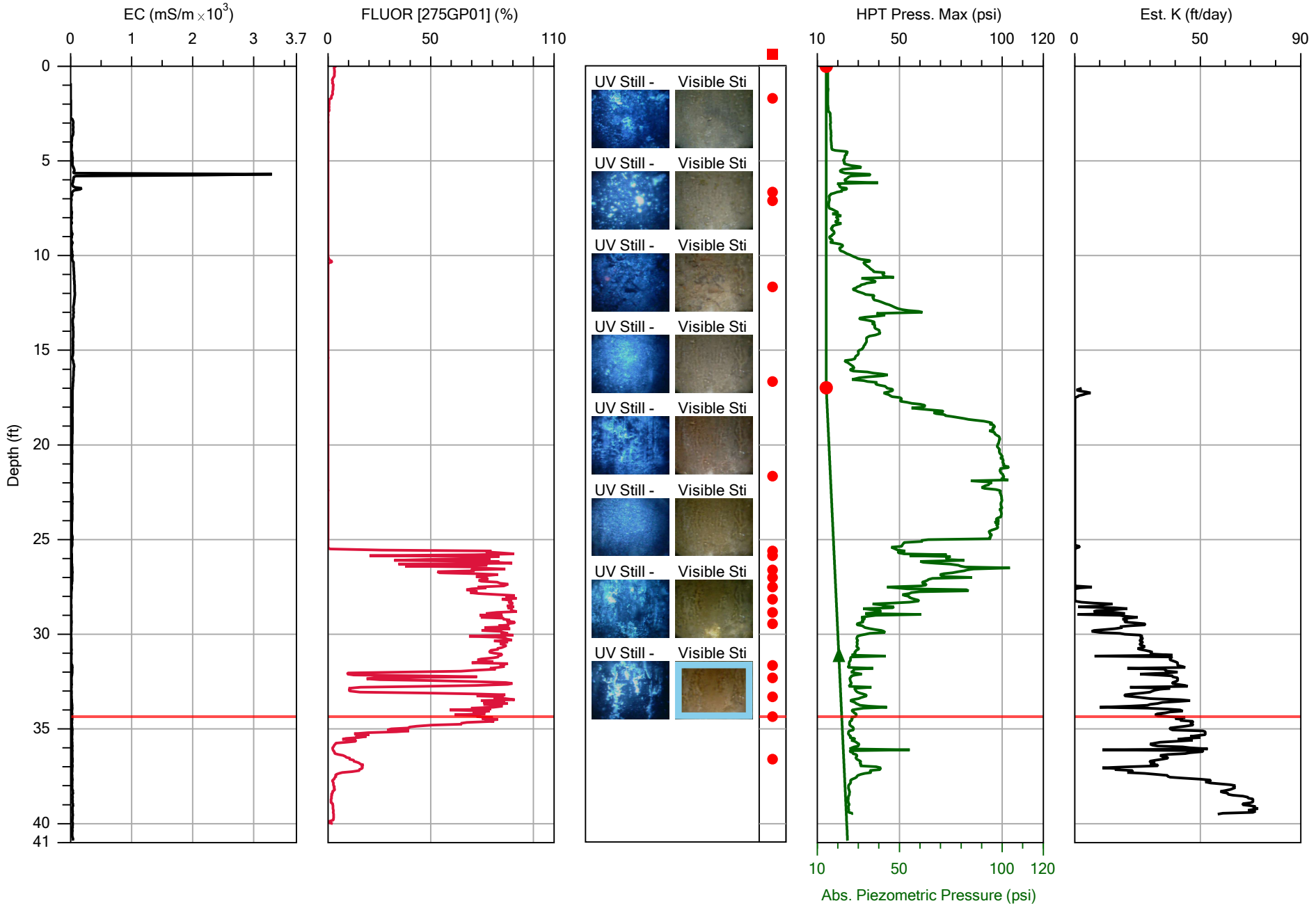

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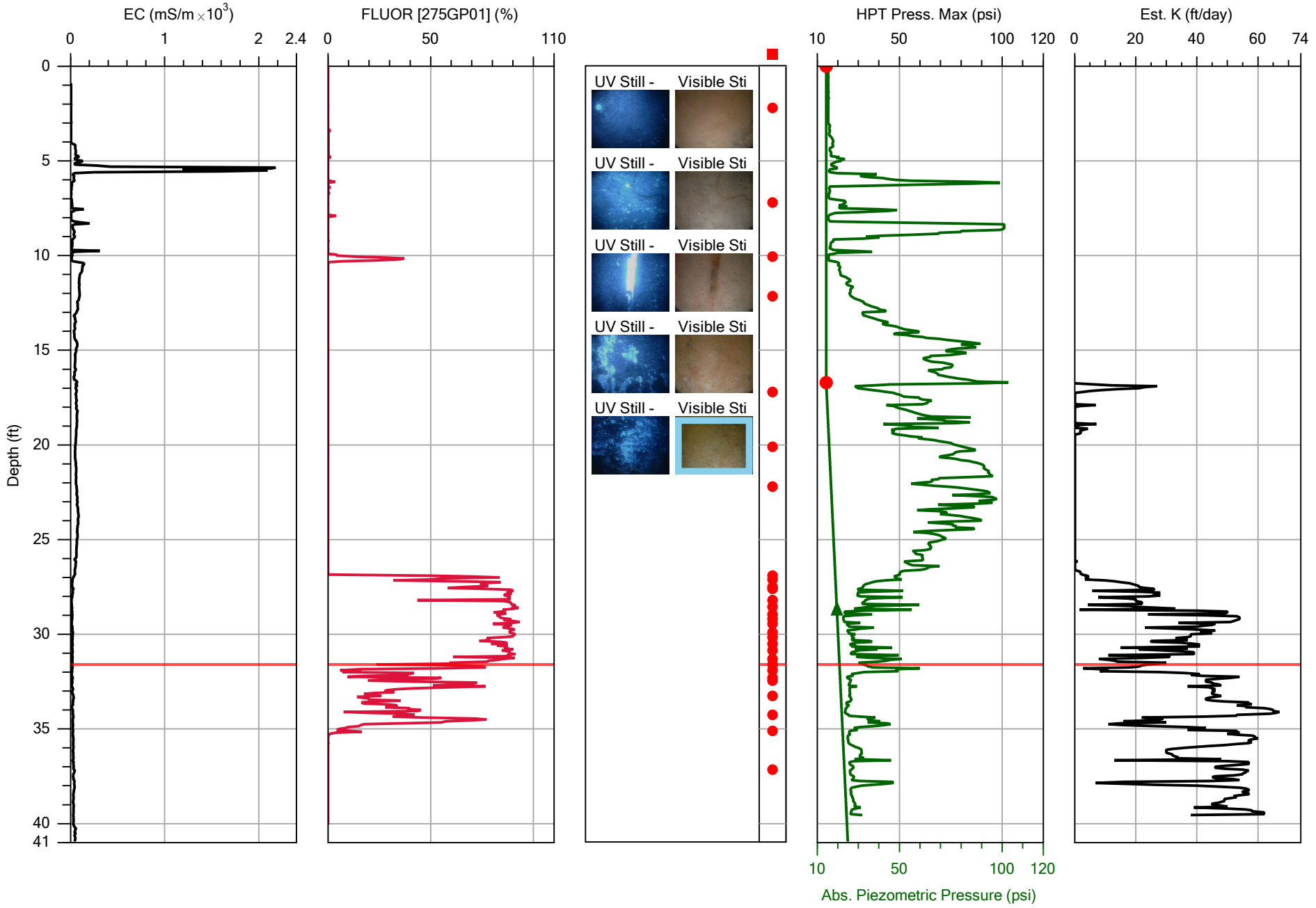

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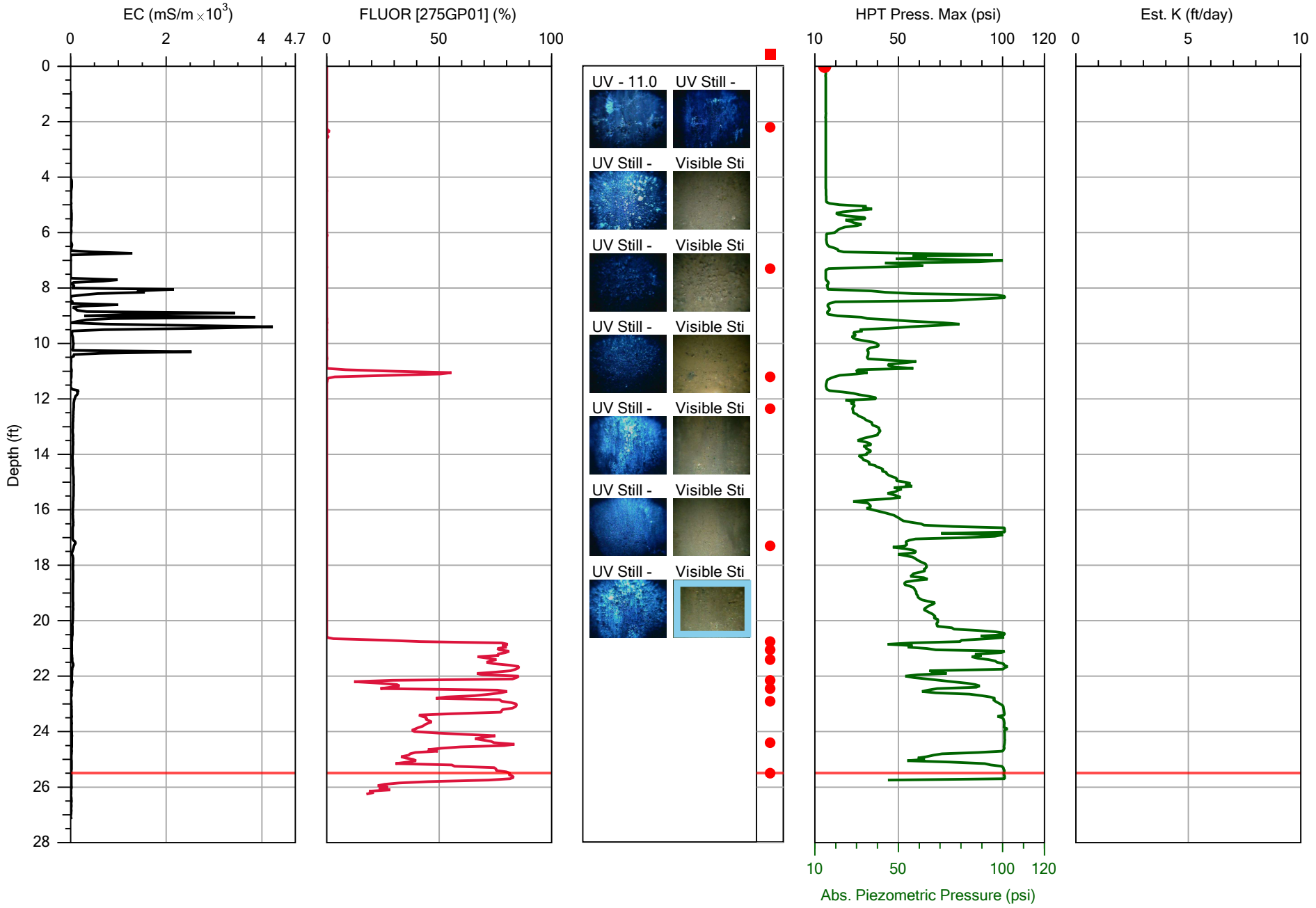

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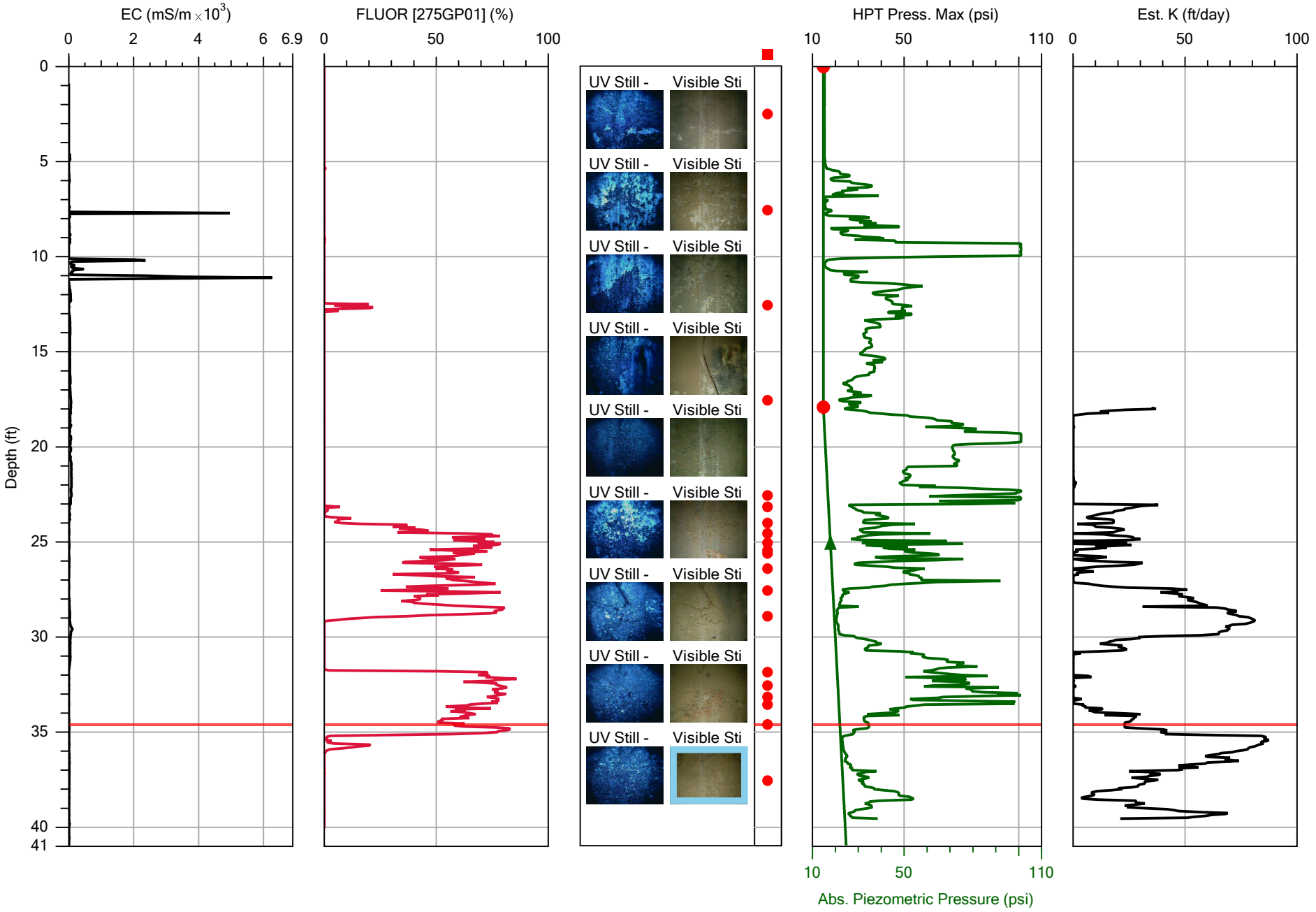

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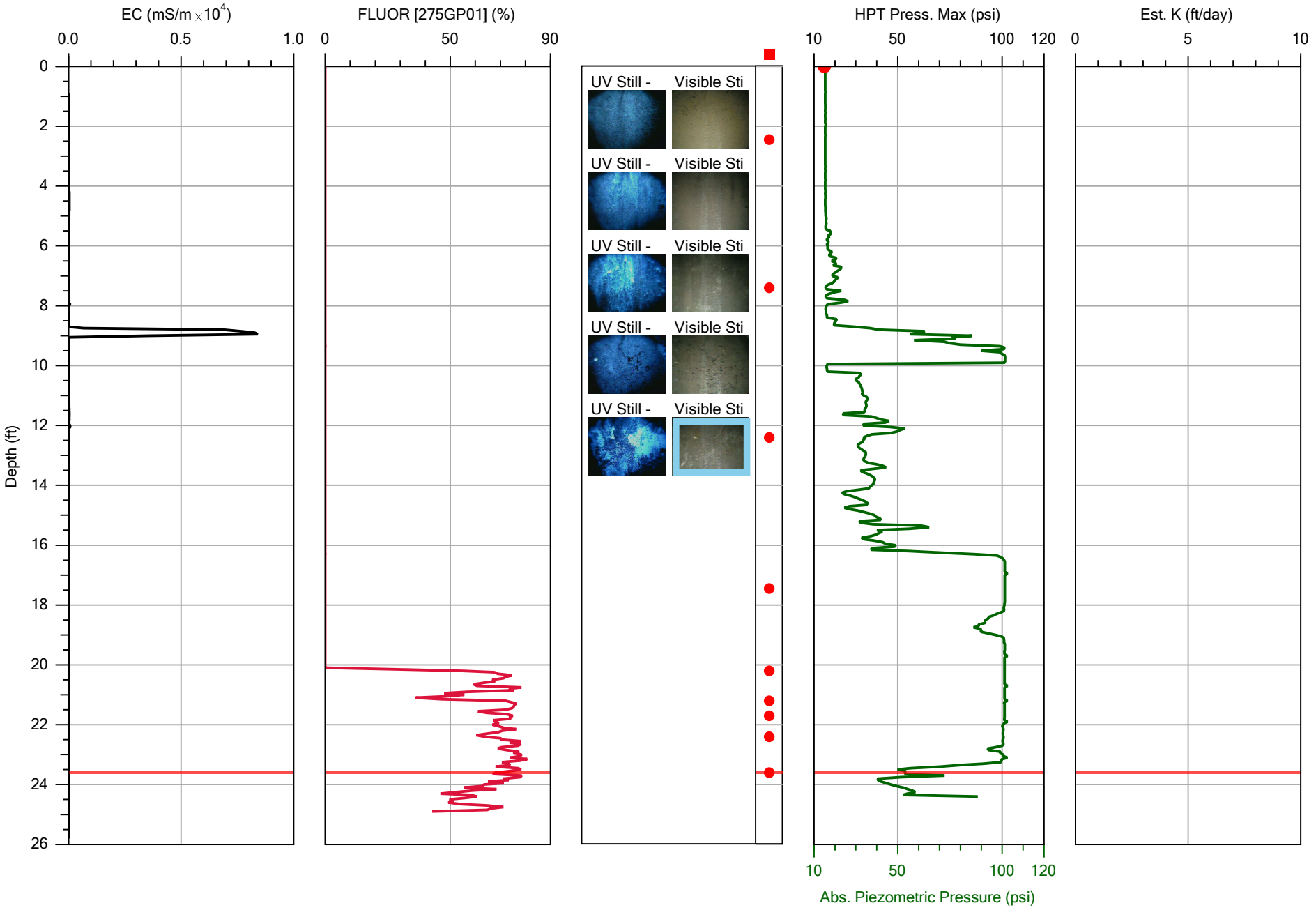

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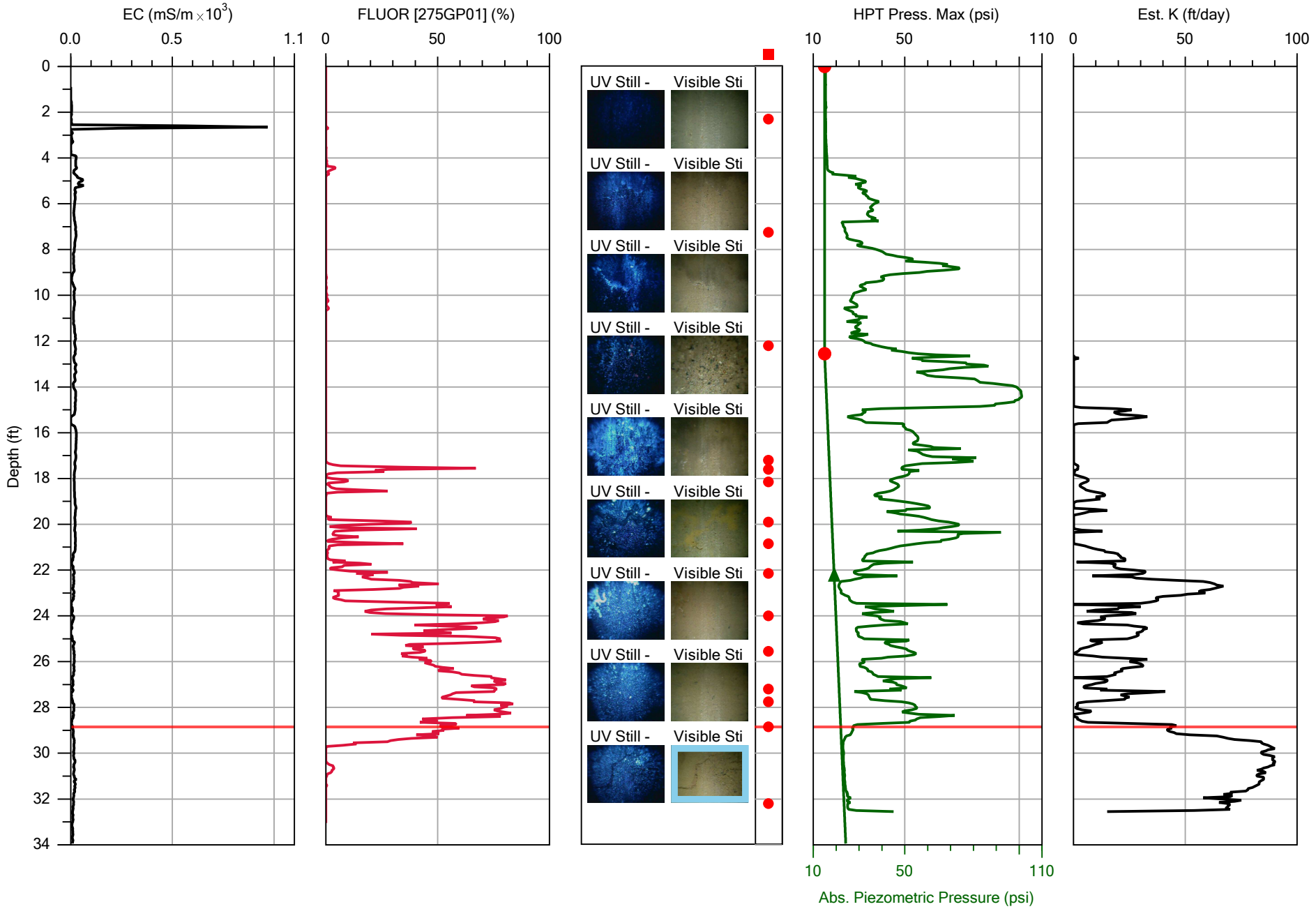

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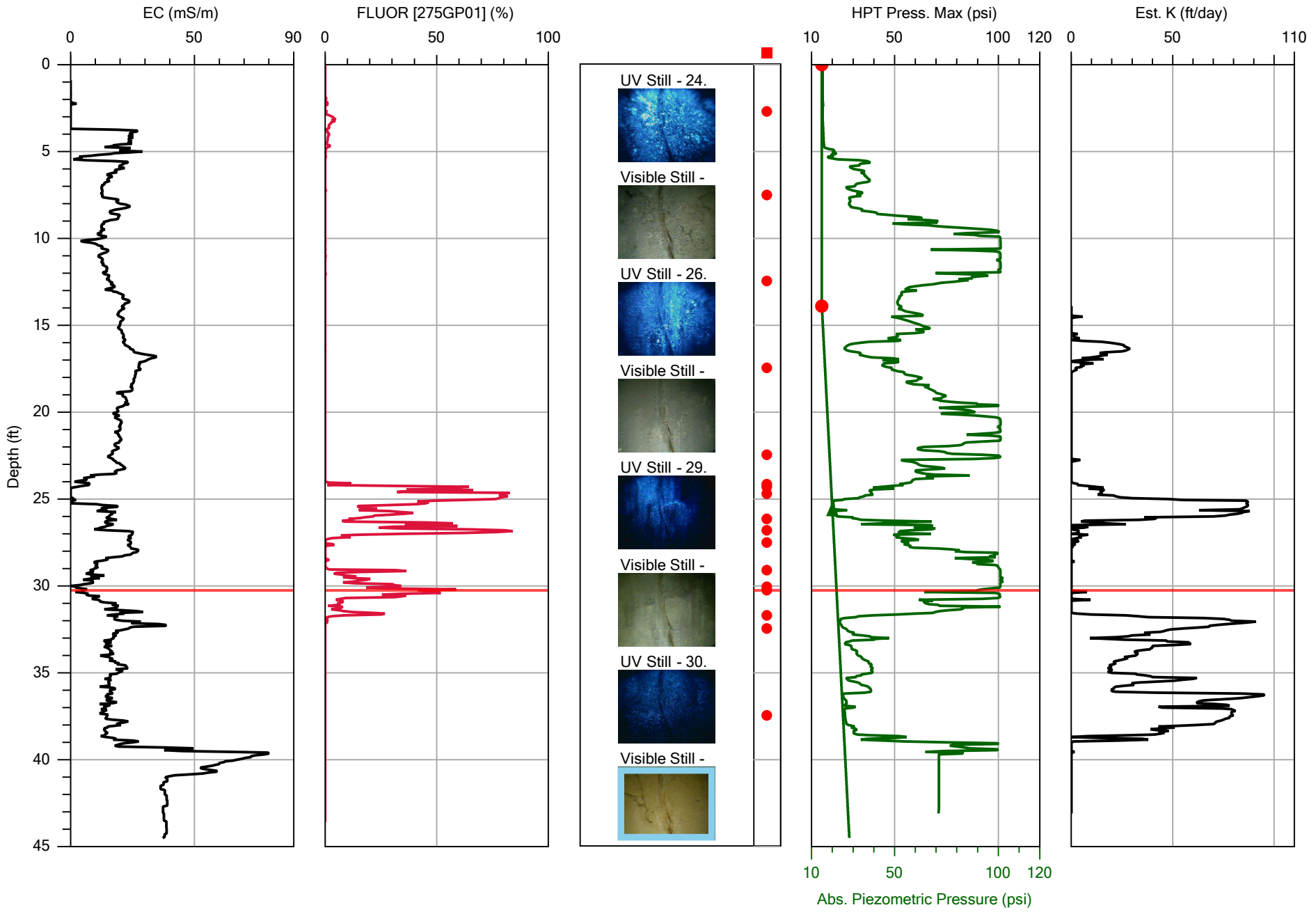
Project ID: 21701	Client: Stantec	Location: PES



Direct Image® By Geoprobe Systems®

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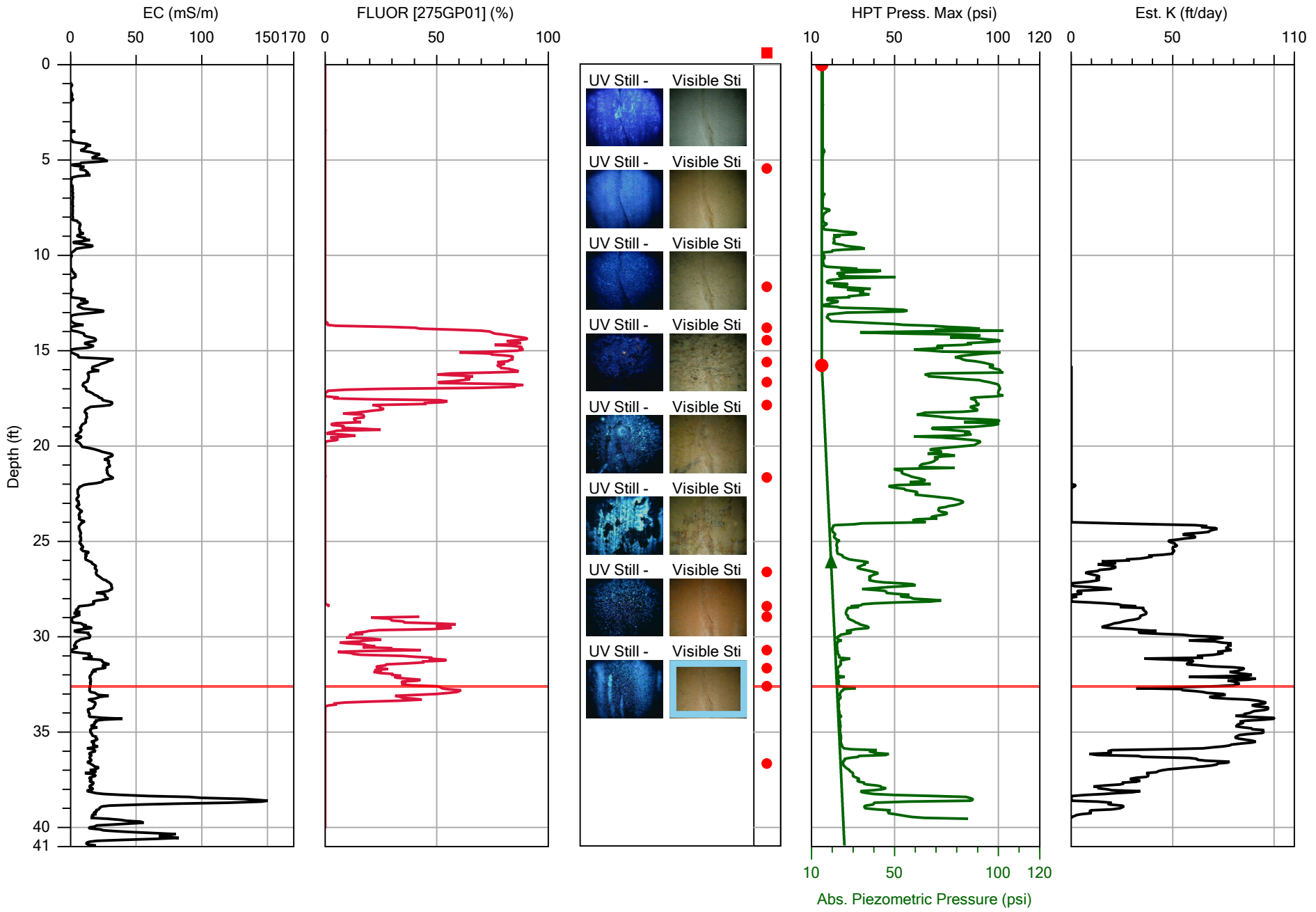

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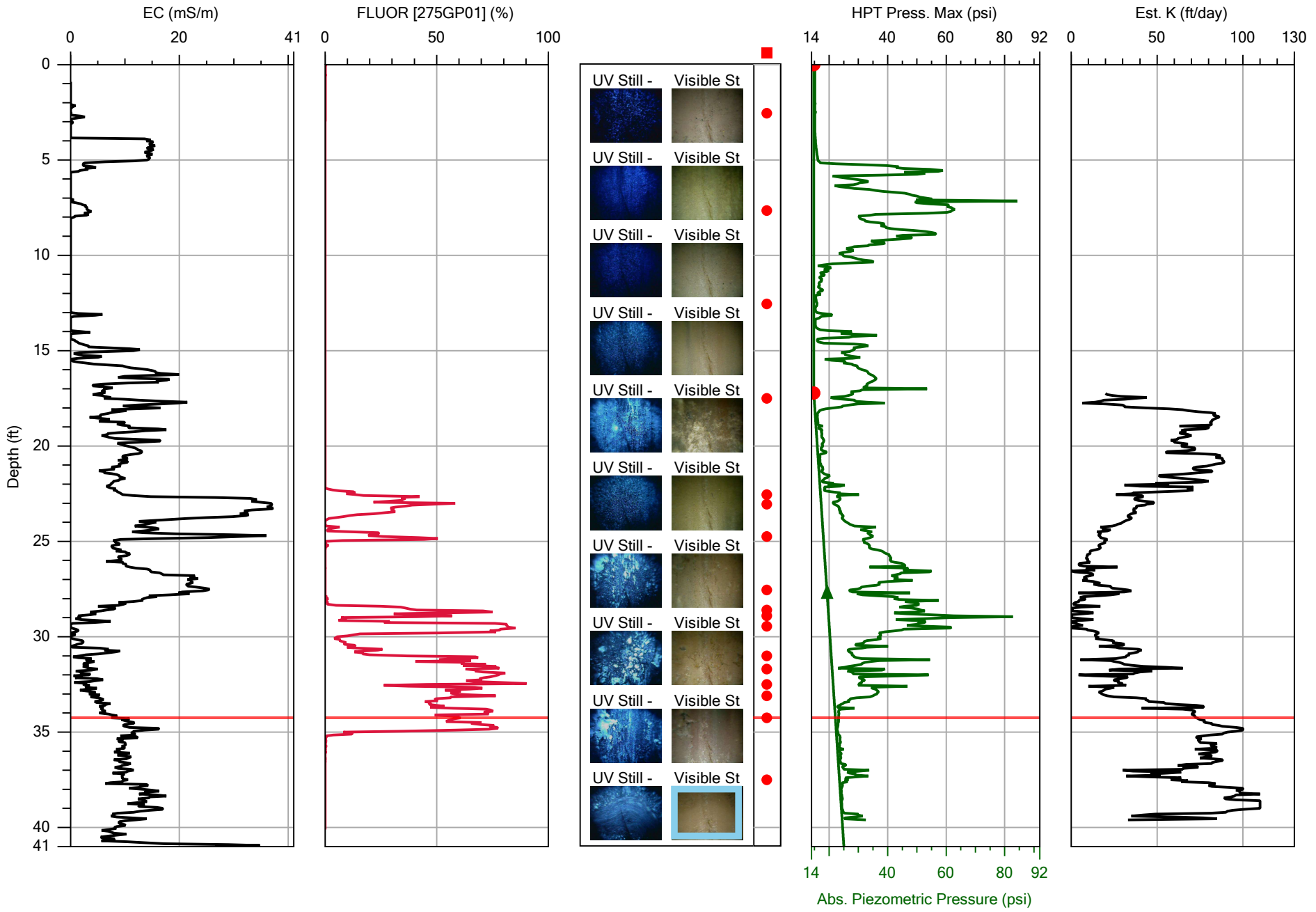

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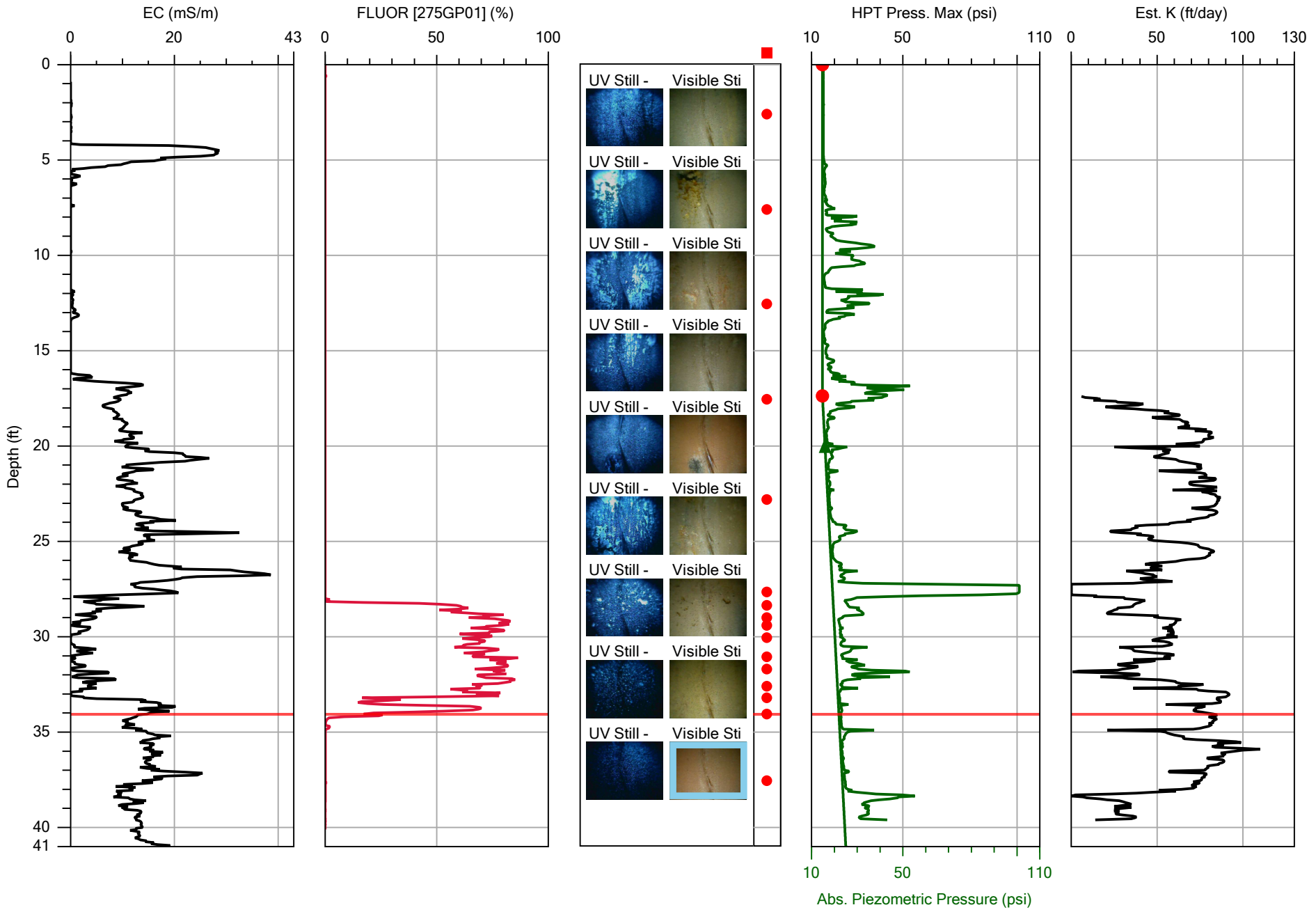
Project ID: 21701	Client: Stantec	Location: PES



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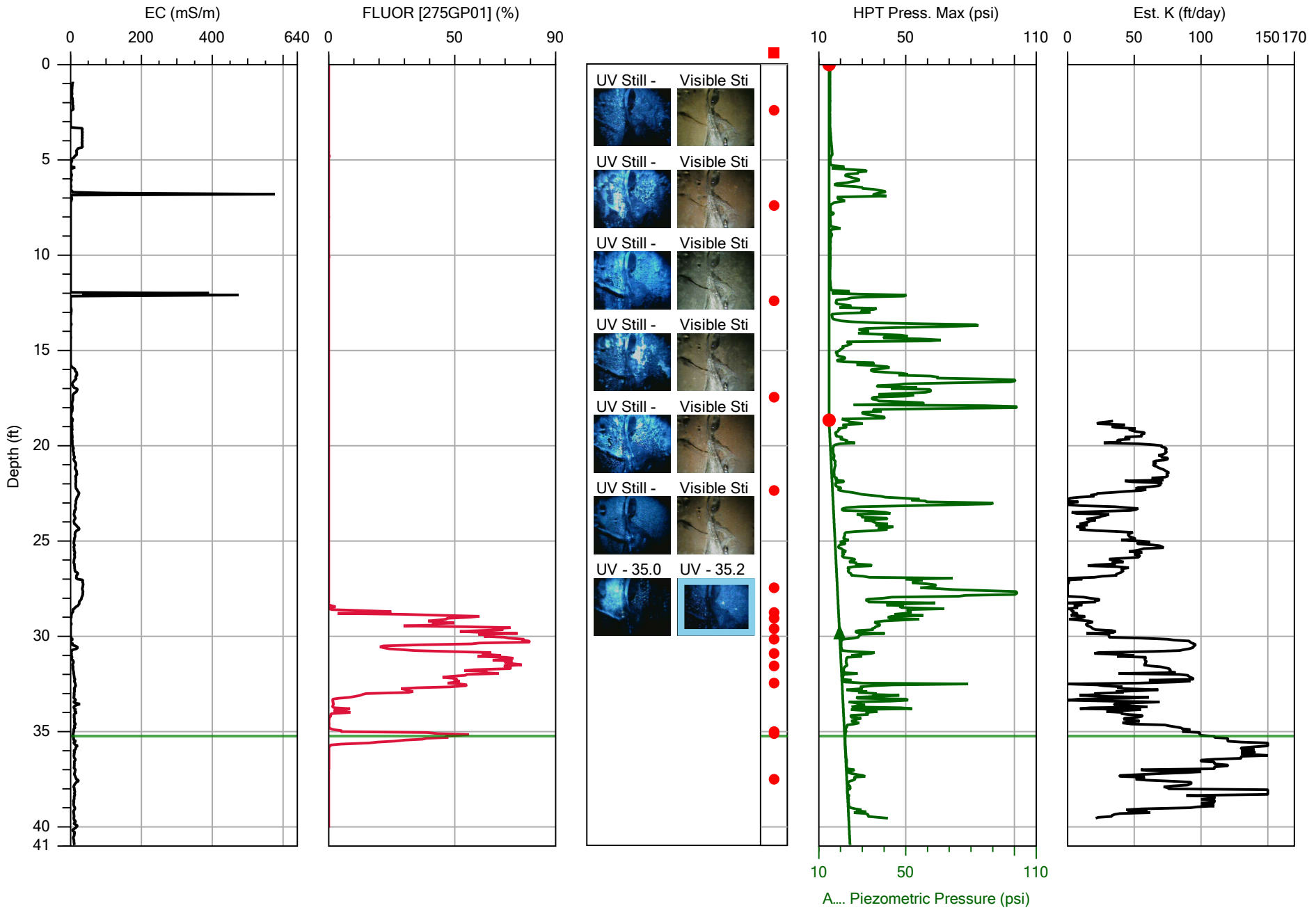

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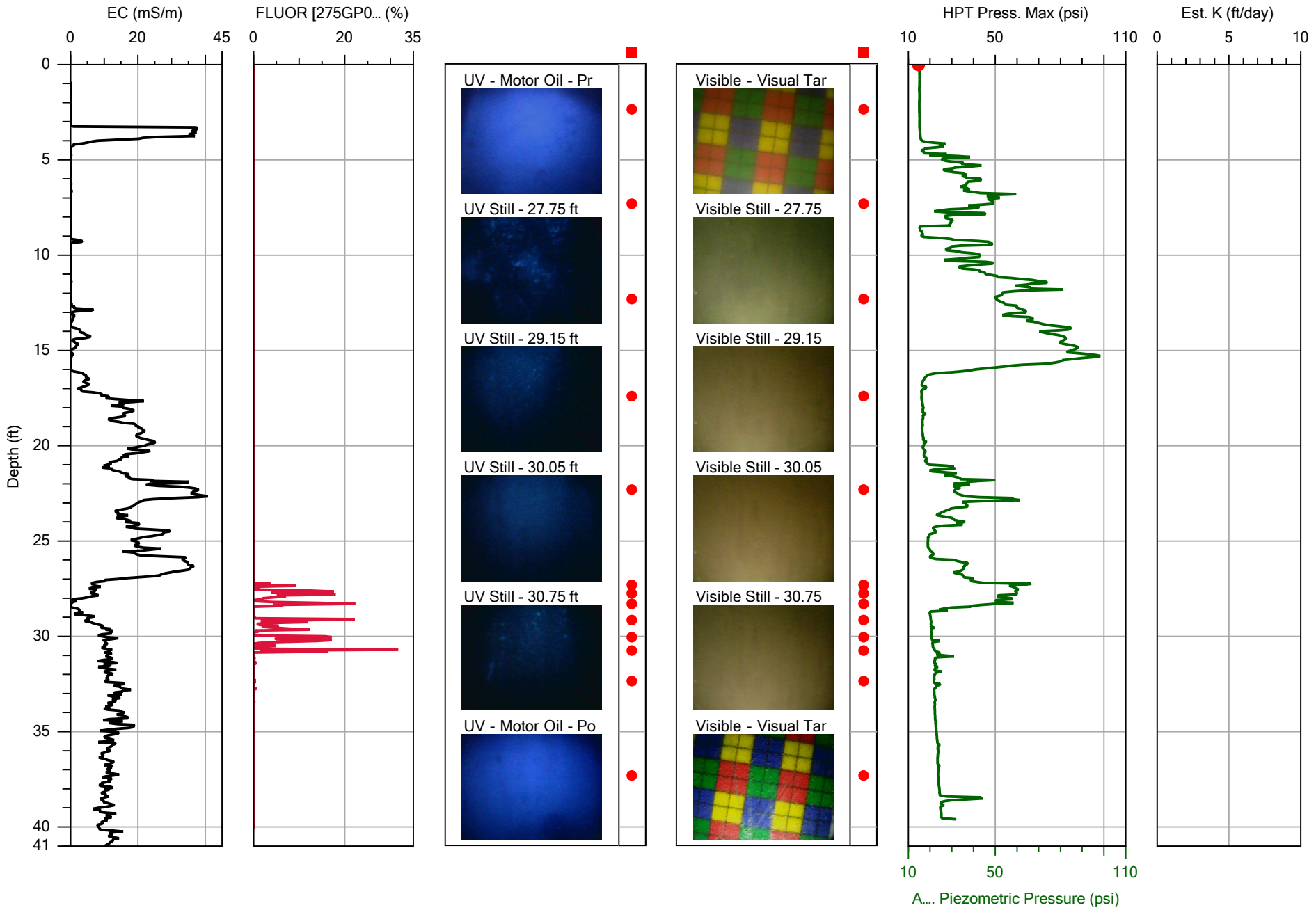

Direct Image® By Geoprobe Systems®

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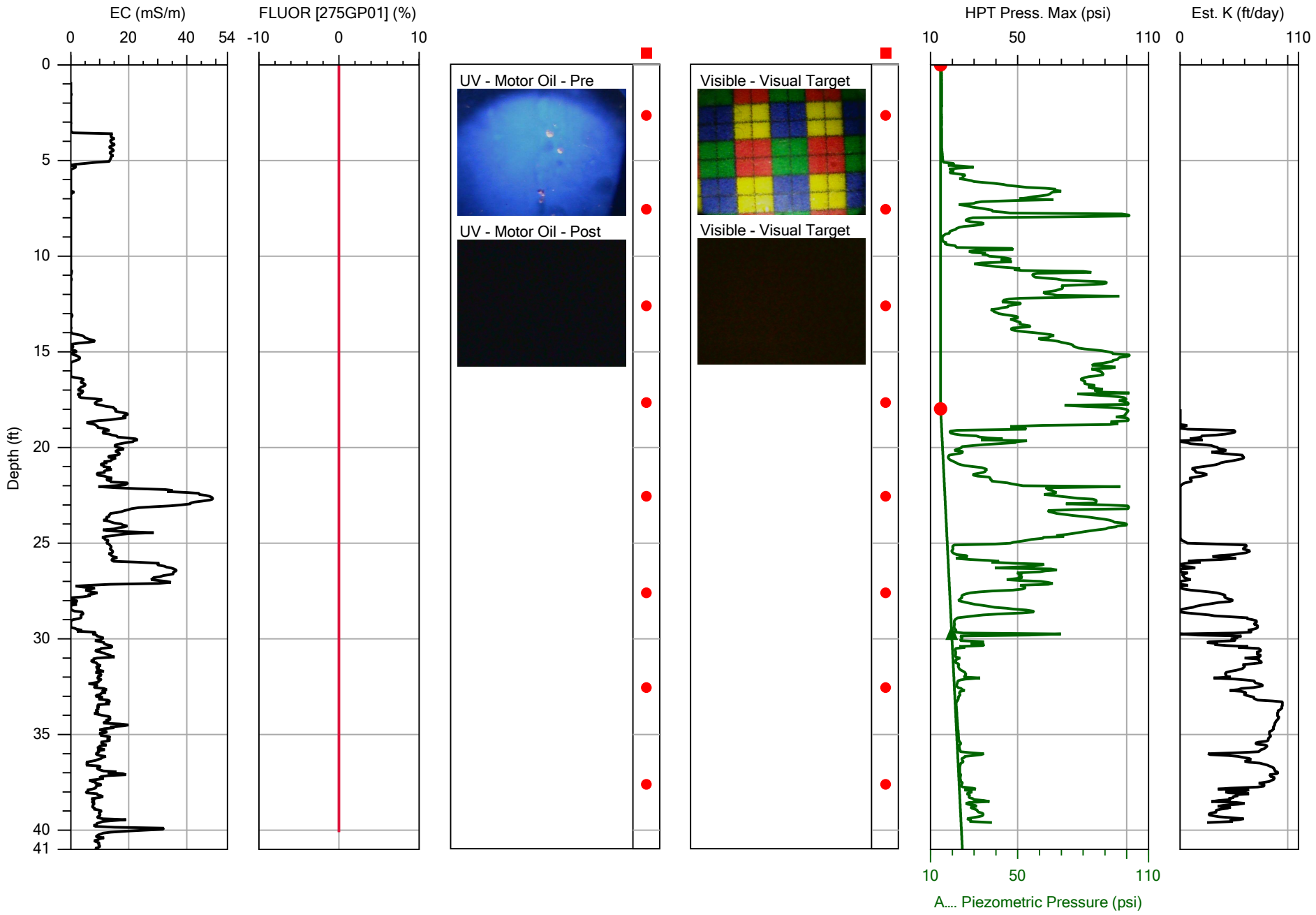

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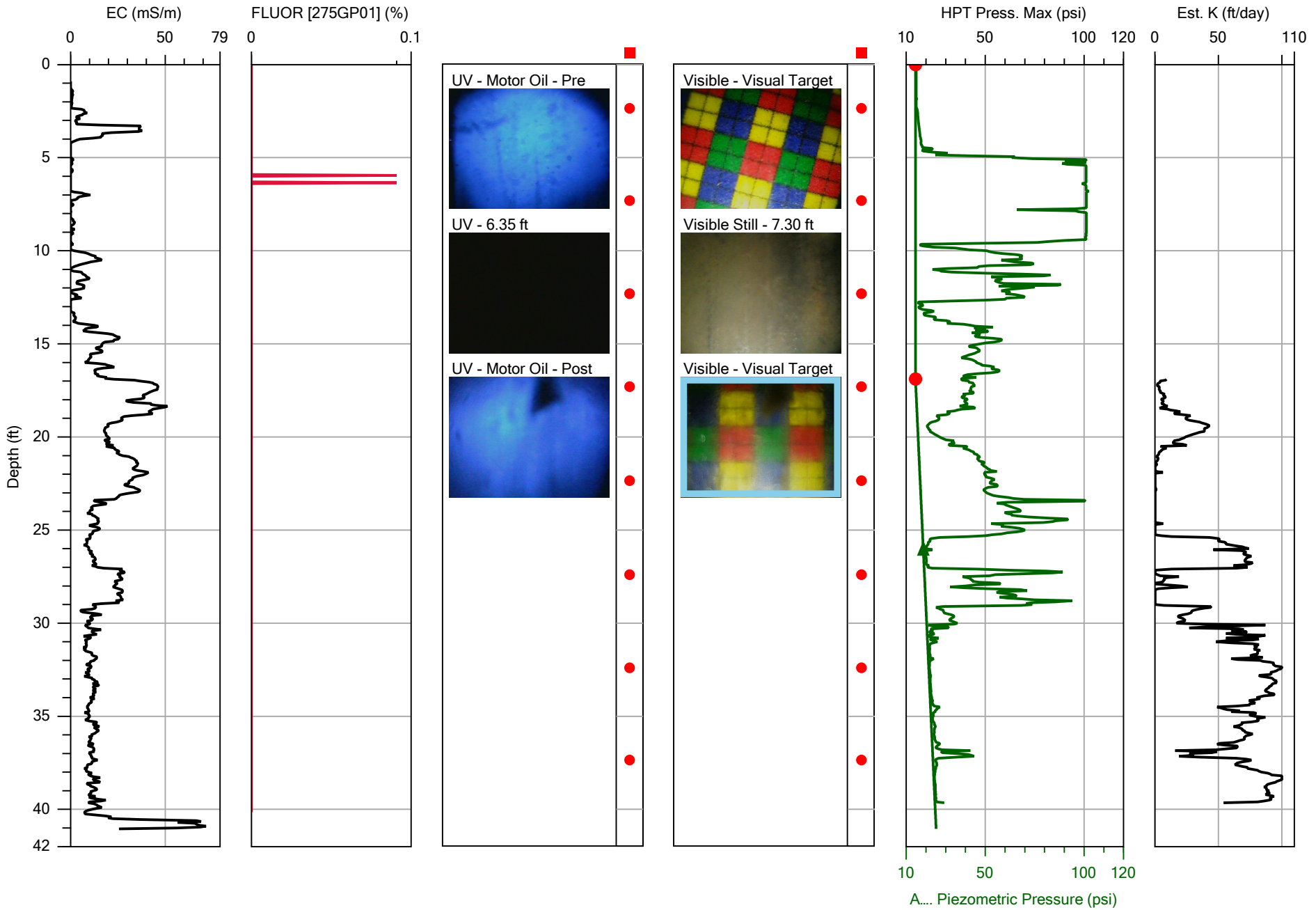

Direct Image® By Geoprobe Systems®

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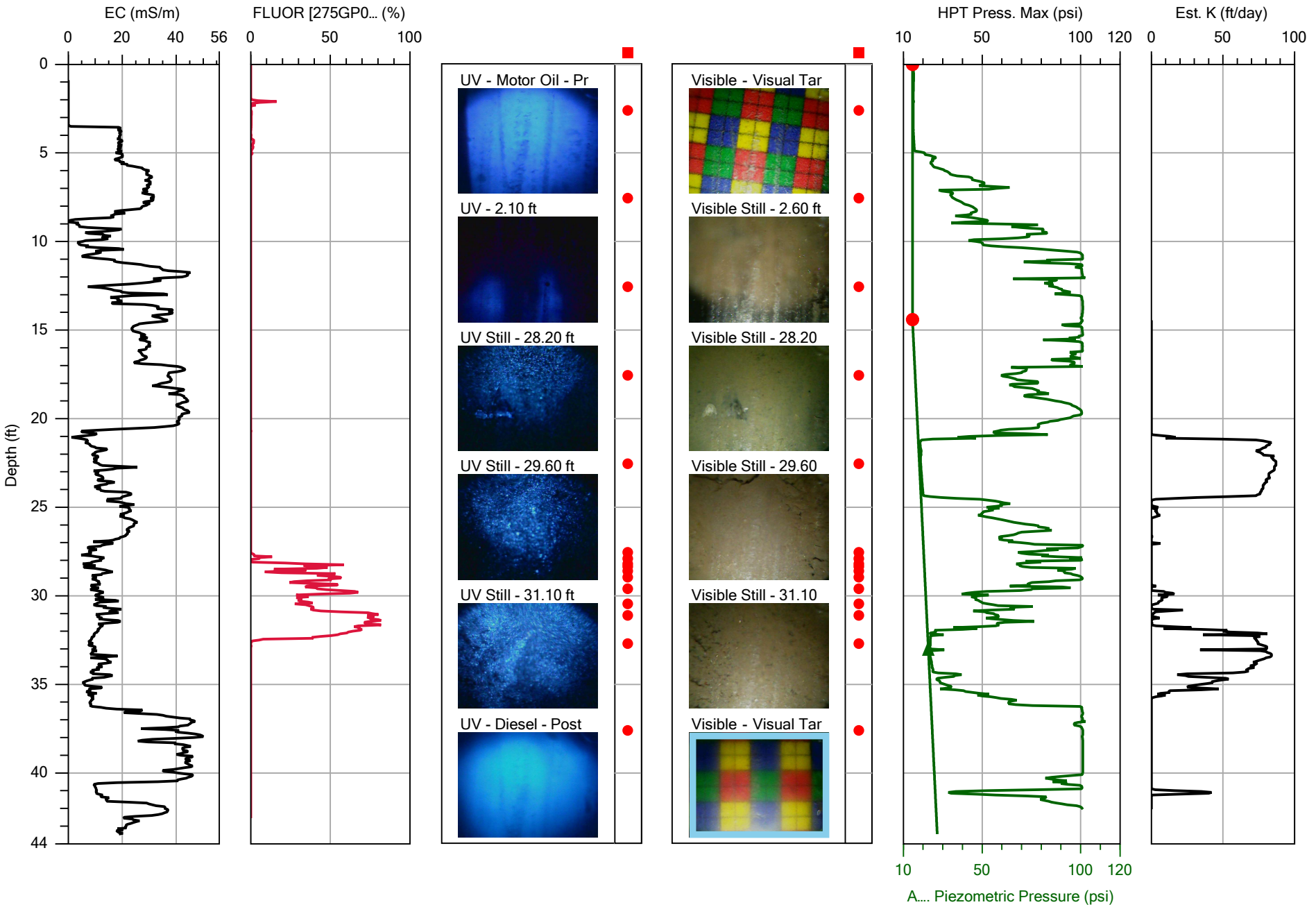
Project ID: 21701	Client: Stantec	Location: PES



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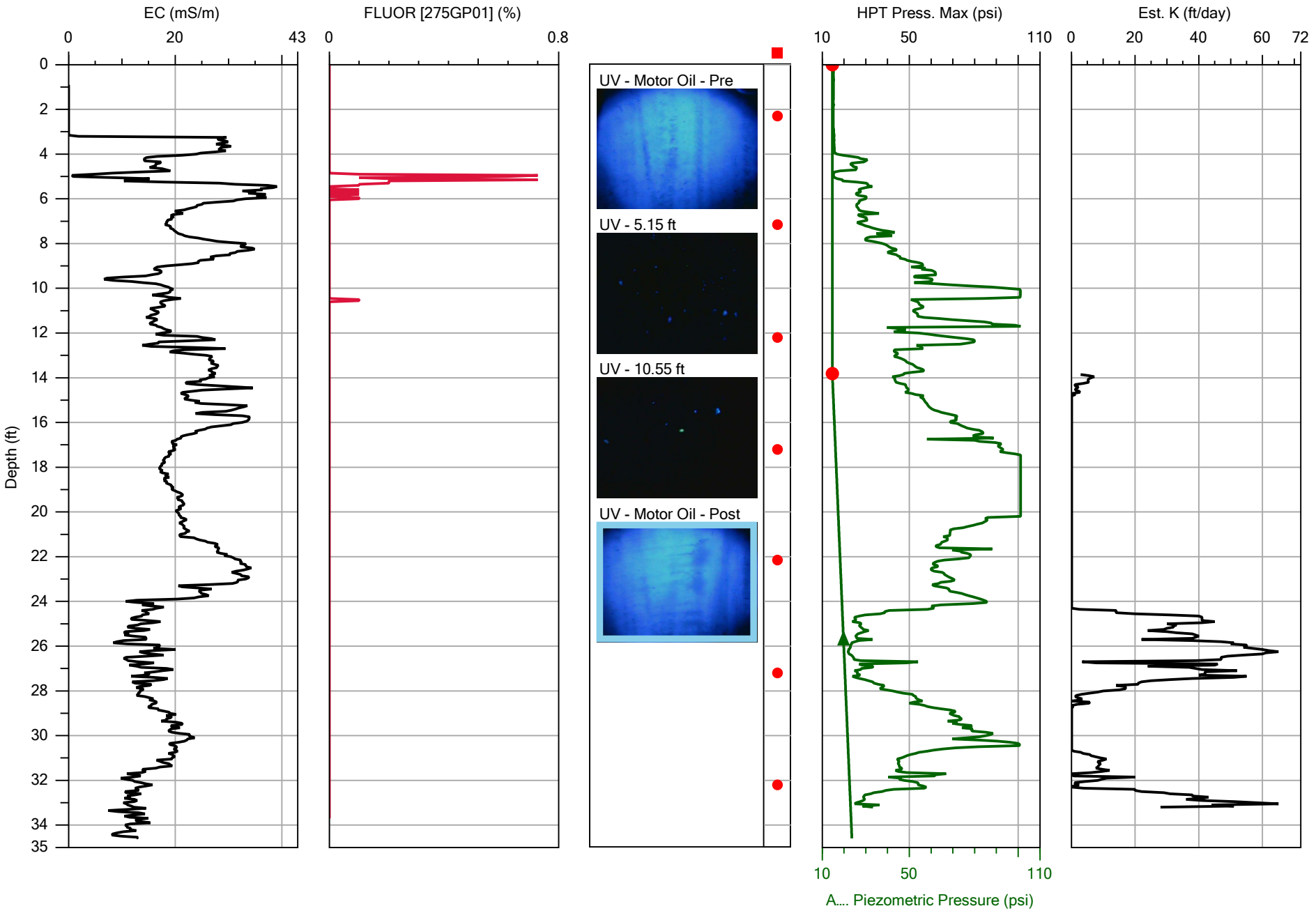
Project ID: 21701	Client: Stantec	Location: PES



Direct Image® By Geoprobe Systems®

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Company: Parratt-Wolff, Inc.	Operator: CJ		Date: 1/13/2022
Project ID: 21701	Client: Stantec		Location: PES

ATTACHMENT D

Laboratory Analytical Reports

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

June 07, 2022

Ms. Jennifer Menges
Stantec
1060 Andrew Drive
Suite 140
West Chester, PA 19380

RE: Project: 213403364-Revised Report
Pace Project No.: 30460228

Dear Ms. Menges:

Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

(Greensburg, PA) - Revision 2 - This report replaces the May, 19, 2022 report. This project was revised on June, 07, 2022 to report C6-C10 only for GRO.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Courtney Fenk

Courtney Fenk for
Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Stantec EDD, Stantec
Andrew Klingbeil, Stantec

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without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 213403364-Revised Report
Pace Project No.: 30460228

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30460228001	**AOI8-BH-22-01-24_20220118**	Solid	01/18/22 13:40	01/20/22 21:45
30460228002	**AOI8-BH-22-01-27_20220118**	Solid	01/18/22 13:50	01/20/22 21:45
30460228003	**AOI8-BH-22-01-30_20220118**	Solid	01/18/22 14:00	01/20/22 21:45
30460228004	**AOI8-BH-22-01-36_20220118**	Solid	01/18/22 14:30	01/20/22 21:45
30460228005	**AOI8-BH-22-02-27_20220119**	Solid	01/19/22 08:45	01/20/22 21:45
30460228006	**AOI8-BH-22-02-29_20220119**	Solid	01/19/22 09:00	01/20/22 21:45
30460228007	**AOI8-BH-22-03-29_20220119**	Solid	01/19/22 13:30	01/20/22 21:45
30460228008	**AOI8-BH-22-03-30_20220119**	Solid	01/19/22 14:00	01/20/22 21:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 213403364-Revised Report
Pace Project No.: 30460228

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30460228001	**AOI8-BH-22-01-24_20220118**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	4	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30460228002	**AOI8-BH-22-01-27_20220118**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	4	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30460228003	**AOI8-BH-22-01-30_20220118**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	4	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30460228004	**AOI8-BH-22-01-36_20220118**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	4	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30460228005	**AOI8-BH-22-02-27_20220119**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	4	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30460228006	**AOI8-BH-22-02-29_20220119**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	4	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30460228007	**AOI8-BH-22-03-29_20220119**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	4	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30460228008	**AOI8-BH-22-03-30_20220119**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	4	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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PROJECT NARRATIVE

Project: 213403364-Revised Report
Pace Project No.: 30460228

Date: June 07, 2022

AOI8-BH-22-01-36_20220118 (Lab ID: 30460228004)

- Sample does not meet method 5035A criteria due to improper sampling. Sample analyzed from soil jar after 48 hours from collection.

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PROJECT NARRATIVE

Project: 213403364-Revised Report
Pace Project No.: 30460228

Method: **EPA 8015D**
Description: 8015D TPH Microwave
Client: Sunoco_Stantec (West Chester)
Date: June 07, 2022

General Information:
8 samples were analyzed for EPA 8015D by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 480583

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- AOI8-BH-22-01-24_20220118 (Lab ID: 30460228001)
  - o-Terphenyl (S)
- AOI8-BH-22-01-27_20220118 (Lab ID: 30460228002)
  - o-Terphenyl (S)
- AOI8-BH-22-01-30_20220118 (Lab ID: 30460228003)
  - o-Terphenyl (S)
- AOI8-BH-22-02-29_20220119 (Lab ID: 30460228006)
  - o-Terphenyl (S)
- AOI8-BH-22-03-29_20220119 (Lab ID: 30460228007)
  - o-Terphenyl (S)
- AOI8-BH-22-03-30_20220119 (Lab ID: 30460228008)
  - o-Terphenyl (S)
- MS (Lab ID: 2322233)
  - o-Terphenyl (S)
- MSD (Lab ID: 2322234)
  - o-Terphenyl (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 213403364-Revised Report
Pace Project No.: 30460228

Method: **EPA 8015D**
Description: 8015D TPH Microwave
Client: Sunoco_Stantec (West Chester)
Date: June 07, 2022

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 480583

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30460228001

MH: Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.

- MS (Lab ID: 2322233)
  - TPH (C10-C28)
- MSD (Lab ID: 2322234)
  - TPH (C10-C28)

Additional Comments:

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PROJECT NARRATIVE

Project: 213403364-Revised Report
Pace Project No.: 30460228

Method: **EPA 8015D**
Description: 8015D GRO Soil
Client: Sunoco_Stantec (West Chester)
Date: June 07, 2022

General Information:
8 samples were analyzed for EPA 8015D by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 480522

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- AOI8-BH-22-01-24_20220118 (Lab ID: 30460228001)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-01-27_20220118 (Lab ID: 30460228002)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-01-30_20220118 (Lab ID: 30460228003)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-02-29_20220119 (Lab ID: 30460228006)
  - a,a,a-Trifluorotoluene (S)
- MS (Lab ID: 2321967)
  - a,a,a-Trifluorotoluene (S)
- MSD (Lab ID: 2321968)
  - a,a,a-Trifluorotoluene (S)

ST: Surrogate recovery was above laboratory control limits. Results may be biased high.

- AOI8-BH-22-01-30_20220118 (Lab ID: 30460228003)
  - 4-Bromofluorobenzene (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

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PROJECT NARRATIVE

Project: 213403364-Revised Report
Pace Project No.: 30460228

Method: **EPA 8015D**
Description: 8015D GRO Soil
Client: Sunoco_Stantec (West Chester)
Date: June 07, 2022

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 480522

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2321967)
  - TPH (C06-C10)
  - Gasoline Range Organics
- MSD (Lab ID: 2321968)
  - TPH (C06-C10)

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Sample: AOI8-BH-22-01-24_20220118 **Lab ID: 30460228001** Collected: 01/18/22 13:40 Received: 01/20/22 21:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**13400**	mg/kg	3130	1980	200	01/25/22 09:19	02/01/22 13:17		MH
TPH (C28-C40)	**3130 U**	mg/kg	3130	1990	200	01/25/22 09:19	02/01/22 13:17		
Surrogates									
o-Terphenyl (S)	0	%.	10-114		200	01/25/22 09:19	02/01/22 13:17	84-15-1	S4
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
Gasoline Range Organics	**5230**	mg/kg	239	108	20	01/24/22 14:29	01/25/22 11:58		
TPH (C06-C10)	**5650**	mg/kg	239	132	20	01/24/22 14:29	01/25/22 11:58		
Surrogates									
a,a,a-Trifluorotoluene (S)	1700	%.	10-175		20	01/24/22 14:29	01/25/22 11:58	98-08-8	S4
4-Bromofluorobenzene (S)	77	%.	70-130		20	01/24/22 14:29	01/25/22 11:58	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**15.3**	%	0.10	0.10	1		01/24/22 17:50		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Sample: AOI8-BH-22-01-27_20220118 **Lab ID: 30460228002** Collected: 01/18/22 13:50 Received: 01/20/22 21:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546								
	Pace Analytical Services - Greensburg								
TPH (C10-C28)	**5890**	mg/kg	1660	1050	100	01/25/22 09:19	02/04/22 14:25		
TPH (C28-C40)	**2240**	mg/kg	1660	1060	100	01/25/22 09:19	02/04/22 14:25		
Surrogates									
o-Terphenyl (S)	0	%.	10-114		100	01/25/22 09:19	02/04/22 14:25	84-15-1	S4
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B								
	Pace Analytical Services - Greensburg								
Gasoline Range Organics	**5710**	mg/kg	312	141	20	01/24/22 14:29	01/25/22 12:52		
TPH (C06-C10)	**6270**	mg/kg	312	173	20	01/24/22 14:29	01/25/22 12:52		
Surrogates									
a,a,a-Trifluorotoluene (S)	1660	%.	10-175		20	01/24/22 14:29	01/25/22 12:52	98-08-8	S4
4-Bromofluorobenzene (S)	97	%.	70-130		20	01/24/22 14:29	01/25/22 12:52	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Greensburg								
Percent Moisture	**22.0**	%	0.10	0.10	1		01/24/22 17:50		

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ANALYTICAL RESULTS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Sample: AOI8-BH-22-01-30_20220118 **Lab ID: 30460228003** Collected: 01/18/22 14:00 Received: 01/20/22 21:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546								
	Pace Analytical Services - Greensburg								
TPH (C10-C28)	**3380**	mg/kg	826	524	50	01/25/22 09:19	02/04/22 14:32		
TPH (C28-C40)	**732J**	mg/kg	826	527	50	01/25/22 09:19	02/04/22 14:32		
Surrogates									
o-Terphenyl (S)	0	%.	10-114		50	01/25/22 09:19	02/04/22 14:32	84-15-1	S4
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B								
	Pace Analytical Services - Greensburg								
Gasoline Range Organics	**1190**	mg/kg	284	128	20	01/24/22 14:29	01/25/22 13:10		
TPH (C06-C10)	**1310**	mg/kg	284	157	20	01/24/22 14:29	01/25/22 13:10		
Surrogates									
a,a,a-Trifluorotoluene (S)	396	%.	10-175		20	01/24/22 14:29	01/25/22 13:10	98-08-8	S4
4-Bromofluorobenzene (S)	157	%.	70-130		20	01/24/22 14:29	01/25/22 13:10	460-00-4	ST
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Greensburg								
Percent Moisture	**20.8**	%	0.10	0.10	1		01/24/22 17:50		

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ANALYTICAL RESULTS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Sample: AOI8-BH-22-01-36_20220118 **Lab ID: 30460228004** Collected: 01/18/22 14:30 Received: 01/20/22 21:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Comments: • Sample does not meet method 5035A criteria due to improper sampling. Sample analyzed from soil jar after 48 hours from collection.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**125**	mg/kg	15.2	9.6	1	01/25/22 09:19	02/04/22 11:25		
TPH (C28-C40)	**29.9**	mg/kg	15.2	9.7	1	01/25/22 09:19	02/04/22 11:25		
Surrogates									
o-Terphenyl (S)	72	%.	10-114		1	01/25/22 09:19	02/04/22 11:25	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
Gasoline Range Organics	**14.5**	mg/kg	12.1	5.4	1	01/24/22 14:29	01/25/22 13:28		
TPH (C06-C10)	**14.9**	mg/kg	12.1	6.7	1	01/24/22 14:29	01/25/22 13:28		
Surrogates									
a,a,a-Trifluorotoluene (S)	42	%.	10-175		1	01/24/22 14:29	01/25/22 13:28	98-08-8	
4-Bromofluorobenzene (S)	81	%.	70-130		1	01/24/22 14:29	01/25/22 13:28	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**14.3**	%	0.10	0.10	1		01/24/22 17:50		

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ANALYTICAL RESULTS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Sample: AOI8-BH-22-02-27_20220119 **Lab ID: 30460228005** Collected: 01/19/22 08:45 Received: 01/20/22 21:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**11.7J**	mg/kg	16.0	10.1	1	01/25/22 09:19	02/04/22 11:37		
TPH (C28-C40)	**10.7J**	mg/kg	16.0	10.2	1	01/25/22 09:19	02/04/22 11:37		
Surrogates									
o-Terphenyl (S)	80	%.	10-114		1	01/25/22 09:19	02/04/22 11:37	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
Gasoline Range Organics	**12.1 U**	mg/kg	12.1	5.5	1	01/24/22 14:29	01/25/22 14:04		
TPH (C06-C10)	**12.1 U**	mg/kg	12.1	6.7	1	01/24/22 14:29	01/25/22 14:04		
Surrogates									
a,a,a-Trifluorotoluene (S)	53	%.	10-175		1	01/24/22 14:29	01/25/22 14:04	98-08-8	
4-Bromofluorobenzene (S)	101	%.	70-130		1	01/24/22 14:29	01/25/22 14:04	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**16.7**	%	0.10	0.10	1		01/24/22 17:50		

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ANALYTICAL RESULTS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Sample: AOI8-BH-22-02-29_20220119 **Lab ID: 30460228006** Collected: 01/19/22 09:00 Received: 01/20/22 21:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546								
	Pace Analytical Services - Greensburg								
TPH (C10-C28)	**3770**	mg/kg	707	448	50	01/25/22 09:19	02/04/22 14:38		
TPH (C28-C40)	**545J**	mg/kg	707	451	50	01/25/22 09:19	02/04/22 14:38		
Surrogates									
o-Terphenyl (S)	0	%.	10-114		50	01/25/22 09:19	02/04/22 14:38	84-15-1	S4
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B								
	Pace Analytical Services - Greensburg								
Gasoline Range Organics	**2680**	mg/kg	177	80.0	20	01/24/22 14:29	01/25/22 14:21		
TPH (C06-C10)	**2910**	mg/kg	177	98.3	20	01/24/22 14:29	01/25/22 14:21		
Surrogates									
a,a,a-Trifluorotoluene (S)	1160	%.	10-175		20	01/24/22 14:29	01/25/22 14:21	98-08-8	S4
4-Bromofluorobenzene (S)	115	%.	70-130		20	01/24/22 14:29	01/25/22 14:21	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Greensburg								
Percent Moisture	**8.1**	%	0.10	0.10	1		01/24/22 17:50		

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Sample: AOI8-BH-22-03-29_20220119 **Lab ID: 30460228007** Collected: 01/19/22 13:30 Received: 01/20/22 21:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**926**	mg/kg	305	193	20	01/25/22 09:19	02/04/22 14:51		
TPH (C28-C40)	**305 U**	mg/kg	305	194	20	01/25/22 09:19	02/04/22 14:51		
Surrogates									
o-Terphenyl (S)	0	%.	10-114		20	01/25/22 09:19	02/04/22 14:51	84-15-1	S4
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
Gasoline Range Organics	**205**	mg/kg	13.4	6.0	1	01/24/22 14:29	01/25/22 14:39		
TPH (C06-C10)	**228**	mg/kg	13.4	7.4	1	01/24/22 14:29	01/25/22 14:39		
Surrogates									
a,a,a-Trifluorotoluene (S)	87	%.	10-175		1	01/24/22 14:29	01/25/22 14:39	98-08-8	
4-Bromofluorobenzene (S)	79	%.	70-130		1	01/24/22 14:29	01/25/22 14:39	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**14.5**	%	0.10	0.10	1		01/24/22 17:50		

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ANALYTICAL RESULTS

Project: 213403364-Revised Report
Pace Project No.: 30460228

Sample: AOI8-BH-22-03-30_20220119 **Lab ID: 30460228008** Collected: 01/19/22 14:00 Received: 01/20/22 21:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**2180**	mg/kg	760	482	50	01/25/22 09:19	02/04/22 14:57		
TPH (C28-C40)	**760 U**	mg/kg	760	485	50	01/25/22 09:19	02/04/22 14:57		
Surrogates									
o-Terphenyl (S)	0	%.	10-114		50	01/25/22 09:19	02/04/22 14:57	84-15-1	S4
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
Gasoline Range Organics	**104**	mg/kg	11.7	5.3	1	01/24/22 14:29	01/25/22 14:57		
TPH (C06-C10)	**115**	mg/kg	11.7	6.5	1	01/24/22 14:29	01/25/22 14:57		
Surrogates									
a,a,a-Trifluorotoluene (S)	41	%.	10-175		1	01/24/22 14:29	01/25/22 14:57	98-08-8	
4-Bromofluorobenzene (S)	108	%.	70-130		1	01/24/22 14:29	01/25/22 14:57	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**14.5**	%	0.10	0.10	1		01/24/22 17:50		

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
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QUALITY CONTROL DATA

Project: 213403364-Revised Report
Pace Project No.: 30460228

QC Batch: 480522
QC Batch Method: EPA 5035A/5030B
Analysis Method: EPA 8015D
Analysis Description: 8015D GRO Soil
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30460228001, 30460228002, 30460228003, 30460228004, 30460228005, 30460228006, 30460228007, 30460228008

METHOD BLANK: 2321965 Matrix: Solid
Associated Lab Samples: 30460228001, 30460228002, 30460228003, 30460228004, 30460228005, 30460228006, 30460228007, 30460228008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	10.0 U	10.0	4.5	01/25/22 10:46	
TPH (C06-C10)	mg/kg	10.0 U	10.0	5.5	01/25/22 10:46	
4-Bromofluorobenzene (S)	%.	101	70-130		01/25/22 10:46	
a,a,a-Trifluorotoluene (S)	%.	52	10-175		01/25/22 10:46	

LABORATORY CONTROL SAMPLE: 2321966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	50	42.1	84	52-139	
TPH (C06-C10)	mg/kg	50	43.4	87	50-137	
4-Bromofluorobenzene (S)	%.			90	70-130	
a,a,a-Trifluorotoluene (S)	%.			55	10-175	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2321967 2321968

Parameter	Units	30460228001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	5230	1190	1190	6200	5770	81	45	33-129	7	25	E
TPH (C06-C10)	mg/kg	5650	1190	1190	6670	6220	85	47	31-130	7	25	E
4-Bromofluorobenzene (S)	%.						77	75	70-130			
a,a,a-Trifluorotoluene (S)	%.						1830	1810	10-175			S4

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 213403364-Revised Report
Pace Project No.: 30460228

QC Batch: 480583
QC Batch Method: EPA 3546
Analysis Method: EPA 8015D
Analysis Description: EPA 8015D TPH
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30460228001, 30460228002, 30460228003, 30460228004, 30460228005, 30460228006, 30460228007, 30460228008

METHOD BLANK: 2322231 Matrix: Solid
Associated Lab Samples: 30460228001, 30460228002, 30460228003, 30460228004, 30460228005, 30460228006, 30460228007, 30460228008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	13.2 U	13.2	8.4	02/01/22 11:24	
TPH (C28-C40)	mg/kg	13.2 U	13.2	8.4	02/01/22 11:24	
o-Terphenyl (S)	%.	84	10-114		02/01/22 11:24	

LABORATORY CONTROL SAMPLE: 2322232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	66.4	62.3	94	51-106	
o-Terphenyl (S)	%.			89	10-114	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2322233 2322234

Parameter	Units	30460228001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	13400	76.9	78.4	14600	15400	1620	2580	10-155	5	25	MH
o-Terphenyl (S)	%.						0	0	10-114			S4

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QUALITY CONTROL DATA

Project: 213403364-Revised Report
Pace Project No.: 30460228

QC Batch: 480372
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30460228001, 30460228002, 30460228003, 30460228004, 30460228005, 30460228006, 30460228007, 30460228008

SAMPLE DUPLICATE: 2321399

Parameter	Units	30460209001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.6	17.1	3	20	

SAMPLE DUPLICATE: 2321520

Parameter	Units	30460209002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.6	18.9	4	20	

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REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 213403364-Revised Report
Pace Project No.: 30460228

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
MH	Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.
ST	Surrogate recovery was above laboratory control limits. Results may be biased high.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 213403364-Revised Report
Pace Project No.: 30460228

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30460228001	**AOI8-BH-22-01-24_20220118**	EPA 3546	480583	EPA 8015D	480644
30460228002	**AOI8-BH-22-01-27_20220118**	EPA 3546	480583	EPA 8015D	480644
30460228003	**AOI8-BH-22-01-30_20220118**	EPA 3546	480583	EPA 8015D	480644
30460228004	**AOI8-BH-22-01-36_20220118**	EPA 3546	480583	EPA 8015D	480644
30460228005	**AOI8-BH-22-02-27_20220119**	EPA 3546	480583	EPA 8015D	480644
30460228006	**AOI8-BH-22-02-29_20220119**	EPA 3546	480583	EPA 8015D	480644
30460228007	**AOI8-BH-22-03-29_20220119**	EPA 3546	480583	EPA 8015D	480644
30460228008	**AOI8-BH-22-03-30_20220119**	EPA 3546	480583	EPA 8015D	480644
30460228001	**AOI8-BH-22-01-24_20220118**	EPA 5035A/5030B	480522	EPA 8015D	480526
30460228002	**AOI8-BH-22-01-27_20220118**	EPA 5035A/5030B	480522	EPA 8015D	480526
30460228003	**AOI8-BH-22-01-30_20220118**	EPA 5035A/5030B	480522	EPA 8015D	480526
30460228004	**AOI8-BH-22-01-36_20220118**	EPA 5035A/5030B	480522	EPA 8015D	480526
30460228005	**AOI8-BH-22-02-27_20220119**	EPA 5035A/5030B	480522	EPA 8015D	480526
30460228006	**AOI8-BH-22-02-29_20220119**	EPA 5035A/5030B	480522	EPA 8015D	480526
30460228007	**AOI8-BH-22-03-29_20220119**	EPA 5035A/5030B	480522	EPA 8015D	480526
30460228008	**AOI8-BH-22-03-30_20220119**	EPA 5035A/5030B	480522	EPA 8015D	480526
30460228001	**AOI8-BH-22-01-24_20220118**	ASTM D2974-87	480372		
30460228002	**AOI8-BH-22-01-27_20220118**	ASTM D2974-87	480372		
30460228003	**AOI8-BH-22-01-30_20220118**	ASTM D2974-87	480372		
30460228004	**AOI8-BH-22-01-36_20220118**	ASTM D2974-87	480372		
30460228005	**AOI8-BH-22-02-27_20220119**	ASTM D2974-87	480372		
30460228006	**AOI8-BH-22-02-29_20220119**	ASTM D2974-87	480372		
30460228007	**AOI8-BH-22-03-29_20220119**	ASTM D2974-87	480372		
30460228008	**AOI8-BH-22-03-30_20220119**	ASTM D2974-87	480372		

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- AL

WO# : 30460228

30460228

Company: Evergreen c/o Stantec	Billing Information:
Address: 1060 Andrew Drive Suite 140 West Chester PA	
Report To: Andrew Klingbeil	Email To: Andrew.Klingbeil@stantec.com
Copy To:	Site Collection Info/Address: Former Philadelphia Refinery
Customer Project Name/Number: 213405364	State: PA / County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [ ]ET
Phone: 610 550 1420 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Andrea Hill	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature): Andrea Hill	Turnaround Date Required: Standard Immediately Packed on Ice: [✓] Yes [ ] No
Sample Disposal: [✓] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
	Field Filtered (if applicable): [ ] Yes [✓] No Analysis:

Container Preservative Type | Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: GRO 8015 - C6 - C10	DRO C10 - C28	ORO C28 - C40	Lab Sample # / Comments
ADI8-BH-22-01-24_20220118	SL	G	1/18/22	1340				5	X	X	X	001 MS1 MS1
ADI8-BH-22-01-27_20220118	SL	G	1/18/22	1350				5	X	X	X	002
ADI8-BH-22-01-30_20220118	SL	G	1/18/22	1400				5	X	X	X	003
ADI8-BH-22-01-36_20220118	SL	G	1/18/22	1430				5	X	X	X	004
ADI8-BH-22-02-27_20220119	SL	G	1/19/22	0845				5	X	X	X	005
ADI8-BH-22-02-29-20220119	SL	G	1/19/22	0900				5	X	X	X	006
ADI8-BH-22-03-29_20220119	SL	G	1/19/22	1330				5	X	X	X	007
ADI8-BH-22-03-30-20220119	SL	G	1/19/22	1400				5	X	X	X	008
~~ADI8-BH-22-04-19-20220119~~	SL	G	1/19/22	1615				5	X	X	X	
~~ADI8-BH-22-04-15-20220119~~	SL	G	1/19/22	1620				5	X	X	X	

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	(N)	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples Received on Ice	(Y)	N	NA
VOA - Headspace Acceptable	Y	N	(NA)
USDA Regulated Soils	Y	(N)	NA
Samples in Holding Time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	N	(NA)
pH Strips:			
Sulfide Present	Y	N	(NA)
Lead Acetate Strips:			

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Foam | Ziploc bag

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y N (N/A)

Lab Tracking #: 2776556 via

Samples received via: FEDEX UPS Client Courier (Pace Courier)

Lab Sample Temperature Info:

Temp Blank Received: Y (N) NA

Therm ID#: 12

Cooler 1 Temp Upon Receipt: 2.1 oC

Cooler 1 Therm Corr. Factor: -.4 oC

Cooler 1 Corrected Temp: 1.7 oC

Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Stantec	1/19/22 1630	PNPPA	1/19 1630
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Canton Pace MS/PACE	1/20/22 1415	MS/PACE	1/20/22 1415
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
MS/PACE	1/20/22 1640	RDS PACE	1/20-22 1745
RDS PACE	1/20-22 2145	Marlow 2 Ulani	1-20-2022 2145

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Page 23 of 25

OIHPT location

A018-01P-08

Stantec

1060 Andrew Drive Suite 140
West Chester, PA 19380
Phone: 610-840-2500

BORING/WELL ID.: A018-BH-22-01

PAGE 1 OF 1

Project Name: ~~Belmont Terminal - UDEX Release ICE Pilot Testing - SVE Well Installations~~ PBNY Ball Field Well Install		Boring Offset:
Project/Task No: ~~213403039~~ 21340 3364	Drilling Agency: Parratt Wolff, Inc.	Surface Elev.:
Date Start: 1/13/22	Drilling Operator: ~~Eric Edelstein~~ Dale Sherman	Total Depth:
Date Finish:	Drilling Equip: ~~Truck-Mounted Ingersoll Rand~~ Geoprobe	Rock Coring: None
Weather: Overcast, windy, 205F	Drilling Method: Hollow Stem Auger w/ Direct Push Macrocore	Staff: ~~ADK/JK~~ AH

Spl. No.	Sample Depth (ft) From	Sample Depth (ft) To	Strata Depth (ft) From	Strata Depth (ft) To	Rec'y (ft)	~~Blows Per 6"~~	PID (ppm)	~~CH4 %~~ FID	~~CO2 %~~	Sample Description
1	0	5	0		1.5		00	00		Fill - brown sandy gravel w/ cobbles + debris - broken brick, micaceous, some silt
				[illegible]			00	00		
2	5	10		7	2.5		00	00		Same as above
			7				00	00		
				[illegible]			00	00		Dark grey to black silt + gravel, abundant debris, glass, cinders
3	10	15		12	4		00	00		Same as above
			12				00	00		Dark brown clayey silt, low plasticity. Moist. Gradual gradient downward to red-brown
				15			00	00		and higher plasticity / increasing clay content
4	15	20	15	16.5	4		00	00		Saturated red-brown silt w/ some sand ~~[illegible]~~
			16.5	19.5			00	00		Same as above w/ abundant gravel, multicolored weathered rocks
[illegible]			19.5	20			00	00		Tightly packed low plasticity red-brown clay
5	20	25	20	24.5	4		0.25	0 4.9		Same as above, some silt, color change to silty red at 21 ft, some mica flakes
			24.5	25			1100	2300		Stained micaceous sand w/ some silt, heavy petroleum odor, saturated, black/dark grey
6	25	30	25	26.5	4		200 1200	169 1391		Same as above, some small pebbles
			26.5	26.8			1900	3600		Heavily stained medium sand, distinct from sand above in color + texture
			26.8	28			8.6	9.3		Brown, micaceous silt, little sand
			28	30			630	1100		Light brown to grey medium to coarse sand w/ some small pebbles, micaceous, petroleum odor
7	30	35	30	32.5	2.5		590 145	785 169		Heavily stained dark grey medium sand, micaceous, gravel abundant and varied in size.
			32.5							Top 6" fine sandy silt w/ coarse yellow/orange sand lens
				35						NO RECOVERY 32.5 - 35
8	35	40	35	36			0.9	1.2		Brown medium sand, poorly sorted, green weathered pebbles, some silt
			36	38			5.6	3.8		Sandy gravel, varied size gravel, some cobbles, sand is medium + brown
			38	40			26	30		Fine brown to tan sand, light petroleum odor to medium

General Notes:

Sample at 24, 27, 30, ~~33~~, and 36 ft

1340 1350 1400 1430

Pace Container Order #902603

PLEASE RETURN THIS COPY WITH COC

Addresses

Order By :		Ship To :		Return To:	
Company	Stantec	Company	Stantec-Residence	Company	Pace Analytical Pittsburgh
Contact	Jenny Kachel	Contact	Jenny Kachel	Contact	Smetanka, Megan
Email	jenny.kachel@stantec.com	Email	jenny.kachel@stantec.com	Email	megan.smetanka@pacelabs.com
Address	1060 Andrew Drive	Address	108 Farview Ave	Address	1638 Roseytown Road
Address 2	Suite 140	Address 2		Address 2	Suites 2,3,4
City	West Chester	City	Trooper	City	Greensburg
State	PA Zip 19380	State	PA Zip 19403	State	PA Zip 15601
Phone	(484) 757-7890	Phone	(484) 757-7890	Phone	(724)850-5600

Info

Project Name	PHL Former Refinery 136 Area Vanadium	**Due Date**	01/11/2022	**Profile**	16366	**Quote**	
Project Manager	Smetanka, Megan	**Return Date**		**Carrier**	Pace Courier	**Location**	PA

Trip Blanks

- [X] Include Trip Blanks

Bottle Labels

- [ ] Blank
- [X] Pre-Printed No Sample IDs
- [ ] Pre-Printed With Sample IDs

Bottles

- [ ] Boxed Cases
- [X] Individually Wrapped
- [ ] Grouped By Sample ID/Matrix

Return Shipping Labels

- [ ] No Shipper
- [ ] With Shipper

COC Options

- [X] Number of Blanks
- [ ] Pre-Printed

Misc

- [ ] Sampling Instructions
- [X] Custody Seal
- [ ] Temp. Blanks
- [ ] Coolers
- [ ] Syringes
- [ ] Extra Bubble Wrap
- [ ] Short Hold/Rush Stickers
- [ ] DI Water Liter(s)
- [ ] USDA Regulated Soils

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
9	SL	Vanadium	4oz. amber jar unpreserved	9	0	110821-1KM	

Hazard Shipping Placard In Place : NO

*Sample receiving hours are typically 8am-5pm, but may differ by location. Please check with your Pace Project Manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

LAB USE:

Ship Date :	01/11/2022
Prepared By:	Megan
Verified By:	David Gunsallus

Sample

CLIENT USE (Optional):

Date Rec'd:	
Received By:	
Verified By:	

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

June 07, 2022

Ms. Jennifer Menges
Stantec
1060 Andrew Drive
Suite 140
West Chester, PA 19380

RE: Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Dear Ms. Menges:

Enclosed are the analytical results for sample(s) received by the laboratory on January 28, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

(Greensburg, PA) - Revision 1 - This report replaces the February, 11, 2022 report. This project was revised on June, 07, 2022 to correct the sample IDs.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Courtney Fenk

Courtney Fenk for
Megan J. Smetanka
megan.smetanka@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Stantec EDD, Stantec
Andrew Klingbeil, Stantec

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CERTIFICATIONS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30461349001	**AOI8-BH-22-02-31-20220125**	Solid	01/25/22 08:50	01/28/22 12:50
30461349002	**AOI8-BH-22-02-33-20220125**	Solid	01/25/22 09:05	01/28/22 12:50
30461349003	**AOI8-BH-22-02-35-20220125**	Solid	01/25/22 09:20	01/28/22 12:50
30461349004	**AOI8-BH-22-03-31-20220125**	Solid	01/25/22 14:45	01/28/22 12:50
30461349005	**AOI8-BH-22-04-20-20220126**	Solid	01/26/22 08:40	01/28/22 12:50
30461349006	**AOI8-BH-22-04-22-20220126**	Solid	01/26/22 09:00	01/28/22 12:50
30461349007	**AOI8-BH-22-04-24-20220126**	Solid	01/26/22 09:20	01/28/22 12:50
30461349008	**AOI8-BH-22-04-26-20220126**	Solid	01/26/22 09:30	01/28/22 12:50
30461349009	**AOI8-BH-22-04-28-20220126**	Solid	01/26/22 10:00	01/28/22 12:50
30461349010	**AOI8-BH-22-05-22-20220126**	Solid	01/26/22 15:10	01/28/22 12:50
30461349011	**AOI8-BH-22-05-26-20220126**	Solid	01/26/22 15:30	01/28/22 12:50
30461349012	**AOI8-BH-22-05-28-20220126**	Solid	01/26/22 15:40	01/28/22 12:50
30461349013	**AOI8-BH-22-05-30-20220126**	Solid	01/26/22 15:50	01/28/22 12:50
30461349014	**AOI8-BH-22-05-32-20220126**	Solid	01/26/22 16:00	01/28/22 12:50
30461349015	**AOI8-BH-22-06-23-20220127**	Solid	01/27/22 11:05	01/28/22 12:50
30461349016	**AOI8-BH-22-06-29-20220127**	Solid	01/27/22 11:15	01/28/22 12:50
30461349017	**AOI8-BH-22-06-31-20220127**	Solid	01/27/22 11:35	01/28/22 12:50
30461349018	**AOI8-BH-22-06-33-20220127**	Solid	01/27/22 11:45	01/28/22 12:50
30461349019	**AOI8-BH-22-06-35-20220127**	Solid	01/27/22 12:00	01/28/22 12:50

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SAMPLE ANALYTE COUNT

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30461349001	AOI8-BH-22-02-31-20220125	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349002	AOI8-BH-22-02-33-20220125	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349003	AOI8-BH-22-02-35-20220125	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349004	AOI8-BH-22-03-31-20220125	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349005	AOI8-BH-22-04-20-20220126	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349006	AOI8-BH-22-04-22-20220126	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349007	AOI8-BH-22-04-24-20220126	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349008	AOI8-BH-22-04-26-20220126	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349009	AOI8-BH-22-04-28-20220126	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349010	AOI8-BH-22-05-22-20220126	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349011	AOI8-BH-22-05-26-20220126	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349012	AOI8-BH-22-05-28-20220126	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349013	AOI8-BH-22-05-30-20220126	EPA 8015D	SEL	3	PASI-PA

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SAMPLE ANALYTE COUNT

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349014	**AOI8-BH-22-05-32-20220126**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349015	**AOI8-BH-22-06-23-20220127**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349016	**AOI8-BH-22-06-29-20220127**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349017	**AOI8-BH-22-06-31-20220127**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349018	**AOI8-BH-22-06-33-20220127**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA
30461349019	**AOI8-BH-22-06-35-20220127**	EPA 8015D	SEL	3	PASI-PA
		EPA 8015D	LEL	3	PASI-PA
		ASTM D2974-87	OMZ	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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PROJECT NARRATIVE

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Method: **EPA 8015D**
Description: 8015D TPH Microwave
Client: Sunoco_Stantec (West Chester)
Date: June 07, 2022

General Information:
19 samples were analyzed for EPA 8015D by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 482316

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30461349001

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 2331448)
  - TPH (C10-C28)
- MSD (Lab ID: 2331449)
  - TPH (C10-C28)

Additional Comments:

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PROJECT NARRATIVE

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Method: **EPA 8015D**
Description: 8015D GRO Soil
Client: Sunoco_Stantec (West Chester)
Date: June 07, 2022

General Information:
19 samples were analyzed for EPA 8015D by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 481740

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- AOI8-BH-22-02-33-20220125 (Lab ID: 30461349002)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-02-35-20220125 (Lab ID: 30461349003)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-03-31-20220125 (Lab ID: 30461349004)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-04-20-20220126 (Lab ID: 30461349005)
  - a,a,a-Trifluorotoluene (S)

ST: Surrogate recovery was above laboratory control limits. Results may be biased high.

- AOI8-BH-22-04-20-20220126 (Lab ID: 30461349005)
  - 4-Bromofluorobenzene (S)

QC Batch: 481904

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- AOI8-BH-22-05-30-20220126 (Lab ID: 30461349013)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-06-29-20220127 (Lab ID: 30461349016)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-06-31-20220127 (Lab ID: 30461349017)
  - a,a,a-Trifluorotoluene (S)
- AOI8-BH-22-06-33-20220127 (Lab ID: 30461349018)
  - a,a,a-Trifluorotoluene (S)
- MS (Lab ID: 2329604)

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PROJECT NARRATIVE

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Method: **EPA 8015D**
Description: 8015D GRO Soil
Client: Sunoco_Stantec (West Chester)
Date: June 07, 2022

QC Batch: 481904

S4: Surrogate recovery not evaluated against control limits due to sample dilution.
- a,a,a-Trifluorotoluene (S)
- MSD (Lab ID: 2329605)
  - a,a,a-Trifluorotoluene (S)

SR: Surrogate recovery was below laboratory control limits. Results may be biased low.
- AOI8-BH-22-05-32-20220126 (Lab ID: 30461349014)
  - a,a,a-Trifluorotoluene (S)

ST: Surrogate recovery was above laboratory control limits. Results may be biased high.
- MS (Lab ID: 2329604)
  - 4-Bromofluorobenzene (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 481904

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30461349013

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.
- MS (Lab ID: 2329604)
  - TPH (C06-C10)

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-02-31-20220125 **Lab ID: 30461349001** Collected: 01/25/22 08:50 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546								
	Pace Analytical Services - Greensburg								
TPH (C10-C28)	**1190**	mg/kg	294	186	20	02/08/22 07:34	02/10/22 17:10		ML
TPH (C28-C40)	**305**	mg/kg	294	187	20	02/08/22 07:34	02/10/22 17:10		
Surrogates									
o-Terphenyl (S)	72	%.	10-114		20	02/08/22 07:34	02/10/22 17:10	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B								
	Pace Analytical Services - Greensburg								
TPH (C06-C10)	**210**	mg/kg	12.0	6.6	1	02/03/22 14:20	02/03/22 18:59		
Surrogates									
a,a,a-Trifluorotoluene (S)	116	%.	10-175		1	02/03/22 14:20	02/03/22 18:59	98-08-8	
4-Bromofluorobenzene (S)	84	%.	70-130		1	02/03/22 14:20	02/03/22 18:59	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Greensburg								
Percent Moisture	**10.6**	%	0.10	0.10	1		01/31/22 14:58		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-02-33-20220125 **Lab ID: 30461349002** Collected: 01/25/22 09:05 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**1030**	mg/kg	277	176	20	02/08/22 07:34	02/10/22 17:36		
TPH (C28-C40)	**277 U**	mg/kg	277	177	20	02/08/22 07:34	02/10/22 17:36		
Surrogates									
o-Terphenyl (S)	82	%.	10-114		20	02/08/22 07:34	02/10/22 17:36	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**1160**	mg/kg	255	142	20	02/03/22 14:20	02/04/22 08:55		
Surrogates									
a,a,a-Trifluorotoluene (S)	524	%.	10-175		20	02/03/22 14:20	02/04/22 08:55	98-08-8	S4
4-Bromofluorobenzene (S)	128	%.	70-130		20	02/03/22 14:20	02/04/22 08:55	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**5.6**	%	0.10	0.10	1		01/31/22 15:00		D6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-02-35-20220125 **Lab ID: 30461349003** Collected: 01/25/22 09:20 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**2060**	mg/kg	730	463	50	02/08/22 07:34	02/10/22 17:42		
TPH (C28-C40)	**730 U**	mg/kg	730	466	50	02/08/22 07:34	02/10/22 17:42		
Surrogates									
o-Terphenyl (S)	79	%.	10-114		50	02/08/22 07:34	02/10/22 17:42	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**2420**	mg/kg	205	114	20	02/03/22 14:20	02/04/22 09:14		
Surrogates									
a,a,a-Trifluorotoluene (S)	1240	%.	10-175		20	02/03/22 14:20	02/04/22 09:14	98-08-8	S4
4-Bromofluorobenzene (S)	81	%.	70-130		20	02/03/22 14:20	02/04/22 09:14	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**10.5**	%	0.10	0.10	1		01/31/22 15:00		D6

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-03-31-20220125 **Lab ID: 30461349004** Collected: 01/25/22 14:45 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**420**	mg/kg	164	104	10	02/08/22 07:34	02/10/22 17:49		
TPH (C28-C40)	**164 U**	mg/kg	164	105	10	02/08/22 07:34	02/10/22 17:49		
Surrogates									
o-Terphenyl (S)	83	%.	10-114		10	02/08/22 07:34	02/10/22 17:49	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**753**	mg/kg	269	149	20	02/03/22 14:20	02/04/22 09:33		
Surrogates									
a,a,a-Trifluorotoluene (S)	358	%.	10-175		20	02/03/22 14:20	02/04/22 09:33	98-08-8	S4
4-Bromofluorobenzene (S)	118	%.	70-130		20	02/03/22 14:20	02/04/22 09:33	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**19.7**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-04-20-20220126 **Lab ID: 30461349005** Collected: 01/26/22 08:40 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**94.4**	mg/kg	15.3	9.7	1	02/08/22 07:34	02/08/22 20:24		
TPH (C28-C40)	**88.8**	mg/kg	15.3	9.8	1	02/08/22 07:34	02/08/22 20:24		
Surrogates									
o-Terphenyl (S)	62	%.	10-114		1	02/08/22 07:34	02/08/22 20:24	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**1450**	mg/kg	247	137	20	02/03/22 14:20	02/04/22 10:11		
Surrogates									
a,a,a-Trifluorotoluene (S)	692	%.	10-175		20	02/03/22 14:20	02/04/22 10:11	98-08-8	S4
4-Bromofluorobenzene (S)	137	%.	70-130		20	02/03/22 14:20	02/04/22 10:11	460-00-4	ST
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**13.6**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-04-22-20220126 **Lab ID: 30461349006** Collected: 01/26/22 09:00 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**546**	mg/kg	149	94.6	10	02/08/22 07:34	02/10/22 18:01		
TPH (C28-C40)	**149 U**	mg/kg	149	95.2	10	02/08/22 07:34	02/10/22 18:01		
Surrogates									
o-Terphenyl (S)	83	%.	10-114		10	02/08/22 07:34	02/10/22 18:01	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**74.7**	mg/kg	10.3	5.7	1	02/03/22 14:20	02/03/22 20:36		
Surrogates									
a,a,a-Trifluorotoluene (S)	45	%.	10-175		1	02/03/22 14:20	02/03/22 20:36	98-08-8	
4-Bromofluorobenzene (S)	93	%.	70-130		1	02/03/22 14:20	02/03/22 20:36	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**11.1**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-04-24-20220126 **Lab ID: 30461349007** Collected: 01/26/22 09:20 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**454**	mg/kg	153	97.3	10	02/08/22 07:34	02/10/22 18:08		
TPH (C28-C40)	**153 U**	mg/kg	153	97.9	10	02/08/22 07:34	02/10/22 18:08		
Surrogates									
o-Terphenyl (S)	83	%.	10-114		10	02/08/22 07:34	02/10/22 18:08	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**27.9**	mg/kg	11.1	6.1	1	02/03/22 14:20	02/03/22 20:55		
Surrogates									
a,a,a-Trifluorotoluene (S)	88	%.	10-175		1	02/03/22 14:20	02/03/22 20:55	98-08-8	
4-Bromofluorobenzene (S)	118	%.	70-130		1	02/03/22 14:20	02/03/22 20:55	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**13.4**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-04-26-20220126 **Lab ID: 30461349008** Collected: 01/26/22 09:30 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**303**	mg/kg	148	93.8	10	02/08/22 07:34	02/10/22 18:14		
TPH (C28-C40)	**148 U**	mg/kg	148	94.4	10	02/08/22 07:34	02/10/22 18:14		
Surrogates									
o-Terphenyl (S)	81	%.	10-114		10	02/08/22 07:34	02/10/22 18:14	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**555**	mg/kg	223	123	20	02/03/22 14:20	02/04/22 10:30		
Surrogates									
a,a,a-Trifluorotoluene (S)	118	%.	10-175		20	02/03/22 14:20	02/04/22 10:30	98-08-8	
4-Bromofluorobenzene (S)	116	%.	70-130		20	02/03/22 14:20	02/04/22 10:30	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**11.7**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-04-28-20220126 **Lab ID: 30461349009** Collected: 01/26/22 10:00 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**332**	mg/kg	143	90.6	10	02/08/22 07:34	02/10/22 18:27		
TPH (C28-C40)	**143 U**	mg/kg	143	91.1	10	02/08/22 07:34	02/10/22 18:27		
Surrogates									
o-Terphenyl (S)	77	%.	10-114		10	02/08/22 07:34	02/10/22 18:27	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**642**	mg/kg	198	110	20	02/03/22 14:20	02/04/22 10:49		
Surrogates									
a,a,a-Trifluorotoluene (S)	121	%.	10-175		20	02/03/22 14:20	02/04/22 10:49	98-08-8	
4-Bromofluorobenzene (S)	114	%.	70-130		20	02/03/22 14:20	02/04/22 10:49	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**8.4**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-05-22-20220126 **Lab ID: 30461349010** Collected: 01/26/22 15:10 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**195**	mg/kg	72.6	46.1	5	02/08/22 07:34	02/10/22 18:33		
TPH (C28-C40)	**72.6 U**	mg/kg	72.6	46.3	5	02/08/22 07:34	02/10/22 18:33		
Surrogates									
o-Terphenyl (S)	81	%.	10-114		5	02/08/22 07:34	02/10/22 18:33	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**11.1 U**	mg/kg	11.1	6.2	1	02/03/22 14:20	02/03/22 22:12		
Surrogates									
a,a,a-Trifluorotoluene (S)	67	%.	10-175		1	02/03/22 14:20	02/03/22 22:12	98-08-8	
4-Bromofluorobenzene (S)	96	%.	70-130		1	02/03/22 14:20	02/03/22 22:12	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**9.4**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-05-26-20220126 **Lab ID: 30461349011** Collected: 01/26/22 15:30 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**142**	mg/kg	14.5	9.2	1	02/08/22 07:34	02/08/22 21:15		
TPH (C28-C40)	**21.3**	mg/kg	14.5	9.3	1	02/08/22 07:34	02/08/22 21:15		
Surrogates									
o-Terphenyl (S)	74	%.	10-114		1	02/08/22 07:34	02/08/22 21:15	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**74.8**	mg/kg	10.5	5.8	1	02/03/22 14:20	02/03/22 22:31		
Surrogates									
a,a,a-Trifluorotoluene (S)	63	%.	10-175		1	02/03/22 14:20	02/03/22 22:31	98-08-8	
4-Bromofluorobenzene (S)	79	%.	70-130		1	02/03/22 14:20	02/03/22 22:31	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**10**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-05-28-20220126 **Lab ID: 30461349012** Collected: 01/26/22 15:40 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**2290**	mg/kg	703	446	50	02/08/22 07:34	02/10/22 18:39		
TPH (C28-C40)	**703 U**	mg/kg	703	448	50	02/08/22 07:34	02/10/22 18:39		
Surrogates									
o-Terphenyl (S)	90	%.	10-114		50	02/08/22 07:34	02/10/22 18:39	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**894**	mg/kg	209	116	20	02/03/22 14:20	02/04/22 11:08		
Surrogates									
a,a,a-Trifluorotoluene (S)	134	%.	10-175		20	02/03/22 14:20	02/04/22 11:08	98-08-8	
4-Bromofluorobenzene (S)	108	%.	70-130		20	02/03/22 14:20	02/04/22 11:08	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**6.7**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-05-30-20220126 **Lab ID: 30461349013** Collected: 01/26/22 15:50 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**1280**	mg/kg	286	181	20	02/08/22 07:34	02/10/22 18:52		
TPH (C28-C40)	**286 U**	mg/kg	286	182	20	02/08/22 07:34	02/10/22 18:52		
Surrogates									
o-Terphenyl (S)	75	%.	10-114		20	02/08/22 07:34	02/10/22 18:52	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**1330**	mg/kg	191	106	20	02/04/22 10:29	02/04/22 13:32		ML
Surrogates									
a,a,a-Trifluorotoluene (S)	325	%.	10-175		20	02/04/22 10:29	02/04/22 13:32	98-08-8	S4
4-Bromofluorobenzene (S)	94	%.	70-130		20	02/04/22 10:29	02/04/22 13:32	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**9.1**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-05-32-20220126 **Lab ID: 30461349014** Collected: 01/26/22 16:00 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**296**	mg/kg	150	94.9	10	02/08/22 07:34	02/10/22 18:58		
TPH (C28-C40)	**150 U**	mg/kg	150	95.4	10	02/08/22 07:34	02/10/22 18:58		
Surrogates									
o-Terphenyl (S)	79	%.	10-114		10	02/08/22 07:34	02/10/22 18:58	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**13.7 U**	mg/kg	13.7	7.6	1	02/04/22 10:29	02/07/22 09:39		
Surrogates									
a,a,a-Trifluorotoluene (S)	0	%.	10-175		1	02/04/22 10:29	02/07/22 09:39	98-08-8	SR
4-Bromofluorobenzene (S)	97	%.	70-130		1	02/04/22 10:29	02/07/22 09:39	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**11.9**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-06-23-20220127 **Lab ID: 30461349015** Collected: 01/27/22 11:05 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**321**	mg/kg	159	101	10	02/08/22 07:34	02/10/22 19:05		
TPH (C28-C40)	**159 U**	mg/kg	159	101	10	02/08/22 07:34	02/10/22 19:05		
Surrogates									
o-Terphenyl (S)	61	%.	10-114		10	02/08/22 07:34	02/10/22 19:05	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**13.7 U**	mg/kg	13.7	7.6	1	02/04/22 10:29	02/04/22 14:49		
Surrogates									
a,a,a-Trifluorotoluene (S)	74	%.	10-175		1	02/04/22 10:29	02/04/22 14:49	98-08-8	
4-Bromofluorobenzene (S)	99	%.	70-130		1	02/04/22 10:29	02/04/22 14:49	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**17.1**	%	0.10	0.10	1		01/31/22 15:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-06-29-20220127 **Lab ID: 30461349016** Collected: 01/27/22 11:15 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**113**	mg/kg	14.6	9.3	1	02/08/22 07:34	02/08/22 21:53		
TPH (C28-C40)	**18.1**	mg/kg	14.6	9.3	1	02/08/22 07:34	02/08/22 21:53		
Surrogates									
o-Terphenyl (S)	76	%.	10-114		1	02/08/22 07:34	02/08/22 21:53	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**628**	mg/kg	250	139	20	02/04/22 10:29	02/04/22 15:08		
Surrogates									
a,a,a-Trifluorotoluene (S)	294	%.	10-175		20	02/04/22 10:29	02/04/22 15:08	98-08-8	S4
4-Bromofluorobenzene (S)	101	%.	70-130		20	02/04/22 10:29	02/04/22 15:08	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**11.7**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-06-31-20220127 **Lab ID: 30461349017** Collected: 01/27/22 11:35 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546								
	Pace Analytical Services - Greensburg								
TPH (C10-C28)	**1550**	mg/kg	721	457	50	02/08/22 07:34	02/10/22 19:17		
TPH (C28-C40)	**721 U**	mg/kg	721	460	50	02/08/22 07:34	02/10/22 19:17		
Surrogates									
o-Terphenyl (S)	81	%.	10-114		50	02/08/22 07:34	02/10/22 19:17	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B								
	Pace Analytical Services - Greensburg								
TPH (C06-C10)	**1290**	mg/kg	246	136	20	02/04/22 10:29	02/04/22 15:27		
Surrogates									
a,a,a-Trifluorotoluene (S)	525	%.	10-175		20	02/04/22 10:29	02/04/22 15:27	98-08-8	S4
4-Bromofluorobenzene (S)	75	%.	70-130		20	02/04/22 10:29	02/04/22 15:27	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
	Pace Analytical Services - Greensburg								
Percent Moisture	**8.8**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-06-33-20220127 **Lab ID: 30461349018** Collected: 01/27/22 11:45 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**455**	mg/kg	142	90.0	10	02/08/22 07:34	02/10/22 19:24		
TPH (C28-C40)	**142 U**	mg/kg	142	90.6	10	02/08/22 07:34	02/10/22 19:24		
Surrogates									
o-Terphenyl (S)	77	%.	10-114		10	02/08/22 07:34	02/10/22 19:24	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**537**	mg/kg	204	113	20	02/04/22 10:29	02/04/22 15:46		
Surrogates									
a,a,a-Trifluorotoluene (S)	329	%.	10-175		20	02/04/22 10:29	02/04/22 15:46	98-08-8	S4
4-Bromofluorobenzene (S)	91	%.	70-130		20	02/04/22 10:29	02/04/22 15:46	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**6.7**	%	0.10	0.10	1		01/31/22 15:00		

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ANALYTICAL RESULTS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Sample: AOI8-BH-22-06-35-20220127 **Lab ID: 30461349019** Collected: 01/27/22 12:00 Received: 01/28/22 12:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015D TPH Microwave	Analytical Method: EPA 8015D Preparation Method: EPA 3546 Pace Analytical Services - Greensburg								
TPH (C10-C28)	**193**	mg/kg	73.6	46.7	5	02/08/22 07:34	02/10/22 19:30		
TPH (C28-C40)	**73.6 U**	mg/kg	73.6	47.0	5	02/08/22 07:34	02/10/22 19:30		
Surrogates									
o-Terphenyl (S)	77	%.	10-114		5	02/08/22 07:34	02/10/22 19:30	84-15-1	
8015D GRO Soil	Analytical Method: EPA 8015D Preparation Method: EPA 5035A/5030B Pace Analytical Services - Greensburg								
TPH (C06-C10)	**10.7J**	mg/kg	12.0	6.7	1	02/04/22 10:29	02/04/22 16:24		
Surrogates									
a,a,a-Trifluorotoluene (S)	36	%.	10-175		1	02/04/22 10:29	02/04/22 16:24	98-08-8	
4-Bromofluorobenzene (S)	86	%.	70-130		1	02/04/22 10:29	02/04/22 16:24	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Greensburg								
Percent Moisture	**9.9**	%	0.10	0.10	1		01/31/22 15:00		

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QUALITY CONTROL DATA

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

QC Batch: 481740 | Analysis Method: EPA 8015D
QC Batch Method: EPA 5035A/5030B | Analysis Description: 8015D GRO Soil
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461349001, 30461349002, 30461349003, 30461349004, 30461349005, 30461349006, 30461349007, 30461349008, 30461349009, 30461349010, 30461349011, 30461349012

METHOD BLANK: 2328556 Matrix: Solid
Associated Lab Samples: 30461349001, 30461349002, 30461349003, 30461349004, 30461349005, 30461349006, 30461349007, 30461349008, 30461349009, 30461349010, 30461349011, 30461349012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C10)	mg/kg	10.0 U	10.0	5.5	02/03/22 14:36	
4-Bromofluorobenzene (S)	%.	100	70-130		02/03/22 14:36	
a,a,a-Trifluorotoluene (S)	%.	65	10-175		02/03/22 14:36	

LABORATORY CONTROL SAMPLE: 2328557

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C10)	mg/kg	50	43.7	87	50-137	
4-Bromofluorobenzene (S)	%.			92	70-130	
a,a,a-Trifluorotoluene (S)	%.			65	10-175	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2328558 2328559

Parameter	Units	30461049001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C10)	mg/kg	ND	72.7	72.7	65.7	59.7	90	81	31-130	10	25	
4-Bromofluorobenzene (S)	%.						90	93	70-130			
a,a,a-Trifluorotoluene (S)	%.						69	71	10-175			

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QUALITY CONTROL DATA

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

QC Batch: 481904
QC Batch Method: EPA 5035A/5030B
Analysis Method: EPA 8015D
Analysis Description: 8015D GRO Soil
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461349013, 30461349014, 30461349015, 30461349016, 30461349017, 30461349018, 30461349019

METHOD BLANK: 2329602 Matrix: Solid
Associated Lab Samples: 30461349013, 30461349014, 30461349015, 30461349016, 30461349017, 30461349018, 30461349019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C06-C10)	mg/kg	10.0 U	10.0	5.5	02/04/22 12:54	
4-Bromofluorobenzene (S)	%.	100	70-130		02/04/22 12:54	
a,a,a-Trifluorotoluene (S)	%.	60	10-175		02/04/22 12:54	

LABORATORY CONTROL SAMPLE: 2329603

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C06-C10)	mg/kg	50	42.7	85	50-137	
4-Bromofluorobenzene (S)	%.			91	70-130	
a,a,a-Trifluorotoluene (S)	%.			59	10-175	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2329604 2329605

Parameter	Units	30461349013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C10)	mg/kg	1330	955	955	1470	1670	15	36	31-130	13	25	ML
4-Bromofluorobenzene (S)	%.						134	92	70-130			ST
a,a,a-Trifluorotoluene (S)	%.						302	355	10-175			S4

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QUALITY CONTROL DATA

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

QC Batch: 482316
QC Batch Method: EPA 3546
Analysis Method: EPA 8015D
Analysis Description: EPA 8015D TPH
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461349001, 30461349002, 30461349003, 30461349004, 30461349005, 30461349006, 30461349007, 30461349008, 30461349009, 30461349010, 30461349011, 30461349012, 30461349013, 30461349014, 30461349015, 30461349016, 30461349017, 30461349018, 30461349019

METHOD BLANK: 2331446 Matrix: Solid
Associated Lab Samples: 30461349001, 30461349002, 30461349003, 30461349004, 30461349005, 30461349006, 30461349007, 30461349008, 30461349009, 30461349010, 30461349011, 30461349012, 30461349013, 30461349014, 30461349015, 30461349016, 30461349017, 30461349018, 30461349019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
TPH (C10-C28)	mg/kg	13.1 U	13.1	8.3	02/08/22 16:55	
TPH (C28-C40)	mg/kg	13.1 U	13.1	8.3	02/08/22 16:55	
o-Terphenyl (S)	%.	84	10-114		02/08/22 16:55	

LABORATORY CONTROL SAMPLE: 2331447

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH (C10-C28)	mg/kg	65.4	56.4	86	51-106	
o-Terphenyl (S)	%.			90	10-114	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2331448 2331449

Parameter	Units	30461349001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C10-C28)	mg/kg	1190	72.9	72.8	1200	972	8	-302	10-155	21	25	ML
o-Terphenyl (S)	%.						36	46	10-114			

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QUALITY CONTROL DATA

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

QC Batch: 481155
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30461349001

SAMPLE DUPLICATE: 2324923

Parameter	Units	30461315002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	13.3	13.0	2	20	

SAMPLE DUPLICATE: 2324924

Parameter	Units	30461315003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	6.2	8.1	27	20	D6

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QUALITY CONTROL DATA

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

QC Batch: 481156
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30461349002, 30461349003, 30461349004, 30461349005, 30461349006, 30461349007, 30461349008, 30461349009, 30461349010, 30461349011, 30461349012, 30461349013, 30461349014, 30461349015, 30461349016, 30461349017, 30461349018, 30461349019

SAMPLE DUPLICATE: 2324926

Parameter	Units	30461349002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	5.6	10.5	60	20	D6

SAMPLE DUPLICATE: 2324936

Parameter	Units	30461349003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	10.5	6.8	43	20	D6

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QUALIFIERS

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
ML	Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.
SR	Surrogate recovery was below laboratory control limits. Results may be biased low.
ST	Surrogate recovery was above laboratory control limits. Results may be biased high.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30461349001	AOI8-BH-22-02-31-20220125	EPA 3546	482316	EPA 8015D	482538
30461349002	AOI8-BH-22-02-33-20220125	EPA 3546	482316	EPA 8015D	482538
30461349003	AOI8-BH-22-02-35-20220125	EPA 3546	482316	EPA 8015D	482538
30461349004	AOI8-BH-22-03-31-20220125	EPA 3546	482316	EPA 8015D	482538
30461349005	AOI8-BH-22-04-20-20220126	EPA 3546	482316	EPA 8015D	482538
30461349006	AOI8-BH-22-04-22-20220126	EPA 3546	482316	EPA 8015D	482538
30461349007	AOI8-BH-22-04-24-20220126	EPA 3546	482316	EPA 8015D	482538
30461349008	AOI8-BH-22-04-26-20220126	EPA 3546	482316	EPA 8015D	482538
30461349009	AOI8-BH-22-04-28-20220126	EPA 3546	482316	EPA 8015D	482538
30461349010	AOI8-BH-22-05-22-20220126	EPA 3546	482316	EPA 8015D	482538
30461349011	AOI8-BH-22-05-26-20220126	EPA 3546	482316	EPA 8015D	482538
30461349012	AOI8-BH-22-05-28-20220126	EPA 3546	482316	EPA 8015D	482538
30461349013	AOI8-BH-22-05-30-20220126	EPA 3546	482316	EPA 8015D	482538
30461349014	AOI8-BH-22-05-32-20220126	EPA 3546	482316	EPA 8015D	482538
30461349015	AOI8-BH-22-06-23-20220127	EPA 3546	482316	EPA 8015D	482538
30461349016	AOI8-BH-22-06-29-20220127	EPA 3546	482316	EPA 8015D	482538
30461349017	AOI8-BH-22-06-31-20220127	EPA 3546	482316	EPA 8015D	482538
30461349018	AOI8-BH-22-06-33-20220127	EPA 3546	482316	EPA 8015D	482538
30461349019	AOI8-BH-22-06-35-20220127	EPA 3546	482316	EPA 8015D	482538
30461349001	AOI8-BH-22-02-31-20220125	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349002	AOI8-BH-22-02-33-20220125	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349003	AOI8-BH-22-02-35-20220125	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349004	AOI8-BH-22-03-31-20220125	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349005	AOI8-BH-22-04-20-20220126	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349006	AOI8-BH-22-04-22-20220126	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349007	AOI8-BH-22-04-24-20220126	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349008	AOI8-BH-22-04-26-20220126	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349009	AOI8-BH-22-04-28-20220126	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349010	AOI8-BH-22-05-22-20220126	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349011	AOI8-BH-22-05-26-20220126	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349012	AOI8-BH-22-05-28-20220126	EPA 5035A/5030B	481740	EPA 8015D	481766
30461349013	AOI8-BH-22-05-30-20220126	EPA 5035A/5030B	481904	EPA 8015D	481915
30461349014	AOI8-BH-22-05-32-20220126	EPA 5035A/5030B	481904	EPA 8015D	481915
30461349015	AOI8-BH-22-06-23-20220127	EPA 5035A/5030B	481904	EPA 8015D	481915
30461349016	AOI8-BH-22-06-29-20220127	EPA 5035A/5030B	481904	EPA 8015D	481915
30461349017	AOI8-BH-22-06-31-20220127	EPA 5035A/5030B	481904	EPA 8015D	481915
30461349018	AOI8-BH-22-06-33-20220127	EPA 5035A/5030B	481904	EPA 8015D	481915
30461349019	AOI8-BH-22-06-35-20220127	EPA 5035A/5030B	481904	EPA 8015D	481915
30461349001	AOI8-BH-22-02-31-20220125	ASTM D2974-87	481155		
30461349002	AOI8-BH-22-02-33-20220125	ASTM D2974-87	481156		
30461349003	AOI8-BH-22-02-35-20220125	ASTM D2974-87	481156		
30461349004	AOI8-BH-22-03-31-20220125	ASTM D2974-87	481156		
30461349005	AOI8-BH-22-04-20-20220126	ASTM D2974-87	481156		
30461349006	AOI8-BH-22-04-22-20220126	ASTM D2974-87	481156		
30461349007	AOI8-BH-22-04-24-20220126	ASTM D2974-87	481156		
30461349008	AOI8-BH-22-04-26-20220126	ASTM D2974-87	481156		
30461349009	AOI8-BH-22-04-28-20220126	ASTM D2974-87	481156		

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 213403364 / A018 Ballfield Con-Revised Report
Pace Project No.: 30461349

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30461349010	**AOI8-BH-22-05-22-20220126**	ASTM D2974-87	481156		
30461349011	**AOI8-BH-22-05-26-20220126**	ASTM D2974-87	481156		
30461349012	**AOI8-BH-22-05-28-20220126**	ASTM D2974-87	481156		
30461349013	**AOI8-BH-22-05-30-20220126**	ASTM D2974-87	481156		
30461349014	**AOI8-BH-22-05-32-20220126**	ASTM D2974-87	481156		
30461349015	**AOI8-BH-22-06-23-20220127**	ASTM D2974-87	481156		
30461349016	**AOI8-BH-22-06-29-20220127**	ASTM D2974-87	481156		
30461349017	**AOI8-BH-22-06-31-20220127**	ASTM D2974-87	481156		
30461349018	**AOI8-BH-22-06-33-20220127**	ASTM D2974-87	481156		
30461349019	**AOI8-BH-22-06-35-20220127**	ASTM D2974-87	481156		

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CHAIN-OF-CUSTODY Analytical Request Document

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LAB USE ONLY- Affix Workorder/I... MT...

WO# : 30461349

30461349

ALL SHADED A...

Company: Evergreen c/o Stantec	Billing Information:
Address: Mateo Andrew Dr Suite 140 West Chester PA	
Report To: Andrew Klingbeil	Email To: Andrew.Klingbeil@stantec.com
Copy To: Dane Hopkins (dane.hopkins@stantec.com)	Site Collection Info/Address: Former Philadelphia Refinery
Customer Project Name/Number: 213403364 / A018 Battlefield Confirmation Drilling	State: PA / County/City: / Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: / Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Hill, Dane Hopkins	Purchase Order #: / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [X] No / Analysis:

Container Preservative Type **

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	GRO 8015 C4-C10	DRO C10-C28	ORO C28-C40	Lab Sample # / Comments
A018-BH-22-0231-20220125	SL	G	1/25/22	~~1430~~ 0850				5	X	X	X	001
A018-BH-22-0233-20220125	SL	G	1/25/22	~~1435~~ 0905				5	X	X	X	002
A018-BH-22-0235-20220125	SL	G	1/25/22	~~1440~~ 0920				5	X	X	X	003
A018-BH-22-03-31-20220125	SL	G	1/25/22	1445				5	X	X	X	004
A018-BH-22-04-20-20220126	SL	G	1/26/22	0840				5	X	X	X	005
A018-BH-22-04-22-20220126	SL	G	1/26/22	0900				5	X	X	X	006
A018-BH-22-04-24-20220126	SL	G	1/26/22	0920				5	X	X	X	007
A018-BH-22-04-26-20220126	SL	G	1/26/22	0930				5	X	X	X	008
A018-BH-22-04-28-20220126	SL	G	1/26/22	1000				5	X	X	X	009
A018-BH-22-05-22-20220126	SL	G	1/26/22	1510				5	X	X	X	010

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y (N) NA
Custody Signatures Present	(Y) N NA
Collector Signature Present	(Y) N NA
Bottles Intact	(Y) N NA
Correct Bottles	(Y) N NA
Sufficient Volume	(Y) N NA
Samples Received on Ice	(Y) N NA
VOA - Headspace Acceptable	(Y) N NA
USDA Regulated Soils	(N) NA
Samples in Holding Time	(Y) N NA
Residual Chlorine Present	Y N (NA)
Cl Strips:	
Sample pH Acceptable	Y N (NA)
pH Strips:	
Sulfide Present	Y N (NA)
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments: 2a | VPInc

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Ice

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 2776750

Samples received via: FEDEX UPS Client Courier (Pace Courier)

Lab Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: 13
Cooler 1 Temp Upon Receipt: 4.7 oC 4.9
Cooler 1 Therm Corr. Factor: .05 oC -0.5
Cooler 1 Corrected Temp: 4.2 oC 4.4
Comments: 2a 1-28-22

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Andrew Hill / Stantec	1/19/22 1700	Dane / Stantec	1/19/22 1700
Dane / Stantec	1/19/22 1700	MS / PACE	1/19/22 1700
MS / PACE	1/27/22 1715	RDS PACE	1/27-22 1730
RDS PACE	1-27-22 2200	& Advanced	1-27-22 22:10

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): (YES) NO

Page: 1 of: 1

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or

WO# : 30461349

PM: MS1 Due Date: 02/11/22

CLIENT: SUNOCO_STANT

ALL SHADE

Company: Evergreen % Stantec	Billing Information:
Address: 1060 Andrew Dr. Suite 140 West Chester PA 19380	
Report To: Andrew Klingbeil	Email To: Andrew.Klingbeil@Stantec.com
Copy To: Dana Hopkins dana.hopkins@stantec.com	Site Collection Info/Address: Former Philadelphia Refinery
Customer Project Name/Number: 213403364/A018 Billfield Confirmation Drilling	State: PA / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrea Hill/Dana Hopkins	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	GRO 8015 C6-C10	DRO C10-C28	DRO C28-C40	Analyses	Lab Profile/Line:
A018-BH-22-05-26-20220126	SL	G	1/26/22	1530					X	X	X		011
A018-BH-22-05-28-20220126	SL	G	1/26/22	1540					X	X	X		012
A018-BH-22-05-30-20220126	SL	G	1/26/22	1550					X	X	X		013
A018-BH-22-05-32-20220126	SL	G	1/26/22	1600					X	X	X		014
A018-BH-22-06-23-20220127	SL	G	1/27/22	1105					X	X	X		015
A018-BH-22-06-29-20220127	SL	G	1/27/22	1115					X	X	X		016
A018-BH-22-06-31-20220127	SL	G	1/27/22	1135					X	X	X		017
A018-BH-22-06-33-20220127	SL	G	1/27/22	1145					X	X	X		018
A018-BH-22-06-35-20220127	SL	G	1/27/22	1200					X	X	X		019

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:
see page 1

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Ice

Radchem sample(s) screened (<500 cpm): Y N (NA)

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 2776557

Samples received via: FEDEX UPS Client Courier (Pace Courier)

Lab Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: T3
Cooler 1 Temp Upon Receipt: 4.7 oC 4.9
Cooler 1 Therm Corr. Factor: -0.5 oC -0.5
Cooler 1 Corrected Temp: 4.2 oC 4.4
Comments: Ja 1-28-22

Relinquished by/Company: (Signature) Stantec	Date/Time: 1/19/22 1700	Received by/Company: (Signature) MS/PACE	Date/Time: 1/19/22 1700	MTJL LAB USE ONLY Table #: Acctnum: Template: Prelogin:
Relinquished by/Company: (Signature) MS/PACE	Date/Time: 1/27/22 1715	Received by/Company: (Signature) RDS PACE	Date/Time: 1/27/22 1730	PM: PB:
Relinquished by/Company: (Signature) RDS PACE	Date/Time: 1/27/22 2205	Received by/Company: (Signature)	Date/Time: 1-27-22 22:10	

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): (YES) NO

Page: 2 of: 2

WO# : 30461349

PM: MS1 **Due Date: 02/11/22**

CLIENT: SUNOCO_STANT

Pace Analytical
www.pacelabs.com

Sample Receiving Non-Conformance Form (NCF)

Date: 1-28-22	**Evaluated by:** Sammy Andreyson
Client: Stantec	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper	✓	Other:

Comments/Details:

no container preservative type on coc
no dry weight received for A018-BH-22-03-31-20220125 (004)

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

F-ALL-C-011-rev.00, 05Jul2018

WO#: 30461349

PM: MS1 Due Date: 02/11/22
CLIENT: SUNOCO_STANT

Pace Analytical®

Pace C ount

Client Stantec

Profile Number 16564

Site 213403364 | A018 Bellfield Confirmation Drilling

Notes no dry weight for 004

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	Dup
1	SL																								4				1
2	1																								4				1
3	SL																								4				
4	SL																								3				
5	SL																								4				
6	1																								1				
7	1																								1				
8	1																								1				
9	1																								1				
10	1																								1				
11	1																								1				
~~12~~ 19	SL																								4				1

Container Codes

Glass

GJN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
AG5U	100mL amber glass unprserved	VG9U	40mL clear VOA vial
AG5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosul
GJN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
AG1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
AG1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
AG1T	1L amber glass Na Thiosulfate	BG2U	500mL clear glass unpreserved
BG1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserve
AG3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
AG3U	250mL amber glass unpreserved		

Plastic / Misc.

GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250ml plastic NAOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZI	5g Encore
VOAK	Kit for Volatile Solid
1	Wipe/Swab
ZPLC	Ziploc Bag

WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

Pace Container Order #893979

Addresses

Order By :		Ship To :		Return To:	
Company	Stantec	Company	Stantec	Company	Pace Analytical Pittsburgh
Contact	Andrea Hill	Contact	Andrea Hill	Contact	Smetanka, Megan
Email	andrea.hill@stantec.com	Email	andrea.hill@stantec.com	Email	megan.smetanka@pacelabs.com
Address	1060 Andrew Drive	Address	1060 Andrew Drive	Address	1638 Roseytown Road
Address 2	Suite 140	Address 2	Suite 140	Address 2	Suites 2,3,4
City	West Chester	City	West Chester	City	Greensburg
State	PA Zip 19380-5602	State	PA Zip 19380-5602	State	PA Zip 15601
Phone	(717) 940-8902	Phone	(717) 940-8902	Phone	(724)850-5600

PLEASE RETURN THIS COPY WITH COC

Info

Project Name	Evergreen_Stantec Former Philadelphia Refinery	**Due Date**	12/30/2021	**Profile**	TBA	**Quote**	
Project Manager	Smetanka, Megan	**Return Date**		**Carrier**	FedEx Priority Overnight	**Location**	Pennsylvania

Trip Blanks

- [X] Include Trip Blanks

Bottle Labels

- [ ] Blank
- [X] Pre-Printed No Sample IDs
- [ ] Pre-Printed With Sample IDs

Bottles

- [ ] Boxed Cases
- [X] Individually Wrapped
- [ ] Grouped By Sample ID/Matrix

Return Shipping Labels

- [ ] No Shipper
- [ ] With Shipper

Misc

- [ ] Sampling Instructions
- [ ] Custody Seal
- [ ] Temp. Blanks
- [ ] Coolers
- [ ] Syringes
- [ ] Extra Bubble Wrap
- [ ] Short Hold/Rush Stickers
- [ ] DI Water Liter(s)
- [ ] USDA Regulated Soils

COC Options

- [X] Number of Blanks
- [ ] Pre-Printed

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
30	SL	GRO 8015	1-Terracore kit	34	4	120621-3YW	MS/MSd
30	SL	DRO/ORO	4oz amber straight side soil jars	30	0	110821-1KM	

WO# : 30461349

PM: MS1 Due Date: 02/11/22

CLIENT: SUNOCO_STANT

Hazard Shipping Placard In Place : NO

- Sample receiving hours are typically 8am-5pm, but may differ by location. Please check with your Pace Project Manager.
- Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.
- Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.
- Payment term are net 30 days.
- Please include the proposal number on the chain of custody to insure proper billing.

LAB USE:

Ship Date :	12/29/2021
Prepared By:	George
Verified By:	David Gunsullus

Sample

CLIENT USE (Optional):

Date Rec'd:	
Received By:	
Verified By:	

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



Technical Report for

Sunoco/Evergreen

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

SGS Job Number: JD40284

Sampling Date: 02/23/22

Report to:

Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380
Jennifer.Menges@stantec.com; Andrew.klingbeil@stantec.com;
Andrew.Bradley@stantec.com; Jenny.Kachel@stantec.com;
ATTN: Jennifer Menges

Total number of pages in report: **90**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

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Test results relate only to samples analyzed.

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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

June 9, 2022

Ms. Jennifer Menges
Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380

RE: SGS – Dayton, Job # JD40284 - Reissues

Dear Ms. Menges,

The final report for SGS job number JD40284 has been edited to reflect corrections to the results. These edits have been incorporated into the revised report which is attached.

Specifically, the Naphthalene has been omitted from volatile samples and retrieved from SIM samples per client's request. The attached revised report incorporates these revisions.

SGS apologizes for this occurrence and for any inconvenience this situation may have caused. Please contact me if I can be of further assistance in this matter.

Sincerely,

Report Department

SGS North America Inc.

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SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD40284

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies: Organics ND = Not detected above the MDL							
JD40284-1	02/23/22	12:35	JDC	02/24/22	AQ	Ground Water	N-166_20220223
JD40284-1F	02/23/22	12:35	JDC	02/24/22	AQ	Groundwater Filtered	N-166_20220223
JD40284-2	02/23/22	15:05	JDC	02/24/22	AQ	Ground Water	N-170_20220223
JD40284-2F	02/23/22	15:05	JDC	02/24/22	AQ	Groundwater Filtered	N-170_20220223
JD40284-3	02/23/22	16:40	JDC	02/24/22	AQ	Ground Water	N-164_20220223
JD40284-3F	02/23/22	16:40	JDC	02/24/22	AQ	Groundwater Filtered	N-164_20220223
JD40284-4	02/23/22	16:40	JDC	02/24/22	AQ	Trip Blank Water	TRIP BLANK

Summary of Hits

Job Number: JD40284
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 02/23/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD40284-1	**N-166_20220223**					
Benzene		913	5.0	4.3	ug/l	SW846 8260D
Toluene [a]		28.4	2.5	1.3	ug/l	SW846 8260D
Ethylbenzene [a]		8.4	2.5	1.5	ug/l	SW846 8260D
Xylene (total) [a]		25.1	2.5	1.5	ug/l	SW846 8260D
Isopropylbenzene [a]		208	2.5	1.6	ug/l	SW846 8260D
1,2,4-Trimethylbenzene [a]		5.7	5.0	2.5	ug/l	SW846 8260D
1,3,5-Trimethylbenzene [a]		11.1	5.0	2.5	ug/l	SW846 8260D
Anthracene		2.60	0.074	0.037	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		1.44	0.037	0.022	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.791	0.037	0.022	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		1.05	0.037	0.022	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.566	0.074	0.037	ug/l	SW846 8270E BY SIM
Chrysene		1.27	0.074	0.037	ug/l	SW846 8270E BY SIM
Fluorene		6.46	0.37	0.19	ug/l	SW846 8270E BY SIM
Naphthalene		13.7 E	0.074	0.037	ug/l	SW846 8270E BY SIM
Phenanthrene		13.6	0.37	0.19	ug/l	SW846 8270E BY SIM
Pyrene		3.69	0.074	0.037	ug/l	SW846 8270E BY SIM
Methane		11800	28	20	ug/l	RSK-175
Ethane		2.1	0.23	0.14	ug/l	RSK-175
Ethene		1.5	0.31	0.16	ug/l	RSK-175
Calcium		76900	5000		ug/l	SW846 6010D
Iron		76800	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [b]		345	10		mg/l	SM2320 B-11
Inorganic Carbon [c]		85.1	6.0		mg/l	SM5310 B-11
Nitrogen, Total Kjeldahl		6.5	4.0		mg/l	EPA 351.2/LACHAT
Sulfate		16.2	2.0		mg/l	EPA 300/SW846 9056A
Total Carbon		96.2	5.0		mg/l	SM5310 B-11
Total Organic Carbon		11.1	1.0		mg/l	SM5310 B-11
JD40284-1F	**N-166_20220223**					
Lead		1.9	1.0		ug/l	SW846 6020B
JD40284-2	**N-170_20220223**					
Benzene		238	5.0	4.3	ug/l	SW846 8260D
Toluene		25.4	1.0	0.53	ug/l	SW846 8260D
Ethylbenzene		46.1	1.0	0.60	ug/l	SW846 8260D
Xylene (total)		56.3	1.0	0.59	ug/l	SW846 8260D
Isopropylbenzene		106	1.0	0.65	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		4.5	2.0	1.0	ug/l	SW846 8260D
Anthracene		1.40	0.082	0.041	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.294	0.041	0.024	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD40284
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 02/23/22

Lab Sample ID / Client Sample ID / Analyte	Result/ Qual	RL	MDL	Units	Method
Benzo(a)pyrene	0.146	0.041	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene	0.132	0.041	0.024	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene	0.115	0.082	0.041	ug/l	SW846 8270E BY SIM
Chrysene	0.301	0.082	0.041	ug/l	SW846 8270E BY SIM
Fluorene	3.63	0.082	0.041	ug/l	SW846 8270E BY SIM
Phenanthrene	6.16	0.41	0.20	ug/l	SW846 8270E BY SIM
Pyrene	1.35	0.082	0.041	ug/l	SW846 8270E BY SIM
Methane	9250	22	16	ug/l	RSK-175
Ethane	1.3	0.23	0.14	ug/l	RSK-175
Ethene	0.69	0.31	0.16	ug/l	RSK-175
Calcium	46100	5000		ug/l	SW846 6010D
Iron	30700	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [b]	210	10		mg/l	SM2320 B-11
Nitrogen, Total Kjeldahl	0.20	0.20		mg/l	EPA 351.2/LACHAT
Total Carbon	7.7	1.0		mg/l	SM5310 B-11
Total Organic Carbon	8.0	1.0		mg/l	SM5310 B-11

JD40284-2F N-170_20220223

No hits reported in this sample.

JD40284-3 N-164_20220223

Benzene	1730	10	8.5	ug/l	SW846 8260D
Toluene [a]	94.9	4.0	2.1	ug/l	SW846 8260D
Ethylbenzene [a]	481	4.0	2.4	ug/l	SW846 8260D
Xylene (total) [a]	596	4.0	2.4	ug/l	SW846 8260D
Isopropylbenzene [a]	132	4.0	2.6	ug/l	SW846 8260D
1,2,4-Trimethylbenzene [a]	372	8.0	4.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene [a]	121	8.0	4.0	ug/l	SW846 8260D
Anthracene	0.162	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene	0.870	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene	157 E	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene	0.981	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene	0.0679 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Methane	14500	22	16	ug/l	RSK-175
Ethane	0.55	0.23	0.14	ug/l	RSK-175
Calcium	52900	5000		ug/l	SW846 6010D
Iron	44500	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [b]	239	10		mg/l	SM2320 B-11
Nitrogen, Total Kjeldahl	0.44	0.20		mg/l	EPA 351.2/LACHAT
Sulfate	14.5	2.0		mg/l	EPA 300/SW846 9056A
Total Carbon	7.6	1.0		mg/l	SM5310 B-11
Total Organic Carbon	7.8	1.0		mg/l	SM5310 B-11

Summary of Hits

Job Number: JD40284
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 02/23/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

JD40284-3F **N-164_20220223**

No hits reported in this sample.

JD40284-4 **TRIP BLANK**

No hits reported in this sample.

(a) Dilution required due to high concentration of target compound.
(b) Sample was titrated to a final pH of 4.5.
(c) Calculated as: Total Carbon - Total Organic Carbon

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	N-166_20220223		
Lab Sample ID:	JD40284-1	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L338508.D	2.5	03/01/22 16:09	NH	n/a	n/a	VL10199
Run #2	L338467.D	10	02/28/22 23:31	NH	n/a	n/a	VL10197

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	913 [b]	5.0	4.3	ug/l	
108-88-3	Toluene	28.4	2.5	1.3	ug/l	
100-41-4	Ethylbenzene	8.4	2.5	1.5	ug/l	
1330-20-7	Xylene (total)	25.1	2.5	1.5	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.5	1.5	ug/l	
98-82-8	Isopropylbenzene	208	2.5	1.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.5	1.3	ug/l	
75-65-0	Tert Butyl Alcohol	ND	25	15	ug/l	
95-63-6	1,2,4-Trimethylbenzene	5.7	5.0	2.5	ug/l	
108-67-8	1,3,5-Trimethylbenzene	11.1	5.0	2.5	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	87%	88%	80-120%
17060-07-0	1,2-Dichloroethane-D4	103%	102%	80-120%
2037-26-5	Toluene-D8	100%	101%	80-120%
460-00-4	4-Bromofluorobenzene	113%	110%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-166_20220223		
Lab Sample ID:	JD40284-1	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P52098.D	1	03/02/22 19:56	KLS	02/28/22 09:45	OP38344A	E4P2715
Run #2	4P52171.D	5	03/04/22 08:07	CS	02/28/22 09:45	OP38344A	E4P2718

	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2	270 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	2.60	0.074	0.037	ug/l	
56-55-3	Benzo(a)anthracene	1.44	0.037	0.022	ug/l	
50-32-8	Benzo(a)pyrene	0.791	0.037	0.022	ug/l	
205-99-2	Benzo(b)fluoranthene	1.05	0.037	0.022	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.566	0.074	0.037	ug/l	
218-01-9	Chrysene	1.27	0.074	0.037	ug/l	
86-73-7	Fluorene	6.46 [a]	0.37	0.19	ug/l	
91-20-3	Naphthalene	13.7	0.074	0.037	ug/l	E
85-01-8	Phenanthrene	13.6 [a]	0.37	0.19	ug/l	
129-00-0	Pyrene	3.69	0.074	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	50%	75%	29-124%
321-60-8	2-Fluorobiphenyl	43%	69%	23-122%
1718-51-0	Terphenyl-d14	54%	62%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-166_20220223
Lab Sample ID: JD40284-1 **Date Sampled:** 02/23/22
Matrix: AQ - Ground Water **Date Received:** 02/24/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G42789.D	1	03/08/22 02:45	RK	03/01/22 13:10	OP38385	G7G1521
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.021	0.0072	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	82%		52-154%
3017-95-6	2-Bromo-1-chloropropane	100%		52-154%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-166_20220223		
Lab Sample ID:	JD40284-1	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA93543.D	1	03/02/22 11:55	WC	n/a	n/a	GAA2507
Run #2	AA93544.D	250	03/02/22 12:09	WC	n/a	n/a	GAA2507

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	11800 [a]	28	20	ug/l	
74-84-0	Ethane	2.1	0.23	0.14	ug/l	
74-85-1	Ethene	1.5	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-166_20220223		
Lab Sample ID:	JD40284-1	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	76900	5000	ug/l	1	02/28/22	02/28/22	ND	SW846 6010D [1]	SW846 3010A [2]
Iron	76800	100	ug/l	1	02/28/22	02/28/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51974
(2) Prep QC Batch: MP31495

RL = Reporting Limit

Report of Analysis

Client Sample ID: N-166_20220223
Lab Sample ID: JD40284-1
Matrix: AQ - Ground Water
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Date Sampled: 02/23/22
Date Received: 02/24/22
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	345	10	mg/l	1	02/25/22 16:10	MP	SM2320 B-11
Inorganic Carbon [b]	85.1	6.0	mg/l	1	02/28/22 22:31	MB	SM5310 B-11
Nitrogen, Total Kjeldahl	6.5	4.0	mg/l	1	03/01/22 10:21	MM	EPA 351.2/LACHAT
Sulfate	16.2	2.0	mg/l	1	02/26/22 01:31	JD	EPA 300/SW846 9056A
Total Carbon	96.2	5.0	mg/l	5	02/28/22 22:31	MB	SM5310 B-11
Total Organic Carbon	11.1	1.0	mg/l	1	02/25/22 20:55	MB	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.
(b) Calculated as: Total Carbon - Total Organic Carbon

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-166_20220223		
Lab Sample ID:	JD40284-1F	**Date Sampled:**	02/23/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	02/24/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	1.9	1.0	ug/l	2	02/28/22	03/02/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51987
(2) Prep QC Batch: MP31496

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-170_20220223		
Lab Sample ID:	JD40284-2	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L338507.D	1	03/01/22 15:45	NH	n/a	n/a	VL10199
Run #2	L338468.D	10	02/28/22 23:55	NH	n/a	n/a	VL10197

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	238 [a]	5.0	4.3	ug/l	
108-88-3	Toluene	25.4	1.0	0.53	ug/l	
100-41-4	Ethylbenzene	46.1	1.0	0.60	ug/l	
1330-20-7	Xylene (total)	56.3	1.0	0.59	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	106	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	4.5	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	88%	88%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	101%	80-120%
2037-26-5	Toluene-D8	100%	97%	80-120%
460-00-4	4-Bromofluorobenzene	117% [b]	112%	82-114%

(a) Result is from Run# 2
(b) Outside of in house control limits, but within reasonable method recovery limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-170_20220223		
Lab Sample ID:	JD40284-2	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P52099.D	1	03/02/22 20:20	KLS	02/28/22 09:45	OP38344A	E4P2715
Run #2	4P52170.D	5	03/04/22 07:44	CS	02/28/22 09:45	OP38344A	E4P2718

	Initial Volume	Final Volume
Run #1	245 ml	1.0 ml
Run #2	245 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	1.40	0.082	0.041	ug/l	
56-55-3	Benzo(a)anthracene	0.294	0.041	0.024	ug/l	
50-32-8	Benzo(a)pyrene	0.146	0.041	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.132	0.041	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.115	0.082	0.041	ug/l	
218-01-9	Chrysene	0.301	0.082	0.041	ug/l	
86-73-7	Fluorene	3.63	0.082	0.041	ug/l	
91-20-3	Naphthalene	ND	0.082	0.041	ug/l	
85-01-8	Phenanthrene	6.16 [a]	0.41	0.20	ug/l	
129-00-0	Pyrene	1.35	0.082	0.041	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61%	66%	29-124%
321-60-8	2-Fluorobiphenyl	59%	65%	23-122%
1718-51-0	Terphenyl-d14	60%	62%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-170_20220223
Lab Sample ID: JD40284-2 **Date Sampled:** 02/23/22
Matrix: AQ - Ground Water **Date Received:** 02/24/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G42792.D	1	03/08/22 03:43	RK	03/01/22 13:10	OP38385	G7G1521
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	90%		52-154%
3017-95-6	2-Bromo-1-chloropropane	109%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-170_20220223		
Lab Sample ID:	JD40284-2	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA93545.D	1	03/02/22 12:23	WC	n/a	n/a	GAA2507
Run #2	AA93546.D	200	03/02/22 12:36	WC	n/a	n/a	GAA2507

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	9250 [a]	22	16	ug/l	
74-84-0	Ethane	1.3	0.23	0.14	ug/l	
74-85-1	Ethene	0.69	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-170_20220223		
Lab Sample ID:	JD40284-2	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	46100	5000	ug/l	1	02/28/22	02/28/22	ND	SW846 6010D [1]	SW846 3010A [2]
Iron	30700	100	ug/l	1	02/28/22	02/28/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51974
(2) Prep QC Batch: MP31495

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-170_20220223		
Lab Sample ID:	JD40284-2	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	210	10	mg/l	1	02/25/22 16:10	MP	SM2320 B-11
Inorganic Carbon [b]	< 2.0	2.0	mg/l	1	02/28/22 23:04	MB	SM5310 B-11
Nitrogen, Total Kjeldahl	0.20	0.20	mg/l	1	03/01/22 10:36	MM	EPA 351.2/LACHAT
Sulfate	< 2.0	2.0	mg/l	1	02/26/22 01:44	JD	EPA 300/SW846 9056A
Total Carbon	7.7	1.0	mg/l	1	02/28/22 23:04	MB	SM5310 B-11
Total Organic Carbon	8.0	1.0	mg/l	1	02/25/22 21:59	MB	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.
(b) Calculated as: Total Carbon - Total Organic Carbon

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-170_20220223		
Lab Sample ID:	JD40284-2F	**Date Sampled:**	02/23/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	02/24/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	02/28/22	03/02/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51987
(2) Prep QC Batch: MP31496

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-164_20220223		
Lab Sample ID:	JD40284-3	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L338500.D	4	03/01/22 12:57	NH	n/a	n/a	VL10199
Run #2	L338466.D	20	02/28/22 23:08	NH	n/a	n/a	VL10197

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1730 [b]	10	8.5	ug/l	
108-88-3	Toluene	94.9	4.0	2.1	ug/l	
100-41-4	Ethylbenzene	481	4.0	2.4	ug/l	
1330-20-7	Xylene (total)	596	4.0	2.4	ug/l	
107-06-2	1,2-Dichloroethane	ND	4.0	2.4	ug/l	
98-82-8	Isopropylbenzene	132	4.0	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	4.0	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	40	23	ug/l	
95-63-6	1,2,4-Trimethylbenzene	372	8.0	4.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	121	8.0	4.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	88%	87%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	103%	80-120%
2037-26-5	Toluene-D8	94%	99%	80-120%
460-00-4	4-Bromofluorobenzene	112%	112%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-164_20220223		
Lab Sample ID:	JD40284-3	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P52100.D	1	03/02/22 20:45	KLS	02/28/22 09:45	OP38344A	E4P2715
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.162	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	0.870	0.080	0.040	ug/l	
91-20-3	Naphthalene	157	0.080	0.040	ug/l	E
85-01-8	Phenanthrene	0.981	0.080	0.040	ug/l	
129-00-0	Pyrene	0.0679	0.080	0.040	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	47%		29-124%
321-60-8	2-Fluorobiphenyl	47%		23-122%
1718-51-0	Terphenyl-d14	47%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-164_20220223
Lab Sample ID: JD40284-3 **Date Sampled:** 02/23/22
Matrix: AQ - Ground Water **Date Received:** 02/24/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G42798.D	1	03/08/22 05:39	RK	03/01/22 13:10	OP38385	G7G1521
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	79%		52-154%
3017-95-6	2-Bromo-1-chloropropane	95%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-164_20220223		
Lab Sample ID:	JD40284-3	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA93547.D	1	03/02/22 12:50	WC	n/a	n/a	GAA2507
Run #2	AA93548.D	200	03/02/22 13:05	WC	n/a	n/a	GAA2507

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	14500 [a]	22	16	ug/l	
74-84-0	Ethane	0.55	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-164_20220223		
Lab Sample ID:	JD40284-3	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	52900	5000	ug/l	1	02/28/22	02/28/22	ND	SW846 6010D [1]	SW846 3010A [2]
Iron	44500	100	ug/l	1	02/28/22	02/28/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51974
(2) Prep QC Batch: MP31495

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-164_20220223		
Lab Sample ID:	JD40284-3	**Date Sampled:**	02/23/22
Matrix:	AQ - Ground Water	**Date Received:**	02/24/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	239	10	mg/l	1	02/25/22 16:10	MP	SM2320 B-11
Inorganic Carbon [b]	< 2.0	2.0	mg/l	1	02/28/22 23:15	MB	SM5310 B-11
Nitrogen, Total Kjeldahl	0.44	0.20	mg/l	1	03/01/22 10:23	MM	EPA 351.2/LACHAT
Sulfate	14.5	2.0	mg/l	1	02/26/22 02:23	JD	EPA 300/SW846 9056A
Total Carbon	7.6	1.0	mg/l	1	02/28/22 23:15	MB	SM5310 B-11
Total Organic Carbon	7.8	1.0	mg/l	1	02/25/22 22:11	MB	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.
(b) Calculated as: Total Carbon - Total Organic Carbon

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-164_20220223		
Lab Sample ID:	JD40284-3F	**Date Sampled:**	02/23/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	02/24/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	02/28/22	03/02/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51987
(2) Prep QC Batch: MP31496

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JD40284-4	**Date Sampled:**	02/23/22
Matrix:	AQ - Trip Blank Water	**Date Received:**	02/24/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L338515.D	1	03/01/22 18:53	NH	n/a	n/a	VL10199
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	88%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	115% [a]		82-114%

(a) Outside of in house control limits, but within reasonable method recovery limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Inorganic Carbon		**SM5310 B-11**	AQ	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

GW
TB

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

Page __ of __ PN

FED-EX Tracking #
Bottle Order Control # VP-021122-252
SGS Quote #
SGS Job # JD40284

Client / Reporting Information

Company Name: Stantec Consulting
Street Address: 1060 Andrew Dr. Suite 104
City / State / Zip: West Chester, PA 19380
Project Contact / E-mail: jenny.kachel@stantec.com
Phone #: 610-840-2561
Sampler(s) Name(s) / Phone #: James D. Craft 6104279307

Project Information

Project Name: AOI 8 Ballfield
Street
City / State
Project #
Client Purchase Order #
Project Manager
Billing Information (if different from Report to)
Company Name
Street Address
City / State / Zip
Attention:

Requested Analysis

Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Evergreen Petroleum Short list	TBA	TIC	TOC	Sulfate	Dissolved headspace gases (Methane, ethane, ethene)	Total Iron	Total Calcium	TKN	Alkalinity as CaCO3	8260	LAB USE ONLY
1F	N-166_20220223		2/23/2022	1235	JDC	G		GW	17	X		X	X	X				X	X	X	X	X	X	X	X	X	X		C14 TT
2F	N-170_20220223		2/23/2022	1505	JDC	G		GW	17	X		X	X	X				X	X	X	X	X	X	X	X	X	X		19 J5
3F	N-164_20220223		2/23/2022	1640	JDC	G		GW	17	X		X	X	X				X	X	X	X	X	X	X	X	X	X		C34
4	Trip Blank		2/23/2022	—	—	—		LIQ	2	X																		X	E28
																													V245

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

Turn Around Time (Business Days)

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

Approved by/SGS Fac. / Date
Initial Assessment 3A-CK
Label Verification
All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format Equis
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

*Standard Turnaround time
*Equis EDD format

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 [signature]	2/23/2022 1300	1 [signature]	2 [signature]	2/24/22 1829	2 [signature]
3		3	4		4
5		5			

Custody Seal # ☐ Intact ☐ Not intact | Absent ☐
Therm ID: See Sample Receipt Summary On Ice Temp. ℃ 2.5 GW

4.2
4

JD40284: Chain of Custody
Page 1 of 5

JD40284

JD40284: Chain of Custody
Page 2 of 5

SGS Sample Receipt Summary

Job Number: JD40284 **Client:** STANTEC **Project:** FORMER PHILADELPHIA REFINERY

Date / Time Received: 2/24/2022 6:29:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.3);

Cooler Temps (Corrected) °C: Cooler 1: (0.7);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments: 1.) Received dissolved metals bottle for -1 thru -3. Please verify analysis.

SM089-02 Rev. Date 12/1/16

Responded to by: VP

Response Date: 2/25

Dissolved metals:PBMS(6020)

Job Change Order: JD40284

Requested Date: 6/8/2022 **Received Date:** 2/24/2022

Account Name: Sunoco/Evergreen **Due Date:** 6/8/2022

Project Description: SECORPAE:Former Philadelphia Refinery, 3144 **Deliverable:** COMMB

C/O Initiated By: VICKYP **PM:** VP **TAT (Days):** 7

==========

Sample #: JD40284-All

Dept:

TAT: 7

Change:
Please NO OUT Naphthalene data under 8260 run and report under 8270SIM

==========

Above Changes Per: **Date/Time:** 6/8/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD40284: Chain of Custody
Page 5 of 5

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10197-MB	L338444.D	1	02/28/22	NH	n/a	n/a	VL10197

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	87%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	80-120%
2037-26-5	Toluene-D8	99%	80-120%
460-00-4	4-Bromofluorobenzene	113%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10199-MB	L338499.D	1	03/01/22	NH	n/a	n/a	VL10199

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40284-1, JD40284-2, JD40284-3, JD40284-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	87%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	80-120%
2037-26-5	Toluene-D8	99%	80-120%
460-00-4	4-Bromofluorobenzene	113%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10197-BS	L338442.D	1	02/28/22	NH	n/a	n/a	VL10197

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	49.8	100	80-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	86%	80-120%
17060-07-0	1,2-Dichloroethane-D4	99%	80-120%
2037-26-5	Toluene-D8	94%	80-120%
460-00-4	4-Bromofluorobenzene	113%	82-114%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10199-BS	L338497.D	1	03/01/22	NH	n/a	n/a	VL10199

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40284-1, JD40284-2, JD40284-3, JD40284-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	48.4	97	80-115
107-06-2	1,2-Dichloroethane	50	47.6	95	73-117
100-41-4	Ethylbenzene	50	45.3	91	78-116
98-82-8	Isopropylbenzene	50	46.6	93	78-121
1634-04-4	Methyl Tert Butyl Ether	50	43.5	87	76-123
75-65-0	Tert Butyl Alcohol	250	228	91	75-123
108-88-3	Toluene	50	44.7	89	79-116
95-63-6	1,2,4-Trimethylbenzene	50	46.9	94	78-120
108-67-8	1,3,5-Trimethylbenzene	50	48.1	96	77-120
1330-20-7	Xylene (total)	150	134	89	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	87%	80-120%
17060-07-0	1,2-Dichloroethane-D4	103%	80-120%
2037-26-5	Toluene-D8	95%	80-120%
460-00-4	4-Bromofluorobenzene	114%	82-114%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD40244-2MS	L338452.D	10	02/28/22	NH	n/a	n/a	VL10197
JD40244-2MSD	L338453.D	10	02/28/22	NH	n/a	n/a	VL10197
JD40244-2 [a]	L338447.D	10	02/28/22	NH	n/a	n/a	VL10197
JD40244-2	L338450.D	100	02/28/22	NH	n/a	n/a	VL10197

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	JD40244-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1550		500	1630	24* [b]	500	1590	16* [b]	2	49-137/12

CAS No.	Surrogate Recoveries	MS	MSD	JD40244-2	JD40244-2	Limits
1868-53-7	Dibromofluoromethane	90%	90%	91%	89%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	104%	104%	105%	80-120%
2037-26-5	Toluene-D8	92%	92%	97%	101%	80-120%
460-00-4	4-Bromofluorobenzene	115%* [c]	113%	107%	111%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Outside control limits due to high level in sample relative to spike amount.
(c) Outside of in house control limits, but within reasonable method recovery limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD40284-3MS	L338512.D	4	03/01/22	NH	n/a	n/a	VL10199
JD40284-3MSD	L338513.D	4	03/01/22	NH	n/a	n/a	VL10199
JD40284-3 [a]	L338500.D	4	03/01/22	NH	n/a	n/a	VL10199

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40284-1, JD40284-2, JD40284-3, JD40284-4

CAS No.	Compound	JD40284-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1290	E	200	1220	-35* [b]	200	1190	-50* [b]	2	49-137/12
107-06-2	1,2-Dichloroethane	ND		200	209	105	200	209	105	0	66-120/13
100-41-4	Ethylbenzene	481		200	545	32* [b]	200	522	21* [b]	4	37-144/12
98-82-8	Isopropylbenzene	132		200	298	83	200	287	78	4	71-126/13
1634-04-4	Methyl Tert Butyl Ether	ND		200	182	91	200	183	92	1	66-124/12
75-65-0	Tert Butyl Alcohol	ND		1000	961	96	1000	834	83	14	63-133/15
108-88-3	Toluene	94.9		200	265	85	200	257	81	3	46-139/12
95-63-6	1,2,4-Trimethylbenzene	372		200	503	66	200	469	49	7	39-147/13
108-67-8	1,3,5-Trimethylbenzene	121		200	299	89	200	280	80	7	56-136/14
1330-20-7	Xylene (total)	596		600	1040	74	600	997	67	4	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD40284-3	Limits
1868-53-7	Dibromofluoromethane	88%	91%	88%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	106%	106%	80-120%
2037-26-5	Toluene-D8	93%	91%	94%	80-120%
460-00-4	4-Bromofluorobenzene	118%* [c]	114%	112%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Outside control limits due to high level in sample relative to spike amount.
(c) Outside of in house control limits, but within reasonable method recovery limits.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10152-BFB
Lab File ID: L337225.D
Instrument ID: GCMSL
Injection Date: 01/26/22
Injection Time: 20:56

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12563	17.8		Pass
75	30.0 - 60.0% of mass 95	35485	50.2		Pass
95	Base peak, 100% relative abundance	70691	100.0		Pass
96	5.0 - 9.0% of mass 95	4334	6.13		Pass
173	Less than 2.0% of mass 174	500	0.71	(0.76) [a]	Pass
174	50.0 - 120.0% of mass 95	65509	92.7		Pass
175	5.0 - 9.0% of mass 174	5372	7.60	(8.20) [a]	Pass
176	95.0 - 101.0% of mass 174	62744	88.8	(95.8) [a]	Pass
177	5.0 - 9.0% of mass 176	4392	6.21	(7.00) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10152-IC10152	L337226.D	01/26/22	21:33	00:37	Initial cal 0.2
VL10152-IC10152	L337227.D	01/26/22	21:56	01:00	Initial cal 0.5
VL10152-IC10152	L337228.D	01/26/22	22:20	01:24	Initial cal 1
VL10152-IC10152	L337229.D	01/26/22	22:43	01:47	Initial cal 2
VL10152-IC10152	L337230.D	01/26/22	23:07	02:11	Initial cal 4
VL10152-IC10152	L337231.D	01/26/22	23:30	02:34	Initial cal 8
VL10152-IC10152	L337232.D	01/26/22	23:53	02:57	Initial cal 20
VL10152-ICC10152	L337233.D	01/27/22	00:17	03:21	Initial cal 50
VL10152-IC10152	L337234.D	01/27/22	00:40	03:44	Initial cal 100
VL10152-IC10152	L337235.D	01/27/22	01:04	04:08	Initial cal 200
VL10152-ICV10152	L337239.D	01/27/22	02:37	05:41	Initial cal verification 50
VL10152-ICV10152	L337240.D	01/27/22	03:01	06:05	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10197-BFB
Lab File ID: L338440.D
Instrument ID: GCMSL
Injection Date: 02/28/22
Injection Time: 12:35

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	14037	16.5		Pass
75	30.0 - 60.0% of mass 95	44942	52.8		Pass
95	Base peak, 100% relative abundance	85197	100.0		Pass
96	5.0 - 9.0% of mass 95	5535	6.50		Pass
173	Less than 2.0% of mass 174	255	0.30	(0.37) [a]	Pass
174	50.0 - 120.0% of mass 95	68570	80.5		Pass
175	5.0 - 9.0% of mass 174	5313	6.24	(7.75) [a]	Pass
176	95.0 - 101.0% of mass 174	66307	77.8	(96.7) [a]	Pass
177	5.0 - 9.0% of mass 176	3924	4.61	(5.92) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10197-CC10152	L338440.D	02/28/22	12:35	00:00	Continuing cal 20
VL10197-BS	L338442.D	02/28/22	13:40	01:05	Blank Spike
VL10197-MB	L338444.D	02/28/22	14:27	01:52	Method Blank
ZZZZZZ	L338445.D	02/28/22	14:57	02:22	(unrelated sample)
ZZZZZZ	L338446.D	02/28/22	15:20	02:45	(unrelated sample)
JD40244-2	L338447.D	02/28/22	15:43	03:08	(used for QC only; not part of job JD40284)
ZZZZZZ	L338448.D	02/28/22	16:07	03:32	(unrelated sample)
JD40244-2	L338450.D	02/28/22	16:53	04:18	(used for QC only; not part of job JD40284)
JD40244-2MS	L338452.D	02/28/22	17:40	05:05	Matrix Spike
JD40244-2MSD	L338453.D	02/28/22	18:04	05:29	Matrix Spike Duplicate
ZZZZZZ	L338457.D	02/28/22	19:37	07:02	(unrelated sample)
ZZZZZZ	L338458.D	02/28/22	20:01	07:26	(unrelated sample)
ZZZZZZ	L338459.D	02/28/22	20:24	07:49	(unrelated sample)
ZZZZZZ	L338460.D	02/28/22	20:48	08:13	(unrelated sample)
ZZZZZZ	L338461.D	02/28/22	21:11	08:36	(unrelated sample)
ZZZZZZ	L338462.D	02/28/22	21:34	08:59	(unrelated sample)
ZZZZZZ	L338463.D	02/28/22	21:58	09:23	(unrelated sample)
ZZZZZZ	L338464.D	02/28/22	22:21	09:46	(unrelated sample)
ZZZZZZ	L338465.D	02/28/22	22:45	10:10	(unrelated sample)
JD40284-3	L338466.D	02/28/22	23:08	10:33	N-164_20220223
JD40284-1	L338467.D	02/28/22	23:31	10:56	N-166_20220223
JD40284-2	L338468.D	02/28/22	23:55	11:20	N-170_20220223

Instrument Performance Check (BFB)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10199-BFB
Lab File ID: L338495.D
Instrument ID: GCMSL
Injection Date: 03/01/22
Injection Time: 10:36

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	13124	17.0		Pass
75	30.0 - 60.0% of mass 95	40837	53.0		Pass
95	Base peak, 100% relative abundance	77120	100.0		Pass
96	5.0 - 9.0% of mass 95	5328	6.91		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	62109	80.5		Pass
175	5.0 - 9.0% of mass 174	4443	5.76	(7.15) [a]	Pass
176	95.0 - 101.0% of mass 174	60736	78.8	(97.8) [a]	Pass
177	5.0 - 9.0% of mass 176	3515	4.56	(5.79) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10199-CC10152	L338495.D	03/01/22	10:36	00:00	Continuing cal 20
VL10199-BS	L338497.D	03/01/22	11:40	01:04	Blank Spike
VL10199-MB	L338499.D	03/01/22	12:27	01:51	Method Blank
JD40284-3	L338500.D	03/01/22	12:57	02:21	N-164_20220223
ZZZZZZ	L338501.D	03/01/22	13:25	02:49	(unrelated sample)
ZZZZZZ	L338502.D	03/01/22	13:49	03:13	(unrelated sample)
ZZZZZZ	L338503.D	03/01/22	14:12	03:36	(unrelated sample)
ZZZZZZ	L338506.D	03/01/22	15:22	04:46	(unrelated sample)
JD40284-2	L338507.D	03/01/22	15:45	05:09	N-170_20220223
JD40284-1	L338508.D	03/01/22	16:09	05:33	N-166_20220223
ZZZZZZ	L338509.D	03/01/22	16:32	05:56	(unrelated sample)
ZZZZZZ	L338510.D	03/01/22	16:56	06:20	(unrelated sample)
ZZZZZZ	L338511.D	03/01/22	17:19	06:43	(unrelated sample)
JD40284-3MS	L338512.D	03/01/22	17:43	07:07	Matrix Spike
JD40284-3MSD	L338513.D	03/01/22	18:06	07:30	Matrix Spike Duplicate
ZZZZZZ	L338514.D	03/01/22	18:29	07:53	(unrelated sample)
JD40284-4	L338515.D	03/01/22	18:53	08:17	TRIP BLANK
ZZZZZZ	L338516.D	03/01/22	19:16	08:40	(unrelated sample)
ZZZZZZ	L338517.D	03/01/22	19:39	09:03	(unrelated sample)
ZZZZZZ	L338518.D	03/01/22	20:03	09:27	(unrelated sample)
ZZZZZZ	L338519.D	03/01/22	20:26	09:50	(unrelated sample)
ZZZZZZ	L338520.D	03/01/22	20:50	10:14	(unrelated sample)
ZZZZZZ	L338521.D	03/01/22	21:13	10:37	(unrelated sample)
ZZZZZZ	L338522.D	03/01/22	21:37	11:01	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	VL10199-BFB	**Injection Date:**	03/01/22
Lab File ID:	L338495.D	**Injection Time:**	10:36
Instrument ID:	GCMSL		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	L338523.D	03/01/22	22:00	11:24	(unrelated sample)
ZZZZZZ	L338524.D	03/01/22	22:23	11:47	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD40284-1	L338508.D	87	103	100	113
JD40284-1	L338467.D	88	102	101	110
JD40284-2	L338507.D	88	107	100	117* [a]
JD40284-2	L338468.D	88	101	97	112
JD40284-3	L338500.D	88	106	94	112
JD40284-3	L338466.D	87	103	99	112
JD40284-4	L338515.D	88	105	100	115* [a]
JD40244-2MS	L338452.D	90	105	92	115* [a]
JD40244-2MSD	L338453.D	90	104	92	113
JD40284-3MS	L338512.D	88	101	93	118* [a]
JD40284-3MSD	L338513.D	91	106	91	114
VL10197-BS	L338442.D	86	99	94	113
VL10197-MB	L338444.D	87	105	99	113
VL10199-BS	L338497.D	87	103	95	114
VL10199-MB	L338499.D	87	107	99	113

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

(a) Outside of in house control limits, but within reasonable method recovery limits.

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38344A-MB1	4P52091.D	1	03/02/22	KLS	02/28/22	OP38344A	E4P2715

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.080	0.040	ug/l	
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	38%	15-110%
4165-62-2	Phenol-d5	27%	12-110%
118-79-6	2,4,6-Tribromophenol	61%	32-143%
4165-60-0	Nitrobenzene-d5	61%	29-124%
321-60-8	2-Fluorobiphenyl	58%	23-122%
1718-51-0	Terphenyl-d14	66%	22-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38344A-BS12	4P52092A.D	1	03/02/22	KLS	02/28/22	OP38344A	E4P2715
OP38344A-BSD12	4P52244.D	1	03/08/22	KLS	02/28/22	OP38344A	E4P2724

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
120-12-7	Anthracene	0.8	0.482	60	0.486	61	1	40-125/32
56-55-3	Benzo(a)anthracene	0.8	0.672	84	0.751	94	11	38-132/31
50-32-8	Benzo(a)pyrene	0.8	0.506	63	0.500	63	1	31-110/37
205-99-2	Benzo(b)fluoranthene	0.8	0.690	86	0.696	87	1	31-113/37
191-24-2	Benzo(g,h,i)perylene	0.8	0.631	79	0.618	77	2	18-110/54
218-01-9	Chrysene	0.8	0.642	80	0.736	92	14	43-119/33
86-73-7	Fluorene	0.8	0.460	58	0.552	69	18	42-123/34
91-20-3	Naphthalene	0.8	0.404	51	0.518	65	25	30-114/40
85-01-8	Phenanthrene	0.8	0.518	65	0.568	71	9	45-125/31
129-00-0	Pyrene	0.8	0.553	69	0.619	77	11	48-125/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	35%	47%	15-110%
4165-62-2	Phenol-d5	28%	38%	12-110%
118-79-6	2,4,6-Tribromophenol	72%	80%	32-143%
4165-60-0	Nitrobenzene-d5	55%	73%	29-124%
321-60-8	2-Fluorobiphenyl	55%	68%	23-122%
1718-51-0	Terphenyl-d14	75%	83%	22-130%

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2704-DFTPP
Lab File ID: 4P51868.D
Instrument ID: GCMS4P
Injection Date: 02/17/22
Injection Time: 16:35

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	11344	37.5		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	13852	45.8		Pass
70	Less than 2.0% of mass 69	59	0.20	(0.43) [a]	Pass
127	40.0 - 60.0% of mass 198	16642	55.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	30248	100.0		Pass
199	5.0 - 9.0% of mass 198	2106	6.96		Pass
275	10.0 - 30.0% of mass 198	8227	27.2		Pass
365	1.0 - 100.0% of mass 198	1446	4.78		Pass
441	Present, but less than mass 443	3921	13.0	(82.7) [b]	Pass
442	40.0 - 100.0% of mass 198	25648	84.8		Pass
443	17.0 - 23.0% of mass 442	4744	15.7	(18.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2704-IC2704	4P51870.D	02/17/22	17:58	01:23	Initial cal 0.1
E4P2704-ICC2704	4P51871.D	02/17/22	18:37	02:02	Initial cal 0.2
E4P2704-IC2704	4P51872.D	02/17/22	19:01	02:26	Initial cal 0.02
E4P2704-IC2704	4P51873.D	02/17/22	19:25	02:50	Initial cal 1
E4P2704-IC2704	4P51874.D	02/17/22	19:50	03:15	Initial cal 0.01
E4P2704-IC2704	4P51875.D	02/17/22	20:14	03:39	Initial cal 0.5
E4P2704-IC2704	4P51876.D	02/17/22	20:39	04:04	Initial cal 0.04
E4P2704-IC2704	4P51877.D	02/17/22	21:04	04:29	Initial cal 0.004
E4P2704-IC2704	4P51878.D	02/17/22	21:29	04:54	Initial cal 0.002
E4P2704-ICV2704	4P51879.D	02/17/22	21:54	05:19	Initial cal verification 0.2
E4P2704-ICV2704	4P51880.D	02/17/22	22:19	05:44	Initial cal verification 0.2
ZZZZZZ	4P51881.D	02/17/22	22:44	06:09	(unrelated sample)
ZZZZZZ	4P51882.D	02/17/22	23:09	06:34	(unrelated sample)
ZZZZZZ	4P51886.D	02/18/22	00:49	08:14	(unrelated sample)
ZZZZZZ	4P51887.D	02/18/22	01:14	08:39	(unrelated sample)
E4P2704-ECC2704	4P51888.D	02/18/22	01:39	09:04	Ending cal 0.2

Instrument Performance Check (DFTPP)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2705-DFTPP
Lab File ID: 4P51889.D
Instrument ID: GCMS4P
Injection Date: 02/18/22
Injection Time: 10:43

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	17224	37.1		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	22938	49.4		Pass
70	Less than 2.0% of mass 69	94	0.20	(0.41) [a]	Pass
127	40.0 - 60.0% of mass 198	25914	55.8		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	46440	100.0		Pass
199	5.0 - 9.0% of mass 198	3646	7.85		Pass
275	10.0 - 30.0% of mass 198	12139	26.1		Pass
365	1.0 - 100.0% of mass 198	2232	4.81		Pass
441	Present, but less than mass 443	5883	12.7	(78.2) [b]	Pass
442	40.0 - 100.0% of mass 198	38577	83.1		Pass
443	17.0 - 23.0% of mass 442	7522	16.2	(19.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2705-ICV2704	4P51890.D	02/18/22	11:21	00:38	Initial cal verification 0.2
E4P2705-CC2704	4P51891.D	02/18/22	11:45	01:02	Continuing cal 0.2
OP38168A-MB1	4P51892.D	02/18/22	12:33	01:50	Method Blank
ZZZZZZ	4P51893A.D	02/18/22	14:50	04:07	(unrelated sample)
OP38168A-BS12	4P51894.D	02/18/22	15:14	04:31	Blank Spike
OP38168A-BSD12	4P51895.D	02/18/22	15:37	04:54	Blank Spike Duplicate
ZZZZZZ	4P51896.D	02/18/22	16:01	05:18	(unrelated sample)
ZZZZZZ	4P51897.D	02/18/22	16:24	05:41	(unrelated sample)
ZZZZZZ	4P51898.D	02/18/22	16:48	06:05	(unrelated sample)
ZZZZZZ	4P51900.D	02/18/22	17:35	06:52	(unrelated sample)
ZZZZZZ	4P51901.D	02/18/22	17:58	07:15	(unrelated sample)
ZZZZZZ	4P51902.D	02/18/22	18:22	07:39	(unrelated sample)
OP38144A-MSA	4P51903.D	02/18/22	18:45	08:02	Matrix Spike
OP38144A-MSDA	4P51904.D	02/18/22	19:09	08:26	Matrix Spike Duplicate
E4P2705-ECC2704	4P51905.D	02/18/22	19:32	08:49	Ending cal 0.2

Instrument Performance Check (DFTPP)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2715-DFTPP
Lab File ID: 4P52084.D
Instrument ID: GCMS4P
Injection Date: 03/02/22
Injection Time: 12:45

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	11735	34.7		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	15114	44.7		Pass
70	Less than 2.0% of mass 69	95	0.28	(0.63) [a]	Pass
127	40.0 - 60.0% of mass 198	17932	53.0		Pass
197	Less than 1.0% of mass 198	221	0.65		Pass
198	Base peak, 100% relative abundance	33830	100.0		Pass
199	5.0 - 9.0% of mass 198	2354	6.96		Pass
275	10.0 - 30.0% of mass 198	8807	26.0		Pass
365	1.0 - 100.0% of mass 198	1820	5.38		Pass
441	Present, but less than mass 443	5093	15.1	(82.5) [b]	Pass
442	40.0 - 100.0% of mass 198	31808	94.0		Pass
443	17.0 - 23.0% of mass 442	6174	18.3	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2715-CC2704	4P52085.D	03/02/22	12:58	00:13	Continuing cal 0.2
OP38321A-MB1	4P52086.D	03/02/22	13:28	00:43	Method Blank
ZZZZZZ	4P52087.D	03/02/22	13:53	01:08	(unrelated sample)
ZZZZZZ	4P52088.D	03/02/22	14:17	01:32	(unrelated sample)
ZZZZZZ	4P52089.D	03/02/22	14:42	01:57	(unrelated sample)
ZZZZZZ	4P52090.D	03/02/22	15:06	02:21	(unrelated sample)
OP38344A-MB1	4P52091.D	03/02/22	15:31	02:46	Method Blank
OP38344A-BS12	4P52092A.D	03/02/22	17:30	04:45	Blank Spike
ZZZZZZ	4P52093.D	03/02/22	17:55	05:10	(unrelated sample)
ZZZZZZ	4P52094.D	03/02/22	18:19	05:34	(unrelated sample)
ZZZZZZ	4P52095.D	03/02/22	18:43	05:58	(unrelated sample)
ZZZZZZ	4P52096.D	03/02/22	19:08	06:23	(unrelated sample)
ZZZZZZ	4P52097.D	03/02/22	19:32	06:47	(unrelated sample)
JD40284-1	4P52098.D	03/02/22	19:56	07:11	N-166_20220223
JD40284-2	4P52099.D	03/02/22	20:20	07:35	N-170_20220223
JD40284-3	4P52100.D	03/02/22	20:45	08:00	N-164_20220223
ZZZZZZ	4P52103.D	03/02/22	21:58	09:13	(unrelated sample)
ZZZZZZ	4P52104.D	03/02/22	22:22	09:37	(unrelated sample)
ZZZZZZ	4P52105.D	03/02/22	22:46	10:01	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E4P2715-DFTPP	**Injection Date:**	03/02/22
Lab File ID:	4P52084.D	**Injection Time:**	12:45
Instrument ID:	GCMS4P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	4P52106.D	03/02/22	23:11	10:26	(unrelated sample)
ZZZZZZ	4P52107.D	03/02/22	23:35	10:50	(unrelated sample)
ZZZZZZ	4P52108.D	03/03/22	00:00	11:15	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2718-DFTPP
Lab File ID: 4P52147.D
Instrument ID: GCMS4P
Injection Date: 03/03/22
Injection Time: 22:36

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	12188	33.5		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	16572	45.6		Pass
70	Less than 2.0% of mass 69	149	0.41	(0.90) [a]	Pass
127	40.0 - 60.0% of mass 198	18749	51.6		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	36338	100.0		Pass
199	5.0 - 9.0% of mass 198	2450	6.74		Pass
275	10.0 - 30.0% of mass 198	9317	25.6		Pass
365	1.0 - 100.0% of mass 198	1902	5.23		Pass
441	Present, but less than mass 443	4516	12.4	(72.5) [b]	Pass
442	40.0 - 100.0% of mass 198	31629	87.0		Pass
443	17.0 - 23.0% of mass 442	6232	17.2	(19.7) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2718-CC2704	4P52149.D	03/03/22	23:15	00:39	Continuing cal 0.1
OP38399A-MB1	4P52150.D	03/03/22	23:49	01:13	Method Blank
ZZZZZZ	4P52151.D	03/04/22	00:13	01:37	(unrelated sample)
OP38399A-BS12	4P52152.D	03/04/22	00:37	02:01	Blank Spike
ZZZZZZ	4P52153.D	03/04/22	01:00	02:24	(unrelated sample)
ZZZZZZ	4P52154.D	03/04/22	01:24	02:48	(unrelated sample)
ZZZZZZ	4P52155.D	03/04/22	01:47	03:11	(unrelated sample)
ZZZZZZ	4P52156.D	03/04/22	02:10	03:34	(unrelated sample)
ZZZZZZ	4P52157.D	03/04/22	02:33	03:57	(unrelated sample)
ZZZZZZ	4P52158.D	03/04/22	02:57	04:21	(unrelated sample)
ZZZZZZ	4P52159.D	03/04/22	03:20	04:44	(unrelated sample)
OP38399A-MSA	4P52160.D	03/04/22	03:43	05:07	Matrix Spike
OP38399A-MSDA	4P52161.D	03/04/22	04:06	05:30	Matrix Spike Duplicate
JD40425-5	4P52162.D	03/04/22	04:29	05:53	(used for QC only; not part of job JD40284)
ZZZZZZ	4P52163A.D	03/04/22	05:02	06:26	(unrelated sample)
ZZZZZZ	4P52164.D	03/04/22	05:25	06:49	(unrelated sample)
ZZZZZZ	4P52165.D	03/04/22	05:48	07:12	(unrelated sample)
ZZZZZZ	4P52166.D	03/04/22	06:12	07:36	(unrelated sample)
ZZZZZZ	4P52167.D	03/04/22	06:35	07:59	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E4P2718-DFTPP	**Injection Date:**	03/03/22
Lab File ID:	4P52147.D	**Injection Time:**	22:36
Instrument ID:	GCMS4P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	4P52168.D	03/04/22	06:58	08:22	(unrelated sample)
ZZZZZZ	4P52169.D	03/04/22	07:21	08:45	(unrelated sample)
JD40284-2	4P52170.D	03/04/22	07:44	09:08	N-170_20220223
JD40284-1	4P52171.D	03/04/22	08:07	09:31	N-166_20220223

Instrument Performance Check (DFTPP)

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2724-DFTPP
Lab File ID: 4P52238.D
Instrument ID: GCMS4P
Injection Date: 03/08/22
Injection Time: 09:37

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	11395	38.1		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	14640	48.9		Pass
70	Less than 2.0% of mass 69	89	0.30	(0.61) [a]	Pass
127	40.0 - 60.0% of mass 198	16970	56.7		Pass
197	Less than 1.0% of mass 198	72	0.24		Pass
198	Base peak, 100% relative abundance	29928	100.0		Pass
199	5.0 - 9.0% of mass 198	2257	7.54		Pass
275	10.0 - 30.0% of mass 198	7799	26.1		Pass
365	1.0 - 100.0% of mass 198	1602	5.35		Pass
441	Present, but less than mass 443	3780	12.6	(78.9) [b]	Pass
442	40.0 - 100.0% of mass 198	24218	80.9		Pass
443	17.0 - 23.0% of mass 442	4788	16.0	(19.8) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2724-CC2704	4P52239.D	03/08/22	09:51	00:14	Continuing cal 0.1
OP38476A-MB1	4P52240.D	03/08/22	10:15	00:38	Method Blank
OP38476A-BS12	4P52241.D	03/08/22	11:04	01:27	Blank Spike
OP38476A-BSD12	4P52242.D	03/08/22	11:28	01:51	Blank Spike Duplicate
OP38344A-BSD12	4P52244.D	03/08/22	11:52	02:15	Blank Spike Duplicate
ZZZZZZ	4P52245.D	03/08/22	12:17	02:40	(unrelated sample)
ZZZZZZ	4P52246A.D	03/08/22	13:15	03:38	(unrelated sample)
ZZZZZZ	4P52247.D	03/08/22	13:39	04:02	(unrelated sample)
ZZZZZZ	4P52248.D	03/08/22	14:03	04:26	(unrelated sample)
ZZZZZZ	4P52249.D	03/08/22	14:27	04:50	(unrelated sample)
ZZZZZZ	4P52250.D	03/08/22	14:51	05:14	(unrelated sample)
ZZZZZZ	4P52251.D	03/08/22	15:15	05:38	(unrelated sample)
ZZZZZZ	4P52252.D	03/08/22	15:40	06:03	(unrelated sample)
ZZZZZZ	4P52253.D	03/08/22	16:04	06:27	(unrelated sample)
ZZZZZZ	4P52254.D	03/08/22	16:28	06:51	(unrelated sample)
ZZZZZZ	4P52255.D	03/08/22	17:06	07:29	(unrelated sample)
ZZZZZZ	4P52257.D	03/08/22	17:54	08:17	(unrelated sample)
ZZZZZZ	4P52258.D	03/08/22	18:19	08:42	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270E BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD40284-1	4P52171.D	75	69	62
JD40284-1	4P52098.D	50	43	54
JD40284-2	4P52170.D	66	65	62
JD40284-2	4P52099.D	61	59	60
JD40284-3	4P52100.D	47	47	47
OP38344A-BS12	4P52092A.D	55	55	75
OP38344A-BSD12	4P52244.D	73	68	83
OP38344A-MB1	4P52091.D	61	58	66

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	29-124%
S2 = 2-Fluorobiphenyl	23-122%
S3 = Terphenyl-d14	22-130%

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38385-MB1	7G42784.D	1	03/08/22	RK	03/01/22	OP38385	G7G1521

The QC reported here applies to the following samples: **Method:** SW846-8011

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
3017-95-6	2-Bromo-1-chloropropane	101%	52-154%
3017-95-6	2-Bromo-1-chloropropane	103%	52-154%

Method Blank Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2507-MB	AA93530.D	1	03/02/22	WC	n/a	n/a	GAA2507

The QC reported here applies to the following samples: **Method:** RSK-175

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.11	0.080	ug/l	
74-84-0	Ethane	ND	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38385-BS1	7G42785.D	1	03/08/22	RK	03/01/22	OP38385	G7G1521
OP38385-BSD	7G42786.D	1	03/08/22	RK	03/01/22	OP38385	G7G1521

The QC reported here applies to the following samples: **Method:** SW846-8011

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	0.5	0.55	110	0.52	104	6	51-197/19

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3017-95-6	2-Bromo-1-chloropropane	101%	99%	52-154%
3017-95-6	2-Bromo-1-chloropropane	103%	105%	52-154%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2507-LCS	AA93528.D	1	03/02/22	WC	n/a	n/a	GAA2507

The QC reported here applies to the following samples: **Method:** RSK-175

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
74-82-8	Methane	11	11.0	100	59-134
74-84-0	Ethane	23	23.6	103	63-135
74-85-1	Ethene	31	31.5	102	62-133

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38385-MS	7G42788.D	1	03/08/22	RK	03/01/22	OP38385	G7G1521
JD40284-1	7G42789.D	1	03/08/22	RK	03/01/22	OP38385	G7G1521

The QC reported here applies to the following samples: **Method:** SW846-8011

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	JD40284-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
106-93-4	1,2-Dibromoethane	ND		0.515	0.61	119	33-200

CAS No.	Surrogate Recoveries	MS	JD40284-1	Limits
3017-95-6	2-Bromo-1-chloropropane	85%	82%	52-154%
3017-95-6	2-Bromo-1-chloropropane	94%	100%	52-154%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38385-DUP	7G42787.D	1	03/08/22	RK	03/01/22	OP38385	G7G1521
JD40284-2	7G42792.D	1	03/08/22	RK	03/01/22	OP38385	G7G1521

The QC reported here applies to the following samples: **Method:** SW846-8011

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	JD40284-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
106-93-4	1,2-Dibromoethane	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JD40284-2	Limits
3017-95-6	2-Bromo-1-chloropropane	93%	90%	52-154%
3017-95-6	2-Bromo-1-chloropropane	106%	109%	52-154%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD40159-9DUP [a]	AA93536.D	1	03/02/22	WC	n/a	n/a	GAA2507
JD40159-9 [a]	AA93535.D	1	03/02/22	WC	n/a	n/a	GAA2507

The QC reported here applies to the following samples: **Method:** RSK-175

JD40284-1, JD40284-2, JD40284-3

CAS No.	Compound	JD40159-9 ug/l	Q	DUP ug/l	Q	RPD	Limits
74-82-8	Methane	3.36		3.76		11	20
74-84-0	Ethane	ND		ND		nc	20
74-85-1	Ethene	1.2		1.4		13	20

(a) (pH= 7)Sample pH did not satisfy field preservation criteria; 2mm diameter bubble present in headspace.

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD40284
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846-8011 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JD40284-1	7G42789.D	82	100
JD40284-2	7G42792.D	90	109
JD40284-3	7G42798.D	79	95
OP38385-BS1	7G42785.D	101	103
OP38385-BSD	7G42786.D	99	105
OP38385-DUP	7G42787.D	93	106
OP38385-MB1	7G42784.D	101	103
OP38385-MS	7G42788.D	85	94

Surrogate Compounds	Recovery Limits
S1 = 2-Bromo-1-chloropropane	52-154%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/28/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	17	150		
Antimony	6.0	1.7	4.7		
Arsenic	3.0	2.1	2.8		
Barium	200	.8	13		
Beryllium	1.0	.3	.5		
Bismuth	20	2.3	8.6		
Boron	100	2.3	10		
Cadmium	3.0	.3	1		
Calcium	5000	6.6	99	5.9	<5000
Cerium	100				
Chromium	10	.3	2		
Cobalt	50	.4	2.6		
Copper	10	.8	5.9		
Iron	100	5.3	32	1.6	<100
Lead	3.0	1.1	1.8		
Lithium	50	4.8	7.3		
Magnesium	5000	32	140		
Manganese	15	.1	1.4		
Molybdenum	20	.6	3.6		
Nickel	10	.4	1.7		
Phosphorus	50	1.2	18		
Potassium	10000	77	200		
Selenium	10	3.2	4.9		
Silicon	200	1.7	32		
Silver	10	1	6.1		
Sodium	10000	34	570		
Strontium	10	.3	2.7		
Sulfur	50	3	45		
Thallium	10	1.8	1.8		
Tin	10	.8	3.7		
Titanium	10	.5	2.5		
Tungsten	50	2.6	40		
Vanadium	50	.6	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/28/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.1	6.9		
Zirconium	10	.3	4.1		

Associated samples MP31495: JD40284-1, JD40284-2, JD40284-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-3 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium					
Beryllium					
Bismuth					
Boron	anr				
Cadmium					
Calcium	52900	76600	25000	94.8	75-125
Cerium					
Chromium					
Cobalt					
Copper	anr				
Iron	44500	68500	25000	96.0	75-125
Lead					
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-3 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP31495: JD40284-1, JD40284-2, JD40284-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-3 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium						
Beryllium						
Bismuth						
Boron	anr					
Cadmium						
Calcium	52900	77700	25000	99.2	1.4	20
Cerium						
Chromium						
Cobalt						
Copper	anr					
Iron	44500	69400	25000	99.6	1.3	20
Lead						
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-3 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc					
Zirconium					

Associated samples MP31495: JD40284-1, JD40284-2, JD40284-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/28/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium				
Beryllium				
Bismuth				
Boron	anr			
Cadmium				
Calcium	24600	25000	98.4	80-120
Cerium				
Chromium				
Cobalt				
Copper	anr			
Iron	24800	25000	99.2	80-120
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/28/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP31495: JD40284-1, JD40284-2, JD40284-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-3 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium				
Beryllium				
Bismuth				
Boron	anr			
Cadmium				
Calcium	52900	53500	1.0	0-10
Cerium				
Chromium				
Cobalt				
Copper	anr			
Iron	44500	45200	1.6	0-10
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31495 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-3 Original SDL 1:5	%DIF	QC Limits
Zinc			
Zirconium			

Associated samples MP31495: JD40284-1, JD40284-2, JD40284-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31496
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 02/28/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.83	32		
Antimony	4.0	.17	1.7		
Arsenic	1.0	.05	.39		
Barium	2.0	.018	.73		
Beryllium	1.0	.01	.15		
Boron	50	1.7	14		
Cadmium	1.0	.02	.17		
Calcium	500	7.2	200		
Chromium	2.0	.036	.62		
Cobalt	1.0	.006	.17		
Copper	4.0	.048	1.9		
Iron	50	.47	19		
Lead	1.0	.016	.52	0.041	<1.0
Magnesium	500	.38	46		
Manganese	2.0	.024	.63		
Molybdenum	2.0	.034	.45		
Nickel	2.0	.034	.95		
Potassium	500	1.6	68		
Selenium	1.0	.088	.55		
Silver	1.0	.008	.16		
Sodium	500	3	470		
Strontium	10	.028	2.4		
Thallium	1.0	.004	.17		
Tin	10	.082	2.6		
Titanium	2.0	.22	1.6		
Vanadium	2.0	.026	1.8		
Zinc	10	.16	5.4		

Associated samples MP31496: JD40284-1F, JD40284-2F, JD40284-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31496
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-2F Original MS		Spikelot MP6020AQ3% Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	0.024	81.6	80	102.0	75-125
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP31496: JD40284-1F, JD40284-2F, JD40284-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31496
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-2F Original	MSD	Spikelot MP6020AQ3%	Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead	0.024	86.7	80	108.3	6.1	20
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP31496: JD40284-1F, JD40284-2F, JD40284-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31496
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 02/28/22

Metal	BSP Result	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	80.3	80	100.4	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP31496: JD40284-1F, JD40284-2F, JD40284-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31496 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/28/22

Metal	JD40284-2F Original	SDL 2:10	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	0.0241	0.00	100.0(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP31496: JD40284-1F, JD40284-2F, JD40284-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN26746	5.0	0.0	mg/l	50.00	49.0	98.0	90-110%
Alkalinity, Total as CaCO3	GN26746			mg/l	250.00	249	99.6	90-110%
Fluoride	GP38736/GN26753	0.20	0.0	mg/l	2	2.20	110.0	90-110%
Nitrogen, Total Kjeldahl	GP38741/GN26849	0.20	0.0	mg/l	3	3.02	100.7	90-110%
Sulfate	GP38736/GN26753	2.0	0.0	mg/l	80	85.9	107.4	90-110%
Total Carbon	GP38727/GN26847	1.0	0.0	mg/l	10	11.0	110.0	90-110%
Total Organic Carbon	GP38726/GN26804	1.0	0.0	mg/l	10	10.9	109.0	90-110%

Associated Samples:
Batch GN26746: JD40284-1, JD40284-2, JD40284-3
Batch GP38726: JD40284-1, JD40284-2, JD40284-3
Batch GP38727: JD40284-1, JD40284-2, JD40284-3
Batch GP38736: JD40284-1, JD40284-2, JD40284-3
Batch GP38741: JD40284-1, JD40284-2, JD40284-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN26746	JD40230-1	mg/l	324	323	0.3	0-10%
Fluoride	GP38736/GN26753	JD40233-5	mg/l	5.1	4.8	6.1	0-20%
Nitrogen, Total Kjeldahl	GP38741/GN26849	JD40087-1	mg/l	0.0	0.0	0.0	0-43%
Sulfate	GP38736/GN26753	JD40233-5	mg/l	28.6	30.5	6.4	0-20%

Associated Samples:
Batch GN26746: JD40284-1, JD40284-2, JD40284-3
Batch GP38736: JD40284-1, JD40284-2, JD40284-3
Batch GP38741: JD40284-1, JD40284-2, JD40284-3
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Fluoride	GP38736/GN26835	JD40233-5	mg/l	5.1	2	5.2	5.0N(a)	80-120%
Nitrogen, Total Kjeldahl	GP38741/GN26849	JD40087-1	mg/l	0.0	3	3.2	106.7	90-110%
Sulfate	GP38736/GN26753	JD40233-5	mg/l	28.6	80	119	113.0	80-120%
Total Carbon	GP38727/GN26847	JD40284-1	mg/l	96.2	10	21.9	-743.0(b)	10-152%
Total Organic Carbon	GP38726/GN26804	JD40284-1	mg/l	11.1	10	22.7	116.0	71-132%

Associated Samples:
Batch GP38726: JD40284-1, JD40284-2, JD40284-3
Batch GP38727: JD40284-1, JD40284-2, JD40284-3
Batch GP38736: JD40284-1, JD40284-2, JD40284-3
Batch GP38741: JD40284-1, JD40284-2, JD40284-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD40284
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Total Carbon	GP38727/GN26847	JD40284-1	mg/l	96.2	10	21.0	4.2	10%
Total Organic Carbon	GP38726/GN26804	JD40284-1	mg/l	11.1	10	19.6	14.7*(a)	10%

Associated Samples:
Batch GP38726: JD40284-1, JD40284-2, JD40284-3
Batch GP38727: JD40284-1, JD40284-2, JD40284-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) High RPD due to nature of sample matrix.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

SGS Job Number: JD40008

Sampling Dates: 02/16/22 - 02/17/22



Report to:

Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380
Jennifer.Menges@stantec.com; Andrew.klingbeil@stantec.com;
Andrew.Bradley@stantec.com; Jenny.Kachel@stantec.com;
ATTN: Jennifer Menges

Total number of pages in report: **405**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

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Test results relate only to samples analyzed.

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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

June 9, 2022

Ms. Jennifer Menges
Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380

RE: SGS – Dayton, Job # JD40008 - Reissues

Dear Ms. Menges,

The final report for SGS job number JD40008 has been edited to reflect corrections to the results. These edits have been incorporated into the revised report which is attached.

Specifically, the Naphthalene has been reported for volatile samples per request. The attached revised report incorporates these revisions.

SGS apologizes for this occurrence and for any inconvenience this situation may have caused. Please contact me if I can be of further assistance in this matter.

Sincerely,

Report Department

SGS North America Inc.

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SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD40008

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies: Organics ND = Not detected above the MDL							
JD40008-1	02/16/22	13:05	JDC	02/18/22	AQ	Ground Water	N-167_20220216
JD40008-1F	02/16/22	13:05	JDC	02/18/22	AQ	Groundwater Filtered	N-167_20220216
JD40008-2	02/17/22	10:55	JDC	02/18/22	AQ	Ground Water	N-168_20220217
JD40008-2F	02/17/22	10:55	JDC	02/18/22	AQ	Groundwater Filtered	N-168_20220217
JD40008-3	02/17/22	13:25	JDC	02/18/22	AQ	Ground Water	N-169_20220217
JD40008-3F	02/17/22	13:25	JDC	02/18/22	AQ	Groundwater Filtered	N-169_20220217
JD40008-4	02/17/22	15:50	JDC	02/18/22	AQ	Ground Water	N-165_20220217
JD40008-4F	02/17/22	15:50	JDC	02/18/22	AQ	Groundwater Filtered	N-165_20220217
JD40008-5	02/17/22	15:50	JDC	02/18/22	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Sunoco/Evergreen **Job No:** JD40008

Site: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, **Report Date** 6/9/2022 5:35:40 PM

On 02/18/2022, 4 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 1.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD40008 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** V2C8406

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD40038-3MS, JD40038-3MSD were used as the QC samples indicated.
- JD40008-2: Dilution required due to high concentraton of non-target compound.

Matrix: AQ **Batch ID:** V4D5151

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD39923-9MS, JD39923-9MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Duplicate Recovery(s) for 1,2-Dichloroethane are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

MS Semi-volatiles By Method SW846 8270E BY SIM

Matrix: AQ **Batch ID:** OP38283

- All samples were extracted within the recommended method holding time.
- Sample(s) JD40008-1, JD40008-3 have compounds reported with "E" qualifiers indicating estimated value exceeding calibration range.
- Sample(s) JD40008-1, JD40008-2, JD40008-3, JD40008-4 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- OP38283-BSD: Recovery indicates possible low bias. Since balnk spike recoveries are within control limits, data are qualified and reported.
- OP38283-BSD for Anthracene: Analytical precision exceeds in-house control limits.

GC Volatiles By Method RSK-175

Matrix: AQ **Batch ID:** GAA2502

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD39963-3DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for Duplicate for Ethane, Ethene are outside control limits for sample JD39963-3DUP. Probable cause due to sample homogeneity.

GC Volatiles By Method SW846-8011

Matrix: AQ **Batch ID:** OP38248

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD39951-1MS, JD39951-2DUP were used as the QC samples indicated.
- JD40008-3 for 1,2-Dibromoethane: Associated CCV outside of control limits high, sample was ND.
- JD40008-4 for 1,2-Dibromoethane: Associated CCV outside of control limits high, sample was ND.
- JD40008-2 for 1,2-Dibromoethane: Associated CCV outside of control limits high, sample was ND.
- JD40008-1 for 1,2-Dibromoethane: Associated CCV outside of control limits high, sample was ND.

Metals Analysis By Method SW846 6010D

Matrix: AQ **Batch ID:** MP31401

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD40008-4MS, JD40008-4MSD, JD40008-4SDL were used as the QC samples for metals.

Metals Analysis By Method SW846 6020B

Matrix: AQ **Batch ID:** MP31402

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD40008-3FMS, JD40008-3FMSD, JD40008-3FSDL were used as the QC samples for metals.

General Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ **Batch ID:** GP38640

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD39964-10DUP, JD39964-10MS were used as the QC samples for Sulfate.

General Chemistry By Method EPA 351.2/LACHAT

Matrix: AQ **Batch ID:** GP38657

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD40008-3DUP, JD40008-3MS were used as the QC samples for Nitrogen, Total Kjeldahl.

General Chemistry By Method SM2320 B-11

Matrix: AQ **Batch ID:** GN26594

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD39850-2DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JD40008-3 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JD40008-2 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.
- JD40008-1 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.

Matrix: AQ **Batch ID:** GN26627

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD40035-1DUP were used as the QC samples for Alkalinity, Total as CaCO3.
- JD40008-4 for Alkalinity, Total as CaCO3: Sample was titrated to a final pH of 4.5.Sample receieved with head space.Net alkalinity ___mg/L

General Chemistry By Method SM5310 B-11

Matrix: AQ **Batch ID:** GP38634

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD39968-1MS, JD39968-1MSD were used as the QC samples for Total Organic Carbon.

Matrix: AQ **Batch ID:** GP38635

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD40008-1MS, JD40008-1MSD were used as the QC samples for Total Carbon.
- JD40008-4 for Total Carbon: Elevated detection limit due to dilution required for matrix interference.
- JD40008-1 for Total Carbon: Elevated detection limit due to dilution required for matrix interference.
- JD40008-2 for Total Carbon: Elevated detection limit due to dilution required for matrix interference.
- JD40008-3 for Total Carbon: Elevated detection limit due to dilution required for matrix interference.

Matrix: AQ **Batch ID:** R195802

- The data for SM5310 B-11 meets quality control requirements.
- JD40008-1 for Inorganic Carbon: Calculated as: Total Carbon - Total Organic Carbon

Matrix: AQ **Batch ID:** R195803

- The data for SM5310 B-11 meets quality control requirements.
- JD40008-2 for Inorganic Carbon: Calculated as: Total Carbon - Total Organic Carbon

Matrix: AQ **Batch ID:** R195804

- The data for SM5310 B-11 meets quality control requirements.
- JD40008-3 for Inorganic Carbon: Calculated as: Total Carbon - Total Organic Carbon

Matrix: AQ **Batch ID:** R195805

- The data for SM5310 B-11 meets quality control requirements.
- JD40008-4 for Inorganic Carbon: Calculated as: Total Carbon - Total Organic Carbon

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD40008
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 02/16/22 thru 02/17/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD40008-1	**N-167_20220216**					
Benzene		2.8	0.50	0.43	ug/l	SW846 8260D
Toluene		1.0	1.0	0.53	ug/l	SW846 8260D
Ethylbenzene		60.9	1.0	0.60	ug/l	SW846 8260D
Xylene (total)		10.8	1.0	0.59	ug/l	SW846 8260D
Isopropylbenzene		98.1	1.0	0.65	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		5.4	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		24.0	2.0	1.0	ug/l	SW846 8260D
Anthracene		0.494 B	0.080	0.040	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0870 B	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0428 B	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0476 B	0.040	0.024	ug/l	SW846 8270E BY SIM
Chrysene		0.0858	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		1.58 B	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		11.2 E	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		2.12 B	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.416	0.080	0.040	ug/l	SW846 8270E BY SIM
Methane		1980	2.8	2.0	ug/l	RSK-175
Ethane		5.25	0.23	0.14	ug/l	RSK-175
Ethene		3.12	0.31	0.16	ug/l	RSK-175
Calcium		38800	5000		ug/l	SW846 6010D
Iron		38400	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [a]		156	5.0		mg/l	SM2320 B-11
Nitrogen, Total Kjeldahl		0.31	0.20		mg/l	EPA 351.2/LACHAT
Sulfate		22.6	2.0		mg/l	EPA 300/SW846 9056A
Total Organic Carbon		2.7	1.0		mg/l	SM5310 B-11
JD40008-1F	**N-167_20220216**					
Lead		4.5	1.0		ug/l	SW846 6020B
JD40008-2	**N-168_20220217**					
Benzene [b]		1.7	1.0	0.85	ug/l	SW846 8260D
Toluene [b]		8.1	2.0	1.1	ug/l	SW846 8260D
Ethylbenzene [b]		6.5	2.0	1.2	ug/l	SW846 8260D
Xylene (total) [b]		10.6	2.0	1.2	ug/l	SW846 8260D
Isopropylbenzene [b]		144	2.0	1.3	ug/l	SW846 8260D
1,3,5-Trimethylbenzene [b]		2.7 J	4.0	2.0	ug/l	SW846 8260D
Anthracene		1.91 B	0.083	0.042	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.502 B	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.295 B	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.280 B	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.274 B	0.083	0.042	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD40008
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 02/16/22 thru 02/17/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Chrysene		0.574	0.083	0.042	ug/l	SW846 8270E BY SIM
Fluorene		3.70 B	0.083	0.042	ug/l	SW846 8270E BY SIM
Phenanthrene		6.64 B	0.42	0.21	ug/l	SW846 8270E BY SIM
Pyrene		2.21	0.083	0.042	ug/l	SW846 8270E BY SIM
Methane		547	1.1	0.80	ug/l	RSK-175
Ethane		0.46	0.23	0.14	ug/l	RSK-175
Ethene		0.48	0.31	0.16	ug/l	RSK-175
Calcium		102000	5000		ug/l	SW846 6010D
Iron		42800	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [a]		370	10		mg/l	SM2320 B-11
Nitrogen, Total Kjeldahl		1.2	0.20		mg/l	EPA 351.2/LACHAT
Sulfate		28.1	2.0		mg/l	EPA 300/SW846 9056A
Total Carbon [c]		9.5	5.0		mg/l	SM5310 B-11
Total Organic Carbon		11.5	1.0		mg/l	SM5310 B-11
JD40008-2F	**N-168_20220217**					
No hits reported in this sample.						
JD40008-3	**N-169_20220217**					
Benzene		46.8	0.50	0.43	ug/l	SW846 8260D
Toluene		23.9	1.0	0.53	ug/l	SW846 8260D
Ethylbenzene		47.6	1.0	0.60	ug/l	SW846 8260D
Xylene (total)		45.5	1.0	0.59	ug/l	SW846 8260D
Isopropylbenzene		138	1.0	0.65	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		1.6 J	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		5.3	2.0	1.0	ug/l	SW846 8260D
Anthracene		0.393 B	0.083	0.042	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0634 B	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0402 JB	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0476 B	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0445 JB	0.083	0.042	ug/l	SW846 8270E BY SIM
Chrysene		0.0618 J	0.083	0.042	ug/l	SW846 8270E BY SIM
Fluorene		1.50 B	0.083	0.042	ug/l	SW846 8270E BY SIM
Naphthalene		12.6 E	0.083	0.042	ug/l	SW846 8270E BY SIM
Phenanthrene		1.72 B	0.083	0.042	ug/l	SW846 8270E BY SIM
Pyrene		0.243	0.083	0.042	ug/l	SW846 8270E BY SIM
Methane		8910	22	16	ug/l	RSK-175
Ethane		1.0	0.23	0.14	ug/l	RSK-175
Ethene		0.70	0.31	0.16	ug/l	RSK-175
Calcium		50500	5000		ug/l	SW846 6010D
Iron		34700	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [a]		270	10		mg/l	SM2320 B-11
Nitrogen, Total Kjeldahl		0.34	0.20		mg/l	EPA 351.2/LACHAT

Summary of Hits

Job Number: JD40008
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 02/16/22 thru 02/17/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Total Organic Carbon		4.7	1.0		mg/l	SM5310 B-11
JD40008-3F	**N-169_20220217**					
No hits reported in this sample.						
JD40008-4	**N-165_20220217**					
Benzene		208	2.5	2.1	ug/l	SW846 8260D
Toluene		5.4	1.0	0.53	ug/l	SW846 8260D
Ethylbenzene		306	5.0	3.0	ug/l	SW846 8260D
Xylene (total)		226	1.0	0.59	ug/l	SW846 8260D
Isopropylbenzene		152	1.0	0.65	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		239	10	5.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		84.9	2.0	1.0	ug/l	SW846 8260D
Anthracene		0.657 B	0.087	0.043	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.138 B	0.043	0.026	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0809 B	0.043	0.026	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.101 B	0.043	0.026	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0663 JB	0.087	0.043	ug/l	SW846 8270E BY SIM
Chrysene		0.141	0.087	0.043	ug/l	SW846 8270E BY SIM
Fluorene		2.49 B	0.087	0.043	ug/l	SW846 8270E BY SIM
Phenanthrene		2.95 B	0.087	0.043	ug/l	SW846 8270E BY SIM
Pyrene		0.611	0.087	0.043	ug/l	SW846 8270E BY SIM
Methane		556	2.2	1.6	ug/l	RSK-175
Calcium		106000	5000		ug/l	SW846 6010D
Iron		7240	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [d]		533	5.0		mg/l	SM2320 B-11
Inorganic Carbon [e]		108	6.0		mg/l	SM5310 B-11
Nitrogen, Total Kjeldahl		0.60	0.20		mg/l	EPA 351.2/LACHAT
Sulfate		163	2.0		mg/l	EPA 300/SW846 9056A
Total Carbon [c]		114	5.0		mg/l	SM5310 B-11
Total Organic Carbon		6.3	1.0		mg/l	SM5310 B-11
JD40008-4F	**N-165_20220217**					
No hits reported in this sample.						
JD40008-5	**TRIP BLANK**					
No hits reported in this sample.						

(a) Sample was titrated to a final pH of 4.5.
(b) Dilution required due to high concentraton of non-target compound.
(c) Elevated detection limit due to dilution required for matrix interference.

Summary of Hits

Job Number: JD40008
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 02/16/22 thru 02/17/22

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

(d) Sample was titrated to a final pH of 4.5. Sample receieved with head space. Net alkalinity ___mg/L
(e) Calculated as: Total Carbon - Total Organic Carbon

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-167_20220216		
Lab Sample ID:	JD40008-1	**Date Sampled:**	02/16/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C188974.D	1	02/24/22 13:48	NW	n/a	n/a	V2C8406
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2.8	0.50	0.43	ug/l	
108-88-3	Toluene	1.0	1.0	0.53	ug/l	
100-41-4	Ethylbenzene	60.9	1.0	0.60	ug/l	
1330-20-7	Xylene (total)	10.8	1.0	0.59	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	98.1	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
95-63-6	1,2,4-Trimethylbenzene	5.4	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	24.0	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	92%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-167_20220216		
Lab Sample ID:	JD40008-1	**Date Sampled:**	02/16/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P51942.D	1	02/23/22 03:30	CS	02/22/22 10:15	OP38283	E4P2708
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.494	0.080	0.040	ug/l	B
56-55-3	Benzo(a)anthracene	0.0870	0.040	0.024	ug/l	B
50-32-8	Benzo(a)pyrene	0.0428	0.040	0.024	ug/l	B
205-99-2	Benzo(b)fluoranthene	0.0476	0.040	0.024	ug/l	B
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	0.0858	0.080	0.040	ug/l	
86-73-7	Fluorene	1.58	0.080	0.040	ug/l	B
91-20-3	Naphthalene	11.2	0.080	0.040	ug/l	E
85-01-8	Phenanthrene	2.12	0.080	0.040	ug/l	B
129-00-0	Pyrene	0.416	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%		29-124%
321-60-8	2-Fluorobiphenyl	61%		23-122%
1718-51-0	Terphenyl-d14	69%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-167_20220216		
Lab Sample ID:	JD40008-1	**Date Sampled:**	02/16/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G42684.D	1	02/22/22 06:15	RK	02/21/22 12:20	OP38248	G7G1516
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane [a]	ND	0.020	0.0072	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	107%		52-154%
3017-95-6	2-Bromo-1-chloropropane	116%		52-154%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-167_20220216		
Lab Sample ID:	JD40008-1	**Date Sampled:**	02/16/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA93367.D	1	02/24/22 10:38	JN	n/a	n/a	GAA2502
Run #2	AA93368.D	25	02/24/22 10:56	JN	n/a	n/a	GAA2502

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	1980 [a]	2.8	2.0	ug/l	
74-84-0	Ethane	5.25	0.23	0.14	ug/l	
74-85-1	Ethene	3.12	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-167_20220216		
Lab Sample ID:	JD40008-1	**Date Sampled:**	02/16/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	38800	5000	ug/l	1	02/22/22	02/23/22	ND	SW846 6010D [1]	SW846 3010A [2]
Iron	38400	100	ug/l	1	02/22/22	02/23/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51950
(2) Prep QC Batch: MP31401

RL = Reporting Limit

Report of Analysis

Client Sample ID: N-167_20220216
Lab Sample ID: JD40008-1
Matrix: AQ - Ground Water
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Date Sampled: 02/16/22
Date Received: 02/18/22
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	156	5.0	mg/l	1	02/21/22 16:25	MP	SM2320 B-11
Inorganic Carbon [b]	< 6.0	6.0	mg/l	1	02/22/22 15:41	NA	SM5310 B-11
Nitrogen, Total Kjeldahl	0.31	0.20	mg/l	1	02/24/22 15:50	MM	EPA 351.2/LACHAT
Sulfate	22.6	2.0	mg/l	1	02/22/22 10:33	JD	EPA 300/SW846 9056A
Total Carbon [c]	< 5.0	5.0	mg/l	5	02/22/22 15:41	NA	SM5310 B-11
Total Organic Carbon	2.7	1.0	mg/l	1	02/22/22 13:00	NA	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.
(b) Calculated as: Total Carbon - Total Organic Carbon
(c) Elevated detection limit due to dilution required for matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-167_20220216		
Lab Sample ID:	JD40008-1F	**Date Sampled:**	02/16/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	4.5	1.0	ug/l	2	02/22/22	02/24/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51960
(2) Prep QC Batch: MP31402

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-168_20220217		
Lab Sample ID:	JD40008-2	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2C188980.D	2	02/24/22 17:40	NW	n/a	n/a	V2C8406
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.7	1.0	0.85	ug/l	
108-88-3	Toluene	8.1	2.0	1.1	ug/l	
100-41-4	Ethylbenzene	6.5	2.0	1.2	ug/l	
1330-20-7	Xylene (total)	10.6	2.0	1.2	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.2	ug/l	
98-82-8	Isopropylbenzene	144	2.0	1.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	1.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	12	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	4.0	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	2.7	4.0	2.0	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		80-120%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	90%		82-114%

(a) Dilution required due to high concentraton of non-target compound.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-168_20220217		
Lab Sample ID:	JD40008-2	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P51943.D	1	02/23/22 03:54	CS	02/22/22 10:15	OP38283	E4P2708
Run #2	4P51972.D	5	02/23/22 20:38	KLS	02/22/22 10:15	OP38283	E4P2709

	Initial Volume	Final Volume
Run #1	240 ml	1.0 ml
Run #2	240 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	1.91	0.083	0.042	ug/l	B
56-55-3	Benzo(a)anthracene	0.502	0.042	0.025	ug/l	B
50-32-8	Benzo(a)pyrene	0.295	0.042	0.025	ug/l	B
205-99-2	Benzo(b)fluoranthene	0.280	0.042	0.025	ug/l	B
191-24-2	Benzo(g,h,i)perylene	0.274	0.083	0.042	ug/l	B
218-01-9	Chrysene	0.574	0.083	0.042	ug/l	
86-73-7	Fluorene	3.70	0.083	0.042	ug/l	B
91-20-3	Naphthalene	ND	0.083	0.042	ug/l	
85-01-8	Phenanthrene	6.64 [a]	0.42	0.21	ug/l	B
129-00-0	Pyrene	2.21	0.083	0.042	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%	70%	29-124%
321-60-8	2-Fluorobiphenyl	63%	70%	23-122%
1718-51-0	Terphenyl-d14	73%	65%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-168_20220217		
Lab Sample ID:	JD40008-2	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G42685.D	1	02/22/22 06:33	RK	02/21/22 12:20	OP38248	G7G1516
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane [a]	ND	0.021	0.0072	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	104%		52-154%
3017-95-6	2-Bromo-1-chloropropane	100%		52-154%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-168_20220217		
Lab Sample ID:	JD40008-2	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA93369.D	1	02/24/22 11:08	JN	n/a	n/a	GAA2502
Run #2	AA93370.D	10	02/24/22 11:22	JN	n/a	n/a	GAA2502

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	547 [a]	1.1	0.80	ug/l	
74-84-0	Ethane	0.46	0.23	0.14	ug/l	
74-85-1	Ethene	0.48	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-168_20220217		
Lab Sample ID:	JD40008-2	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	102000	5000	ug/l	1	02/22/22	02/23/22	ND	SW846 6010D [1]	SW846 3010A [2]
Iron	42800	100	ug/l	1	02/22/22	02/23/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51950
(2) Prep QC Batch: MP31401

RL = Reporting Limit

Report of Analysis

Client Sample ID: N-168_20220217
Lab Sample ID: JD40008-2
Matrix: AQ - Ground Water
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Date Sampled: 02/17/22
Date Received: 02/18/22
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	370	10	mg/l	1	02/21/22 16:25	MP	SM2320 B-11
Inorganic Carbon [b]	< 6.0	6.0	mg/l	1	02/22/22 16:40	NA	SM5310 B-11
Nitrogen, Total Kjeldahl	1.2	0.20	mg/l	1	02/24/22 15:51	MM	EPA 351.2/LACHAT
Sulfate	28.1	2.0	mg/l	1	02/22/22 10:46	JD	EPA 300/SW846 9056A
Total Carbon [c]	9.5	5.0	mg/l	5	02/22/22 16:40	NA	SM5310 B-11
Total Organic Carbon	11.5	1.0	mg/l	1	02/22/22 13:19	NA	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.
(b) Calculated as: Total Carbon - Total Organic Carbon
(c) Elevated detection limit due to dilution required for matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-168_20220217		
Lab Sample ID:	JD40008-2F	**Date Sampled:**	02/17/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	02/22/22	02/24/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51960
(2) Prep QC Batch: MP31402

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-169_20220217		
Lab Sample ID:	JD40008-3	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C188975.D	1	02/24/22 14:17	NW	n/a	n/a	V2C8406
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	46.8	0.50	0.43	ug/l	
108-88-3	Toluene	23.9	1.0	0.53	ug/l	
100-41-4	Ethylbenzene	47.6	1.0	0.60	ug/l	
1330-20-7	Xylene (total)	45.5	1.0	0.59	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	138	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
95-63-6	1,2,4-Trimethylbenzene	1.6	2.0	1.0	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	5.3	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	107%		80-120%
460-00-4	4-Bromofluorobenzene	100%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-169_20220217		
Lab Sample ID:	JD40008-3	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P51944.D	1	02/23/22 04:18	CS	02/22/22 10:15	OP38283	E4P2708
Run #2							

	Initial Volume	Final Volume
Run #1	240 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.393	0.083	0.042	ug/l	B
56-55-3	Benzo(a)anthracene	0.0634	0.042	0.025	ug/l	B
50-32-8	Benzo(a)pyrene	0.0402	0.042	0.025	ug/l	JB
205-99-2	Benzo(b)fluoranthene	0.0476	0.042	0.025	ug/l	B
191-24-2	Benzo(g,h,i)perylene	0.0445	0.083	0.042	ug/l	JB
218-01-9	Chrysene	0.0618	0.083	0.042	ug/l	J
86-73-7	Fluorene	1.50	0.083	0.042	ug/l	B
91-20-3	Naphthalene	12.6	0.083	0.042	ug/l	E
85-01-8	Phenanthrene	1.72	0.083	0.042	ug/l	B
129-00-0	Pyrene	0.243	0.083	0.042	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%		29-124%
321-60-8	2-Fluorobiphenyl	66%		23-122%
1718-51-0	Terphenyl-d14	71%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-169_20220217		
Lab Sample ID:	JD40008-3	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G42686.D	1	02/22/22 06:52	RK	02/21/22 12:20	OP38248	G7G1516
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane [a]	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	109%		52-154%
3017-95-6	2-Bromo-1-chloropropane	109%		52-154%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-169_20220217		
Lab Sample ID:	JD40008-3	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA93371.D	1	02/24/22 11:39	JN	n/a	n/a	GAA2502
Run #2	AA93372.D	200	02/24/22 11:52	JN	n/a	n/a	GAA2502

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	8910 [a]	22	16	ug/l	
74-84-0	Ethane	1.0	0.23	0.14	ug/l	
74-85-1	Ethene	0.70	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-169_20220217		
Lab Sample ID:	JD40008-3	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	50500	5000	ug/l	1	02/22/22	02/23/22	ND	SW846 6010D [1]	SW846 3010A [2]
Iron	34700	100	ug/l	1	02/22/22	02/23/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51950
(2) Prep QC Batch: MP31401

RL = Reporting Limit

Report of Analysis

Client Sample ID: N-169_20220217
Lab Sample ID: JD40008-3
Matrix: AQ - Ground Water
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Date Sampled: 02/17/22
Date Received: 02/18/22
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	270	10	mg/l	1	02/21/22 16:36	MP	SM2320 B-11
Inorganic Carbon [b]	< 6.0	6.0	mg/l	1	02/22/22 17:01	NA	SM5310 B-11
Nitrogen, Total Kjeldahl	0.34	0.20	mg/l	1	02/24/22 15:49	MM	EPA 351.2/LACHAT
Sulfate	< 2.0	2.0	mg/l	1	02/22/22 10:59	JD	EPA 300/SW846 9056A
Total Carbon [c]	< 5.0	5.0	mg/l	5	02/22/22 17:01	NA	SM5310 B-11
Total Organic Carbon	4.7	1.0	mg/l	1	02/22/22 14:19	NA	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.
(b) Calculated as: Total Carbon - Total Organic Carbon
(c) Elevated detection limit due to dilution required for matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-169_20220217		
Lab Sample ID:	JD40008-3F	**Date Sampled:**	02/17/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	02/22/22	02/24/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51960
(2) Prep QC Batch: MP31402

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-165_20220217		
Lab Sample ID:	JD40008-4	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C188982.D	1	02/24/22 18:38	NW	n/a	n/a	V2C8406
Run #2	4D115920.D	5	02/23/22 08:31	BK	n/a	n/a	V4D5151

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	208 [a]	2.5	2.1	ug/l	
108-88-3	Toluene	5.4	1.0	0.53	ug/l	
100-41-4	Ethylbenzene	306 [a]	5.0	3.0	ug/l	
1330-20-7	Xylene (total)	226	1.0	0.59	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	152	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
95-63-6	1,2,4-Trimethylbenzene	239 [a]	10	5.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	84.9	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	108%	80-120%
2037-26-5	Toluene-D8	112%	105%	80-120%
460-00-4	4-Bromofluorobenzene	93%	100%	82-114%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-165_20220217		
Lab Sample ID:	JD40008-4	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P51945.D	1	02/23/22 04:42	CS	02/22/22 10:15	OP38283	E4P2708
Run #2							

	Initial Volume	Final Volume
Run #1	230 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.657	0.087	0.043	ug/l	B
56-55-3	Benzo(a)anthracene	0.138	0.043	0.026	ug/l	B
50-32-8	Benzo(a)pyrene	0.0809	0.043	0.026	ug/l	B
205-99-2	Benzo(b)fluoranthene	0.101	0.043	0.026	ug/l	B
191-24-2	Benzo(g,h,i)perylene	0.0663	0.087	0.043	ug/l	JB
218-01-9	Chrysene	0.141	0.087	0.043	ug/l	
86-73-7	Fluorene	2.49	0.087	0.043	ug/l	B
91-20-3	Naphthalene	ND	0.087	0.043	ug/l	
85-01-8	Phenanthrene	2.95	0.087	0.043	ug/l	B
129-00-0	Pyrene	0.611	0.087	0.043	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	51%		29-124%
321-60-8	2-Fluorobiphenyl	57%		23-122%
1718-51-0	Terphenyl-d14	51%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-165_20220217		
Lab Sample ID:	JD40008-4	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G42687.D	1	02/22/22 07:10	RK	02/21/22 12:20	OP38248	G7G1516
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane [a]	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	108%		52-154%
3017-95-6	2-Bromo-1-chloropropane	129%		52-154%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-165_20220217		
Lab Sample ID:	JD40008-4	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA93373.D	1	02/24/22 12:07	JN	n/a	n/a	GAA2502
Run #2	AA93374.D	20	02/24/22 12:20	JN	n/a	n/a	GAA2502

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	556 [a]	2.2	1.6	ug/l	
74-84-0	Ethane	ND	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-165_20220217		
Lab Sample ID:	JD40008-4	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	106000	5000	ug/l	1	02/22/22	02/23/22	ND	SW846 6010D [1]	SW846 3010A [2]
Iron	7240	100	ug/l	1	02/22/22	02/23/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51950
(2) Prep QC Batch: MP31401

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-165_20220217		
Lab Sample ID:	JD40008-4	**Date Sampled:**	02/17/22
Matrix:	AQ - Ground Water	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	533	5.0	mg/l	1	02/22/22 13:45	MP	SM2320 B-11
Inorganic Carbon [b]	108	6.0	mg/l	1	02/22/22 17:19	NA	SM5310 B-11
Nitrogen, Total Kjeldahl	0.60	0.20	mg/l	1	02/24/22 15:52	MM	EPA 351.2/LACHAT
Sulfate	163	2.0	mg/l	1	02/22/22 11:12	JD	EPA 300/SW846 9056A
Total Carbon [c]	114	5.0	mg/l	5	02/22/22 17:19	NA	SM5310 B-11
Total Organic Carbon	6.3	1.0	mg/l	1	02/22/22 14:38	NA	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.Sample receieved with head space.Net alkalinity ___mg/L
(b) Calculated as: Total Carbon - Total Organic Carbon
(c) Elevated detection limit due to dilution required for matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-165_20220217		
Lab Sample ID:	JD40008-4F	**Date Sampled:**	02/17/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	02/18/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	02/22/22	02/24/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA51960
(2) Prep QC Batch: MP31402

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JD40008-5	**Date Sampled:**	02/17/22
Matrix:	AQ - Trip Blank Water	**Date Received:**	02/18/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D115903.D	1	02/23/22 00:22	BK	n/a	n/a	V4D5151
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

PA Leaded Gasoline and Aviation Gas List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	111%		80-120%
2037-26-5	Toluene-D8	106%		80-120%
460-00-4	4-Bromofluorobenzene	103%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Inorganic Carbon		**SM5310 B-11**	AQ	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

GW
TB

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

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EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #
Bottle Order Control # VP-021122-252
SGS Quote #
SGS Job # JD40008

Client / Reporting Information

Company Name: Stantec Consulting
Street Address: 1060 Andrew Dr Suite 104
City / State / Zip: West Chester PA 19380
Project Contact / E-mail: Jenny.Kachel@stantec.com
Phone #: 610-840-2561
Sampler(s) Name(s) / Phone #: James D. Croft 6104279307
Project Manager: Jenny Kachel

Project Information

Project Name: AOI 8 Ballfield
Street
City / State
Project #
Client Purchase Order #
Project Manager: Jenny Kachel

Billing Information (if different from Report to)
Company Name
Street Address
City / State / Zip
Attention:

Requested Analysis

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Everyreen Petroleum Short list	TBA	TTC	TOC	Sulfate	Dissolved headspace gases (Methane, ethane, ethene)	Total Iron	Total Calcium	TKN	Alkalinity as CaCO3	8260	LAB USE ONLY
1F	N-167_20220216		2/16/2022	1305	JDC	G		GW	17	X		X	X	X				X	X	X	X	X	X	X	X	X	X		E43
2F	N-168_20220217		2/17/2022	1055	JDC	G		GW	17	X		X	X	X				X	X	X	X	X	X	X	X	X	X		A12
3F	N-169_20220217		2/17/2022	1325	JDC	G		GW	17	X		X	X	X				X	X	X	X	X	X	X	X	X	X		G13
4F	N-165_20220217		2/17/2022	1550	JDC	G		GW	17	X		X	X	X				X	X	X	X	X	X	X	X	X	X		G14
5	Trip Blank		2/16/2022	—	—	—		LIQ	2	X																		X	V217

pH Check (Lab Use Only)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

Turn Around Time (Business Days)

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

All data available via Lablink

Approved By (SGS PM): / Date:
Initial Assessment/A Co
Label Verification
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

*Standard Turn-around time
*Equis EDD format
• 2x250m NP Ext

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 [signature]	2/18/2022 0939	1 [signature]	2 [signature]	2/18/22 1807	2 [signature]
3		3	4		4
5		5			

Custody Seal # ☐ Intact ☐ Not intact | Absent ☐
Therm ID: See Sample Receipt Summary
On Ice ☒ Cooler Temp. °C 2.8 cp

JD40008: Chain of Custody
Page 1 of 4

JD40008

STANTEC

VOC's by EPA Method 8260	Cas No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-414
Ethylene Dibromide*	106-73-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7

SVOC's by EPA Method 8270	Cas No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a) pyrene	50-32-8
Benzo(b) fluoranthene	205-99-2
Benzo(g,h,i) perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0

Metals by Method 6010/6020	Cas No.
Lead	7439-92-1

SGS Sample Receipt Summary

Job Number: JD40008 **Client:** STANTEC **Project:** FORMER PHILADELPHIA REFINERY

Date / Time Received: 2/18/2022 6:07:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (1.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

Job Change Order: JD40008

Requested Date: 6/8/2022 **Received Date:** 2/18/2022

Account Name: Sunoco/Evergreen **Due Date:** 6/8/2022

Project Description: SECORPAE:Former Philadelphia Refinery, 3144 **Deliverable:** REDT2

C/O Initiated By: VICKYP **PM:** VP **TAT (Days):** 7

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Sample #: JD40008-All

Dept:

TAT: 7

Change:
Please NO OUT Naphthalene data under 8260 run and report under 8270SIM

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Above Changes Per: Andrea Wright **Date/Time:** 6/8/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

JD40008: Chain of Custody
Page 4 of 4

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD40008

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD40008-1 Collected: 16-FEB-22 13:05 By: JDC N-167_20220216			Received: 18-FEB-22 By: TS			
JD40008-1	SM2320 B-11	21-FEB-22 16:25	MP			ALK
JD40008-1	SW846-8011	22-FEB-22 06:15	RK	21-FEB-22	AC	V8011EDB
JD40008-1	EPA 300/SW846 9056A	22-FEB-22 10:33	JD	21-FEB-22	JD	SO4
JD40008-1	SM5310 B-11	22-FEB-22 13:00	NA	21-FEB-22	MB	TOC
JD40008-1	SM5310 B-11	22-FEB-22 15:41	NA			ICAR
JD40008-1	SM5310 B-11	22-FEB-22 15:41	NA	21-FEB-22	MB	TCAR
JD40008-1	SW846 8270E BY SIM	23-FEB-22 03:30	CS	22-FEB-22	JL	BLV8270SIMSL
JD40008-1	SW846 6010D	23-FEB-22 12:21	ND	22-FEB-22	SF	CA,FE
JD40008-1	RSK-175	24-FEB-22 10:38	JN			VRSK175DGMEE
JD40008-1	RSK-175	24-FEB-22 10:56	JN			VRSK175DGMEE
JD40008-1	SW846 8260D	24-FEB-22 13:48	NW			V8260PALGTMB
JD40008-1	EPA 351.2/LACHAT	24-FEB-22 15:50	MM	22-FEB-22	MP	TKN
JD40008-2 Collected: 17-FEB-22 10:55 By: JDC N-168_20220217			Received: 18-FEB-22 By: TS			
JD40008-2	SM2320 B-11	21-FEB-22 16:25	MP			ALK
JD40008-2	SW846-8011	22-FEB-22 06:33	RK	21-FEB-22	AC	V8011EDB
JD40008-2	EPA 300/SW846 9056A	22-FEB-22 10:46	JD	21-FEB-22	JD	SO4
JD40008-2	SM5310 B-11	22-FEB-22 13:19	NA	21-FEB-22	MB	TOC
JD40008-2	SM5310 B-11	22-FEB-22 16:40	NA			ICAR
JD40008-2	SM5310 B-11	22-FEB-22 16:40	NA	21-FEB-22	MB	TCAR
JD40008-2	SW846 8270E BY SIM	23-FEB-22 03:54	CS	22-FEB-22	JL	BLV8270SIMSL
JD40008-2	SW846 6010D	23-FEB-22 12:26	ND	22-FEB-22	SF	CA,FE
JD40008-2	SW846 8270E BY SIM	23-FEB-22 20:38	KLS	22-FEB-22	JL	BLV8270SIMSL
JD40008-2	RSK-175	24-FEB-22 11:08	JN			VRSK175DGMEE
JD40008-2	RSK-175	24-FEB-22 11:22	JN			VRSK175DGMEE
JD40008-2	EPA 351.2/LACHAT	24-FEB-22 15:51	MM	22-FEB-22	MP	TKN
JD40008-2	SW846 8260D	24-FEB-22 17:40	NW			V8260PALGTMB
JD40008-3 Collected: 17-FEB-22 13:25 By: JDC N-169_20220217			Received: 18-FEB-22 By: TS			
JD40008-3	SM2320 B-11	21-FEB-22 16:36	MP			ALK
JD40008-3	SW846-8011	22-FEB-22 06:52	RK	21-FEB-22	AC	V8011EDB
JD40008-3	EPA 300/SW846 9056A	22-FEB-22 10:59	JD	21-FEB-22	JD	SO4
JD40008-3	SM5310 B-11	22-FEB-22 14:19	NA	21-FEB-22	MB	TOC

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD40008

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD40008-3	SM5310 B-11	22-FEB-22 17:01	NA			ICAR
JD40008-3	SM5310 B-11	22-FEB-22 17:01	NA	21-FEB-22	MB	TCAR
JD40008-3	SW846 8270E BY SIM	23-FEB-22 04:18	CS	22-FEB-22	JL	BLV8270SIMSL
JD40008-3	SW846 6010D	23-FEB-22 12:31	ND	22-FEB-22	SF	CA,FE
JD40008-3	RSK-175	24-FEB-22 11:39	JN			VRSK175DGMEE
JD40008-3	RSK-175	24-FEB-22 11:52	JN			VRSK175DGMEE
JD40008-3	SW846 8260D	24-FEB-22 14:17	NW			V8260PALGTMB
JD40008-3	EPA 351.2/LACHAT	24-FEB-22 15:49	MM	22-FEB-22	MP	TKN
JD40008-4	Collected: 17-FEB-22 15:50 By: JDC N-165_20220217		Received: 18-FEB-22 By: TS			
JD40008-4	SW846-8011	22-FEB-22 07:10	RK	21-FEB-22	AC	V8011EDB
JD40008-4	EPA 300/SW846 9056A	22-FEB-22 11:12	JD	21-FEB-22	JD	SO4
JD40008-4	SM2320 B-11	22-FEB-22 13:45	MP			ALK
JD40008-4	SM5310 B-11	22-FEB-22 14:38	NA	21-FEB-22	MB	TOC
JD40008-4	SM5310 B-11	22-FEB-22 17:19	NA			ICAR
JD40008-4	SM5310 B-11	22-FEB-22 17:19	NA	21-FEB-22	MB	TCAR
JD40008-4	SW846 8270E BY SIM	23-FEB-22 04:42	CS	22-FEB-22	JL	BLV8270SIMSL
JD40008-4	SW846 8260D	23-FEB-22 08:31	BK			V8260PALGTMB
JD40008-4	SW846 6010D	23-FEB-22 12:01	ND	22-FEB-22	SF	CA,FE
JD40008-4	RSK-175	24-FEB-22 12:07	JN			VRSK175DGMEE
JD40008-4	RSK-175	24-FEB-22 12:20	JN			VRSK175DGMEE
JD40008-4	EPA 351.2/LACHAT	24-FEB-22 15:52	MM	22-FEB-22	MP	TKN
JD40008-4	SW846 8260D	24-FEB-22 18:38	NW			V8260PALGTMB
JD40008-5	Collected: 17-FEB-22 15:50 By: JDC TRIP BLANK		Received: 18-FEB-22 By: TS			
JD40008-5	SW846 8260D	23-FEB-22 00:22	BK			V8260PALGTMB
JD40008-1F	Collected: 16-FEB-22 13:05 By: JDC N-167_20220216		Received: 18-FEB-22 By: TS			
JD40008-1F	SW846 6020B	24-FEB-22 14:20	NV	22-FEB-22	SF	PBMS
JD40008-2F	Collected: 17-FEB-22 10:55 By: JDC N-168_20220217		Received: 18-FEB-22 By: TS			
JD40008-2F	SW846 6020B	24-FEB-22 14:26	NV	22-FEB-22	SF	PBMS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD40008

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD40008-3F	Collected: 17-FEB-22 13:25 By: JDC		Received: 18-FEB-22 By: TS			
	N-169_20220217					
JD40008-3F	SW846 6020B	24-FEB-22 14:07	NV	22-FEB-22	SF	PBMS
JD40008-4F	Collected: 17-FEB-22 15:50 By: JDC		Received: 18-FEB-22 By: TS			
	N-165_20220217					
JD40008-4F	SW846 6020B	24-FEB-22 14:32	NV	22-FEB-22	SF	PBMS

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-1.1	Aleandi Rodriguez	Secured Storage	02/18/22 22:39	Return to Storage
JD40008-1.1	Aleandi Rodriguez	Secured Storage	02/18/22 22:40	Return to Storage
override				
JD40008-1.1	Secured Storage	Benjamin Gaines	02/21/22 15:49	Retrieve from Storage
JD40008-1.1	Benjamin Gaines	Secured Staging Area	02/21/22 15:49	Return to Storage
JD40008-1.1	Secured Staging Area	Edward Rue	02/22/22 07:36	Retrieve from Storage
JD40008-1.1	Edward Rue		02/22/22 16:25	Depleted
JD40008-1.1.1	Edward Rue	Organics Prep	02/22/22 07:48	Extract from JD40008-1.1
JD40008-1.1.1	Organics Prep	Jesse Li	02/22/22 18:48	Extract from JD40008-1.1
JD40008-1.1.1	Jesse Li	Extract Storage	02/22/22 18:48	Return to Storage
JD40008-1.1.1	Extract Storage	Christopher Sowa	02/23/22 02:17	Retrieve from Storage
JD40008-1.1.1	Christopher Sowa	GCMS4P	02/23/22 02:17	Load on Instrument
JD40008-1.1.1	GCMS4P	Kristi Schollenberger	02/24/22 13:31	Unload from Instrument
JD40008-1.1.1	Kristi Schollenberger	Extract Freezer	02/24/22 13:31	Return to Storage
JD40008-1.1.1	Extract Freezer		04/04/22 09:00	Disposed
JD40008-1.2	Aleandi Rodriguez	Secured Storage	02/18/22 22:40	Return to Storage
JD40008-1.2	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.3	Aleandi Rodriguez	Secured Storage	02/18/22 22:09	Return to Storage
JD40008-1.3	Aleandi Rodriguez	Secured Staging Area	02/21/22 17:33	Return to Storage
stage				
JD40008-1.3	Secured Staging Area	Alyssa Koshy	02/22/22 07:57	Retrieve from Storage
JD40008-1.3	Alyssa Koshy	Secured Storage	02/22/22 10:34	Return to Storage
JD40008-1.3	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.3.1	Alyssa Koshy	Metals Digestion	02/22/22 09:34	Digestate from JD40008-1.3
JD40008-1.3.1	Metals Digestion	Alyssa Koshy	02/22/22 09:35	Digestate from JD40008-1.3
JD40008-1.3.1	Alyssa Koshy	Metals Digestate Storage	02/22/22 09:35	Return to Storage
JD40008-1.3.1	Metals Digestate Storage		05/02/22 09:00	Disposed
JD40008-1.5	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-1.5	Secured Storage	Todd Shoemaker	02/22/22 10:05	Retrieve from Storage
JD40008-1.5	Todd Shoemaker	Secured Staging Area	02/22/22 10:06	Return to Storage
JD40008-1.5	Secured Staging Area	Mahendra Patel	02/22/22 11:55	Retrieve from Storage
JD40008-1.5	Mahendra Patel	Secured Storage	02/22/22 16:04	Return to Storage
JD40008-1.5	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.6	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-1.6	Secured Storage	Todd Shoemaker	02/21/22 12:00	Retrieve from Storage
JD40008-1.6	Todd Shoemaker	Secured Staging Area	02/21/22 12:00	Return to Storage
JD40008-1.6	Secured Staging Area	Joseph Dye	02/21/22 14:16	Retrieve from Storage
JD40008-1.6	Joseph Dye	Secured Storage	02/22/22 14:08	Return to Storage

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-1.6	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.7	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-1.7	Secured Storage	Todd Shoemaker	02/21/22 10:51	Retrieve from Storage
JD40008-1.7	Todd Shoemaker	Secured Staging Area	02/21/22 10:51	Return to Storage
JD40008-1.7	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.8	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-1.8	Secured Storage	Todd Shoemaker	02/21/22 13:41	Retrieve from Storage
JD40008-1.8	Todd Shoemaker	Secured Staging Area	02/21/22 13:41	Return to Storage
JD40008-1.8	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.9	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-1.9	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.10	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-1.10	Secured Storage	Brittany Klimek	02/24/22 18:34	Retrieve from Storage
JD40008-1.10	Brittany Klimek	GCMS2C	02/24/22 18:35	Load on Instrument
JD40008-1.10	GCMS2C	Nicholas Weigand	02/25/22 17:15	Unload from Instrument
JD40008-1.10	Nicholas Weigand	Secured Storage	02/25/22 17:15	Return to Storage
JD40008-1.10	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.11	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-1.11	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.12	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-1.12	Secured Storage	John Nieradka	02/23/22 10:40	Retrieve from Storage
JD40008-1.12	John Nieradka	VOA Prep Storage	02/25/22 18:20	Return to Storage
JD40008-1.12	VOA Prep Storage	William Cruser	03/08/22 09:03	Retrieve from Storage
JD40008-1.12	William Cruser		03/08/22 09:03	Depleted
JD40008-1.13	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-1.13	Secured Storage	Benjamin Gaines	02/20/22 10:38	Retrieve from Storage
JD40008-1.13	Benjamin Gaines	Secured Staging Area	02/20/22 10:39	Return to Storage
JD40008-1.13	Secured Staging Area	Taylor Gorman	02/21/22 04:55	Retrieve from Storage
JD40008-1.13	Taylor Gorman	Secured Storage	02/22/22 05:06	Return to Storage
JD40008-1.13	Secured Storage	Alejandra Cruz	03/02/22 16:17	Retrieve from Storage
JD40008-1.13	Alejandra Cruz		03/02/22 16:17	Depleted
JD40008-1.13.1	Taylor Gorman	Organics Prep	02/21/22 04:56	Extract from JD40008-1.13
JD40008-1.14	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-1.14	Secured Storage	Kyle McKeon	02/22/22 16:51	Retrieve from Storage
JD40008-1.14	Kyle McKeon	GCMS4D	02/22/22 16:52	Load on Instrument

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-1.14	GCMS4D	Kyle McKeon	02/23/22 11:54	Unload from Instrument
JD40008-1.14	Kyle McKeon	Secured Storage	02/23/22 11:54	Return to Storage
JD40008-1.14	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.15	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-1.15	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.16	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-1.16	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1.17	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-1.17	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1F.4	Aleandi Rodriguez	Secured Storage	02/18/22 22:09	Return to Storage
JD40008-1F.4	Aleandi Rodriguez	Secured Staging Area	02/21/22 17:33	Return to Storage
stage				
JD40008-1F.4	Secured Staging Area	Alyssa Koshy	02/22/22 07:57	Retrieve from Storage
JD40008-1F.4	Alyssa Koshy	Secured Storage	02/22/22 10:34	Return to Storage
JD40008-1F.4	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-1F.4.1	Alyssa Koshy	Metals Digestion	02/22/22 09:36	Digestate from JD40008-1F.4
JD40008-1F.4.1	Metals Digestion	Alyssa Koshy	02/22/22 09:36	Digestate from JD40008-1F.4
JD40008-1F.4.1	Alyssa Koshy	Metals Digestate Storage	02/22/22 09:36	Return to Storage
JD40008-1F.4.1	Metals Digestate Storage		05/02/22 09:00	Disposed
JD40008-2.1	Aleandi Rodriguez	Secured Storage	02/18/22 22:40	Return to Storage
JD40008-2.1	Secured Storage	Benjamin Gaines	02/21/22 15:49	Retrieve from Storage
JD40008-2.1	Benjamin Gaines	Secured Staging Area	02/21/22 15:49	Return to Storage
JD40008-2.1	Secured Staging Area	Edward Rue	02/22/22 07:36	Retrieve from Storage
JD40008-2.1	Edward Rue		02/22/22 16:25	Depleted
JD40008-2.1.1	Edward Rue	Organics Prep	02/22/22 07:48	Extract from JD40008-2.1
JD40008-2.1.1	Organics Prep	Jesse Li	02/22/22 18:48	Extract from JD40008-2.1
JD40008-2.1.1	Jesse Li	Extract Storage	02/22/22 18:48	Return to Storage
JD40008-2.1.1	Extract Storage	Christopher Sowa	02/23/22 02:17	Retrieve from Storage
JD40008-2.1.1	Christopher Sowa	GCMS4P	02/23/22 02:17	Load on Instrument
JD40008-2.1.1	GCMS4P	Kristi Schollenberger	02/24/22 13:31	Unload from Instrument
JD40008-2.1.1	Kristi Schollenberger	Extract Freezer	02/24/22 13:31	Return to Storage
JD40008-2.1.1	Extract Freezer		04/04/22 09:00	Disposed
JD40008-2.2	Aleandi Rodriguez	Secured Storage	02/18/22 22:40	Return to Storage
JD40008-2.2	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.3	Aleandi Rodriguez	Secured Storage	02/18/22 22:09	Return to Storage

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-2.3	Aleandi Rodriguez	Secured Staging Area	02/21/22 17:33	Return to Storage
stage				
JD40008-2.3	Secured Staging Area	Alyssa Koshy	02/22/22 07:57	Retrieve from Storage
JD40008-2.3	Alyssa Koshy	Secured Storage	02/22/22 10:34	Return to Storage
JD40008-2.3	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.3.1	Alyssa Koshy	Metals Digestion	02/22/22 09:34	Digestate from JD40008-2.3
JD40008-2.3.1	Metals Digestion	Alyssa Koshy	02/22/22 09:35	Digestate from JD40008-2.3
JD40008-2.3.1	Alyssa Koshy	Metals Digestate Storage	02/22/22 09:35	Return to Storage
JD40008-2.3.1	Metals Digestate Storage		05/02/22 09:00	Disposed
JD40008-2.5	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-2.5	Secured Storage	Todd Shoemaker	02/22/22 10:05	Retrieve from Storage
JD40008-2.5	Todd Shoemaker	Secured Staging Area	02/22/22 10:06	Return to Storage
JD40008-2.5	Secured Staging Area	Mahendra Patel	02/22/22 11:55	Retrieve from Storage
JD40008-2.5	Mahendra Patel	Secured Storage	02/22/22 16:04	Return to Storage
JD40008-2.5	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.6	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-2.6	Secured Storage	Todd Shoemaker	02/21/22 12:00	Retrieve from Storage
JD40008-2.6	Todd Shoemaker	Secured Staging Area	02/21/22 12:00	Return to Storage
JD40008-2.6	Secured Staging Area	Joseph Dye	02/21/22 14:16	Retrieve from Storage
JD40008-2.6	Joseph Dye	Secured Storage	02/22/22 14:08	Return to Storage
JD40008-2.6	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.7	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-2.7	Secured Storage	Todd Shoemaker	02/21/22 10:51	Retrieve from Storage
JD40008-2.7	Todd Shoemaker	Secured Staging Area	02/21/22 10:51	Return to Storage
JD40008-2.7	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.8	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-2.8	Secured Storage	Todd Shoemaker	02/21/22 13:41	Retrieve from Storage
JD40008-2.8	Todd Shoemaker	Secured Staging Area	02/21/22 13:41	Return to Storage
JD40008-2.8	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.9	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-2.9	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.10	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-2.10	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.11	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-2.11	Dave Hunkele		06/01/22 05:24	Disposed

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-2.12	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-2.12	Secured Storage	Kyle McKeon	02/22/22 16:51	Retrieve from Storage
JD40008-2.12	Kyle McKeon	GCMS4D	02/22/22 16:52	Load on Instrument
JD40008-2.12	GCMS4D	Kyle McKeon	02/23/22 11:54	Unload from Instrument
JD40008-2.12	Kyle McKeon	Secured Storage	02/23/22 11:54	Return to Storage
JD40008-2.12	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.13	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-2.13	Secured Storage	Benjamin Gaines	02/20/22 10:38	Retrieve from Storage
JD40008-2.13	Benjamin Gaines	Secured Staging Area	02/20/22 10:39	Return to Storage
JD40008-2.13	Secured Staging Area	Taylor Gorman	02/21/22 04:55	Retrieve from Storage
JD40008-2.13	Taylor Gorman	Secured Storage	02/22/22 05:06	Return to Storage
JD40008-2.13	Secured Storage	Alejandra Cruz	03/02/22 16:17	Retrieve from Storage
JD40008-2.13	Alejandra Cruz		03/02/22 16:17	Depleted
JD40008-2.13.1	Taylor Gorman	Organics Prep	02/21/22 04:56	Extract from JD40008-2.13
JD40008-2.14	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-2.14	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.15	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-2.15	Secured Storage	Brittany Klimek	02/24/22 18:34	Retrieve from Storage
JD40008-2.15	Brittany Klimek	GCMS2C	02/24/22 18:35	Load on Instrument
JD40008-2.15	GCMS2C	Nicholas Weigand	02/25/22 17:15	Unload from Instrument
JD40008-2.15	Nicholas Weigand	Secured Storage	02/25/22 17:15	Return to Storage
JD40008-2.15	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2.16	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-2.16	Secured Storage	John Nieradka	02/23/22 10:40	Retrieve from Storage
JD40008-2.16	John Nieradka	VOA Prep Storage	02/25/22 18:20	Return to Storage
JD40008-2.16	VOA Prep Storage	William Cruser	03/08/22 09:03	Retrieve from Storage
JD40008-2.16	William Cruser		03/08/22 09:03	Depleted
JD40008-2.17	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-2.17	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2F.4	Aleandi Rodriguez	Secured Storage	02/18/22 22:09	Return to Storage
JD40008-2F.4	Aleandi Rodriguez	Secured Staging Area	02/21/22 17:33	Return to Storage
stage				
JD40008-2F.4	Secured Staging Area	Alyssa Koshy	02/22/22 07:57	Retrieve from Storage
JD40008-2F.4	Alyssa Koshy	Secured Storage	02/22/22 10:34	Return to Storage
JD40008-2F.4	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-2F.4.1	Alyssa Koshy	Metals Digestion	02/22/22 09:36	Digestate from JD40008-2F.4

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-2F.4.1	Metals Digestion	Alyssa Koshy	02/22/22 09:36	Digestate from JD40008-2F.4
JD40008-2F.4.1	Alyssa Koshy	Metals Digestate Storage	02/22/22 09:36	Return to Storage
JD40008-2F.4.1	Metals Digestate Storage		05/02/22 09:00	Disposed
JD40008-3.1	Aleandi Rodriguez	Secured Storage	02/18/22 22:40	Return to Storage
JD40008-3.1	Secured Storage	Benjamin Gaines	02/21/22 15:49	Retrieve from Storage
JD40008-3.1	Benjamin Gaines	Secured Staging Area	02/21/22 15:49	Return to Storage
JD40008-3.1	Secured Staging Area	Edward Rue	02/22/22 07:36	Retrieve from Storage
JD40008-3.1	Edward Rue		02/22/22 16:25	Depleted
JD40008-3.1.1	Edward Rue	Organics Prep	02/22/22 07:48	Extract from JD40008-3.1
JD40008-3.1.1	Organics Prep	Jesse Li	02/22/22 18:48	Extract from JD40008-3.1
JD40008-3.1.1	Jesse Li	Extract Storage	02/22/22 18:48	Return to Storage
JD40008-3.1.1	Extract Storage	Christopher Sowa	02/23/22 02:17	Retrieve from Storage
JD40008-3.1.1	Christopher Sowa	GCMS4P	02/23/22 02:17	Load on Instrument
JD40008-3.1.1	GCMS4P	Kristi Schollenberger	02/24/22 13:31	Unload from Instrument
JD40008-3.1.1	Kristi Schollenberger	Extract Freezer	02/24/22 13:31	Return to Storage
JD40008-3.1.1	Extract Freezer		04/04/22 09:00	Disposed
JD40008-3.2	Aleandi Rodriguez	Secured Storage	02/18/22 22:40	Return to Storage
JD40008-3.2	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.3	Aleandi Rodriguez	Secured Storage	02/18/22 22:09	Return to Storage
JD40008-3.3 stage	Aleandi Rodriguez	Secured Staging Area	02/21/22 17:33	Return to Storage
JD40008-3.3	Secured Staging Area	Alyssa Koshy	02/22/22 07:57	Retrieve from Storage
JD40008-3.3	Alyssa Koshy	Secured Storage	02/22/22 10:34	Return to Storage
JD40008-3.3	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.3.1	Alyssa Koshy	Metals Digestion	02/22/22 09:34	Digestate from JD40008-3.3
JD40008-3.3.1	Metals Digestion	Alyssa Koshy	02/22/22 09:35	Digestate from JD40008-3.3
JD40008-3.3.1	Alyssa Koshy	Metals Digestate Storage	02/22/22 09:35	Return to Storage
JD40008-3.3.1	Metals Digestate Storage		05/02/22 09:00	Disposed
JD40008-3.5	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-3.5	Secured Storage	Todd Shoemaker	02/22/22 10:05	Retrieve from Storage
JD40008-3.5	Todd Shoemaker	Secured Staging Area	02/22/22 10:06	Return to Storage
JD40008-3.5	Secured Staging Area	Mahendra Patel	02/22/22 11:55	Retrieve from Storage
JD40008-3.5	Mahendra Patel	Secured Storage	02/22/22 16:04	Return to Storage
JD40008-3.5	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.6	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-3.6	Secured Storage	Todd Shoemaker	02/21/22 10:51	Retrieve from Storage
JD40008-3.6	Todd Shoemaker	Secured Staging Area	02/21/22 10:51	Return to Storage

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-3.6	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.7	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-3.7	Secured Storage	Todd Shoemaker	02/21/22 12:00	Retrieve from Storage
JD40008-3.7	Todd Shoemaker	Secured Staging Area	02/21/22 12:00	Return to Storage
JD40008-3.7	Secured Staging Area	Joseph Dye	02/21/22 14:16	Retrieve from Storage
JD40008-3.7	Joseph Dye	Secured Storage	02/22/22 14:08	Return to Storage
JD40008-3.7	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.8	Secured Storage	Todd Shoemaker	02/21/22 13:41	Retrieve from Storage
JD40008-3.8	Todd Shoemaker	Secured Staging Area	02/21/22 13:41	Return to Storage
JD40008-3.8	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.9	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-3.9	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.10	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-3.10	Secured Storage	Kyle McKeon	02/22/22 16:51	Retrieve from Storage
JD40008-3.10	Kyle McKeon	GCMS4D	02/22/22 16:52	Load on Instrument
JD40008-3.10	GCMS4D	Kyle McKeon	02/23/22 11:54	Unload from Instrument
JD40008-3.10	Kyle McKeon	Secured Storage	02/23/22 11:54	Return to Storage
JD40008-3.10	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.11	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-3.11	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.12	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-3.12	Secured Storage	John Nieradka	02/23/22 10:40	Retrieve from Storage
JD40008-3.12	John Nieradka	VOA Prep Storage	02/25/22 18:20	Return to Storage
JD40008-3.12	VOA Prep Storage	William Cruser	03/08/22 09:03	Retrieve from Storage
JD40008-3.12	William Cruser		03/08/22 09:03	Depleted
JD40008-3.13	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-3.13	Secured Storage	Benjamin Gaines	02/20/22 10:38	Retrieve from Storage
JD40008-3.13	Benjamin Gaines	Secured Staging Area	02/20/22 10:39	Return to Storage
JD40008-3.13	Secured Staging Area	Taylor Gorman	02/21/22 04:55	Retrieve from Storage
JD40008-3.13	Taylor Gorman	Secured Storage	02/22/22 05:06	Return to Storage
JD40008-3.13	Secured Storage	Alejandra Cruz	03/02/22 16:17	Retrieve from Storage
JD40008-3.13	Alejandra Cruz		03/02/22 16:17	Depleted
JD40008-3.13.1	Taylor Gorman	Organics Prep	02/21/22 04:56	Extract from JD40008-3.13
JD40008-3.14	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-3.14	Secured Storage	Brittany Klimek	02/24/22 18:34	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-3.14	Brittany Klimek	GCMS2C	02/24/22 18:35	Load on Instrument
JD40008-3.14	GCMS2C	Nicholas Weigand	02/25/22 17:15	Unload from Instrument
JD40008-3.14	Nicholas Weigand	Secured Storage	02/25/22 17:15	Return to Storage
JD40008-3.14	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.15	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-3.15	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.16	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-3.16	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3.17	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-3.17	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3F.4	Aleandi Rodriguez	Secured Storage	02/18/22 22:09	Return to Storage
JD40008-3F.4	Aleandi Rodriguez	Secured Staging Area	02/21/22 17:33	Return to Storage
stage				
JD40008-3F.4	Secured Staging Area	Alyssa Koshy	02/22/22 07:57	Retrieve from Storage
JD40008-3F.4	Alyssa Koshy	Secured Storage	02/22/22 10:34	Return to Storage
JD40008-3F.4	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-3F.4.1	Alyssa Koshy	Metals Digestion	02/22/22 09:36	Digestate from JD40008-3F.4
JD40008-3F.4.1	Metals Digestion	Alyssa Koshy	02/22/22 09:36	Digestate from JD40008-3F.4
JD40008-3F.4.1	Alyssa Koshy	Metals Digestate Storage	02/22/22 09:36	Return to Storage
JD40008-3F.4.1	Metals Digestate Storage		05/02/22 09:00	Disposed
JD40008-4.1	Aleandi Rodriguez	Secured Storage	02/18/22 22:39	Return to Storage
JD40008-4.1	Aleandi Rodriguez	Secured Storage	02/18/22 22:40	Return to Storage
override				
JD40008-4.1	Secured Storage	Benjamin Gaines	02/21/22 15:49	Retrieve from Storage
JD40008-4.1	Benjamin Gaines	Secured Staging Area	02/21/22 15:49	Return to Storage
JD40008-4.1	Secured Staging Area	Edward Rue	02/22/22 07:36	Retrieve from Storage
JD40008-4.1	Edward Rue		02/22/22 16:25	Depleted
JD40008-4.1.1	Edward Rue	Organics Prep	02/22/22 07:48	Extract from JD40008-4.1
JD40008-4.1.1	Organics Prep	Jesse Li	02/22/22 18:48	Extract from JD40008-4.1
JD40008-4.1.1	Jesse Li	Extract Storage	02/22/22 18:48	Return to Storage
JD40008-4.1.1	Extract Storage	Christopher Sowa	02/23/22 02:17	Retrieve from Storage
JD40008-4.1.1	Christopher Sowa	GCMS4P	02/23/22 02:17	Load on Instrument
JD40008-4.1.1	GCMS4P	Kristi Schollenberger	02/24/22 13:31	Unload from Instrument
JD40008-4.1.1	Kristi Schollenberger	Extract Freezer	02/24/22 13:31	Return to Storage
JD40008-4.1.1	Extract Freezer		04/04/22 09:00	Disposed
JD40008-4.2	Aleandi Rodriguez	Secured Storage	02/18/22 22:39	Return to Storage

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-4.2	Aleandi Rodriguez	Secured Storage	02/18/22 22:40	Return to Storage override
JD40008-4.2	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.3	Aleandi Rodriguez	Secured Storage	02/18/22 22:09	Return to Storage
JD40008-4.3	Aleandi Rodriguez	Secured Staging Area	02/21/22 17:33	Return to Storage stage
JD40008-4.3	Secured Staging Area	Alyssa Koshy	02/22/22 07:57	Retrieve from Storage
JD40008-4.3	Alyssa Koshy	Secured Storage	02/22/22 10:34	Return to Storage
JD40008-4.3	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.3.1	Alyssa Koshy	Metals Digestion	02/22/22 09:34	Digestate from JD40008-4.3
JD40008-4.3.1	Metals Digestion	Alyssa Koshy	02/22/22 09:35	Digestate from JD40008-4.3
JD40008-4.3.1	Alyssa Koshy	Metals Digestate Storage	02/22/22 09:35	Return to Storage
JD40008-4.3.1	Metals Digestate Storage		05/02/22 09:00	Disposed
JD40008-4.5	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-4.5	Secured Storage	Todd Shoemaker	02/22/22 10:05	Retrieve from Storage
JD40008-4.5	Todd Shoemaker	Secured Staging Area	02/22/22 10:06	Return to Storage
JD40008-4.5	Secured Staging Area	Mahendra Patel	02/22/22 11:55	Retrieve from Storage
JD40008-4.5	Mahendra Patel	Secured Storage	02/22/22 16:04	Return to Storage
JD40008-4.5	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.6	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-4.6	Secured Storage	Todd Shoemaker	02/21/22 10:51	Retrieve from Storage
JD40008-4.6	Todd Shoemaker	Secured Staging Area	02/21/22 10:51	Return to Storage
JD40008-4.6	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.7	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-4.7	Secured Storage	Todd Shoemaker	02/21/22 12:00	Retrieve from Storage
JD40008-4.7	Todd Shoemaker	Secured Staging Area	02/21/22 12:00	Return to Storage
JD40008-4.7	Secured Staging Area	Joseph Dye	02/21/22 14:16	Retrieve from Storage
JD40008-4.7	Joseph Dye	Secured Storage	02/22/22 14:08	Return to Storage
JD40008-4.7	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.8	Secured Storage	Todd Shoemaker	02/21/22 13:41	Retrieve from Storage
JD40008-4.8	Todd Shoemaker	Secured Staging Area	02/21/22 13:41	Return to Storage
JD40008-4.8	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.9	Aleandi Rodriguez	Secured Storage	02/18/22 22:11	Return to Storage
JD40008-4.9	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.10	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-4.10	Dave Hunkele		06/01/22 05:24	Disposed

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-4.11	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-4.11	Secured Storage	John Nieradka	02/23/22 10:40	Retrieve from Storage
JD40008-4.11	John Nieradka	VOA Prep Storage	02/25/22 18:20	Return to Storage
JD40008-4.11	VOA Prep Storage	William Cruser	03/08/22 09:03	Retrieve from Storage
JD40008-4.11	William Cruser		03/08/22 09:03	Depleted
JD40008-4.12	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-4.12	Secured Storage	Kyle McKeon	02/22/22 16:51	Retrieve from Storage
JD40008-4.12	Kyle McKeon	GCMS4D	02/22/22 16:52	Load on Instrument
JD40008-4.12	GCMS4D	Kyle McKeon	02/23/22 11:54	Unload from Instrument
JD40008-4.12	Kyle McKeon	Secured Storage	02/23/22 11:54	Return to Storage
JD40008-4.12	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.13	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-4.13	Secured Storage	Benjamin Gaines	02/20/22 10:38	Retrieve from Storage
JD40008-4.13	Benjamin Gaines	Secured Staging Area	02/20/22 10:39	Return to Storage
JD40008-4.13	Secured Staging Area	Taylor Gorman	02/21/22 04:55	Retrieve from Storage
JD40008-4.13	Taylor Gorman	Secured Storage	02/22/22 05:06	Return to Storage
JD40008-4.13	Secured Storage	Alejandra Cruz	03/02/22 16:17	Retrieve from Storage
JD40008-4.13	Alejandra Cruz		03/02/22 16:17	Depleted
JD40008-4.13.1	Taylor Gorman	Organics Prep	02/21/22 04:56	Extract from JD40008-4.13
JD40008-4.14	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-4.14	Secured Storage	Brittany Klimek	02/24/22 18:34	Retrieve from Storage
JD40008-4.14	Brittany Klimek	GCMS2C	02/24/22 18:35	Load on Instrument
JD40008-4.14	GCMS2C	Nicholas Weigand	02/25/22 17:15	Unload from Instrument
JD40008-4.14	Nicholas Weigand	Secured Storage	02/25/22 17:15	Return to Storage
JD40008-4.14	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.15	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-4.15	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.16	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-4.16	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4.17	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-4.17	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4F.4	Aleandi Rodriguez	Secured Storage	02/18/22 22:09	Return to Storage
JD40008-4F.4 stage	Aleandi Rodriguez	Secured Staging Area	02/21/22 17:33	Return to Storage
JD40008-4F.4	Secured Staging Area	Alyssa Koshy	02/22/22 07:57	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 02/18/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD40008-4F.4	Alyssa Koshy	Secured Storage	02/22/22 10:34	Return to Storage
JD40008-4F.4	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-4F.4.1	Alyssa Koshy	Metals Digestion	02/22/22 09:36	Digestate from JD40008-4F.4
JD40008-4F.4.1	Metals Digestion	Alyssa Koshy	02/22/22 09:36	Digestate from JD40008-4F.4
JD40008-4F.4.1	Alyssa Koshy	Metals Digestate Storage	02/22/22 09:36	Return to Storage
JD40008-4F.4.1	Metals Digestate Storage		05/02/22 09:00	Disposed
JD40008-5.1	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-5.1	Dave Hunkele		06/01/22 05:24	Disposed
JD40008-5.2	Tyler Strong	Secured Storage	02/18/22 22:00	Return to Storage
JD40008-5.2	Secured Storage	Kyle McKeon	02/22/22 16:51	Retrieve from Storage
JD40008-5.2	Kyle McKeon	GCMS4D	02/22/22 16:52	Load on Instrument
JD40008-5.2	GCMS4D	Kyle McKeon	02/23/22 11:54	Unload from Instrument
JD40008-5.2	Kyle McKeon	Secured Storage	02/23/22 11:54	Return to Storage
JD40008-5.2	Dave Hunkele		06/01/22 05:24	Disposed

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5151-MB	4D115902.D	1	02/22/22	BK	n/a	n/a	V4D5151

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40008-4, JD40008-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	80-120%
17060-07-0	1,2-Dichloroethane-D4	111%	80-120%
2037-26-5	Toluene-D8	100%	80-120%
460-00-4	4-Bromofluorobenzene	100%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2C8406-MB	2C188972.D	1	02/24/22	NW	n/a	n/a	V2C8406

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	103%	80-120%
2037-26-5	Toluene-D8	96%	80-120%
460-00-4	4-Bromofluorobenzene	90%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5151-BS	4D115900.D	1	02/22/22	BK	n/a	n/a	V4D5151

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40008-4, JD40008-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	52.5	105	80-115
107-06-2	1,2-Dichloroethane	50	52.7	105	73-117
100-41-4	Ethylbenzene	50	51.7	103	78-116
98-82-8	Isopropylbenzene	50	49.6	99	78-121
1634-04-4	Methyl Tert Butyl Ether	50	56.4	113	76-123
75-65-0	Tert Butyl Alcohol	250	270	108	75-123
108-88-3	Toluene	50	54.1	108	79-116
95-63-6	1,2,4-Trimethylbenzene	50	50.5	101	78-120
108-67-8	1,3,5-Trimethylbenzene	50	50.9	102	77-120
1330-20-7	Xylene (total)	150	152	101	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	80-120%
2037-26-5	Toluene-D8	103%	80-120%
460-00-4	4-Bromofluorobenzene	100%	82-114%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2C8406-BS	2C188970.D	1	02/24/22	NW	n/a	n/a	V2C8406

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	48.0	96	80-115
107-06-2	1,2-Dichloroethane	50	50.6	101	73-117
100-41-4	Ethylbenzene	50	46.7	93	78-116
98-82-8	Isopropylbenzene	50	47.8	96	78-121
1634-04-4	Methyl Tert Butyl Ether	50	45.3	91	76-123
75-65-0	Tert Butyl Alcohol	250	229	92	75-123
108-88-3	Toluene	50	46.8	94	79-116
95-63-6	1,2,4-Trimethylbenzene	50	46.4	93	78-120
108-67-8	1,3,5-Trimethylbenzene	50	45.7	91	77-120
1330-20-7	Xylene (total)	150	145	97	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	80-120%
2037-26-5	Toluene-D8	94%	80-120%
460-00-4	4-Bromofluorobenzene	90%	82-114%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD39923-9MS	4D115905.D	5	02/23/22	BK	n/a	n/a	V4D5151
JD39923-9MSD	4D115906.D	5	02/23/22	BK	n/a	n/a	V4D5151
JD39923-9 [a]	4D115904.D	5	02/23/22	BK	n/a	n/a	V4D5151

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40008-4, JD40008-5

CAS No.	Compound	JD39923-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1810	E	250	1780	-12* [b]	250	1750	-24* [b]	2	49-137/12
107-06-2	1,2-Dichloroethane	ND		250	301	120	250	303	121* [c]	1	66-120/13
100-41-4	Ethylbenzene	202		250	438	94	250	434	93	1	37-144/12
98-82-8	Isopropylbenzene	11.2		250	263	101	250	266	102	1	71-126/13
1634-04-4	Methyl Tert Butyl Ether	1250	E	250	1450	80	250	1460	84	1	66-124/12
75-65-0	Tert Butyl Alcohol	5220	E	1250	6620	112	1250	6600	110	0	63-133/15
108-88-3	Toluene	148		250	380	93	250	404	102	6	46-139/12
95-63-6	1,2,4-Trimethylbenzene	108		250	360	101	250	363	102	1	39-147/13
108-67-8	1,3,5-Trimethylbenzene	19.3		250	280	104	250	281	105	0	56-136/14
1330-20-7	Xylene (total)	229		750	962	98	750	965	98	0	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD39923-9	Limits
1868-53-7	Dibromofluoromethane	99%	98%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	106%	116%	80-120%
2037-26-5	Toluene-D8	100%	101%	106%	80-120%
460-00-4	4-Bromofluorobenzene	95%	98%	102%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Outside control limits due to high level in sample relative to spike amount.
(c) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD40038-3MS	2C188983.D	10	02/24/22	NW	n/a	n/a	V2C8406
JD40038-3MSD	2C188984.D	10	02/24/22	NW	n/a	n/a	V2C8406
JD40038-3	2C188988.D	10	02/24/22	NW	n/a	n/a	V2C8406

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	JD40038-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		500	438	88	500	441	88	1	49-137/12
107-06-2	1,2-Dichloroethane	ND		500	399	80	500	438	88	9	66-120/13
100-41-4	Ethylbenzene	ND		500	485	97	500	464	93	4	37-144/12
98-82-8	Isopropylbenzene	ND		500	492	98	500	474	95	4	71-126/13
1634-04-4	Methyl Tert Butyl Ether	ND		500	381	76	500	392	78	3	66-124/12
75-65-0	Tert Butyl Alcohol	ND		2500	2700	108	2500	2500	100	8	63-133/15
108-88-3	Toluene	ND		500	477	95	500	471	94	1	46-139/12
95-63-6	1,2,4-Trimethylbenzene	ND		500	503	101	500	454	91	10	39-147/13
108-67-8	1,3,5-Trimethylbenzene	ND		500	499	100	500	454	91	9	56-136/14
1330-20-7	Xylene (total)	ND		1500	1470	98	1500	1420	95	3	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD40038-3	Limits
1868-53-7	Dibromofluoromethane	89%	91%	92%	80-120%
17060-07-0	1,2-Dichloroethane-D4	87%	96%	97%	80-120%
2037-26-5	Toluene-D8	99%	99%	97%	80-120%
460-00-4	4-Bromofluorobenzene	97%	93%	93%	82-114%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V2C8388-BFB
Lab File ID: 2C188523.D
Instrument ID: GCMS2C
Injection Date: 01/19/22
Injection Time: 14:42

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	28373	25.4		Pass
75	30.0 - 60.0% of mass 95	58146	52.0		Pass
95	Base peak, 100% relative abundance	111858	100.0		Pass
96	5.0 - 9.0% of mass 95	7550	6.75		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	96218	86.0		Pass
175	5.0 - 9.0% of mass 174	7159	6.40	(7.44) [a]	Pass
176	95.0 - 101.0% of mass 174	92016	82.3	(95.6) [a]	Pass
177	5.0 - 9.0% of mass 176	5854	5.23	(6.36) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2C8388-IC8388	2C188524.D	01/19/22	18:41	03:59	Initial cal 0.2
V2C8388-IC8388	2C188525.D	01/19/22	19:10	04:28	Initial cal 0.5
V2C8388-IC8388	2C188526.D	01/19/22	19:40	04:58	Initial cal 1
V2C8388-IC8388	2C188527.D	01/19/22	20:09	05:27	Initial cal 2
V2C8388-IC8388	2C188528.D	01/19/22	20:38	05:56	Initial cal 4
V2C8388-IC8388	2C188529.D	01/19/22	21:07	06:25	Initial cal 8
V2C8388-IC8388	2C188530.D	01/19/22	21:36	06:54	Initial cal 20
V2C8388-ICC8388	2C188531.D	01/19/22	22:06	07:24	Initial cal 50
V2C8388-IC8388	2C188532.D	01/19/22	22:35	07:53	Initial cal 100
V2C8388-IC8388	2C188533.D	01/19/22	23:04	08:22	Initial cal 200
V2C8388-ICV8388	2C188537.D	01/20/22	01:02	10:20	Initial cal verification 50
V2C8388-ICV8388	2C188538.D	01/20/22	01:31	10:49	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V2C8406-BFB
Lab File ID: 2C188968.D
Instrument ID: GCMS2C
Injection Date: 02/24/22
Injection Time: 10:31

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	16478	22.3		Pass
75	30.0 - 60.0% of mass 95	35597	48.1		Pass
95	Base peak, 100% relative abundance	74048	100.0		Pass
96	5.0 - 9.0% of mass 95	4488	6.06		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	71771	96.9		Pass
175	5.0 - 9.0% of mass 174	5960	8.05	(8.30) [a]	Pass
176	95.0 - 101.0% of mass 174	69917	94.4	(97.4) [a]	Pass
177	5.0 - 9.0% of mass 176	4472	6.04	(6.40) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2C8406-CC8388	2C188968.D	02/24/22	10:31	00:00	Continuing cal 20
V2C8406-BS	2C188970.D	02/24/22	11:52	01:21	Blank Spike
V2C8406-MB	2C188972.D	02/24/22	12:50	02:19	Method Blank
ZZZZZZ	2C188973.D	02/24/22	13:19	02:48	(unrelated sample)
JD40008-1	2C188974.D	02/24/22	13:48	03:17	N-167_20220216
JD40008-3	2C188975.D	02/24/22	14:17	03:46	N-169_20220217
ZZZZZZ	2C188976.D	02/24/22	14:47	04:16	(unrelated sample)
ZZZZZZ	2C188977.D	02/24/22	15:16	04:45	(unrelated sample)
ZZZZZZ	2C188978.D	02/24/22	15:45	05:14	(unrelated sample)
ZZZZZZ	2C188979.D	02/24/22	16:14	05:43	(unrelated sample)
JD40008-2	2C188980.D	02/24/22	17:40	07:09	N-168_20220217
ZZZZZZ	2C188981.D	02/24/22	18:09	07:38	(unrelated sample)
JD40008-4	2C188982.D	02/24/22	18:38	08:07	N-165_20220217
JD40038-3MS	2C188983.D	02/24/22	19:07	08:36	Matrix Spike
JD40038-3MSD	2C188984.D	02/24/22	19:35	09:04	Matrix Spike Duplicate
ZZZZZZ	2C188986.D	02/24/22	20:34	10:03	(unrelated sample)
ZZZZZZ	2C188987.D	02/24/22	21:03	10:32	(unrelated sample)
JD40038-3	2C188988.D	02/24/22	21:32	11:01	(used for QC only; not part of job JD40008)
ZZZZZZ	2C188989.D	02/24/22	22:01	11:30	(unrelated sample)
ZZZZZZ	2C188990.D	02/24/22	22:30	11:59	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V4D5098-BFB
Lab File ID: 4D114627.D
Instrument ID: GCMS4D
Injection Date: 01/14/22
Injection Time: 21:51

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	35643	21.5		Pass
75	30.0 - 60.0% of mass 95	80725	48.8		Pass
95	Base peak, 100% relative abundance	165568	100.0		Pass
96	5.0 - 9.0% of mass 95	11009	6.65		Pass
173	Less than 2.0% of mass 174	2036	1.23	(1.35) [a]	Pass
174	50.0 - 120.0% of mass 95	150485	90.9		Pass
175	5.0 - 9.0% of mass 174	11221	6.78	(7.46) [a]	Pass
176	95.0 - 101.0% of mass 174	145920	88.1	(97.0) [a]	Pass
177	5.0 - 9.0% of mass 176	9660	5.83	(6.62) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V4D5098-IC5098	4D114628.D	01/14/22	22:35	00:44	Initial cal 0.2
V4D5098-IC5098	4D114629.D	01/14/22	23:04	01:13	Initial cal 0.5
V4D5098-IC5098	4D114630.D	01/14/22	23:32	01:41	Initial cal 1
V4D5098-IC5098	4D114631.D	01/15/22	00:01	02:10	Initial cal 2
V4D5098-IC5098	4D114632.D	01/15/22	00:29	02:38	Initial cal 4
V4D5098-IC5098	4D114633.D	01/15/22	00:58	03:07	Initial cal 8
V4D5098-IC5098	4D114634.D	01/15/22	01:26	03:35	Initial cal 20
V4D5098-ICC5098	4D114635.D	01/15/22	01:54	04:03	Initial cal 50
V4D5098-IC5098	4D114636.D	01/15/22	02:23	04:32	Initial cal 100
V4D5098-IC5098	4D114637.D	01/15/22	02:51	05:00	Initial cal 200
V4D5098-ICV5098	4D114641.D	01/15/22	04:45	06:54	Initial cal verification 50
V4D5098-ICV5098	4D114642.D	01/15/22	05:13	07:22	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V4D5098-BFB2
Lab File ID: 4D114647.D
Instrument ID: GCMS4D
Injection Date: 01/17/22
Injection Time: 16:40

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	38853	21.1		Pass
75	30.0 - 60.0% of mass 95	88688	48.1		Pass
95	Base peak, 100% relative abundance	184491	100.0		Pass
96	5.0 - 9.0% of mass 95	12679	6.87		Pass
173	Less than 2.0% of mass 174	1327	0.72	(0.79) [a]	Pass
174	50.0 - 120.0% of mass 95	167616	90.9		Pass
175	5.0 - 9.0% of mass 174	12737	6.90	(7.60) [a]	Pass
176	95.0 - 101.0% of mass 174	162261	88.0	(96.8) [a]	Pass
177	5.0 - 9.0% of mass 176	10612	5.75	(6.54) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V4D5098-ICV5098	4D114648.D	01/17/22	17:29	00:49	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V4D5151-BFB
Lab File ID: 4D115898.D
Instrument ID: GCMS4D
Injection Date: 02/22/22
Injection Time: 21:59

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	29669	21.6		Pass
75	30.0 - 60.0% of mass 95	65357	47.6		Pass
95	Base peak, 100% relative abundance	137349	100.0		Pass
96	5.0 - 9.0% of mass 95	8987	6.54		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	119499	87.0		Pass
175	5.0 - 9.0% of mass 174	9287	6.76	(7.77) [a]	Pass
176	95.0 - 101.0% of mass 174	117123	85.3	(98.0) [a]	Pass
177	5.0 - 9.0% of mass 176	7504	5.46	(6.41) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V4D5151-CC5098	4D115898.D	02/22/22	21:59	00:00	Continuing cal 50
V4D5151-BS	4D115900.D	02/22/22	22:56	00:57	Blank Spike
V4D5151-MB	4D115902.D	02/22/22	23:54	01:55	Method Blank
JD40008-5	4D115903.D	02/23/22	00:22	02:23	TRIP BLANK
JD39923-9	4D115904.D	02/23/22	00:51	02:52	(used for QC only; not part of job JD40008)
JD39923-9MS	4D115905.D	02/23/22	01:20	03:21	Matrix Spike
JD39923-9MSD	4D115906.D	02/23/22	01:49	03:50	Matrix Spike Duplicate
ZZZZZZ	4D115909.D	02/23/22	03:15	05:16	(unrelated sample)
ZZZZZZ	4D115910.D	02/23/22	03:44	05:45	(unrelated sample)
ZZZZZZ	4D115911.D	02/23/22	04:12	06:13	(unrelated sample)
ZZZZZZ	4D115912.D	02/23/22	04:41	06:42	(unrelated sample)
ZZZZZZ	4D115914.D	02/23/22	05:39	07:40	(unrelated sample)
ZZZZZZ	4D115915.D	02/23/22	06:07	08:08	(unrelated sample)
JD40008-4	4D115920.D	02/23/22	08:31	10:32	N-165_20220217

Internal Standard Area Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std: V2C8406-CC8388 **Injection Date:** 02/24/22
Lab File ID: 2C188968.D **Injection Time:** 10:31
Instrument ID: GCMS2C **Method:** SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	266571	8.43	194310	10.87	246155	11.80	230961	14.77	156389	16.94
Upper Limit [a]	533142	8.93	388620	11.37	492310	12.30	461922	15.27	312778	17.44
Lower Limit [b]	133286	7.93	97155	10.37	123078	11.30	115481	14.27	78195	16.44

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V2C8406-BS	284685	8.42	217260	10.87	282423	11.79	274721	14.76	175481	16.94
V2C8406-MB	287089	8.43	222099	10.87	289379	11.80	271711	14.76	175200	16.94
ZZZZZZ	287368	8.43	210422	10.86	271545	11.80	258533	14.76	171858	16.94
JD40008-1	306134	8.43	236542	10.87	310599	11.80	291776	14.76	186283	16.94
JD40008-3	357083	8.41	279373	10.87	357995	11.80	322403	14.76	204480	16.94
ZZZZZZ	352767	8.43	256360	10.86	328105	11.80	277555	14.76	195358	16.94
ZZZZZZ	330313	8.43	252152	10.87	321693	11.80	292096	14.76	190101	16.94
ZZZZZZ	327591	8.43	242360	10.86	312240	11.79	284769	14.76	188229	16.94
ZZZZZZ	322727	8.43	246157	10.87	319042	11.80	291291	14.76	188144	16.94
JD40008-2 [c]	184835	8.41	222721	10.86	292590	11.80	278380	14.76	184010	16.94
ZZZZZZ	144473	8.41	223119	10.86	288926	11.79	260135	14.76	149029	16.94
JD40008-4	296793	8.41	259056	10.87	335629	11.79	311479	14.76	197142	16.94
JD40038-3MS	150803	8.40	240209	10.86	316842	11.79	281526	14.76	167222	16.94
JD40038-3MSD	274802	8.42	267223	10.87	341798	11.80	302805	14.76	191962	16.94
ZZZZZZ	351137	8.42	256793	10.87	331236	11.79	302598	14.76	196554	16.94
ZZZZZZ	184764	8.42	232703	10.86	300529	11.79	272544	14.76	171219	16.94
JD40038-3	276036	8.43	243550	10.87	313131	11.80	284312	14.76	181202	16.94
ZZZZZZ	275439	8.43	242204	10.86	316916	11.79	287266	14.76	187107	16.94
ZZZZZZ	265215	8.41	233347	10.86	307806	11.80	283131	14.76	182108	16.94

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Dilution required due to high concentraton of non-target compound.

Internal Standard Area Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std: V4D5151-CC5098 **Injection Date:** 02/22/22
Lab File ID: 4D115898.D **Injection Time:** 21:59
Instrument ID: GCMS4D **Method:** SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	201762	8.58	568431	11.07	715914	11.96	520805	14.86	217415	16.97
Upper Limit [a]	403524	9.08	1136862	11.57	1431828	12.46	1041610	15.36	434830	17.47
Lower Limit [b]	100881	8.08	284216	10.57	357957	11.46	260403	14.36	108708	16.47

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V4D5151-BS	214075	8.59	565257	11.06	738390	11.96	549262	14.86	224027	16.97
V4D5151-MB	220380	8.58	624553	11.06	792370	11.96	581483	14.86	235087	16.97
JD40008-5	203836	8.58	581570	11.07	754322	11.96	541533	14.86	212999	16.97
JD39923-9	198473	8.58	562445	11.07	706079	11.96	528892	14.86	211937	16.97
JD39923-9MS	205560	8.58	595600	11.07	755352	11.96	560712	14.86	229995	16.97
JD39923-9MSD	222685	8.59	615359	11.06	775763	11.96	592429	14.86	240885	16.96
ZZZZZZ	219819	8.58	622300	11.06	791609	11.96	574782	14.86	235612	16.97
ZZZZZZ	204445	8.58	583617	11.07	745650	11.96	549793	14.86	220944	16.97
ZZZZZZ	237177	8.58	644847	11.06	803376	11.96	593259	14.86	240565	16.97
ZZZZZZ	250160	8.58	642420	11.07	796408	11.96	591301	14.86	233094	16.96
ZZZZZZ	209265	8.58	644355	11.07	813580	11.96	596954	14.86	240929	16.97
ZZZZZZ	218430	8.58	668820	11.06	849545	11.96	591880	14.86	243127	16.97
JD40008-4	241496	8.59	666456	11.07	829023	11.96	608032	14.86	248072	16.97

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD40008-1	2C188974.D	97	107	104	92
JD40008-2	2C188980.D	92	97	104	90
JD40008-3	2C188975.D	94	106	107	100
JD40008-4	2C188982.D	90	102	112	93
JD40008-4	4D115920.D	97	108	105	100
JD40008-5	4D115903.D	100	111	106	103
JD39923-9MS	4D115905.D	99	106	100	95
JD39923-9MSD	4D115906.D	98	106	101	98
JD40038-3MS	2C188983.D	89	87	99	97
JD40038-3MSD	2C188984.D	91	96	99	93
V2C8406-BS	2C188970.D	100	107	94	90
V2C8406-MB	2C188972.D	99	103	96	90
V4D5151-BS	4D115900.D	101	107	103	100
V4D5151-MB	4D115902.D	98	111	100	100

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

Initial Calibration Summary

Job Number: JD40008 **Sample:** V2C8388-ICC8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188531.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report GCMS2C

Method : C:\msdchem\1\METHODS\M2C8388.M (RTE Integrator)
Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
Last Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

Calibration Files
1 =2C188526.D 2 =2C188527.D 100 =2C188532.D 50 =2C188531.D
20 =2C188530.D 200 =2C188533.D 0.5 =2C188525.D 4 =2C188528.D
8 =2C188529.D 0.2 =2C188524.D = =

Compound	1	2	100	50	20	200	0.5	4	8	0.2	Avg	%RSD
1) I Tert Butyl Alcohol-d9	----------ISTD----------											
2) ethanol											0.000	-1.00
3) tertiary butyl alcohol	0.985	1.180	1.335	1.320	1.259	1.322		1.269	1.304		1.247	9.39
4) 1,4-dioxane			0.086	0.095	0.095	0.094	0.095		0.092	0.101	0.094	4.74
5) I pentafluorobenzene	----------ISTD----------											
6) chlorodifluoromethane	0.919	1.126	1.065	1.069	1.114	0.993		1.121	1.153		1.070	7.35
7) dichlorodifluoromethane	0.786	0.837	0.911	0.958	0.973	0.852		0.900	0.927		0.893	7.13
8) chloromethane	1.209	1.183	1.109	1.148	1.197	1.037	1.036	1.245	1.078		1.138	6.74
9) vinyl chloride	1.018	0.948	1.060	1.090	1.091	1.004	0.854	1.104	1.084		1.028	8.08
10) 1,3-butadiene	0.856	0.954	0.911	0.936	0.930	0.850	0.957	0.934	0.960		0.921	4.49
11) bromomethane	1.004	0.854	0.767	0.731	0.705	0.704		0.644	0.724		0.767	14.78
12) chloroethane	0.573	0.492	0.596	0.576	0.558	0.597	0.419	0.574	0.567		0.550	10.56
13) trichlorofluoromethane	0.994	0.962	1.152	1.155	1.142	1.147	0.893	1.153	1.121		1.080	9.40
14) ethyl ether	0.274	0.262	0.287	0.274	0.260	0.279	0.253	0.272	0.272		0.270	3.86
15) acrolein			0.147	0.151	0.141	0.141	0.144		0.152	0.143	0.146	3.20
16) freon 113	0.492	0.527	0.514	0.516	0.523	0.495	0.401	0.528	0.525		0.502	8.00
17) 1,1-dichloroethene	0.569	0.572	0.567	0.550	0.554	0.540	0.630	0.581	0.557		0.569	4.60
18) acetone	0.076	0.080	0.081	0.076	0.076	0.079	0.082	0.077	0.074		0.078	3.64
19) iodomethane	0.988	1.063	1.053	1.054	1.036	1.019	0.900	1.061	1.080		1.028	5.38
20) acetonitrile	0.130	0.131	0.124	0.118	0.122	0.118		0.125	0.121		0.123	3.99
21) carbon disulfide	1.869	2.030	2.032	2.022	2.042	1.949	2.024	2.065	2.009		2.004	2.97
22) methylene chloride	0.709	0.661	0.620	0.622	0.614	0.596	0.850	0.667	0.649		0.665	11.60
23) methyl acetate												

		0.524	0.526	0.552	0.534	0.516	0.545		0.510	0.525		0.529	2.64
24)	methyl tert butyl ether												
		1.634	1.731	1.892	1.837	1.766	1.835	1.562	1.783	1.778	1.856	1.767	5.79
25)	trans-1,2-dichloroethene												
		0.548	0.601	0.576	0.566	0.558	0.545	0.658	0.597	0.571	0.649	0.587	6.75
26)	hexane												
		0.381	0.379	0.417	0.408	0.393	0.408		0.387	0.390		0.395	3.50
27)	di-isopropyl ether												
		1.729	1.817	1.996	1.923	1.859	1.964	1.599	1.807	1.849	2.071	1.862	7.33
28)	1,1-dichloroethane												
		0.880	0.941	0.996	0.973	0.938	0.980	0.995	0.974	0.949	1.080	0.971	5.32
29)	chloroprene												
		0.712	0.776	0.873	0.827	0.802	0.871	0.799	0.808	0.800		0.808	6.05
30)	acrylonitrile												
		0.320	0.271	0.328	0.305	0.316	0.313		0.261	0.302		0.302	7.88
31)	vinyl acetate												
			0.071	0.094	0.094	0.087	0.099		0.068	0.080		0.085	14.30
32)	ethyl tert-butyl ether												
		1.752	1.914	2.206	2.106	2.012	2.161	1.700	1.941	1.986	1.699	1.948	9.47
33)	2-butanone												
		0.052	0.064	0.077	0.072	0.074	0.077	0.057	0.067	0.070		0.068	12.96
34)	ethyl acetate												
			0.112	0.093	0.089	0.094	0.093		0.078	0.095		0.093	10.97
35)	2,2-dichloropropane												
		0.723	0.808	0.890	0.883	0.843	0.879	0.760	0.821	0.846		0.828	6.92
36)	cis-1,2-dichloroethene												
		0.542	0.553	0.596	0.573	0.555	0.578	0.525	0.576	0.588	0.392	0.548	10.75
37)	propionitrile												
		0.104	0.116	0.125	0.118	0.118	0.123	0.106	0.112	0.115		0.115	6.10
38)	bromochloromethane												
		0.266	0.289	0.299	0.289	0.287	0.289	0.205	0.297	0.298		0.280	10.61
39)	tetrahydrofuran												
			0.127	0.088	0.087	0.093	0.088		0.105	0.096		0.098	14.67
40)	chloroform												
		0.927	0.916	0.942	0.915	0.895	0.937	0.974	0.886	0.916		0.923	2.84
41)	t-butyl formate												
		0.415	0.475	0.679	0.611	0.568	0.685		0.467	0.524		0.553	18.11
42)	dibromofluoromethane (s)												
		0.453	0.447	0.458	0.441	0.448	0.454	0.454	0.438	0.450	0.461	0.450	1.59
43)	methacrylonitrile												
		0.195	0.206	0.234	0.223	0.228	0.235		0.205	0.212		0.217	6.84
44)	1,1,1-trichloroethane												
		0.816	0.955	1.024	1.019	0.997	1.024	0.868	0.960	0.980	0.833	0.948	8.41
45)	cyclohexane												
		0.829	0.812	0.958	0.970	0.917	0.940	0.720	0.936	0.914	0.932	0.893	8.93
46)	1,1-dichloropropene												
		0.550	0.601	0.639	0.618	0.605	0.644	0.535	0.574	0.610	0.744	0.612	9.52
47)	carbon tetrachloride												
		0.705	0.738	0.911	0.882	0.830	0.908	0.732	0.768	0.795	0.846	0.812	9.27
48)	isobutyl alcohol												
				0.028	0.025	0.025	0.029		0.022	0.020		0.025	13.49
49)	I 1,4-difluorobenzene	----------	ISTD	----------									
50)	1,2-dichloroethane-d4 (s)												
		0.357	0.359	0.378	0.366	0.362	0.391	0.363	0.357	0.372	0.382	0.369	3.17
51)	n-butyl alcohol												
			0.017	0.026	0.024	0.023	0.026		0.018	0.021		0.022	15.95
52)	tert-amyl alcohol												
		0.036	0.039	0.038	0.038	0.039	0.038		0.037	0.037		0.038	2.64
53)	iso-octane												

```
      1.268 1.538 2.054 1.960 1.737 2.164 1.293 1.594 1.624 1.557  1.679   18.00
54)  benzene
      1.162 1.301 1.412 1.414 1.352 1.432 1.196 1.336 1.347 1.390  1.334    6.87
55)  tert-amyl methyl ether
      0.276 0.306 0.352 0.336 0.315 0.361 0.216 0.314 0.332        0.312   14.11
56)  heptane
      0.226 0.229 0.259 0.254 0.249 0.257 0.234 0.246 0.241        0.244    4.98
57)  isopropyl acetate
            0.077 0.095 0.092 0.090 0.095       0.085 0.086        0.088    7.41
58)  1,2-dichloroethane
      0.549 0.531 0.548 0.534 0.512 0.558 0.536 0.528 0.519        0.535    2.80
59)  ethyl acrylate
      0.467 0.483 0.580 0.556 0.515 0.591 0.388 0.528 0.539        0.516   12.17
60)  trichloroethene
      0.330 0.364 0.371 0.360 0.359 0.378 0.337 0.343 0.351 0.291  0.349    7.16
61)  2-nitropropane
            0.189 0.213 0.192 0.167 0.219       0.175 0.177        0.190   10.27
62)  2-chloroethyl vinyl ether
      0.195 0.199 0.254 0.242 0.230 0.259 0.173 0.217 0.221        0.221   12.93
63)  methyl methacrylate
      0.075 0.079 0.103 0.099 0.100 0.103       0.091 0.095        0.093   11.66
64)  1,2-dichloropropane
      0.316 0.357 0.387 0.374 0.362 0.391 0.293 0.362 0.360        0.356    9.01
65)  dibromomethane
      0.232 0.262 0.260 0.246 0.247 0.258 0.238 0.239 0.262        0.249    4.65
66)  methylcyclohexane
      0.547 0.658 0.795 0.798 0.736 0.809 0.551 0.698 0.708 0.611  0.691   14.19
67)  bromodichloromethane
      0.420 0.439 0.510 0.494 0.466 0.515 0.436 0.462 0.471 0.390  0.460    8.69
68)  epichlorohydrin
      0.057 0.056 0.066 0.063 0.060 0.066       0.056 0.060        0.060    6.67
69)  cis-1,3-dichloropropene
      0.468 0.493 0.566 0.560 0.518 0.573 0.471 0.484 0.510 0.493  0.514    7.67
70)  4-methyl-2-pentanone
      0.178 0.205 0.254 0.239 0.226 0.258 0.167 0.215 0.228        0.219   14.28
71)  3-methyl-1-butanol
            0.024 0.047 0.043 0.038 0.047       0.029 0.033        0.037   23.71
            ----- Linear regression -----  Coefficient =  0.9980
              Response Ratio = -0.02676 + 0.04640 *A


72) I   chlorobenzene-d5      ----------------ISTD--------------------
73)  toluene-d8 (s)
      1.255 1.230 1.227 1.257 1.233 1.227 1.237 1.243 1.243 1.265  1.242    1.07
74)  toluene
      0.829 0.840 0.962 0.944 0.922 0.969 0.803 0.861 0.932 0.966  0.903    7.00
75)  ethyl methacrylate
      0.405 0.433 0.537 0.529 0.500 0.537 0.401 0.467 0.514        0.480   11.57
76)  trans-1,3-dichloropropene
      0.490 0.495 0.592 0.581 0.550 0.594 0.482 0.527 0.523        0.537    8.24
77)  1,1,2-trichloroethane
      0.273 0.300 0.308 0.294 0.299 0.303 0.290 0.286 0.310        0.296    3.92
78)  2-hexanone
      0.222 0.222 0.248 0.241 0.243 0.247 0.203 0.233 0.237 0.234  0.233    6.02
79)  tetrachloroethene
      0.292 0.340 0.359 0.354 0.348 0.354 0.262 0.357 0.344 0.378  0.339   10.31
80)  1,3-dichloropropane
      0.500 0.564 0.577 0.586 0.562 0.577 0.463 0.567 0.577 0.551  0.552    7.14
81)  butyl acetate
      0.239 0.354 0.342 0.348 0.346 0.337       0.339 0.336        0.330   11.32
```

Initial Calibration Summary

Job Number: JD40008 **Sample:** V2C8388-ICC8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188531.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

82) dibromochloromethane
0.367 0.389 0.469 0.449 0.420 0.474 0.355 0.414 0.410 0.430 0.418 9.56
83) 1,2-dibromoethane
0.350 0.360 0.413 0.404 0.399 0.403 0.332 0.384 0.382 0.339 0.377 7.79
84) n-butyl ether
1.506 1.846 1.973 2.005 1.934 1.969 1.641 1.890 1.954 1.858 9.21
85) chlorobenzene
0.910 1.039 1.109 1.105 1.076 1.121 0.928 1.023 1.072 1.069 1.045 7.02
86) 1,1,1,2-tetrachloroethane
0.344 0.368 0.491 0.483 0.449 0.506 0.373 0.438 0.424 0.386 0.426 13.34
87) ethylbenzene
1.626 1.768 2.001 1.965 1.879 2.035 1.654 1.813 1.857 1.630 1.823 8.36
88) m,p-xylene
0.582 0.703 0.753 0.743 0.718 0.769 0.576 0.684 0.714 0.667 0.691 9.64
89) o-xylene
0.652 0.699 0.829 0.811 0.777 0.842 0.608 0.719 0.747 0.666 0.735 10.87
90) styrene
0.973 1.111 1.302 1.272 1.213 1.345 0.965 1.139 1.185 1.161 1.167 10.90
91) butyl acrylate
0.819 0.954 1.055 1.071 1.045 1.036 0.733 0.961 1.056 0.957 0.969 11.64
92) bromoform
0.261 0.271 0.368 0.345 0.320 0.371 0.290 0.280 0.302 0.312 13.29
93) isopropylbenzene
1.711 1.901 2.255 2.230 2.140 2.314 1.632 2.019 2.086 1.873 2.016 11.52
94) cis-1,4-dichloro-2-butene
0.137 0.153 0.194 0.186 0.168 0.190 0.165 0.166 0.170 11.50

95) I 1,4-dichlorobenzene-d ----------ISTD----------
96) 4-bromofluorobenzene (s)
0.848 0.832 0.879 0.862 0.849 0.888 0.826 0.835 0.846 0.827 0.849 2.52
97) bromobenzene
0.791 0.833 0.902 0.864 0.833 0.895 0.780 0.743 0.806 1.062 0.851 10.53
98) 1,1,2,2-tetrachloroethane
0.900 1.013 1.159 1.131 1.115 1.133 0.964 1.020 1.063 0.988 1.049 8.15
99) trans-1,4-dichloro-2-butene
0.131 0.188 0.177 0.166 0.184 0.132 0.154 0.162 14.65
100) 1,2,3-trichloropropane
0.269 0.300 0.311 0.305 0.292 0.305 0.298 0.315 0.290 0.298 4.58
101) n-propylbenzene
3.271 3.549 4.351 4.295 4.017 4.409 3.230 3.701 3.946 4.023 3.879 11.05
102) 2-chlorotoluene
0.720 0.806 0.874 0.850 0.803 0.898 0.671 0.790 0.810 0.751 0.797 8.69
103) 4-chlorotoluene
2.018 2.316 2.575 2.491 2.397 2.613 1.826 2.246 2.344 2.112 2.294 10.91
104) 1,3,5-trimethylbenzene
2.207 2.617 3.404 3.251 3.020 3.541 2.233 2.639 2.938 2.615 2.847 16.27
105) tert-butylbenzene
1.878 2.118 2.791 2.656 2.464 2.943 1.725 2.121 2.310 1.862 2.287 18.28
106) 1,2,4-trimethylbenzene
2.362 2.717 3.384 3.321 3.125 3.489 2.254 2.841 2.971 2.629 2.909 14.63
107) sec-butylbenzene
3.100 3.490 4.581 4.380 4.093 4.752 3.083 3.582 3.836 3.326 3.822 15.86
108) 1,3-dichlorobenzene
1.498 1.694 1.777 1.760 1.711 1.784 1.352 1.613 1.677 1.540 1.641 8.54
109) p-isopropyltoluene
2.515 2.934 3.806 3.663 3.446 3.956 2.461 2.977 3.302 2.474 3.153 17.89
110) 1,2,3-trimethylbenzene
2.823 3.103 3.867 3.647 3.422 4.013 2.592 3.185 3.318 3.330 14.00
111) 1,4-dichlorobenzene
1.578 1.678 1.843 1.794 1.788 1.890 1.720 1.718 1.758 1.752 5.28

Initial Calibration Summary

Job Number: JD40008 **Sample:** V2C8388-ICC8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188531.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
112)  1,2-dichlorobenzene
       1.607 1.711 1.888 1.827 1.774 1.879 1.697 1.666 1.795 2.060  1.790    7.35
113)  n-butylbenzene
       1.305 1.598 1.921 1.858 1.786 1.940 1.257 1.675 1.759 1.630  1.673   14.12
114)  1,2-dibromo-3-chloropropane
       0.256 0.269 0.321 0.307 0.299 0.321 0.219 0.251 0.278        0.280   12.40
115)  1,3,5-trichlorobenzene
       1.367 1.547 1.690 1.626 1.588 1.712 1.292 1.451 1.549 1.590  1.541    8.75
116)  1,2,4-trichlorobenzene
       1.099 1.190 1.495 1.449 1.379 1.516 1.157 1.243 1.295        1.314   11.65
117)  hexachlorobutadiene
       0.590 0.638 0.753 0.746 0.721 0.772 0.531 0.638 0.680        0.674   12.13
118)  naphthalene
       2.527 2.769 3.958 3.727 3.471 4.043 2.683 2.893 3.353        3.269   17.49
119)  1,2,3-trichlorobenzene
       0.882 1.014 1.267 1.191 1.132 1.289 0.936 0.993 1.094        1.089   13.21
120)  hexachloroethane
             0.308 0.581 0.509 0.426 0.631       0.307 0.340        0.443   30.05
          ----- Quadratic regression -----                Coefficient =  0.9985
               Response Ratio = -0.01217 + 0.48384 *A + 0.03901 *A^2

121)  2-methylnaphthalene
                    1.501 1.297 1.135 1.561             0.994        1.298   18.47
 ----------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M2C8388.M         Mon Jan 24 16:34:10 2022   GCMS2C
```

Initial Calibration Verification

Job Number: JD40008 **Sample:** V2C8388-ICV8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188537.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\V2C8388\2C188537.D Vial: 15
Acq On : 20 Jan 2022 1:02 am Operator: thienn
Sample : icv8388-50 Inst : GCMS2C
Misc : MS55456,V2C8388,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\M2C8388.M (RTE Integrator)
Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
Last Update : Fri Jan 21 16:15:21 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	111	-0.02	8.43
2		ethanol		----------NA----------				
3		tertiary butyl alcohol	1.247	1.342	-7.6	113	-0.02	8.57
4		1,4-dioxane	0.094	0.095	-1.1	111	0.01	12.44
5	I	pentafluorobenzene	1.000	1.000	0.0	102	0.00	10.86
6		chlorodifluoromethane		----------NA----------				
7		dichlorodifluoromethane	0.893	0.877	1.8	94	0.00	4.51
8		chloromethane	1.138	1.068	6.2	95	0.00	4.96
9		vinyl chloride	1.028	1.091	-6.1	102	0.00	5.24
10		1,3-butadiene	0.921	0.926	-0.5	101	0.00	5.27
11		bromomethane	0.767	0.774	-0.9	108	0.01	5.95
12		chloroethane	0.550	0.562	-2.2	100	0.02	6.15
13		trichlorofluoromethane	1.080	1.134	-5.0	100	0.00	6.69
14		ethyl ether	0.270	0.281	-4.1	105	0.00	7.14
15		acrolein	0.146	0.142	2.7	102	0.00	7.41
16		freon 113	0.502	0.529	-5.4	105	0.00	7.64
17		1,1-dichloroethene	0.569	0.529	7.0	98	0.00	7.61
18		acetone	0.078	0.081	-3.8	109	0.00	7.66
19		iodomethane	1.028	1.053	-2.4	102	0.00	7.90
20		acetonitrile	0.123	0.087	29.3	75	0.02	8.17
21		carbon disulfide	2.004	1.919	4.2	97	0.00	8.05
22		methylene chloride	0.665	0.603	9.3	99	0.00	8.44
23		methyl acetate	0.529	0.509	3.8	98	0.00	8.17
24		methyl tert butyl ether	1.767	1.767	0.0	98	0.00	8.84
25		trans-1,2-dichloroethene	0.587	0.552	6.0	100	0.00	8.86
26		hexane	0.395	0.347	12.2	87	0.00	9.26
27		di-isopropyl ether	1.862	1.830	1.7	97	-0.01	9.50
28		1,1-dichloroethane	0.971	0.954	1.8	100	0.00	9.51
29		chloroprene	0.808	0.862	-6.7	106	0.00	9.62
30		acrylonitrile	0.302	0.312	-3.3	104	0.00	8.79
31		vinyl acetate	0.085	0.094	-10.6	102	-0.01	9.44
32		ethyl tert-butyl ether	1.948	1.926	1.1	93	0.00	10.00
33		2-butanone	0.068	0.079	-16.2	112	-0.01	10.22
34		ethyl acetate	0.093	0.095	-2.2	110	-0.01	10.23
35		2,2-dichloropropane	0.828	0.804	2.9	93	0.00	10.33
36		cis-1,2-dichloroethene	0.548	0.567	-3.5	101	0.00	10.29
37		propionitrile	0.115	0.119	-3.5	102	0.00	10.32
38		bromochloromethane	0.280	0.289	-3.2	102	0.00	10.60
39		tetrahydrofuran	0.098	0.094	4.1	111	0.00	10.62
40		chloroform	0.923	0.906	1.8	101	0.00	10.70
41		t-butyl formate	0.553	0.515	6.9	86	0.00	10.74

Initial Calibration Verification

Job Number: JD40008 **Sample:** V2C8388-ICV8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188537.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	S	dibromofluoromethane (s)	0.450	0.449	0.2	104	0.00	10.90
43		methacrylonitrile	0.217	0.234	-7.8	107	0.00	10.52
44		1,1,1-trichloroethane	0.948	0.978	-3.2	98	0.00	10.97
45		cyclohexane	0.893	0.973	-9.0	103	0.00	11.07
46		1,1-dichloropropene	0.612	0.615	-0.5	102	0.00	11.13
47		carbon tetrachloride	0.812	0.868	-6.9	101	0.00	11.16
48		isobutyl alcohol	0.025	0.028	-12.0	115	0.00	11.13
49	I	1,4-difluorobenzene	1.000	1.000	0.0	102	0.00	11.80
50	S	1,2-dichloroethane-d4 (s)	0.369	0.375	-1.6	104	0.00	11.33
51		n-butyl alcohol	0.022	0.027	-22.7	114	0.00	11.87
52		tert-amyl alcohol	0.038	0.041	-7.9	109	0.00	11.29
53		iso-octane	1.679	1.784	-6.3	93	0.00	11.48
54		benzene	1.334	1.359	-1.9	98	0.00	11.38
55		tert-amyl methyl ether	0.312	0.312	0.0	95	0.00	11.47
56		heptane	0.244	0.252	-3.3	101	0.00	11.63
57		isopropyl acetate	0.088	0.095	-8.0	105	0.00	11.31
58		1,2-dichloroethane	0.535	0.523	2.2	100	0.00	11.42
59		ethyl acrylate	0.516	0.585	-13.4	107	0.00	12.09
60		trichloroethene	0.349	0.360	-3.2	102	0.00	12.09
61		2-nitropropane	0.190	0.201	-5.8	106	0.00	12.83
62		2-chloroethyl vinyl ether	0.221	0.220	0.5	93	0.00	12.85
63		methyl methacrylate	0.093	0.106	-14.0	109	0.00	12.34
64		1,2-dichloropropane	0.356	0.378	-6.2	103	0.00	12.38
65		dibromomethane	0.249	0.252	-1.2	105	0.00	12.49
66		methylcyclohexane	0.691	0.789	-14.2	101	0.00	12.38
67		bromodichloromethane	0.460	0.490	-6.5	101	0.00	12.63
68		epichlorohydrin	0.060	0.066	-10.0	107	0.00	12.94
69		cis-1,3-dichloropropene	0.514	0.541	-5.3	99	0.00	13.06
70		4-methyl-2-pentanone	0.219	0.247	-12.8	105	0.00	13.16

			True	Calc.	% Drift			
71		3-methyl-1-butanol	1000.000	1102.542	-10.3	118	0.00	13.17

			AvgRF	CCRF	% Dev			
72	I	chlorobenzene-d5	1.000	1.000	0.0	103	0.00	14.76
73	S	toluene-d8 (s)	1.242	1.238	0.3	101	0.00	13.35
74		toluene	0.903	0.917	-1.6	100	0.00	13.42
75		ethyl methacrylate	0.480	0.514	-7.1	100	0.00	13.58
76		trans-1,3-dichloropropene	0.537	0.563	-4.8	99	0.00	13.60
77		1,1,2-trichloroethane	0.296	0.303	-2.4	106	0.00	13.80
78		2-hexanone	0.233	0.247	-6.0	105	0.00	13.95
79		tetrachloroethene	0.339	0.345	-1.8	100	0.00	13.93
80		1,3-dichloropropane	0.552	0.567	-2.7	99	0.00	13.97
81		butyl acetate	0.330	0.358	-8.5	105	0.00	14.02
82		dibromochloromethane	0.418	0.443	-6.0	101	0.00	14.20
83		1,2-dibromoethane	0.377	0.402	-6.6	102	0.00	14.35
84		n-butyl ether	1.858	1.951	-5.0	100	0.00	14.74
85		chlorobenzene	1.045	1.078	-3.2	100	0.00	14.79
86		1,1,1,2-tetrachloroethane	0.426	0.480	-12.7	102	0.00	14.85
87		ethylbenzene	1.823	1.908	-4.7	100	0.00	14.85
88		m,p-xylene	0.691	0.723	-4.6	100	0.00	14.96
89		o-xylene	0.735	0.778	-5.9	98	0.00	15.33
90		styrene	1.167	1.236	-5.9	100	0.00	15.34
91		butyl acrylate	0.969	1.105	-14.0	106	0.00	15.16
92		bromoform	0.312	0.357	-14.4	106	0.00	15.56
93		isopropylbenzene	2.016	2.209	-9.6	102	0.00	15.65
94		cis-1,4-dichloro-2-butene	0.170	0.192	-12.9	106	0.00	15.69

Initial Calibration Verification

Job Number: JD40008 **Sample:** V2C8388-ICV8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188537.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

95	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	101	0.00	16.94
96	S	4-bromofluorobenzene (s)	0.849	0.885	-4.2	103	0.00	15.85
97		bromobenzene	0.851	0.871	-2.4	102	0.00	16.02
98		1,1,2,2-tetrachloroethane	1.049	1.178	-12.3	105	0.00	15.92
99		trans-1,4-dichloro-2-bute	0.162	0.177	-9.3	101	0.00	15.95
100		1,2,3-trichloropropane	0.298	0.307	-3.0	101	0.00	16.00
101		n-propylbenzene	3.879	4.271	-10.1	100	0.00	16.04
102		2-chlorotoluene	0.797	0.854	-7.2	101	0.00	16.17
103		4-chlorotoluene	2.294	2.505	-9.2	101	0.00	16.27
104		1,3,5-trimethylbenzene	2.847	3.264	-14.6	101	0.00	16.18
105		tert-butylbenzene	2.287	2.696	-17.9	102	0.00	16.50
106		1,2,4-trimethylbenzene	2.909	3.268	-12.3	99	0.00	16.55
107		sec-butylbenzene	3.822	4.457	-16.6	102	0.00	16.71
108		1,3-dichlorobenzene	1.641	1.758	-7.1	101	0.00	16.87
109		p-isopropyltoluene	3.153	3.678	-16.7	101	0.00	16.83
110		1,2,3-trimethylbenzene		----------NA----------				
111		1,4-dichlorobenzene	1.752	1.792	-2.3	101	0.00	16.96
112		1,2-dichlorobenzene	1.790	1.887	-5.4	104	0.00	17.32
113		n-butylbenzene	1.673	1.868	-11.7	101	0.00	17.22
114		1,2-dibromo-3-chloropropa	0.280	0.324	-15.7	106	0.00	18.09
115		1,3,5-trichlorobenzene	1.541	1.692	-9.8	105	0.00	18.27
116		1,2,4-trichlorobenzene	1.314	1.491	-13.5	104	0.00	18.93
117		hexachlorobutadiene	0.674	0.740	-9.8	100	0.00	19.04
118		naphthalene	3.269	3.859	-18.0	104	0.00	19.23
119		1,2,3-trichlorobenzene	1.089	1.231	-13.0	104	0.00	19.46
		----------	True	Calc.	% Drift		----------	
120		hexachloroethane	50.000	51.629	-3.3	105	0.00	17.61
		----------	AvgRF	CCRF	% Dev		----------	
121		2-methylnaphthalene	1.298	1.356	-4.5	105	0.00	20.40

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2C188531.D M2C8388.M Mon Jan 24 16:33:30 2022 GCMS2C

Initial Calibration Verification

Job Number: JD40008 **Sample:** V2C8388-ICV8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188538.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\V2C8388\2C188538.D Vial: 16
Acq On : 20 Jan 2022 1:31 am Operator: thienn
Sample : icv8388-50 Inst : GCMS2C
Misc : MS55456,V2C8388,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\M2C8388.M (RTE Integrator)
Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
Last Update : Fri Jan 21 16:15:21 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	115	-0.02	8.43
2		ethanol		----------NA----------				
3		tertiary butyl alcohol		----------NA----------				
4		1,4-dioxane		----------NA----------				
5	I	pentafluorobenzene	1.000	1.000	0.0	103	0.00	10.86
6		chlorodifluoromethane	1.070	1.361	-27.2	132	0.00	4.54
7		dichlorodifluoromethane		----------NA----------				
8		chloromethane		----------NA----------				
9		vinyl chloride		----------NA----------				
10		1,3-butadiene		----------NA----------				
11		bromomethane		----------NA----------				
12		chloroethane		----------NA----------				
13		trichlorofluoromethane		----------NA----------				
14		ethyl ether		----------NA----------				
15		acrolein		----------NA----------				
16		freon 113		----------NA----------				
17		1,1-dichloroethene		----------NA----------				
18		acetone		----------NA----------				
19		iodomethane		----------NA----------				
20		acetonitrile	0.123	0.099	19.5	87	0.01	8.16
21		carbon disulfide		----------NA----------				
22		methylene chloride		----------NA----------				
23		methyl acetate		----------NA----------				
24		methyl tert butyl ether		----------NA----------				
25		trans-1,2-dichloroethene		----------NA----------				
26		hexane		----------NA----------				
27		di-isopropyl ether		----------NA----------				
28		1,1-dichloroethane		----------NA----------				
29		chloroprene		----------NA----------				
30		acrylonitrile	0.302	0.241	20.2	82	0.00	8.79
31		vinyl acetate		----------NA----------				
32		ethyl tert-butyl ether		----------NA----------				
33		2-butanone		----------NA----------				
34		ethyl acetate		----------NA----------				
35		2,2-dichloropropane		----------NA----------				
36		cis-1,2-dichloroethene		----------NA----------				
37		propionitrile		----------NA----------				
38		bromochloromethane		----------NA----------				
39		tetrahydrofuran		----------NA----------				
40		chloroform		----------NA----------				
41		t-butyl formate		----------NA----------				

Initial Calibration Verification

Job Number: JD40008 **Sample:** V2C8388-ICV8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188538.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	S	dibromofluoromethane (s)	0.450	0.445	1.1	104	0.00	10.90
43		methacrylonitrile		----------NA----------				
44		1,1,1-trichloroethane		----------NA----------				
45		cyclohexane		----------NA----------				
46		1,1-dichloropropene		----------NA----------				
47		carbon tetrachloride		----------NA----------				
48		isobutyl alcohol		----------NA----------				
49	I	1,4-difluorobenzene	1.000	1.000	0.0	103	0.00	11.80
50	S	1,2-dichloroethane-d4 (s)	0.369	0.373	-1.1	105	0.00	11.33
51		n-butyl alcohol		----------NA----------				
52		tert-amyl alcohol		----------NA----------				
53		iso-octane		----------NA----------				
54		benzene		----------NA----------				
55		tert-amyl methyl ether		----------NA----------				
56		heptane		----------NA----------				
57		isopropyl acetate		----------NA----------				
58		1,2-dichloroethane		----------NA----------				
59		ethyl acrylate		----------NA----------				
60		trichloroethene		----------NA----------				
61		2-nitropropane		----------NA----------				
62		2-chloroethyl vinyl ether		----------NA----------				
63		methyl methacrylate		----------NA----------				
64		1,2-dichloropropane		----------NA----------				
65		dibromomethane		----------NA----------				
66		methylcyclohexane		----------NA----------				
67		bromodichloromethane		----------NA----------				
68		epichlorohydrin		----------NA----------				
69		cis-1,3-dichloropropene		----------NA----------				
70		4-methyl-2-pentanone		----------NA----------				
		----------	True	Calc.	% Drift	----------		
71		3-methyl-1-butanol		----------NA----------				
		----------	AvgRF	CCRF	% Dev	----------		
72	I	chlorobenzene-d5	1.000	1.000	0.0	99	0.00	14.77
73	S	toluene-d8 (s)	1.242	1.251	-0.7	98	0.00	13.35
74		toluene		----------NA----------				
75		ethyl methacrylate		----------NA----------				
76		trans-1,3-dichloropropene		----------NA----------				
77		1,1,2-trichloroethane		----------NA----------				
78		2-hexanone		----------NA----------				
79		tetrachloroethene		----------NA----------				
80		1,3-dichloropropane		----------NA----------				
81		butyl acetate		----------NA----------				
82		dibromochloromethane		----------NA----------				
83		1,2-dibromoethane		----------NA----------				
84		n-butyl ether		----------NA----------				
85		chlorobenzene		----------NA----------				
86		1,1,1,2-tetrachloroethane		----------NA----------				
87		ethylbenzene		----------NA----------				
88		m,p-xylene		----------NA----------				
89		o-xylene		----------NA----------				
90		styrene		----------NA----------				
91		butyl acrylate		----------NA----------				
92		bromoform		----------NA----------				
93		isopropylbenzene		----------NA----------				
94		cis-1,4-dichloro-2-butene		----------NA----------				

Initial Calibration Verification

Job Number: JD40008 **Sample:** V2C8388-ICV8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188538.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

95	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	106	0.00	16.94
96	S	4-bromofluorobenzene (s)	0.849	0.834	1.8	103	0.00	15.85
97		bromobenzene		----------NA----------				
98		1,1,2,2-tetrachloroethane		----------NA----------				
99		trans-1,4-dichloro-2-bute		----------NA----------				
100		1,2,3-trichloropropane		----------NA----------				
101		n-propylbenzene		----------NA----------				
102		2-chlorotoluene		----------NA----------				
103		4-chlorotoluene		----------NA----------				
104		1,3,5-trimethylbenzene		----------NA----------				
105		tert-butylbenzene		----------NA----------				
106		1,2,4-trimethylbenzene		----------NA----------				
107		sec-butylbenzene		----------NA----------				
108		1,3-dichlorobenzene		----------NA----------				
109		p-isopropyltoluene		----------NA----------				
110		1,2,3-trimethylbenzene	3.330	3.712	-11.5	108	0.00	16.95
111		1,4-dichlorobenzene		----------NA----------				
112		1,2-dichlorobenzene		----------NA----------				
113		n-butylbenzene		----------NA----------				
114		1,2-dibromo-3-chloropropa		----------NA----------				
115		1,3,5-trichlorobenzene		----------NA----------				
116		1,2,4-trichlorobenzene		----------NA----------				
117		hexachlorobutadiene		----------NA----------				
118		naphthalene		----------NA----------				
119		1,2,3-trichlorobenzene		----------NA----------				

	----------	True	Calc.	% Drift	----------
120	hexachloroethane		----------NA----------		

	----------	AvgRF	CCRF	% Dev	----------
121	2-methylnaphthalene		----------NA----------		

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2C188531.D M2C8388.M Mon Jan 24 16:36:54 2022 GCMS2C

Continuing Calibration Summary

Job Number: JD40008 **Sample:** V2C8406-CC8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188968.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\ni...06-halfway\2c188968.d Vial: 3
Acq On : 24 Feb 2022 10:31 am Operator: nickw
Sample : cc8388-20 Inst : GCMS2C
Misc : MS56911,V2C8406,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\METHODS\M2C8388.M (RTE Integrator)
Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
Last Update : Fri Jan 21 15:40:09 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	80	-0.02	8.43
2		ethanol		----------NA----------				
3		tertiary butyl alcohol	1.247	1.189	4.7	75	-0.03	8.56
4		1,4-dioxane	0.094	0.092	2.1	78	0.00	12.43
5	I	pentafluorobenzene	1.000	1.000	0.0	64	0.00	10.87
6		chlorodifluoromethane	1.070	0.784	26.7#	45#	0.02	4.55
7		dichlorodifluoromethane	0.893	0.709	20.6#	47#	0.00	4.52
8		chloromethane	1.138	0.959	15.7	51	0.04	4.99
9		vinyl chloride	1.028	0.833	19.0	49#	0.01	5.25
10		1,3-butadiene	0.921	0.726	21.2#	50	0.04	5.30
11		bromomethane	0.767	0.629	18.0	57	0.04	5.98
12		chloroethane	0.550	0.503	8.5	58	0.04	6.17
13		trichlorofluoromethane	1.080	1.023	5.3	58	0.03	6.72
14		ethyl ether	0.270	0.268	0.7	66	0.00	7.14
15		acrolein	0.146	0.159	-8.9	73	0.02	7.43
16		freon 113	0.502	0.535	-6.6	66	0.02	7.65
17		1,1-dichloroethene	0.569	0.513	9.8	59	0.02	7.63
18		acetone	0.078	0.094	-20.5#	80	0.01	7.66
19		iodomethane	1.028	1.052	-2.3	65	0.03	7.93
20		acetonitrile	0.123	0.147	-19.5	77	0.03	8.18
21		carbon disulfide	2.004	1.787	10.8	56	0.04	8.09
22		methylene chloride	0.665	0.592	11.0	62	0.02	8.45
23		methyl acetate	0.529	0.661	-25.0#	82	0.00	8.18
24		methyl tert butyl ether	1.767	1.569	11.2	57	0.00	8.85
25		trans-1,2-dichloroethene	0.587	0.497	15.3	57	0.00	8.87
26		hexane	0.395	0.330	16.5	54	0.01	9.27
27		di-isopropyl ether	1.862	1.739	6.6	60	0.00	9.51
28		1,1-dichloroethane	0.971	0.887	8.7	61	0.00	9.52
29		chloroprene	0.808	0.733	9.3	59	0.00	9.62
30		acrylonitrile	0.302	0.334	-10.6	68	0.01	8.79
31		vinyl acetate	0.085	0.090	-5.9	66	0.00	9.46
32		ethyl tert-butyl ether	1.948	1.710	12.2	55	0.00	10.01
33		2-butanone	0.068	0.083	-22.1#	72	0.00	10.24
34		ethyl acetate	0.093	0.107	-15.1	73	0.00	10.24
35		2,2-dichloropropane	0.828	0.844	-1.9	64	0.00	10.33
36		cis-1,2-dichloroethene	0.548	0.526	4.0	61	0.00	10.29
37		propionitrile	0.115	0.147	-27.8#	80	0.00	10.33
38		bromochloromethane	0.280	0.296	-5.7	66	0.00	10.61
39		tetrahydrofuran	0.098	0.102	-4.1	70	0.00	10.63
40		chloroform	0.923	0.890	3.6	64	0.00	10.70
41		t-butyl formate	0.553	0.508	8.1	57	0.00	10.75

Continuing Calibration Summary

Job Number: JD40008 **Sample:** V2C8406-CC8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188968.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	S	dibromofluoromethane (s)	0.450	0.463	-2.9	66	0.00	10.90
43		methacrylonitrile	0.217	0.230	-6.0	65	0.00	10.53
44		1,1,1-trichloroethane	0.948	0.920	3.0	59	0.00	10.97
45		cyclohexane	0.893	0.781	12.5	55	0.00	11.08
46		1,1-dichloropropene	0.612	0.566	7.5	60	0.00	11.13
47		carbon tetrachloride	0.812	0.835	-2.8	65	0.00	11.16
48		isobutyl alcohol	0.025	0.032	-28.0#	83	0.00	11.13
49	I	1,4-difluorobenzene	1.000	1.000	0.0	59	0.00	11.80
50	S	1,2-dichloroethane-d4 (s)	0.369	0.399	-8.1	65	0.00	11.33
51		n-butyl alcohol	0.022	0.033	-50.0#	83	0.00	11.87
52		tert-amyl alcohol	0.038	0.054	-42.1#	81	0.00	11.30
53		iso-octane	1.679	1.586	5.5	54	0.00	11.48
54		benzene	1.334	1.280	4.0	56	0.00	11.38
55		tert-amyl methyl ether	0.312	0.316	-1.3	59	0.00	11.47
56		heptane	0.244	0.212	13.1	50	0.00	11.64
57		isopropyl acetate	0.088	0.091	-3.4	60	0.00	11.31
58		1,2-dichloroethane	0.535	0.543	-1.5	63	0.00	11.42
59		ethyl acrylate	0.516	0.556	-7.8	64	0.00	12.09
60		trichloroethene	0.349	0.338	3.2	56	0.00	12.10
61		2-nitropropane	0.190	0.232	-22.1#	82	0.00	12.83
62		2-chloroethyl vinyl ether	0.221	0.197	10.9	51	0.00	12.85
63		methyl methacrylate	0.093	0.098	-5.4	58	0.00	12.34
64		1,2-dichloropropane	0.356	0.336	5.6	55	0.00	12.38
65		dibromomethane	0.249	0.253	-1.6	60	0.00	12.48
66		methylcyclohexane	0.691	0.679	1.7	54	0.00	12.39
67		bromodichloromethane	0.460	0.481	-4.6	61	0.00	12.63
68		epichlorohydrin	0.060	0.076	-26.7#	76	0.00	12.94
69		cis-1,3-dichloropropene	0.514	0.509	1.0	58	0.00	13.06
70		4-methyl-2-pentanone	0.219	0.262	-19.6	68	0.00	13.16
			True	Calc.	% Drift			
71		3-methyl-1-butanol	400.000	540.860	-35.2#	93	0.00	13.17
			AvgRF	CCRF	% Dev			
72	I	chlorobenzene-d5	1.000	1.000	0.0	61	0.00	14.77
73	S	toluene-d8 (s)	1.242	1.205	3.0	60	0.00	13.35
74		toluene	0.903	0.837	7.3	55	0.00	13.42
75		ethyl methacrylate	0.480	0.460	4.2	56	0.00	13.58
76		trans-1,3-dichloropropene	0.537	0.536	0.2	60	0.00	13.60
77		1,1,2-trichloroethane	0.296	0.281	5.1	57	0.00	13.81
78		2-hexanone	0.233	0.271	-16.3	68	0.00	13.95
79		tetrachloroethene	0.339	0.325	4.1	57	0.00	13.93
80		1,3-dichloropropane	0.552	0.527	4.5	57	0.00	13.97
81		butyl acetate	0.330	0.348	-5.5	61	0.00	14.02
82		dibromochloromethane	0.418	0.459	-9.8	67	0.00	14.21
83		1,2-dibromoethane	0.377	0.393	-4.2	60	0.00	14.35
84		n-butyl ether	1.858	1.623	12.6	51	0.00	14.74
85		chlorobenzene	1.045	1.046	-0.1	59	0.00	14.79
86		1,1,1,2-tetrachloroethane	0.426	0.474	-11.3	65	0.00	14.86
87		ethylbenzene	1.823	1.668	8.5	54	0.00	14.85
88		m,p-xylene	0.691	0.656	5.1	56	0.00	14.96
89		o-xylene	0.735	0.724	1.5	57	0.00	15.33
90		styrene	1.167	1.119	4.1	56	0.00	15.34
91		butyl acrylate	0.969	0.930	4.0	54	0.00	15.16
92		bromoform	0.312	0.397	-27.2#	76	0.00	15.56
93		isopropylbenzene	2.016	1.972	2.2	56	0.00	15.65
94		cis-1,4-dichloro-2-butene	0.170	0.203	-19.4	74	0.00	15.69

Continuing Calibration Summary

Job Number: JD40008 **Sample:** V2C8406-CC8388
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2C188968.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

95	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	69	0.00	16.94	
96	S	4-bromofluorobenzene (s)	0.849	0.737	13.2	60	0.00	15.85	
97		bromobenzene	0.851	0.762	10.5	63	0.00	16.02	
98		1,1,2,2-tetrachloroethane	1.049	1.040	0.9	64	0.00	15.92	
99		trans-1,4-dichloro-2-bute	0.162	0.163	-0.6	67	0.00	15.95	
100		1,2,3-trichloropropane	0.298	0.287	3.7	67	0.00	16.00	
101		n-propylbenzene	3.879	3.262	15.9	56	0.00	16.04	
102		2-chlorotoluene	0.797	0.688	13.7	59	0.00	16.17	
103		4-chlorotoluene	2.294	1.961	14.5	56	0.00	16.27	
104		1,3,5-trimethylbenzene	2.847	2.520	11.5	57	0.00	16.18	
105		tert-butylbenzene	2.287	1.992	12.9	55	0.00	16.50	
106		1,2,4-trimethylbenzene	2.909	2.549	12.4	56	0.00	16.55	
107		sec-butylbenzene	3.822	3.225	15.6	54	0.00	16.71	
108		1,3-dichlorobenzene	1.641	1.579	3.8	63	0.00	16.87	
109		p-isopropyltoluene	3.153	2.850	9.6	57	0.00	16.83	
110		1,2,3-trimethylbenzene	3.330	2.784	16.4	56	0.00	16.95	
111		1,4-dichlorobenzene	1.752	1.670	4.7	64	0.00	16.96	
112		1,2-dichlorobenzene	1.790	1.676	6.4	65	0.00	17.33	
113		n-butylbenzene	1.673	1.405	16.0	54	0.00	17.22	
114		1,2-dibromo-3-chloropropa	0.280	0.328	-17.1	75	0.00	18.09	
115		1,3,5-trichlorobenzene	1.541	1.517	1.6	66	0.00	18.27	
116		1,2,4-trichlorobenzene	1.314	1.344	-2.3	67	0.00	18.93	
117		hexachlorobutadiene	0.674	0.647	4.0	61	0.00	19.04	
118		naphthalene	3.269	3.903	-19.4	77	0.00	19.23	
119		1,2,3-trichlorobenzene	1.089	1.263	-16.0	77	0.00	19.46	
		----------	True	Calc.	% Drift	----------			
120		hexachloroethane	20.000	18.915	5.4	71	0.00	17.61	
		----------	AvgRF	CCRF	% Dev	----------			
121		2-methylnaphthalene	1.298	19.006	-1364.3#	1149#	0.00	20.40	

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2C188530.D M2C8388.M Fri Feb 25 04:12:41 2022

Initial Calibration Summary

Job Number: JD40008 **Sample:** V4D5098-ICC5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114635.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS4D

Method : C:\msdchem\1\methods\M4D5098.M (RTE Integrator)
Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
Last Update : Mon Jan 17 15:07:58 2022
Response via : Initial Calibration

Calibration Files
1 =4D114630.D 0.5 =4D114629.D 100 =4D114636.D 50 =4D114635.D
20 =4D114634.D 200 =4D114637.D 4 =4D114632.D 2 =4D114631.D
8 =4D114633.D 0.2 =4D114628.D = =

Compound	1	0.5	100	50	20	200	4	2	8	0.2	Avg	%RSD
1) tert butyl alcohol-d9 ----------ISTD----------												
2) tertiary butyl alcohol	1.296	1.243	1.379	1.374	1.304	1.312	1.330	1.416	1.369		1.336	4.00
3) ethanol	0.133	0.125	0.158	0.156	0.142	0.150	0.149	0.154	0.148		0.146	7.45
4) 1,4-dioxane	0.125		0.151	0.148	0.135	0.142	0.145	0.144	0.137		0.141	5.84
5) I pentafluorobenzene ----------ISTD----------												
6) chlorodifluoromethane	0.421	0.469	0.524	0.480	0.444	0.516	0.484	0.474	0.469		0.476	6.69
7) dichlorodifluoromethane	0.461	0.500	0.616	0.555	0.510	0.595	0.517	0.537	0.543		0.537	8.89
8) chloromethane	0.470	0.629	0.539	0.507	0.496	0.518	0.510	0.556	0.534		0.529	8.53
9) vinyl chloride	0.455	0.513	0.561	0.511	0.492	0.545	0.497	0.516	0.515	0.460	0.506	6.51
10) 1,3-butadiene	0.415	0.440	0.442	0.411	0.390	0.432	0.430	0.434	0.413	0.476	0.428	5.41
11) bromomethane	0.238	0.294	0.291	0.238	0.222	0.309	0.230	0.227	0.237		0.254	13.21
12) chloroethane	0.177	0.212	0.262	0.239	0.230	0.259	0.225	0.236	0.238		0.231	11.00
13) trichlorofluoromethane	0.530	0.585	0.691	0.622	0.590	0.670	0.585	0.598	0.627	0.400	0.590	13.73
14) vinyl bromide											0.000	-1.00
15) ethyl ether	0.130	0.135	0.188	0.173	0.162	0.185	0.166	0.155	0.165		0.162	12.23
16) acrolein			0.070	0.064	0.057	0.066	0.049		0.055		0.060	13.09
17) freon 113	0.227	0.225	0.296	0.270	0.252	0.277	0.275	0.258	0.257	0.172	0.251	14.05
18) 1,1-dichloroethene	0.315	0.360	0.330	0.302	0.286	0.315	0.331	0.334	0.300	0.304	0.318	6.74
19) acetone	0.102	0.132	0.144	0.138	0.142	0.137	0.147	0.144	0.135		0.136	9.97
20) acetonitrile	0.044	0.042	0.047	0.044	0.041	0.045	0.046	0.051	0.044		0.045	6.56
21) iodomethane *This compound fails initial calibration criteria.	0.084		0.464	0.352	0.222	0.463	0.109	0.082	0.140		0.239	68.76
22) carbon disulfide	0.857	0.990	0.972	0.887	0.833	0.943	0.890	0.878	0.877		0.903	5.91
23) methylene chloride												

```
      0.383 0.436 0.367 0.335 0.323 0.349 0.364 0.379 0.343        0.364    9.22
24)  methyl acetate
      0.210       0.270 0.257 0.231 0.258 0.246 0.245 0.251        0.246    7.50
25)  methyl tert butyl ether
      0.839 0.931 0.959 0.889 0.843 0.945 0.891 0.948 0.872 0.869  0.899    4.92
26)  trans-1,2-dichloroethene
      0.354 0.446 0.341 0.329 0.315 0.336 0.342 0.364 0.342        0.352   10.76
27)  di-isopropyl ether
      0.932 0.982 1.130 1.046 1.008 1.117 1.092 1.050 1.033 0.982  1.037    6.13
28)  2-butanone
      0.028       0.044 0.041 0.040 0.043 0.044 0.044 0.041        0.041   13.20
29)  1,1-dichloroethane
      0.567 0.625 0.651 0.603 0.573 0.649 0.617 0.618 0.606 0.543  0.605    5.81
30)  chloroprene
      0.413 0.458 0.536 0.489 0.456 0.531 0.464 0.472 0.461 0.367  0.465   10.75
31)  acrylonitrile
      0.090       0.130 0.121 0.114 0.125 0.129 0.122 0.119        0.119   10.55
32)  hexane
      0.174 0.183 0.233 0.214 0.194 0.230 0.201 0.192 0.203        0.203    9.87
33)  vinyl acetate
                  0.067 0.059 0.055 0.065 0.053 0.047 0.058        0.058   11.72
34)  ethyl tert-butyl ether
      0.924 1.035 1.137 1.043 0.959 1.134 1.055 1.084 1.012 0.963  1.035    6.98
35)  ethyl acetate
                  0.044 0.040 0.038 0.043 0.039 0.027 0.035        0.038   14.90
36)  2,2-dichloropropane
      0.459 0.500 0.510 0.469 0.445 0.499 0.474 0.468 0.461 0.503  0.479    4.67
37)  cis-1,2-dichloroethene
      0.379 0.476 0.398 0.373 0.356 0.384 0.383 0.391 0.365 0.431  0.394    9.03
38)  methyl acrylate
      0.243       0.336 0.320 0.295 0.318 0.301 0.301 0.311        0.303    9.15
39)  propionitrile
      0.044 0.039 0.055 0.052 0.048 0.053 0.053 0.054 0.051        0.050   10.35
40)  bromochloromethane
      0.169 0.195 0.194 0.188 0.179 0.186 0.194 0.195 0.179        0.187    4.96
41)  tetrahydrofuran
                  0.049 0.046 0.042 0.046 0.048 0.057 0.049        0.048    9.23
42)  chloroform
      0.457 0.498 0.446 0.413 0.405 0.427 0.442 0.458 0.412        0.440    6.69
43)  t-butyl formate
      0.223 0.215 0.291 0.246 0.194 0.297 0.243 0.237 0.236        0.243   13.68
44)  dibromofluoromethane (s)
      0.403 0.400 0.397 0.397 0.398 0.410 0.406 0.393 0.404 0.388  0.400    1.61
45)  methacrylonitrile
      0.083       0.143 0.137 0.126 0.139 0.134 0.125 0.130        0.127   14.87
46)  1,1,1-trichloroethane
      0.502 0.538 0.580 0.546 0.512 0.581 0.559 0.567 0.531 0.527  0.544    5.02
47)  cyclohexane
      0.357 0.432 0.471 0.430 0.407 0.465 0.412 0.447 0.429 0.390  0.424    8.13
48)  1,1-dichloropropene
      0.420 0.447 0.468 0.426 0.408 0.461 0.430 0.441 0.420 0.418  0.434    4.56
49)  isobutyl alcohol
                  0.003 0.003 0.003 0.003 0.003 0.003 0.003        0.003    7.21
50)  carbon tetrachloride
      0.445 0.472 0.542 0.509 0.483 0.532 0.503 0.517 0.487 0.441  0.493    6.87
51)  tert amyl alcohol
      0.012       0.013 0.012 0.012 0.012 0.012 0.015 0.012        0.012    8.11

52) I   1,4-difluorobenzene   ----------------ISTD---------------------
53)  1,2-dichloroethane-d4 (s)
```

```
      0.310 0.308 0.297 0.298 0.302 0.307 0.307 0.302 0.309 0.308  0.305    1.55
54)  n-butyl alcohol
      0.007       0.008 0.008 0.007 0.008 0.007 0.008 0.007        0.008    9.16
55)  2,2,4-trimethylpentane
      0.527 0.573 0.629 0.599 0.558 0.637 0.598 0.580 0.572 0.654  0.593    6.56
56)  benzene
      0.908 1.016 1.009 0.983 0.942 0.994 0.994 1.054 0.980 0.955  0.983    4.18
57)  tert-amyl methyl ether
      0.152 0.169 0.183 0.176 0.168 0.183 0.178 0.186 0.172        0.174    6.05
58)  heptane
      0.104 0.108 0.125 0.119 0.108 0.125 0.117 0.107 0.107 0.143  0.116   10.29
59)  isopropyl acetate
      0.048       0.056 0.055 0.051 0.055 0.056 0.057 0.053        0.054    5.78
60)  1,2-dichloroethane
      0.386 0.429 0.401 0.387 0.370 0.399 0.402 0.410 0.385 0.527  0.410   10.83
61)  trichloroethene
      0.267 0.268 0.307 0.294 0.278 0.314 0.282 0.300 0.284 0.281  0.287    5.50
62)  ethyl acrylate
      0.272       0.376 0.351 0.330 0.379 0.329 0.350 0.336        0.340    9.87
63)  2-nitropropane
      0.095       0.096 0.092 0.083 0.097 0.087 0.091 0.089        0.091    5.24
64)  2-chloroethyl vinyl ether
                                                                   0.000   -1.00
65)  methyl methacrylate
      0.043       0.070 0.069 0.063 0.071 0.063 0.062 0.061        0.063   14.16
66)  1,2-dichloropropane
      0.229 0.282 0.300 0.282 0.268 0.306 0.273 0.274 0.275 0.286  0.278    7.48
67)  dibromomethane
      0.173 0.194 0.199 0.191 0.186 0.195 0.194 0.209 0.188 0.195  0.193    4.83
68)  methylcyclohexane
      0.290 0.314 0.355 0.339 0.312 0.360 0.338 0.329 0.317 0.279  0.323    8.09
69)  bromodichloromethane
      0.345 0.369 0.396 0.380 0.359 0.390 0.374 0.393 0.362 0.374  0.374    4.31
70)  epichlorohydrin
      0.016       0.023 0.021 0.018 0.022 0.018 0.019 0.018        0.019   12.24
71)  cis-1,3-dichloropropene
      0.408 0.436 0.460 0.435 0.411 0.469 0.419 0.409 0.417 0.435  0.430    4.94
72)  4-methyl-2-pentanone
      0.095 0.081 0.115 0.108 0.100 0.113 0.106 0.110 0.104        0.104   10.10
73)  3-methyl-1-butanol
      0.005       0.007 0.006 0.006 0.007 0.006 0.005 0.006        0.006   14.00

74) I   chlorobenzene-d5      ----------------ISTD---------------------
75)  toluene-d8 (s)
      1.290 1.306 1.286 1.253 1.280 1.248 1.275 1.311 1.292 1.325  1.287    1.88
76)  toluene
      0.716 0.756 0.807 0.752 0.720 0.792 0.774 0.806 0.760 0.764  0.765    4.11
77)  trans-1,3-dichloropropene
      0.454 0.470 0.524 0.490 0.456 0.508 0.482 0.521 0.479 0.488  0.487    5.01
78)  ethyl methacrylate
      0.330 0.355 0.432 0.407 0.375 0.411 0.401 0.400 0.387        0.389    8.02
79)  1,1,2-trichloroethane
      0.243 0.215 0.269 0.258 0.248 0.257 0.262 0.273 0.266 0.183  0.247   11.37
80)  tetrachloroethene
      0.307 0.300 0.313 0.302 0.296 0.297 0.325 0.328 0.308 0.276  0.305    4.95
81)  1,3-dichloropropane
      0.448 0.443 0.524 0.486 0.462 0.506 0.484 0.517 0.479 0.463  0.481    5.81
82)  2-hexanone
      0.116 0.106 0.145 0.135 0.127 0.138 0.136 0.145 0.136        0.132    9.87
83)  butyl acetate
```

```
      0.192 0.181 0.223 0.211 0.197 0.210 0.213 0.220 0.213        0.207    6.70
 84)  dibromochloromethane
      0.402 0.389 0.424 0.401 0.381 0.414 0.401 0.430 0.402 0.383  0.403    4.08
 85)  1,2-dibromoethane
      0.307 0.345 0.354 0.340 0.326 0.338 0.353 0.355 0.342 0.331  0.339    4.39
 86)  n-butyl ether
      1.288 1.376 1.559 1.429 1.323 1.559 1.371 1.460 1.393        1.417    6.70
 87)  chlorobenzene
      0.837 0.957 0.905 0.868 0.834 0.877 0.883 0.937 0.878 0.966  0.894    5.18
 88)  1,1,1,2-tetrachloroethane
      0.319 0.334 0.362 0.349 0.328 0.352 0.344 0.359 0.346 0.330  0.342    4.09
 89)  ethylbenzene
      1.354 1.457 1.491 1.430 1.359 1.451 1.435 1.541 1.427 1.467  1.441    3.89
 90)  m,p-xylene
      0.491 0.549 0.590 0.551 0.517 0.568 0.557 0.572 0.552 0.536  0.548    5.15
 91)  o-xylene
      0.469 0.482 0.619 0.572 0.524 0.585 0.562 0.583 0.531 0.479  0.541    9.55
 92)  styrene
      0.780 0.808 1.051 0.952 0.862 1.001 0.863 0.876 0.868 0.801  0.886   10.02
 93)  bromoform
      0.274 0.276 0.321 0.307 0.281 0.305 0.301 0.327 0.289 0.234  0.292    9.28
 94)  butyl acrylate
      0.529 0.540 0.740 0.674 0.604 0.714 0.607 0.650 0.616        0.631   11.40
 95)  isopropylbenzene
      1.225 1.302 1.467 1.353 1.257 1.417 1.339 1.370 1.309 1.288  1.333    5.47
 96)  cis-1,4-dichloro-2-butene
      0.110 0.099 0.161 0.148 0.131 0.151 0.126 0.127 0.131        0.132   14.89

 97) I   1,4-dichlorobenzene-d ----------------ISTD---------------------
 98)  4-bromofluorobenzene (s)
      1.059 1.044 1.041 1.039 1.015 1.037 1.058 1.065 1.040 1.041  1.044    1.36
 99)  bromobenzene
      0.801 0.830 0.921 0.858 0.864 0.892 0.909 1.026 0.890 0.860  0.885    6.93
100)  1,1,2,2-tetrachloroethane
      0.978 0.834 1.002 0.941 0.912 0.949 1.011 1.093 0.976 0.749  0.944   10.20
101)  trans-1,4-dichloro-2-butene
      0.192 0.224 0.306 0.280 0.252 0.292 0.255 0.275 0.264        0.260   13.37
102)  1,2,3-trichloropropane
      0.213       0.259 0.250 0.245 0.245 0.292 0.291 0.258        0.257   10.09
103)  n-propylbenzene
      3.263 3.499 3.810 3.586 3.455 3.668 3.600 3.777 3.529 3.392  3.558    4.74
104)  2-chlorotoluene
      0.738 0.766 0.830 0.768 0.744 0.784 0.762 0.806 0.749 0.635  0.758    6.83
105)  4-chlorotoluene
      2.098 2.193 2.388 2.230 2.149 2.327 2.269 2.436 2.212 2.529  2.283    5.94
106)  1,3,5-trimethylbenzene
      2.233 2.239 2.596 2.414 2.286 2.501 2.350 2.558 2.339 2.186  2.370    6.03
107)  tert-butylbenzene
      0.366 0.399 0.496 0.463 0.438 0.479 0.463 0.460 0.438 0.392  0.439    9.46
108)  1,2,4-trimethylbenzene
      2.279 2.119 2.718 2.546 2.359 2.589 2.464 2.558 2.392 2.197  2.422    7.77
109)  sec-butylbenzene
      2.601 2.785 3.097 2.882 2.668 2.998 2.727 2.860 2.633 2.812  2.806    5.67
110)  1,3-dichlorobenzene
      1.457 1.412 1.579 1.498 1.418 1.498 1.498 1.547 1.430 1.728  1.506    6.31
111)  p-isopropyltoluene
      1.980 2.100 2.579 2.413 2.197 2.479 2.292 2.278 2.185 2.224  2.273    7.87
112)  1,4-dichlorobenzene
      1.441 1.611 1.629 1.531 1.441 1.540 1.528 1.602 1.478 2.163  1.596   13.15
113)  1,2,3-trimethylbenzene
```

```
       2.220 2.562 2.661 2.533 2.387 2.536 2.527 2.637 2.408 2.283  2.475    5.90
114)  benzyl chloride
       1.156 1.189 1.511 1.370 1.193 1.493 1.254 1.332 1.192 1.358  1.305    9.87
115)  1,2-dichlorobenzene
       1.233 1.278 1.536 1.444 1.359 1.468 1.407 1.483 1.367 1.381  1.396    6.66
116)  n-butylbenzene
       0.903 0.944 1.229 1.134 1.027 1.204 0.988 1.025 1.001 0.944  1.040   10.79
117)  1,2-dibromo-3-chloropropane
       0.176 0.154 0.218 0.213 0.193 0.210 0.206 0.217 0.202        0.199   10.77
118)  1,3,5-trichlorobenzene
       0.722 0.756 0.894 0.879 0.830 0.895 0.830 0.867 0.824 0.678  0.818    9.18
119)  1,2,4-trichlorobenzene
       0.595 0.640 0.757 0.747 0.636 0.754 0.687 0.712 0.677 0.671  0.688    7.98
120)  hexachlorobutadiene
       0.330 0.298 0.341 0.318 0.296 0.325 0.317 0.323 0.318 0.333  0.320    4.43
121)  naphthalene
       1.811 1.814 1.979 1.864 1.662 1.915 1.804 2.052 1.787 2.311  1.900    9.51
122)  1,2,3-trichlorobenzene
       0.493 0.621 0.639 0.629 0.543 0.618 0.618 0.608 0.606        0.597    7.98
123)  hexachloroethane
       0.336 0.301 0.448 0.408 0.370 0.440 0.367 0.393 0.358        0.380   12.55
124)  2-methylnaphthalene
       0.554 0.513 0.698 0.641 0.565 0.600 0.611 0.632 0.569        0.598    9.21

125)     pentafluorobenzene(a) ----------------ISTD---------------------
126)  freon 142B
                                                                     0.000   -1.00
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M4D5098.M         Tue Jan 18 09:23:59 2022
```

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114641.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\V4D5098\4D114641.D Vial: 15
Acq On : 15 Jan 2022 4:45 am Operator: nicoleh
Sample : icv5098-50 Inst : MS4D
Misc : MS56060,V4D5098,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\methods\M4D5098.M (RTE Integrator)
Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
Last Update : Mon Jan 17 15:07:58 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		tert butyl alcohol-d9	1.000	1.000	0.0	109	0.00	8.58
2	M	tertiary butyl alcohol	1.336	1.259	5.8	100	0.00	8.72
3		ethanol	0.146	0.149	-2.1	104	0.00	7.12
4	M	1,4-dioxane	0.141	0.140	0.7	103	0.00	12.62
5	I	pentafluorobenzene	1.000	1.000	0.0	105	0.00	11.07
6	M	chlorodifluoromethane		----------NA----------				
7	M	dichlorodifluoromethane	0.537	0.365	32.0#	69	0.00	4.58
8	M	chloromethane	0.529	0.449	15.1	93	-0.01	5.06
9	M	vinyl chloride	0.506	0.456	9.9	94	0.00	5.33
10		1,3-butadiene	0.428	0.401	6.3	103	0.00	5.43
11	M	bromomethane	0.254	0.243	4.3	107	0.00	6.10
12	M	chloroethane	0.231	0.218	5.6	96	0.00	6.33
13	M	trichlorofluoromethane	0.590	0.559	5.3	95	0.00	6.90
14		vinyl bromide		----------NA----------				
15	M	ethyl ether	0.162	0.168	-3.7	103	0.00	7.43
16	M	acrolein	0.060	0.062	-3.3	102	0.00	7.62
17		freon 113	0.251	0.270	-7.6	105	0.00	7.88
18	M	1,1-dichloroethene	0.318	0.283	11.0	99	0.00	7.88
19	M	acetone	0.136	0.104	23.5	80	0.00	7.88
20	M	acetonitrile	0.045	0.041	8.9	98	0.00	8.32
21	M	iodomethane	0.239	0.296	-23.8	88	0.00	8.16
22	M	carbon disulfide	0.903	0.842	6.8	100	0.00	8.33
23	M	methylene chloride	0.364	0.326	10.4	102	0.00	8.65
24	M	methyl acetate	0.246	0.233	5.3	96	0.00	8.45
25	M	methyl tert butyl ether	0.899	0.862	4.1	102	0.00	9.09
26	M	trans-1,2-dichloroethene	0.352	0.315	10.5	101	0.00	9.11
27	M	di-isopropyl ether	1.037	1.005	3.1	101	0.00	9.77
28	M	2-butanone	0.041	0.038	7.3	99	0.00	10.45
29	M	1,1-dichloroethane	0.605	0.588	2.8	103	0.00	9.71
30	M	chloroprene	0.465	0.496	-6.7	107	0.00	9.85
31	M	acrylonitrile	0.119	0.113	5.0	98	0.00	8.97
32		hexane	0.203	0.187	7.9	92	0.00	9.53
33	M	vinyl acetate	0.058	0.062	-6.9	110	0.00	9.71
34	M	ethyl tert-butyl ether	1.035	0.966	6.7	97	0.00	10.27
35	M	ethyl acetate	0.038	0.041	-7.9	107	0.00	10.51
36	M	2,2-dichloropropane	0.479	0.442	7.7	99	0.00	10.52
37	M	cis-1,2-dichloroethene	0.394	0.354	10.2	100	0.00	10.49
38		methyl acrylate	0.303	0.303	0.0	100	0.00	10.58
39	M	propionitrile	0.050	0.048	4.0	98	0.00	10.49
40	M	bromochloromethane	0.187	0.188	-0.5	105	0.00	10.80
41	M	tetrahydrofuran	0.048	0.043	10.4	99	0.00	10.88

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114641.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	M	chloroform	0.440	0.400	9.1	102	0.00	10.87
43	M	t-butyl formate	0.243	0.225	7.4	96	0.00	10.95
44	S	dibromofluoromethane (s)	0.400	0.402	-0.5	107	0.00	11.07
45	M	methacrylonitrile	0.127	0.132	-3.9	102	0.00	10.73
46	M	1,1,1-trichloroethane	0.544	0.524	3.7	101	0.00	11.18
47		cyclohexane	0.424	0.450	-6.1	110	0.00	11.29
48		1,1-dichloropropene	0.434	0.423	2.5	105	0.00	11.37
49		isobutyl alcohol	0.003	0.003	0.0	107	0.00	11.36
50		carbon tetrachloride	0.493	0.492	0.2	102	0.00	11.40
51		tert amyl alcohol	0.012	0.012	0.0	113	0.00	11.45
52	I	1,4-difluorobenzene	1.000	1.000	0.0	105	0.00	11.96
53	S	1,2-dichloroethane-d4 (s)	0.305	0.300	1.6	106	0.00	11.49
54	M	n-butyl alcohol	0.008	0.008	0.0	103	0.00	12.03
55		2,2,4-trimethylpentane	0.593	0.533	10.1	94	0.00	11.69
56	M	benzene	0.983	0.947	3.7	101	0.00	11.61
57	M	tert-amyl methyl ether	0.174	0.161	7.5	96	0.00	11.68
58	M	heptane	0.116	0.112	3.4	99	0.00	11.85
59	M	isopropyl acetate	0.054	0.053	1.9	102	0.00	11.54
60	M	1,2-dichloroethane	0.410	0.376	8.3	102	0.00	11.58
61	M	trichloroethene	0.287	0.288	-0.3	103	0.00	12.30
62		ethyl acrylate	0.340	0.351	-3.2	105	0.00	12.29
63	M	2-nitropropane	0.091	0.093	-2.2	106	0.00	12.94
64	M	2-chloroethyl vinyl ether		----------NA----------				
65	M	methyl methacrylate	0.063	0.067	-6.3	102	0.00	12.54
66	M	1,2-dichloropropane	0.278	0.278	0.0	104	0.00	12.52
67	M	dibromomethane	0.193	0.186	3.6	102	0.00	12.64
68	M	methylcyclohexane	0.323	0.333	-3.1	103	0.00	12.55
69	M	bromodichloromethane	0.374	0.370	1.1	103	0.00	12.76
70		epichlorohydrin	0.019	0.021	-10.5	104	0.00	13.08
71	M	cis-1,3-dichloropropene	0.430	0.430	0.0	104	0.00	13.20
72	M	4-methyl-2-pentanone	0.104	0.103	1.0	100	0.00	13.29
73	M	3-methyl-1-butanol	0.006	0.007	-16.7	107	0.00	13.28
74	I	chlorobenzene-d5	1.000	1.000	0.0	106	0.00	14.86
75	S	toluene-d8 (s)	1.287	1.242	3.5	105	0.00	13.50
76		toluene	0.765	0.722	5.6	101	0.00	13.57
77		trans-1,3-dichloropropene	0.487	0.467	4.1	101	0.00	13.70
78		ethyl methacrylate	0.389	0.379	2.6	98	0.00	13.73
79		1,1,2-trichloroethane	0.247	0.246	0.4	101	0.00	13.89
80	M	tetrachloroethene	0.305	0.314	-3.0	110	0.00	14.11
81	M	1,3-dichloropropane	0.481	0.468	2.7	102	0.00	14.06
82		2-hexanone	0.132	0.121	8.3	95	0.00	14.07
83	M	butyl acetate	0.207	0.213	-2.9	107	0.00	14.15
84	M	dibromochloromethane	0.403	0.382	5.2	100	0.00	14.30
85	M	1,2-dibromoethane	0.339	0.330	2.7	102	0.00	14.45
86		n-butyl ether	1.417	1.405	0.8	104	0.00	14.84
87	M	chlorobenzene	0.894	0.848	5.1	103	0.00	14.89
88	M	1,1,1,2-tetrachloroethane	0.342	0.343	-0.3	104	0.00	14.93
89	M	ethylbenzene	1.441	1.378	4.4	102	0.00	14.95
90	M	m,p-xylene	0.548	0.540	1.5	103	0.00	15.05
91	M	o-xylene	0.541	0.547	-1.1	101	0.00	15.43
92	M	styrene	0.886	0.921	-4.0	102	0.00	15.43
93	M	bromoform	0.292	0.295	-1.0	101	0.00	15.63
94		butyl acrylate	0.631	0.668	-5.9	104	0.00	15.25
95		isopropylbenzene	1.333	1.332	0.1	104	0.00	15.74
96		cis-1,4-dichloro-2-butene	0.132	0.144	-9.1	103	0.00	15.75
97	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	104	0.00	16.97
98	S	4-bromofluorobenzene (s)	1.044	1.064	-1.9	107	0.00	15.90

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114641.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	M	bromobenzene	0.885	0.876	1.0	106	0.00	16.08
100	M	1,1,2,2-tetrachloroethane	0.944	0.948	-0.4	105	0.00	15.96
101	M	trans-1,4-dichloro-2-bute	0.260	0.272	-4.6	101	0.00	16.00
102	M	1,2,3-trichloropropane	0.257	0.247	3.9	103	0.00	16.03
103	M	n-propylbenzene	3.558	3.537	0.6	103	0.00	16.11
104	M	2-chlorotoluene	0.758	0.778	-2.6	105	0.00	16.23
105	M	4-chlorotoluene	2.283	2.228	2.4	104	0.00	16.32
106	M	1,3,5-trimethylbenzene	2.370	2.437	-2.8	105	0.00	16.25
107	M	tert-butylbenzene	0.439	0.453	-3.2	102	0.00	16.57
108	M	1,2,4-trimethylbenzene	2.422	2.511	-3.7	103	0.00	16.61
109	M	sec-butylbenzene	2.806	2.829	-0.8	102	0.00	16.77
110	M	1,3-dichlorobenzene	1.506	1.459	3.1	101	0.00	16.92
111	M	p-isopropyltoluene	2.273	2.334	-2.7	101	0.00	16.87
112	M	1,4-dichlorobenzene	1.596	1.486	6.9	101	0.00	16.99
113		1,2,3-trimethylbenzene		----------NA----------				
114		benzyl chloride	1.305	1.249	4.3	95	0.00	17.08
115	M	1,2-dichlorobenzene	1.396	1.420	-1.7	102	0.00	17.35
116	M	n-butylbenzene	1.040	1.108	-6.5	102	0.00	17.26
117	M	1,2-dibromo-3-chloropropa	0.199	0.204	-2.5	100	0.00	18.05
118		1,3,5-trichlorobenzene	0.818	0.881	-7.7	104	0.00	18.27
119	M	1,2,4-trichlorobenzene	0.688	0.732	-6.4	102	0.00	18.86
120	M	hexachlorobutadiene	0.320	0.329	-2.8	108	0.00	19.00
121	M	naphthalene	1.900	1.795	5.5	100	0.00	19.12
122	M	1,2,3-trichlorobenzene	0.597	0.612	-2.5	101	0.00	19.35
123	m	hexachloroethane	0.380	0.410	-7.9	105	0.00	17.62
124		2-methylnaphthalene	0.598	0.637	-6.5	104	0.00	20.21
125		pentafluorobenzene(a)	1.000	1.000	0.0	105	0.00	11.07
126		freon 142B		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4D114635.D M4D5098.M Tue Jan 18 09:20:45 2022

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114642.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\V4D5098\4D114642.D Vial: 16
Acq On : 15 Jan 2022 5:13 am Operator: nicoleh
Sample : icv5098-50 Inst : MS4D
Misc : MS56060,V4D5098,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\msdchem\1\methods\M4D5098.M (RTE Integrator)
Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
Last Update : Mon Jan 17 15:07:58 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		tert butyl alcohol-d9	1.000	1.000	0.0	104	0.00	8.58
2	M	tertiary butyl alcohol		----------NA----------				
3		ethanol		----------NA----------				
4	M	1,4-dioxane		----------NA----------				
5	I	pentafluorobenzene	1.000	1.000	0.0	110	0.00	11.07
6	M	chlorodifluoromethane	0.476	0.515	-8.2	119	0.00	4.61
7	M	dichlorodifluoromethane		----------NA----------				
8	M	chloromethane		----------NA----------				
9	M	vinyl chloride		----------NA----------				
10		1,3-butadiene		----------NA----------				
11	M	bromomethane		----------NA----------				
12	M	chloroethane		----------NA----------				
13	M	trichlorofluoromethane		----------NA----------				
14		vinyl bromide		----------NA----------				
15	M	ethyl ether		----------NA----------				
16	M	acrolein		----------NA----------				
17		freon 113		----------NA----------				
18	M	1,1-dichloroethene		----------NA----------				
19	M	acetone		----------NA----------				
20	M	acetonitrile	0.045	0.033	26.7	82	0.00	8.32
21	M	iodomethane		----------NA----------				
22	M	carbon disulfide		----------NA----------				
23	M	methylene chloride		----------NA----------				
24	M	methyl acetate		----------NA----------				
25	M	methyl tert butyl ether		----------NA----------				
26	M	trans-1,2-dichloroethene		----------NA----------				
27	M	di-isopropyl ether		----------NA----------				
28	M	2-butanone		----------NA----------				
29	M	1,1-dichloroethane		----------NA----------				
30	M	chloroprene		----------NA----------				
31	M	acrylonitrile	0.119	0.096	19.3	88	0.00	8.97
32		hexane		----------NA----------				
33	M	vinyl acetate		----------NA----------				
34	M	ethyl tert-butyl ether		----------NA----------				
35	M	ethyl acetate		----------NA----------				
36	M	2,2-dichloropropane		----------NA----------				
37	M	cis-1,2-dichloroethene		----------NA----------				
38		methyl acrylate		----------NA----------				
39	M	propionitrile		----------NA----------				
40	M	bromochloromethate		----------NA----------				
41	M	tetrahydrofuran		----------NA----------				

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114642.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	M	chloroform		----------NA----------				
43	M	t-butyl formate		----------NA----------				
44	S	dibromofluoromethane (s)	0.400	0.397	0.8	111	0.00	11.07
45	M	methacrylonitrile		----------NA----------				
46	M	1,1,1-trichloroethane		----------NA----------				
47		cyclohexane		----------NA----------				
48		1,1-dichloropropene		----------NA----------				
49		isobutyl alcohol		----------NA----------				
50		carbon tetrachloride		----------NA----------				
51		tert amyl alcohol		----------NA----------				
52	I	1,4-difluorobenzene	1.000	1.000	0.0	109	0.00	11.96
53	S	1,2-dichloroethane-d4 (s)	0.305	0.304	0.3	111	0.00	11.49
54	M	n-butyl alcohol		----------NA----------				
55		2,2,4-trimethylpentane		----------NA----------				
56	M	benzene		----------NA----------				
57	M	tert-amyl methyl ether		----------NA----------				
58	M	heptane		----------NA----------				
59	M	isopropyl acetate		----------NA----------				
60	M	1,2-dichloroethane		----------NA----------				
61	M	trichloroethene		----------NA----------				
62		ethyl acrylate		----------NA----------				
63	M	2-nitropropane		----------NA----------				
64	M	2-chloroethyl vinyl ether		----------NA----------				
65	M	methyl methacrylate		----------NA----------				
66	M	1,2-dichloropropane		----------NA----------				
67	M	dibromomethane		----------NA----------				
68	M	methylcyclohexane		----------NA----------				
69	M	bromodichloromethane		----------NA----------				
70		epichlorohydrin		----------NA----------				
71	M	cis-1,3-dichloropropene		----------NA----------				
72	M	4-methyl-2-pentanone		----------NA----------				
73	M	3-methyl-1-butanol		----------NA----------				
74	I	chlorobenzene-d5	1.000	1.000	0.0	103	0.00	14.86
75	S	toluene-d8 (s)	1.287	1.303	-1.2	108	0.00	13.50
76		toluene		----------NA----------				
77		trans-1,3-dichloropropene		----------NA----------				
78		ethyl methacrylate		----------NA----------				
79		1,1,2-trichloroethane		----------NA----------				
80	M	tetrachloroethene	0.305	0.284	6.9	97	0.00	14.11
81	M	1,3-dichloropropane		----------NA----------				
82		2-hexanone		----------NA----------				
83	M	butyl acetate		----------NA----------				
84	M	dibromochloromethane		----------NA----------				
85	M	1,2-dibromoethane		----------NA----------				
86		n-butyl ether		----------NA----------				
87	M	chlorobenzene		----------NA----------				
88	M	1,1,1,2-tetrachloroethane		----------NA----------				
89	M	ethylbenzene		----------NA----------				
90	M	m,p-xylene		----------NA----------				
91	M	o-xylene		----------NA----------				
92	M	styrene		----------NA----------				
93	M	bromoform		----------NA----------				
94		butyl acrylate		----------NA----------				
95		isopropylbenzene		----------NA----------				
96		cis-1,4-dichloro-2-butene		----------NA----------				
97	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	105	0.00	16.97
98	S	4-bromofluorobenzene (s)	1.044	1.034	1.0	104	0.00	15.90

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114642.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	M	bromobenzene		----------NA----------					
100	M	1,1,2,2-tetrachloroethane		----------NA----------					
101	M	trans-1,4-dichloro-2-bute		----------NA----------					
102	M	1,2,3-trichloropropane		----------NA----------					
103	M	n-propylbenzene		----------NA----------					
104	M	2-chlorotoluene		----------NA----------					
105	M	4-chlorotoluene		----------NA----------					
106	M	1,3,5-trimethylbenzene		----------NA----------					
107	M	tert-butylbenzene		----------NA----------					
108	M	1,2,4-trimethylbenzene		----------NA----------					
109	M	sec-butylbenzene		----------NA----------					
110	M	1,3-dichlorobenzene		----------NA----------					
111	M	p-isopropyltoluene		----------NA----------					
112	M	1,4-dichlorobenzene		----------NA----------					
113		1,2,3-trimethylbenzene	2.475	2.720	-9.9	113	0.00	17.01	
114		benzyl chloride		----------NA----------					
115	M	1,2-dichlorobenzene		----------NA----------					
116	M	n-butylbenzene		----------NA----------					
117	M	1,2-dibromo-3-chloropropa		----------NA----------					
118		1,3,5-trichlorobenzene		----------NA----------					
119	M	1,2,4-trichlorobenzene		----------NA----------					
120	M	hexachlorobutadiene		----------NA----------					
121	M	naphthalene		----------NA----------					
122	M	1,2,3-trichlorobenzene		----------NA----------					
123	m	hexachloroethane		----------NA----------					
124		2-methylnaphthalene		----------NA----------					
125		pentafluorobenzene(a)	1.000	1.000	0.0	110	0.00	11.07	
126		freon 142B		----------NA----------					

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4D114635.D M4D5098.M Tue Jan 18 09:23:36 2022

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114648.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\V4D5098\4D114648.D Vial: 22
Acq On : 17 Jan 2022 5:29 pm Operator: nicoleh
Sample : icv5098-50 Inst : MS4D
Misc : MS56060,V4D5098,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M4D5098.M (RTE Integrator)
Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
Last Update : Mon Jan 17 15:07:58 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		tert butyl alcohol-d9	1.000	1.000	0.0	100	0.00	8.58
2	M	tertiary butyl alcohol		----------NA----------				
3		ethanol		----------NA----------				
4	M	1,4-dioxane		----------NA----------				
5	I	pentafluorobenzene	1.000	1.000	0.0	109	0.00	11.06
6	M	chlorodifluoromethane		----------NA----------				
7	M	dichlorodifluoromethane	0.537	0.561	-4.5	110	0.00	4.58
8	M	chloromethane	0.529	0.539	-1.9	116	0.00	5.06
9	M	vinyl chloride	0.506	0.529	-4.5	113	0.00	5.33
10		1,3-butadiene		----------NA----------				
11	M	bromomethane	0.254	0.210	17.3	96	0.01	6.11
12	M	chloroethane	0.231	0.254	-10.0	116	0.00	6.33
13	M	trichlorofluoromethane	0.590	0.653	-10.7	114	0.00	6.90
14		vinyl bromide		----------NA----------				
15	M	ethyl ether		----------NA----------				
16	M	acrolein		----------NA----------				
17		freon 113		----------NA----------				
18	M	1,1-dichloroethene		----------NA----------				
19	M	acetone		----------NA----------				
20	M	acetonitrile		----------NA----------				
21	M	iodomethane		----------NA----------				
22	M	carbon disulfide		----------NA----------				
23	M	methylene chloride		----------NA----------				
24	M	methyl acetate		----------NA----------				
25	M	methyl tert butyl ether		----------NA----------				
26	M	trans-1,2-dichloroethene		----------NA----------				
27	M	di-isopropyl ether		----------NA----------				
28	M	2-butanone		----------NA----------				
29	M	1,1-dichloroethane		----------NA----------				
30	M	chloroprene		----------NA----------				
31	M	acrylonitrile		----------NA----------				
32		hexane		----------NA----------				
33	M	vinyl acetate		----------NA----------				
34	M	ethyl tert-butyl ether		----------NA----------				
35	M	ethyl acetate		----------NA----------				
36	M	2,2-dichloropropane		----------NA----------				
37	M	cis-1,2-dichloroethene		----------NA----------				
38		methyl acrylate		----------NA----------				
39	M	propionitrile		----------NA----------				
40	M	bromochloromethane		----------NA----------				
41	M	tetrahydrofuran		----------NA----------				

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114648.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	M	chloroform		----------NA----------				
43	M	t-butyl formate		----------NA----------				
44	S	dibromofluoromethane (s)	0.400	0.398	0.5	109	0.00	11.06
45	M	methacrylonitrile		----------NA----------				
46	M	1,1,1-trichloroethane		----------NA----------				
47		cyclohexane		----------NA----------				
48		1,1-dichloropropene		----------NA----------				
49		isobutyl alcohol		----------NA----------				
50		carbon tetrachloride		----------NA----------				
51		tert amyl alcohol		----------NA----------				
52	I	1,4-difluorobenzene	1.000	1.000	0.0	107	0.00	11.96
53	S	1,2-dichloroethane-d4 (s)	0.305	0.312	-2.3	112	0.00	11.49
54	M	n-butyl alcohol		----------NA----------				
55		2,2,4-trimethylpentane		----------NA----------				
56	M	benzene		----------NA----------				
57	M	tert-amyl methyl ether		----------NA----------				
58	M	heptane		----------NA----------				
59	M	isopropyl acetate		----------NA----------				
60	M	1,2-dichloroethane		----------NA----------				
61	M	trichloroethene		----------NA----------				
62		ethyl acrylate		----------NA----------				
63	M	2-nitropropane		----------NA----------				
64	M	2-chloroethyl vinyl ether		----------NA----------				
65	M	methyl methacrylate		----------NA----------				
66	M	1,2-dichloropropane		----------NA----------				
67	M	dibromomethane		----------NA----------				
68	M	methylcyclohexane		----------NA----------				
69	M	bromodichloromethane		----------NA----------				
70		epichlorohydrin		----------NA----------				
71	M	cis-1,3-dichloropropene		----------NA----------				
72	M	4-methyl-2-pentanone		----------NA----------				
73	M	3-methyl-1-butanol		----------NA----------				
74	I	chlorobenzene-d5	1.000	1.000	0.0	102	0.00	14.86
75	S	toluene-d8 (s)	1.287	1.295	-0.6	106	0.00	13.50
76		toluene		----------NA----------				
77		trans-1,3-dichloropropene		----------NA----------				
78		ethyl methacrylate		----------NA----------				
79		1,1,2-trichloroethane		----------NA----------				
80	M	tetrachloroethene		----------NA----------				
81	M	1,3-dichloropropane		----------NA----------				
82		2-hexanone		----------NA----------				
83	M	butyl acetate		----------NA----------				
84	M	dibromochloromethane		----------NA----------				
85	M	1,2-dibromoethane		----------NA----------				
86		n-butyl ether		----------NA----------				
87	M	chlorobenzene		----------NA----------				
88	M	1,1,1,2-tetrachloroethane		----------NA----------				
89	M	ethylbenzene		----------NA----------				
90	M	m,p-xylene		----------NA----------				
91	M	o-xylene		----------NA----------				
92	M	styrene		----------NA----------				
93	M	bromoform		----------NA----------				
94		butyl acrylate		----------NA----------				
95		isopropylbenzene		----------NA----------				
96		cis-1,4-dichloro-2-butene		----------NA----------				
97	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	106	0.00	16.97
98	S	4-bromofluorobenzene (s)	1.044	1.026	1.7	105	0.00	15.90

Initial Calibration Verification

Job Number: JD40008 **Sample:** V4D5098-ICV5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D114648.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	M	bromobenzene	----------NA----------						
100	M	1,1,2,2-tetrachloroethane	----------NA----------						
101	M	trans-1,4-dichloro-2-bute	----------NA----------						
102	M	1,2,3-trichloropropane	----------NA----------						
103	M	n-propylbenzene	----------NA----------						
104	M	2-chlorotoluene	----------NA----------						
105	M	4-chlorotoluene	----------NA----------						
106	M	1,3,5-trimethylbenzene	----------NA----------						
107	M	tert-butylbenzene	----------NA----------						
108	M	1,2,4-trimethylbenzene	----------NA----------						
109	M	sec-butylbenzene	----------NA----------						
110	M	1,3-dichlorobenzene	----------NA----------						
111	M	p-isopropyltoluene	----------NA----------						
112	M	1,4-dichlorobenzene	----------NA----------						
113		1,2,3-trimethylbenzene	----------NA----------						
114		benzyl chloride	----------NA----------						
115	M	1,2-dichlorobenzene	----------NA----------						
116	M	n-butylbenzene	----------NA----------						
117	M	1,2-dibromo-3-chloropropa	----------NA----------						
118		1,3,5-trichlorobenzene	----------NA----------						
119	M	1,2,4-trichlorobenzene	----------NA----------						
120	M	hexachlorobutadiene	----------NA----------						
121	M	naphthalene	----------NA----------						
122	M	1,2,3-trichlorobenzene	----------NA----------						
123	m	hexachloroethane	----------NA----------						
124		2-methylnaphthalene	----------NA----------						
125		pentafluorobenzene(a)	1.000	1.000	0.0	109	0.00	11.06	
126		freon 142B	----------NA----------						

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4D114635.D M4D5098.M Tue Jan 18 09:30:50 2022

Continuing Calibration Summary

Job Number: JD40008 **Sample:** V4D5151-CC5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D115898.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\kr...22\v4d5151\4d115898.d Vial: 28
Acq On : 22 Feb 2022 9:59 pm Operator: BridgetK
Sample : cc5098-50 Inst : MS4D
Misc : MS56828,V4D5151,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M4D5098.M (RTE Integrator)
Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
Last Update : Mon Jan 17 15:07:58 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		tert butyl alcohol-d9	1.000	1.000	0.0	109	0.00	8.58
2	M	tertiary butyl alcohol	1.336	1.493	-11.8	119	0.00	8.72
3		ethanol	0.146	0.164	-12.3	115	0.00	7.13
4	M	1,4-dioxane	0.141	0.130	7.8	96	0.00	12.62
5	I	pentafluorobenzene	1.000	1.000	0.0	86	0.00	11.07
6	M	chlorodifluoromethane	0.476	0.495	-4.0	89	0.00	4.60
7	M	dichlorodifluoromethane	0.537	0.460	14.3	72	0.01	4.58
8	M	chloromethane	0.529	0.485	8.3	83	0.00	5.06
9	M	vinyl chloride	0.506	0.453	10.5	77	0.00	5.33
10		1,3-butadiene	0.428	0.483	-12.9	102	0.00	5.43
11	M	bromomethane	0.254	0.167	34.3#	61	0.00	6.09
12	M	chloroethane	0.231	0.258	-11.7	93	0.00	6.33
13	M	trichlorofluoromethane	0.590	0.624	-5.8	87	0.00	6.90
14		vinyl bromide		----------NA----------				
15	M	ethyl ether	0.162	0.191	-17.9	96	0.00	7.43
16	M	acrolein	0.060	0.078	-30.0#	106	0.00	7.63
17		freon 113	0.251	0.286	-13.9	91	0.00	7.88
18	M	1,1-dichloroethene	0.318	0.327	-2.8	94	0.00	7.88
19	M	acetone	0.136	0.140	-2.9	88	0.00	7.88
20	M	acetonitrile	0.045	0.064	-42.2#	126	0.00	8.32
21	M	iodomethane	0.239	0.274	-14.6	67	0.00	8.16
22	M	carbon disulfide	0.903	0.975	-8.0	95	0.00	8.33
23	M	methylene chloride	0.364	0.365	-0.3	94	0.00	8.64
24	M	methyl acetate	0.246	0.353	-43.5#	119	0.00	8.45
25	M	methyl tert butyl ether	0.899	0.974	-8.3	95	0.00	9.09
26	M	trans-1,2-dichloroethene	0.352	0.349	0.9	92	0.00	9.10
27	M	di-isopropyl ether	1.037	1.404	-35.4#	116	0.00	9.77
28	M	2-butanone	0.041	0.043	-4.9	92	0.00	10.45
29	M	1,1-dichloroethane	0.605	0.707	-16.9	101	0.00	9.71
30	M	chloroprene	0.465	0.615	-32.3#	109	0.00	9.85
31	M	acrylonitrile	0.119	0.138	-16.0	99	0.00	8.97
32		hexane	0.203	0.244	-20.2#	99	0.00	9.53
33	M	vinyl acetate	0.058	0.073	-25.9#	108	0.00	9.71
34	M	ethyl tert-butyl ether	1.035	1.175	-13.5	97	0.00	10.27
35	M	ethyl acetate	0.038	0.046	-21.1#	99	0.00	10.50
36	M	2,2-dichloropropane	0.479	0.497	-3.8	92	0.00	10.52
37	M	cis-1,2-dichloroethene	0.394	0.391	0.8	91	0.00	10.49
38		methyl acrylate	0.303	0.413	-36.3#	112	0.00	10.58
39	M	propionitrile	0.050	0.067	-34.0#	112	0.00	10.49
40	M	bromochloromethane	0.187	0.193	-3.2	89	0.00	10.80
41	M	tetrahydrofuran	0.048	0.052	-8.3	99	0.00	10.88

Continuing Calibration Summary

Job Number: JD40008 **Sample:** V4D5151-CC5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D115898.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	M	chloroform	0.440	0.450	-2.3	94	0.00	10.87
43	M	t-butyl formate	0.243	0.194	20.2#	68	0.00	10.95
44	S	dibromofluoromethane (s)	0.400	0.394	1.5	86	0.00	11.06
45	M	methacrylonitrile	0.127	0.157	-23.6#	100	0.00	10.72
46	M	1,1,1-trichloroethane	0.544	0.594	-9.2	94	0.00	11.18
47		cyclohexane	0.424	0.459	-8.3	92	0.00	11.29
48		1,1-dichloropropene	0.434	0.481	-10.8	98	0.00	11.36
49		isobutyl alcohol	0.003	0.003	0.0	99	0.00	11.37
50		carbon tetrachloride	0.493	0.518	-5.1	88	0.00	11.40
51		tert amyl alcohol	0.012	0.016	-33.3#	116	0.00	11.45
52	I	1,4-difluorobenzene	1.000	1.000	0.0	86	0.00	11.96
53	S	1,2-dichloroethane-d4 (s)	0.305	0.326	-6.9	95	0.00	11.49
54	M	n-butyl alcohol	0.008	0.008	0.0	87	0.00	12.03
55		2,2,4-trimethylpentane	0.593	0.629	-6.1	91	0.00	11.69
56	M	benzene	0.983	1.048	-6.6	92	0.00	11.61
57	M	tert-amyl methyl ether	0.174	0.177	-1.7	87	0.00	11.68
58	M	heptane	0.116	0.122	-5.2	89	0.00	11.85
59	M	isopropyl acetate	0.054	0.060	-11.1	95	0.00	11.54
60	M	1,2-dichloroethane	0.410	0.428	-4.4	96	0.00	11.58
61	M	trichloroethene	0.287	0.297	-3.5	87	0.00	12.29
62		ethyl acrylate	0.340	0.453	-33.2#	112	0.00	12.29
63	M	2-nitropropane	0.091	0.104	-14.3	97	0.00	12.94
64	M	2-chloroethyl vinyl ether		----------NA----------				
65	M	methyl methacrylate	0.063	0.075	-19.0	93	0.00	12.54
66	M	1,2-dichloropropane	0.278	0.322	-15.8	99	0.00	12.52
67	M	dibromomethane	0.193	0.195	-1.0	88	0.00	12.64
68	M	methylcyclohexane	0.323	0.330	-2.2	84	0.00	12.55
69	M	bromodichloromethane	0.374	0.389	-4.0	89	0.00	12.76
70		epichlorohydrin	0.019	0.014	26.3#	56	0.00	13.08
71	M	cis-1,3-dichloropropene	0.430	0.456	-6.0	91	0.00	13.20
72	M	4-methyl-2-pentanone	0.104	0.127	-22.1#	101	0.00	13.29
73	M	3-methyl-1-butanol	0.006	0.006	0.0	77	0.00	13.28
74	I	chlorobenzene-d5	1.000	1.000	0.0	77	0.00	14.86
75	S	toluene-d8 (s)	1.287	1.340	-4.1	82	0.00	13.50
76		toluene	0.765	0.835	-9.2	85	0.00	13.57
77		trans-1,3-dichloropropene	0.487	0.540	-10.9	85	0.00	13.70
78		ethyl methacrylate	0.389	0.470	-20.8#	89	0.00	13.72
79		1,1,2-trichloroethane	0.247	0.297	-20.2#	88	0.00	13.89
80	M	tetrachloroethene	0.305	0.325	-6.6	82	0.00	14.11
81	M	1,3-dichloropropane	0.481	0.552	-14.8	87	0.00	14.06
82		2-hexanone	0.132	0.166	-25.8#	94	0.00	14.06
83	M	butyl acetate	0.207	0.280	-35.3#	102	0.00	14.15
84	M	dibromochloromethane	0.403	0.434	-7.7	83	0.00	14.30
85	M	1,2-dibromoethane	0.339	0.378	-11.5	85	0.00	14.45
86		n-butyl ether	1.417	1.700	-20.0	91	0.00	14.84
87	M	chlorobenzene	0.894	0.925	-3.5	82	0.00	14.89
88	M	1,1,1,2-tetrachloroethane	0.342	0.364	-6.4	80	0.00	14.93
89	M	ethylbenzene	1.441	1.500	-4.1	81	0.00	14.95
90	M	m,p-xylene	0.548	0.563	-2.7	78	0.00	15.05
91	M	o-xylene	0.541	0.555	-2.6	75	0.00	15.42
92	M	styrene	0.886	0.938	-5.9	76	0.00	15.42
93	M	bromoform	0.292	0.307	-5.1	77	0.00	15.63
94		butyl acrylate	0.631	0.798	-26.5#	91	0.00	15.25
95		isopropylbenzene	1.333	1.337	-0.3	76	0.00	15.74
96		cis-1,4-dichloro-2-butene	0.132	0.095	28.0#	49#	0.00	15.75
97	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	75	0.00	16.97
98	S	4-bromofluorobenzene (s)	1.044	1.024	1.9	74	0.00	15.90

Continuing Calibration Summary

Job Number: JD40008 **Sample:** V4D5151-CC5098
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4D115898.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	M	bromobenzene	0.885	0.930	-5.1	82	0.00	16.08
100	M	1,1,2,2-tetrachloroethane	0.944	1.078	-14.2	86	0.00	15.95
101	M	trans-1,4-dichloro-2-bute	0.260	0.195	25.0#	52	0.00	16.00
102	M	1,2,3-trichloropropane	0.257	0.269	-4.7	81	0.00	16.03
103	M	n-propylbenzene	3.558	3.611	-1.5	76	0.00	16.11
104	M	2-chlorotoluene	0.758	0.790	-4.2	77	0.00	16.23
105	M	4-chlorotoluene	2.283	2.265	0.8	76	0.00	16.32
106	M	1,3,5-trimethylbenzene	2.370	2.431	-2.6	76	0.00	16.24
107	M	tert-butylbenzene	0.439	0.445	-1.4	72	0.00	16.57
108	M	1,2,4-trimethylbenzene	2.422	2.507	-3.5	74	0.00	16.60
109	M	sec-butylbenzene	2.806	2.724	2.9	71	0.00	16.77
110	M	1,3-dichlorobenzene	1.506	1.498	0.5	75	0.00	16.92
111	M	p-isopropyltoluene	2.273	2.287	-0.6	71	0.00	16.87
112	M	1,4-dichlorobenzene	1.596	1.523	4.6	75	0.00	16.99
113		1,2,3-trimethylbenzene	2.475	2.396	3.2	71	0.00	17.01
114		benzyl chloride	1.305	1.412	-8.2	78	0.00	17.08
115	M	1,2-dichlorobenzene	1.396	1.443	-3.4	75	0.00	17.35
116	M	n-butylbenzene	1.040	1.027	1.3	68	0.00	17.26
117	M	1,2-dibromo-3-chloropropa	0.199	0.218	-9.5	77	0.00	18.04
118		1,3,5-trichlorobenzene	0.818	0.919	-12.3	79	0.00	18.27
119	M	1,2,4-trichlorobenzene	0.688	0.751	-9.2	76	0.00	18.86
120	M	hexachlorobutadiene	0.320	0.309	3.4	73	0.00	19.00
121	M	naphthalene	1.900	2.029	-6.8	82	0.00	19.12
122	M	1,2,3-trichlorobenzene	0.597	0.668	-11.9	80	0.00	19.34
123	m	hexachloroethane	0.380	0.382	-0.5	70	0.00	17.62
124		2-methylnaphthalene	0.598	7.432	-1142.8#	872#	0.00	20.20
125		pentafluorobenzene(a)	1.000	1.000	0.0	86	0.00	11.07
126		freon 142B		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4D114635.D M4D5098.M Thu Feb 24 02:11:16 2022

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: V2C8388	**Method:** SW846 8260D	**Instrument ID:** GCMS2C

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2C8388-BFB	2C188523.D	01/19/22 14:42	n/a	BFB Tune
V2C8388-IC8388	2C188524.D	01/19/22 18:41	n/a	Initial cal 0.2
V2C8388-IC8388	2C188525.D	01/19/22 19:10	n/a	Initial cal 0.5
V2C8388-IC8388	2C188526.D	01/19/22 19:40	n/a	Initial cal 1
V2C8388-IC8388	2C188527.D	01/19/22 20:09	n/a	Initial cal 2
V2C8388-IC8388	2C188528.D	01/19/22 20:38	n/a	Initial cal 4
V2C8388-IC8388	2C188529.D	01/19/22 21:07	n/a	Initial cal 8
V2C8388-IC8388	2C188530.D	01/19/22 21:36	n/a	Initial cal 20
V2C8388-ICC8388	2C188531.D	01/19/22 22:06	n/a	Initial cal 50
V2C8388-IC8388	2C188532.D	01/19/22 22:35	n/a	Initial cal 100
V2C8388-IC8388	2C188533.D	01/19/22 23:04	n/a	Initial cal 200
V2C8388-ICV8388	2C188537.D	01/20/22 01:02	n/a	Initial cal verification 50
V2C8388-ICV8388	2C188538.D	01/20/22 01:31	n/a	Initial cal verification 50

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: V2C8406	**Method:** SW846 8260D	**Instrument ID:** GCMS2C

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V2C8406-BFB	2C188968.D	02/24/22 10:31	n/a	BFB Tune
V2C8406-CC8388	2C188968.D	02/24/22 10:31	n/a	Continuing cal 20
V2C8406-BS	2C188970.D	02/24/22 11:52	n/a	Blank Spike
V2C8406-MB	2C188972.D	02/24/22 12:50	n/a	Method Blank
ZZZZZZ	2C188973.D	02/24/22 13:19	n/a	(unrelated sample)
JD40008-1	2C188974.D	02/24/22 13:48	n/a	N-167_20220216
JD40008-3	2C188975.D	02/24/22 14:17	n/a	N-169_20220217
ZZZZZZ	2C188976.D	02/24/22 14:47	n/a	(unrelated sample)
ZZZZZZ	2C188977.D	02/24/22 15:16	n/a	(unrelated sample)
ZZZZZZ	2C188978.D	02/24/22 15:45	n/a	(unrelated sample)
ZZZZZZ	2C188979.D	02/24/22 16:14	n/a	(unrelated sample)
JD40008-2	2C188980.D	02/24/22 17:40	n/a	N-168_20220217
ZZZZZZ	2C188981.D	02/24/22 18:09	n/a	(unrelated sample)
JD40008-4	2C188982.D	02/24/22 18:38	n/a	N-165_20220217
JD40038-3MS	2C188983.D	02/24/22 19:07	n/a	Matrix Spike
JD40038-3MSD	2C188984.D	02/24/22 19:35	n/a	Matrix Spike Duplicate
ZZZZZZ	2C188986.D	02/24/22 20:34	n/a	(unrelated sample)
ZZZZZZ	2C188987.D	02/24/22 21:03	n/a	(unrelated sample)
JD40038-3	2C188988.D	02/24/22 21:32	n/a	(used for QC only; not part of job JD40008)
ZZZZZZ	2C188989.D	02/24/22 22:01	n/a	(unrelated sample)
ZZZZZZ	2C188990.D	02/24/22 22:30	n/a	(unrelated sample)

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: V4D5098	**Method:** SW846 8260D	**Instrument ID:** GCMS4D

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V4D5098-BFB	4D114627.D	01/14/22 21:51	n/a	BFB Tune
V4D5098-IC5098	4D114628.D	01/14/22 22:35	n/a	Initial cal 0.2
V4D5098-IC5098	4D114629.D	01/14/22 23:04	n/a	Initial cal 0.5
V4D5098-IC5098	4D114630.D	01/14/22 23:32	n/a	Initial cal 1
V4D5098-IC5098	4D114631.D	01/15/22 00:01	n/a	Initial cal 2
V4D5098-IC5098	4D114632.D	01/15/22 00:29	n/a	Initial cal 4
V4D5098-IC5098	4D114633.D	01/15/22 00:58	n/a	Initial cal 8
V4D5098-IC5098	4D114634.D	01/15/22 01:26	n/a	Initial cal 20
V4D5098-ICC5098	4D114635.D	01/15/22 01:54	n/a	Initial cal 50
V4D5098-IC5098	4D114636.D	01/15/22 02:23	n/a	Initial cal 100
V4D5098-IC5098	4D114637.D	01/15/22 02:51	n/a	Initial cal 200
V4D5098-ICV5098	4D114641.D	01/15/22 04:45	n/a	Initial cal verification 50
V4D5098-ICV5098	4D114642.D	01/15/22 05:13	n/a	Initial cal verification 50
V4D5098-BFB2	4D114647.D	01/17/22 16:40	n/a	BFB Tune
V4D5098-ICV5098	4D114648.D	01/17/22 17:29	n/a	Initial cal verification 50

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: V4D5151	**Method:** SW846 8260D	**Instrument ID:** GCMS4D

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
V4D5151-BFB	4D115898.D	02/22/22 21:59	n/a	BFB Tune
V4D5151-CC5098	4D115898.D	02/22/22 21:59	n/a	Continuing cal 50
V4D5151-BS	4D115900.D	02/22/22 22:56	n/a	Blank Spike
V4D5151-MB	4D115902.D	02/22/22 23:54	n/a	Method Blank
JD40008-5	4D115903.D	02/23/22 00:22	n/a	TRIP BLANK
JD39923-9	4D115904.D	02/23/22 00:51	n/a	(used for QC only; not part of job JD40008)
JD39923-9MS	4D115905.D	02/23/22 01:20	n/a	Matrix Spike
JD39923-9MSD	4D115906.D	02/23/22 01:49	n/a	Matrix Spike Duplicate
ZZZZZZ	4D115909.D	02/23/22 03:15	n/a	(unrelated sample)
ZZZZZZ	4D115910.D	02/23/22 03:44	n/a	(unrelated sample)
ZZZZZZ	4D115911.D	02/23/22 04:12	n/a	(unrelated sample)
ZZZZZZ	4D115912.D	02/23/22 04:41	n/a	(unrelated sample)
ZZZZZZ	4D115914.D	02/23/22 05:39	n/a	(unrelated sample)
ZZZZZZ	4D115915.D	02/23/22 06:07	n/a	(unrelated sample)
JD40008-4	4D115920.D	02/23/22 08:31	n/a	N-165_20220217

MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188974.d
Acq On : 24 Feb 2022 1:48 pm
Operator : nickw
Sample : jd40008-1 Inst : GCMS2C
Misc : MS56922,V2C8406,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:24:56 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

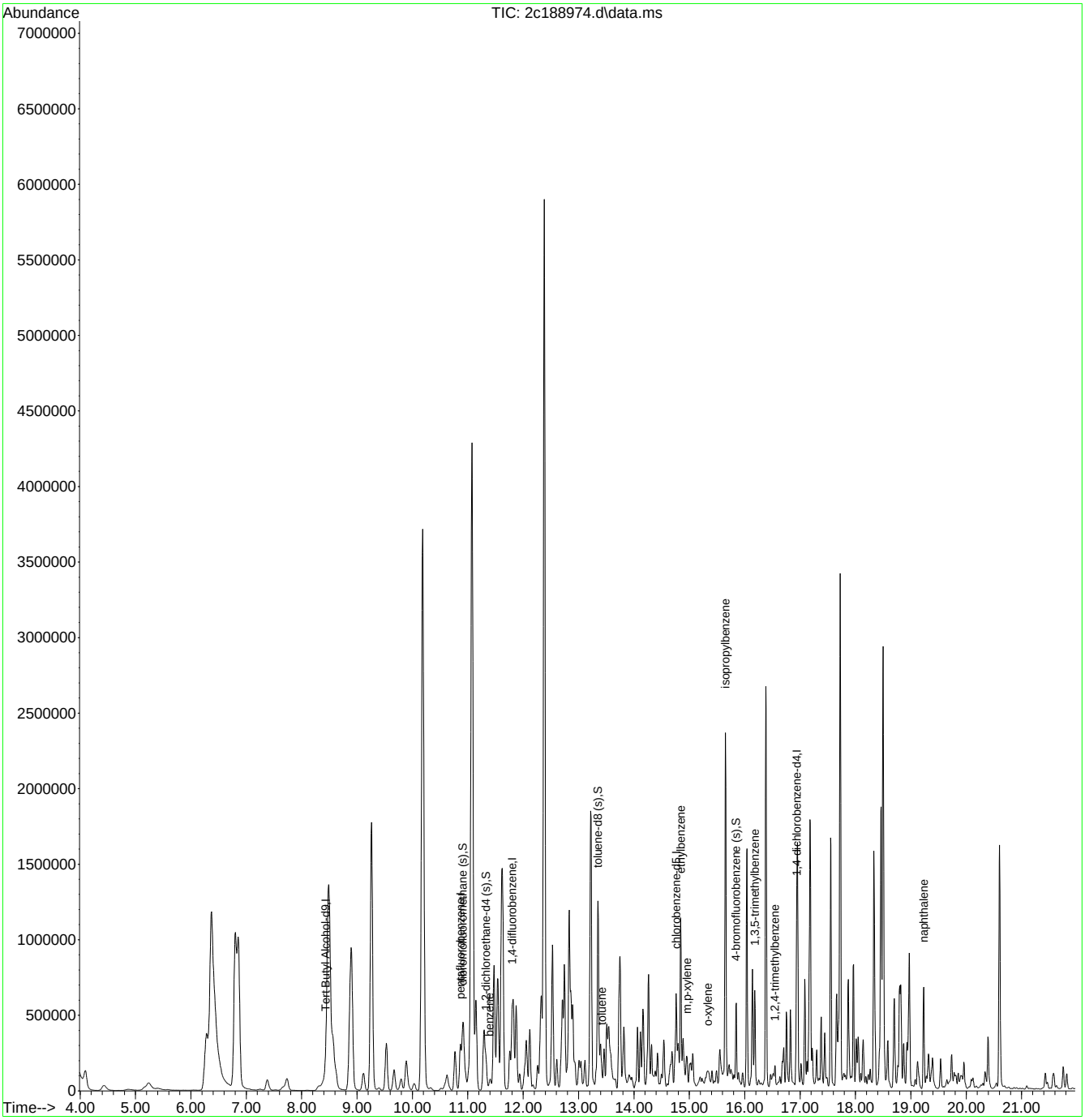
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.428	65	306134	500.00	ug/L	-0.02
5) pentafluorobenzene	10.866	168	236542	50.00	ug/L	0.00
49) 1,4-difluorobenzene	11.799	114	310599	50.00	ug/L	0.00
72) chlorobenzene-d5	14.761	117	291776	50.00	ug/L	0.00
95) 1,4-dichlorobenzene-d4	16.937	152	186283	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	10.902	113	103497	48.58	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.16%			
50) 1,2-dichloroethane-d4 (s)	11.327	65	122831	53.66	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 107.32%			
73) toluene-d8 (s)	13.346	98	376203	51.92	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.84%			
96) 4-bromofluorobenzene (s)	15.841	95	145468	45.98	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.96%			
Target Compounds						Qvalue
54) benzene	11.390	78	23313	2.81	ug/L	89
74) toluene	13.419	92	5377	1.02	ug/L	94
87) ethylbenzene	14.845	91	647417	60.86	ug/L	99
88) m,p-xylene	14.960	106	34999	8.68	ug/L	94
89) o-xylene	15.333	106	8918	2.08	ug/L	99
93) isopropylbenzene	15.653	105	1154673	98.13	ug/L	98
104) 1,3,5-trimethylbenzene	16.182	105	254684	24.02	ug/L	99
106) 1,2,4-trimethylbenzene	16.544	105	58278	5.38	ug/L	97
118) naphthalene	19.233	128	502780	41.28	ug/L	99

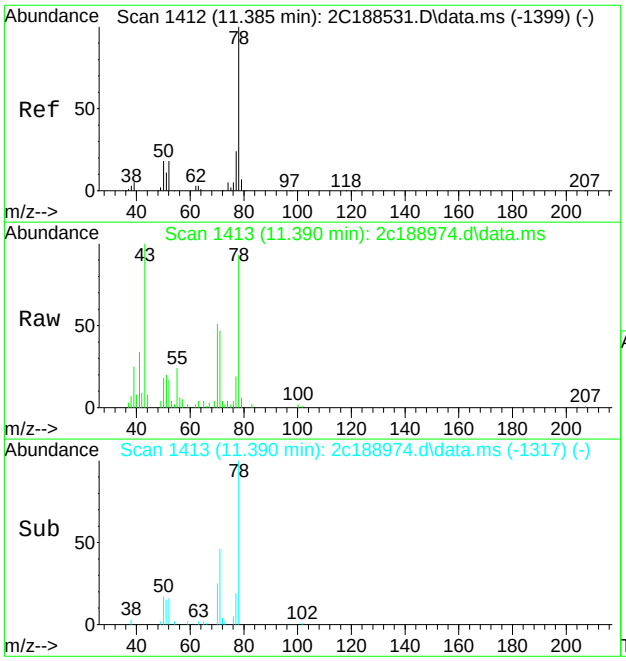
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188974.d
Acq On : 24 Feb 2022 1:48 pm
Operator : nickw
Sample : jd40008-1 Inst : GCMS2C
Misc : MS56922,V2C8406,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:24:56 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

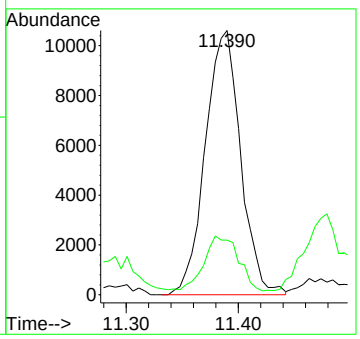


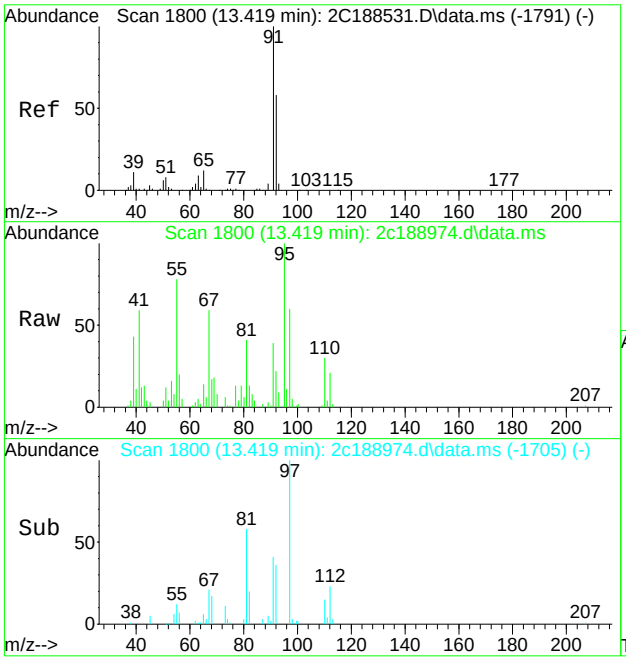


#54
benzene
Concen: 2.81 ug/L
RT: 11.390 min Scan# 1413
Delta R.T. 0.005 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion: 78 Resp: 23313

Ion	Ratio	Lower	Upper
78	100		
77	18.4	0.0	53.6

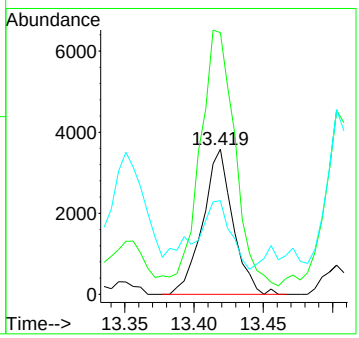


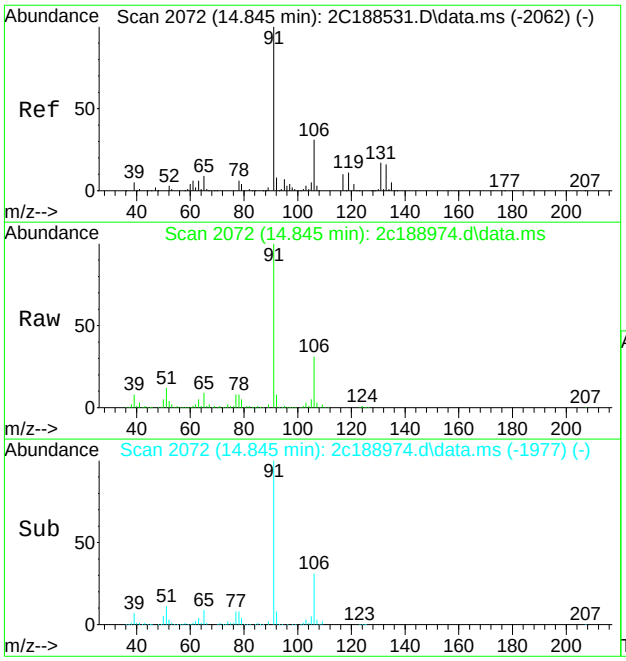


#74
toluene
Concen: 1.02 ug/L
RT: 13.419 min Scan# 1800
Delta R.T. 0.000 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion: 92 Resp: 5377

Ion	Ratio	Lower	Upper
92	100		
91	169.5	153.0	193.0
65	39.0	1.0	41.0

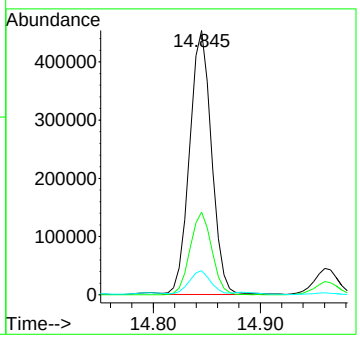


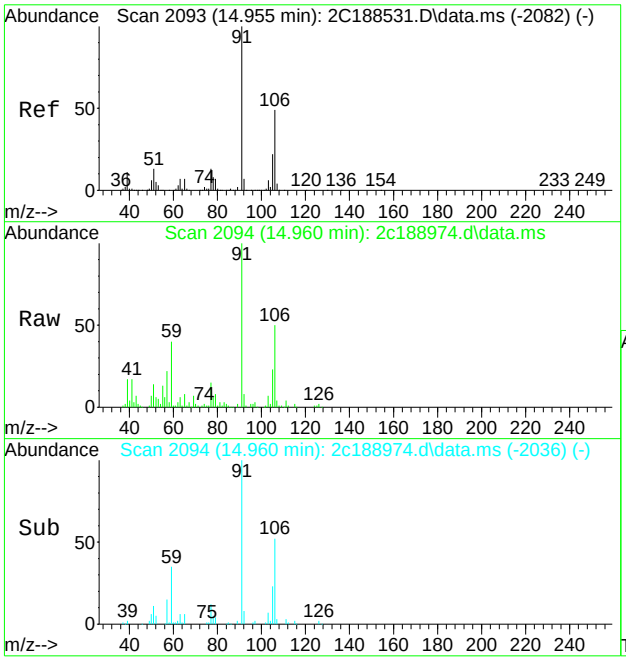


#87
ethylbenzene
Concen: 60.86 ug/L
RT: 14.845 min Scan# 2072
Delta R.T. 0.000 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion: 91 Resp: 647417

Ion	Ratio	Lower	Upper
91	100		
106	31.3	0.9	60.9
65	8.9	0.0	39.4

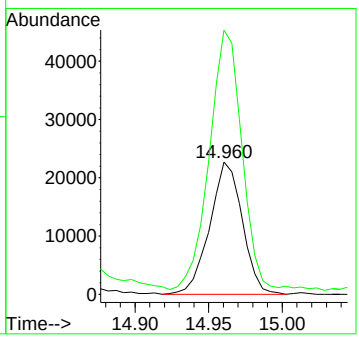


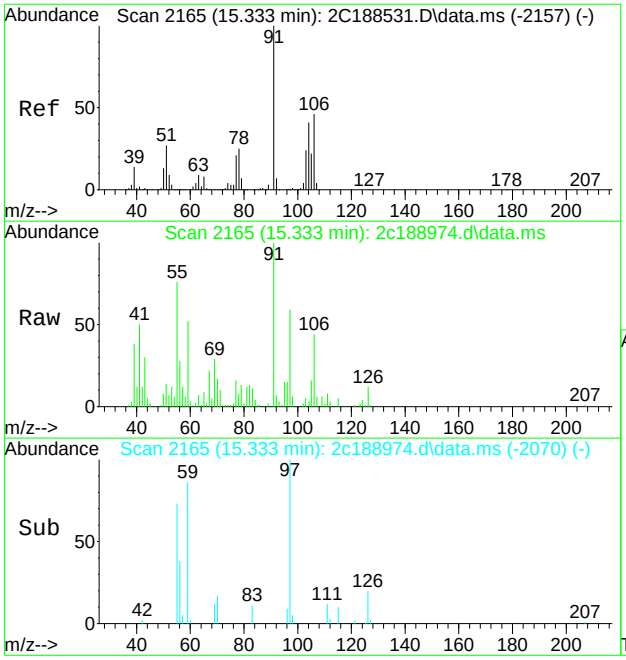


#88
m,p-xylene
Concen: 8.68 ug/L
RT: 14.960 min Scan# 2094
Delta R.T. 0.005 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion:106 Resp: 34999

Ion	Ratio	Lower	Upper
106	100		
91	194.0	173.9	233.9

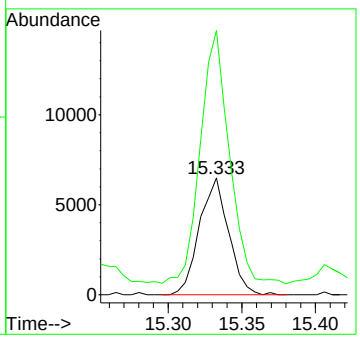


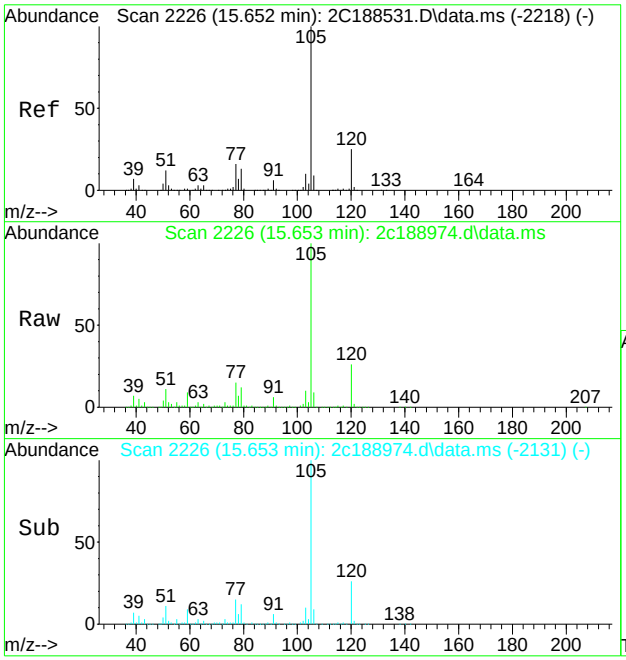


#89
o-xylene
Concen: 2.08 ug/L
RT: 15.333 min Scan# 2165
Delta R.T. 0.000 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion:106 Resp: 8918

Ion	Ratio	Lower	Upper
106	100		
91	217.0	189.2	249.2

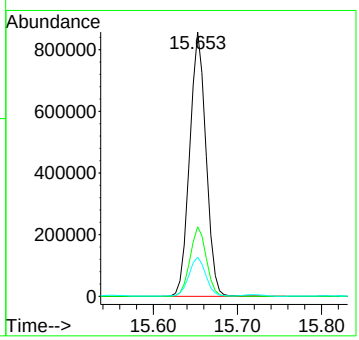


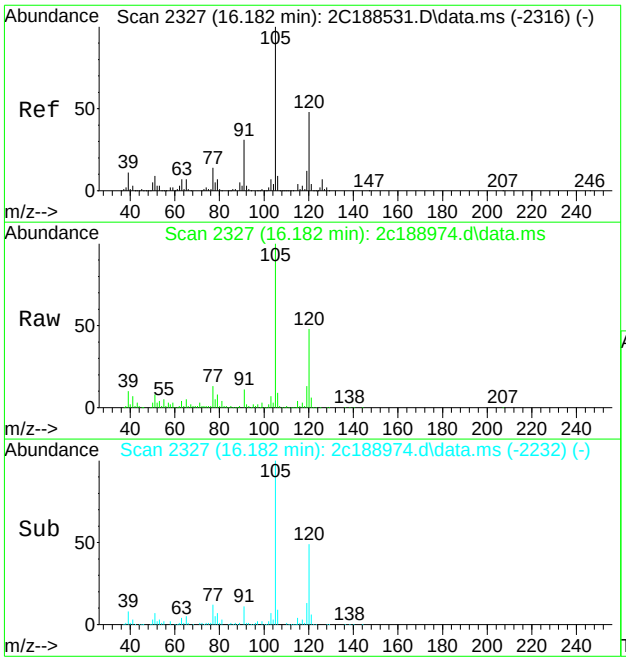


#93
isopropylbenzene
Concen: 98.13 ug/L
RT: 15.653 min Scan# 2226
Delta R.T. 0.000 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion:105 Resp: 1154673

Ion	Ratio	Lower	Upper
105	100		
120	26.3	5.3	45.3
77	14.8	0.0	35.9

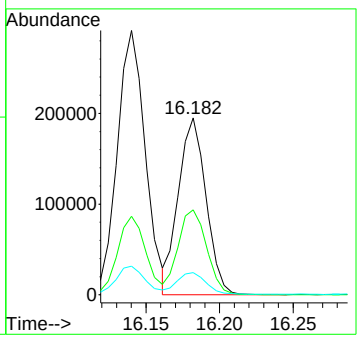


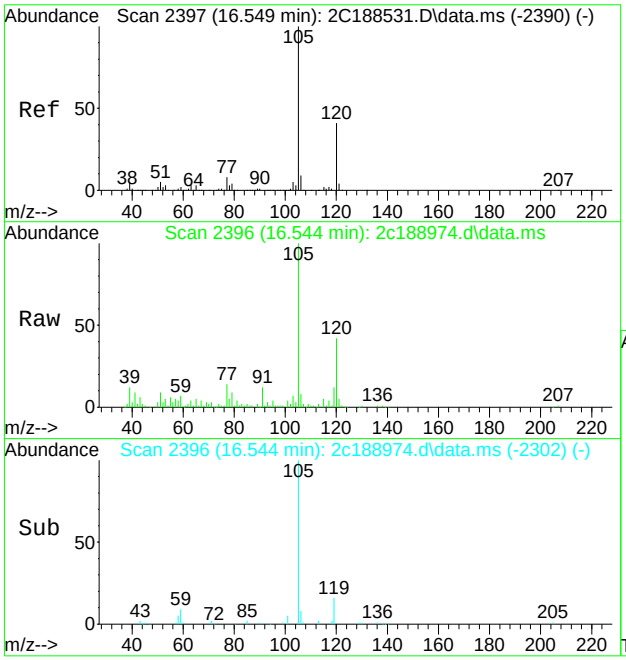


#104
1,3,5-trimethylbenzene
Concen: 24.02 ug/L
RT: 16.182 min Scan# 2327
Delta R.T. 0.000 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion:105 Resp: 254684

Ion	Ratio	Lower	Upper
105	100		
120	48.1	18.3	78.3
77	12.2	0.0	44.0

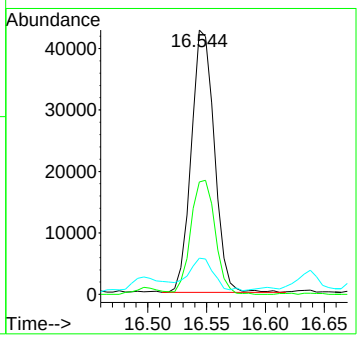


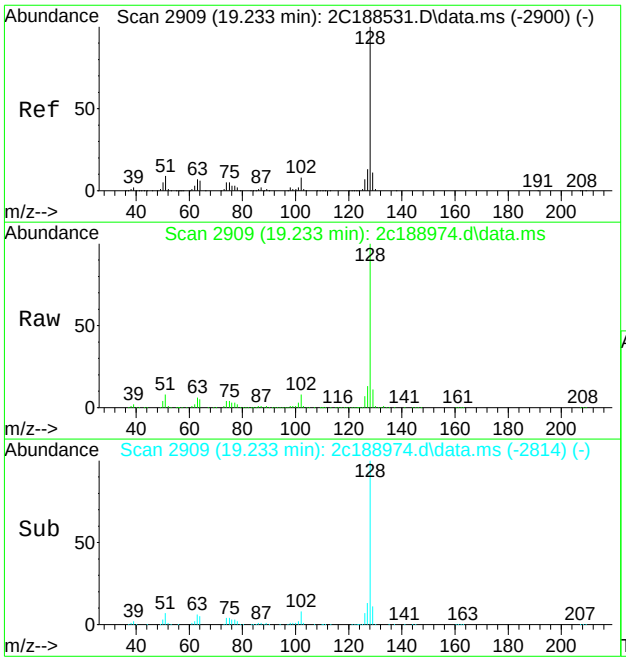


#106
1,2,4-trimethylbenzene
Concen: 5.38 ug/L
RT: 16.544 min Scan# 2396
Delta R.T. -0.005 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion:105 Resp: 58278

Ion	Ratio	Lower	Upper
105	100		
120	42.5	14.2	74.2
77	10.7	0.0	42.4

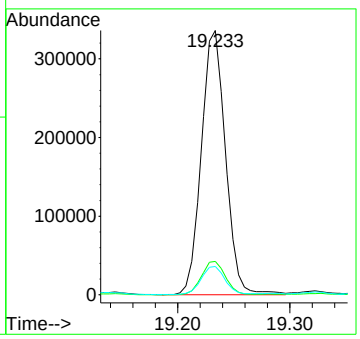




#118
naphthalene
Concen: 41.28 ug/L
RT: 19.233 min Scan# 2909
Delta R.T. 0.000 min
Lab File: 2c188974.d
Acq: 24 Feb 2022 1:48 pm

Tgt Ion:128 Resp: 502780

Ion	Ratio	Lower	Upper
128	100		
127	12.6	0.0	42.9
129	10.7	0.0	41.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188980.d
Acq On : 24 Feb 2022 5:40 pm
Operator : nickw
Sample : jd40008-2 Inst : GCMS2C
Misc : MS56922,V2C8406,5,,,,2
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:35:59 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

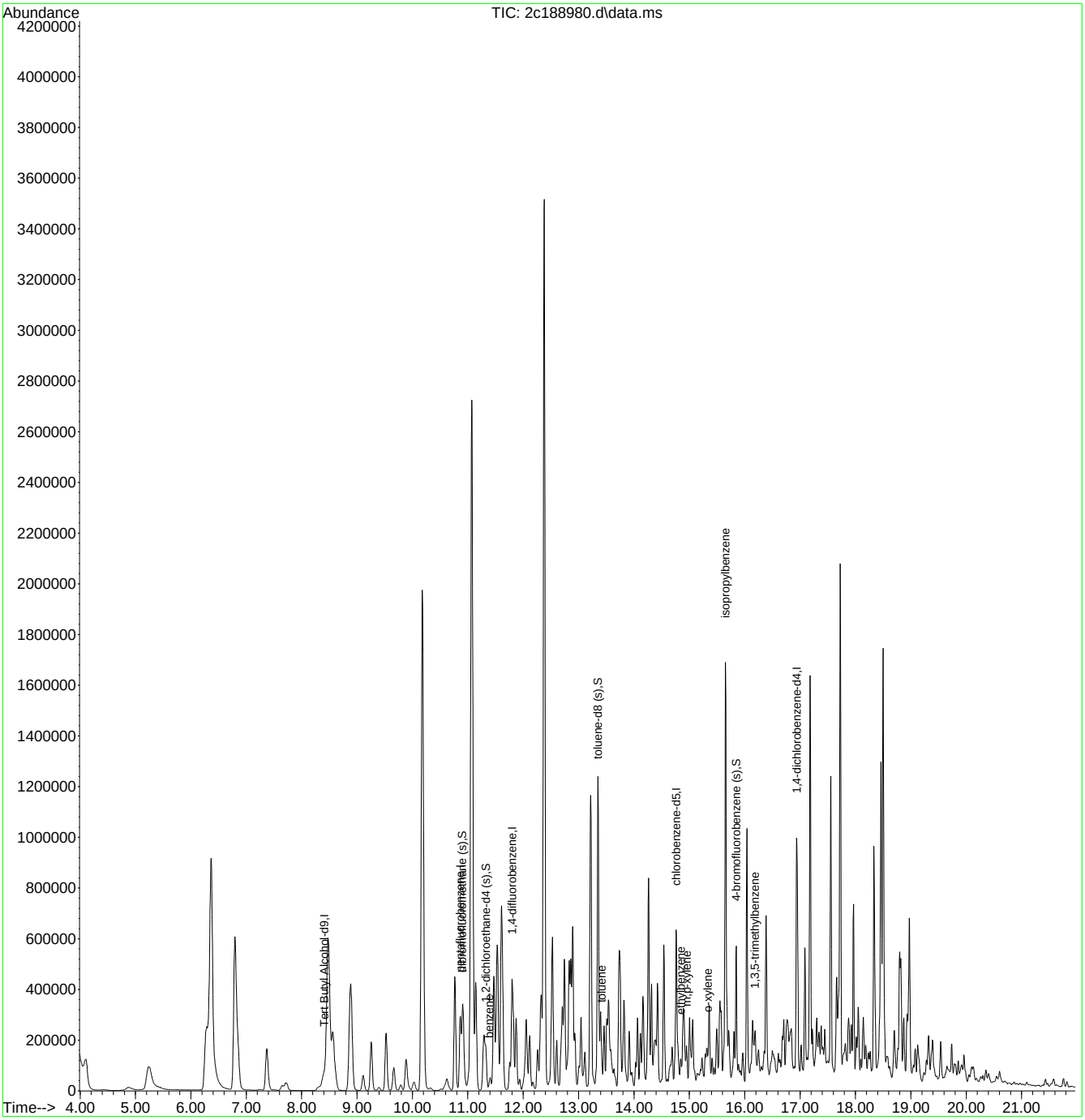
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.407	65	184835	500.00	ug/L	-0.04
5) pentafluorobenzene	10.860	168	222721	50.00	ug/L	0.00
49) 1,4-difluorobenzene	11.799	114	292590	50.00	ug/L	0.00
72) chlorobenzene-d5	14.761	117	278380	50.00	ug/L	0.00
95) 1,4-dichlorobenzene-d4	16.937	152	184010	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	10.897	113	92070	45.90	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.80%			
50) 1,2-dichloroethane-d4 (s)	11.327	65	104180	48.31	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 96.62%			
73) toluene-d8 (s)	13.346	98	360851	52.20	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.40%			
96) 4-bromofluorobenzene (s)	15.847	95	141367	45.24	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.48%			
Target Compounds						Qvalue
54) benzene	11.385	78	6800	0.87	ug/L	97
74) toluene	13.414	92	20395	4.06	ug/L	99
87) ethylbenzene	14.845	91	32897	3.24	ug/L	98
88) m,p-xylene	14.955	106	15766	4.10	ug/L	81
89) o-xylene	15.333	106	4860	1.19	ug/L	99
93) isopropylbenzene	15.653	105	807162	71.90	ug/L	99
104) 1,3,5-trimethylbenzene	16.182	105	14157	1.35	ug/L	95

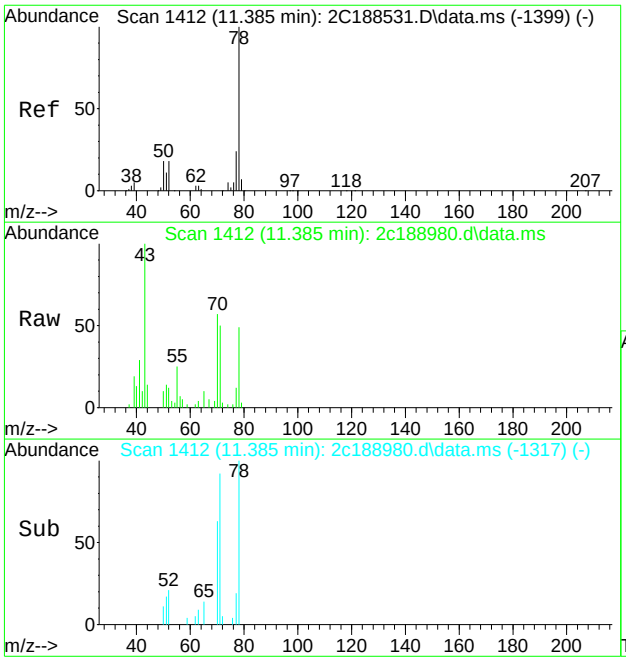
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188980.d
Acq On : 24 Feb 2022 5:40 pm
Operator : nickw
Sample : jd40008-2 Inst : GCMS2C
Misc : MS56922,V2C8406,5,,,,2
ALS Vial : 15 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:35:59 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

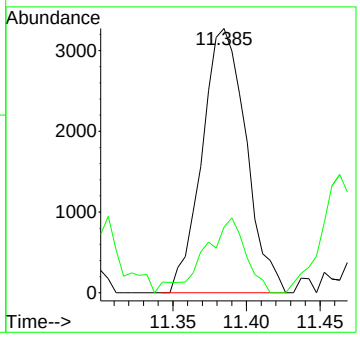


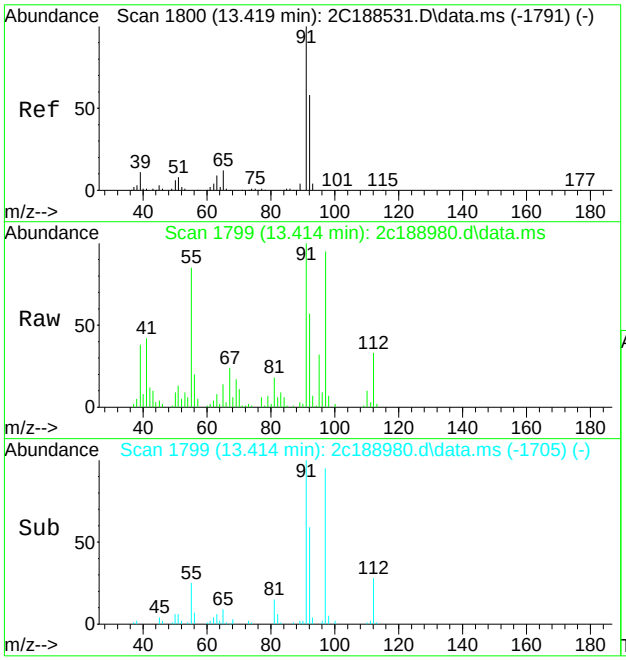


#54
benzene
Concen: 0.87 ug/L
RT: 11.385 min Scan# 1412
Delta R.T. 0.000 min
Lab File: 2c188980.d
Acq: 24 Feb 2022 5:40 pm

Tgt Ion: 78 Resp: 6800

Ion	Ratio	Lower	Upper
78	100		
77	24.9	0.0	53.6

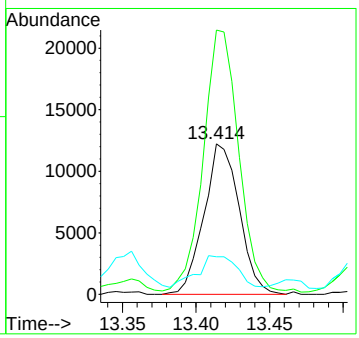


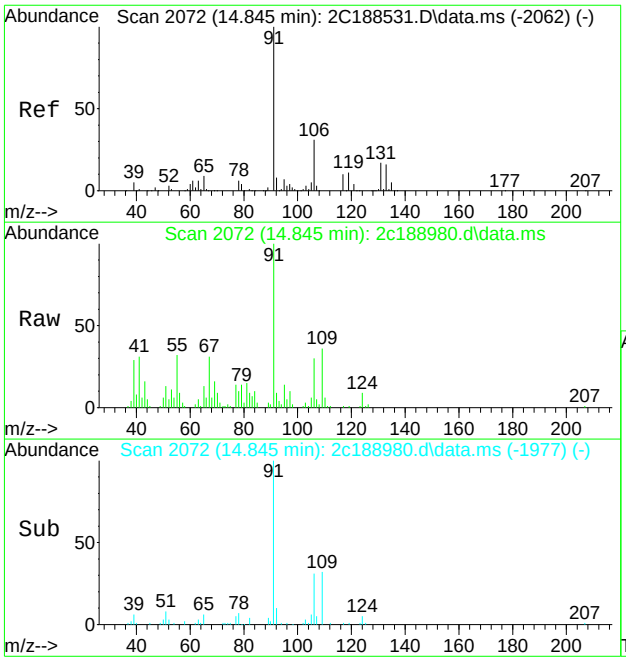


#74
toluene
Concen: 4.06 ug/L
RT: 13.414 min Scan# 1799
Delta R.T. -0.005 min
Lab File: 2c188980.d
Acq: 24 Feb 2022 5:40 pm

Tgt Ion: 92 Resp: 20395

Ion	Ratio	Lower	Upper
92	100		
91	173.3	153.0	193.0
65	19.0	1.0	41.0

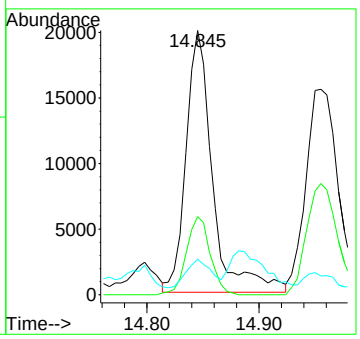


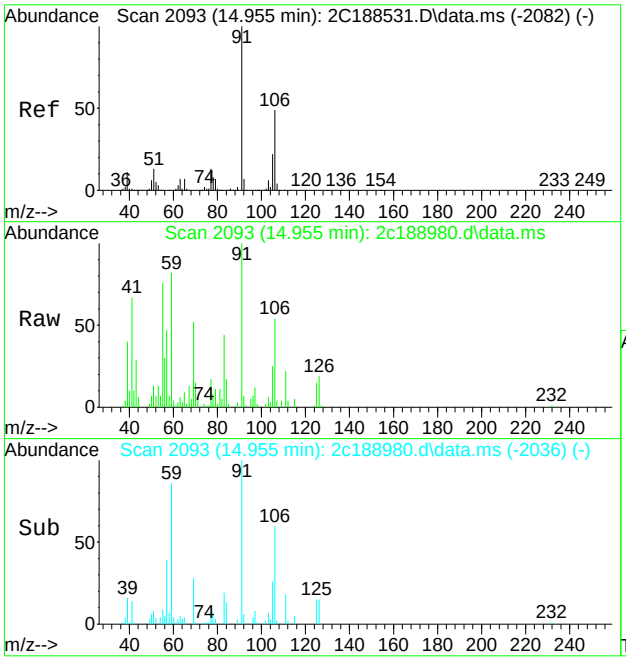


#87
ethylbenzene
Concen: 3.24 ug/L
RT: 14.845 min Scan# 2072
Delta R.T. 0.000 min
Lab File: 2c188980.d
Acq: 24 Feb 2022 5:40 pm

Tgt Ion: 91 Resp: 32897

Ion	Ratio	Lower	Upper
91	100		
106	30.1	0.9	60.9
65	11.0	0.0	39.4

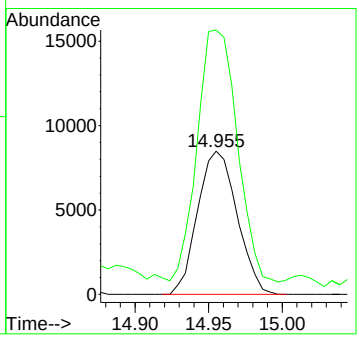


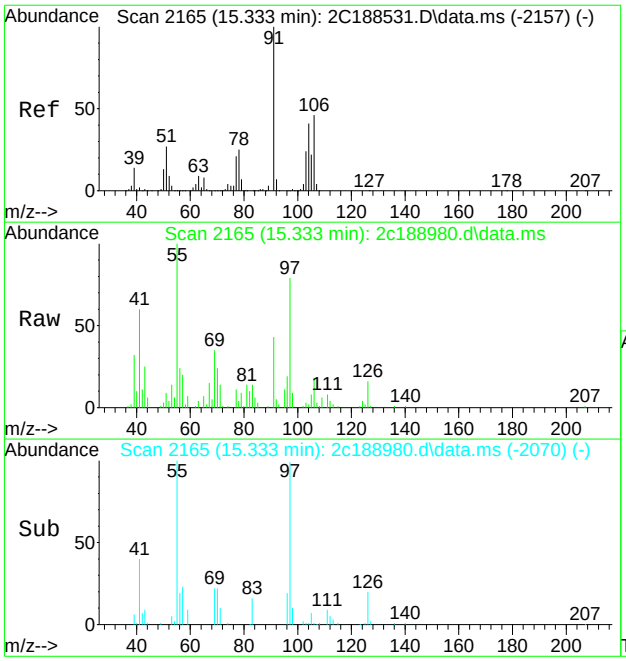


#88
m,p-xylene
Concen: 4.10 ug/L
RT: 14.955 min Scan# 2093
Delta R.T. 0.000 min
Lab File: 2c188980.d
Acq: 24 Feb 2022 5:40 pm

Tgt Ion:106 Resp: 15766

Ion	Ratio	Lower	Upper
106	100		
91	174.8	173.9	233.9

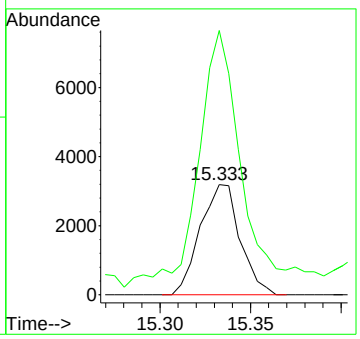


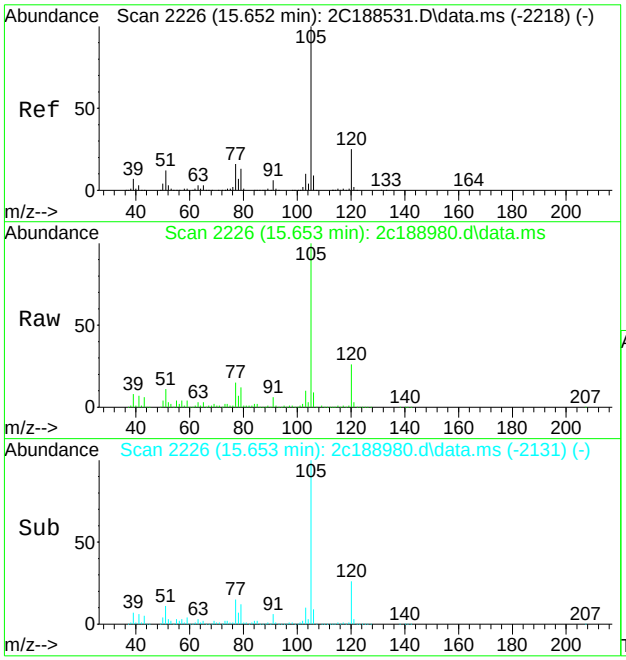


#89
o-xylene
Concen: 1.19 ug/L
RT: 15.333 min Scan# 2165
Delta R.T. 0.000 min
Lab File: 2c188980.d
Acq: 24 Feb 2022 5:40 pm

Tgt Ion:106 Resp: 4860

Ion	Ratio	Lower	Upper
106	100		
91	217.7	189.2	249.2

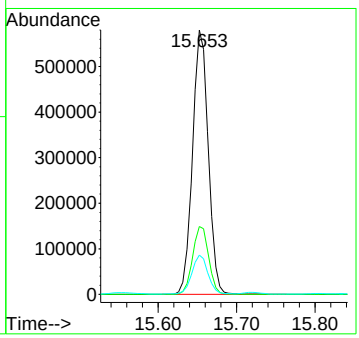


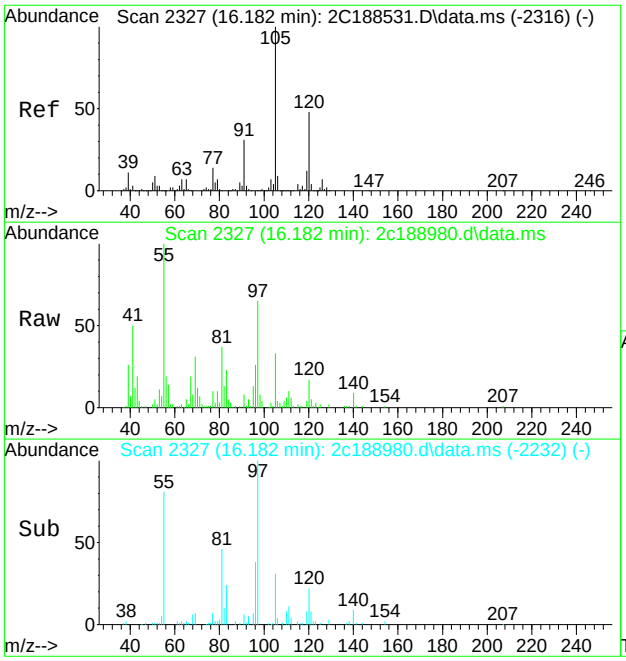


#93
isopropylbenzene
Concen: 71.90 ug/L
RT: 15.653 min Scan# 2226
Delta R.T. 0.000 min
Lab File: 2c188980.d
Acq: 24 Feb 2022 5:40 pm

Tgt Ion:105 Resp: 807162

Ion	Ratio	Lower	Upper
105	100		
120	25.7	5.3	45.3
77	14.8	0.0	35.9

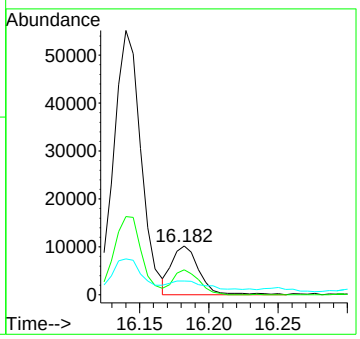




#104
1,3,5-trimethylbenzene
Concen: 1.35 ug/L
RT: 16.182 min Scan# 2327
Delta R.T. 0.000 min
Lab File: 2c188980.d
Acq: 24 Feb 2022 5:40 pm

Tgt Ion:105 Resp: 14157

Ion	Ratio	Lower	Upper
105	100		
120	51.5	18.3	78.3
77	17.3	0.0	44.0



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188975.d
Acq On : 24 Feb 2022 2:17 pm
Operator : nickw
Sample : jd40008-3 Inst : GCMS2C
Misc : MS56922,V2C8406,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:26:46 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

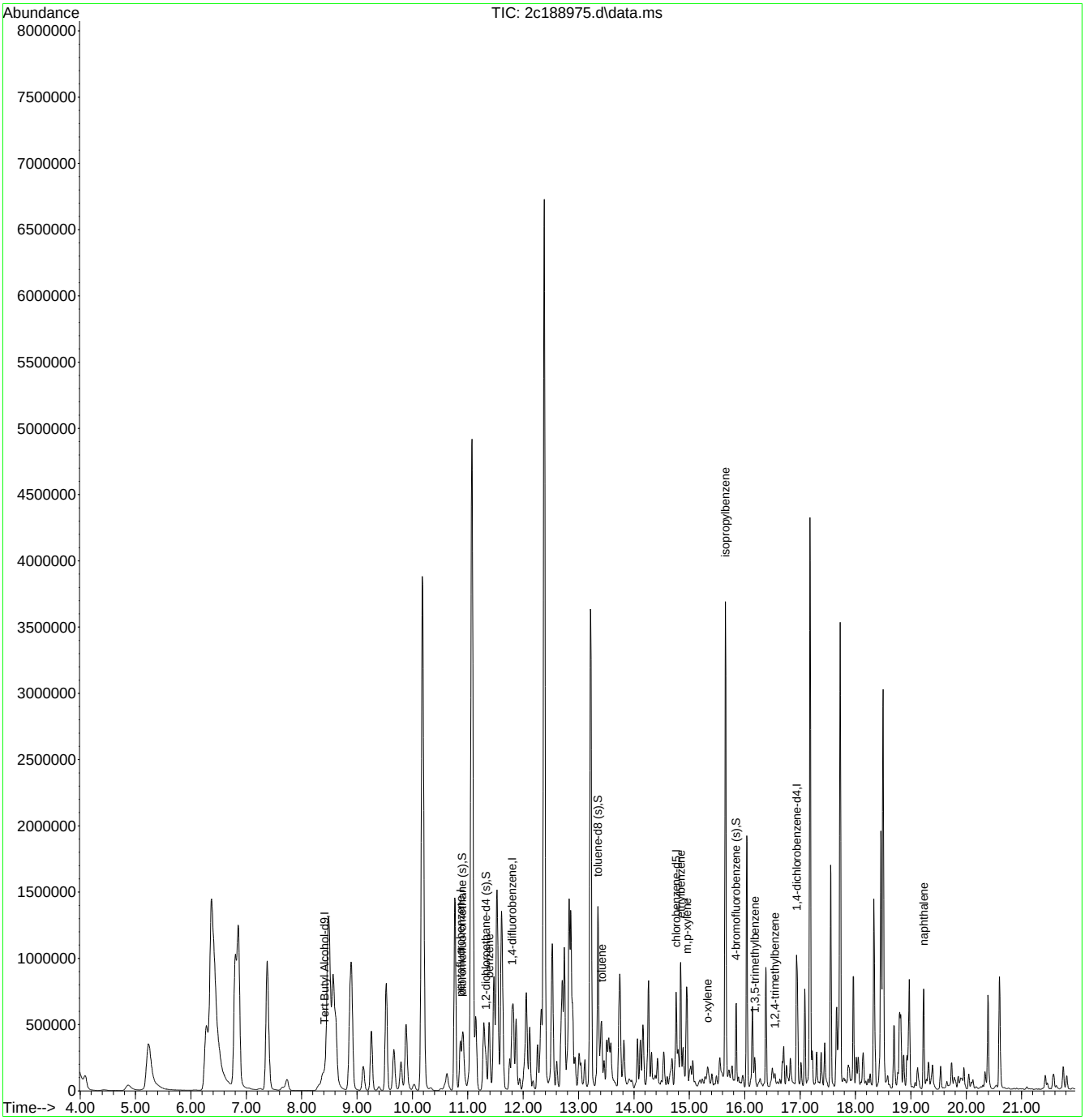
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.412	65	357083	500.00	ug/L	-0.04
5) pentafluorobenzene	10.866	168	279373	50.00	ug/L	0.00
49) 1,4-difluorobenzene	11.799	114	357995	50.00	ug/L	0.00
72) chlorobenzene-d5	14.761	117	322403	50.00	ug/L	0.00
95) 1,4-dichlorobenzene-d4	16.937	152	204480	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	10.897	113	118013	46.90	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.80%			
50) 1,2-dichloroethane-d4 (s)	11.327	65	139713	52.95	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 105.90%			
73) toluene-d8 (s)	13.346	98	426520	53.27	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.54%			
96) 4-bromofluorobenzene (s)	15.841	95	173637	50.00	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.00%			
Target Compounds						Qvalue
54) benzene	11.385	78	447335	46.83	ug/L	100
74) toluene	13.419	92	139215	23.92	ug/L	98
87) ethylbenzene	14.845	91	559428	47.59	ug/L	99
88) m,p-xylene	14.961	106	182096	40.87	ug/L	97
89) o-xylene	15.328	106	21973	4.64	ug/L	94
93) isopropylbenzene	15.653	105	1788834	137.59	ug/L	98
104) 1,3,5-trimethylbenzene	16.182	105	61148	5.25	ug/L	96
106) 1,2,4-trimethylbenzene	16.544	105	19172	1.61	ug/L	99
118) naphthalene	19.234	128	570679	42.68	ug/L	98

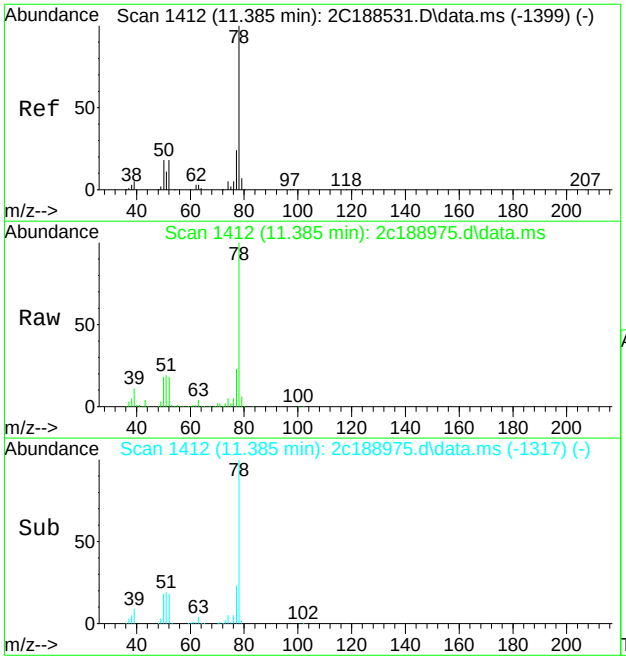
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188975.d
Acq On : 24 Feb 2022 2:17 pm
Operator : nickw
Sample : jd40008-3 Inst : GCMS2C
Misc : MS56922,V2C8406,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:26:46 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

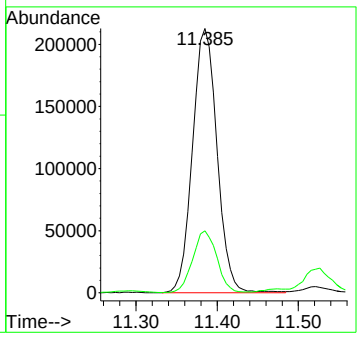


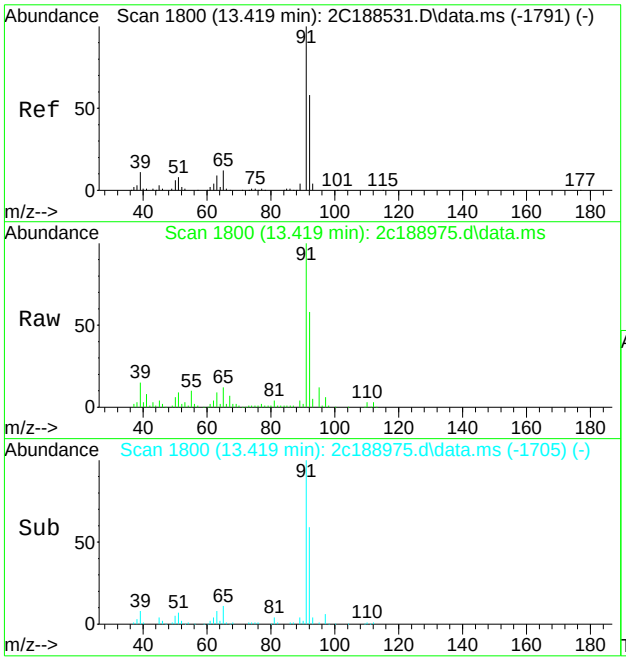


#54
benzene
Concen: 46.83 ug/L
RT: 11.385 min Scan# 1412
Delta R.T. 0.000 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion: 78 Resp: 447335

Ion	Ratio	Lower	Upper
78	100		
77	23.4	0.0	53.6

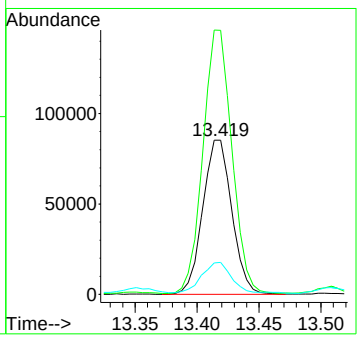


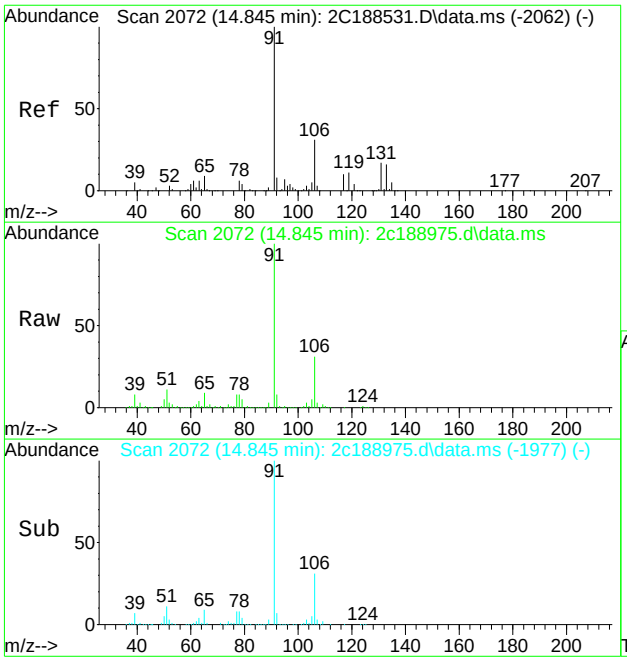


#74
toluene
Concen: 23.92 ug/L
RT: 13.419 min Scan# 1800
Delta R.T. 0.000 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion: 92 Resp: 139215

Ion	Ratio	Lower	Upper
92	100		
91	170.5	153.0	193.0
65	20.0	1.0	41.0

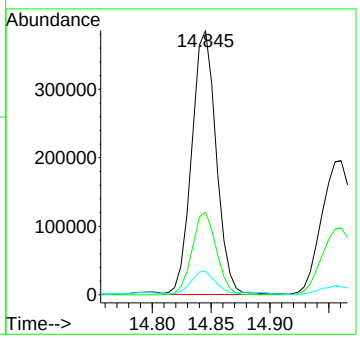


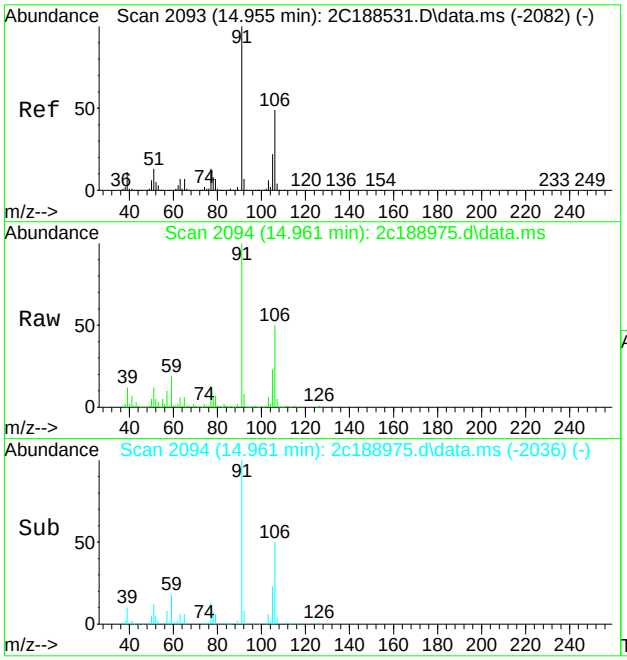


#87
ethylbenzene
Concen: 47.59 ug/L
RT: 14.845 min Scan# 2072
Delta R.T. 0.000 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion: 91 Resp: 559428

Ion	Ratio	Lower	Upper
91	100		
106	31.4	0.9	60.9
65	8.7	0.0	39.4

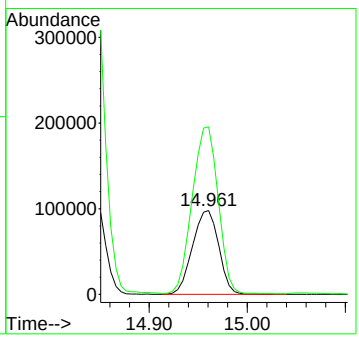


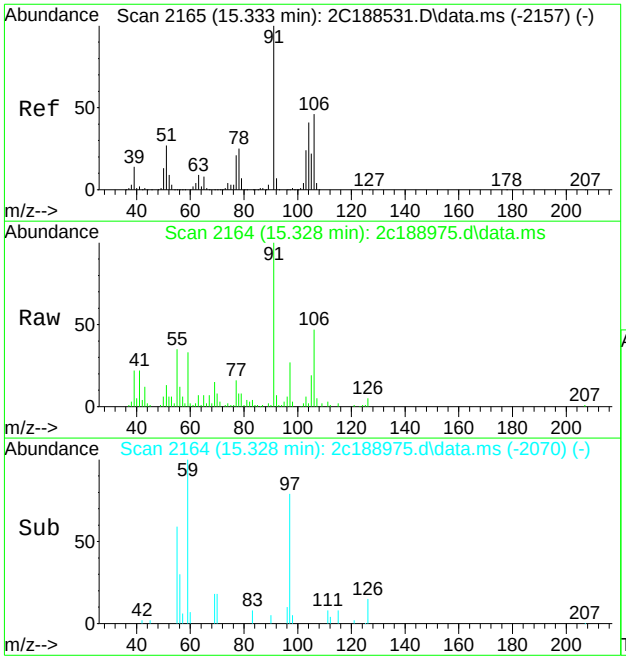


#88
m,p-xylene
Concen: 40.87 ug/L
RT: 14.961 min Scan# 2094
Delta R.T. 0.005 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion:106 Resp: 182096

Ion	Ratio	Lower	Upper
106	100		
91	199.2	173.9	233.9

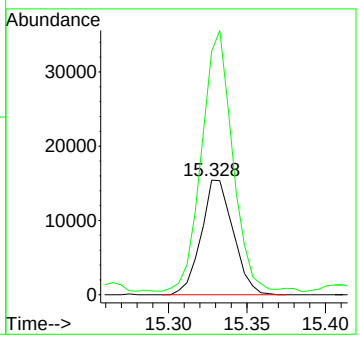


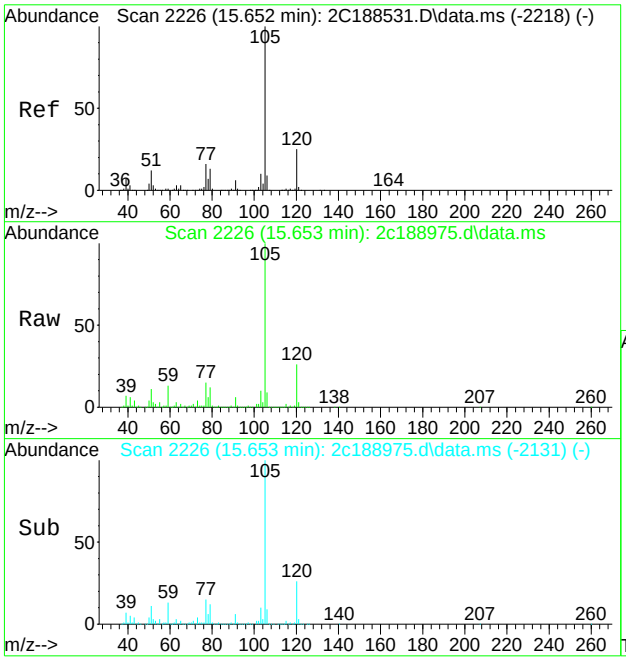


#89
o-xylene
Concen: 4.64 ug/L
RT: 15.328 min Scan# 2164
Delta R.T. -0.005 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion:106 Resp: 21973

Ion	Ratio	Lower	Upper
106	100		
91	208.9	189.2	249.2

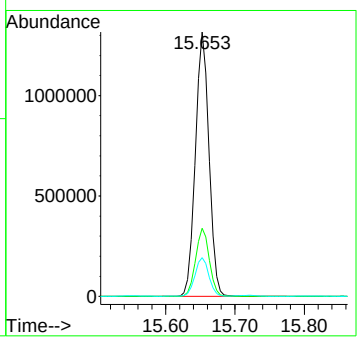


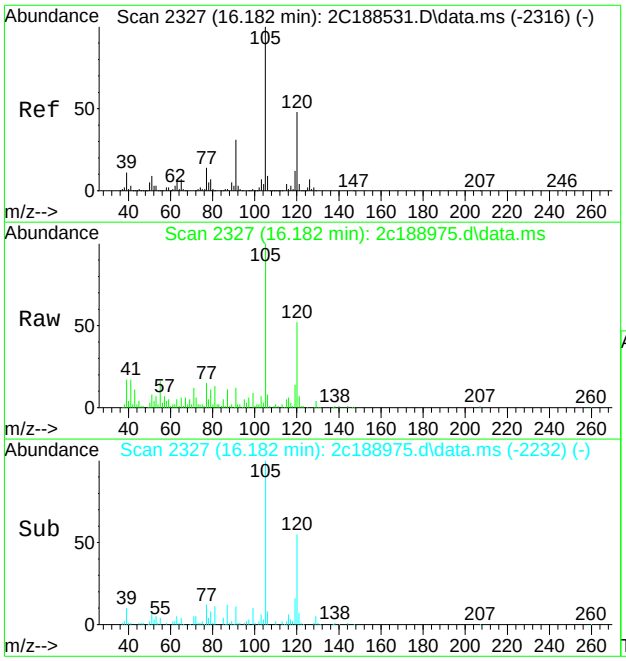


#93
isopropylbenzene
Concen: 137.59 ug/L
RT: 15.653 min Scan# 2226
Delta R.T. 0.000 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion:105 Resp: 1788834

Ion	Ratio	Lower	Upper
105	100		
120	25.8	5.3	45.3
77	14.6	0.0	35.9

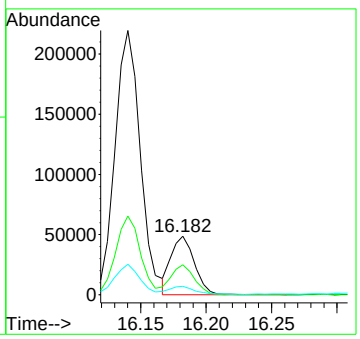


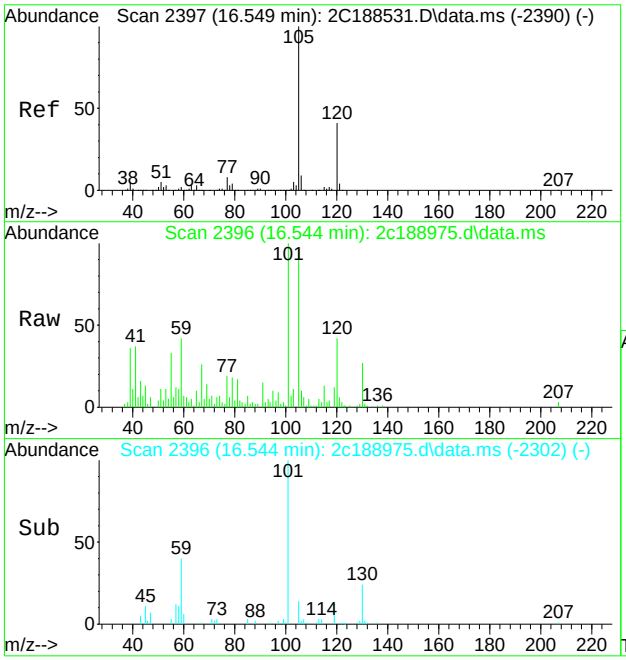


#104
1,3,5-trimethylbenzene
Concen: 5.25 ug/L
RT: 16.182 min Scan# 2327
Delta R.T. 0.000 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion:105 Resp: 61148

Ion	Ratio	Lower	Upper
105	100		
120	51.6	18.3	78.3
77	13.1	0.0	44.0

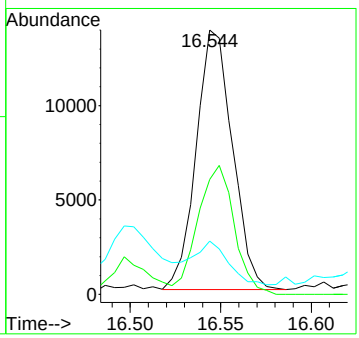


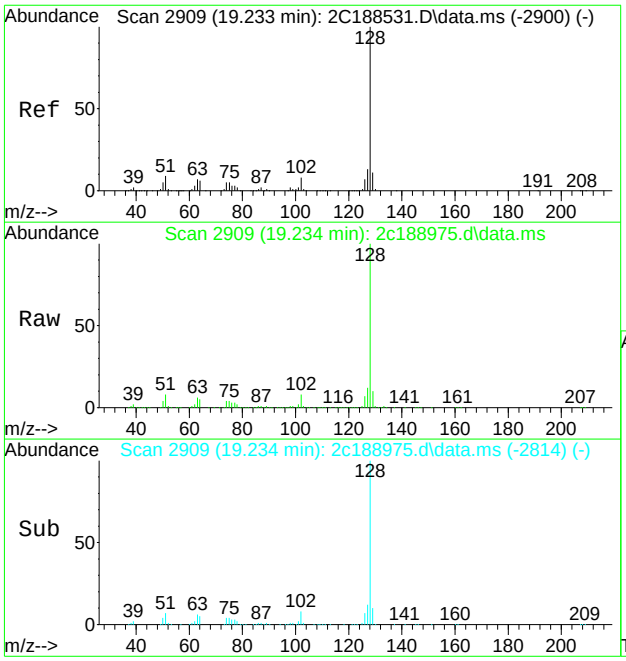


#106
1,2,4-trimethylbenzene
Concen: 1.61 ug/L
RT: 16.544 min Scan# 2396
Delta R.T. -0.005 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion:105 Resp: 19172

Ion	Ratio	Lower	Upper
105	100		
120	44.2	14.2	74.2
77	13.7	0.0	42.4

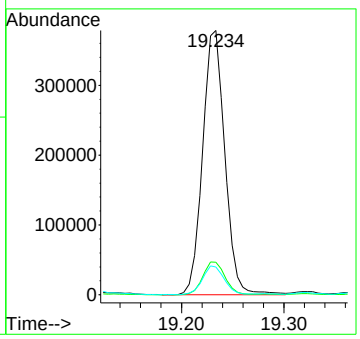




#118
naphthalene
Concen: 42.68 ug/L
RT: 19.234 min Scan# 2909
Delta R.T. 0.000 min
Lab File: 2c188975.d
Acq: 24 Feb 2022 2:17 pm

Tgt Ion:128 Resp: 570679

Ion	Ratio	Lower	Upper
128	100		
127	12.3	0.0	42.9
129	10.4	0.0	41.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188982.d
Acq On : 24 Feb 2022 6:38 pm
Operator : nickw
Sample : jd40008-4 Inst : GCMS2C
Misc : MS56922,V2C8406,5,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:39:10 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

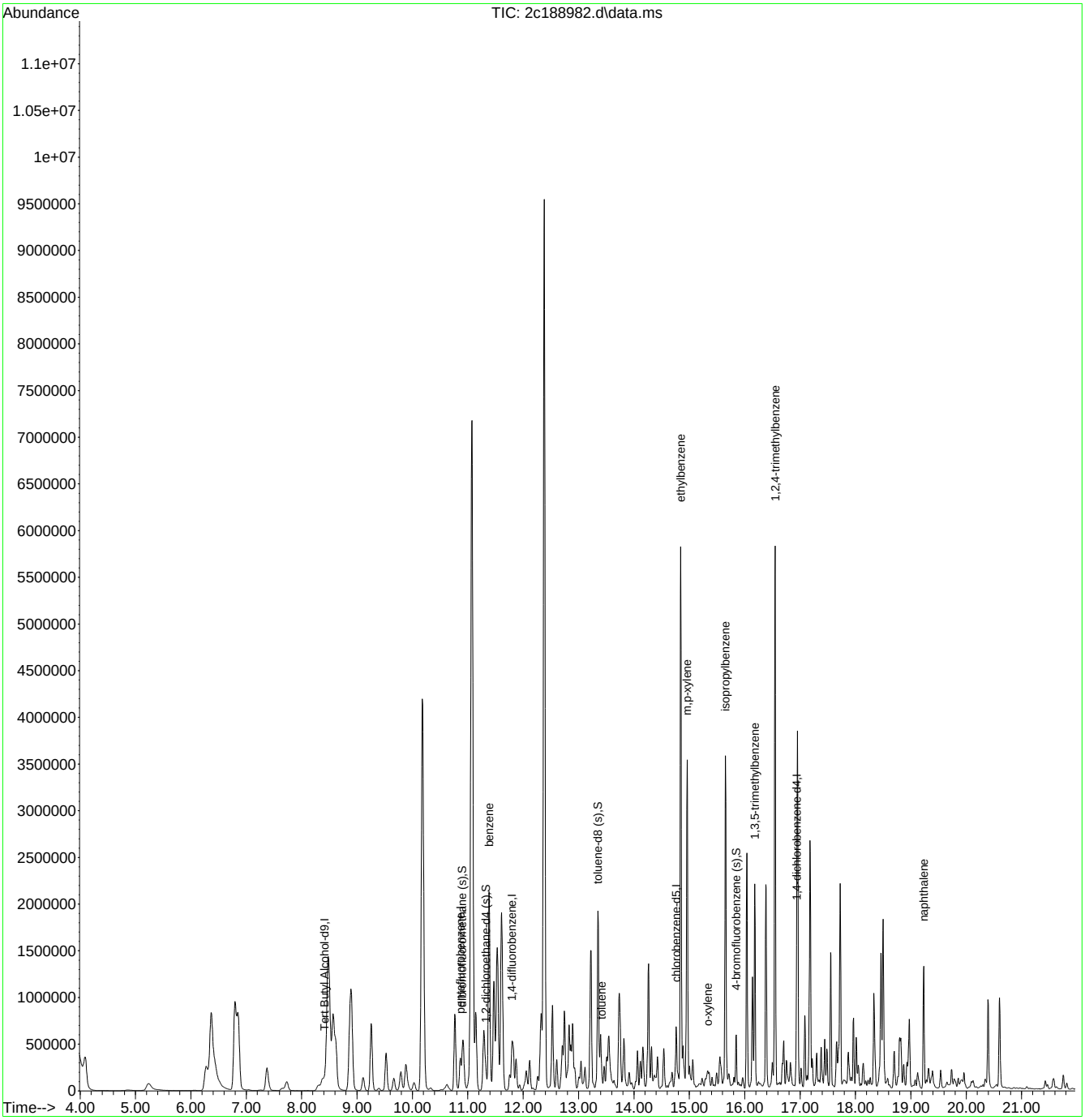
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.412	65	296793	500.00	ug/L	-0.04
5) pentafluorobenzene	10.866	168	259056	50.00	ug/L	0.00
49) 1,4-difluorobenzene	11.794	114	335629	50.00	ug/L	0.00
72) chlorobenzene-d5	14.761	117	311479	50.00	ug/L	0.00
95) 1,4-dichlorobenzene-d4	16.937	152	197142	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	10.897	113	104857	44.94	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.88%			
50) 1,2-dichloroethane-d4 (s)	11.327	65	126755	51.24	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 102.48%			
73) toluene-d8 (s)	13.346	98	433754	56.07	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 112.14%			
96) 4-bromofluorobenzene (s)	15.847	95	156058	46.61	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.22%			
Target Compounds						Qvalue
54) benzene	11.385	78	1841223	205.60	ug/L	99
74) toluene	13.414	92	30390	5.40	ug/L #	84
87) ethylbenzene	14.845	91	3583379	315.55	ug/L	98
88) m,p-xylene	14.960	106	945435	219.62	ug/L	96
89) o-xylene	15.333	106	25470	5.56	ug/L	93
93) isopropylbenzene	15.653	105	1905451	151.69	ug/L	98
104) 1,3,5-trimethylbenzene	16.182	105	952405	84.86	ug/L	96
106) 1,2,4-trimethylbenzene	16.549	105	2768055	241.31	ug/L	96
118) naphthalene	19.234	128	972955	75.48	ug/L	99

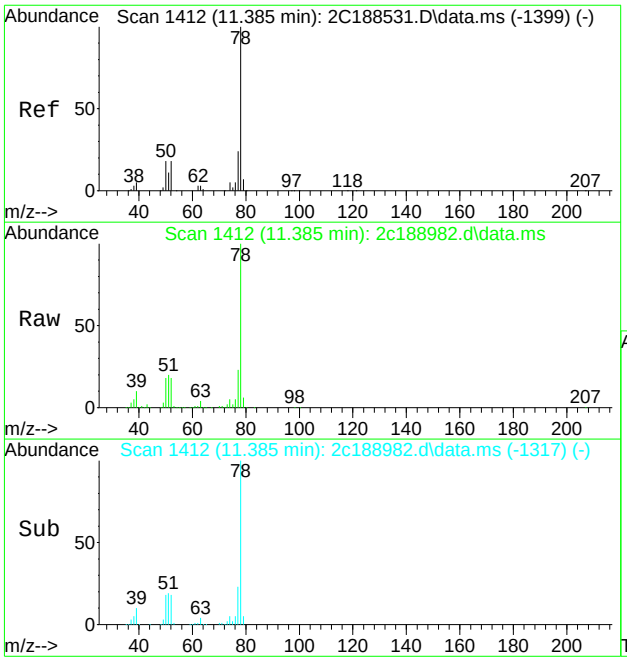
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188982.d
Acq On : 24 Feb 2022 6:38 pm
Operator : nickw
Sample : jd40008-4 Inst : GCMS2C
Misc : MS56922,V2C8406,5,,,,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:39:10 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 16:15:21 2022
Response via : Initial Calibration

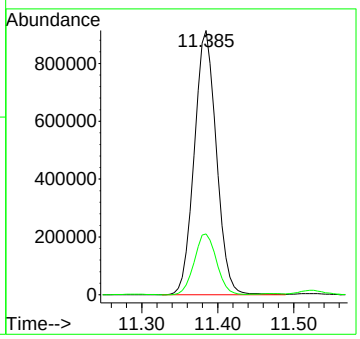


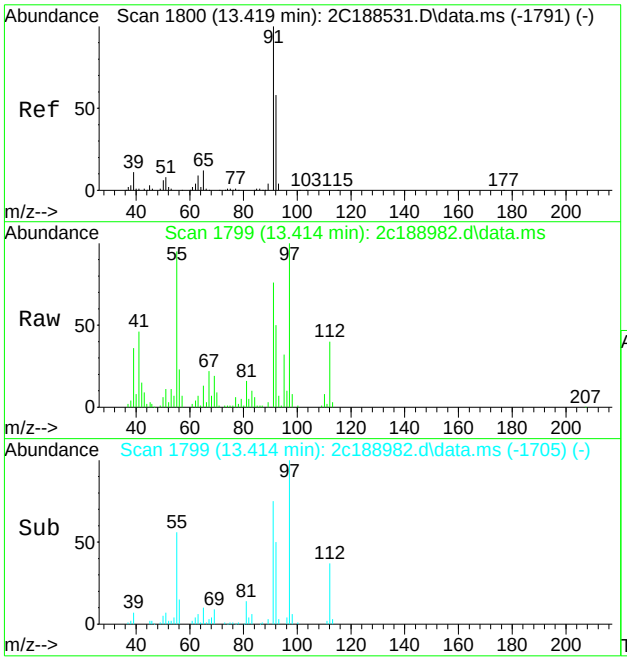


#54
benzene
Concen: 205.60 ug/L
RT: 11.385 min Scan# 1412
Delta R.T. 0.000 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion: 78 Resp: 1841223

Ion	Ratio	Lower	Upper
78	100		
77	22.9	0.0	53.6

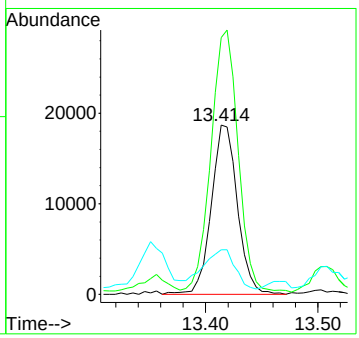


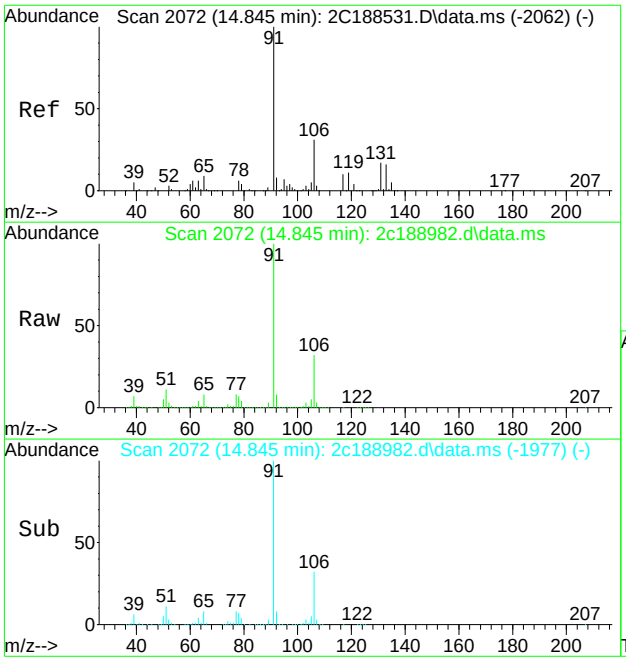


#74
toluene
Concen: 5.40 ug/L
RT: 13.414 min Scan# 1799
Delta R.T. -0.005 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion: 92 Resp: 30390

Ion	Ratio	Lower	Upper
92	100		
91	149.3	153.0	193.0#
65	18.6	1.0	41.0

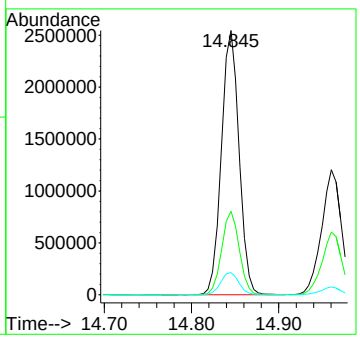


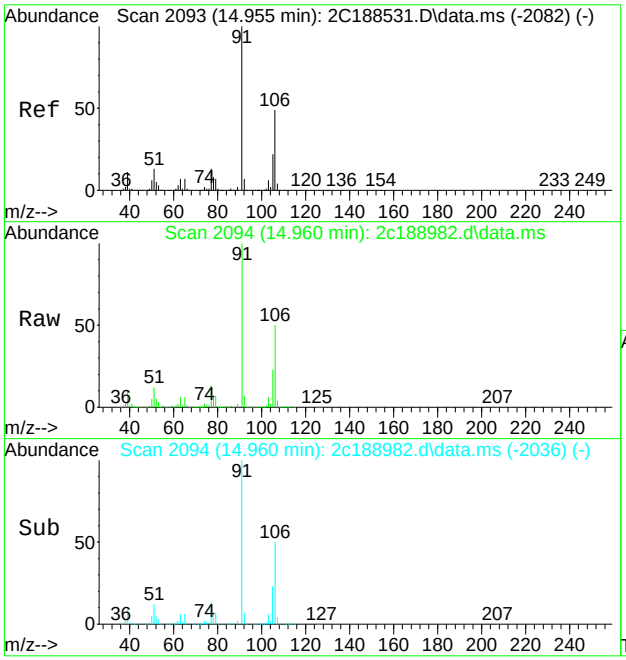


#87
ethylbenzene
Concen: 315.55 ug/L
RT: 14.845 min Scan# 2072
Delta R.T. 0.000 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion: 91 Resp: 3583379

Ion	Ratio	Lower	Upper
91	100		
106	31.6	0.9	60.9
65	8.4	0.0	39.4

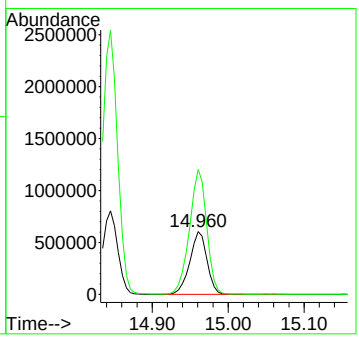


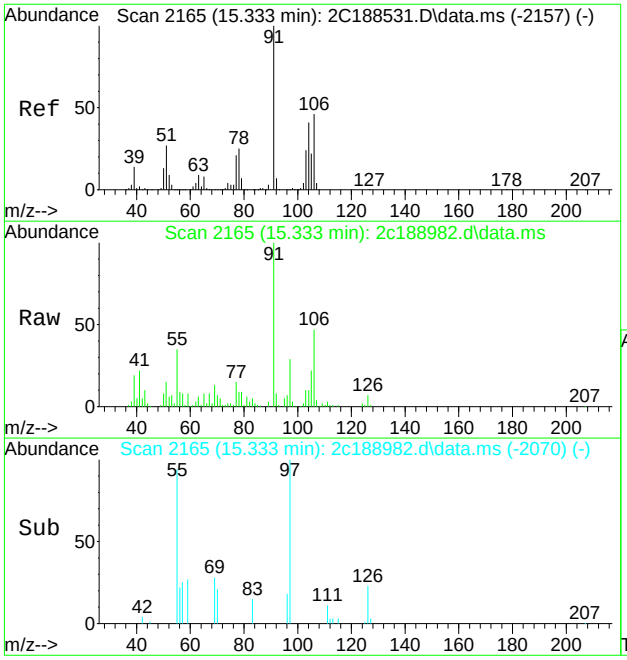


#88
m,p-xylene
Concen: 219.62 ug/L
RT: 14.960 min Scan# 2094
Delta R.T. 0.005 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion:106 Resp: 945435

Ion	Ratio	Lower	Upper
106	100		
91	198.5	173.9	233.9

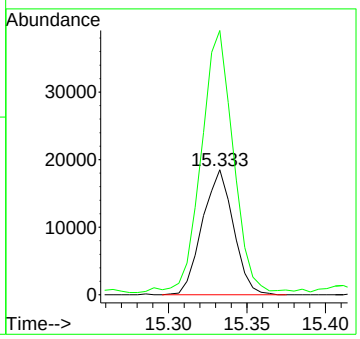


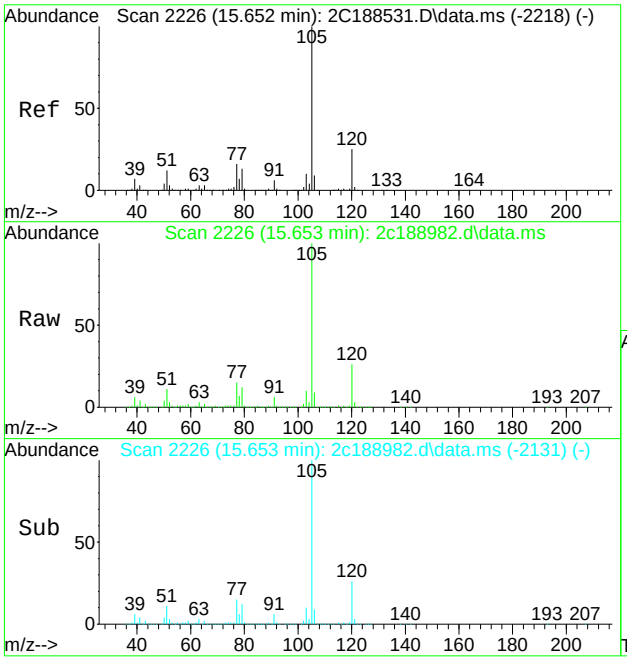


#89
o-xylene
Concen: 5.56 ug/L
RT: 15.333 min Scan# 2165
Delta R.T. 0.000 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion:106 Resp: 25470

Ion	Ratio	Lower	Upper
106	100		
91	207.3	189.2	249.2

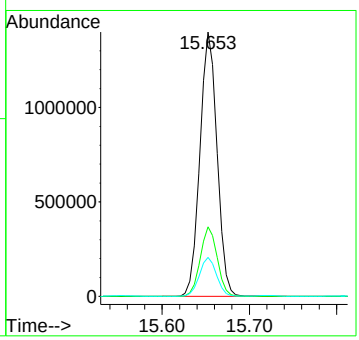


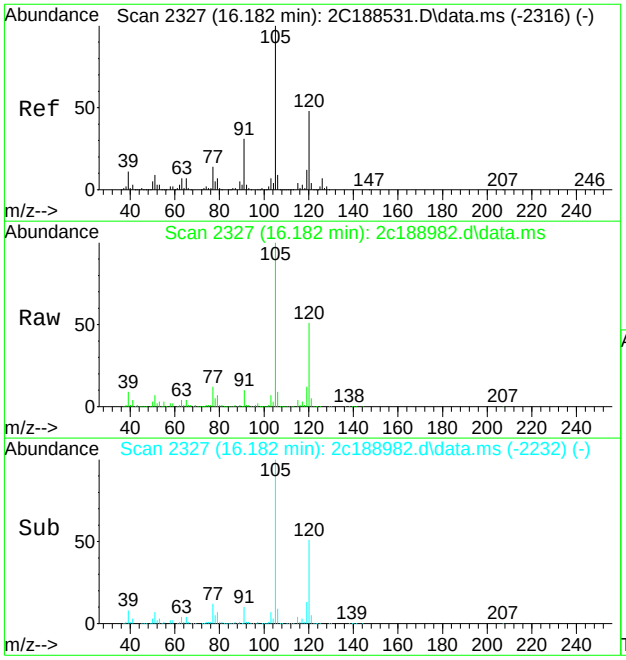


#93
isopropylbenzene
Concen: 151.69 ug/L
RT: 15.653 min Scan# 2226
Delta R.T. 0.000 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion:105 Resp: 1905451

Ion	Ratio	Lower	Upper
105	100		
120	26.3	5.3	45.3
77	14.7	0.0	35.9

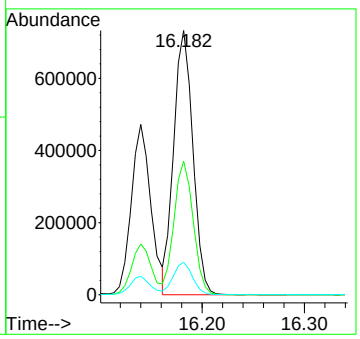


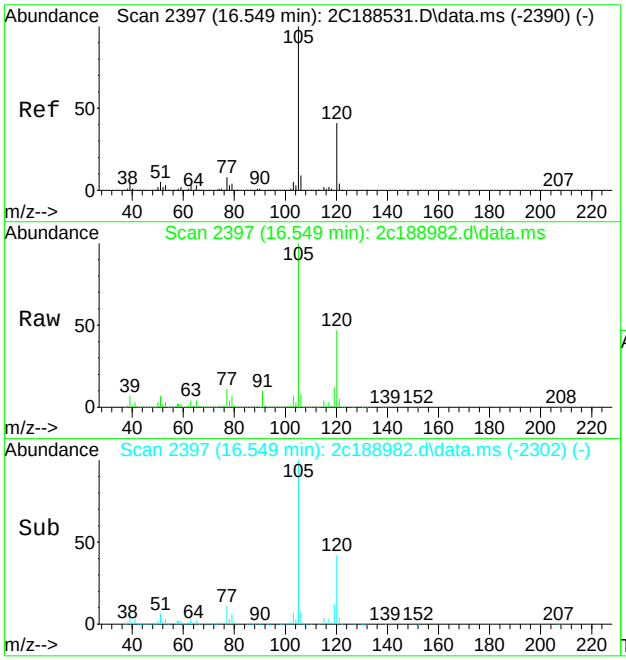


#104
1,3,5-trimethylbenzene
Concen: 84.86 ug/L
RT: 16.182 min Scan# 2327
Delta R.T. 0.000 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion:105 Resp: 952405

Ion	Ratio	Lower	Upper
105	100		
120	50.5	18.3	78.3
77	12.2	0.0	44.0

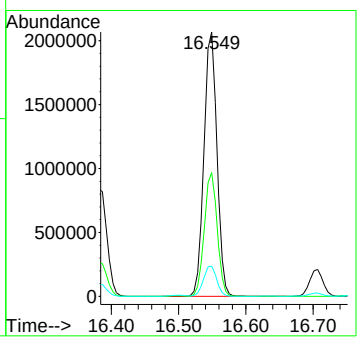


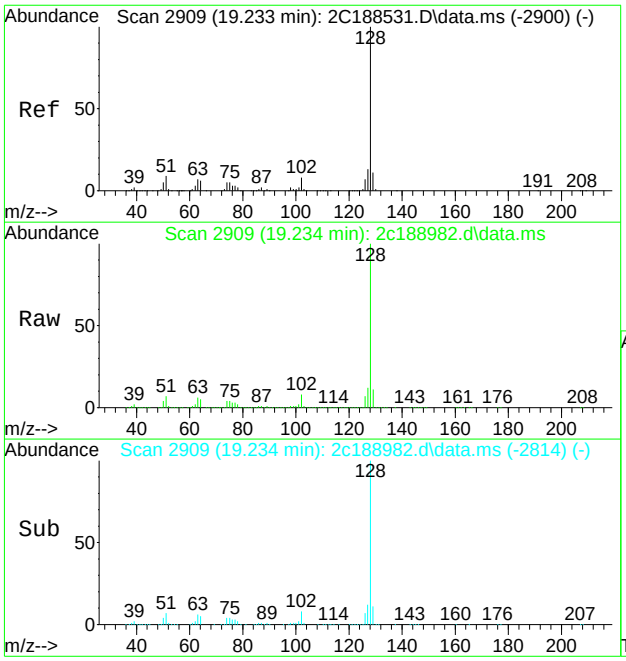


#106
1,2,4-trimethylbenzene
Concen: 241.31 ug/L
RT: 16.549 min Scan# 2397
Delta R.T. 0.000 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion:105 Resp: 2768055

Ion	Ratio	Lower	Upper
105	100		
120	46.8	14.2	74.2
77	11.4	0.0	42.4

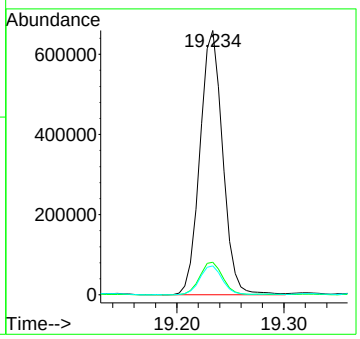




#118
naphthalene
Concen: 75.48 ug/L
RT: 19.234 min Scan# 2909
Delta R.T. 0.000 min
Lab File: 2c188982.d
Acq: 24 Feb 2022 6:38 pm

Tgt Ion:128 Resp: 972955

Ion	Ratio	Lower	Upper
128	100		
127	12.3	0.0	42.9
129	11.0	0.0	41.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\february 2022\02242022\v4d5151\
Data File : 4d115920.d
Acq On : 23 Feb 2022 8:31 am
Operator : BridgetK
Sample : jd40008-4 Inst : MS4D
Misc : MS56922,V4D5151,5,,,,5
ALS Vial : 50 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4D5098.M
Quant Results File: M4D5098.RES
Quant Time: Feb 24 02:10:18 2022
Quant Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
QLast Update : Mon Jan 17 15:07:58 2022
Response via : Initial Calibration

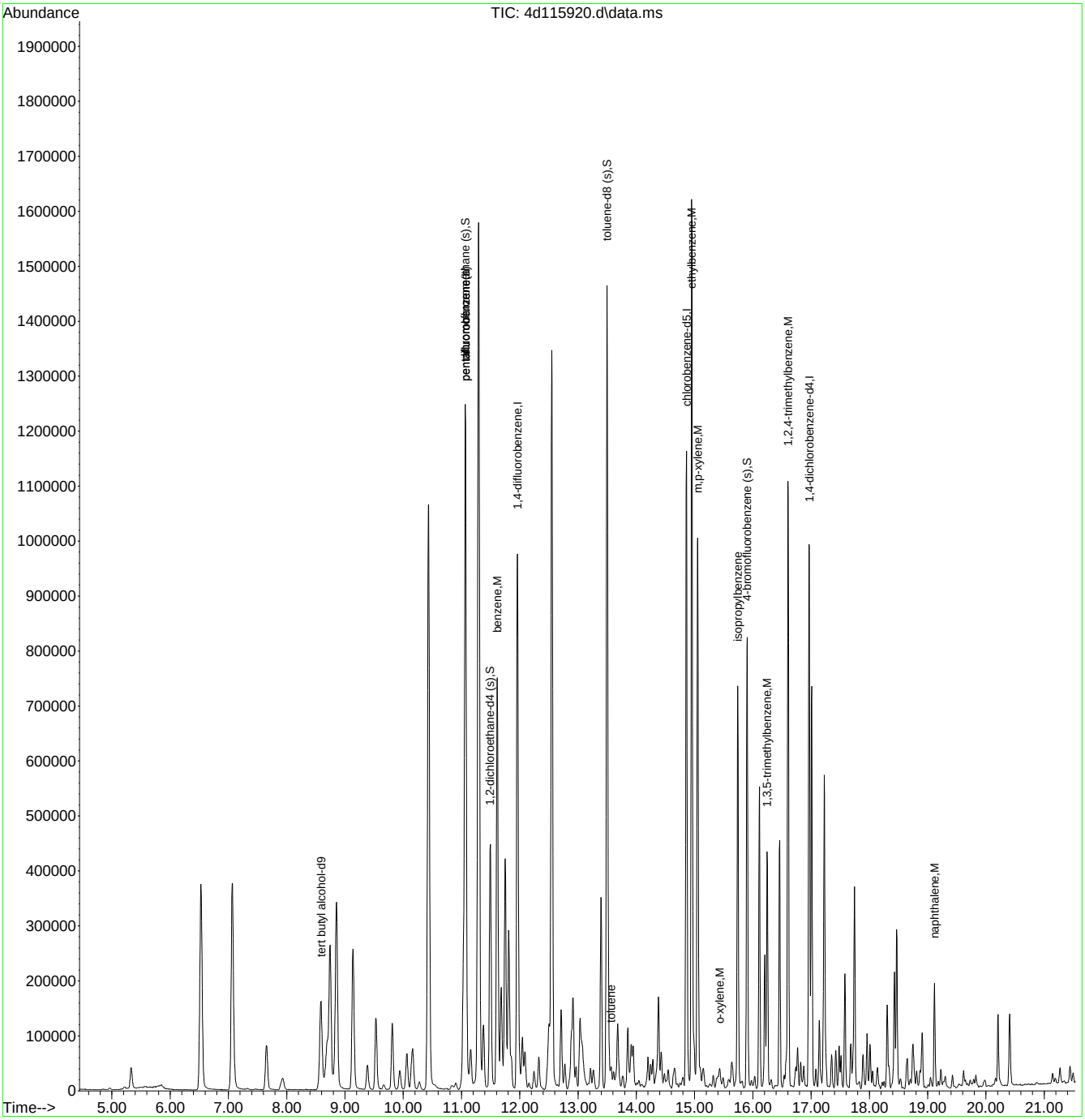
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	8.589	65	241496	500.00	ug/L	0.00
5) pentafluorobenzene	11.069	168	666456	50.00	ug/L	0.00
52) 1,4-difluorobenzene	11.961	114	829023	50.00	ug/L	0.00
74) chlorobenzene-d5	14.860	117	608032	50.00	ug/L	0.00
97) 1,4-dichlorobenzene-d4	16.968	152	248072	50.00	ug/L	0.00
125) pentafluorobenzene(a)	11.069	168	666456	50.00	ug/L	0.00
System Monitoring Compounds						
44) dibromofluoromethane (s)	11.064	113	257441	48.33	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.66%			
53) 1,2-dichloroethane-d4 (s)	11.489	65	273007	54.03	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 108.06%			
75) toluene-d8 (s)	13.497	98	821917	52.53	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.06%			
98) 4-bromofluorobenzene (s)	15.898	95	258506	49.92	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.84%			
Target Compounds						Qvalue
56) benzene	11.615	78	676657	41.50	ug/L	99
76) toluene	13.565	92	10692	1.15	ug/L	96
89) ethylbenzene	14.949	91	1071164	61.12	ug/L	99
90) m,p-xylene	15.054	106	278749	41.81	ug/L	98
91) o-xylene	15.432	106	7641	1.16	ug/L	92
95) isopropylbenzene	15.741	105	440293	27.17	ug/L	97
106) 1,3,5-trimethylbenzene	16.244	105	210645	17.91	ug/L	99
108) 1,2,4-trimethylbenzene	16.606	105	574951	47.84	ug/L	99
121) naphthalene	19.117	128	138575	14.70	ug/L	99

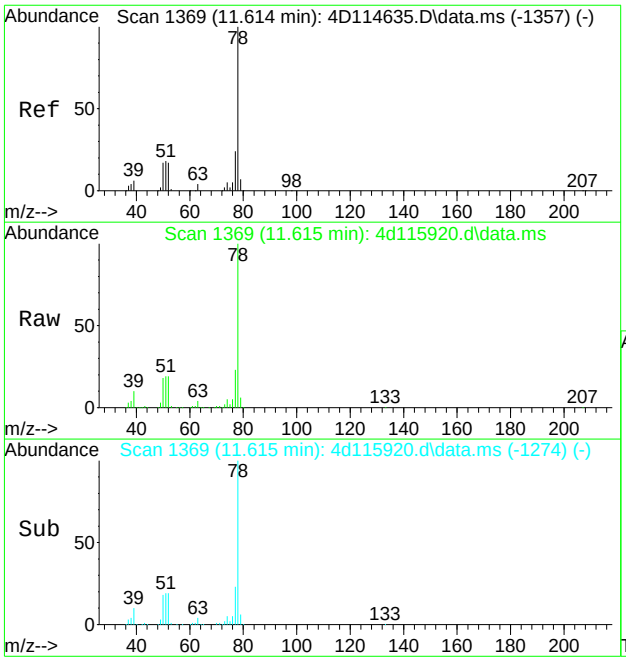
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\february 2022\02242022\v4d5151\
Data File : 4d115920.d
Acq On : 23 Feb 2022 8:31 am
Operator : BridgetK
Sample : jd40008-4 Inst : MS4D
Misc : MS56922,V4D5151,5,,,,5
ALS Vial : 50 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4D5098.M
Quant Results File: M4D5098.RES
Quant Time: Feb 24 02:10:18 2022
Quant Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
QLast Update : Mon Jan 17 15:07:58 2022
Response via : Initial Calibration

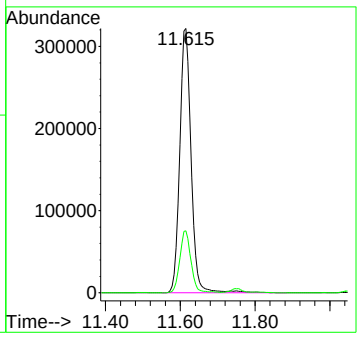


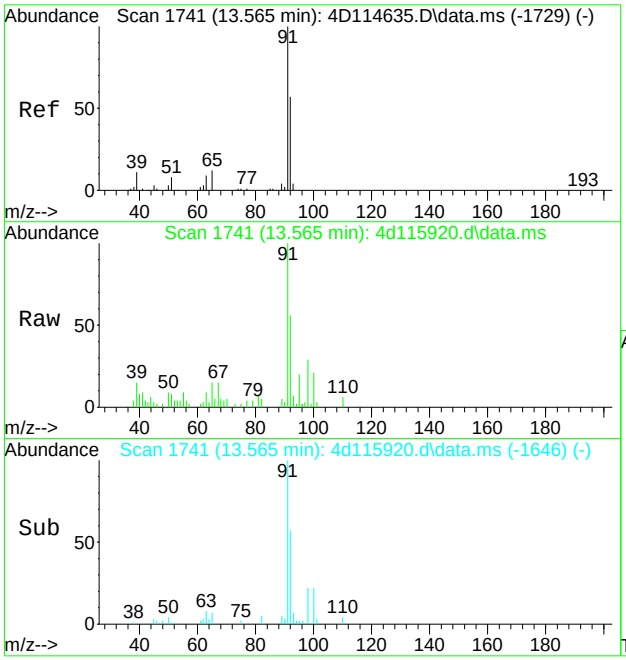


#56
benzene
Concen: 41.50 ug/L
RT: 11.615 min Scan# 1369
Delta R.T. 0.001 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion: 78 Resp: 676657

Ion	Ratio	Lower	Upper
78	100		
77	23.4	0.0	54.1

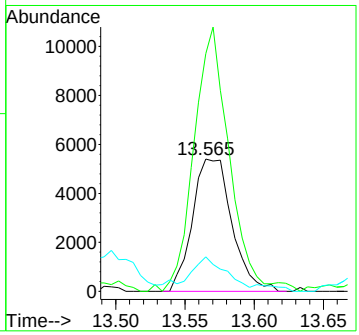


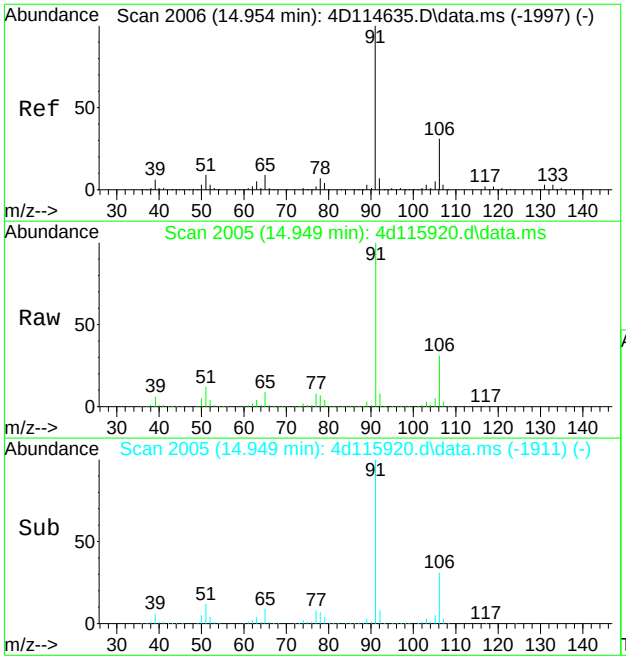


#76
toluene
Concen: 1.15 ug/L
RT: 13.565 min Scan# 1741
Delta R.T. 0.000 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion: 92 Resp: 10692

Ion	Ratio	Lower	Upper
92	100		
91	179.6	154.0	194.0
65	23.1	0.9	40.9

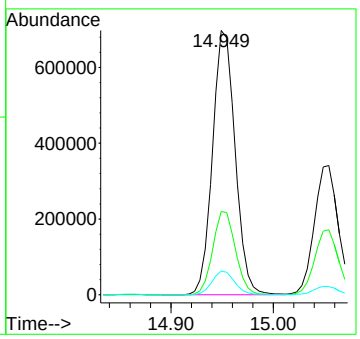


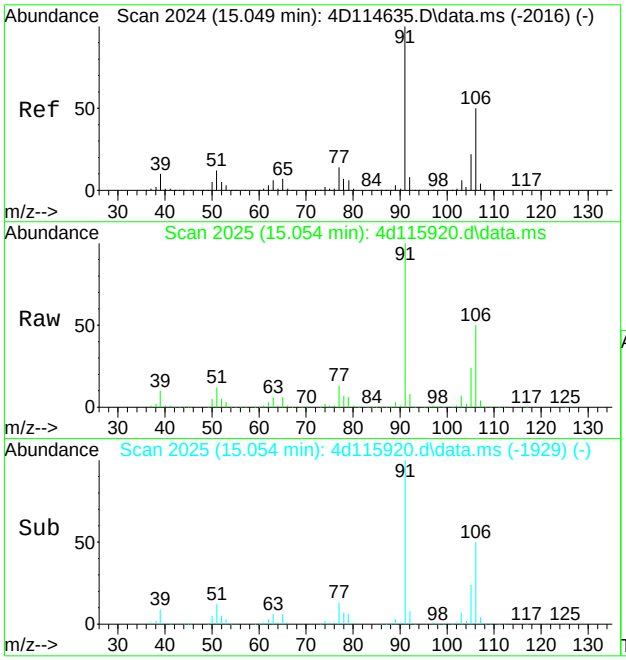


#89
ethylbenzene
Concen: 61.12 ug/L
RT: 14.949 min Scan# 2005
Delta R.T. -0.005 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion: 91 Resp: 1071164

Ion	Ratio	Lower	Upper
91	100		
106	31.5	0.7	60.7
65	9.1	0.0	39.4

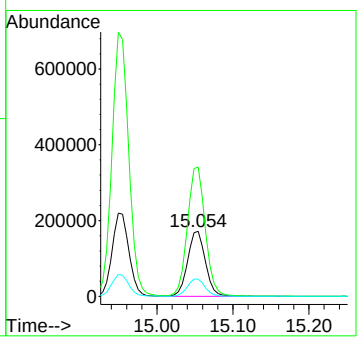


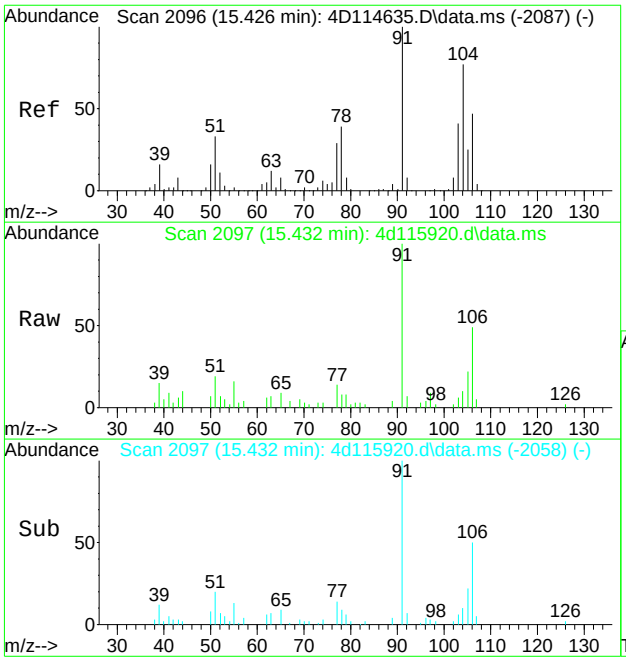


#90
m,p-xylene
Concen: 41.81 ug/L
RT: 15.054 min Scan# 2025
Delta R.T. 0.005 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion:106 Resp: 278749

Ion	Ratio	Lower	Upper
106	100		
91	198.4	171.4	231.4
77	26.3	7.3	47.3

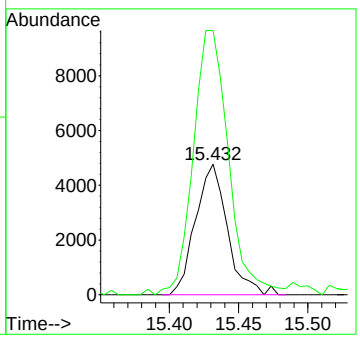


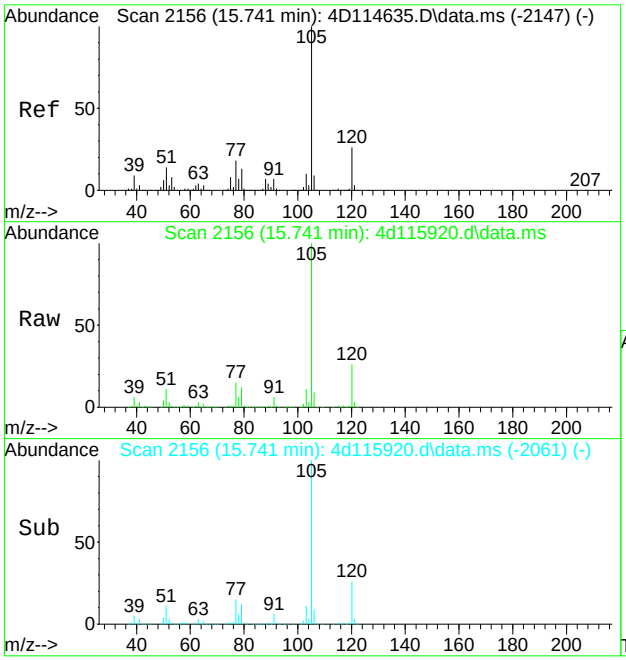


#91
o-xylene
Concen: 1.16 ug/L
RT: 15.432 min Scan# 2097
Delta R.T. 0.006 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion:106 Resp: 7641

Ion	Ratio	Lower	Upper
106	100		
91	198.2	180.7	240.7

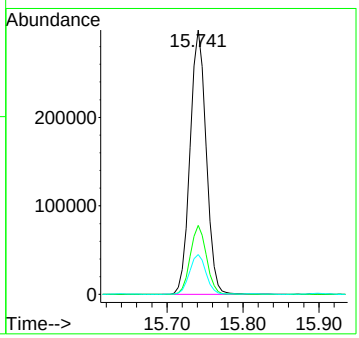


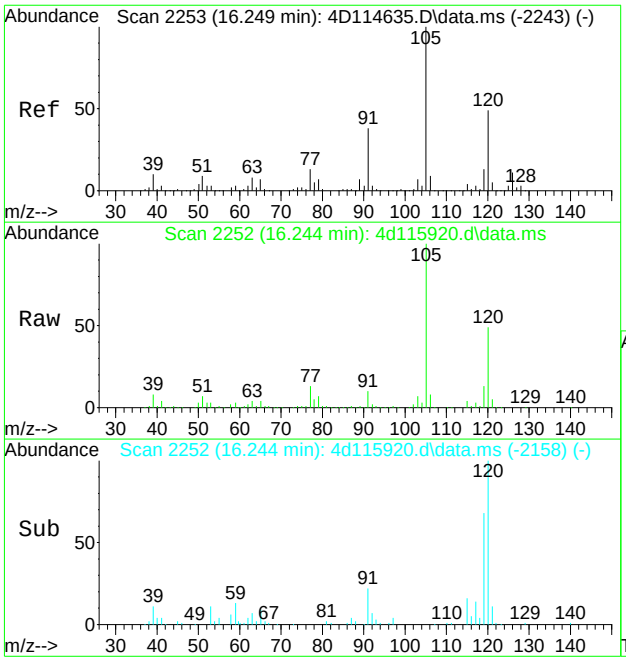


#95
isopropylbenzene
Concen: 27.17 ug/L
RT: 15.741 min Scan# 2156
Delta R.T. -0.000 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion:105 Resp: 440293

Ion	Ratio	Lower	Upper
105	100		
120	26.1	6.0	46.0
77	15.1	0.0	38.2

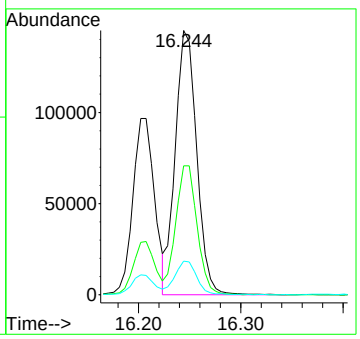


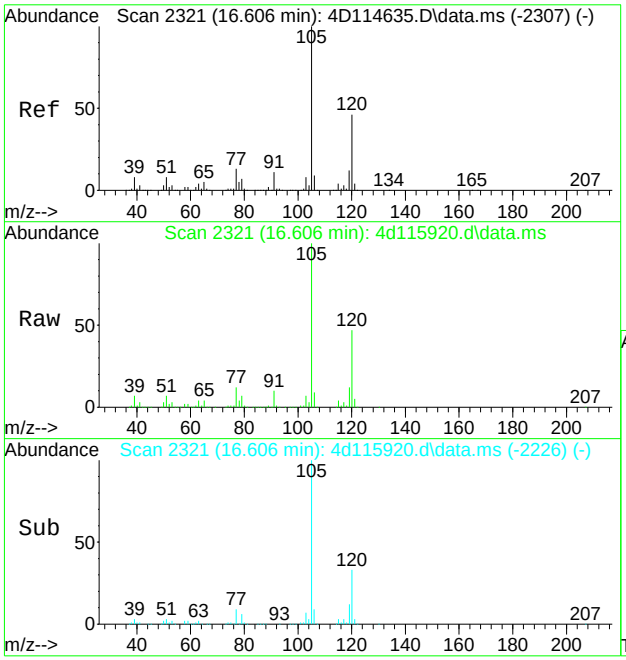


#106
1,3,5-trimethylbenzene
Concen: 17.91 ug/L
RT: 16.244 min Scan# 2252
Delta R.T. -0.005 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion:105 Resp: 210645

Ion	Ratio	Lower	Upper
105	100		
120	48.7	19.4	79.4
77	12.6	0.0	42.9

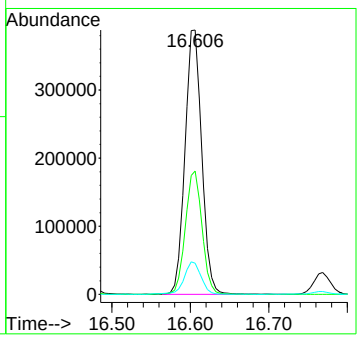


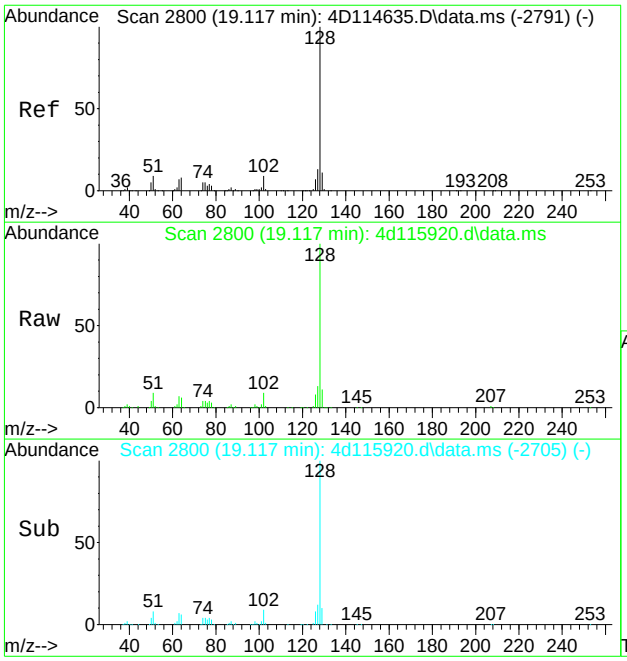


#108
1,2,4-trimethylbenzene
Concen: 47.84 ug/L
RT: 16.606 min Scan# 2321
Delta R.T. 0.000 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion:105 Resp: 574951

Ion	Ratio	Lower	Upper
105	100		
120	46.7	15.9	75.9
77	11.6	0.0	42.7

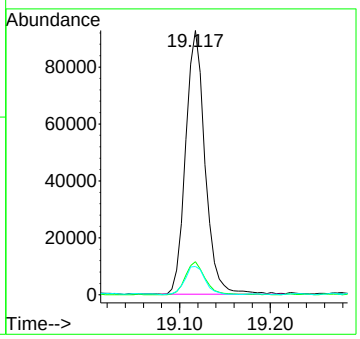




#121
naphthalene
Concen: 14.70 ug/L
RT: 19.117 min Scan# 2800
Delta R.T. 0.000 min
Lab File: 4d115920.d
Acq: 23 Feb 2022 8:31 am

Tgt Ion:128 Resp: 138575

Ion	Ratio	Lower	Upper
128	100		
127	12.6	0.0	42.7
129	10.8	0.0	41.1



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\february 2022\02242022\v4d5151\
Data File : 4d115903.d
Acq On : 23 Feb 2022 12:22 am
Operator : BridgetK
Sample : jd40008-5 Inst : MS4D
Misc : MS56922,V4D5151,5,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4D5098.M
Quant Results File: M4D5098.RES
Quant Time: Feb 24 01:03:27 2022
Quant Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
QLast Update : Mon Jan 17 15:07:58 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	8.584	65	203836	500.00	ug/L	0.00
5) pentafluorobenzene	11.069	168	581570	50.00	ug/L	0.00
52) 1,4-difluorobenzene	11.961	114	754322	50.00	ug/L	0.00
74) chlorobenzene-d5	14.860	117	541533	50.00	ug/L	0.00
97) 1,4-dichlorobenzene-d4	16.968	152	212999	50.00	ug/L	0.00
125) pentafluorobenzene(a)	11.069	168	581570	50.00	ug/L	0.00
System Monitoring Compounds						
44) dibromofluoromethane (s)	11.064	113	232995	50.12	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.24%			
53) 1,2-dichloroethane-d4 (s)	11.494	65	256294	55.75	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 111.50%			
75) toluene-d8 (s)	13.497	98	739717	53.08	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.16%			
98) 4-bromofluorobenzene (s)	15.903	95	228691	51.43	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.86%			

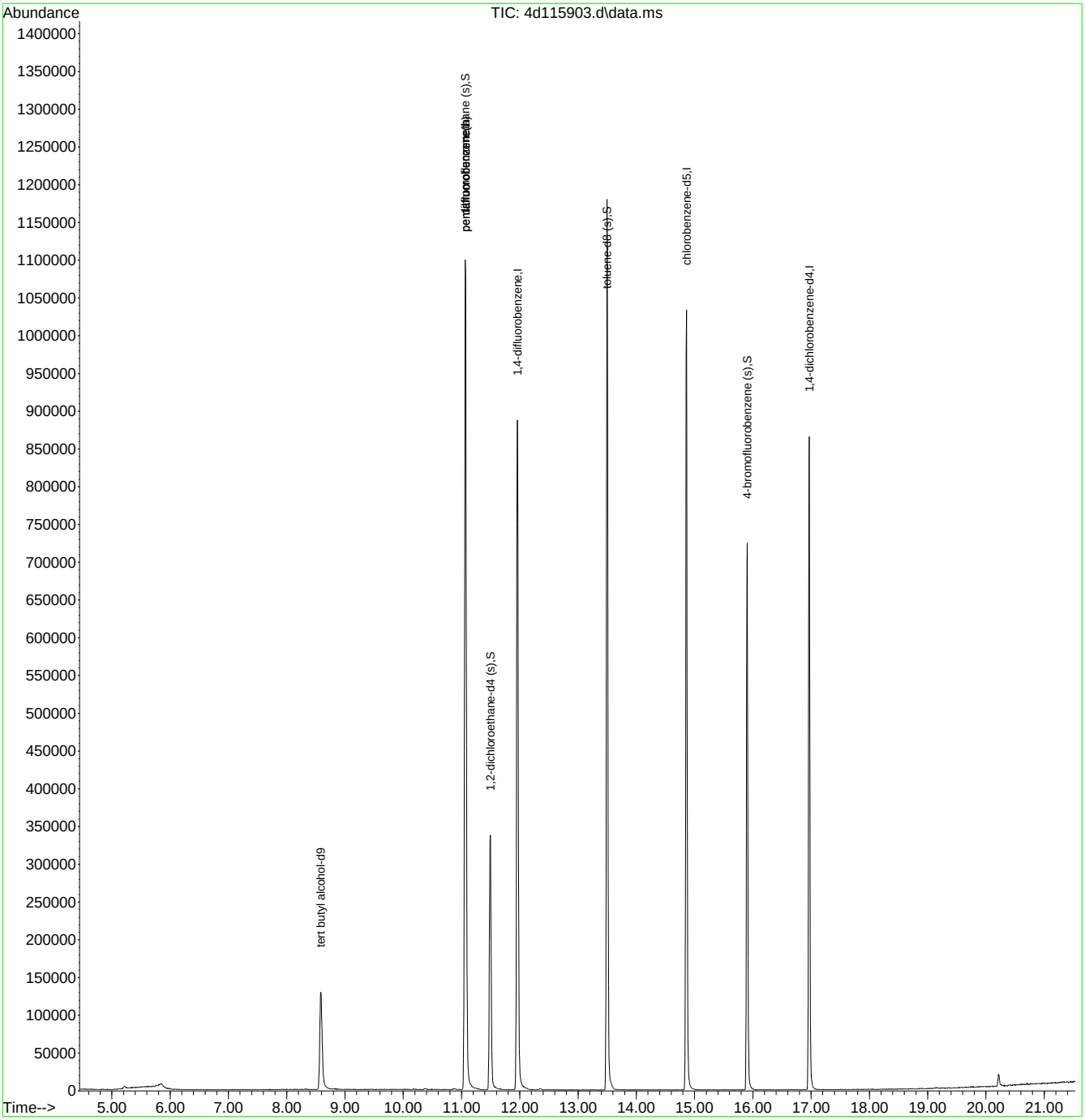
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\february 2022\02242022\v4d5151\
Data File : 4d115903.d
Acq On : 23 Feb 2022 12:22 am
Operator : BridgetK
Sample : jd40008-5 Inst : MS4D
Misc : MS56922,V4D5151,5,,,,1
ALS Vial : 33 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4D5098.M
Quant Results File: M4D5098.RES
Quant Time: Feb 24 01:03:27 2022
Quant Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
QLast Update : Mon Jan 17 15:07:58 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188972.d
Acq On : 24 Feb 2022 12:50 pm
Operator : nickw
Sample : mb Inst : GCMS2C
Misc : MS48261,V2C8406,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:21:04 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 15:40:09 2022
Response via : Initial Calibration

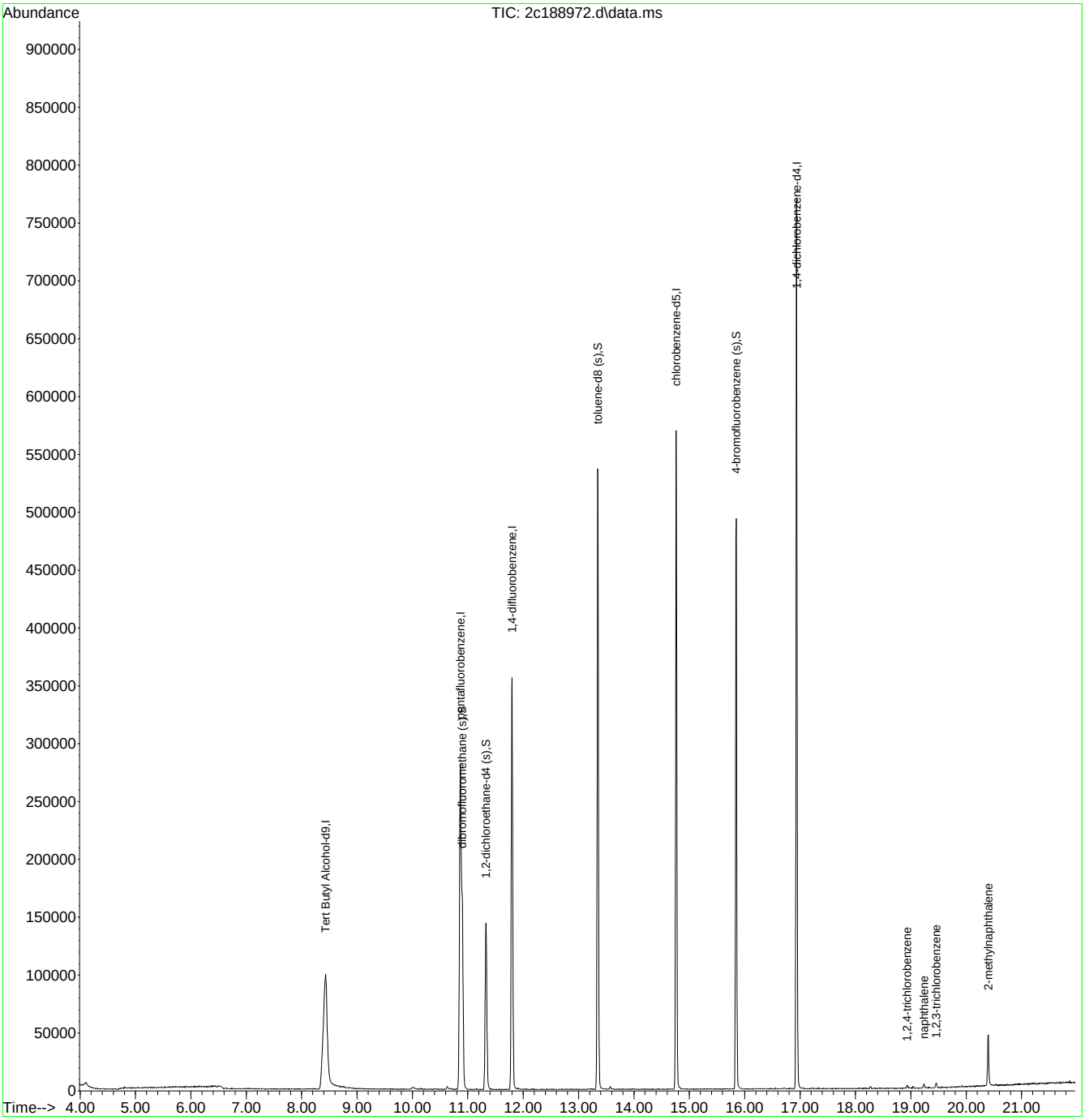
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	8.428	65	287089	500.00	ug/L	-0.02
5) pentafluorobenzene	10.866	168	222099	50.00	ug/L	0.00
49) 1,4-difluorobenzene	11.799	114	289379	50.00	ug/L	0.00
72) chlorobenzene-d5	14.761	117	271711	50.00	ug/L	0.00
95) 1,4-dichlorobenzene-d4	16.937	152	175200	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	10.897	113	98774	49.38	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.76%			
50) 1,2-dichloroethane-d4 (s)	11.327	65	109560	51.37	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 102.74%			
73) toluene-d8 (s)	13.346	98	322349	47.77	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.54%			
96) 4-bromofluorobenzene (s)	15.847	95	133930	45.01	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.02%			
Target Compounds						Qvalue
116) 1,2,4-trichlorobenzene	18.930	180	1081	0.23	ug/L #	54
118) naphthalene	19.239	128	3143	0.27	ug/L	96
119) 1,2,3-trichlorobenzene	19.454	180	1608	0.42	ug/L	96
121) 2-methylnaphthalene	20.398	142	21897	4.82	ug/L	94

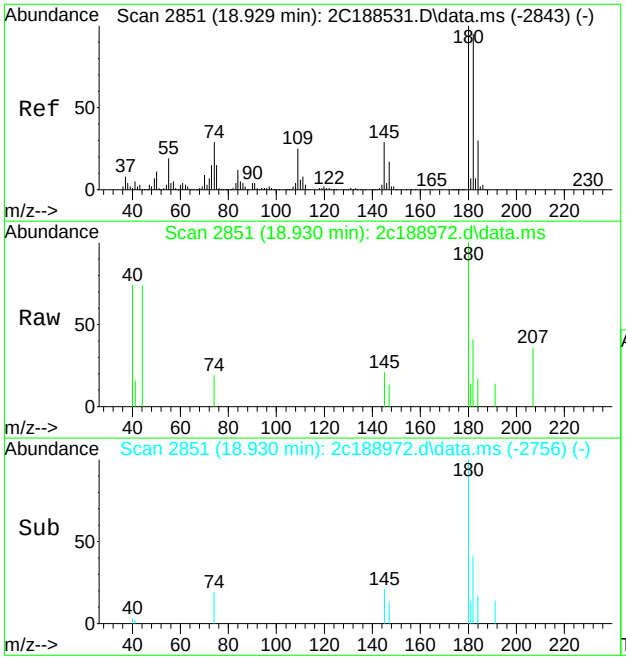
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nizele\2022\2_feb\2-25-2022\v2c8406-halfway\
Data File : 2c188972.d
Acq On : 24 Feb 2022 12:50 pm
Operator : nickw
Sample : mb Inst : GCMS2C
Misc : MS48261,V2C8406,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M2C8388.M
Quant Results File: M2C8388.RES
Quant Time: Feb 25 04:21:04 2022
Quant Title : SW846 8260C/D, Column ZB624 60mX0.25mmX1.4um
QLast Update : Fri Jan 21 15:40:09 2022
Response via : Initial Calibration

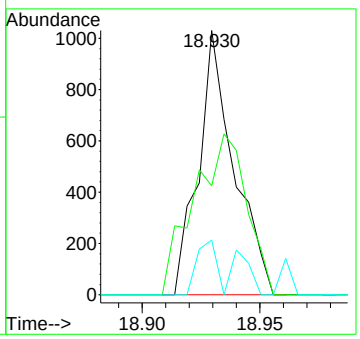


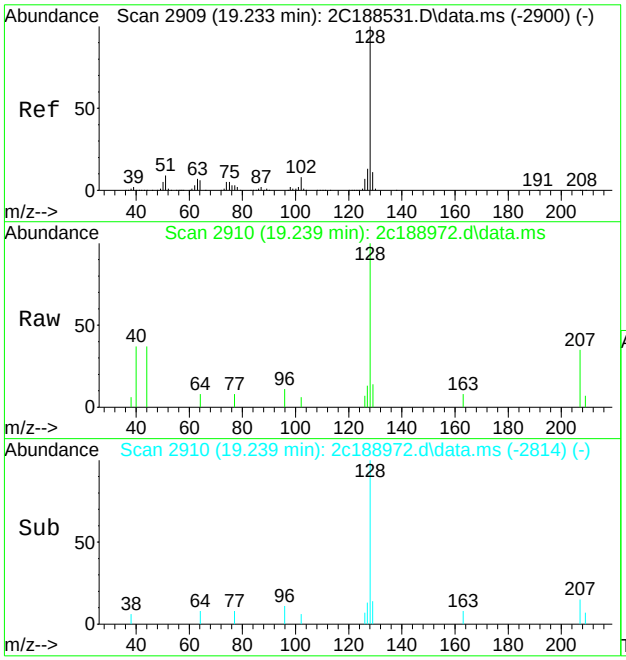


#116
1,2,4-trichlorobenzene
Concen: 0.23 ug/L
RT: 18.930 min Scan# 2851
Delta R.T. 0.000 min
Lab File: 2c188972.d
Acq: 24 Feb 2022 12:50 pm

Tgt Ion:180 Resp: 1081

Ion	Ratio	Lower	Upper
180	100		
182	41.2	64.8	124.8#
145	20.7	0.0	58.6

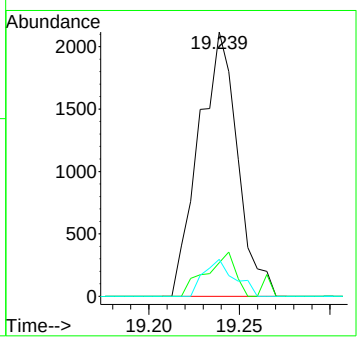


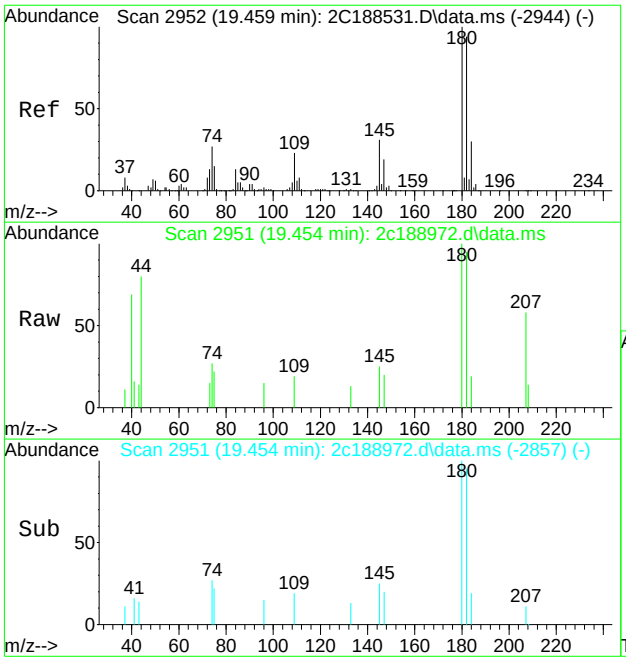


#118
naphthalene
Concen: 0.27 ug/L
RT: 19.239 min Scan# 2910
Delta R.T. 0.005 min
Lab File: 2c188972.d
Acq: 24 Feb 2022 12:50 pm

Tgt Ion:128 Resp: 3143

Ion	Ratio	Lower	Upper
128	100		
127	12.7	0.0	42.9
129	14.0	0.0	41.2

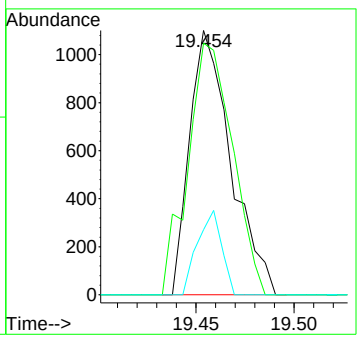


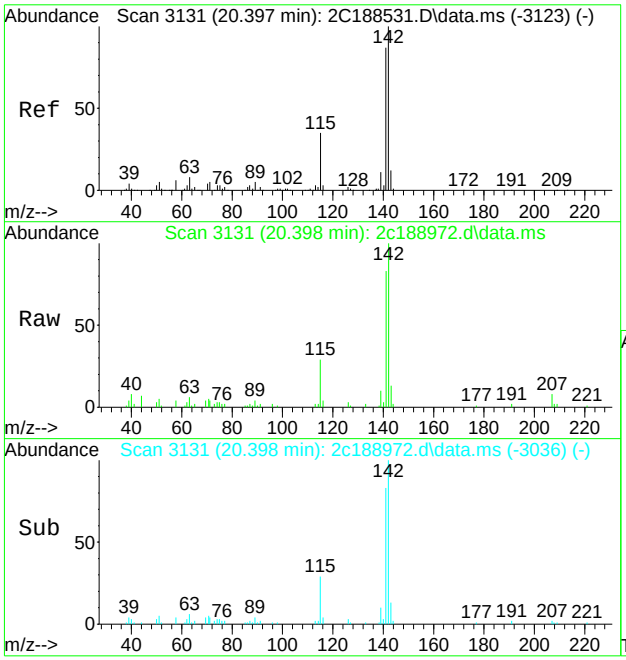


#119
1,2,3-trichlorobenzene
Concen: 0.42 ug/L
RT: 19.454 min Scan# 2951
Delta R.T. -0.005 min
Lab File: 2c188972.d
Acq: 24 Feb 2022 12:50 pm

Tgt Ion:180 Resp: 1608

Ion	Ratio	Lower	Upper
180	100		
182	95.2	64.3	124.3
145	24.6	1.2	61.2

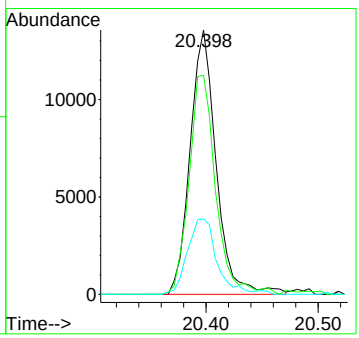




#121
2-methylnaphthalene
Concen: 4.82 ug/L
RT: 20.398 min Scan# 3131
Delta R.T. 0.001 min
Lab File: 2c188972.d
Acq: 24 Feb 2022 12:50 pm

Tgt Ion:142 Resp: 21897

Ion	Ratio	Lower	Upper
142	100		
141	82.9	66.8	106.8
115	28.5	4.5	64.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\february 2022\02242022\v4d5151\
Data File : 4d115902.d
Acq On : 22 Feb 2022 11:54 pm
Operator : BridgetK
Sample : mb Inst : MS4D
Misc : MS37677,V4D5151,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4D5098.M
Quant Results File: M4D5098.RES
Quant Time: Feb 24 01:02:23 2022
Quant Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
QLast Update : Mon Jan 17 15:07:58 2022
Response via : Initial Calibration

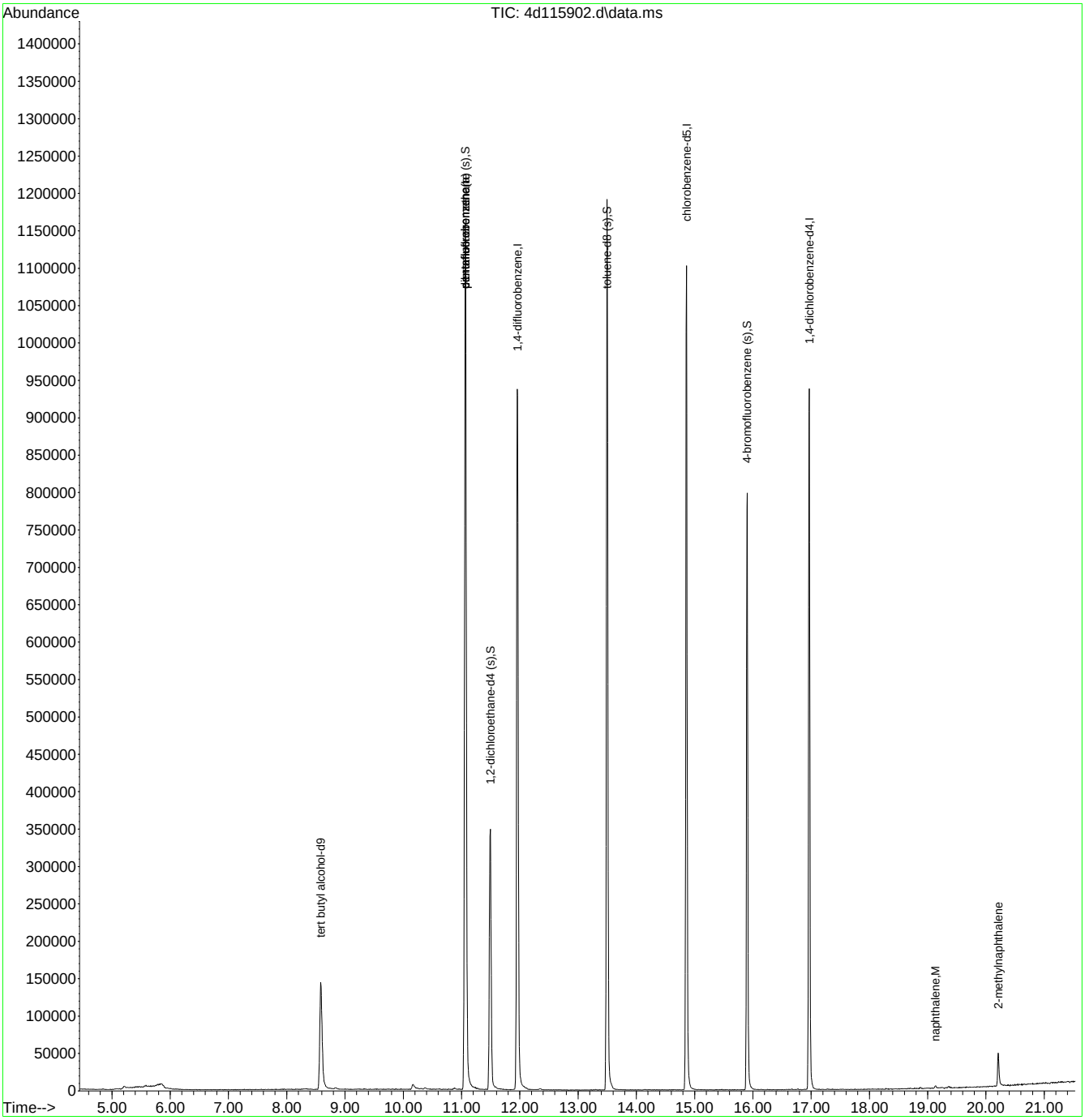
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	8.584	65	220380	500.00	ug/L	0.00
5) pentafluorobenzene	11.064	168	624553	50.00	ug/L	0.00
52) 1,4-difluorobenzene	11.961	114	792370	50.00	ug/L	0.00
74) chlorobenzene-d5	14.860	117	581483	50.00	ug/L	0.00
97) 1,4-dichlorobenzene-d4	16.968	152	235087	50.00	ug/L	0.00
125) pentafluorobenzene(a)	11.064	168	624553	50.00	ug/L	0.00
System Monitoring Compounds						
44) dibromofluoromethane (s)	11.064	113	245562	49.19	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.38%			
53) 1,2-dichloroethane-d4 (s)	11.494	65	268387	55.58	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 111.16%			
75) toluene-d8 (s)	13.497	98	751051	50.19	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.38%			
98) 4-bromofluorobenzene (s)	15.898	95	244816	49.88	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.76%			
Target Compounds						Qvalue
121) naphthalene	19.133	128	3648	0.41	ug/L	88
124) 2-methylnaphthalene	20.213	142	25320	9.01	ug/L	98

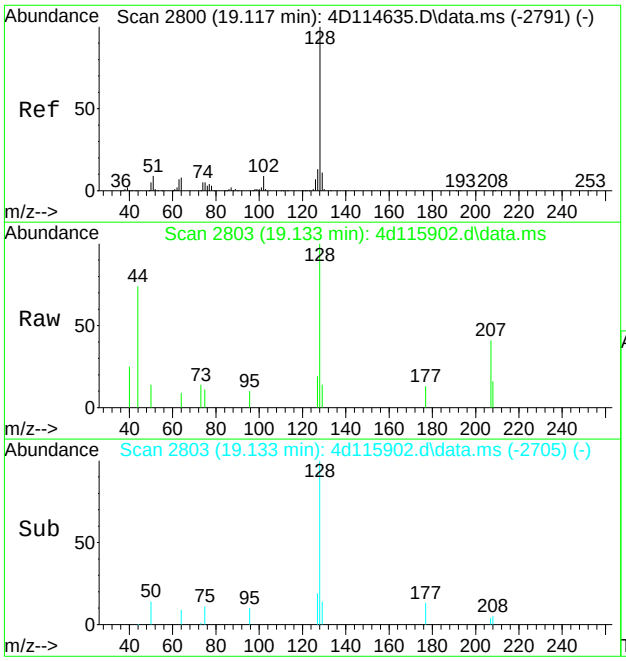
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\february 2022\02242022\v4d5151\
Data File : 4d115902.d
Acq On : 22 Feb 2022 11:54 pm
Operator : BridgetK
Sample : mb Inst : MS4D
Misc : MS37677,V4D5151,5,,,,1
ALS Vial : 32 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4D5098.M
Quant Results File: M4D5098.RES
Quant Time: Feb 24 01:02:23 2022
Quant Title : SW846 8260C/D/ EPA 624.1, DB-624 60 m x 0.25 mm x 1.4 um
QLast Update : Mon Jan 17 15:07:58 2022
Response via : Initial Calibration

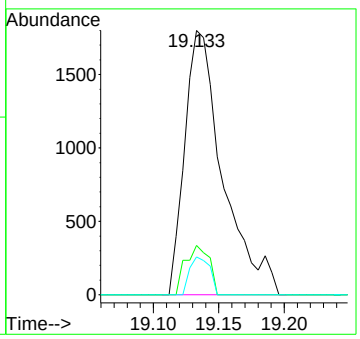


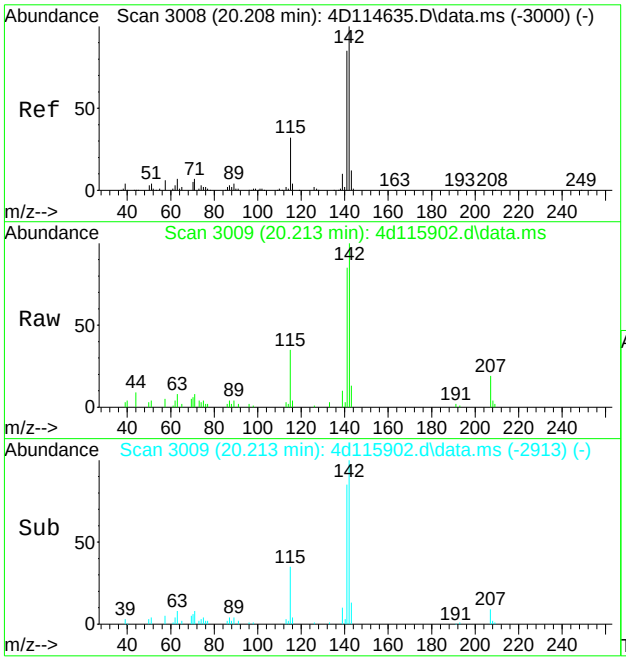


#121
naphthalene
Concen: 0.41 ug/L
RT: 19.133 min Scan# 2803
Delta R.T. 0.016 min
Lab File: 4d115902.d
Acq: 22 Feb 2022 11:54 pm

Tgt Ion:128 Resp: 3648

Ion	Ratio	Lower	Upper
128	100		
127	18.7	0.0	42.7
129	14.4	0.0	41.1

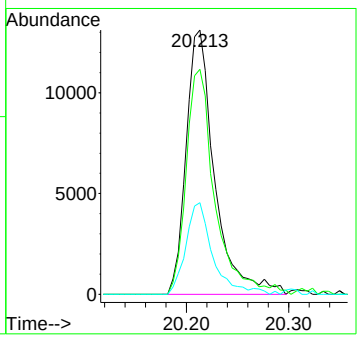




#124
2-methylnaphthalene
Concen: 9.01 ug/L
RT: 20.213 min Scan# 3009
Delta R.T. 0.005 min
Lab File: 4d115902.d
Acq: 22 Feb 2022 11:54 pm

Tgt Ion:142 Resp: 25320

Ion	Ratio	Lower	Upper
142	100		
141	85.1	64.6	104.6
115	34.7	12.2	52.2



MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38283-MB1	4P51939.D	1	02/23/22	CS	02/22/22	OP38283	E4P2708

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0441	0.080	0.040	ug/l	J
56-55-3	Benzo(a)anthracene	0.0292	0.040	0.024	ug/l	J
50-32-8	Benzo(a)pyrene	0.0403	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0476	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0743	0.080	0.040	ug/l	J
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	0.0447	0.080	0.040	ug/l	J
91-20-3	Naphthalene	0.0616	0.080	0.040	ug/l	J
85-01-8	Phenanthrene	0.0501	0.080	0.040	ug/l	J
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	59%	29-124%
321-60-8	2-Fluorobiphenyl	68%	23-122%
1718-51-0	Terphenyl-d14	85%	22-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38283-BS1	4P51940.D	1	02/23/22	CS	02/22/22	OP38283	E4P2708
OP38283-BSD [a]	4P51941.D	1	02/23/22	CS	02/22/22	OP38283	E4P2708

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
120-12-7	Anthracene	0.8	0.549	69	0.385	48	35* [b]	40-125/32
56-55-3	Benzo(a)anthracene	0.8	0.619	77	0.451	56	31	38-132/31
50-32-8	Benzo(a)pyrene	0.8	0.549	69	0.396	50	32	31-110/37
205-99-2	Benzo(b)fluoranthene	0.8	0.753	94	0.551	69	31	31-113/37
191-24-2	Benzo(g,h,i)perylene	0.8	0.697	87	0.472	59	38	18-110/54
218-01-9	Chrysene	0.8	0.576	72	0.424	53	30	43-119/33
86-73-7	Fluorene	0.8	0.487	61	0.368	46	28	42-123/34
91-20-3	Naphthalene	0.8	0.480	60	0.322	40	39	30-114/40
85-01-8	Phenanthrene	0.8	0.532	67	0.430	54	21	45-125/31
129-00-0	Pyrene	0.8	0.521	65	0.407	51	25	48-125/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	60%	34%	29-124%
321-60-8	2-Fluorobiphenyl	62%	42%	23-122%
1718-51-0	Terphenyl-d14	78%	55%	22-130%

(a) Recovery indicates possible low bias. Since balnk spike recoveries are within control limits, data are qualified and reported.
(b) Analytical precision exceeds in-house control limits.

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2704-DFTPP
Lab File ID: 4P51868.D
Instrument ID: GCMS4P
Injection Date: 02/17/22
Injection Time: 16:35

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	11344	37.5		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	13852	45.8		Pass
70	Less than 2.0% of mass 69	59	0.20	(0.43) [a]	Pass
127	40.0 - 60.0% of mass 198	16642	55.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	30248	100.0		Pass
199	5.0 - 9.0% of mass 198	2106	6.96		Pass
275	10.0 - 30.0% of mass 198	8227	27.2		Pass
365	1.0 - 100.0% of mass 198	1446	4.78		Pass
441	Present, but less than mass 443	3921	13.0	(82.7) [b]	Pass
442	40.0 - 100.0% of mass 198	25648	84.8		Pass
443	17.0 - 23.0% of mass 442	4744	15.7	(18.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2704-IC2704	4P51870.D	02/17/22	17:58	01:23	Initial cal 0.1
E4P2704-ICC2704	4P51871.D	02/17/22	18:37	02:02	Initial cal 0.2
E4P2704-IC2704	4P51872.D	02/17/22	19:01	02:26	Initial cal 0.02
E4P2704-IC2704	4P51873.D	02/17/22	19:25	02:50	Initial cal 1
E4P2704-IC2704	4P51874.D	02/17/22	19:50	03:15	Initial cal 0.01
E4P2704-IC2704	4P51875.D	02/17/22	20:14	03:39	Initial cal 0.5
E4P2704-IC2704	4P51876.D	02/17/22	20:39	04:04	Initial cal 0.04
E4P2704-IC2704	4P51877.D	02/17/22	21:04	04:29	Initial cal 0.004
E4P2704-IC2704	4P51878.D	02/17/22	21:29	04:54	Initial cal 0.002
E4P2704-ICV2704	4P51879.D	02/17/22	21:54	05:19	Initial cal verification 0.2
E4P2704-ICV2704	4P51880.D	02/17/22	22:19	05:44	Initial cal verification 0.2
ZZZZZZ	4P51881.D	02/17/22	22:44	06:09	(unrelated sample)
ZZZZZZ	4P51882.D	02/17/22	23:09	06:34	(unrelated sample)
ZZZZZZ	4P51886.D	02/18/22	00:49	08:14	(unrelated sample)
ZZZZZZ	4P51887.D	02/18/22	01:14	08:39	(unrelated sample)
E4P2704-ECC2704	4P51888.D	02/18/22	01:39	09:04	Ending cal 0.2

Instrument Performance Check (DFTPP)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2705-DFTPP
Lab File ID: 4P51889.D
Instrument ID: GCMS4P
Injection Date: 02/18/22
Injection Time: 10:43

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	17224	37.1		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	22938	49.4		Pass
70	Less than 2.0% of mass 69	94	0.20	(0.41) [a]	Pass
127	40.0 - 60.0% of mass 198	25914	55.8		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	46440	100.0		Pass
199	5.0 - 9.0% of mass 198	3646	7.85		Pass
275	10.0 - 30.0% of mass 198	12139	26.1		Pass
365	1.0 - 100.0% of mass 198	2232	4.81		Pass
441	Present, but less than mass 443	5883	12.7	(78.2) [b]	Pass
442	40.0 - 100.0% of mass 198	38577	83.1		Pass
443	17.0 - 23.0% of mass 442	7522	16.2	(19.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2705-ICV2704	4P51890.D	02/18/22	11:21	00:38	Initial cal verification 0.2
E4P2705-CC2704	4P51891.D	02/18/22	11:45	01:02	Continuing cal 0.2
OP38168A-MB1	4P51892.D	02/18/22	12:33	01:50	Method Blank
ZZZZZZ	4P51893A.D	02/18/22	14:50	04:07	(unrelated sample)
OP38168A-BS12	4P51894.D	02/18/22	15:14	04:31	Blank Spike
OP38168A-BSD12	4P51895.D	02/18/22	15:37	04:54	Blank Spike Duplicate
ZZZZZZ	4P51896.D	02/18/22	16:01	05:18	(unrelated sample)
ZZZZZZ	4P51897.D	02/18/22	16:24	05:41	(unrelated sample)
ZZZZZZ	4P51898.D	02/18/22	16:48	06:05	(unrelated sample)
ZZZZZZ	4P51900.D	02/18/22	17:35	06:52	(unrelated sample)
ZZZZZZ	4P51901.D	02/18/22	17:58	07:15	(unrelated sample)
ZZZZZZ	4P51902.D	02/18/22	18:22	07:39	(unrelated sample)
OP38144A-MSA	4P51903.D	02/18/22	18:45	08:02	Matrix Spike
OP38144A-MSDA	4P51904.D	02/18/22	19:09	08:26	Matrix Spike Duplicate
E4P2705-ECC2704	4P51905.D	02/18/22	19:32	08:49	Ending cal 0.2

Instrument Performance Check (DFTPP)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2708-DFTPP
Lab File ID: 4P51936.D
Instrument ID: GCMS4P
Injection Date: 02/22/22
Injection Time: 23:29

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	20055	33.2		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	26561	44.0		Pass
70	Less than 2.0% of mass 69	134	0.22	(0.50) [a]	Pass
127	40.0 - 60.0% of mass 198	32901	54.5		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	60317	100.0		Pass
199	5.0 - 9.0% of mass 198	4086	6.77		Pass
275	10.0 - 30.0% of mass 198	16175	26.8		Pass
365	1.0 - 100.0% of mass 198	2933	4.86		Pass
441	Present, but less than mass 443	8403	13.9	(78.9) [b]	Pass
442	40.0 - 100.0% of mass 198	55717	92.4		Pass
443	17.0 - 23.0% of mass 442	10651	17.7	(19.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2708-CC2704	4P51937.D	02/22/22	23:49	00:20	Continuing cal 0.1
OP38283-MB1	4P51939.D	02/23/22	02:18	02:49	Method Blank
OP38283-BS1	4P51940.D	02/23/22	02:41	03:12	Blank Spike
OP38283-BSD	4P51941.D	02/23/22	03:06	03:37	Blank Spike Duplicate
JD40008-1	4P51942.D	02/23/22	03:30	04:01	N-167_20220216
JD40008-2	4P51943.D	02/23/22	03:54	04:25	N-168_20220217
JD40008-3	4P51944.D	02/23/22	04:18	04:49	N-169_20220217
JD40008-4	4P51945.D	02/23/22	04:42	05:13	N-165_20220217
ZZZZZZ	4P51946.D	02/23/22	05:06	05:37	(unrelated sample)
ZZZZZZ	4P51947.D	02/23/22	05:30	06:01	(unrelated sample)
ZZZZZZ	4P51948.D	02/23/22	05:55	06:26	(unrelated sample)
ZZZZZZ	4P51949.D	02/23/22	06:18	06:49	(unrelated sample)
ZZZZZZ	4P51950.D	02/23/22	06:42	07:13	(unrelated sample)
ZZZZZZ	4P51951.D	02/23/22	07:06	07:37	(unrelated sample)
ZZZZZZ	4P51952.D	02/23/22	07:29	08:00	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2709-DFTPP
Lab File ID: 4P51961.D
Instrument ID: GCMS4P
Injection Date: 02/23/22
Injection Time: 16:12

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	16310	38.5		Pass
68	Less than 2.0% of mass 69	142	0.34	(0.68) [a]	Pass
69	Mass 69 relative abundance	20879	49.3		Pass
70	Less than 2.0% of mass 69	70	0.17	(0.34) [a]	Pass
127	40.0 - 60.0% of mass 198	24174	57.1		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	42355	100.0		Pass
199	5.0 - 9.0% of mass 198	2986	7.05		Pass
275	10.0 - 30.0% of mass 198	10603	25.0		Pass
365	1.0 - 100.0% of mass 198	1748	4.13		Pass
441	Present, but less than mass 443	4721	11.1	(69.7) [b]	Pass
442	40.0 - 100.0% of mass 198	32538	76.8		Pass
443	17.0 - 23.0% of mass 442	6776	16.0	(20.8) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2709-CC2704	4P51962.D	02/23/22	16:26	00:14	Continuing cal 0.2
ZZZZZZ	4P51964.D	02/23/22	17:28	01:16	(unrelated sample)
ZZZZZZ	4P51965.D	02/23/22	17:52	01:40	(unrelated sample)
ZZZZZZ	4P51966.D	02/23/22	18:16	02:04	(unrelated sample)
ZZZZZZ	4P51967.D	02/23/22	18:39	02:27	(unrelated sample)
ZZZZZZ	4P51968.D	02/23/22	19:03	02:51	(unrelated sample)
ZZZZZZ	4P51969.D	02/23/22	19:27	03:15	(unrelated sample)
ZZZZZZ	4P51970.D	02/23/22	19:51	03:39	(unrelated sample)
ZZZZZZ	4P51971.D	02/23/22	20:14	04:02	(unrelated sample)
JD40008-2	4P51972.D	02/23/22	20:38	04:26	N-168_20220217

Internal Standard Area Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E4P2708-CC2704	**Injection Date:**	02/22/22
Lab File ID:	4P51937.D	**Injection Time:**	23:49
Instrument ID:	GCMS4P	**Method:**	SW846 8270E BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	17121	6.31	25038	7.77	39603	9.87	18161	12.51
Upper Limit [a]	34242	6.81	50076	8.27	79206	10.37	36322	13.01
Lower Limit [b]	8561	5.81	12519	7.27	19802	9.37	9081	12.01

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP38283-MB1	13431	6.31	18267	7.77	24766	9.87	11275	12.51
OP38283-BS1	11353	6.31	16120	7.77	23786	9.87	11532	12.51
OP38283-BSD [c]	22814	6.31	32214	7.77	45964	9.87	20042	12.51
JD40008-1	15196	6.31	21098	7.77	29878	9.87	15321	12.51
JD40008-2	14390	6.31	20829	7.78	23997	9.88	12200	12.51
JD40008-3	19843	6.31	28350	7.77	33386	9.87	16431	12.51
JD40008-4	14463	6.31	20246	7.77	28304	9.87	14769	12.51
ZZZZZZ	10799	6.31	14352	7.77	18273[d]	9.87	10409	12.51
ZZZZZZ	13777	6.31	17939	7.77	23074	9.87	11304	12.51
ZZZZZZ	12160	6.31	16530	7.77	20910	9.87	10020	12.51
ZZZZZZ	11613	6.31	14622	7.77	19731[d]	9.87	11121	12.51
ZZZZZZ	13696	6.31	17404	7.77	24476	9.87	13588	12.51
ZZZZZZ	12934	6.31	16851	7.77	22446	9.87	12913	12.51
ZZZZZZ	17042	6.31	21171	7.77	27082	9.87	14696	12.51

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Recovery indicates possible low bias. Since balnk spike recoveries are within control limits, data are qualified and reported.
(d) Internal standard failing low.

Internal Standard Area Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E4P2709-CC2704	**Injection Date:**	02/23/22
Lab File ID:	4P51962.D	**Injection Time:**	16:26
Instrument ID:	GCMS4P	**Method:**	SW846 8270E BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	14295	6.31	19966	7.76	30532	9.86	17506	12.50
Upper Limit [a]	28590	6.81	39932	8.26	61064	10.36	35012	13.00
Lower Limit [b]	7148	5.81	9983	7.26	15266	9.36	8753	12.00

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
ZZZZZZ	11777	6.31	16260	7.76	24858	9.86	14345	12.50
ZZZZZZ	9986	6.30	12892	7.77	18619	9.86	11161	12.50
ZZZZZZ	9345	6.30	12797	7.77	19680	9.86	11538	12.50
ZZZZZZ	11105	6.30	14678	7.77	20525	9.86	11416	12.50
ZZZZZZ	9789	6.30	13408	7.77	19341	9.86	11059	12.50
ZZZZZZ	10051	6.30	13548	7.76	20001	9.86	11994	12.50
ZZZZZZ	9599	6.30	12665	7.76	18368	9.86	11157	12.50
ZZZZZZ	10247	6.30	13093	7.77	19488	9.86	11535	12.50
JD40008-2	12110	6.30	15101	7.77	21408	9.86	12553	12.50

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270E BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD40008-1	4P51942.D	52	61	69
JD40008-2	4P51972.D	70	70	65
JD40008-2	4P51943.D	70	63	73
JD40008-3	4P51944.D	58	66	71
JD40008-4	4P51945.D	51	57	51
OP38283-BS1	4P51940.D	60	62	78
OP38283-BSD	4P51941.D	34	42	55
OP38283-MB1	4P51939.D	59	68	85

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	29-124%
S2 = 2-Fluorobiphenyl	23-122%
S3 = Terphenyl-d14	22-130%

Initial Calibration Summary

Job Number: JD40008 **Sample:** E4P2704-ICC2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51871.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS4P

Method : C:\MSDCHEM\1\MET...\M4P2704SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Feb 18 09:59:22 2022
Response via : Initial Calibration

Calibration Files
1.0 =4p51873.D 0.5 =4p51875.D 0.2 =4p51871.D 0.1 =4p51870.D
0.04=4p51876.D 0.02=4p51872.D 0.01=4p51874.D .004=4p51877.D
.002=4p51878.D = = =

Compound	1.0	0.5	0.2	0.1	0.04	0.02	0.01	.004	.002	Avg	%RSD
1) I 1-Methylnaphthalene-d	----------ISTD----------										
2) 1,4-Dioxane	0.250	0.263	0.228	0.286	0.187	0.286				0.250	15.10
3) 2-Fluorophenol	0.532	0.608	0.574	0.611	0.590	0.661	0.713	0.605	0.572	0.607	8.71
4) Phenol-d5	0.841	0.861	0.885	0.901	0.913	1.060	1.030	1.008	0.776	0.919	10.28
5) Phenol	0.909	0.933	0.964	0.996	1.027	1.145	1.139	1.026	0.904	1.005	8.96
6) bis(2-Chloroethyl)ether										0.000#	-1.00
7) Nitrobenzene-d5	0.926	0.964	0.981	0.987	1.047	1.152	1.198	1.100	1.017	1.041	8.75
8) Naphthalene	2.405	2.437	2.464	2.507	2.589	2.889	3.094	3.012	2.849	2.694	9.92
9) Hexachlorobutadiene	0.847	0.853	0.863	0.865	0.918	1.034	1.063	1.194	0.982	0.958	12.54
10) 2-Methylnaphthalene	1.264	1.307	1.271	1.275	1.360	1.500	1.672	2.116	1.523	1.476	18.87
11) 1-Methylnaphthalene	1.294	1.351	1.325	1.353	1.465	1.659	1.781	1.737	1.916	1.542	15.12
12) Hexachlorocyclopentadiene											0.00
13) I Fluorene-d10	----------ISTD----------										
14) 2-Fluorobiphenyl	1.148	1.142	1.191	1.208	1.254	1.412	1.472	1.401	1.318	1.283	9.58
15) Acenaphthylene	1.638	1.643	1.656	1.607	1.681	1.864	1.981	1.925	1.779	1.753	7.97
16) Acenaphthene	1.192	1.181	1.181	1.200	1.217	1.434	1.507	1.290	1.307	1.279	9.32
17) Fluorene	1.210	1.241	1.231	1.229	1.285	1.546	1.451	1.444	1.452	1.343	9.56
18) 4,6-dinitro-2-methylphenol	0.196	0.182	0.139	0.116	0.078	0.067	0.065			0.121	45.01
---- Quadratic regression ---- Coefficient = 0.9961											
Response Ratio = -0.00818 + 0.14059 *A + 0.00961 *A^2											
19) 2,4,6-Tribromophenol	0.356	0.362	0.352	0.353	0.327	0.359	0.363	0.292	0.258	0.336	11.08
20) Fluoranthene-d10	----------ISTD----------										
21) Hexachlorobenzene	0.460	0.447	0.486	0.472	0.494	0.554	0.593	0.557	0.473	0.504	10.11

Initial Calibration Summary

Job Number: JD40008 **Sample:** E4P2704-ICC2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51871.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
22)  Pentachlorophenol
           0.198 0.192 0.173 0.159 0.121 0.119 0.103                    0.152   24.93
            ---- Quadratic regression ----  Coefficient =  0.9988
              Response Ratio = -0.00658 + 0.17415 *A + 0.00428 *A^2

23)  Phenanthrene
           1.193 1.196 1.224 1.191 1.256 1.404 1.407 1.596 1.396        1.318   10.66
24)  Anthracene
           1.172 1.168 1.175 1.123 1.213 1.351 1.384 1.495 1.207        1.254    9.99
25)  Fluoranthene
           1.291 1.343 1.310 1.337 1.451 1.648 1.805 1.938              1.515   16.51
26)  Pyrene
           1.322 1.340 1.292 1.286 1.339 1.441 1.522 1.558 1.609        1.412    8.74
27)  Terphenyl-d14
           0.682 0.660 0.632 0.642 0.668 0.725 0.762 0.687 0.612        0.674    6.94
28)  Benzo[a]anthracene
           1.083 1.059 0.963 0.943 0.913 0.967 1.057 0.975 0.923        0.987    6.41
29)  Chrysene
           1.115 1.097 1.022 1.007 1.013 1.075 1.111 1.089 0.994        1.058    4.59

30) I   Benzo(a)pyrene-d12    ----------------ISTD---------------------
31)  Benzo[b]fluoranthene
           1.669 1.666 1.503 1.528 1.551 1.757 1.696 1.712 1.260        1.594    9.60
32)  Benzo[k]fluoranthene
           1.713 1.820 1.653 1.586 1.449 1.579 1.895 1.613 1.774        1.676    8.25
33)  Benzo[a]pyrene
           1.626 1.665 1.608 1.666 1.785 2.046 2.514 1.886 2.007        1.867   15.65
34)  Indeno[1,2,3-cd]pyrene
           1.971 1.908 1.749 1.768 1.657 1.840 1.948 1.787 1.634        1.807    6.66
35)  Dibenz[a,h]anthracene
           1.623 1.577 1.452 1.444 1.368 1.474 1.583 1.638 1.447        1.512    6.28
36)  Benzo[g,h,i]perylene
           1.747 1.691 1.579 1.636 1.531 1.684 1.789 1.464 1.774        1.655    6.78
-------------------------------------------------------------------------------
(#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          M4P2704SIMLVI.M        Fri Feb 18 18:52:50 2022   YING
```

8.6.1

8

Initial Calibration Verification

Job Number: JD40008 **Sample:** E4P2704-ICV2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51879.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4P2704\4p51879.D Vial: 11
Acq On : 17 Feb 2022 9:54 pm Operator: kristis
Sample : icv2704-0.2 Inst : MS4P
Misc : op37872a,e4p2704,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M4P2704SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Feb 18 09:59:22 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	1-Methylnaphthalene-d10	1.000	1.000	0.0	73	0.00	6.34
5	Phenol	1.005	0.888	11.6	67	-0.01	4.13
13 I	Fluorene-d10	1.000	1.000	0.0	77	0.00	7.81
	----------	True	Calc.	% Drift		----------	
18	4,6-dinitro-2-methylpheno	1000.000	959.047	4.1	77	-0.02	7.93
20	Fluoranthene-d10	1.000	1.000	0.0	79	0.00	9.91
	----------	True	Calc.	% Drift		----------	
22 t	Pentachlorophenol	1000.000	890.645	10.9	70	0.00	8.59

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p51871.D M4P2704SIMLVI.M Fri Feb 18 18:53:41 2022 YING

8.6.2

8

Initial Calibration Verification

Job Number: JD40008 **Sample:** E4P2704-ICV2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51880.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4P2704\4p51880.D Vial: 12
Acq On : 17 Feb 2022 10:19 pm Operator: kristis
Sample : icv2704-0.2 Inst : MS4P
Misc : op37872a,e4p2704,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M4P2704SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Feb 18 09:45:09 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	58	0.00	6.34
8	t	Naphthalene	2.694	2.542	5.6	60	0.00	5.59
9	t	Hexachlorobutadiene	0.958	0.826	13.8	56	0.01	5.73
10	t	2-Methylnaphthalene	1.476	1.289	12.7	59	0.00	6.28
11	t	1-Methylnaphthalene	1.542	1.281	16.9	56	0.00	6.37
13	I	Fluorene-d10	1.000	1.000	0.0	63	0.00	7.81
15	t	Acenaphthylene	1.753	1.540	12.2	58	0.00	7.15
16	t	Acenaphthene	1.279	1.036	19.0	55	0.00	7.32
17	t	Fluorene	1.343	1.110	17.3	57	0.00	7.83
20		Fluoranthene-d10	1.000	1.000	0.0	67	0.00	9.91
21	t	Hexachlorobenzene	0.504	0.386	23.4	53	0.00	8.36
23	t	Phenanthrene	1.318	1.124	14.7	62	0.00	8.75
24	t	Anthracene	1.254	1.087	13.3	62	0.00	8.81
25	t	Fluoranthene	1.515	1.220	19.5	63	0.00	9.91
26	t	Pyrene	1.412	1.211	14.2	63	0.00	10.14
28	t	Benzo[a]anthracene	0.987	0.972	1.5	68	0.00	11.31
29	t	Chrysene	1.058	0.975	7.8	64	0.00	11.35
30	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	67	0.00	12.54
31	t	Benzo[b]fluoranthene	1.594	1.513	5.1	68	0.00	12.30
32	t	Benzo[k]fluoranthene	1.676	1.528	8.8	62	0.00	12.32
33	t	Benzo[a]pyrene	1.867	1.532	17.9	64	0.00	12.56
34	t	Indeno[1,2,3-cd]pyrene	1.807	1.516	16.1	58	0.00	13.45
35	t	Dibenz[a,h]anthracene	1.512	1.303	13.8	61	0.00	13.46
36	t	Benzo[g,h,i]perylene	1.655	1.439	13.1	62	0.00	13.67

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p51871.D M4P2704SIMLVI.M Fri Feb 18 09:48:01 2022 YING

8.6.3

8

Initial Calibration Verification

Job Number: JD40008 **Sample:** E4P2705-ICV2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51890.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4P2705\4p51890.D Vial: 2
Acq On : 18 Feb 2022 11:21 am Operator: kristis
Sample : icv2704-0.2 Inst : MS4P
Misc : op37872a,e4p2705,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M4P2704SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Feb 18 09:59:22 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	1-Methylnaphthalene-d10	1.000	1.000	0.0	132	0.00	6.34
2 t	1,4-Dioxane	0.250	0.233	6.8	134	0.00	1.47

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p51871.D M4P2704SIMLVI.M Fri Feb 18 19:02:10 2022 YING

8.6.4

8

Continuing Calibration Summary

Job Number: JD40008 **Sample:** E4P2708-CC2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51937.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4P2708\4p51937.D Vial: 2
Acq On : 22 Feb 2022 11:49 pm Operator: chriss2
Sample : cc2704-0.1 Inst : MS4P
Misc : op38241a,e4p2708,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M4P2704SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Mon Feb 21 11:29:18 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	145	-0.03	6.31
2	t	1,4-Dioxane	0.250	0.159	36.4#	80	-0.01	1.41
3	S	2-Fluorophenol	0.607	0.559	7.9	132	-0.03	3.08
4	S	Phenol-d5	0.919	0.925	-0.7	148	-0.03	4.08
5		Phenol	1.005	1.011	-0.6	147	-0.04	4.09
7	S	Nitrobenzene-d5	1.041	0.986	5.3	144	-0.03	4.86
8	t	Naphthalene	2.694	2.581	4.2	149	-0.03	5.56
9	t	Hexachlorobutadiene	0.958	0.838	12.5	140	-0.03	5.70
10	t	2-Methylnaphthalene	1.476	1.362	7.7	154	-0.03	6.25
11	t	1-Methylnaphthalene	1.542	1.386	10.1	148	-0.03	6.34
12		Hexachlorocyclopentadiene	0.415	0.403	2.9	140	-0.02	6.40
13	I	Fluorene-d10	1.000	1.000	0.0	150	-0.03	7.77
14	S	2-Fluorobiphenyl	1.283	1.188	7.4	148	-0.02	6.63
15	t	Acenaphthylene	1.753	1.646	6.1	154	-0.03	7.12
16	t	Acenaphthene	1.279	1.206	5.7	151	-0.03	7.29
17	t	Fluorene	1.343	1.225	8.8	150	-0.03	7.80
		----------	True	Calc.	% Drift	----------		
18		4,6-dinitro-2-methylpheno	500.000	571.984	-14.4	202	-0.03	7.90
		----------	AvgRF	CCRF	% Dev	----------		
19	S	2,4,6-Tribromophenol	0.336	0.376	-11.9	160	-0.03	8.04
20		Fluoranthene-d10	1.000	1.000	0.0	151	-0.04	9.87
21	t	Hexachlorobenzene	0.504	0.465	7.7	149	-0.03	8.33
		----------	True	Calc.	% Drift	----------		
22	t	Pentachlorophenol	500.000	507.394	-1.5	160	-0.02	8.56
		----------	AvgRF	CCRF	% Dev	----------		
23	t	Phenanthrene	1.318	1.166	11.5	148	-0.03	8.72
24	t	Anthracene	1.254	1.155	7.9	155	-0.03	8.78
25	t	Fluoranthene	1.515	1.337	11.7	151	-0.03	9.89
26	t	Pyrene	1.412	1.327	6.0	156	-0.04	10.10
27	S	Terphenyl-d14	0.674	0.657	2.5	155	-0.03	10.30
28	t	Benzo[a]anthracene	0.987	1.000	-1.3	160	-0.03	11.28
29	t	Chrysene	1.058	1.017	3.9	152	-0.03	11.31
30	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	132	-0.03	12.51
31	t	Benzo[b]fluoranthene	1.594	1.814	-13.8	156	-0.03	12.26
32	t	Benzo[k]fluoranthene	1.676	1.589	5.2	132	-0.03	12.29

Continuing Calibration Summary

Job Number: JD40008 **Sample:** E4P2708-CC2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51937.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

33	t	Benzo[a]pyrene	1.867	1.658	11.2	131	-0.03	12.53
34	t	Indeno[1,2,3-cd]pyrene	1.807	2.135	-18.2	159	-0.04	13.41
35	t	Dibenz[a,h]anthracene	1.512	1.759	-16.3	160	-0.03	13.43
36	t	Benzo[g,h,i]perylene	1.655	1.914	-15.6	154	-0.04	13.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p51870.D M4P2704SIMLVI.M Wed Feb 23 12:28:57 2022 YING

Continuing Calibration Summary

Job Number: JD40008 **Sample:** E4P2709-CC2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51962.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\jo...422\e4p2709\4p51962.d Vial: 2
Acq On : 23 Feb 2022 4:26 pm Operator: kristis
Sample : cc2704-0.2 Inst : MS4P
Misc : op38241a,e4p2709,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M4P2704SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Tue Feb 22 22:49:58 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	122	-0.01	6.31
2	t	1,4-Dioxane	0.250	0.343	-37.2#	183	0.00	1.37
3	S	2-Fluorophenol	0.607	0.602	0.8	128	-0.01	3.06
4	S	Phenol-d5	0.919	0.950	-3.4	131	-0.02	4.06
5		Phenol	1.005	1.027	-2.2	130	-0.02	4.07
7	S	Nitrobenzene-d5	1.041	0.961	7.7	120	-0.01	4.85
8	t	Naphthalene	2.694	2.539	5.8	126	-0.01	5.56
9	t	Hexachlorobutadiene	0.958	0.836	12.7	118	-0.02	5.69
10	t	2-Methylnaphthalene	1.476	1.284	13.0	123	-0.01	6.25
11	t	1-Methylnaphthalene	1.542	1.359	11.9	125	-0.02	6.34
13	I	Fluorene-d10	1.000	1.000	0.0	123	-0.02	7.76
14	S	2-Fluorobiphenyl	1.283	1.178	8.2	121	-0.01	6.63
15	t	Acenaphthylene	1.753	1.641	6.4	122	-0.01	7.11
16	t	Acenaphthene	1.279	1.197	6.4	124	-0.01	7.29
17	t	Fluorene	1.343	1.234	8.1	123	-0.02	7.79
		----------	True	Calc.	% Drift	----------		
18		4,6-dinitro-2-methylpheno	1000.000	870.185	13.0	110	-0.02	7.89
		----------	AvgRF	CCRF	% Dev	----------		
19	S	2,4,6-Tribromophenol	0.336	0.360	-7.1	126	-0.02	8.04
20		Fluoranthene-d10	1.000	1.000	0.0	124	-0.02	9.86
21	t	Hexachlorobenzene	0.504	0.463	8.1	118	-0.01	8.33
		----------	True	Calc.	% Drift	----------		
22	t	Pentachlorophenol	1000.000	1083.754	-8.4	136	-0.01	8.55
		----------	AvgRF	CCRF	% Dev	----------		
23	t	Phenanthrene	1.318	1.231	6.6	125	-0.01	8.72
24	t	Anthracene	1.254	1.119	10.8	118	-0.01	8.78
25	t	Fluoranthene	1.515	1.336	11.8	127	-0.02	9.88
26	t	Pyrene	1.412	1.328	5.9	128	-0.02	10.09
27	S	Terphenyl-d14	0.674	0.651	3.4	128	-0.02	10.29
28	t	Benzo[a]anthracene	0.987	1.096	-11.0	141	-0.01	11.27
29	t	Chrysene	1.058	1.103	-4.3	134	-0.02	11.31
30	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	131	-0.01	12.50
31	t	Benzo[b]fluoranthene	1.594	1.739	-9.1	151	-0.01	12.26

Continuing Calibration Summary

Job Number: JD40008 **Sample:** E4P2709-CC2704
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P51962.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

32	t	Benzo[k]fluoranthene	1.676	1.581	5.7	125	-0.01	12.28
33	t	Benzo[a]pyrene	1.867	1.599	14.4	130	-0.02	12.52
34	t	Indeno[1,2,3-cd]pyrene	1.807	2.124	-17.5	159	-0.01	13.40
35	t	Dibenz[a,h]anthracene	1.512	1.790	-18.4	161	-0.02	13.42
36	t	Benzo[g,h,i]perylene	1.655	1.867	-12.8	155	-0.02	13.62

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p51930.d M4P2704SIMLVI.M Wed Feb 23 22:12:50 2022

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E4P2704 **Method:** SW846 8270E BY SIM **Instrument ID:** GCMS4P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E4P2704-DFTPP	4P51868.D	02/17/22 16:35	n/a	DFTPP Tune
E4P2704-IC2704	4P51870.D	02/17/22 17:58	n/a	Initial cal 0.1
E4P2704-ICC2704	4P51871.D	02/17/22 18:37	n/a	Initial cal 0.2
E4P2704-IC2704	4P51872.D	02/17/22 19:01	n/a	Initial cal 0.02
E4P2704-IC2704	4P51873.D	02/17/22 19:25	n/a	Initial cal 1
E4P2704-IC2704	4P51874.D	02/17/22 19:50	n/a	Initial cal 0.01
E4P2704-IC2704	4P51875.D	02/17/22 20:14	n/a	Initial cal 0.5
E4P2704-IC2704	4P51876.D	02/17/22 20:39	n/a	Initial cal 0.04
E4P2704-IC2704	4P51877.D	02/17/22 21:04	n/a	Initial cal 0.004
E4P2704-IC2704	4P51878.D	02/17/22 21:29	n/a	Initial cal 0.002
E4P2704-ICV2704	4P51879.D	02/17/22 21:54	n/a	Initial cal verification 0.2
E4P2704-ICV2704	4P51880.D	02/17/22 22:19	n/a	Initial cal verification 0.2
ZZZZZZ	4P51881.D	02/17/22 22:44	OP38144A	(unrelated sample)
ZZZZZZ	4P51882.D	02/17/22 23:09	OP38144A	(unrelated sample)
ZZZZZZ	4P51886.D	02/18/22 00:49	OP38144A	(unrelated sample)
ZZZZZZ	4P51887.D	02/18/22 01:14	OP38144A	(unrelated sample)
E4P2704-ECC2704	4P51888.D	02/18/22 01:39	n/a	Ending cal 0.2

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E4P2705 **Method:** SW846 8270E BY SIM **Instrument ID:** GCMS4P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E4P2705-DFTPP	4P51889.D	02/18/22 10:43	n/a	DFTPP Tune
E4P2705-ICV2704	4P51890.D	02/18/22 11:21	n/a	Initial cal verification 0.2
E4P2705-CC2704	4P51891.D	02/18/22 11:45	n/a	Continuing cal 0.2
OP38168A-MB1	4P51892.D	02/18/22 12:33	OP38168A	Method Blank
ZZZZZZ	4P51893A.D	02/18/22 14:50	OP38168A	(unrelated sample)
OP38168A-BS12	4P51894.D	02/18/22 15:14	OP38168A	Blank Spike
OP38168A-BSD12	4P51895.D	02/18/22 15:37	OP38168A	Blank Spike Duplicate
ZZZZZZ	4P51896.D	02/18/22 16:01	OP38168A	(unrelated sample)
ZZZZZZ	4P51897.D	02/18/22 16:24	OP38168A	(unrelated sample)
ZZZZZZ	4P51898.D	02/18/22 16:48	OP38168A	(unrelated sample)
ZZZZZZ	4P51900.D	02/18/22 17:35	OP38168A	(unrelated sample)
ZZZZZZ	4P51901.D	02/18/22 17:58	OP38168A	(unrelated sample)
ZZZZZZ	4P51902.D	02/18/22 18:22	OP37982A	(unrelated sample)
OP38144A-MSA	4P51903.D	02/18/22 18:45	OP38144A	Matrix Spike
OP38144A-MSDA	4P51904.D	02/18/22 19:09	OP38144A	Matrix Spike Duplicate
E4P2705-ECC2704	4P51905.D	02/18/22 19:32	n/a	Ending cal 0.2

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E4P2708 **Method:** SW846 8270E BY SIM **Instrument ID:** GCMS4P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E4P2708-DFTPP	4P51936.D	02/22/22 23:29	n/a	DFTPP Tune
E4P2708-CC2704	4P51937.D	02/22/22 23:49	n/a	Continuing cal 0.1
OP38283-MB1	4P51939.D	02/23/22 02:18	OP38283	Method Blank
OP38283-BS1	4P51940.D	02/23/22 02:41	OP38283	Blank Spike
OP38283-BSD	4P51941.D	02/23/22 03:06	OP38283	Blank Spike Duplicate
JD40008-1	4P51942.D	02/23/22 03:30	OP38283	N-167_20220216
JD40008-2	4P51943.D	02/23/22 03:54	OP38283	N-168_20220217
JD40008-3	4P51944.D	02/23/22 04:18	OP38283	N-169_20220217
JD40008-4	4P51945.D	02/23/22 04:42	OP38283	N-165_20220217
ZZZZZZ	4P51946.D	02/23/22 05:06	OP38283	(unrelated sample)
ZZZZZZ	4P51947.D	02/23/22 05:30	OP38283	(unrelated sample)
ZZZZZZ	4P51948.D	02/23/22 05:55	OP38283	(unrelated sample)
ZZZZZZ	4P51949.D	02/23/22 06:18	OP38283	(unrelated sample)
ZZZZZZ	4P51950.D	02/23/22 06:42	OP38283	(unrelated sample)
ZZZZZZ	4P51951.D	02/23/22 07:06	OP38283	(unrelated sample)
ZZZZZZ	4P51952.D	02/23/22 07:29	OP38283	(unrelated sample)

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E4P2709 **Method:** SW846 8270E BY SIM **Instrument ID:** GCMS4P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E4P2709-DFTPP	4P51961.D	02/23/22 16:12	n/a	DFTPP Tune
E4P2709-CC2704	4P51962.D	02/23/22 16:26	n/a	Continuing cal 0.2
ZZZZZZ	4P51964.D	02/23/22 17:28	OP38283	(unrelated sample)
ZZZZZZ	4P51965.D	02/23/22 17:52	OP38283	(unrelated sample)
ZZZZZZ	4P51966.D	02/23/22 18:16	OP38283	(unrelated sample)
ZZZZZZ	4P51967.D	02/23/22 18:39	OP38283	(unrelated sample)
ZZZZZZ	4P51968.D	02/23/22 19:03	OP38283	(unrelated sample)
ZZZZZZ	4P51969.D	02/23/22 19:27	OP38283	(unrelated sample)
ZZZZZZ	4P51970.D	02/23/22 19:51	OP38283	(unrelated sample)
ZZZZZZ	4P51971.D	02/23/22 20:14	OP38283	(unrelated sample)
JD40008-2	4P51972.D	02/23/22 20:38	OP38283	N-168_20220217

MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51942.D
Acq On : 23 Feb 2022 3:30 am
Operator : chriss2
Sample : jd40008-1
Misc : op38283,e4p2708,250,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 23 12:41:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

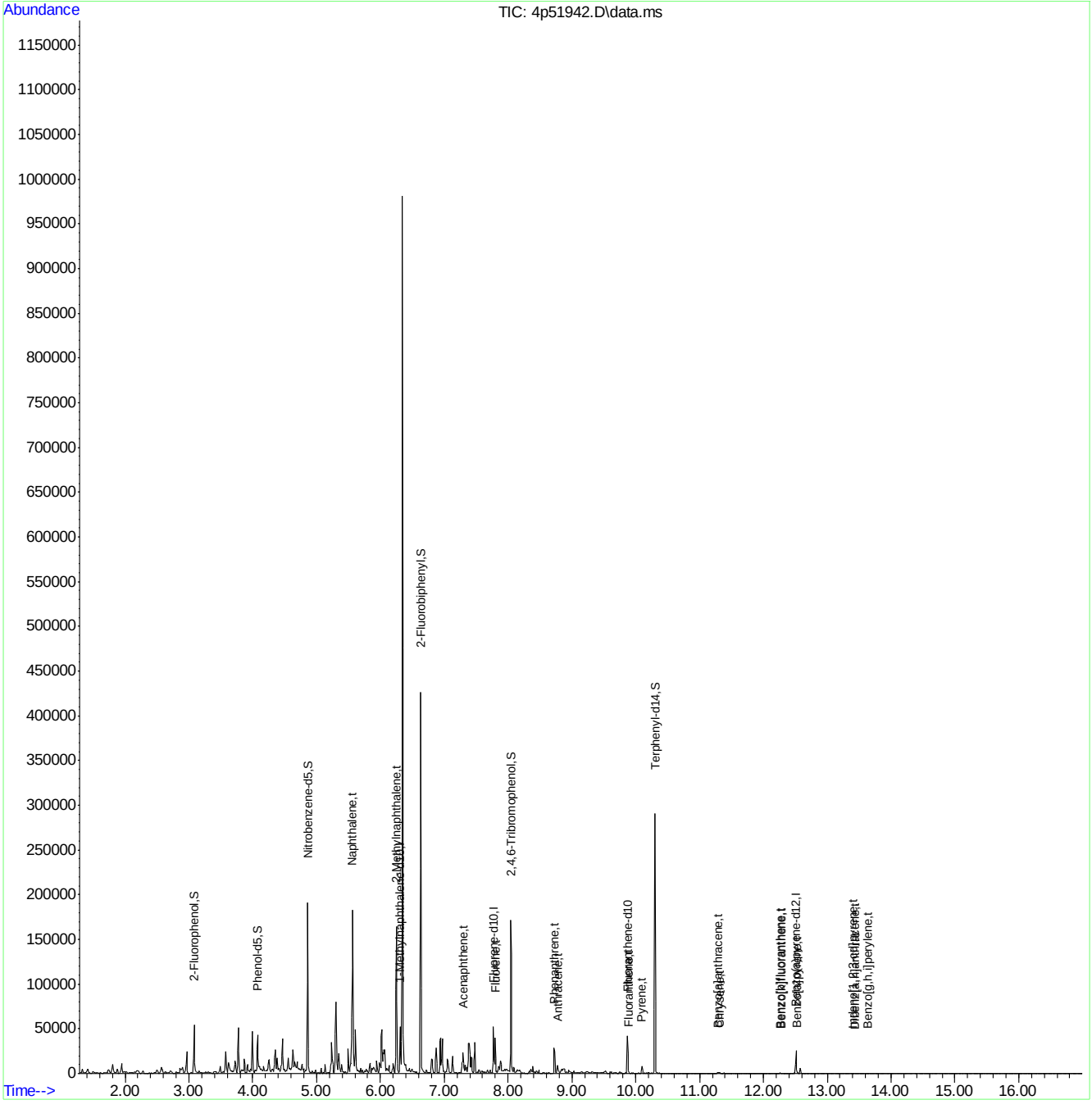
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.311	150	15196	800.00 ppm	0.00
13) Fluorene-d10	7.771	176	21098	800.00 ppm	0.00
20) Fluoranthene-d10	9.869	212	29878	800.00 ppm	0.00
30) Benzo(a)pyrene-d12	12.512	264	15321	800.00 ppm	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.082	112	30771	2667.93 ppm	0.00
Spiked Amount 50.000			Recovery	= 5335.86%	
4) Phenol-d5	4.075	99	33771	1933.69 ppm	0.00
Spiked Amount 50.000			Recovery	= 3867.38%	
7) Nitrobenzene-d5	4.864	82	103527	5233.61 ppm	0.00
Spiked Amount 50.000			Recovery	= 10467.22%	
14) 2-Fluorobiphenyl	6.634	172	205891	6086.00 ppm	0.00
Spiked Amount 50.000			Recovery	= 12172.00%	
19) 2,4,6-Tribromophenol	8.044	330	70233	7932.53 ppm	0.00
Spiked Amount 50.000			Recovery	= 15865.06%	
27) Terphenyl-d14	10.301	244	174599	6933.46 ppm	0.00
Spiked Amount 50.000			Recovery	= 13866.92%	
Target Compounds					Qvalue
8) Naphthalene	5.563	128	143916	2812.44 ppm	93
10) 2-Methylnaphthalene	6.252	141	47315	1687.24 ppm	# 78
16) Acenaphthene	7.293	153	10648	315.76 ppm	96
17) Fluorene	7.797	166	13968	394.34 ppm	86
23) Phenanthrene	8.720	178	26042	529.02 ppm	91
24) Anthracene	8.775	178	5784	123.48 ppm	93
25) Fluoranthene	9.887	202	1440	25.45 ppm	82
26) Pyrene	10.099	202	5483	103.97 ppm	99
28) Benzo[a]anthracene	11.282	228	802	21.76 ppm	99
29) Chrysene	11.314	228	848	21.46 ppm	88
31) Benzo[b]fluoranthene	12.263	252	363	11.89 ppm	95
32) Benzo[k]fluoranthene	12.287	252	95	2.96 ppm	90
33) Benzo[a]pyrene	12.527	252	383	10.71 ppm	95
34) Indeno[1,2,3-cd]pyrene	13.408	276	216	6.24 ppm	94
35) Dibenz[a,h]anthracene	13.432	278	142	4.90 ppm	77
36) Benzo[g,h,i]perylene	13.630	276	313	9.87 ppm	95

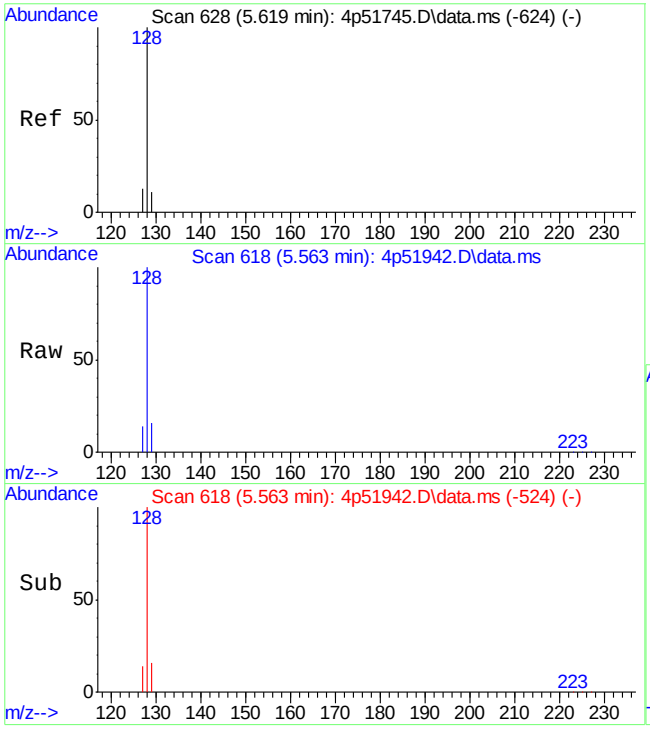
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51942.D
Acq On : 23 Feb 2022 3:30 am
Operator : chriss2
Sample : jd40008-1
Misc : op38283,e4p2708,250,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 23 12:41:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

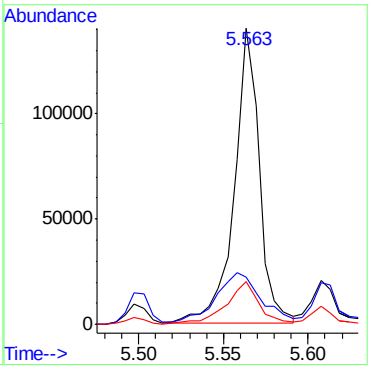


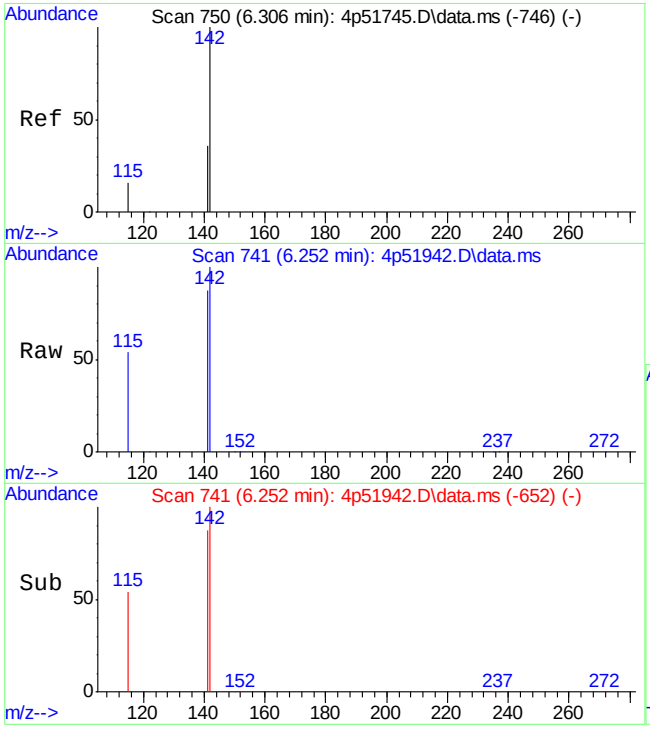


#8
Naphthalene
Concen: 2812.44 ppm
RT: 5.563 min Scan# 618
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:128 Resp: 143916

Ion	Ratio	Lower	Upper
128	100		
129	14.8	0.0	41.2
127	14.1	0.0	42.3

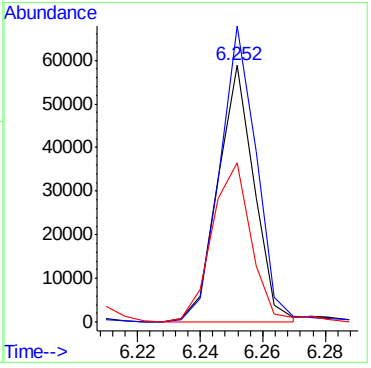


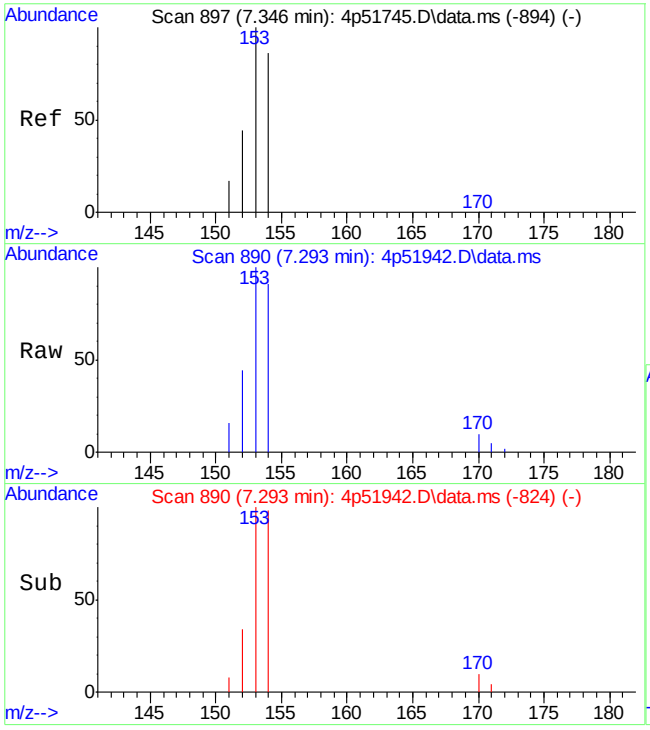


#10
2-Methylnaphthalene
Concen: 1687.24 ppm
RT: 6.252 min Scan# 741
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:141 Resp: 47315

Ion	Ratio	Lower	Upper
141	100		
142	115.3	52.1	112.1#
115	61.7	34.1	94.1

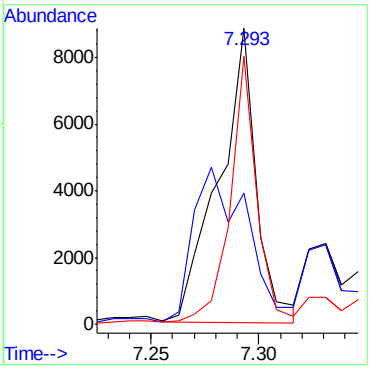


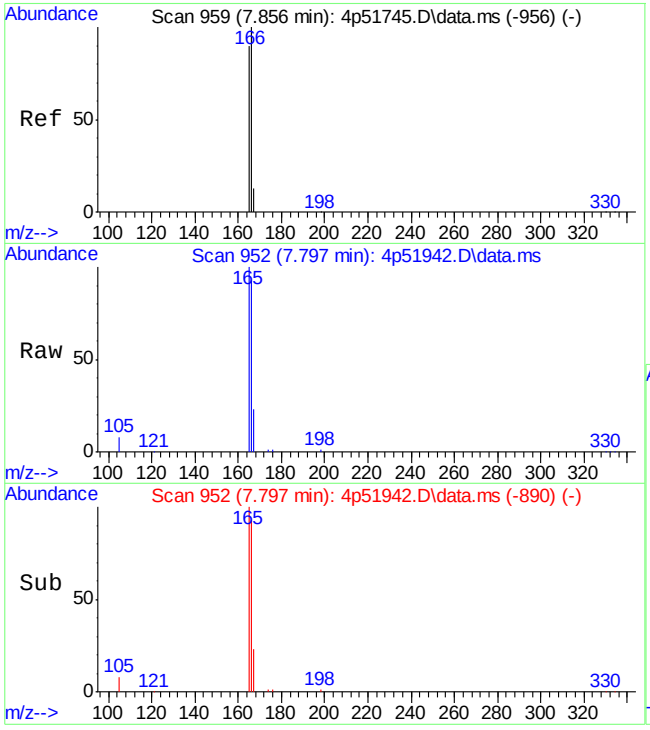


#16
Acenaphthene
Concen: 315.76 ppm
RT: 7.293 min Scan# 890
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:153 Resp: 10648

Ion	Ratio	Lower	Upper
153	100		
152	42.8	11.0	71.0
154	92.4	66.5	126.5

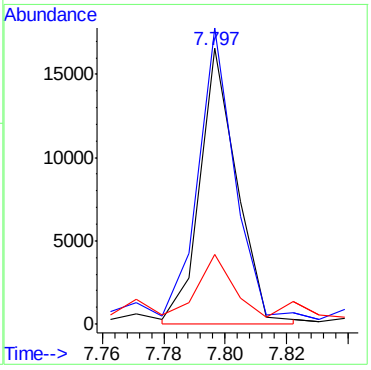


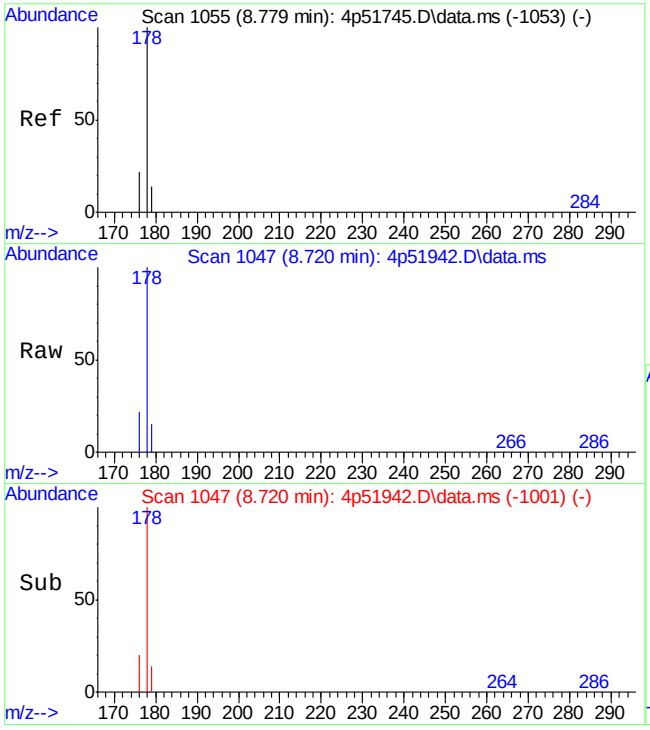


#17
Fluorene
Concen: 394.34 ppm
RT: 7.797 min Scan# 952
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:166 Resp: 13968

Ion	Ratio	Lower	Upper
166	100		
165	105.5	61.8	121.8
167	19.7	0.0	43.4

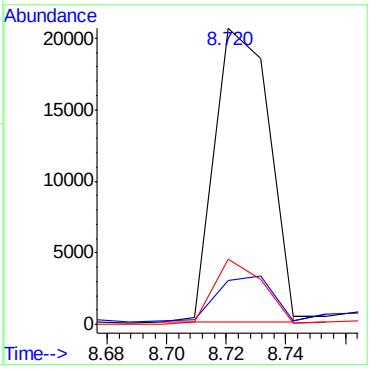


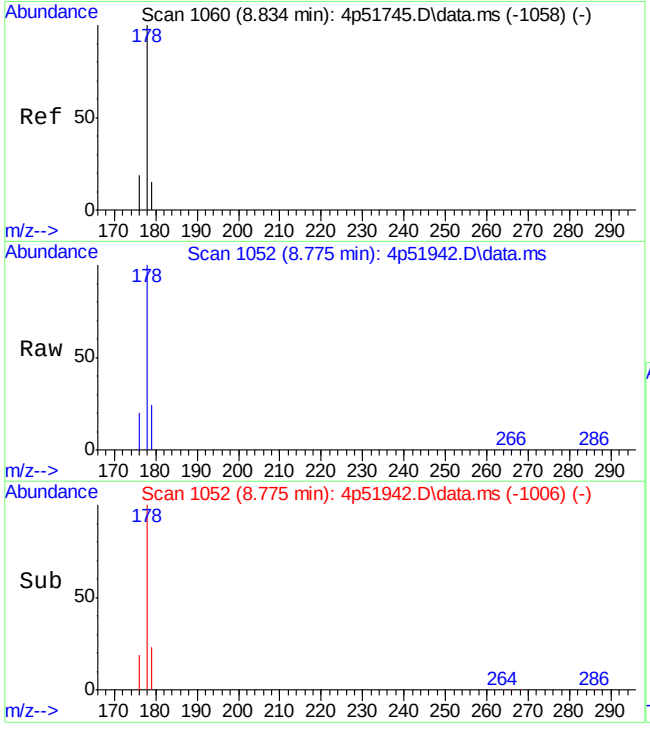


#23
Phenanthrene
Concen: 529.02 ppm
RT: 8.720 min Scan# 1047
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:178 Resp: 26042

Ion	Ratio	Lower	Upper
178	100		
179	13.8	0.0	46.2
176	22.0	0.0	46.9

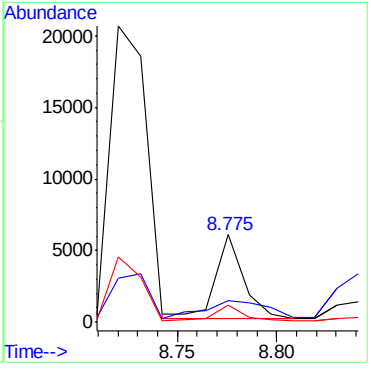


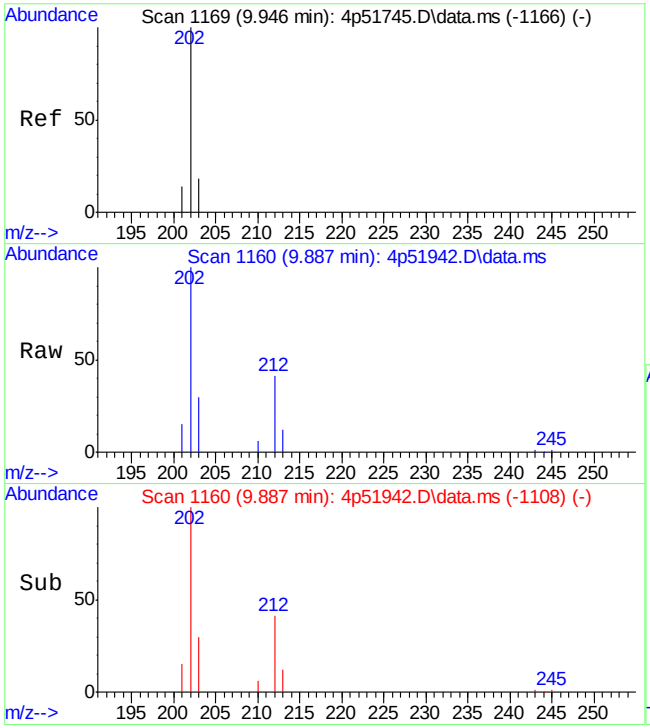


#24
Anthracene
Concen: 123.48 ppm
RT: 8.775 min Scan# 1052
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:178 Resp: 5784

Ion	Ratio	Lower	Upper
178	100		
179	21.1	0.0	44.7
176	19.8	0.0	50.5

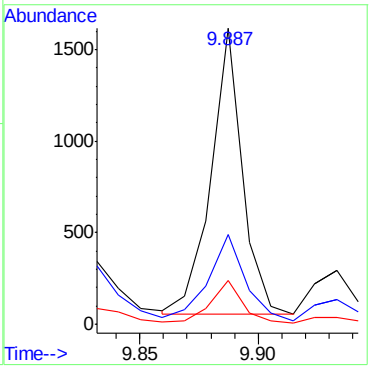


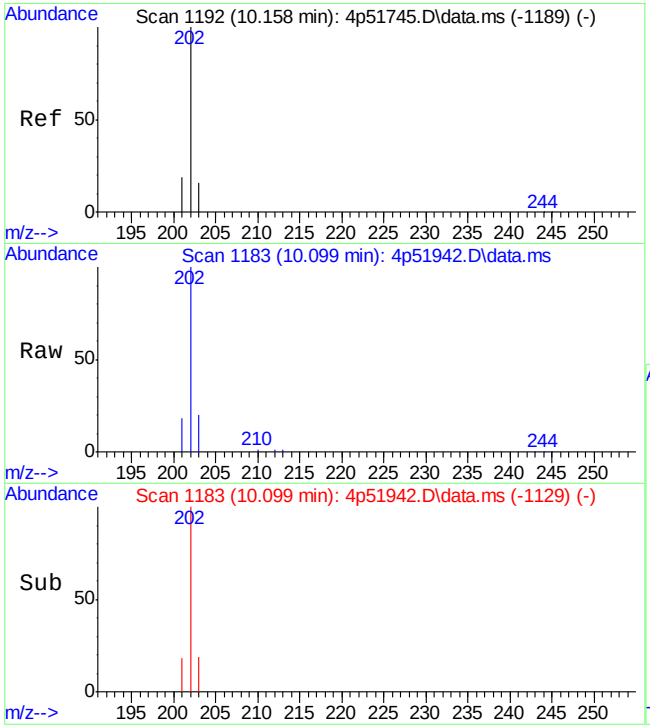


#25
Fluoranthene
Concen: 25.45 ppm
RT: 9.887 min Scan# 1160
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:202 Resp: 1440

Ion	Ratio	Lower	Upper
202	100		
203	29.6	0.0	45.5
201	14.7	0.0	45.7

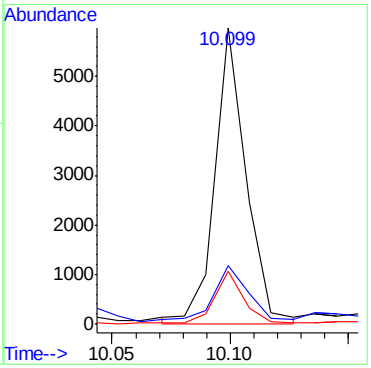


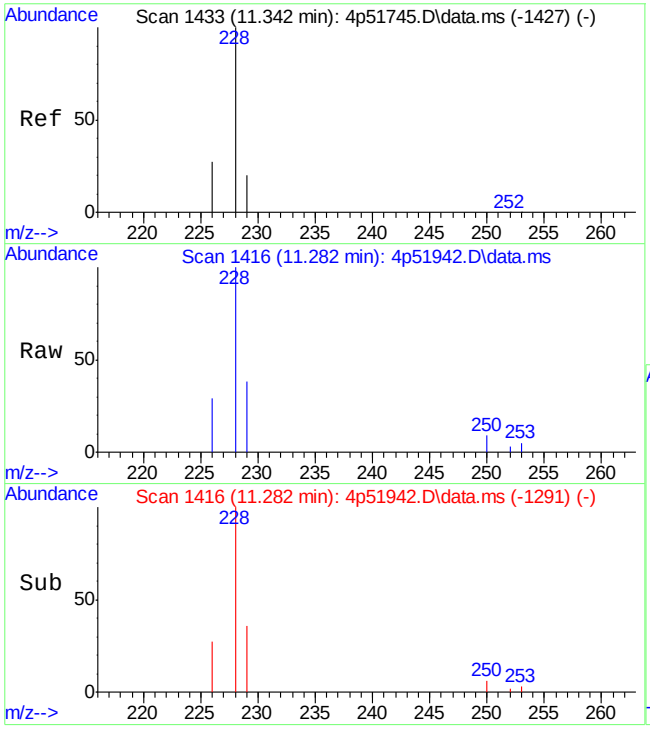


#26
Pyrene
Concen: 103.97 ppm
RT: 10.099 min Scan# 1183
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:202 Resp: 5483

Ion	Ratio	Lower	Upper
202	100		
203	18.5	0.0	48.6
201	17.5	0.0	46.3

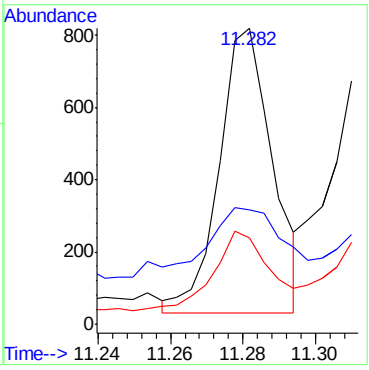


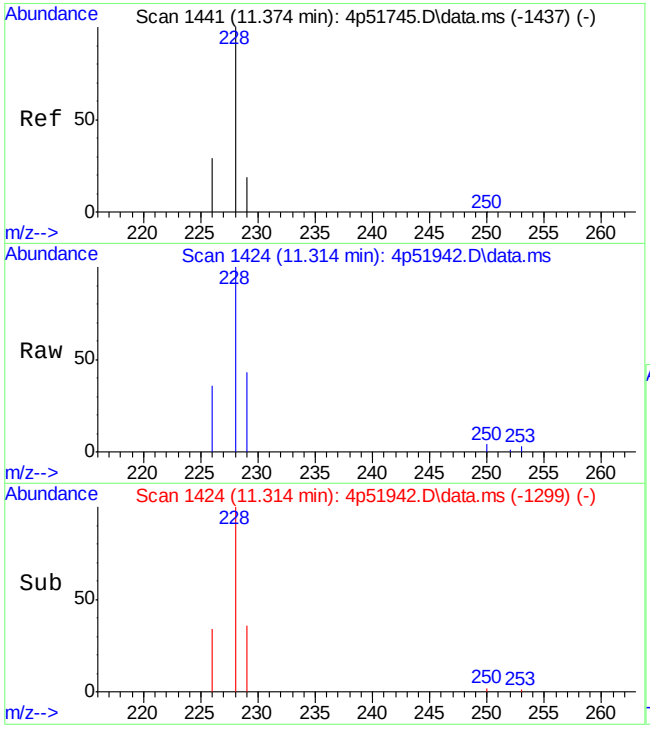


#28
Benzo[a]anthracene
Concen: 21.76 ppm
RT: 11.282 min Scan# 1416
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:228 Resp: 802

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.0	49.5
226	24.9	0.0	55.8

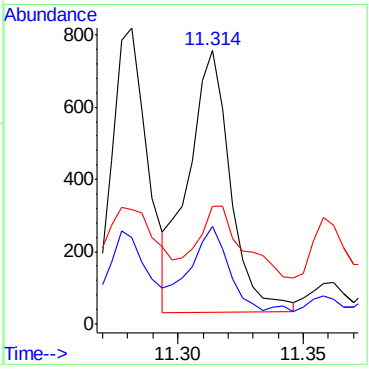


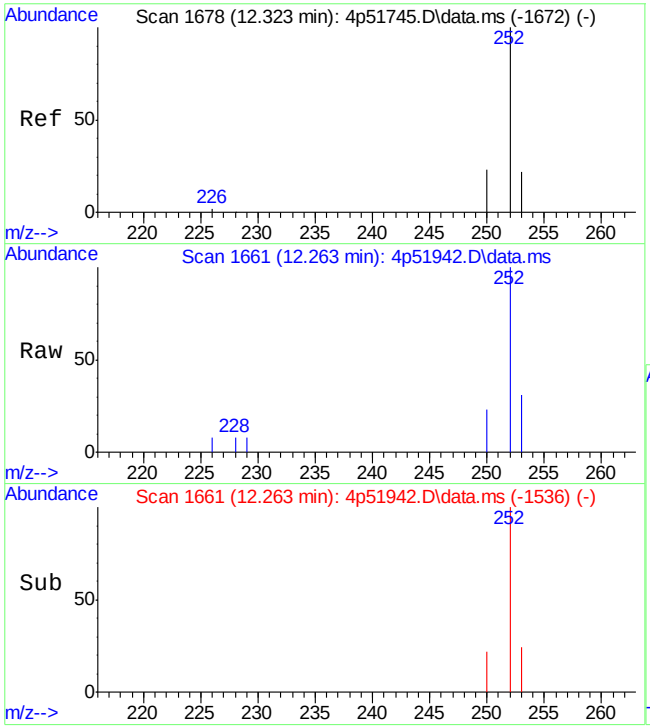


#29
Chrysene
Concen: 21.46 ppm
RT: 11.314 min Scan# 1424
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:228 Resp: 848

Ion	Ratio	Lower	Upper
228	100		
226	34.1	0.0	58.3
229	25.8	0.0	49.9

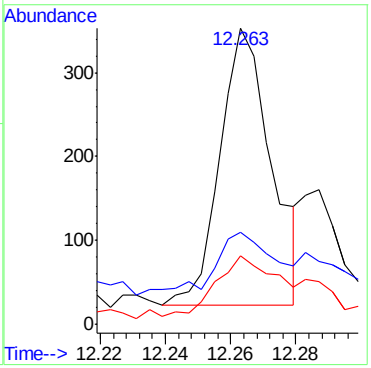


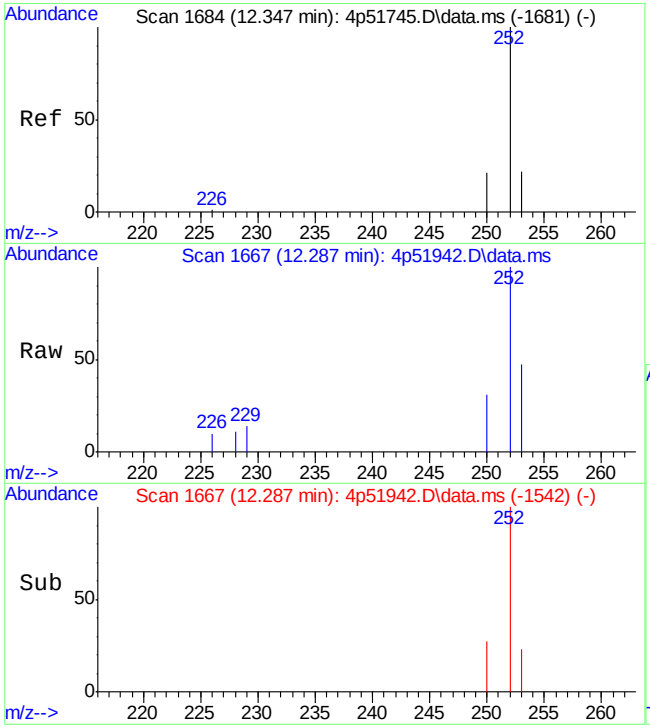


#31
Benzo[b]fluoranthene
Concen: 11.89 ppm
RT: 12.263 min Scan# 1661
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:252 Resp: 363

Ion	Ratio	Lower	Upper
252	100		
253	20.3	0.0	51.3
250	20.4	0.0	53.9

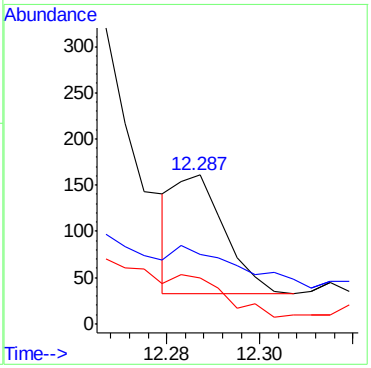


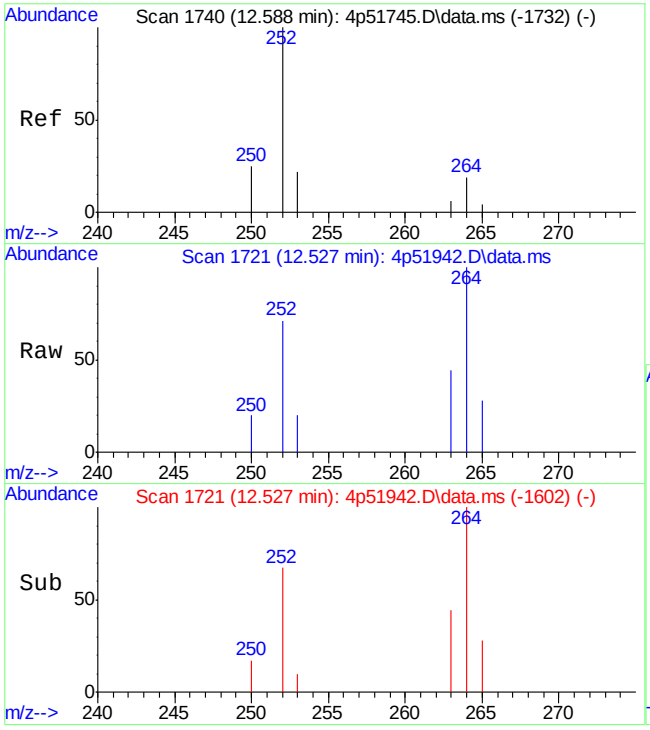


#32
Benzo[k]fluoranthene
Concen: 2.96 ppm
RT: 12.287 min Scan# 1667
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:252 Resp: 95

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	51.6
250	31.5	0.0	52.5

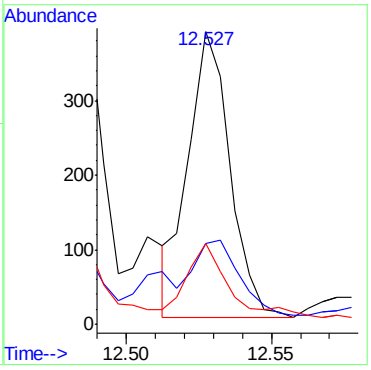


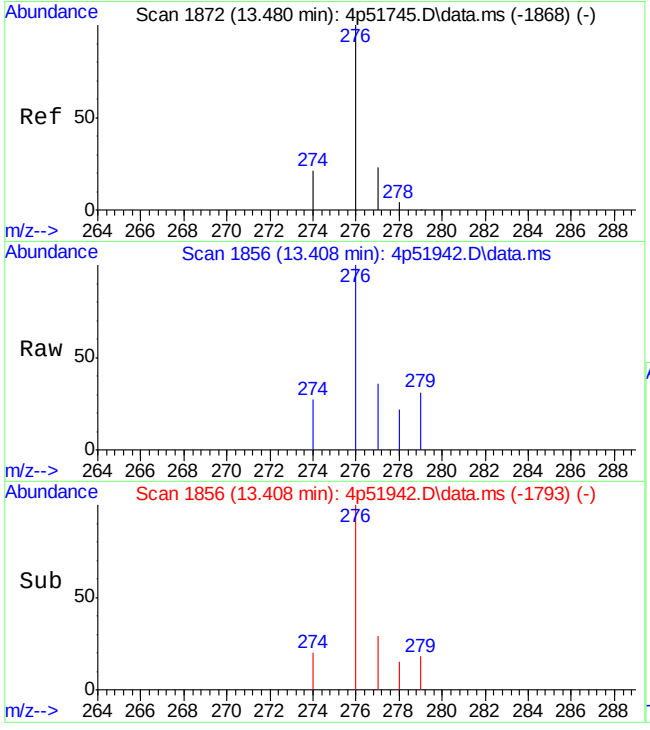


#33
Benzo[a]pyrene
Concen: 10.71 ppm
RT: 12.527 min Scan# 1721
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:252 Resp: 383

Ion	Ratio	Lower	Upper
252	100		
253	20.3	0.0	51.5
250	27.0	0.0	53.6

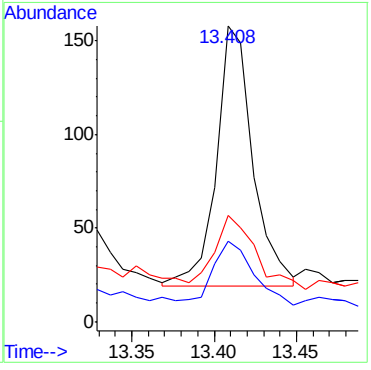


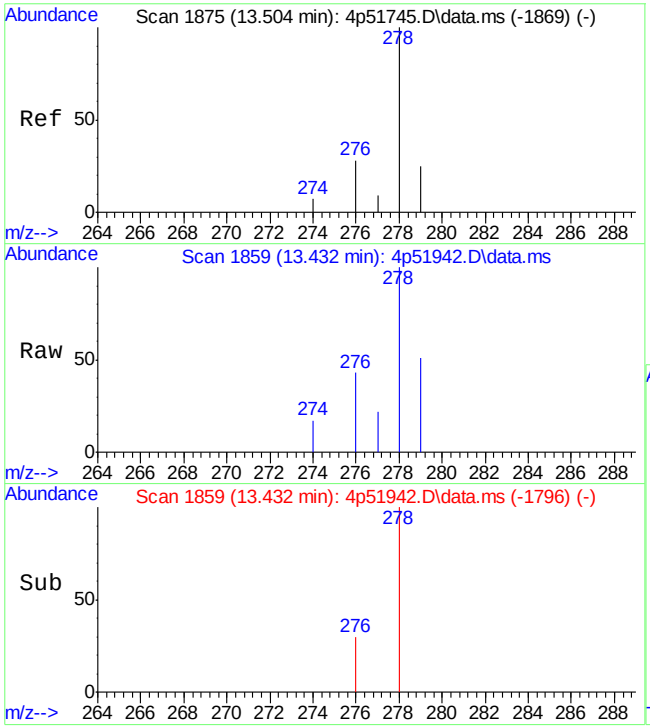


#34
Indeno[1,2,3-cd]pyrene
Concen: 6.24 ppm
RT: 13.408 min Scan# 1856
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:276 Resp: 216

Ion	Ratio	Lower	Upper
276	100		
274	23.6	0.0	52.3
277	25.5	0.0	50.9

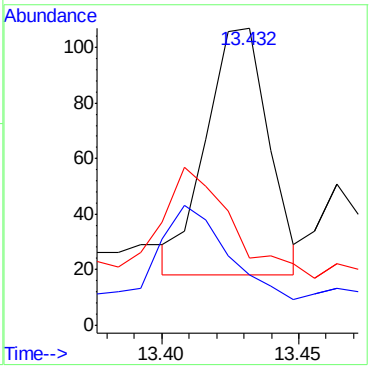


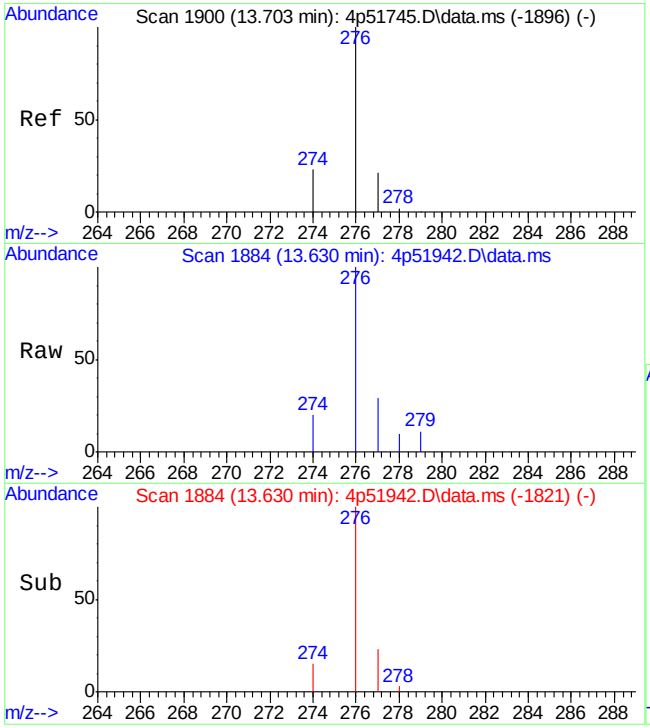


#35
Dibenz[a,h]anthracene
Concen: 4.90 ppm
RT: 13.432 min Scan# 1859
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:278 Resp: 142

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	37.5
277	0.0	0.0	39.1

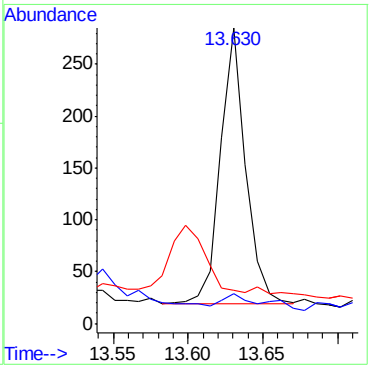




#36
Benzo[g,h,i]perylene
Concen: 9.87 ppm
RT: 13.630 min Scan# 1884
Delta R.T. -0.000 min
Lab File: 4p51942.D
Acq: 23 Feb 2022 3:30 am

Tgt Ion:276 Resp: 313

Ion	Ratio	Lower	Upper
276	100		
278	4.3	0.0	32.4
279	0.0	0.0	30.1



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51943.D
Acq On : 23 Feb 2022 3:54 am
Operator : chriss2
Sample : jd40008-2
Misc : op38283,e4p2708,240,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 23 12:43:20 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

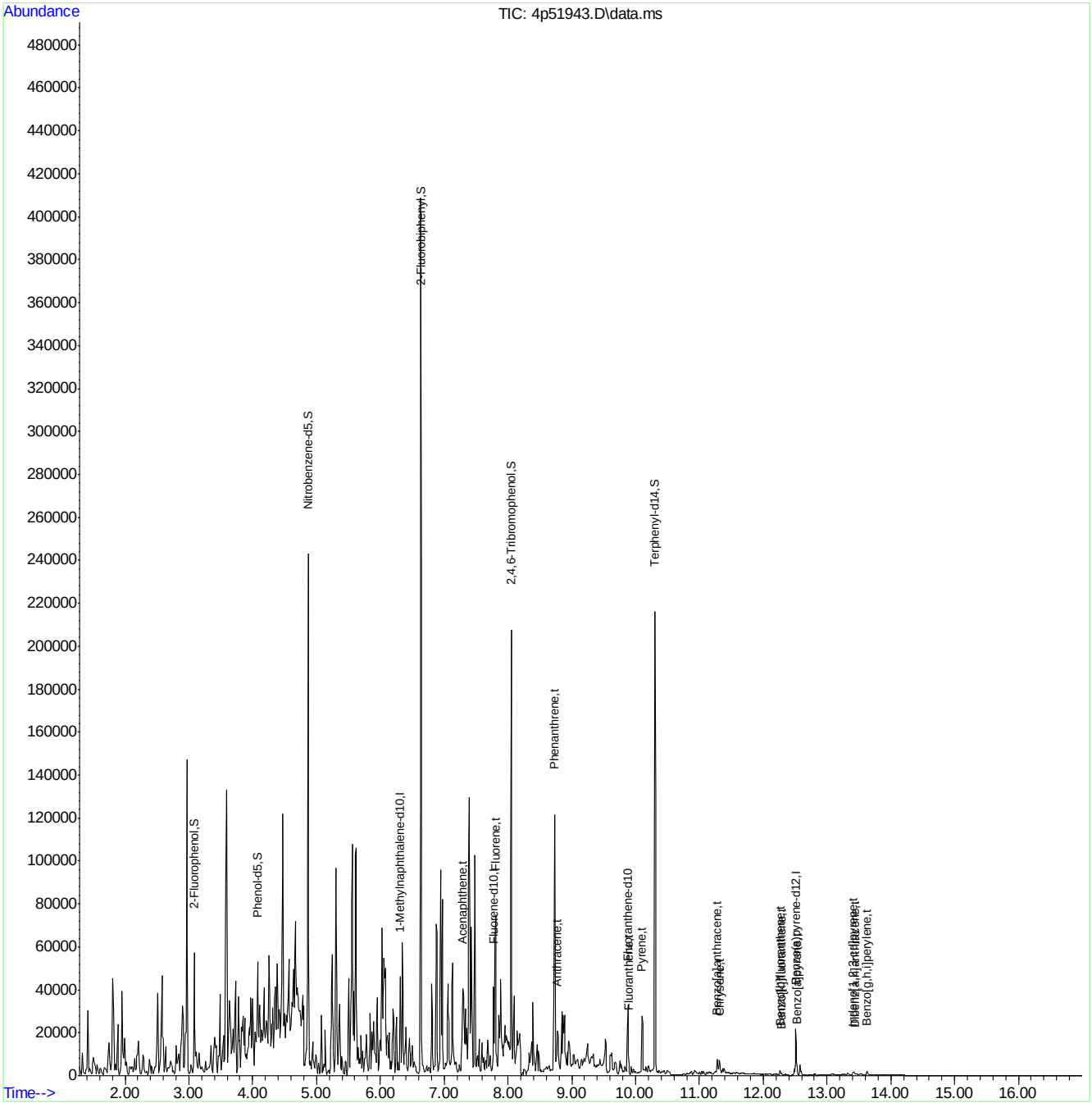
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.311	150	14390	800.00	ppm	0.00
13) Fluorene-d10	7.780	176	20829	800.00	ppm	0.00
20) Fluoranthene-d10	9.878	212	23997	800.00	ppm	0.00
30) Benzo(a)pyrene-d12	12.512	264	12200	800.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.082	112	32112	2940.14	ppm	0.00
Spiked Amount 50.000			Recovery = 5880.28%			
4) Phenol-d5	4.080	99	33914	2050.65	ppm	0.00
Spiked Amount 50.000			Recovery = 4101.30%			
7) Nitrobenzene-d5	4.868	82	130458	6964.45	ppm	0.01
Spiked Amount 50.000			Recovery = 13928.90%			
14) 2-Fluorobiphenyl	6.634	172	209618	6276.19	ppm	0.00
Spiked Amount 50.000			Recovery = 12552.38%			
19) 2,4,6-Tribromophenol	8.052	330	68213	7803.88	ppm	0.00
Spiked Amount 50.000			Recovery = 15607.76%			
27) Terphenyl-d14	10.302	244	148636	7348.98	ppm	0.00
Spiked Amount 50.000			Recovery = 14697.96%			
Target Compounds						Qvalue
16) Acenaphthene	7.293	153	17898	537.62	ppm	81
17) Fluorene	7.805	166	31059	888.18	ppm	99
23) Phenanthrene	8.732	178	76674	1939.30	ppm	96
24) Anthracene	8.775	178	17261	458.82	ppm	96
25) Fluoranthene	9.887	202	4899	107.79	ppm	90
26) Pyrene	10.099	202	22483	530.79	ppm	96
28) Benzo[a]anthracene	11.282	228	3568	120.51	ppm	98
29) Chrysene	11.314	228	4373	137.76	ppm	89
31) Benzo[b]fluoranthene	12.263	252	1633	67.20	ppm	98
32) Benzo[k]fluoranthene	12.287	252	505	19.76	ppm	90
33) Benzo[a]pyrene	12.532	252	2016	70.80	ppm	99
34) Indeno[1,2,3-cd]pyrene	13.413	276	1111	40.32	ppm	93
35) Dibenz[a,h]anthracene	13.429	278	880	38.17	ppm	86
36) Benzo[g,h,i]perylene	13.628	276	1658	65.69	ppm	99

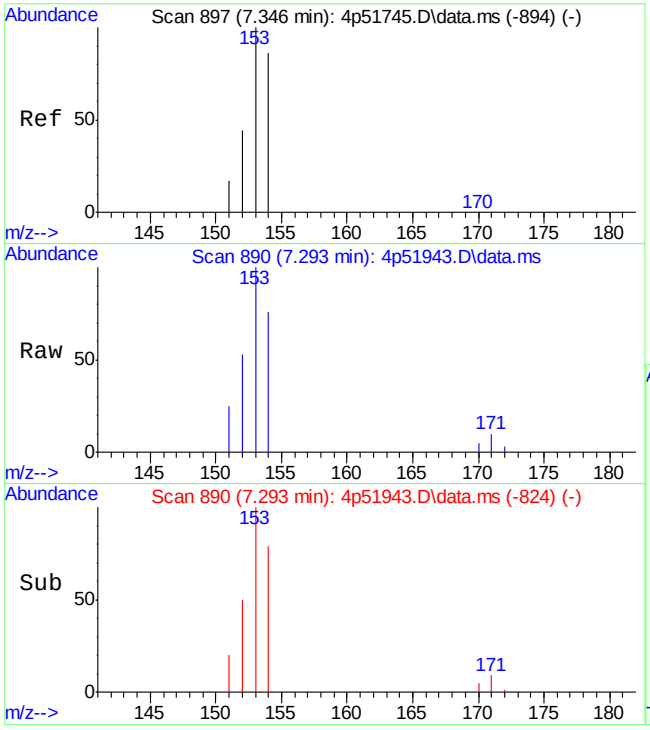
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51943.D
Acq On : 23 Feb 2022 3:54 am
Operator : chriss2
Sample : jd40008-2
Misc : op38283,e4p2708,240,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 23 12:43:20 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

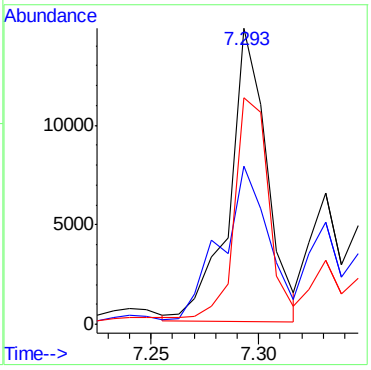


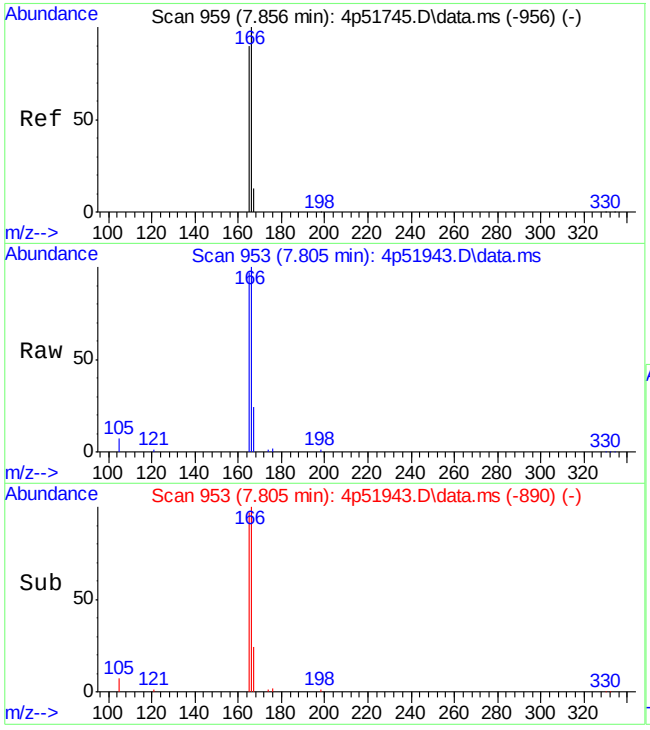


#16
Acenaphthene
Concen: 537.62 ppm
RT: 7.293 min Scan# 890
Delta R.T. -0.000 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:153 Resp: 17898

Ion	Ratio	Lower	Upper
153	100		
152	52.2	11.0	71.0
154	77.7	66.5	126.5

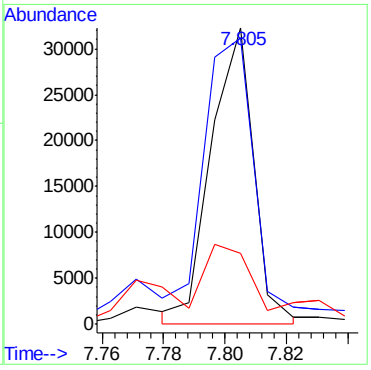


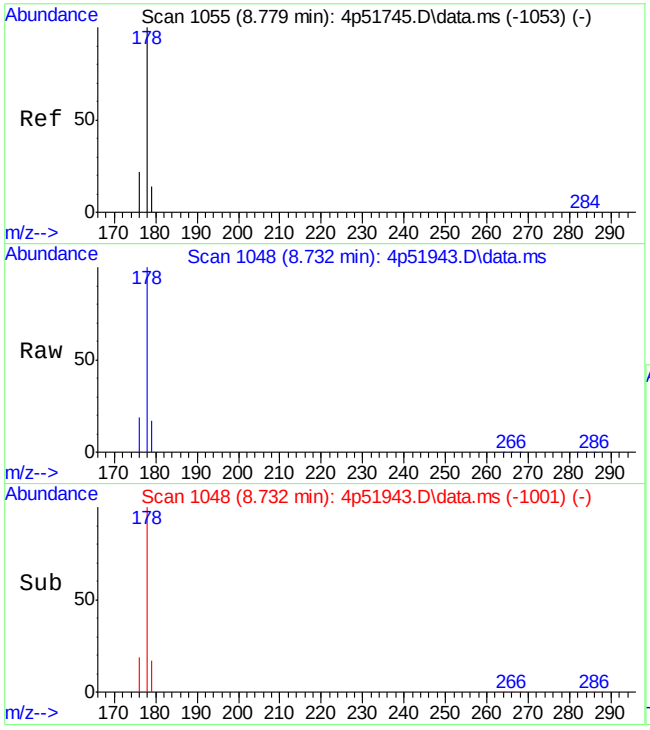


#17
Fluorene
Concen: 888.18 ppm
RT: 7.805 min Scan# 953
Delta R.T. 0.008 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:166 Resp: 31059

Ion	Ratio	Lower	Upper
166	100		
165	92.5	61.8	121.8
167	14.2	0.0	43.4

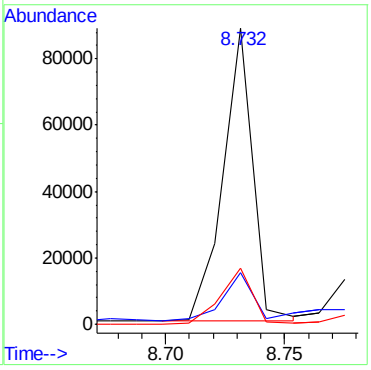


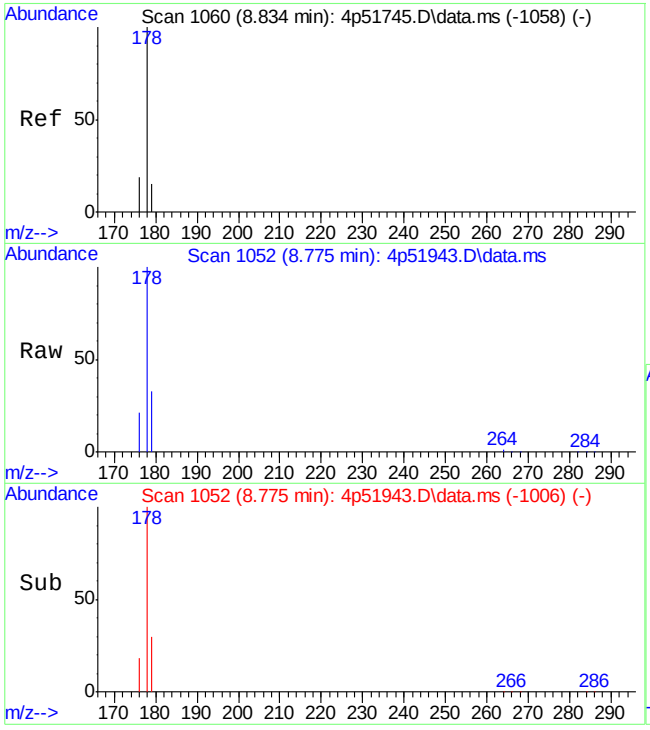


#23
Phenanthrene
Concen: 1939.30 ppm
RT: 8.732 min Scan# 1048
Delta R.T. 0.011 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:178 Resp: 76674

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	46.2
176	19.0	0.0	46.9

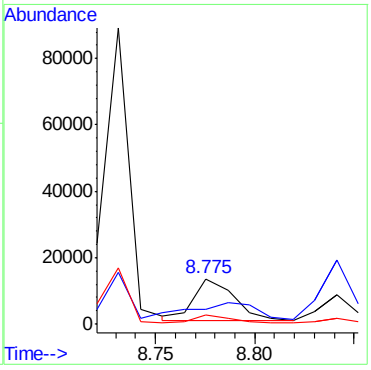


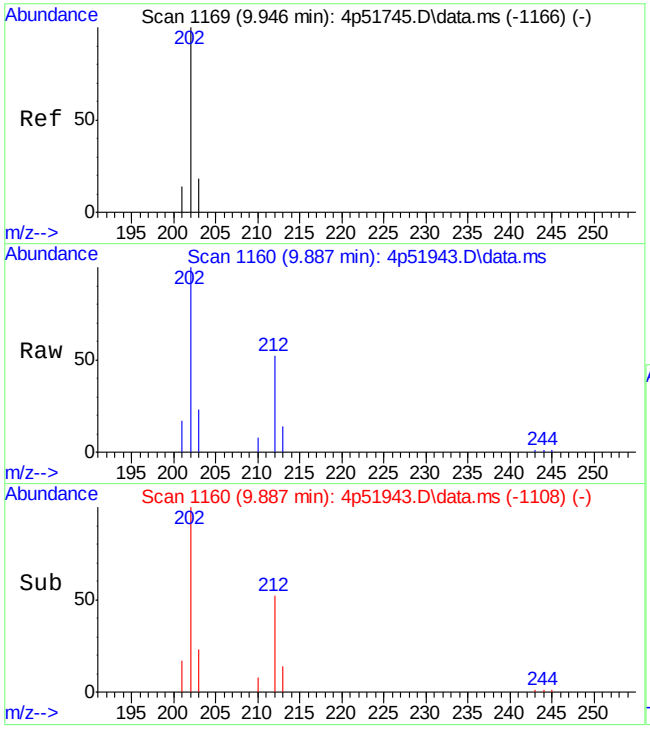


#24
Anthracene
Concen: 458.82 ppm
RT: 8.775 min Scan# 1052
Delta R.T. -0.000 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:178 Resp: 17261

Ion	Ratio	Lower	Upper
178	100		
179	18.1	0.0	44.7
176	21.1	0.0	50.5

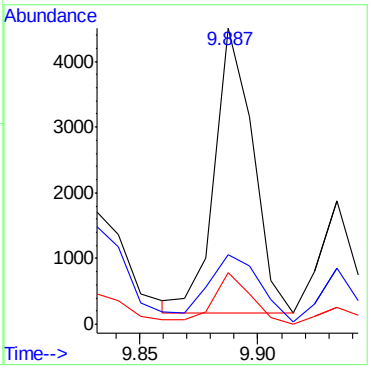


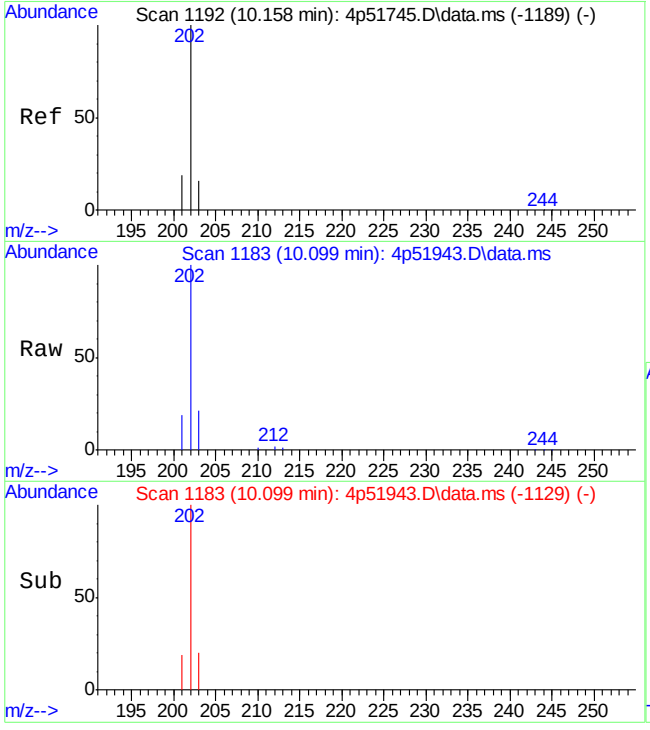


#25
Fluoranthene
Concen: 107.79 ppm
RT: 9.887 min Scan# 1160
Delta R.T. -0.000 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:202 Resp: 4899

Ion	Ratio	Lower	Upper
202	100		
203	22.2	0.0	45.5
201	17.5	0.0	45.7

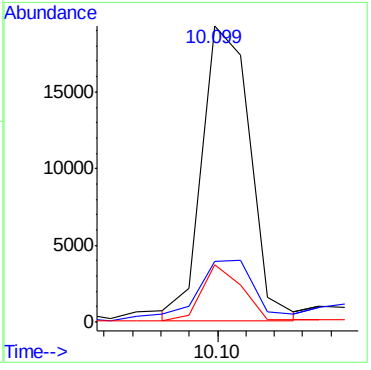


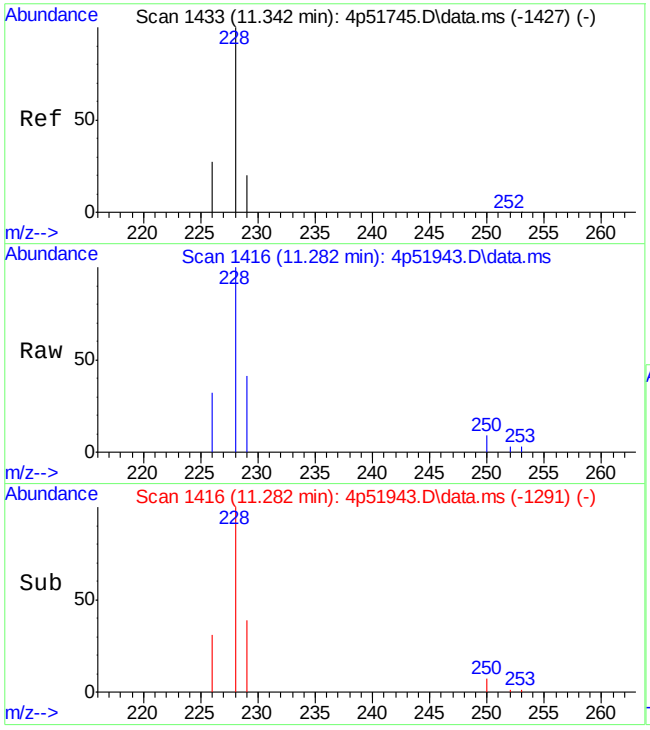


#26
Pyrene
Concen: 530.79 ppm
RT: 10.099 min Scan# 1183
Delta R.T. -0.000 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:202 Resp: 22483

Ion	Ratio	Lower	Upper
202	100		
203	18.5	0.0	48.6
201	19.5	0.0	46.3

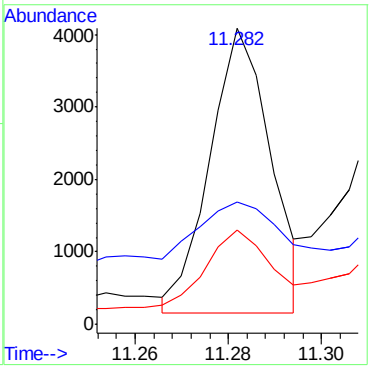


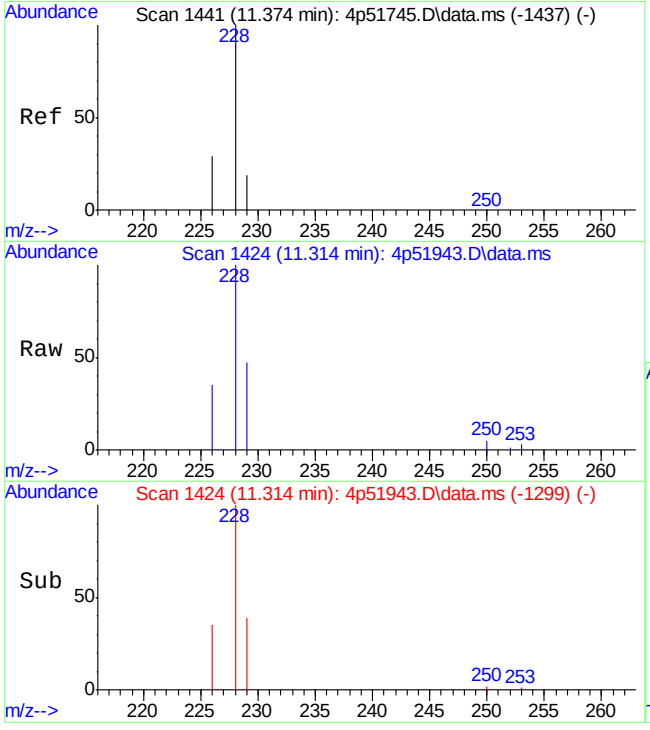


#28
Benzo[a]anthracene
Concen: 120.51 ppm
RT: 11.282 min Scan# 1416
Delta R.T. -0.000 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:228 Resp: 3568

Ion	Ratio	Lower	Upper
228	100		
229	20.5	0.0	49.5
226	27.1	0.0	55.8

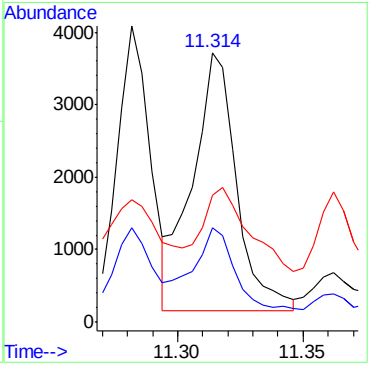


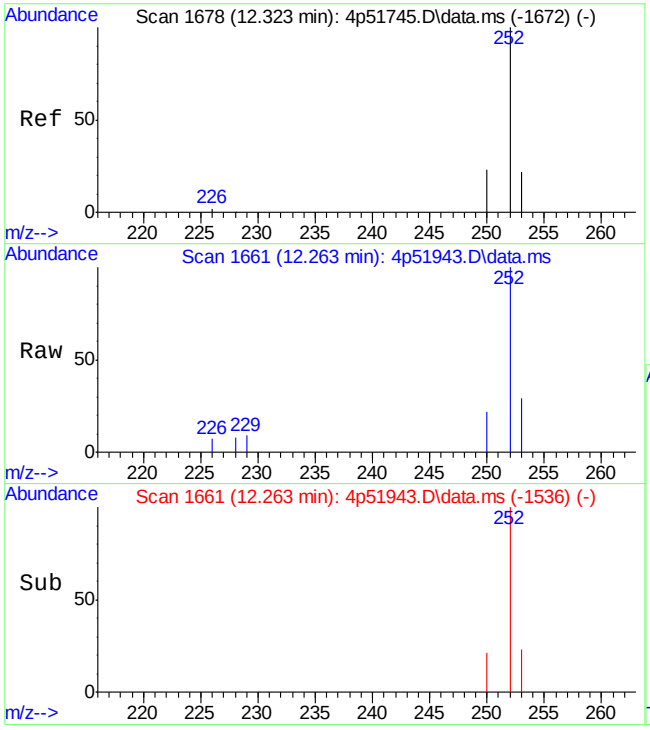


#29
Chrysene
Concen: 137.76 ppm
RT: 11.314 min Scan# 1424
Delta R.T. -0.000 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:228 Resp: 4373

Ion	Ratio	Lower	Upper
228	100		
226	31.2	0.0	58.3
229	28.6	0.0	49.9

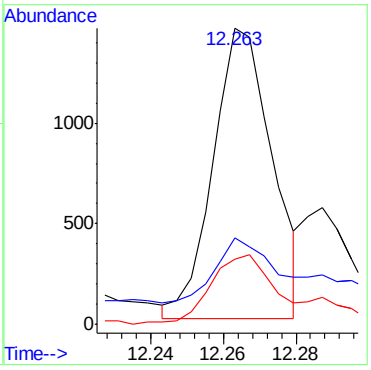


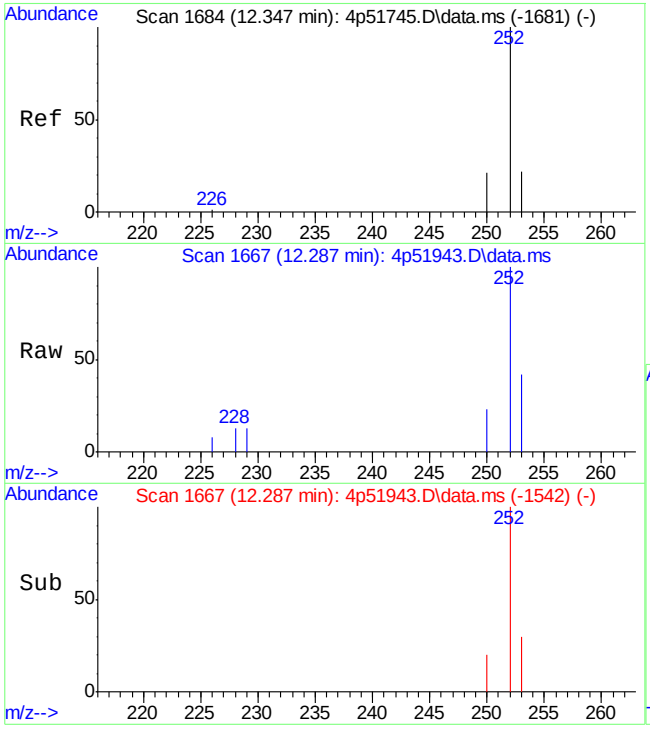


#31
Benzo[b]fluoranthene
Concen: 67.20 ppm
RT: 12.263 min Scan# 1661
Delta R.T. -0.000 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:252 Resp: 1633

Ion	Ratio	Lower	Upper
252	100		
253	21.8	0.0	51.3
250	22.4	0.0	53.9

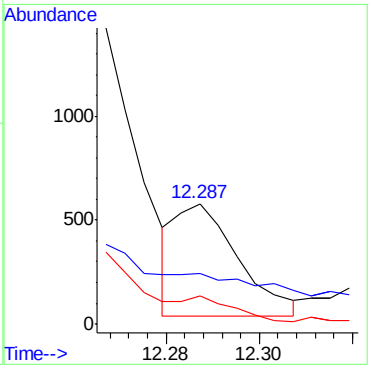


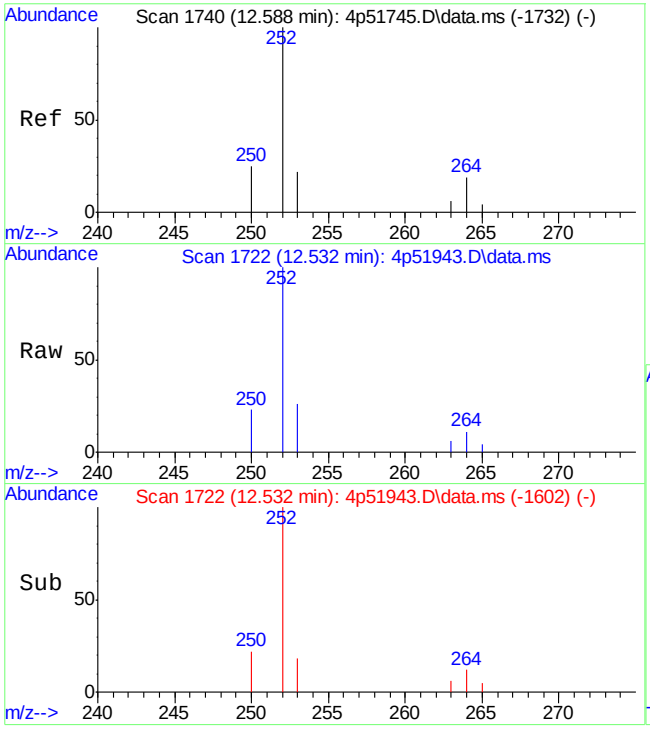


#32
Benzo[k]fluoranthene
Concen: 19.76 ppm
RT: 12.287 min Scan# 1667
Delta R.T. -0.000 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:252 Resp: 505

Ion	Ratio	Lower	Upper
252	100		
253	15.5	0.0	51.6
250	26.0	0.0	52.5

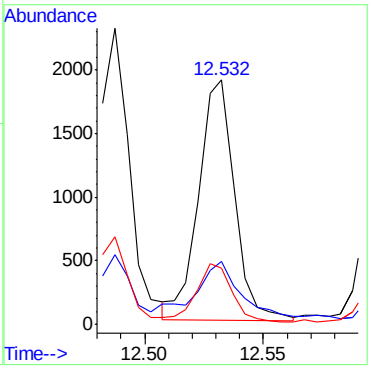


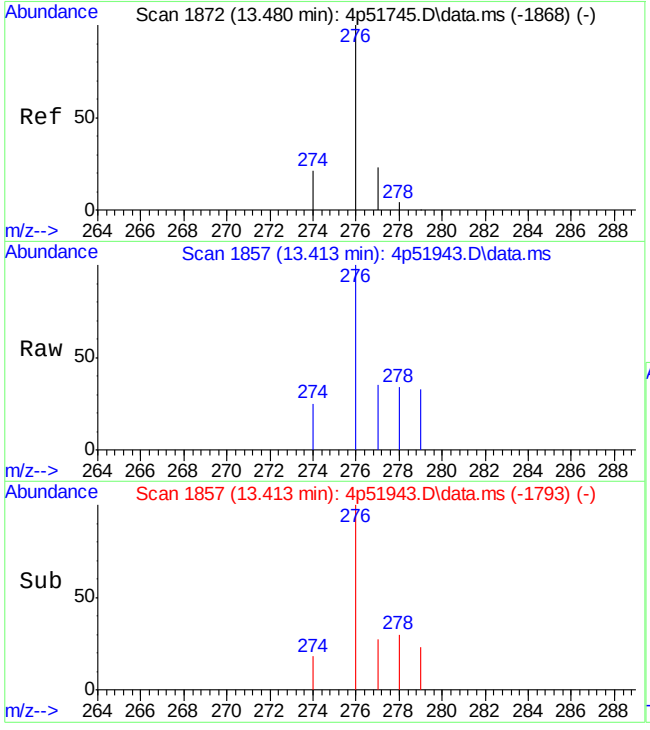


#33
Benzo[a]pyrene
Concen: 70.80 ppm
RT: 12.532 min Scan# 1722
Delta R.T. 0.005 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:252 Resp: 2016

Ion	Ratio	Lower	Upper
252	100		
253	21.3	0.0	51.5
250	22.7	0.0	53.6

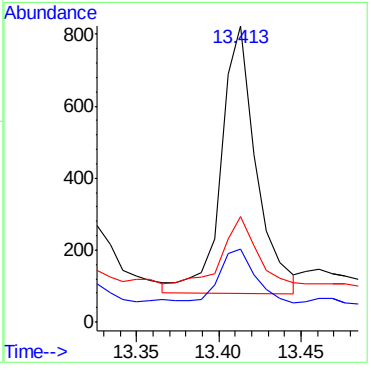


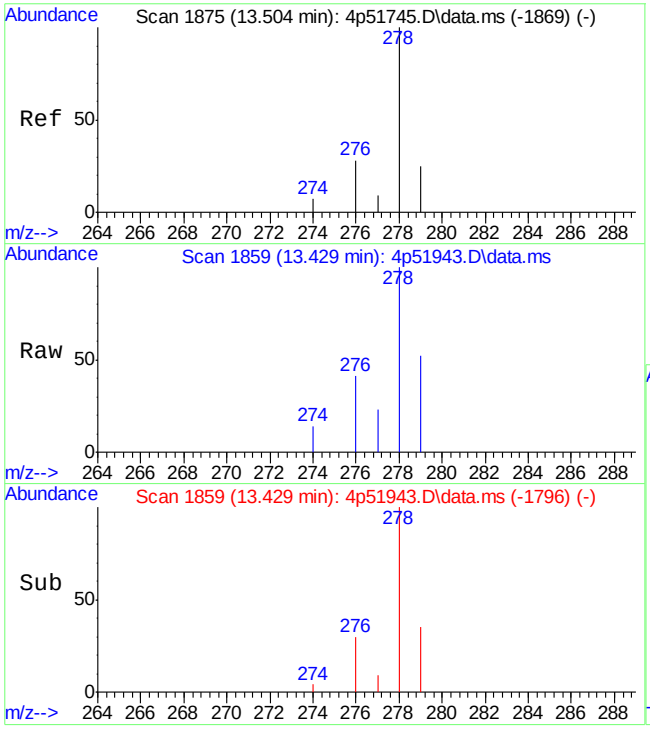


#34
Indeno[1,2,3-cd]pyrene
Concen: 40.32 ppm
RT: 13.413 min Scan# 1857
Delta R.T. 0.005 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:276 Resp: 1111

Ion	Ratio	Lower	Upper
276	100		
274	20.6	0.0	52.3
277	26.1	0.0	50.9

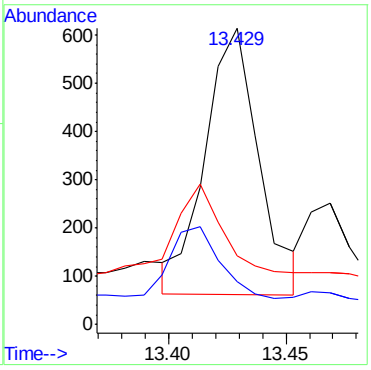


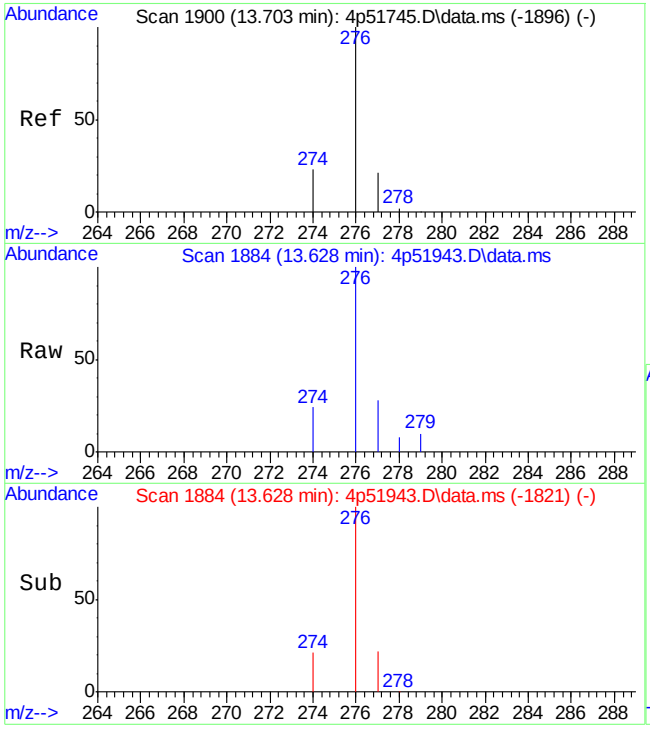


#35
Dibenz[a,h]anthracene
Concen: 38.17 ppm
RT: 13.429 min Scan# 1859
Delta R.T. -0.003 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:278 Resp: 880

Ion	Ratio	Lower	Upper
278	100		
274	2.0	0.0	37.5
277	4.6	0.0	39.1

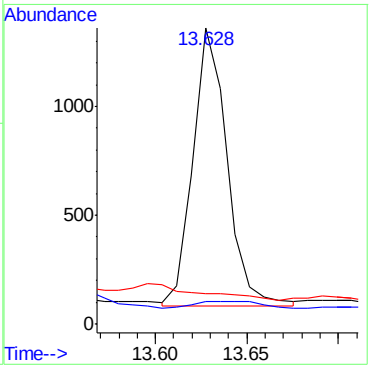




#36
Benzo[g,h,i]perylene
Concen: 65.69 ppm
RT: 13.628 min Scan# 1884
Delta R.T. -0.003 min
Lab File: 4p51943.D
Acq: 23 Feb 2022 3:54 am

Tgt Ion:276 Resp: 1658

Ion	Ratio	Lower	Upper
276	100		
278	2.6	0.0	32.4
279	0.0	0.0	30.1



Quantitation Report (QT Reviewed)

Data Path : R:\svoa-gcms\svoagcms completed\feb 2022\02-24-22\jonkm\e4p2709\
Data File : 4p51972.d
Acq On : 23 Feb 2022 8:38 pm
Operator : kristis
Sample : jd40008-2
Misc : op38283,e4p2709,240,,,1,5
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 24 12:31:05 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 22:16:28 2022
Response via : Initial Calibration

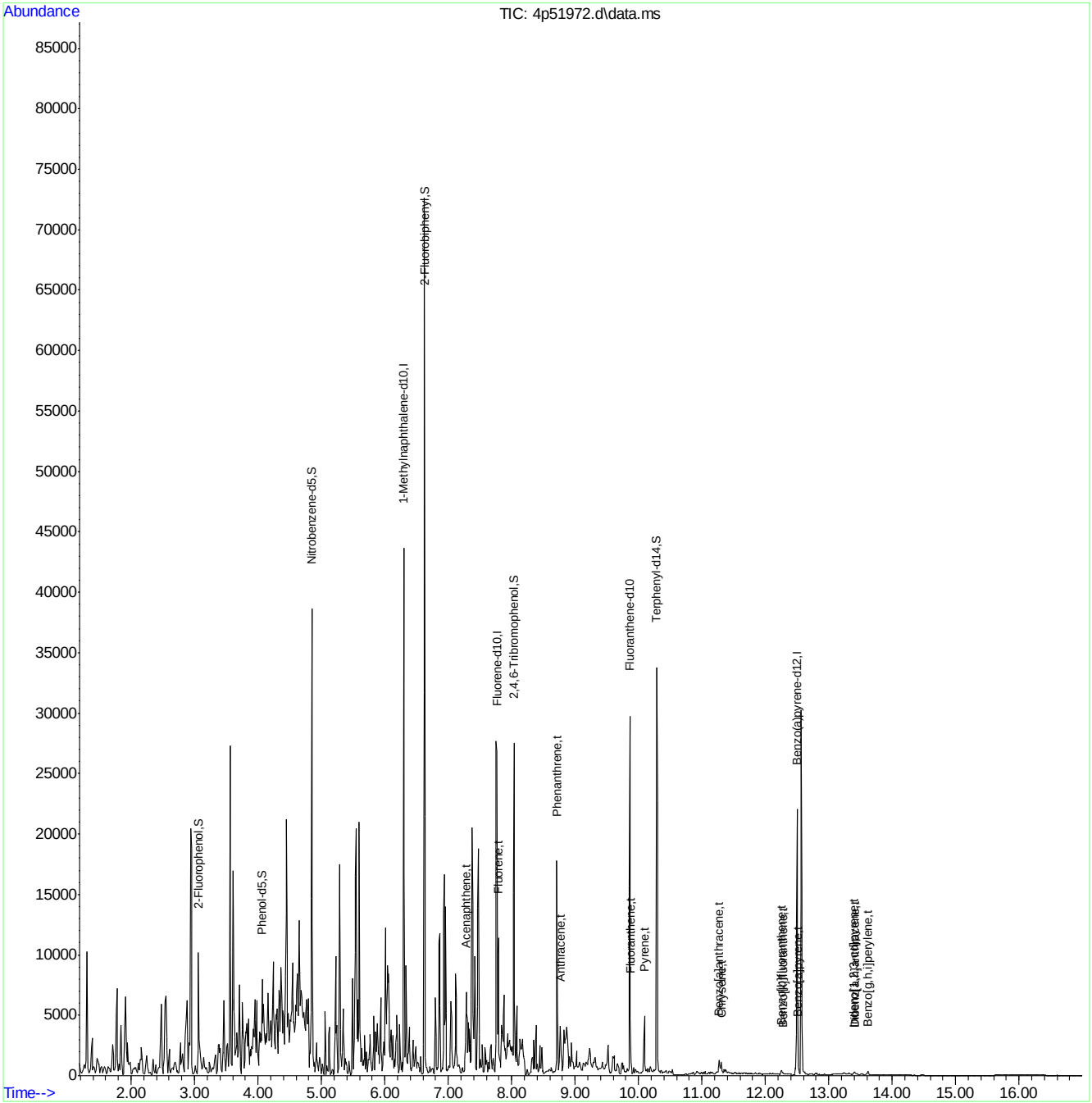
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.302	150	12110	800.00 ppm	0.00
13) Fluorene-d10	7.767	176	15101	800.00 ppm	0.00
20) Fluoranthene-d10	9.864	212	21408	800.00 ppm	# 0.00
30) Benzo(a)pyrene-d12	12.499	264	12553	800.00 ppm	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.063	112	5910	642.99 ppm	0.00
Spiked Amount 50.000			Recovery	= 1285.98%	
4) Phenol-d5	4.067	99	5461	392.37 ppm	0.00
Spiked Amount 50.000			Recovery	= 784.74%	
7) Nitrobenzene-d5	4.849	82	21999	1395.52 ppm	0.00
Spiked Amount 50.000			Recovery	= 2791.04%	
14) 2-Fluorobiphenyl	6.623	172	33731	1393.03 ppm	0.00
Spiked Amount 50.000			Recovery	= 2786.06%	
19) 2,4,6-Tribromophenol	8.039	330	9633	1520.08 ppm	0.00
Spiked Amount 50.000			Recovery	= 3040.16%	
27) Terphenyl-d14	10.287	244	23544	1304.86 ppm	0.00
Spiked Amount 50.000			Recovery	= 2609.72%	
Target Compounds					Qvalue
16) Acenaphthene	7.282	153	2862	118.58 ppm	96
17) Fluorene	7.792	166	4741	187.00 ppm	92
23) Phenanthrene	8.714	178	11246	318.84 ppm	95
24) Anthracene	8.769	178	2723	81.13 ppm	81
25) Fluoranthene	9.873	202	803	19.80 ppm	90
26) Pyrene	10.094	202	3524	93.26 ppm	91
28) Benzo[a]anthracene	11.270	228	682	25.82 ppm	92
29) Chrysene	11.302	228	668	23.59 ppm	90
31) Benzo[b]fluoranthene	12.255	252	300	12.00 ppm	92
32) Benzo[k]fluoranthene	12.275	252	55	2.09 ppm	60
33) Benzo[a]pyrene	12.519	252	334	11.40 ppm	99
34) Indeno[1,2,3-cd]pyrene	13.402	276	161	5.68 ppm	91
35) Dibenz[a,h]anthracene	13.417	278	138	5.82 ppm	87
36) Benzo[g,h,i]perylene	13.616	276	266	10.24 ppm	93

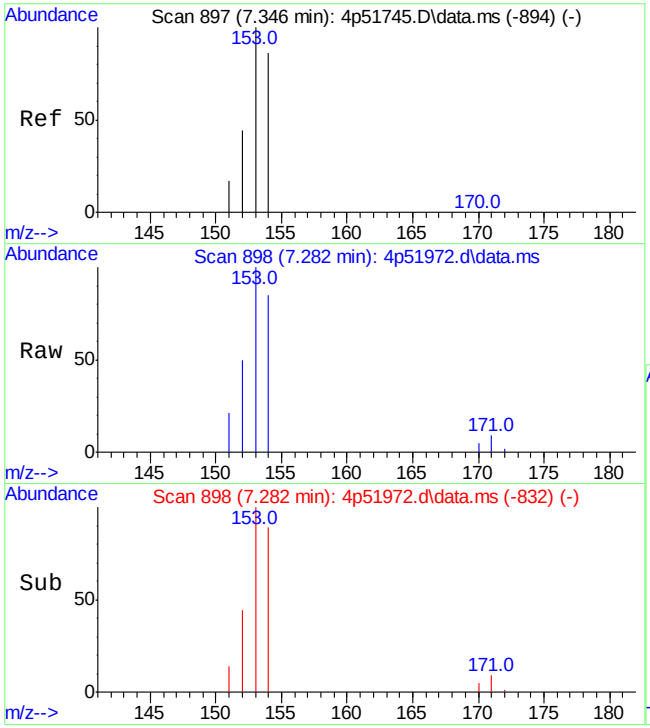
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : R:\svoa-gcms\svoagcms completed\feb 2022\02-24-22\jonkm\e4p2709\
Data File : 4p51972.d
Acq On : 23 Feb 2022 8:38 pm
Operator : kristis
Sample : jd40008-2
Misc : op38283,e4p2709,240,,,1,5
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 24 12:31:05 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 22:16:28 2022
Response via : Initial Calibration

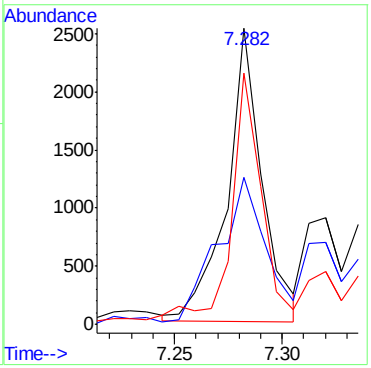


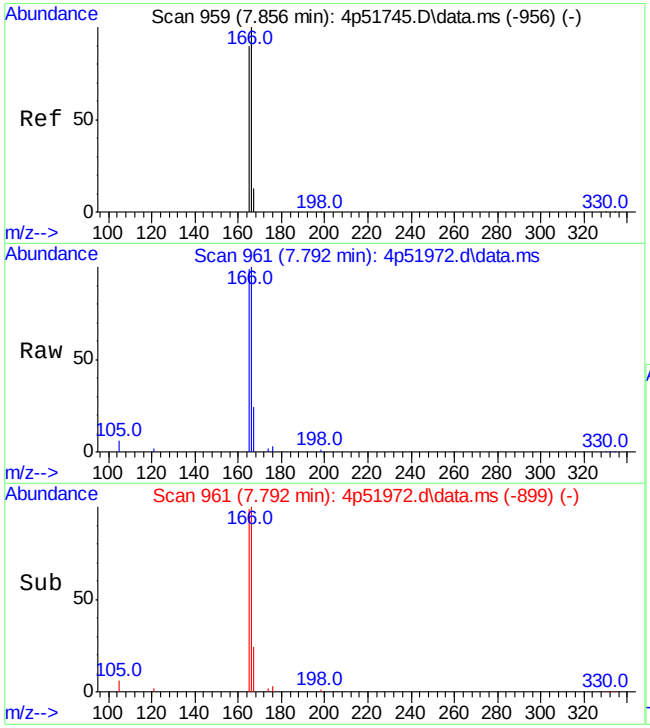


#16
Acenaphthene
Concen: 118.58 ppm
RT: 7.282 min Scan# 898
Delta R.T. -0.003 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:153 Resp: 2862

Ion	Ratio	Lower	Upper
153	100		
152	48.4	14.0	74.0
154	86.6	58.5	118.5

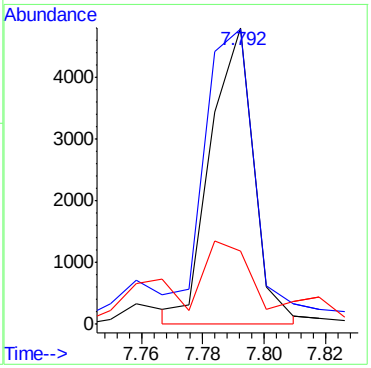


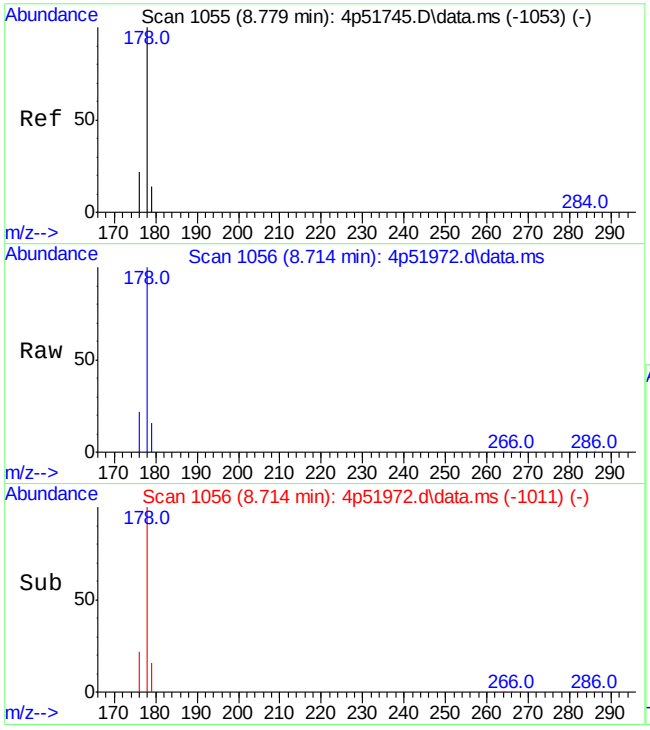


#17
Fluorene
Concen: 187.00 ppm
RT: 7.792 min Scan# 961
Delta R.T. 0.004 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:166 Resp: 4741

Ion	Ratio	Lower	Upper
166	100		
165	94.7	72.9	132.9
167	13.4	0.0	41.5

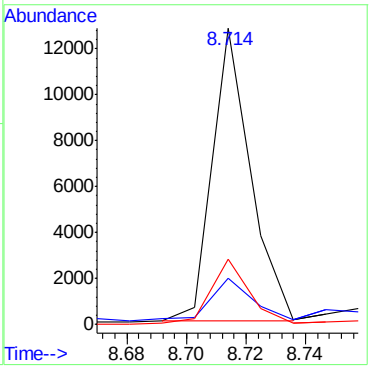


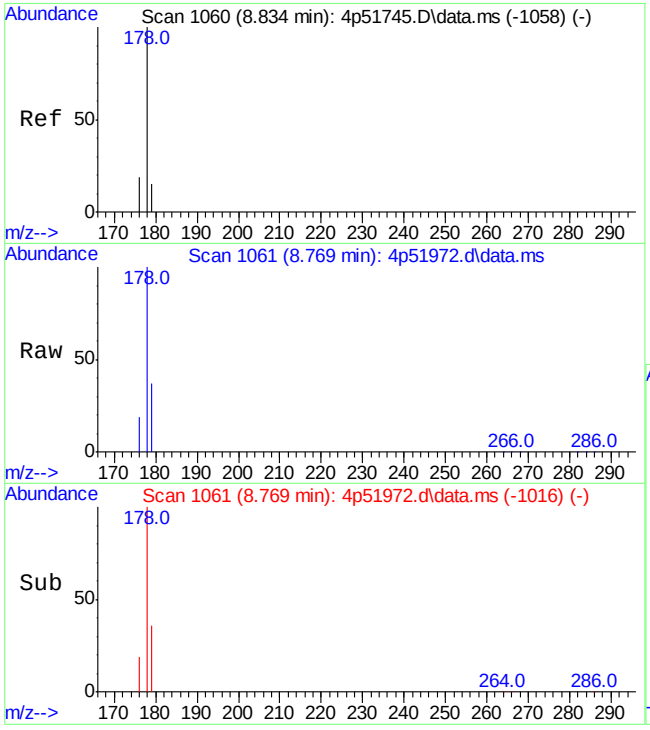


#23
Phenanthrene
Concen: 318.84 ppm
RT: 8.714 min Scan# 1056
Delta R.T. -0.007 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:178 Resp: 11246

Ion	Ratio	Lower	Upper
178	100		
179	14.1	0.0	45.4
176	22.1	0.0	48.9

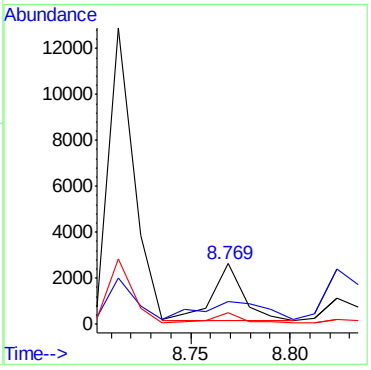


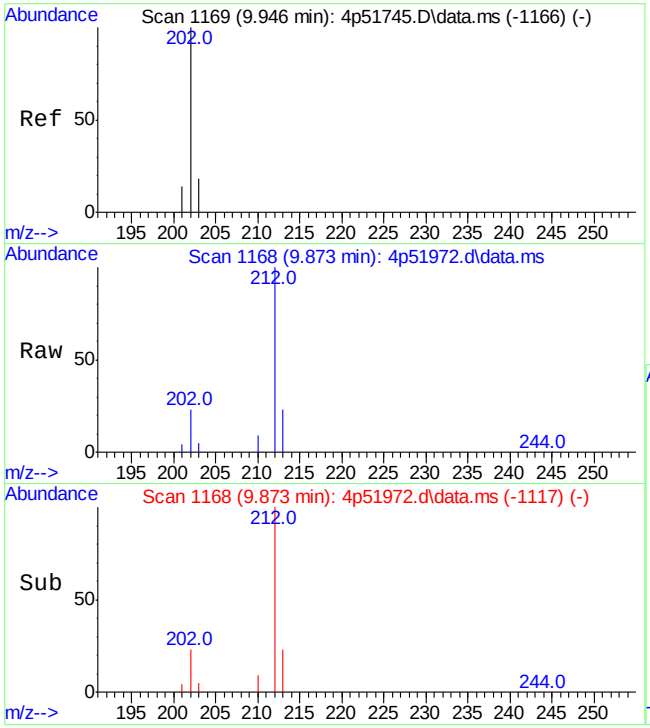


#24
Anthracene
Concen: 81.13 ppm
RT: 8.769 min Scan# 1061
Delta R.T. -0.007 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:178 Resp: 2723

Ion	Ratio	Lower	Upper
178	100		
179	31.8	0.0	46.4
176	18.6	0.0	47.4

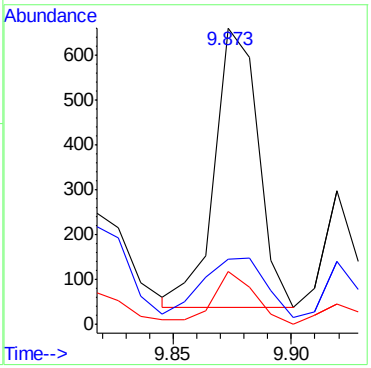


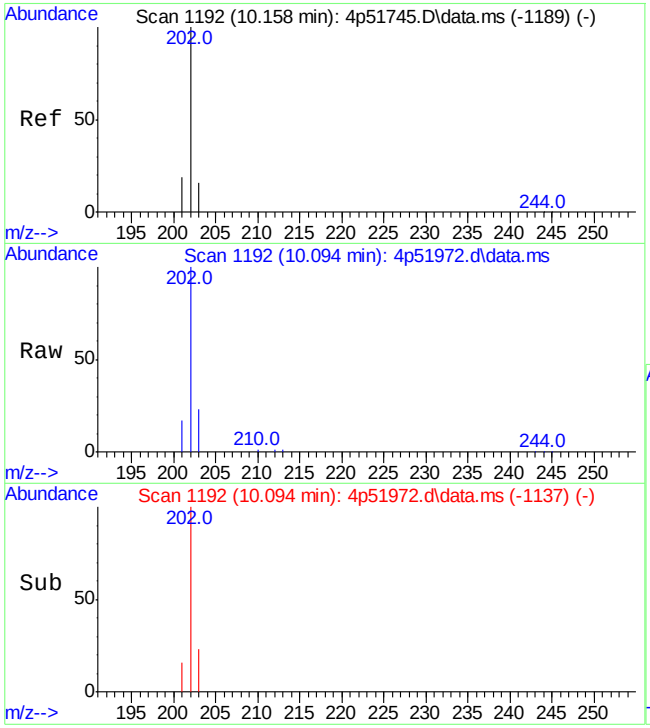


#25
Fluoranthene
Concen: 19.80 ppm
RT: 9.873 min Scan# 1168
Delta R.T. -0.005 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:202 Resp: 803

Ion	Ratio	Lower	Upper
202	100		
203	20.7	0.0	46.2
201	18.6	0.0	44.8

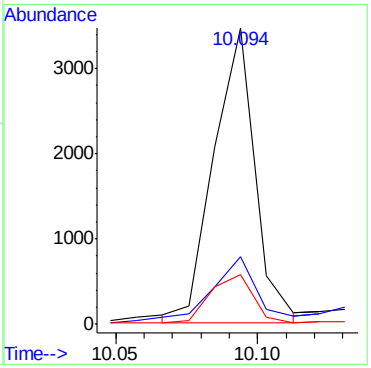


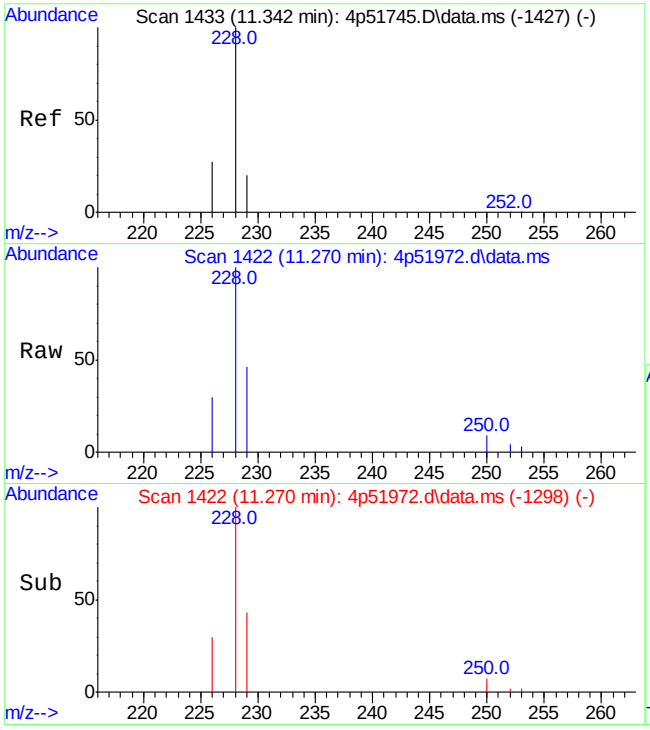


#26
Pyrene
Concen: 93.26 ppm
RT: 10.094 min Scan# 1192
Delta R.T. 0.004 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:202 Resp: 3524

Ion	Ratio	Lower	Upper
202	100		
203	20.9	0.0	45.3
201	16.7	0.0	49.0

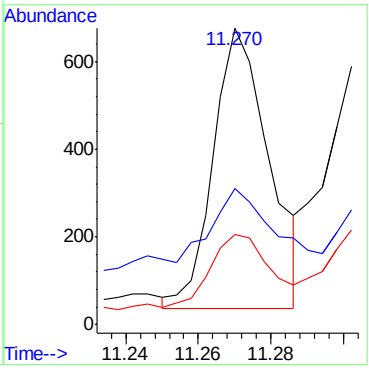


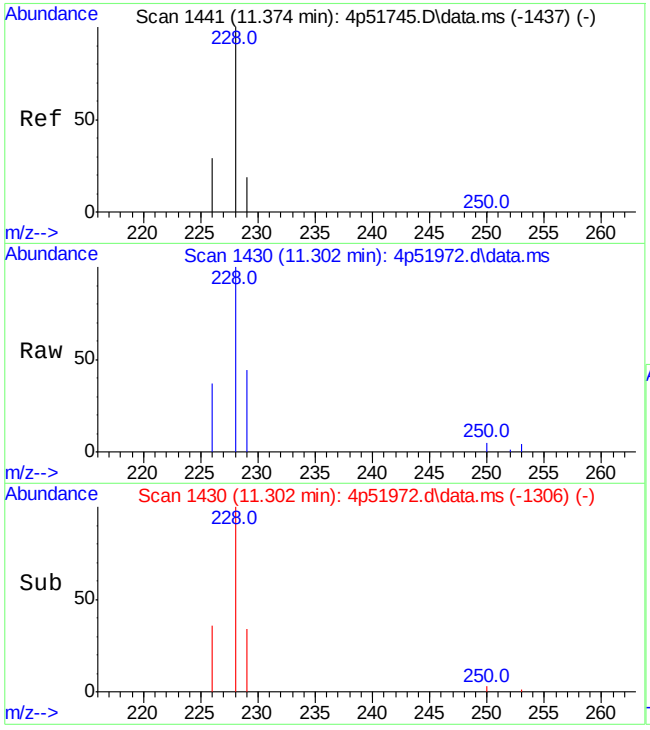


#28
Benzo[a]anthracene
Concen: 25.82 ppm
RT: 11.270 min Scan# 1422
Delta R.T. -0.004 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:228 Resp: 682

Ion	Ratio	Lower	Upper
228	100		
229	26.1	0.0	49.0
226	27.1	0.0	56.0

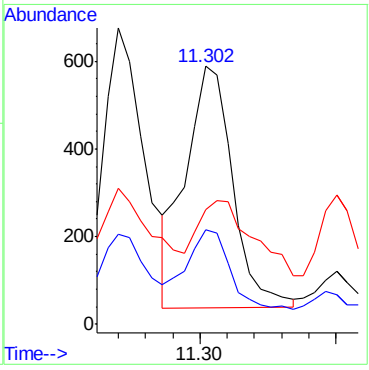


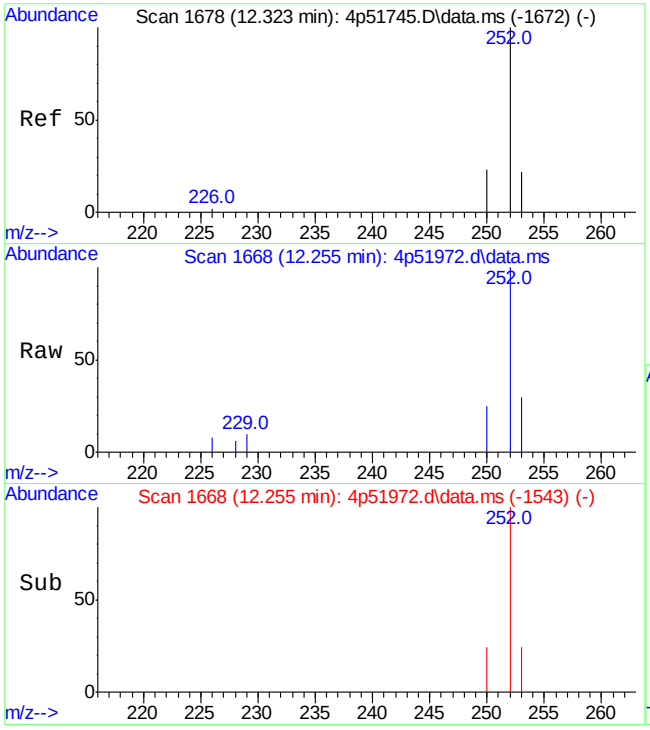


#29
Chrysene
Concen: 23.59 ppm
RT: 11.302 min Scan# 1430
Delta R.T. -0.004 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:228 Resp: 668

Ion	Ratio	Lower	Upper
228	100		
226	35.0	0.2	60.2
229	24.4	0.0	48.9

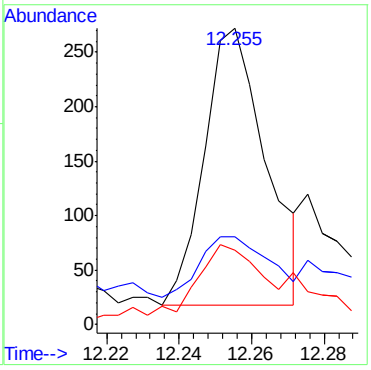


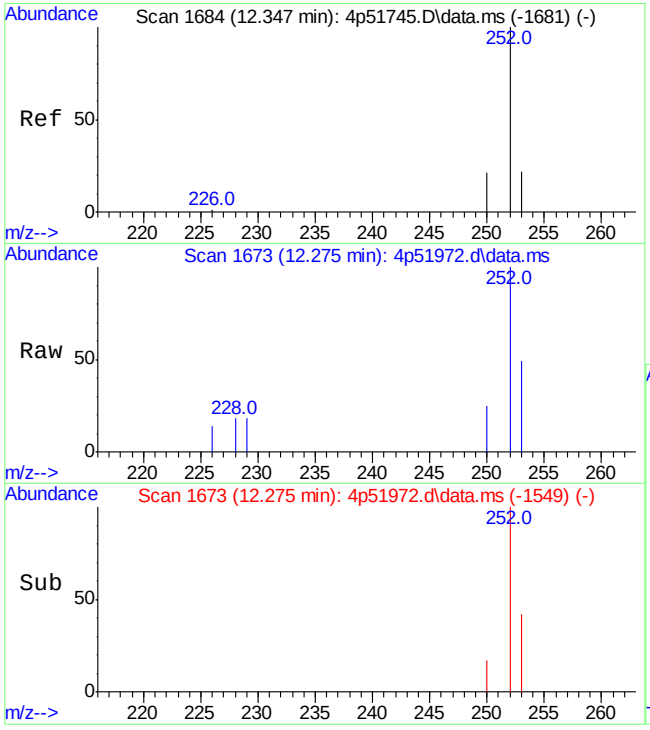


#31
Benzo[b]fluoranthene
Concen: 12.00 ppm
RT: 12.255 min Scan# 1668
Delta R.T. 0.000 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:252 Resp: 300

Ion	Ratio	Lower	Upper
252	100		
253	23.1	0.0	51.9
250	16.7	0.0	52.7

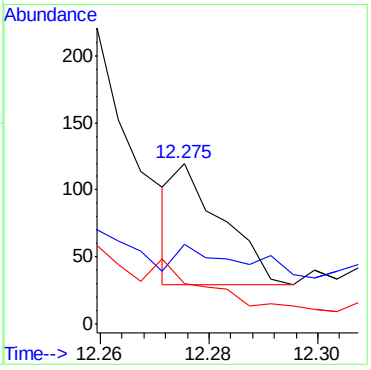


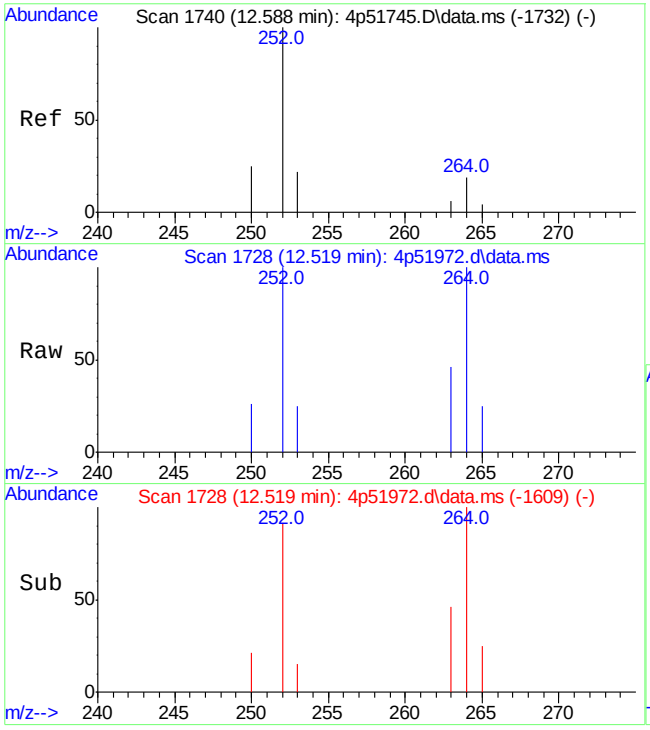


#32
Benzo[k]fluoranthene
Concen: 2.09 ppm
RT: 12.275 min Scan# 1673
Delta R.T. -0.004 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:252 Resp: 55

Ion	Ratio	Lower	Upper
252	100		
253	38.5	0.0	51.9
250	0.0	0.0	50.8

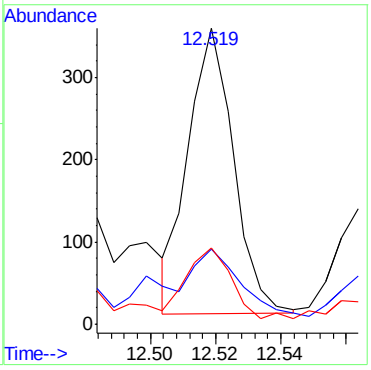


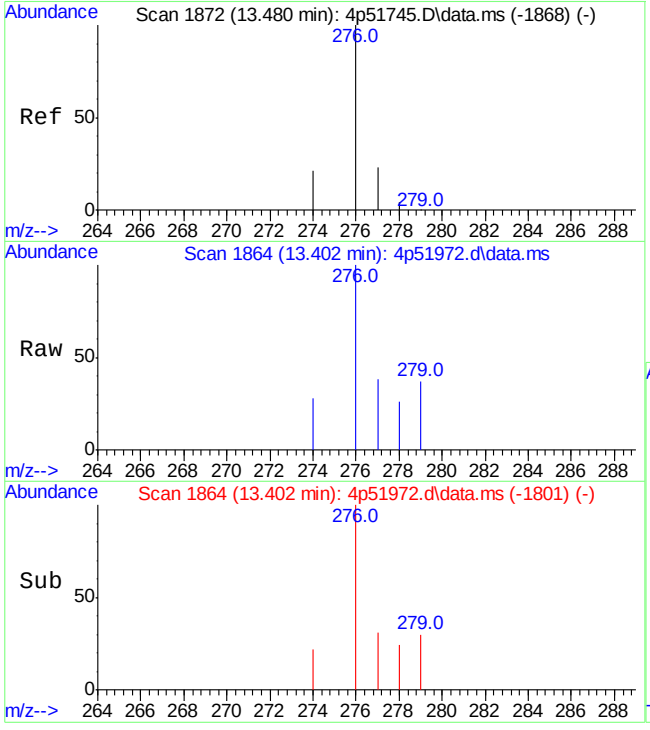


#33
Benzo[a]pyrene
Concen: 11.40 ppm
RT: 12.519 min Scan# 1728
Delta R.T. 0.000 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:252 Resp: 334

Ion	Ratio	Lower	Upper
252	100		
253	20.1	0.0	50.1
250	26.2	0.0	55.1

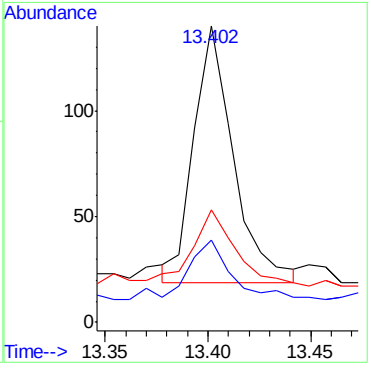


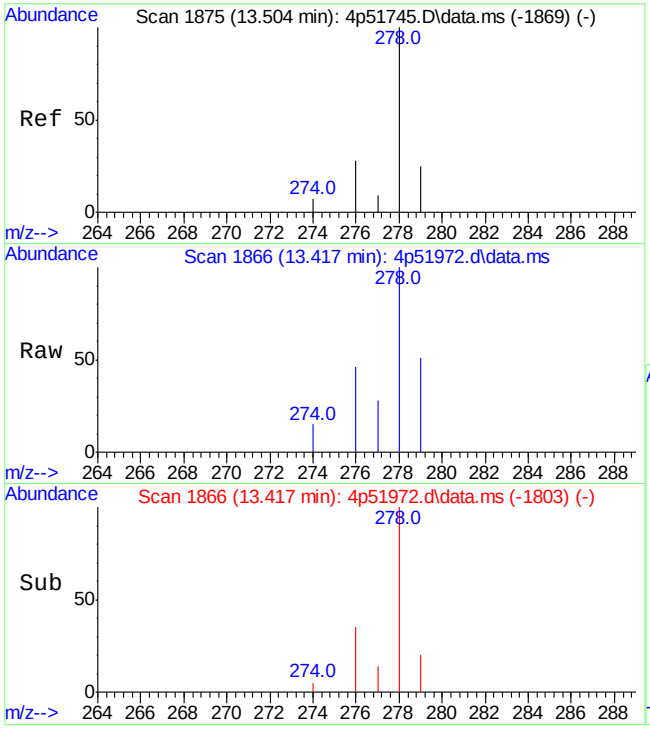


#34
Indeno[1,2,3-cd]pyrene
Concen: 5.68 ppm
RT: 13.402 min Scan# 1864
Delta R.T. 0.000 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:276 Resp: 161

Ion	Ratio	Lower	Upper
276	100		
274	23.7	0.0	50.0
277	28.1	0.0	53.1

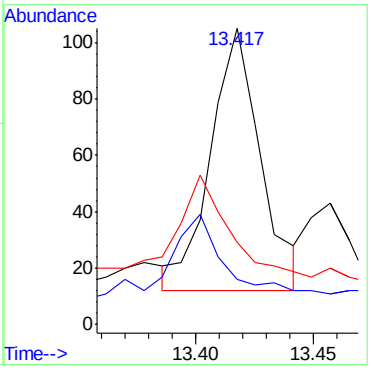


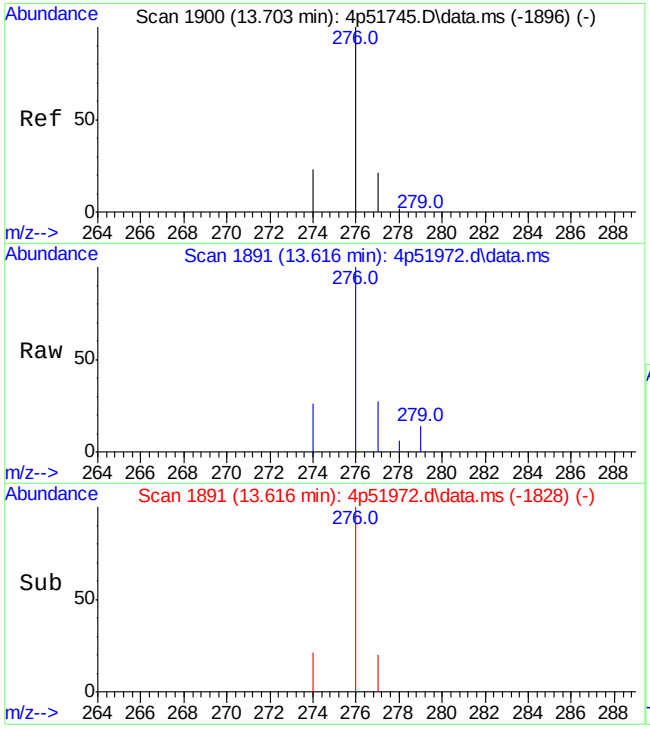


#35
Dibenz[a,h]anthracene
Concen: 5.82 ppm
RT: 13.417 min Scan# 1866
Delta R.T. 0.000 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:278 Resp: 138

Ion	Ratio	Lower	Upper
278	100		
274	1.9	0.0	40.3
277	9.3	0.0	40.7

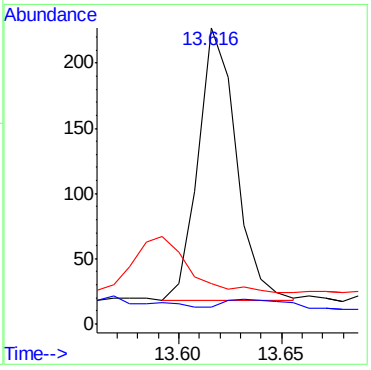




#36
Benzo[g,h,i]perylene
Concen: 10.24 ppm
RT: 13.616 min Scan# 1891
Delta R.T. 0.000 min
Lab File: 4p51972.d
Acq: 23 Feb 2022 8:38 pm

Tgt Ion:276 Resp: 266

Ion	Ratio	Lower	Upper
276	100		
278	0.0	0.0	32.3
279	0.0	0.0	30.0



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51944.D
Acq On : 23 Feb 2022 4:18 am
Operator : chriss2
Sample : jd40008-3
Misc : op38283,e4p2708,240,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 23 12:44:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

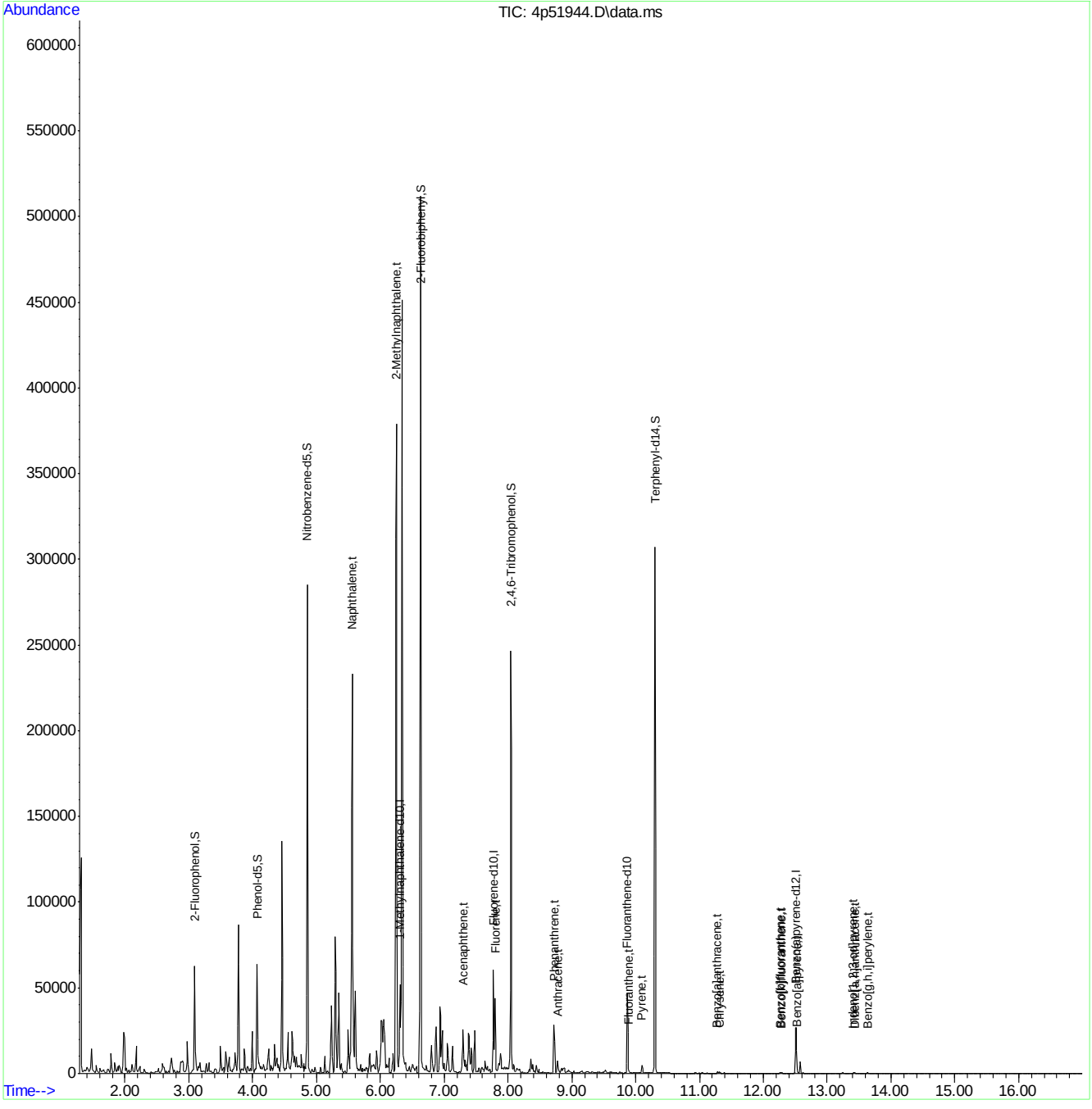
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.312	150	19843	800.00	ppm	0.00
13) Fluorene-d10	7.771	176	28350	800.00	ppm	0.00
20) Fluoranthene-d10	9.869	212	33386	800.00	ppm	0.00
30) Benzo(a)pyrene-d12	12.509	264	16431	800.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.094	112	41388	2748.08	ppm	0.01
Spiked Amount 50.000			Recovery = 5496.16%			
4) Phenol-d5	4.070	99	50885	2231.29	ppm	0.00
Spiked Amount 50.000			Recovery = 4462.58%			
7) Nitrobenzene-d5	4.857	82	149153	5774.33	ppm	0.00
Spiked Amount 50.000			Recovery = 11548.66%			
14) 2-Fluorobiphenyl	6.634	172	299399	6586.17	ppm	0.00
Spiked Amount 50.000			Recovery = 13172.34%			
19) 2,4,6-Tribromophenol	8.044	330	106735	8971.51	ppm	0.00
Spiked Amount 50.000			Recovery = 17943.02%			
27) Terphenyl-d14	10.302	244	199524	7090.72	ppm	0.00
Spiked Amount 50.000			Recovery = 14181.44%			
Target Compounds						Qvalue
8) Naphthalene	5.558	128	201866	3021.06	ppm	92
10) 2-Methylnaphthalene	6.252	141	138053	3770.05	ppm	# 70
16) Acenaphthene	7.293	153	10739	237.00	ppm	99
17) Fluorene	7.797	166	17081	358.87	ppm	89
23) Phenanthrene	8.721	178	22715	412.95	ppm	90
24) Anthracene	8.775	178	4937	94.33	ppm	95
25) Fluoranthene	9.887	202	1060	16.76	ppm	95
26) Pyrene	10.099	202	3430	58.20	ppm	100
28) Benzo[a]anthracene	11.278	228	627	15.22	ppm	91
29) Chrysene	11.314	228	655	14.83	ppm	90
31) Benzo[b]fluoranthene	12.263	252	374	11.43	ppm	98
32) Benzo[k]fluoranthene	12.287	252	268	7.79	ppm	92
33) Benzo[a]pyrene	12.529	252	370	9.65	ppm	94
34) Indeno[1,2,3-cd]pyrene	13.409	276	318	8.57	ppm	95
35) Dibenz[a,h]anthracene	13.433	278	293	9.44	ppm	78
36) Benzo[g,h,i]perylene	13.632	276	363	10.68	ppm	96

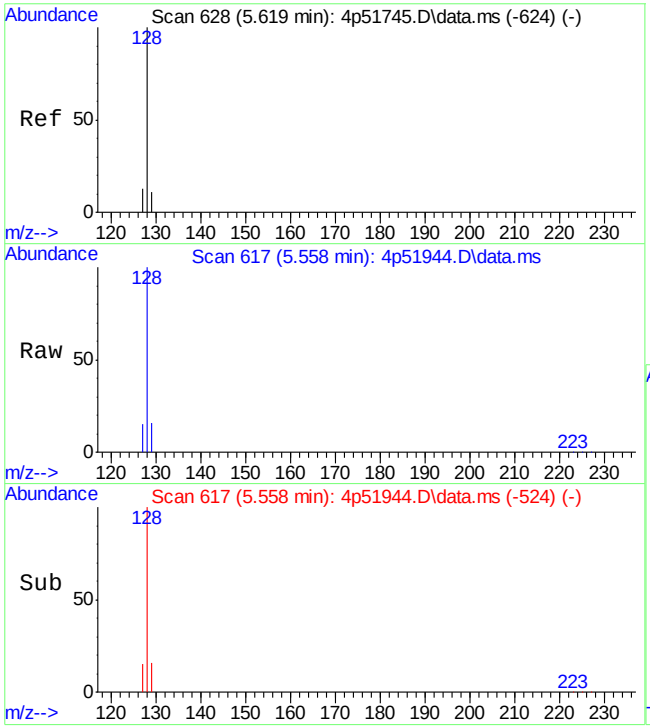
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51944.D
Acq On : 23 Feb 2022 4:18 am
Operator : chriss2
Sample : jd40008-3
Misc : op38283,e4p2708,240,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 23 12:44:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

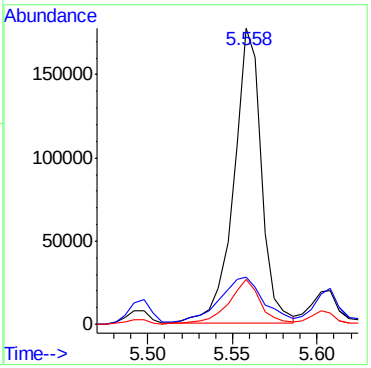


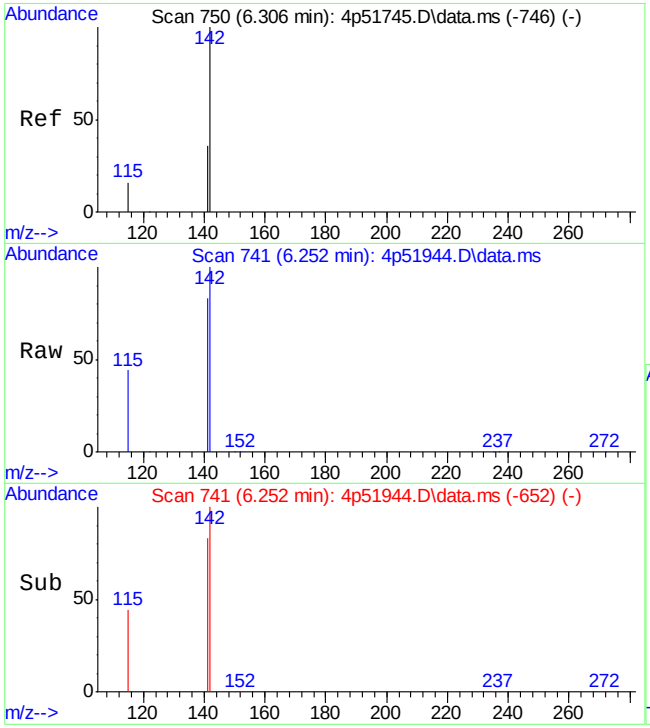


#8
Naphthalene
Concen: 3021.06 ppm
RT: 5.558 min Scan# 617
Delta R.T. -0.005 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:128 Resp: 201866

Ion	Ratio	Lower	Upper
128	100		
129	14.8	0.0	41.2
127	14.8	0.0	42.3

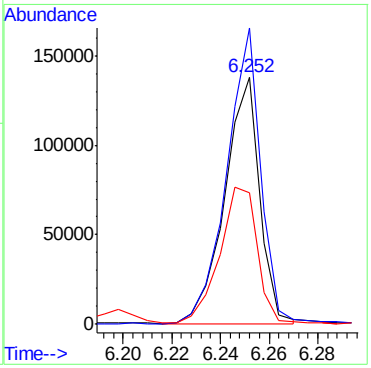


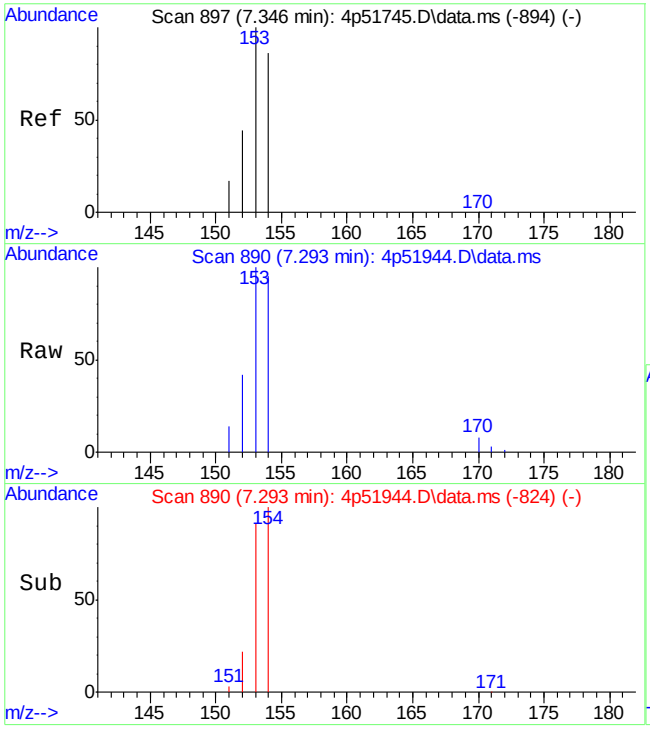


#10
2-Methylnaphthalene
Concen: 3770.05 ppm
RT: 6.252 min Scan# 741
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:141 Resp: 138053

Ion	Ratio	Lower	Upper
141	100		
142	120.0	52.1	112.1#
115	53.0	34.1	94.1

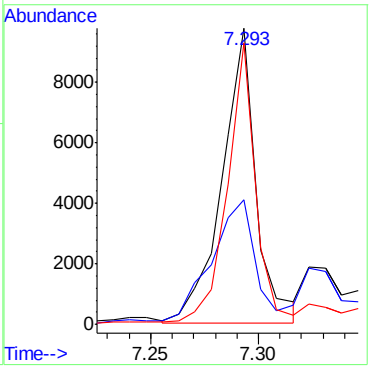


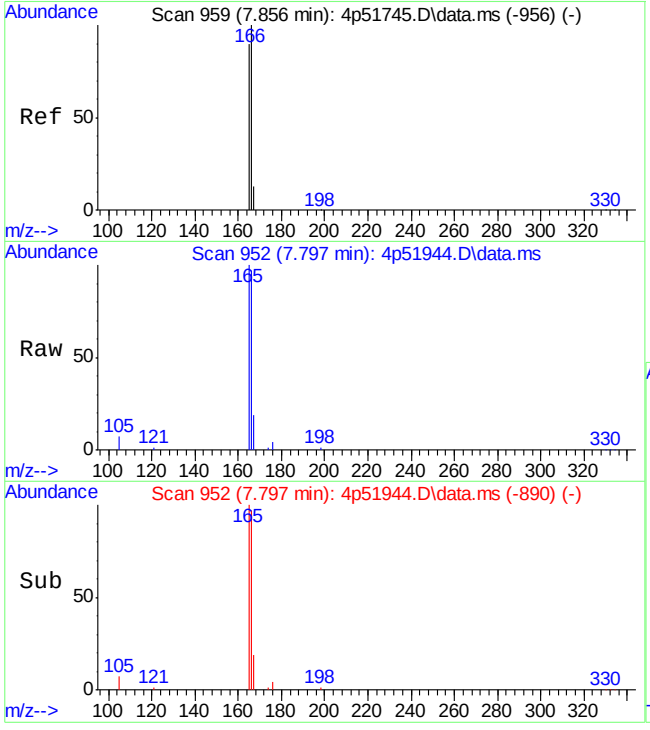


#16
Acenaphthene
Concen: 237.00 ppm
RT: 7.293 min Scan# 890
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:153 Resp: 10739

Ion	Ratio	Lower	Upper
153	100		
152	40.1	11.0	71.0
154	97.7	66.5	126.5

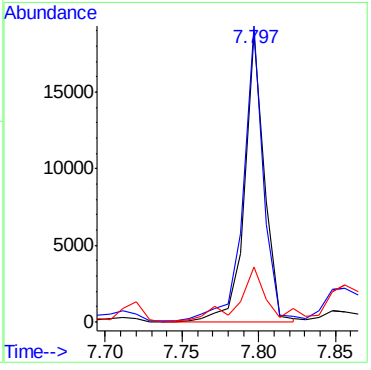


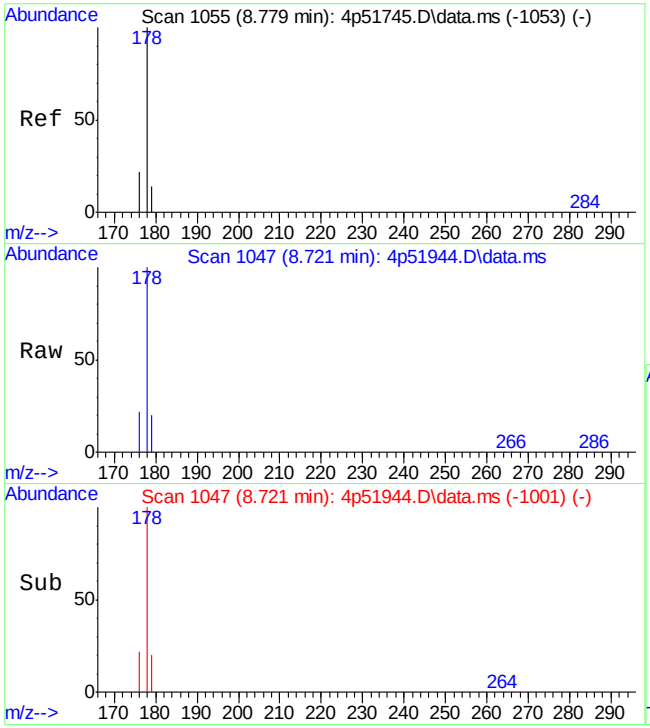


#17
Fluorene
Concen: 358.87 ppm
RT: 7.797 min Scan# 952
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:166 Resp: 17081

Ion	Ratio	Lower	Upper
166	100		
165	102.2	61.8	121.8
167	17.1	0.0	43.4

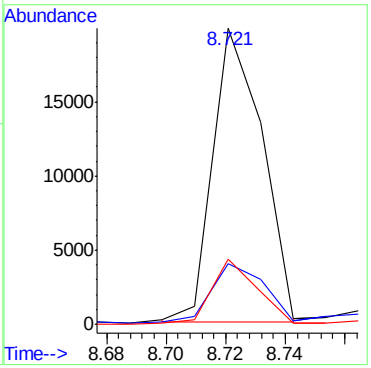


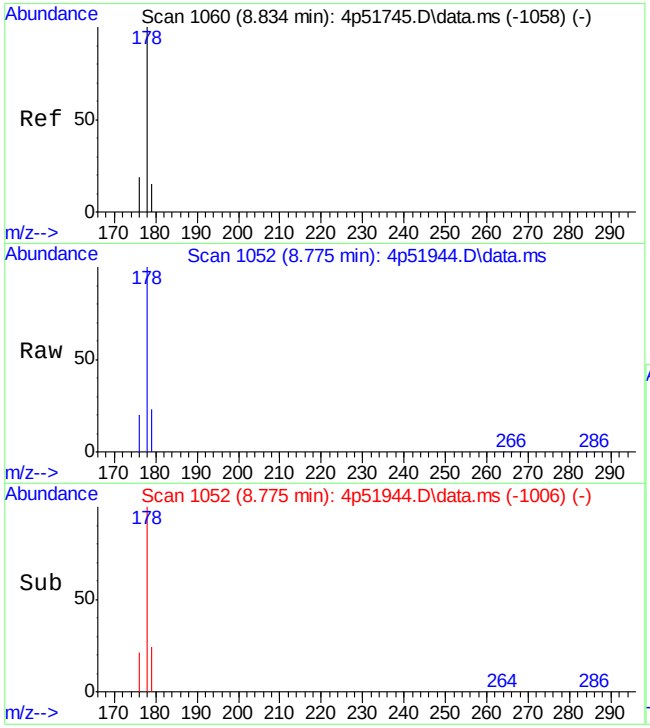


#23
Phenanthrene
Concen: 412.95 ppm
RT: 8.721 min Scan# 1047
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:178 Resp: 22715

Ion	Ratio	Lower	Upper
178	100		
179	19.5	0.0	46.2
176	22.2	0.0	46.9

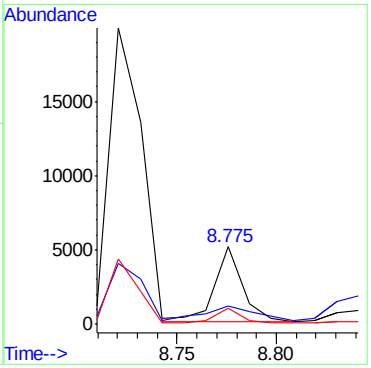


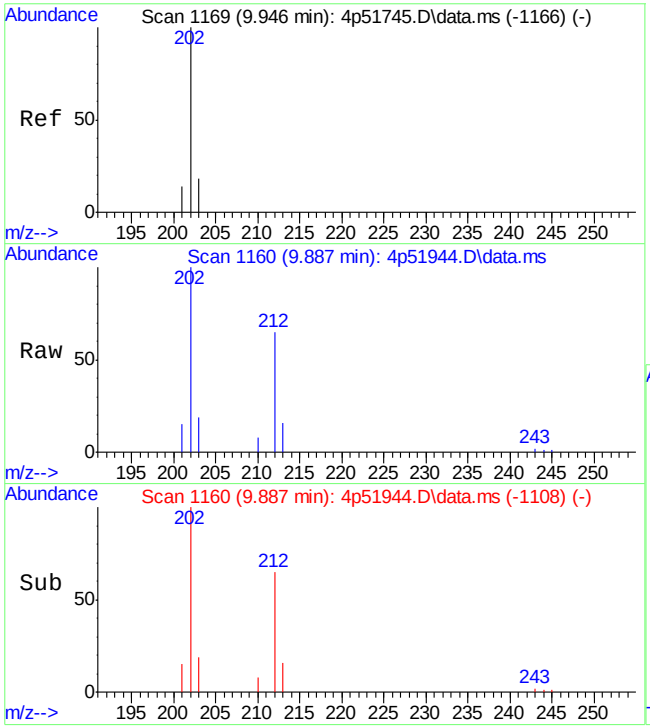


#24
Anthracene
Concen: 94.33 ppm
RT: 8.775 min Scan# 1052
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:178 Resp: 4937

Ion	Ratio	Lower	Upper
178	100		
179	20.0	0.0	44.7
176	20.4	0.0	50.5

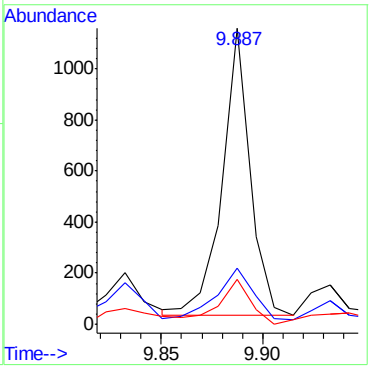


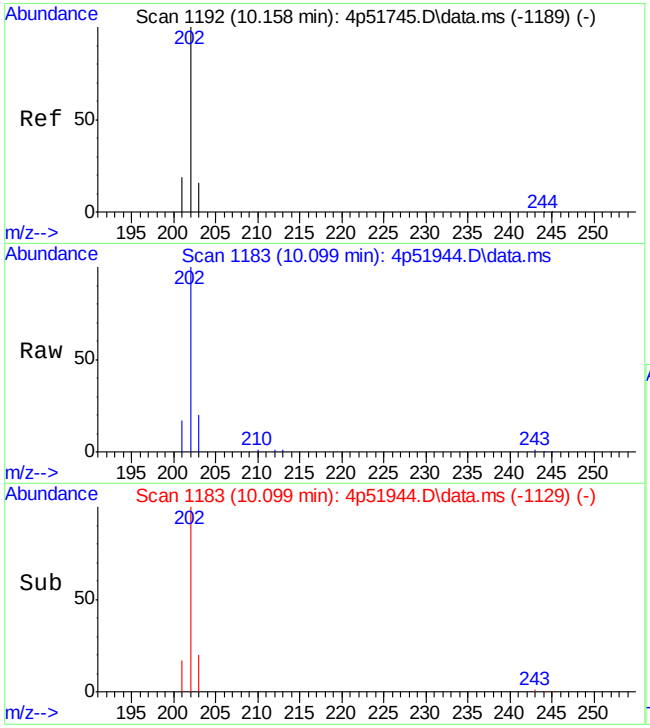


#25
Fluoranthene
Concen: 16.76 ppm
RT: 9.887 min Scan# 1160
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:202 Resp: 1060

Ion	Ratio	Lower	Upper
202	100		
203	17.8	0.0	45.5
201	13.6	0.0	45.7

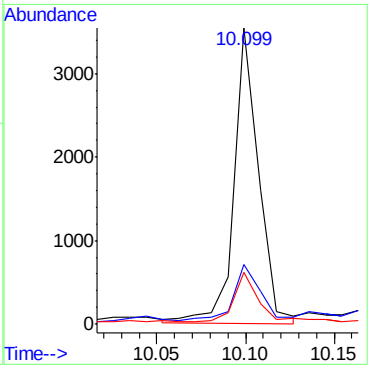


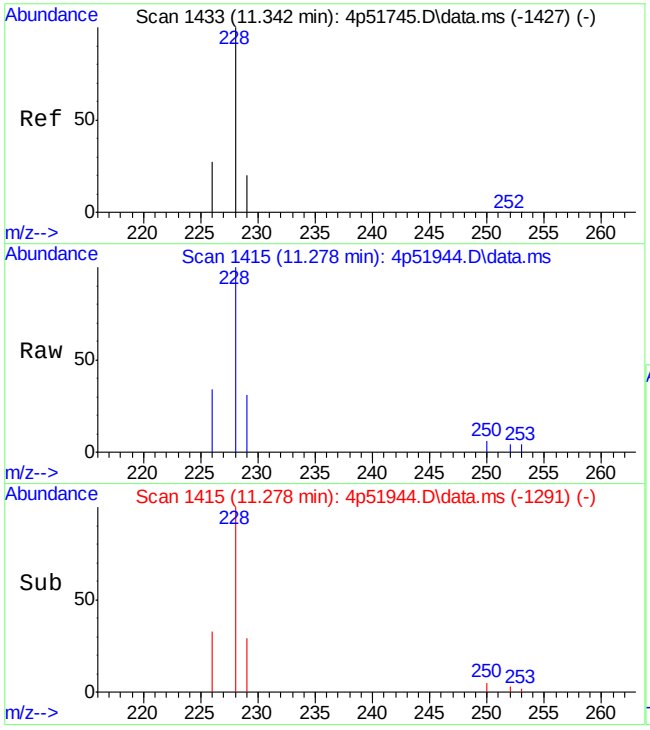


#26
Pyrene
Concen: 58.20 ppm
RT: 10.099 min Scan# 1183
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:202 Resp: 3430

Ion	Ratio	Lower	Upper
202	100		
203	18.8	0.0	48.6
201	16.1	0.0	46.3

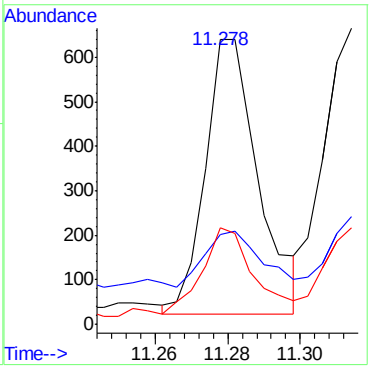


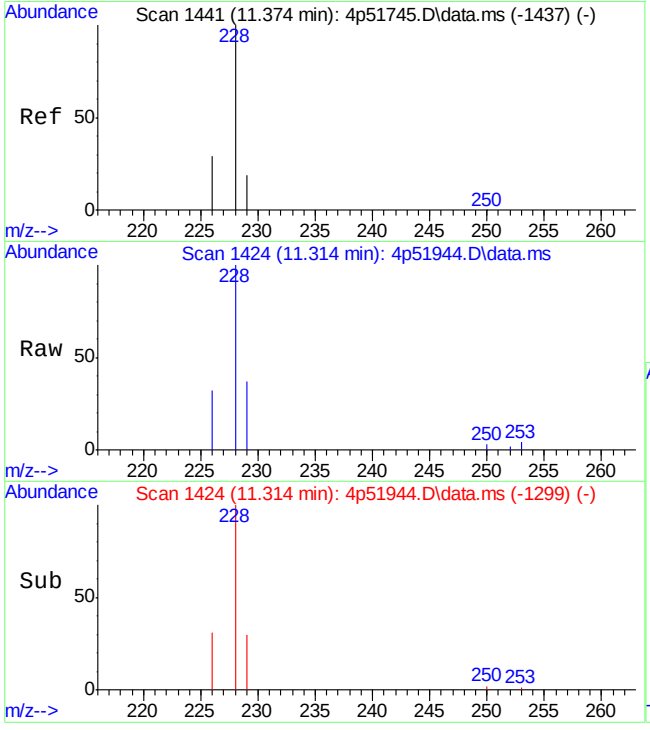


#28
Benzo[a]anthracene
Concen: 15.22 ppm
RT: 11.278 min Scan# 1415
Delta R.T. -0.004 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:228 Resp: 627

Ion	Ratio	Lower	Upper
228	100		
229	19.1	0.0	49.5
226	33.2	0.0	55.8

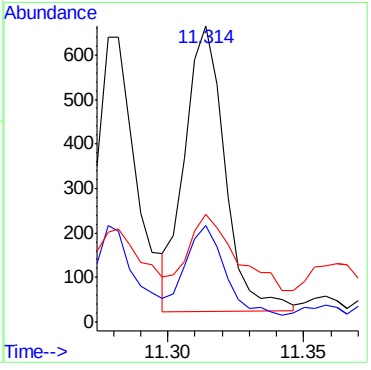


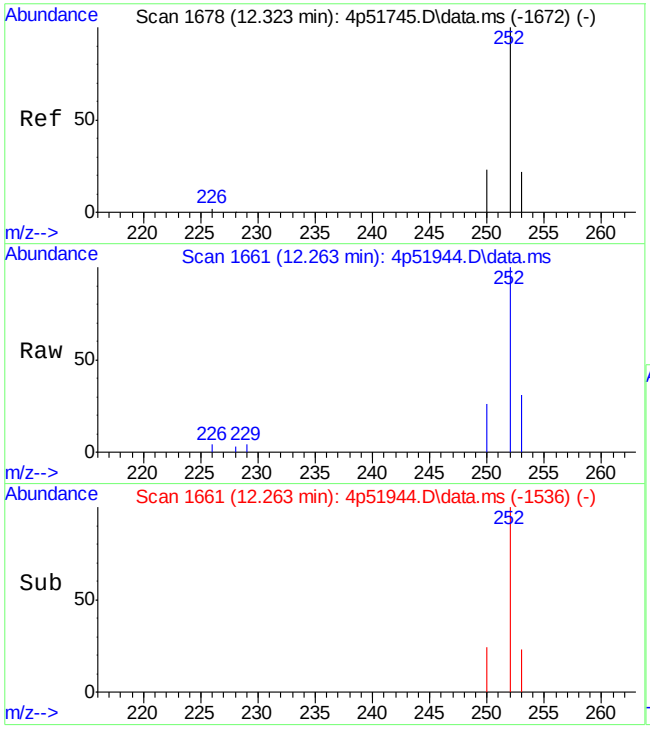


#29
Chrysene
Concen: 14.83 ppm
RT: 11.314 min Scan# 1424
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:228 Resp: 655

Ion	Ratio	Lower	Upper
228	100		
226	31.5	0.0	58.3
229	27.6	0.0	49.9

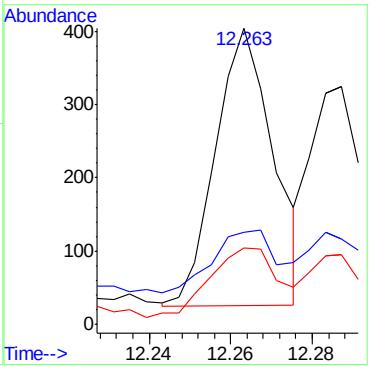


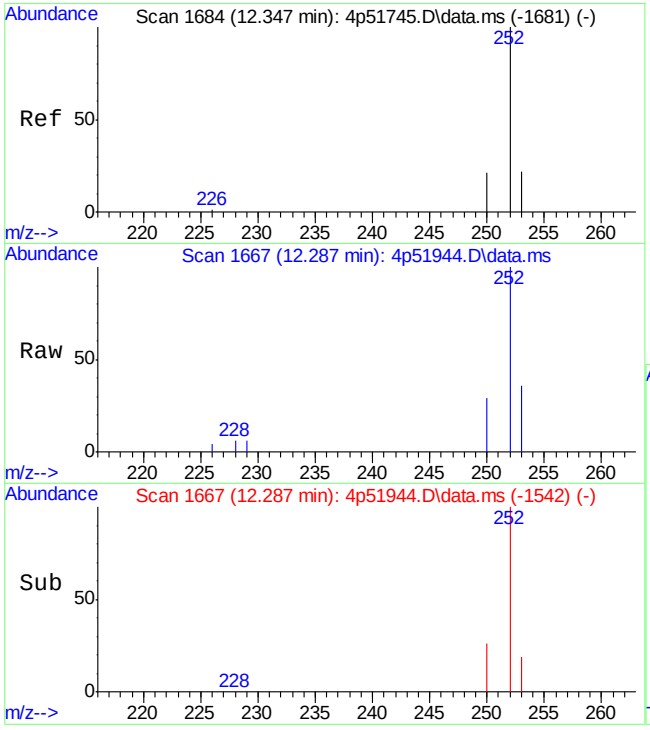


#31
Benzo[b]fluoranthene
Concen: 11.43 ppm
RT: 12.263 min Scan# 1661
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:252 Resp: 374

Ion	Ratio	Lower	Upper
252	100		
253	20.0	0.0	51.3
250	22.9	0.0	53.9

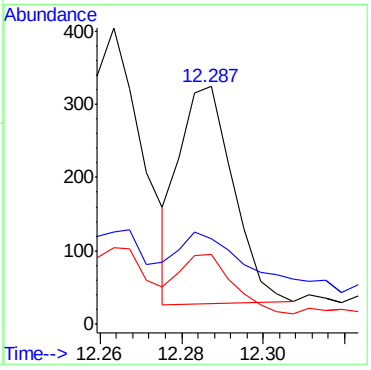


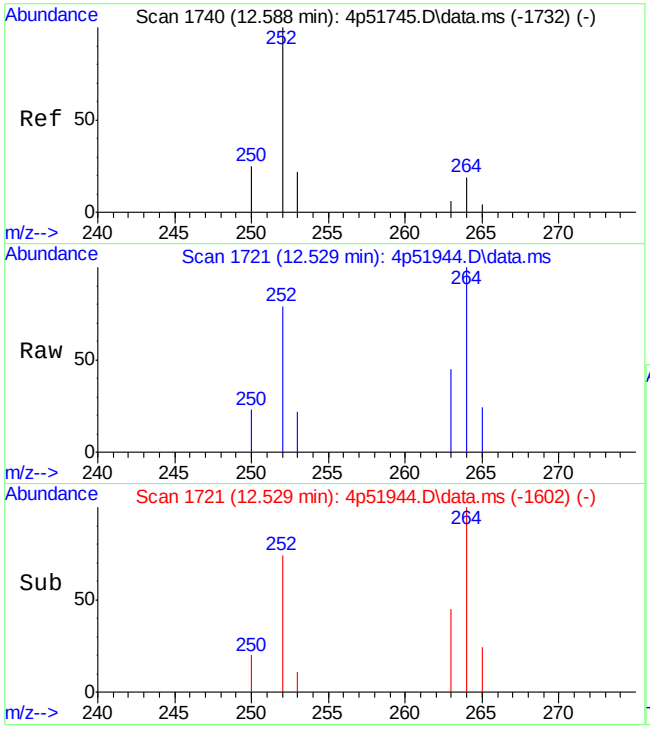


#32
Benzo[k]fluoranthene
Concen: 7.79 ppm
RT: 12.287 min Scan# 1667
Delta R.T. 0.000 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:252 Resp: 268

Ion	Ratio	Lower	Upper
252	100		
253	18.8	0.0	51.6
250	27.6	0.0	52.5

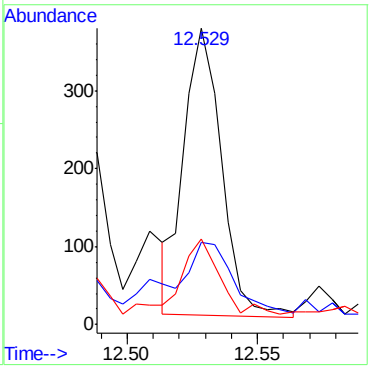


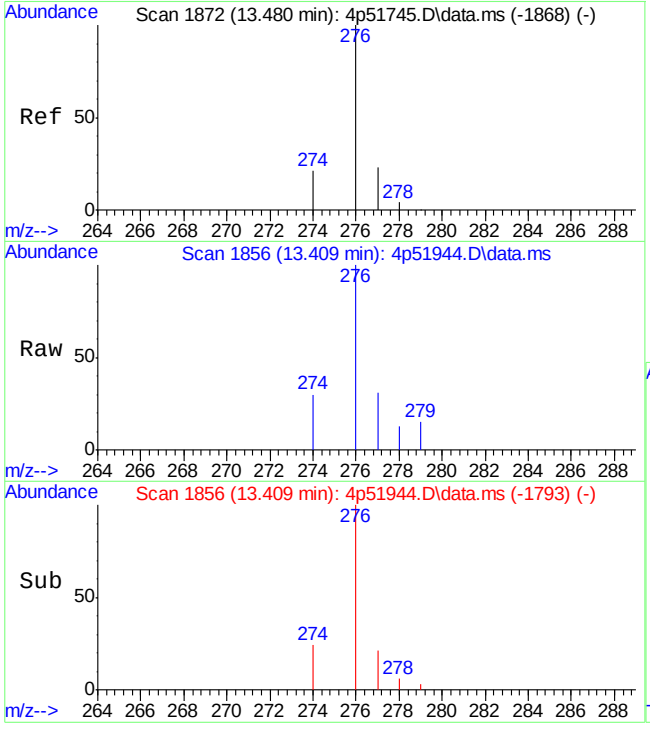


#33
Benzo[a]pyrene
Concen: 9.65 ppm
RT: 12.529 min Scan# 1721
Delta R.T. 0.001 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:252 Resp: 370

Ion	Ratio	Lower	Upper
252	100		
253	22.4	0.0	51.5
250	27.9	0.0	53.6

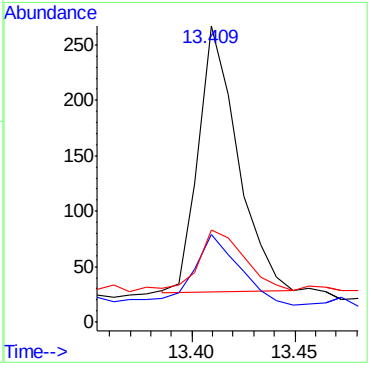


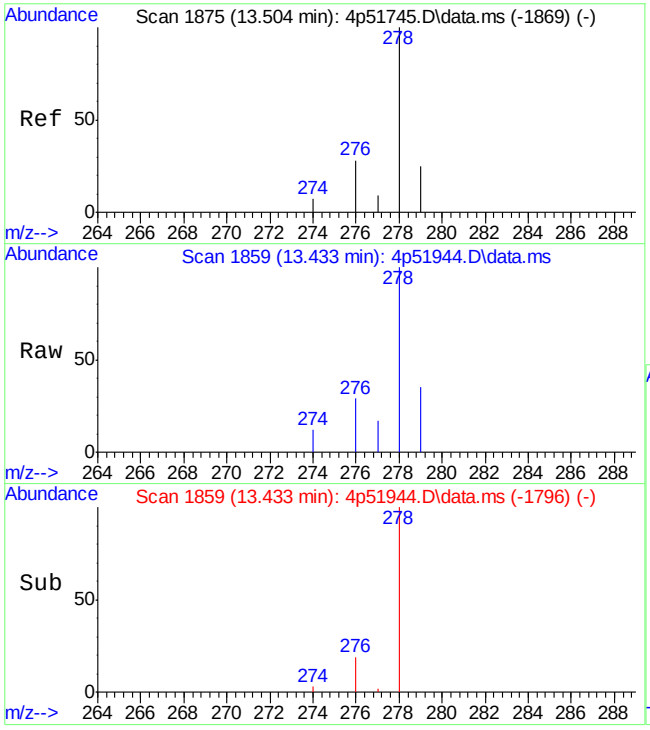


#34
Indeno[1,2,3-cd]pyrene
Concen: 8.57 ppm
RT: 13.409 min Scan# 1856
Delta R.T. 0.001 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:276 Resp: 318

Ion	Ratio	Lower	Upper
276	100		
274	25.5	0.0	52.3
277	22.6	0.0	50.9

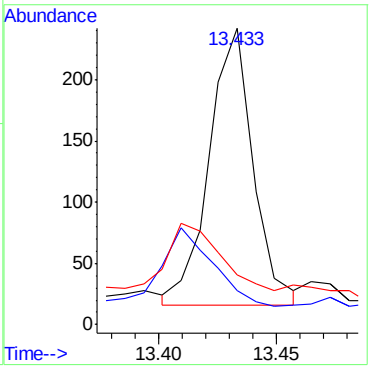


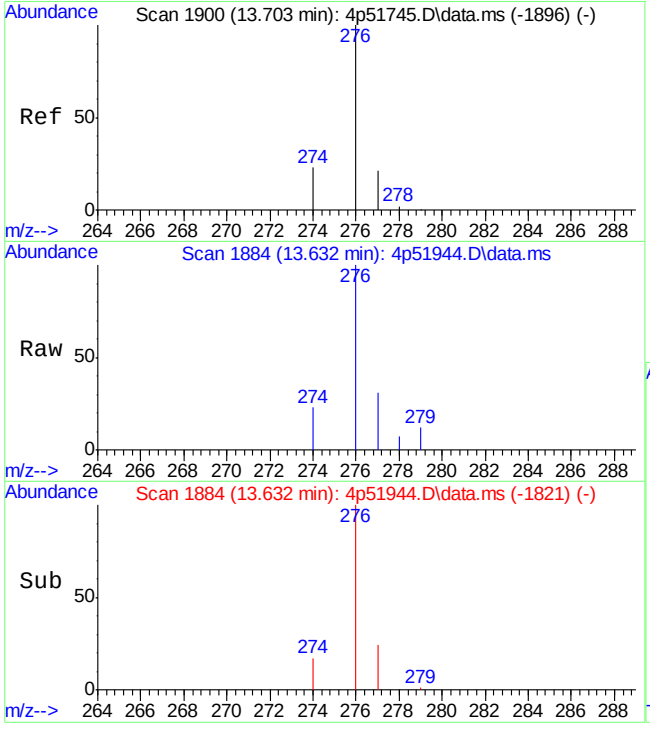


#35
Dibenz[a,h]anthracene
Concen: 9.44 ppm
RT: 13.433 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:278 Resp: 293

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	37.5
277	1.2	0.0	39.1

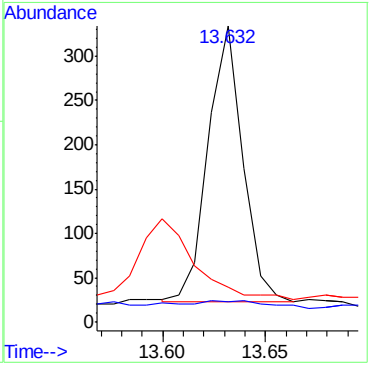




#36
Benzo[g,h,i]perylene
Concen: 10.68 ppm
RT: 13.632 min Scan# 1884
Delta R.T. 0.001 min
Lab File: 4p51944.D
Acq: 23 Feb 2022 4:18 am

Tgt Ion:276 Resp: 363

Ion	Ratio	Lower	Upper
276	100		
278	0.8	0.0	32.4
279	0.0	0.0	30.1



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51945.D
Acq On : 23 Feb 2022 4:42 am
Operator : chriss2
Sample : jd40008-4
Misc : op38283,e4p2708,230,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 23 12:46:01 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

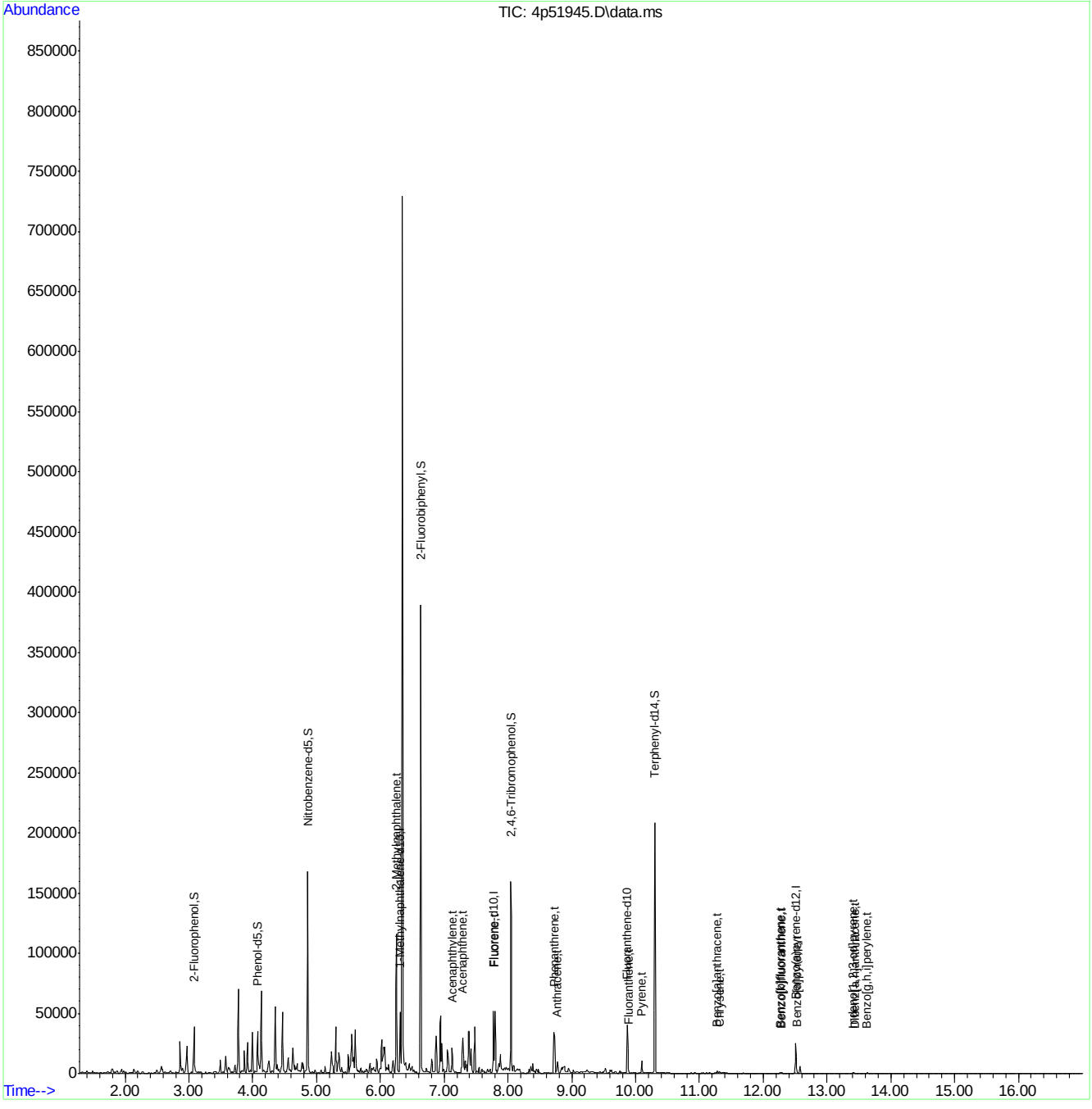
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.311	150	14463	800.00 ppm	0.00
13) Fluorene-d10	7.771	176	20246	800.00 ppm	0.00
20) Fluoranthene-d10	9.869	212	28304	800.00 ppm	0.00
30) Benzo(a)pyrene-d12	12.512	264	14769	800.00 ppm	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.082	112	22561	2055.24 ppm	0.00
Spiked Amount 50.000			Recovery	= 4110.48%	
4) Phenol-d5	4.075	99	27241	1638.84 ppm	0.00
Spiked Amount 50.000			Recovery	= 3277.68%	
7) Nitrobenzene-d5	4.861	82	96011	5099.64 ppm	0.00
Spiked Amount 50.000			Recovery	= 10199.28%	
14) 2-Fluorobiphenyl	6.634	172	184569	5685.32 ppm	0.00
Spiked Amount 50.000			Recovery	= 11370.64%	
19) 2,4,6-Tribromophenol	8.044	330	66627	7841.93 ppm	0.00
Spiked Amount 50.000			Recovery	= 15683.86%	
27) Terphenyl-d14	10.302	244	121377	5088.02 ppm	0.00
Spiked Amount 50.000			Recovery	= 10176.04%	
Target Compounds					Qvalue
10) 2-Methylnaphthalene	6.252	141	33469	1253.99 ppm	# 78
15) Acenaphthylene	7.127	152	5877	132.50 ppm	# 1
16) Acenaphthene	7.293	153	10650	329.11 ppm	97
17) Fluorene	7.797	166	19453	572.30 ppm	89
23) Phenanthrene	8.721	178	31619	678.04 ppm	90
24) Anthracene	8.775	178	6706	151.13 ppm	92
25) Fluoranthene	9.887	202	1838	34.29 ppm	94
26) Pyrene	10.099	202	7016	140.43 ppm	97
28) Benzo[a]anthracene	11.282	228	1106	31.67 ppm	99
29) Chrysene	11.314	228	1210	32.32 ppm	92
31) Benzo[b]fluoranthene	12.263	252	684	23.25 ppm	95
32) Benzo[k]fluoranthene	12.283	252	266	8.60 ppm	80
33) Benzo[a]pyrene	12.527	252	641	18.60 ppm	99
34) Indeno[1,2,3-cd]pyrene	13.413	276	352	10.55 ppm	93
35) Dibenz[a,h]anthracene	13.429	278	205	7.35 ppm	81
36) Benzo[g,h,i]perylene	13.628	276	466	15.25 ppm	97

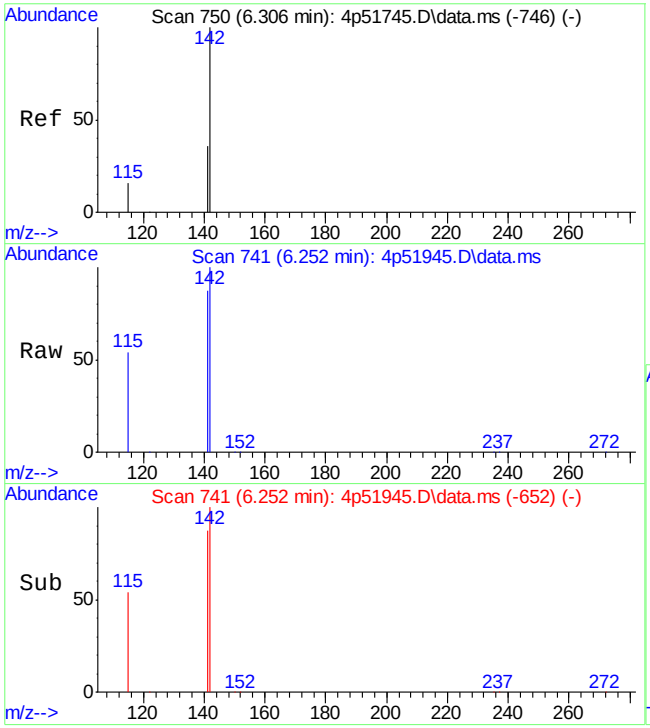
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51945.D
Acq On : 23 Feb 2022 4:42 am
Operator : chriss2
Sample : jd40008-4
Misc : op38283,e4p2708,230,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 23 12:46:01 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

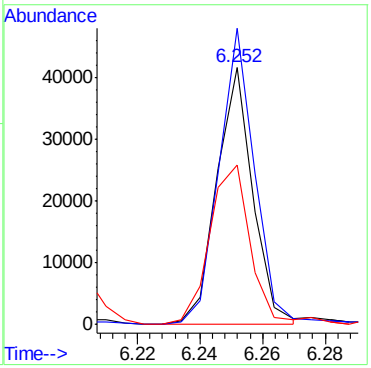


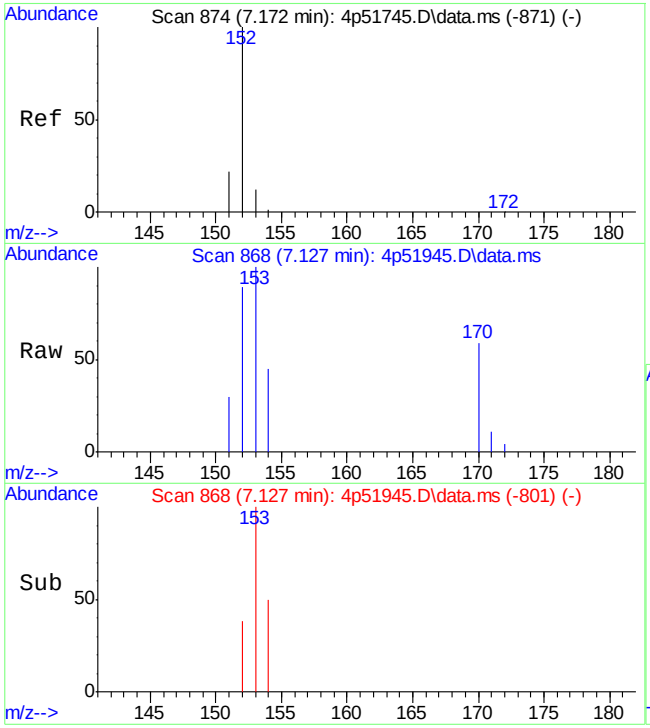


#10
2-Methylnaphthalene
Concen: 1253.99 ppm
RT: 6.252 min Scan# 741
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:141 Resp: 33469

Ion	Ratio	Lower	Upper
141	100		
142	115.4	52.1	112.1#
115	61.8	34.1	94.1

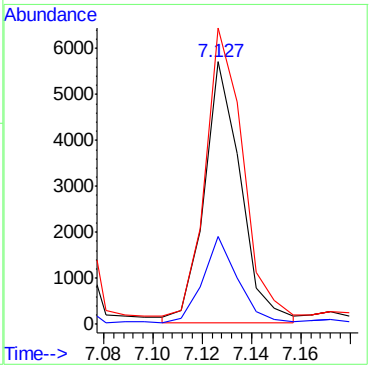


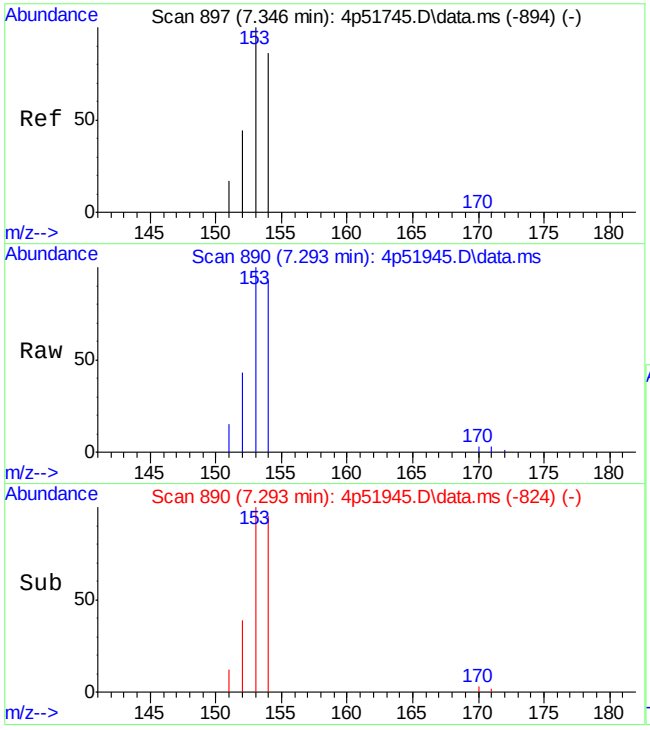


#15
Acenaphthylene
Concen: 132.50 ppm
RT: 7.127 min Scan# 868
Delta R.T. 0.007 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:152 Resp: 5877

Ion	Ratio	Lower	Upper
152	100		
151	33.7	0.0	50.1
153	112.8	0.0	43.5#

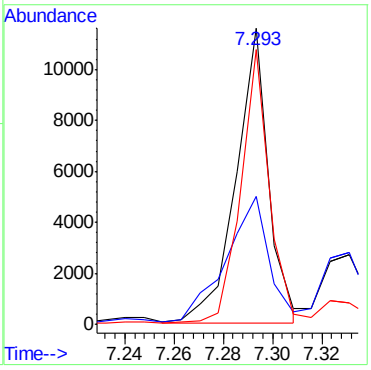


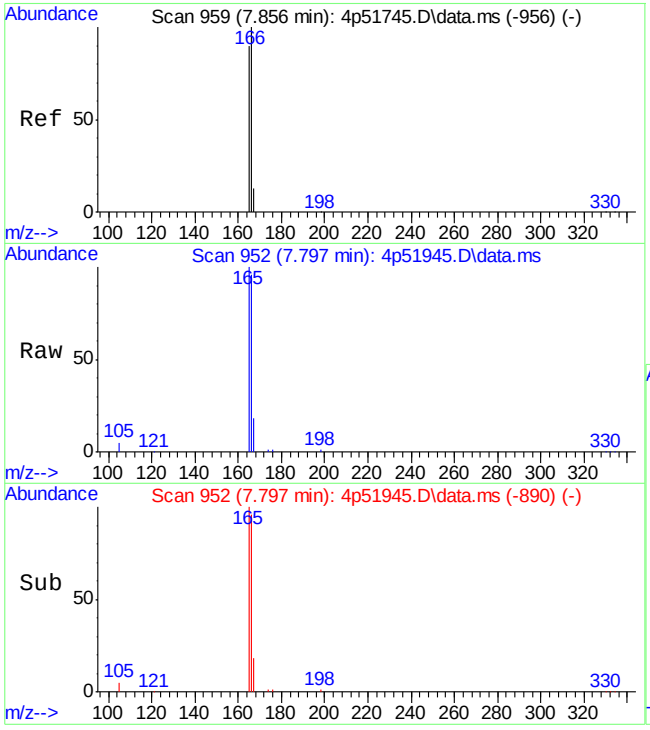


#16
Acenaphthene
Concen: 329.11 ppm
RT: 7.293 min Scan# 890
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:153 Resp: 10650

Ion	Ratio	Lower	Upper
153	100		
152	42.0	11.0	71.0
154	93.6	66.5	126.5

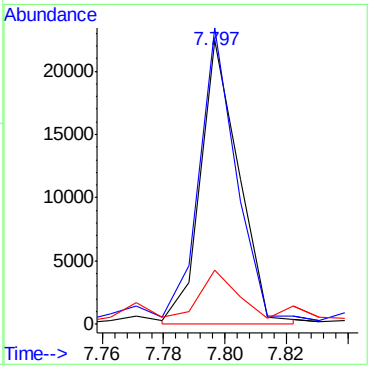


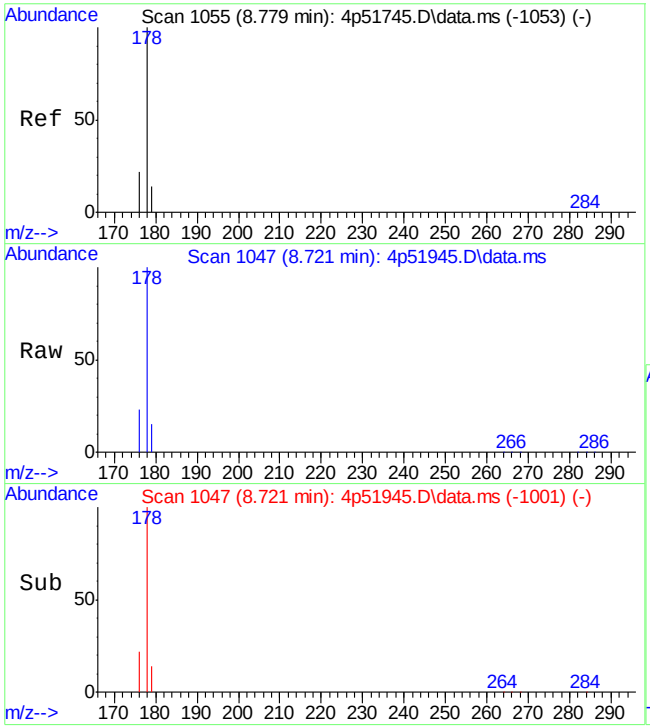


#17
Fluorene
Concen: 572.30 ppm
RT: 7.797 min Scan# 952
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:166 Resp: 19453

Ion	Ratio	Lower	Upper
166	100		
165	103.3	61.8	121.8
167	14.6	0.0	43.4

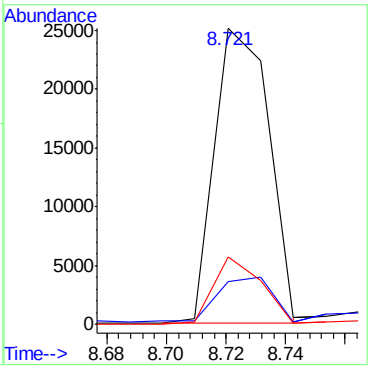


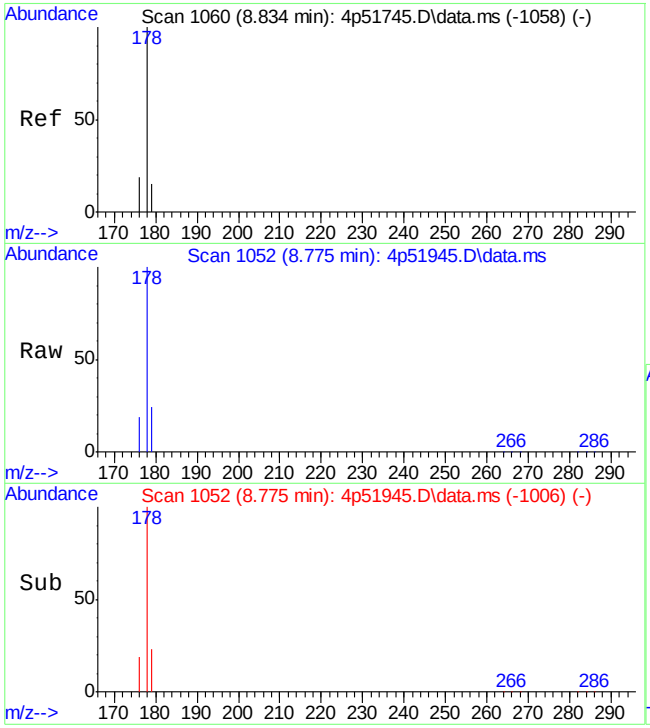


#23
Phenanthrene
Concen: 678.04 ppm
RT: 8.721 min Scan# 1047
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:178 Resp: 31619

Ion	Ratio	Lower	Upper
178	100		
179	13.8	0.0	46.2
176	22.7	0.0	46.9

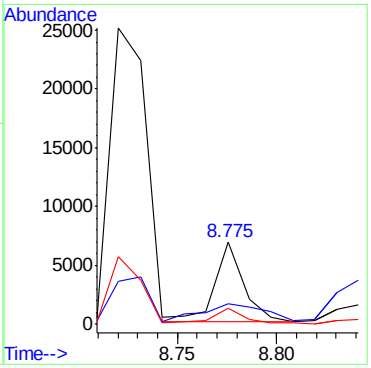


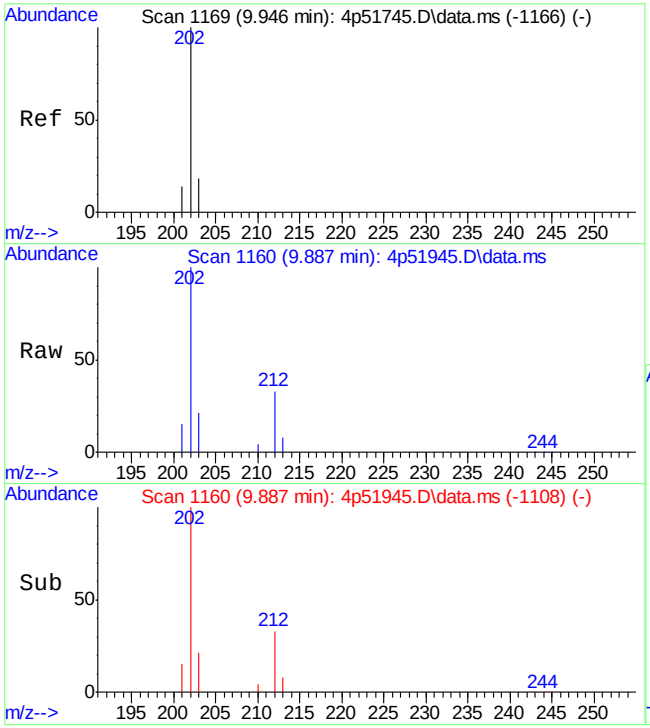


#24
Anthracene
Concen: 151.13 ppm
RT: 8.775 min Scan# 1052
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:178 Resp: 6706

Ion	Ratio	Lower	Upper
178	100		
179	21.5	0.0	44.7
176	19.2	0.0	50.5

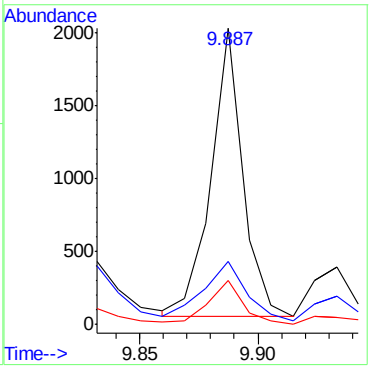


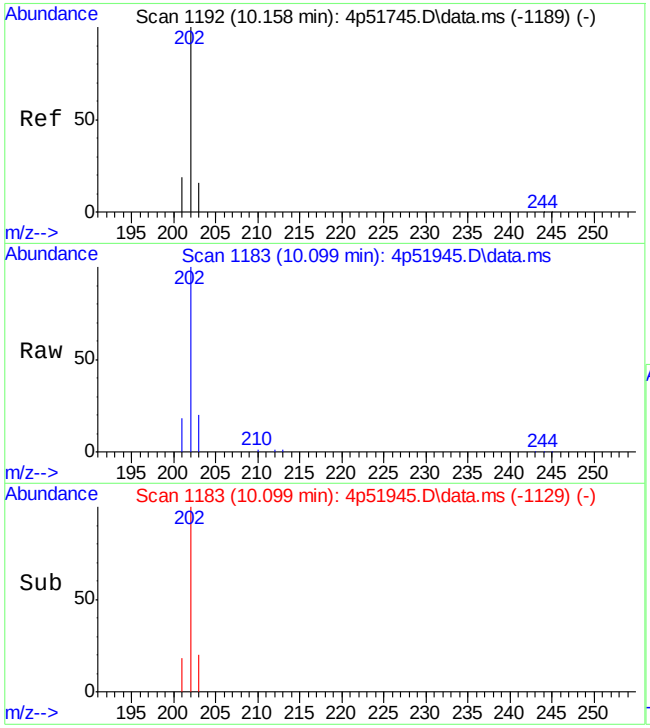


#25
Fluoranthene
Concen: 34.29 ppm
RT: 9.887 min Scan# 1160
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:202 Resp: 1838

Ion	Ratio	Lower	Upper
202	100		
203	20.0	0.0	45.5
201	15.0	0.0	45.7

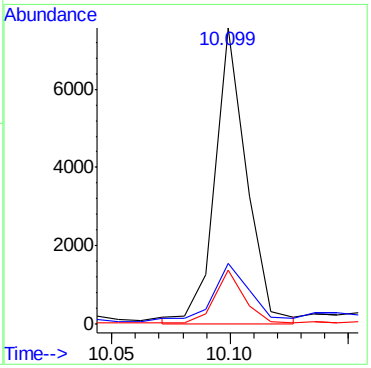


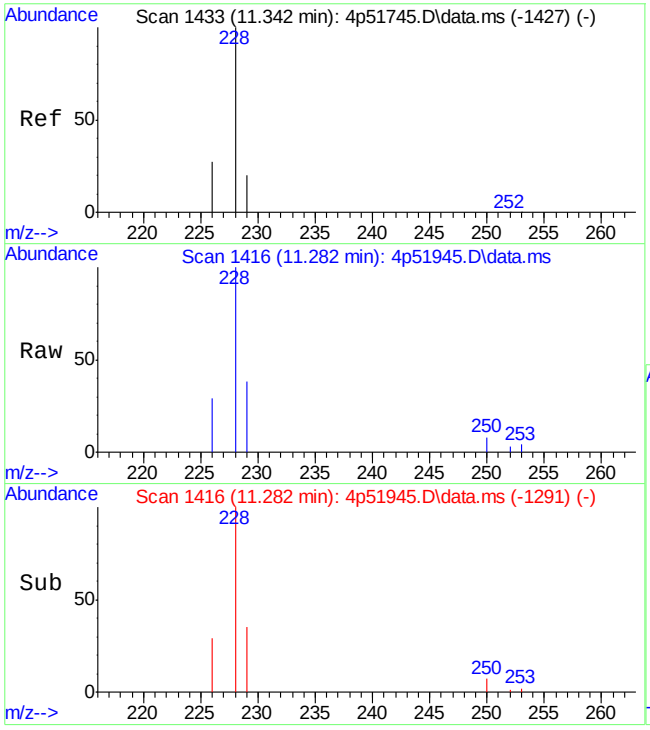


#26
Pyrene
Concen: 140.43 ppm
RT: 10.099 min Scan# 1183
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:202 Resp: 7016

Ion	Ratio	Lower	Upper
202	100		
203	19.1	0.0	48.6
201	18.1	0.0	46.3

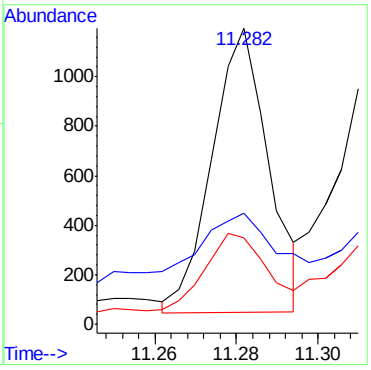


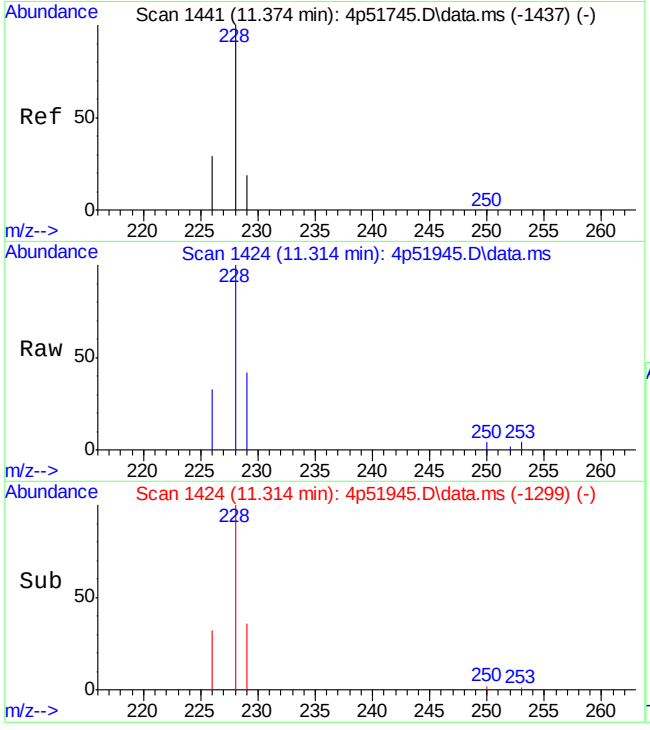


#28
Benzo[a]anthracene
Concen: 31.67 ppm
RT: 11.282 min Scan# 1416
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:228 Resp: 1106

Ion	Ratio	Lower	Upper
228	100		
229	20.3	0.0	49.5
226	25.7	0.0	55.8

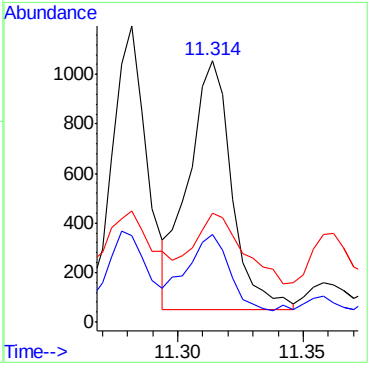


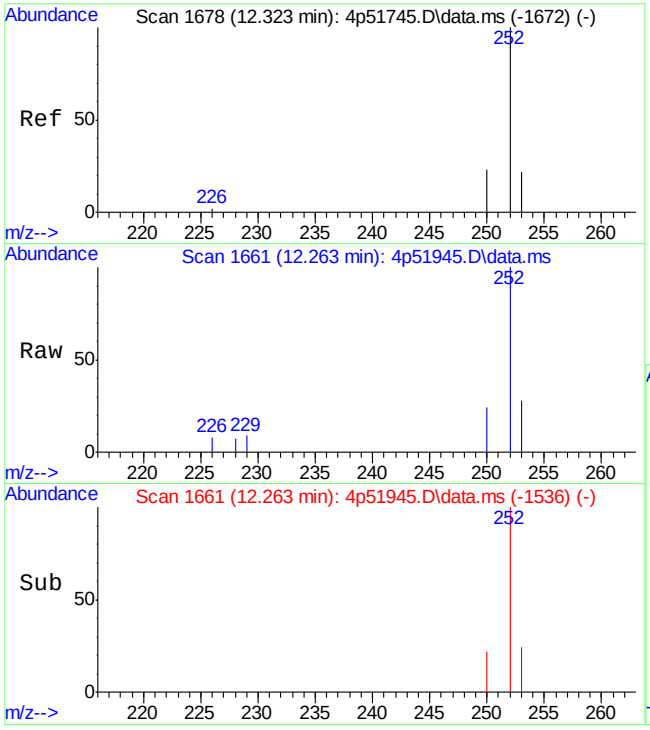


#29
Chrysene
Concen: 32.32 ppm
RT: 11.314 min Scan# 1424
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:228 Resp: 1210

Ion	Ratio	Lower	Upper
228	100		
226	30.5	0.0	58.3
229	25.8	0.0	49.9

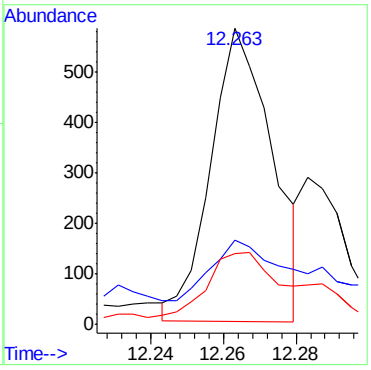


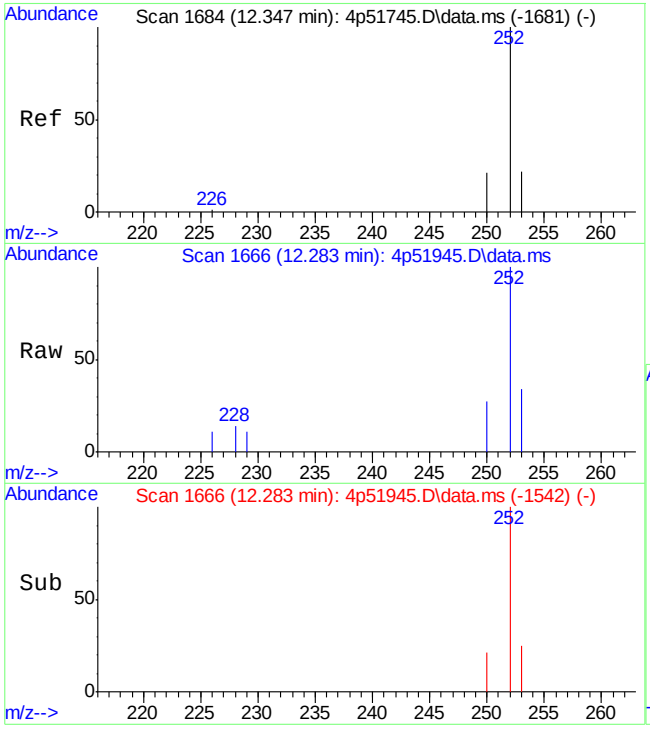


#31
Benzo[b]fluoranthene
Concen: 23.25 ppm
RT: 12.263 min Scan# 1661
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:252 Resp: 684

Ion	Ratio	Lower	Upper
252	100		
253	20.1	0.0	51.3
250	20.7	0.0	53.9

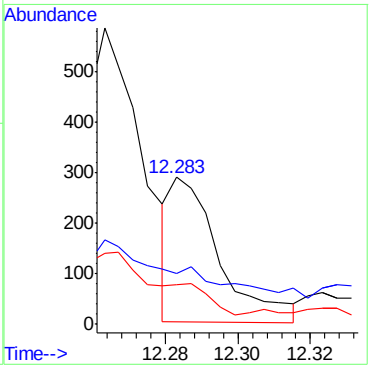


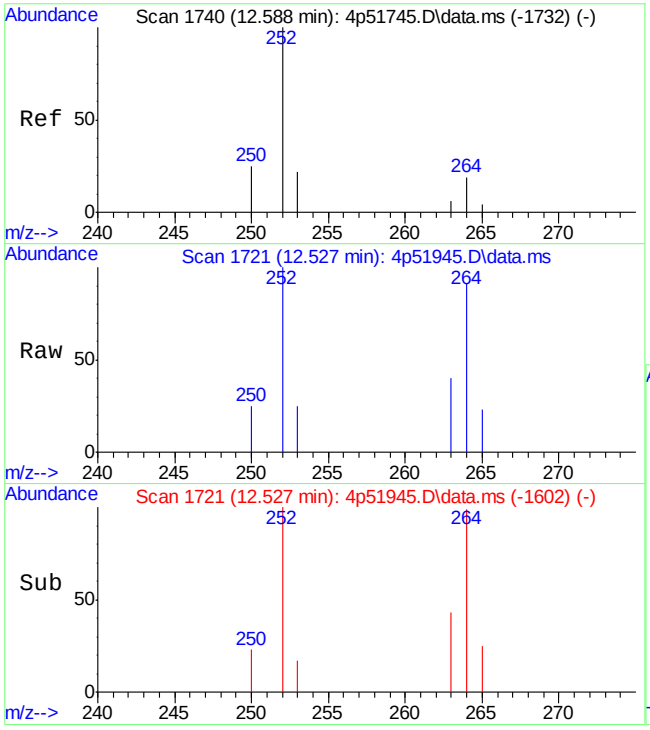


#32
Benzo[k]fluoranthene
Concen: 8.60 ppm
RT: 12.283 min Scan# 1666
Delta R.T. -0.004 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:252 Resp: 266

Ion	Ratio	Lower	Upper
252	100		
253	5.9	0.0	51.6
250	19.1	0.0	52.5

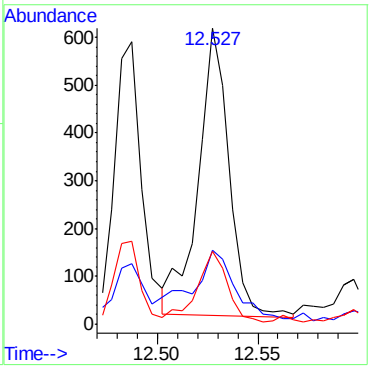


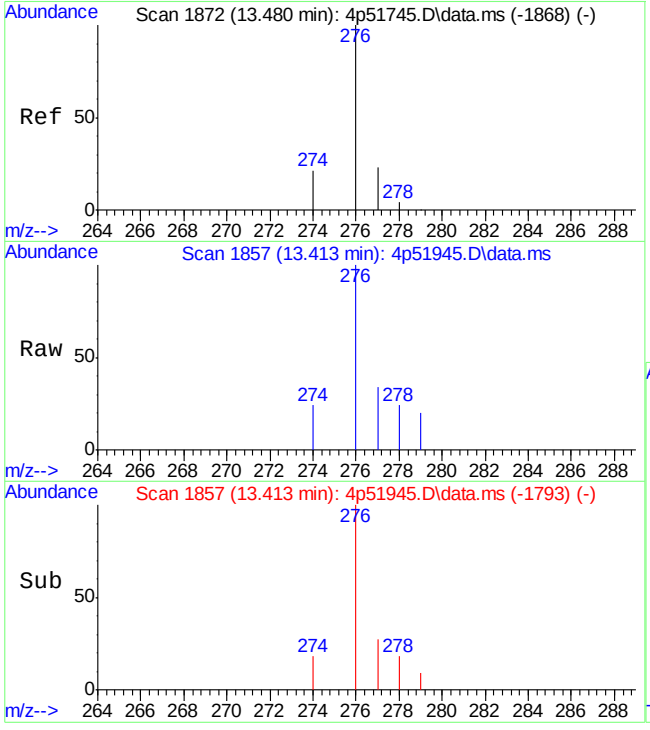


#33
Benzo[a]pyrene
Concen: 18.60 ppm
RT: 12.527 min Scan# 1721
Delta R.T. -0.000 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:252 Resp: 641

Ion	Ratio	Lower	Upper
252	100		
253	21.2	0.0	51.5
250	24.7	0.0	53.6

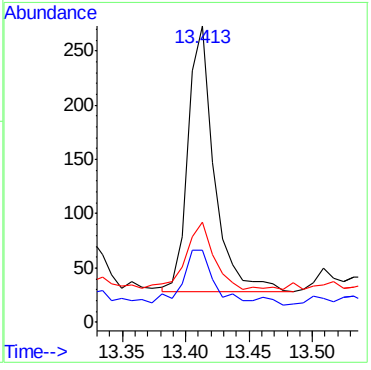


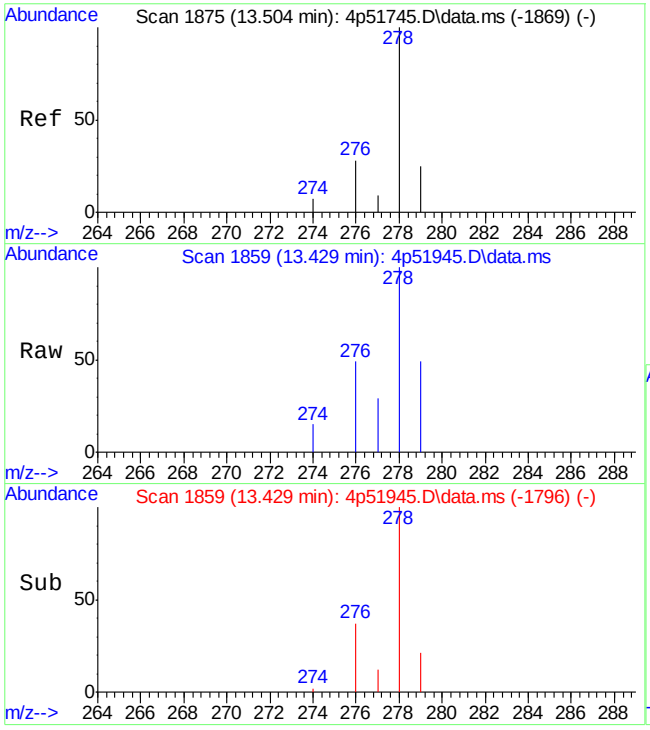


#34
Indeno[1,2,3-cd]pyrene
Concen: 10.55 ppm
RT: 13.413 min Scan# 1857
Delta R.T. 0.005 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:276 Resp: 352

Ion	Ratio	Lower	Upper
276	100		
274	18.3	0.0	52.3
277	23.3	0.0	50.9

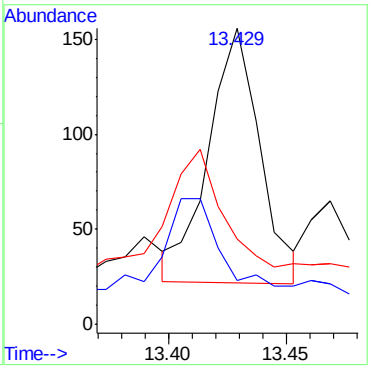


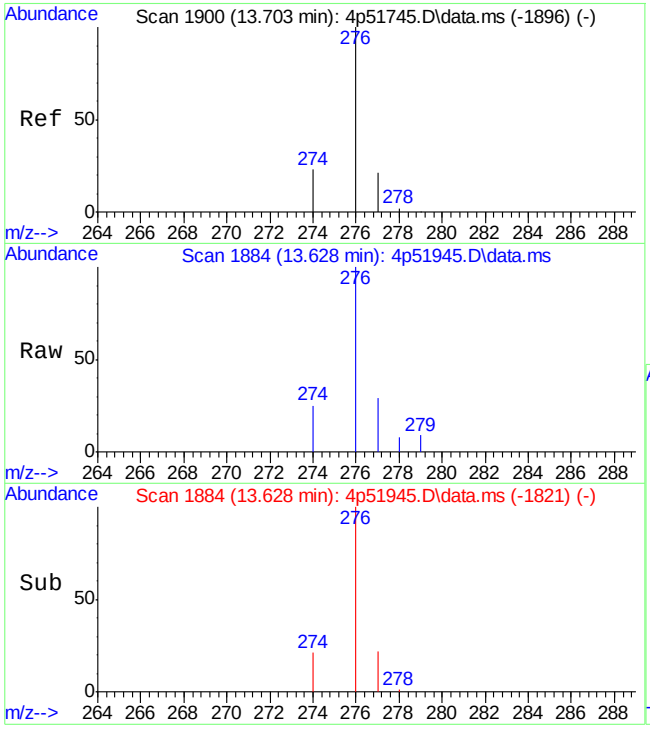


#35
Dibenz[a,h]anthracene
Concen: 7.35 ppm
RT: 13.429 min Scan# 1859
Delta R.T. -0.003 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:278 Resp: 205

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	37.5
277	3.0	0.0	39.1

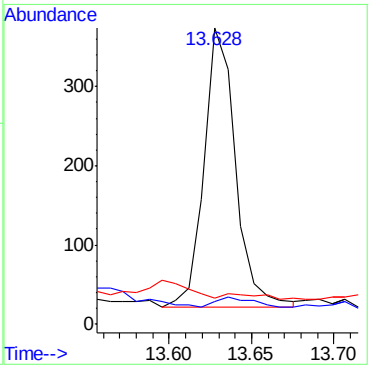




#36
Benzo[g,h,i]perylene
Concen: 15.25 ppm
RT: 13.628 min Scan# 1884
Delta R.T. -0.003 min
Lab File: 4p51945.D
Acq: 23 Feb 2022 4:42 am

Tgt Ion:276 Resp: 466

Ion	Ratio	Lower	Upper
276	100		
278	1.3	0.0	32.4
279	0.0	0.0	30.1



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
02/24/22 12:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51939.D
Acq On : 23 Feb 2022 2:18 am
Operator : chriss2
Sample : op38283-mb1
Misc : op38283,e4p2708,250,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 23 12:36:50 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

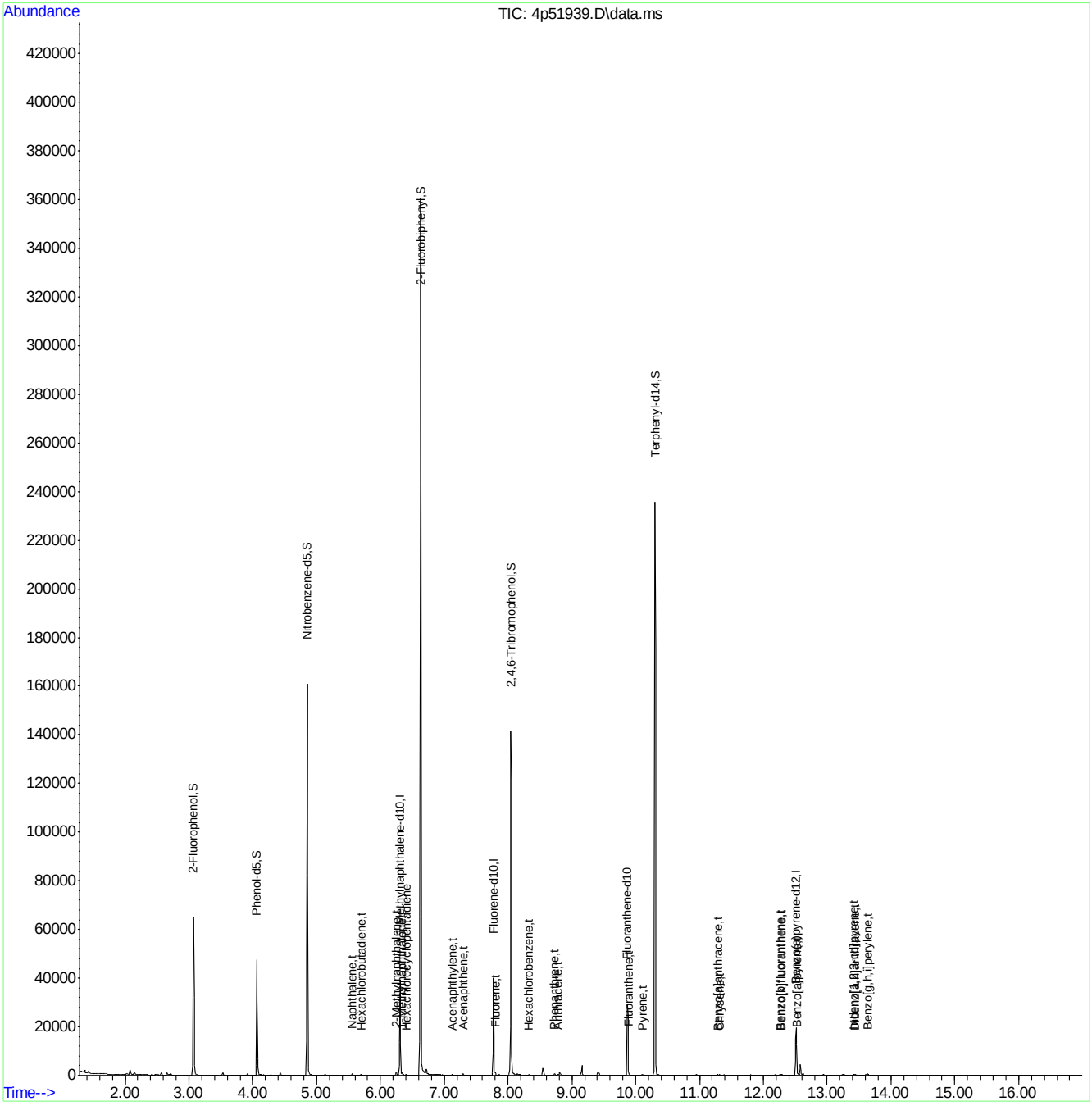
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.311	150	13431	800.00	ppm	0.00
13) Fluorene-d10	7.771	176	18267	800.00	ppm	0.00
20) Fluoranthene-d10	9.869	212	24766	800.00	ppm	0.00
30) Benzo(a)pyrene-d12	12.513	264	11275	800.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.071	112	36455	3576.11	ppm	-0.01
Spiked Amount 50.000			Recovery = 7152.22%			
4) Phenol-d5	4.066	99	36812	2384.81	ppm	0.00
Spiked Amount 50.000			Recovery = 4769.62%			
7) Nitrobenzene-d5	4.853	82	103724	5932.64	ppm	0.00
Spiked Amount 50.000			Recovery = 11865.28%			
14) 2-Fluorobiphenyl	6.634	172	197968	6758.70	ppm	0.00
Spiked Amount 50.000			Recovery = 13517.40%			
19) 2,4,6-Tribromophenol	8.044	330	63381	8268.06	ppm	0.00
Spiked Amount 50.000			Recovery = 16536.12%			
27) Terphenyl-d14	10.302	244	176641	8462.44	ppm	0.00
Spiked Amount 50.000			Recovery = 16924.88%			
Target Compounds						Qvalue
8) Naphthalene	5.558	128	697	15.41	ppm	94
9) Hexachlorobutadiene	5.696	225	96	5.97	ppm	94
10) 2-Methylnaphthalene	6.252	141	491	19.81	ppm #	74
11) 1-Methylnaphthalene	6.341	141	316	12.20	ppm	94
12) Hexachlorocyclopentadiene	6.401	237	120	17.21	ppm	90
15) Acenaphthylene	7.119	152	181	4.52	ppm	96
16) Acenaphthene	7.293	153	202	6.92	ppm	90
17) Fluorene	7.797	166	343	11.18	ppm	92
21) Hexachlorobenzene	8.326	284	209	13.40	ppm	93
23) Phenanthrene	8.732	178	511	12.52	ppm	95
24) Anthracene	8.775	178	428	11.02	ppm	85
25) Fluoranthene	9.887	202	354	7.55	ppm	96
26) Pyrene	10.108	202	276	6.31	ppm	97
28) Benzo[a]anthracene	11.282	228	223	7.30	ppm	95
29) Chrysene	11.314	228	224	6.84	ppm	90
31) Benzo[b]fluoranthene	12.267	252	267m	11.89	ppm	
32) Benzo[k]fluoranthene	12.287	252	217m	9.19	ppm	
33) Benzo[a]pyrene	12.528	252	265	10.07	ppm	95
34) Indeno[1,2,3-cd]pyrene	13.417	276	435	17.08	ppm	94
35) Dibenz[a,h]anthracene	13.433	278	294	13.80	ppm	94
36) Benzo[g,h,i]perylene	13.632	276	433	18.56	ppm	97

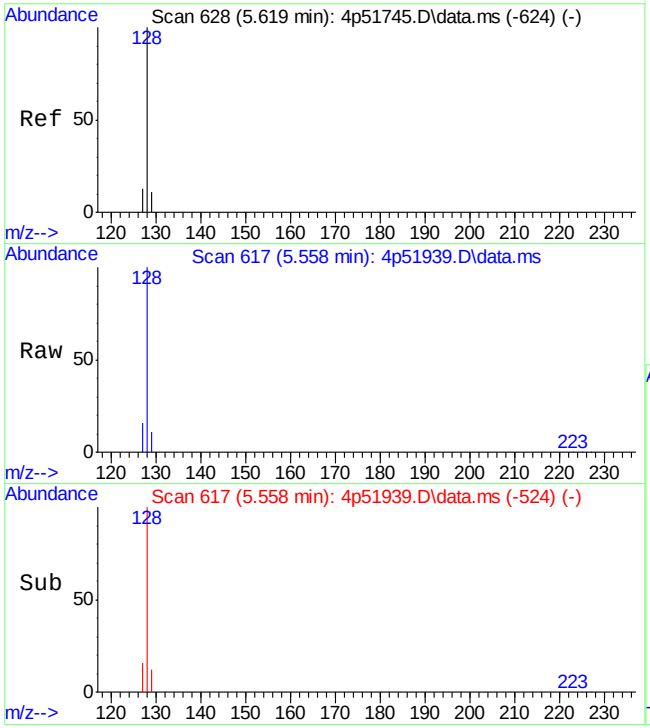
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2708\
Data File : 4p51939.D
Acq On : 23 Feb 2022 2:18 am
Operator : chriss2
Sample : op38283-mb1
Misc : op38283,e4p2708,250,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 23 12:36:50 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2704SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Wed Feb 23 12:29:18 2022
Response via : Initial Calibration

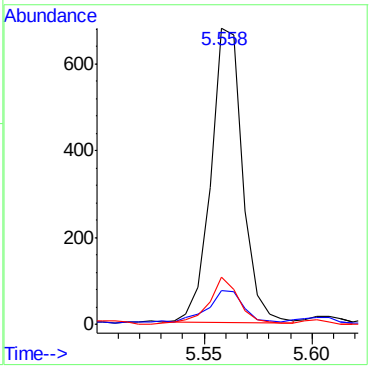


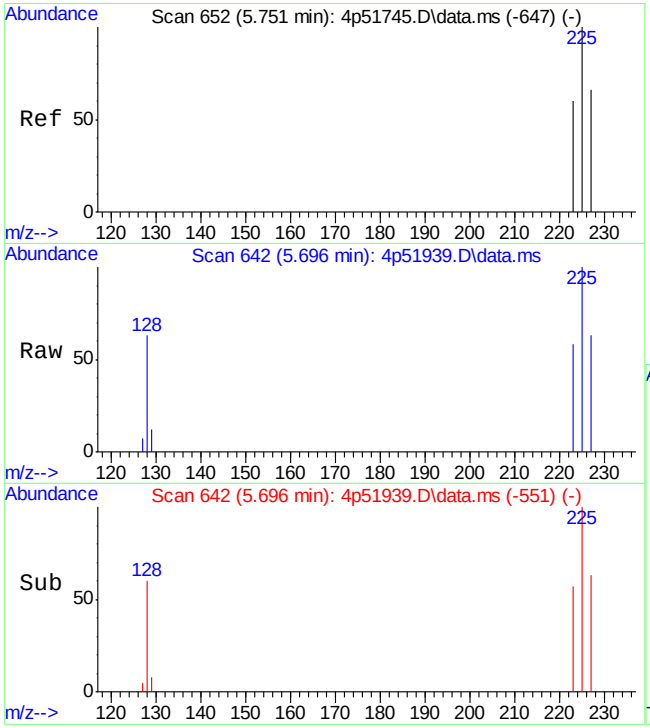


#8
Naphthalene
Concen: 15.41 ppm
RT: 5.558 min Scan# 617
Delta R.T. -0.006 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:128 Resp: 697

Ion	Ratio	Lower	Upper
128	100		
129	10.0	0.0	41.2
127	15.6	0.0	42.3

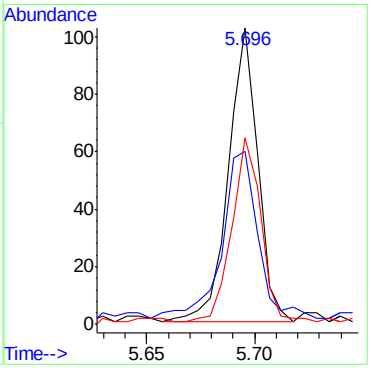


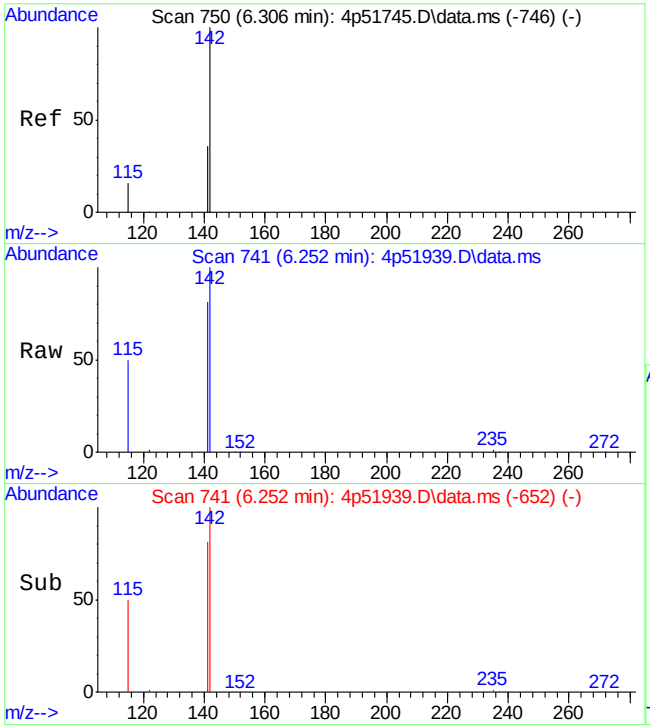


#9
Hexachlorobutadiene
Concen: 5.97 ppm
RT: 5.696 min Scan# 642
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:225 Resp: 96

Ion	Ratio	Lower	Upper
225	100		
223	53.9	31.9	91.9
227	61.8	31.1	91.1

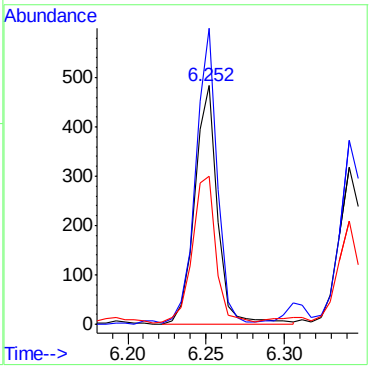


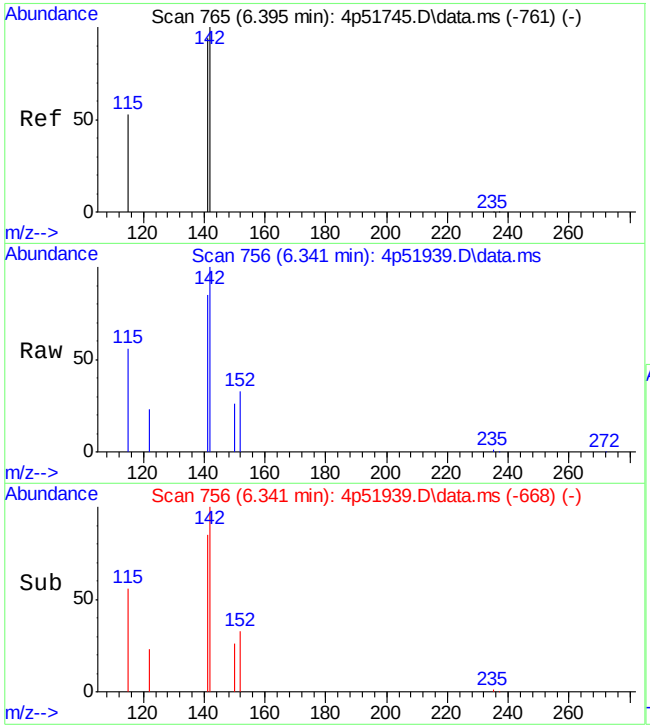


#10
2-Methylnaphthalene
Concen: 19.81 ppm
RT: 6.252 min Scan# 741
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:141 Resp: 491

Ion	Ratio	Lower	Upper
141	100		
142	119.9	52.1	112.1#
115	60.6	34.1	94.1

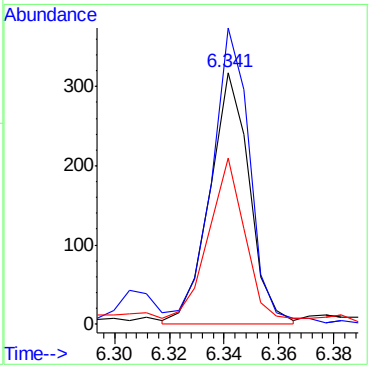


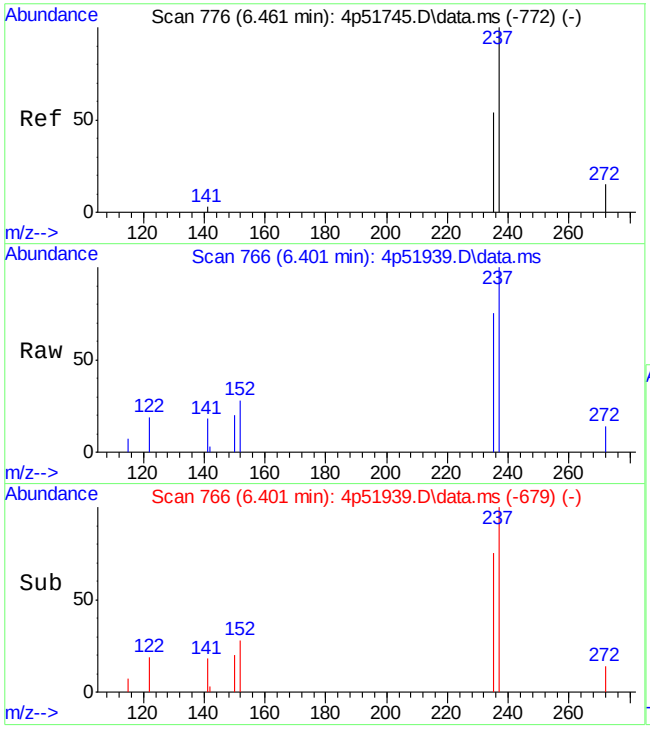


#11
1-Methylnaphthalene
Concen: 12.20 ppm
RT: 6.341 min Scan# 756
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:141 Resp: 316

Ion	Ratio	Lower	Upper
141	100		
142	115.8	82.3	142.3
115	64.5	25.7	85.7

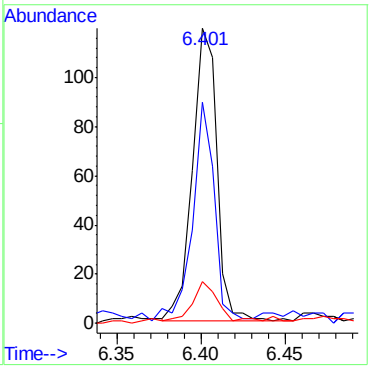


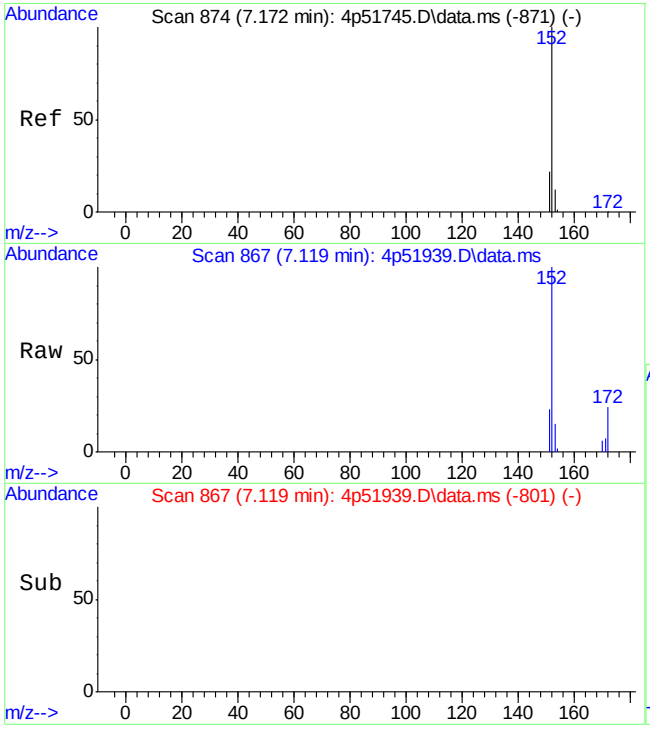


#12
Hexachlorocyclopentadiene
Concen: 17.21 ppm
RT: 6.401 min Scan# 766
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:237 Resp: 120

Ion	Ratio	Lower	Upper
237	100		
235	71.3	32.1	92.1
272	13.5	0.0	42.7

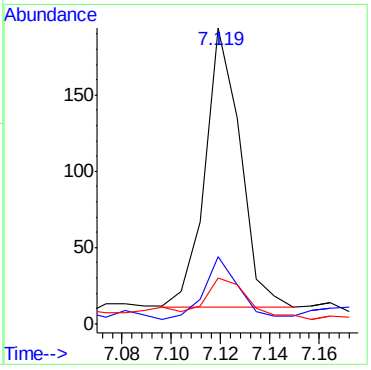


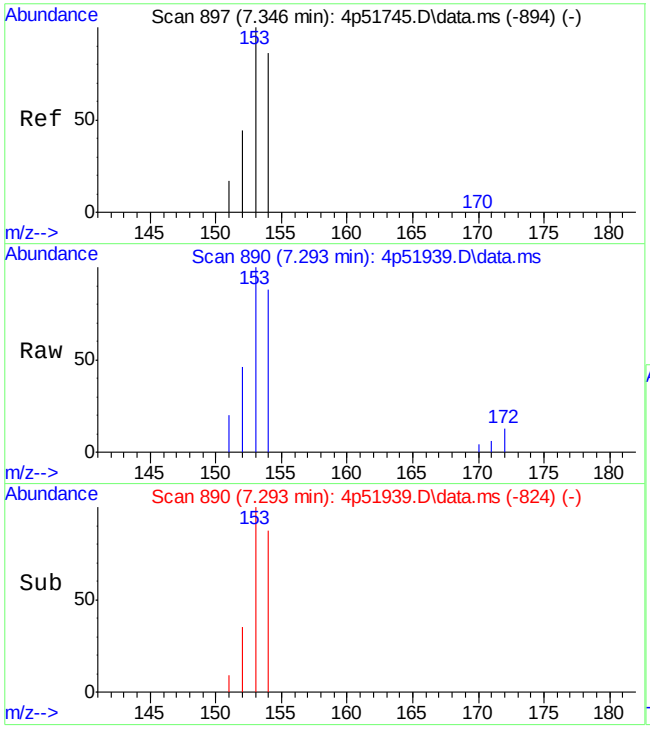


#15
Acenaphthylene
Concen: 4.52 ppm
RT: 7.119 min Scan# 867
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:152 Resp: 181

Ion	Ratio	Lower	Upper
152	100		
151	21.9	0.0	50.1
153	11.8	0.0	43.5

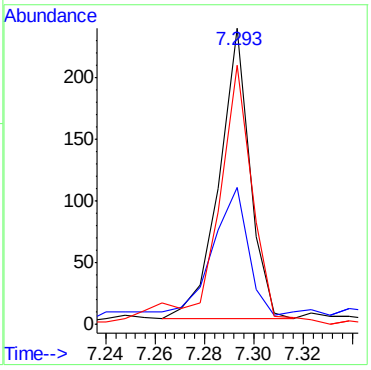


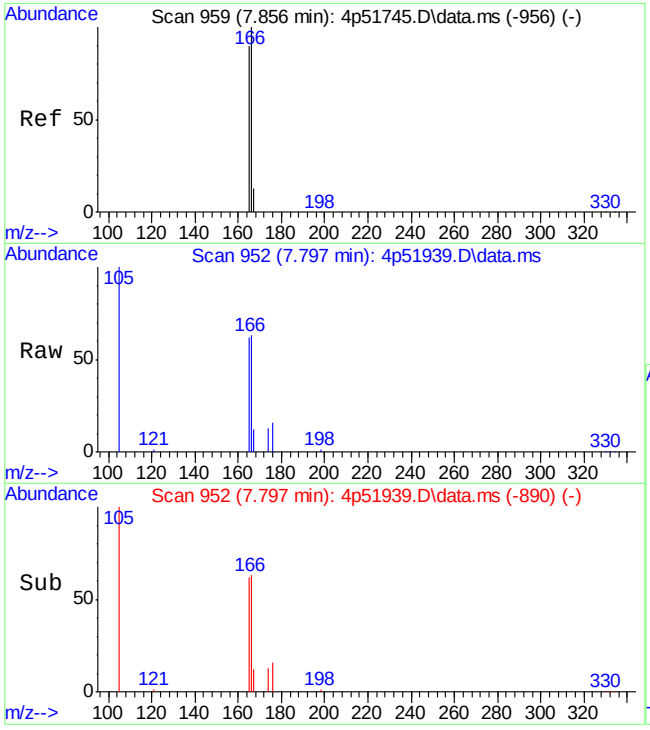


#16
Acenaphthene
Concen: 6.92 ppm
RT: 7.293 min Scan# 890
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:153 Resp: 202

Ion	Ratio	Lower	Upper
153	100		
152	43.0	11.0	71.0
154	84.3	66.5	126.5

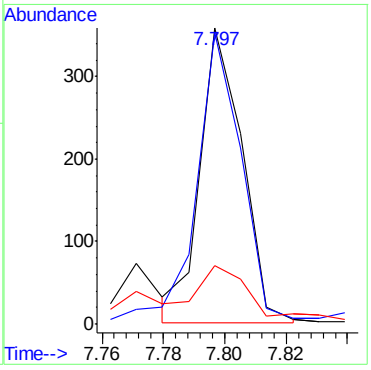


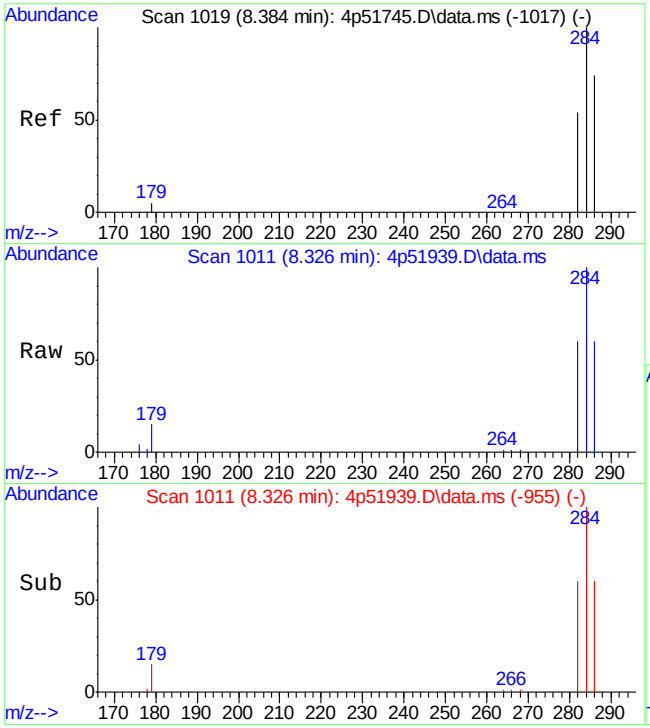


#17
Fluorene
Concen: 11.18 ppm
RT: 7.797 min Scan# 952
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:166 Resp: 343

Ion	Ratio	Lower	Upper
166	100		
165	100.1	61.8	121.8
167	15.1	0.0	43.4

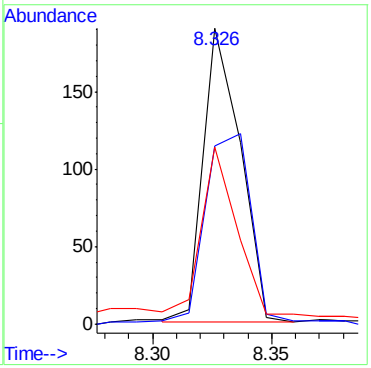


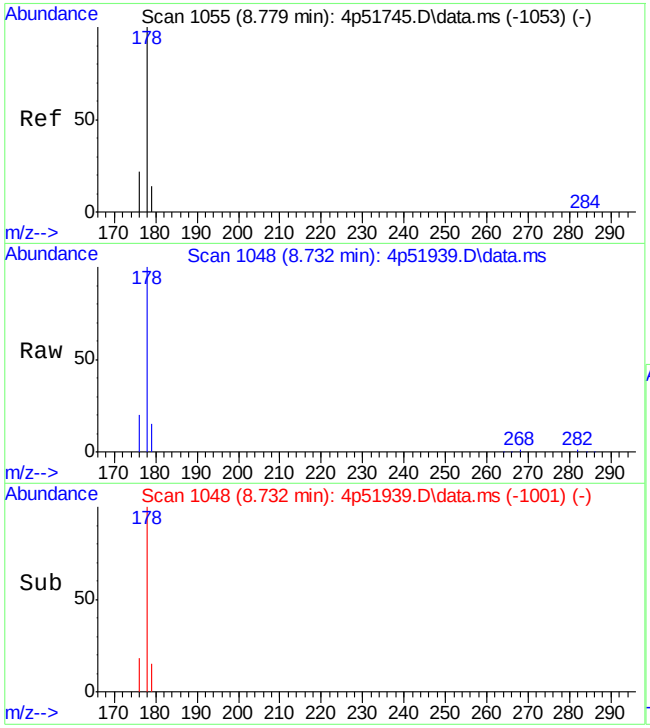


#21
Hexachlorobenzene
Concen: 13.40 ppm
RT: 8.326 min Scan# 1011
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:284 Resp: 209

Ion	Ratio	Lower	Upper
284	100		
286	59.8	38.0	98.0
282	56.6	28.4	88.4

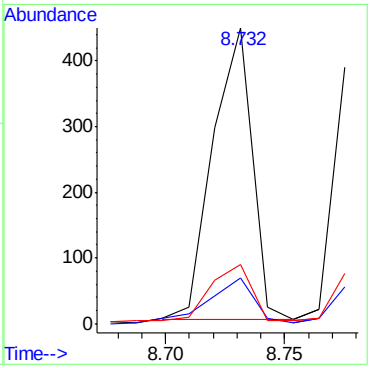


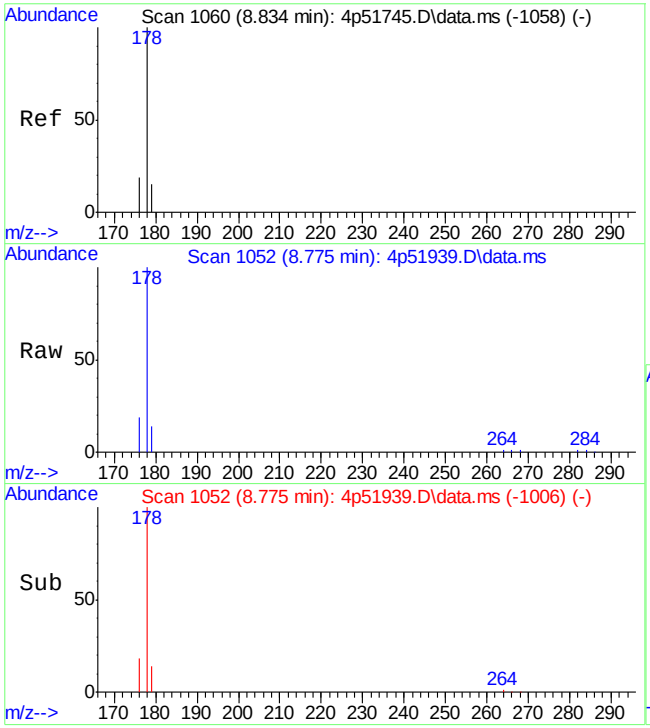


#23
Phenanthrene
Concen: 12.52 ppm
RT: 8.732 min Scan# 1048
Delta R.T. 0.011 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:178 Resp: 511

Ion	Ratio	Lower	Upper
178	100		
179	14.5	0.0	46.2
176	19.3	0.0	46.9

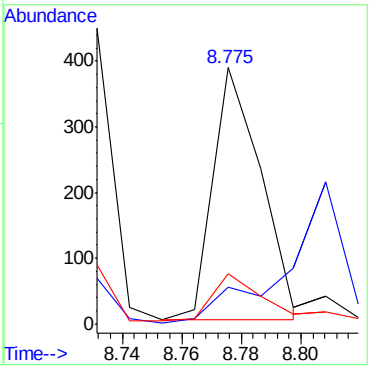


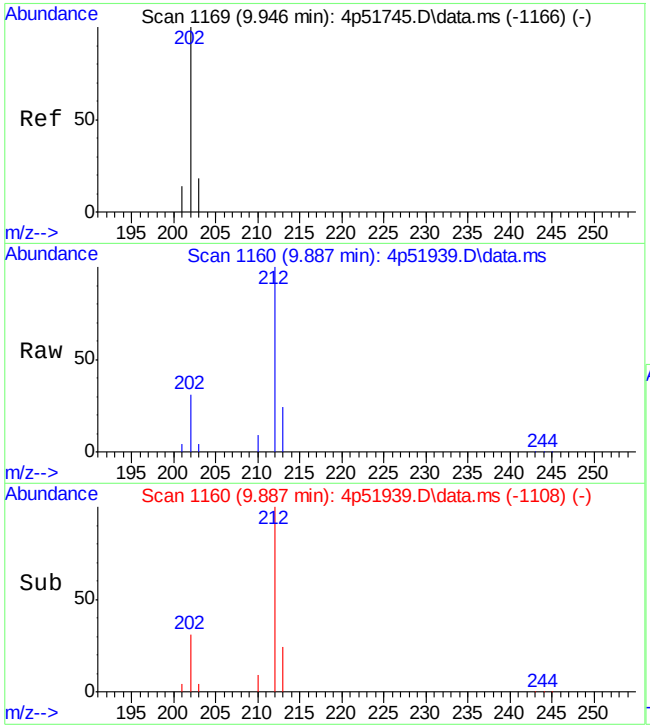


#24
Anthracene
Concen: 11.02 ppm
RT: 8.775 min Scan# 1052
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:178 Resp: 428

Ion	Ratio	Lower	Upper
178	100		
179	3.3	0.0	44.7
176	17.8	0.0	50.5

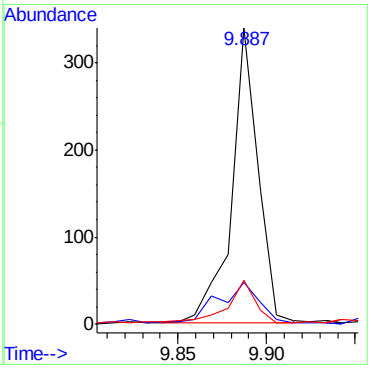


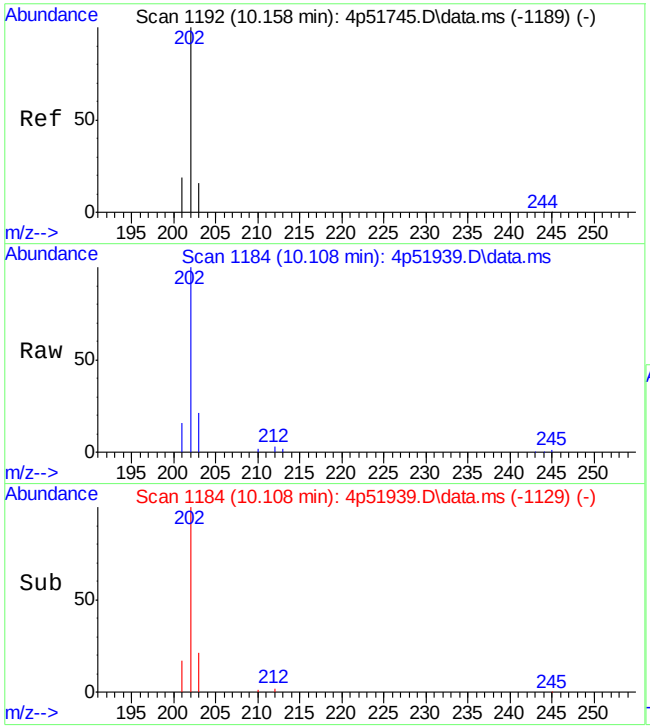


#25
Fluoranthene
Concen: 7.55 ppm
RT: 9.887 min Scan# 1160
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:202 Resp: 354

Ion	Ratio	Lower	Upper
202	100		
203	13.6	0.0	45.5
201	14.2	0.0	45.7

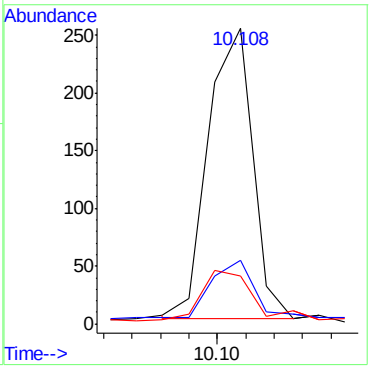


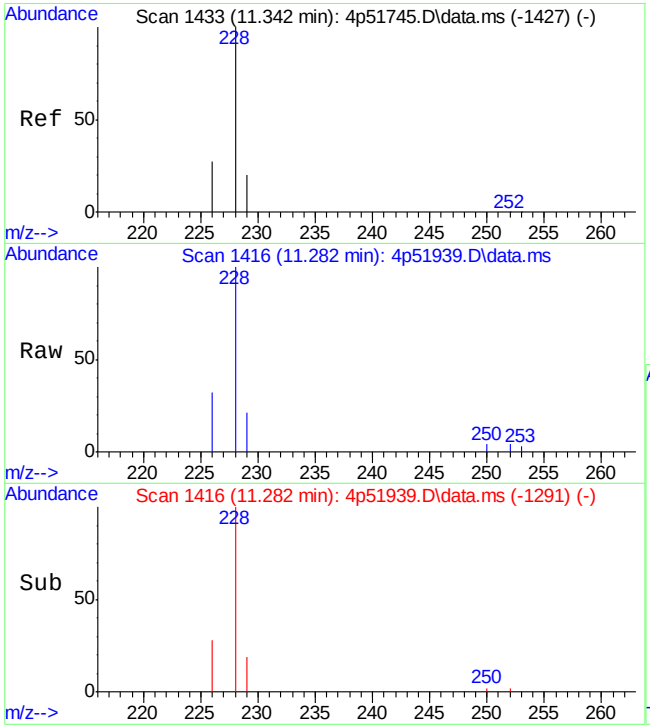


#26
Pyrene
Concen: 6.31 ppm
RT: 10.108 min Scan# 1184
Delta R.T. 0.009 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:202 Resp: 276

Ion	Ratio	Lower	Upper
202	100		
203	19.0	0.0	48.6
201	13.8	0.0	46.3

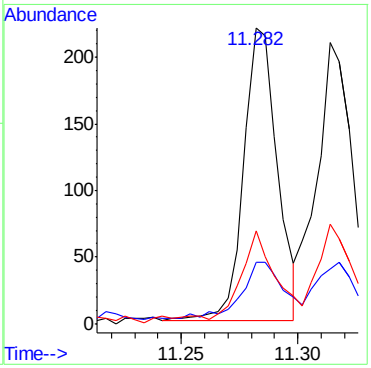


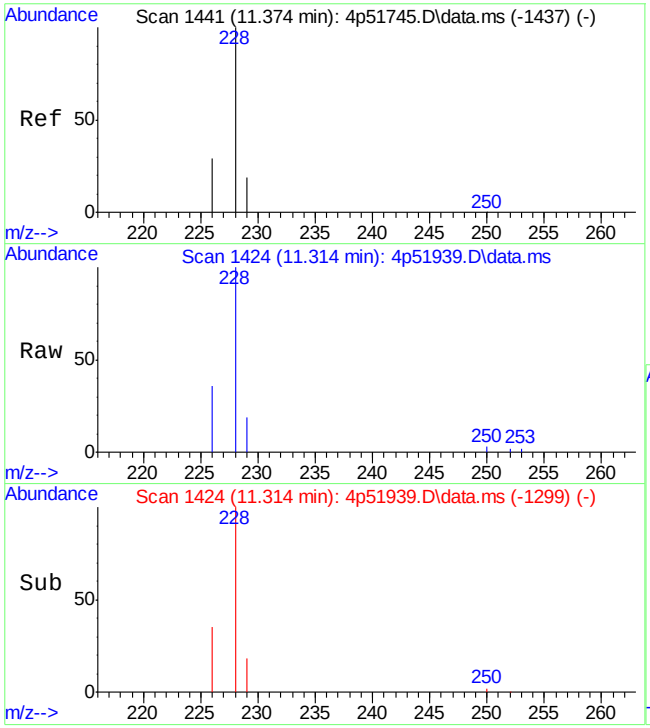


#28
Benzo[a]anthracene
Concen: 7.30 ppm
RT: 11.282 min Scan# 1416
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:228 Resp: 223

Ion	Ratio	Lower	Upper
228	100		
229	17.1	0.0	49.5
226	28.5	0.0	55.8

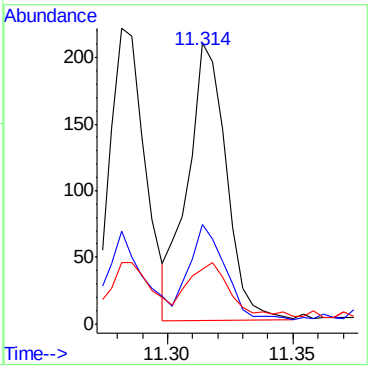


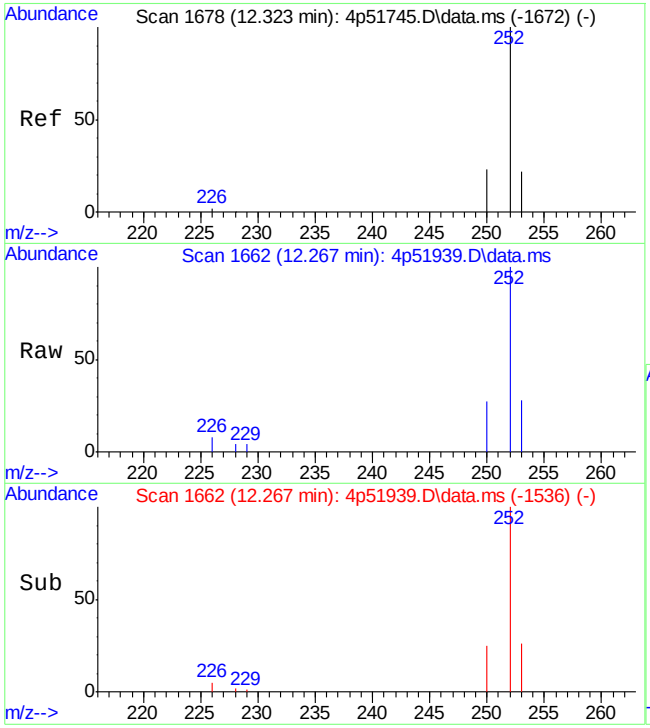


#29
Chrysene
Concen: 6.84 ppm
RT: 11.314 min Scan# 1424
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:228 Resp: 224

Ion	Ratio	Lower	Upper
228	100		
226	33.8	0.0	58.3
229	15.0	0.0	49.9

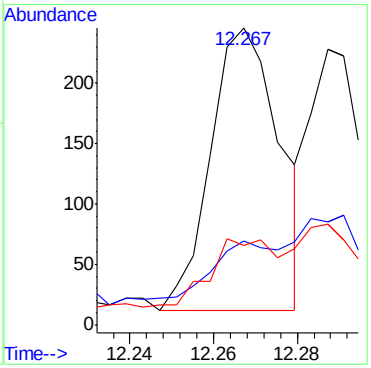


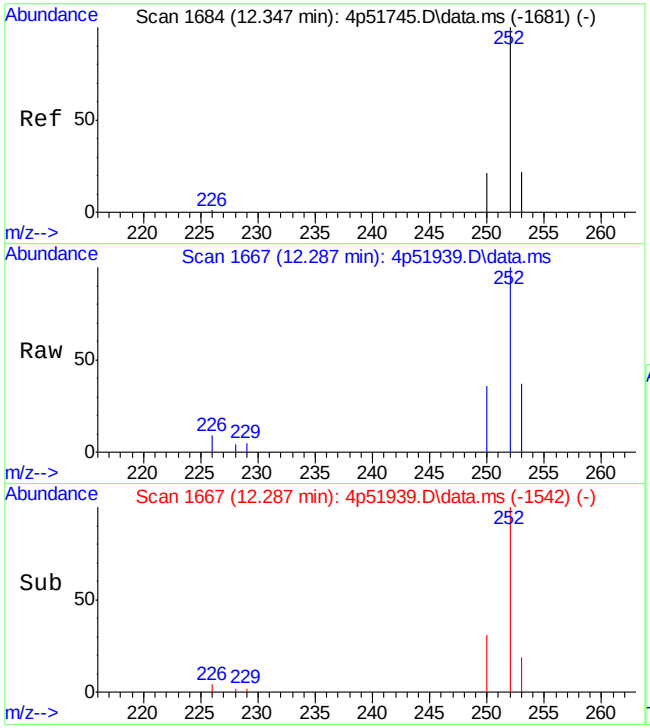


#31
Benzo[b]fluoranthene
Concen: 11.89 ppm m
RT: 12.267 min Scan# 1662
Delta R.T. 0.004 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:252 Resp: 267

Ion	Ratio	Lower	Upper
252	100		
253	28.0	0.0	51.3
250	26.8	0.0	53.9

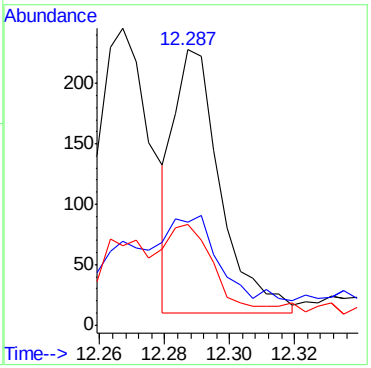


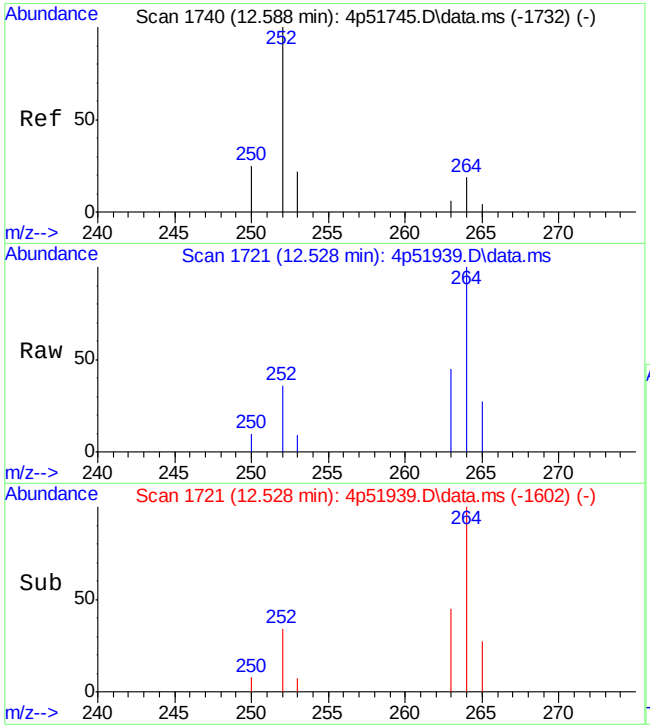


#32
Benzo[k]fluoranthene
Concen: 9.19 ppm m
RT: 12.287 min Scan# 1667
Delta R.T. -0.000 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:252 Resp: 217

Ion	Ratio	Lower	Upper
252	100		
253	37.3	0.0	51.6
250	36.4	0.0	52.5

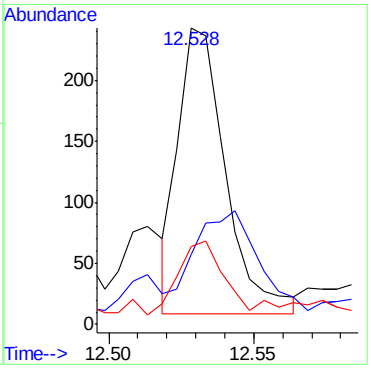


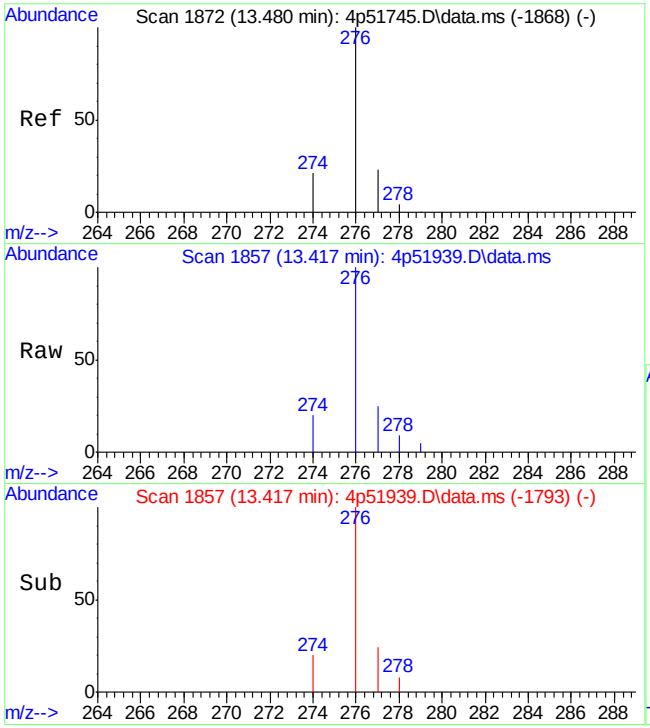


#33
Benzo[a]pyrene
Concen: 10.07 ppm
RT: 12.528 min Scan# 1721
Delta R.T. 0.001 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:252 Resp: 265

Ion	Ratio	Lower	Upper
252	100		
253	17.0	0.0	51.5
250	23.6	0.0	53.6

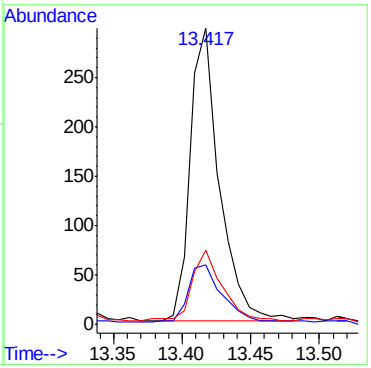


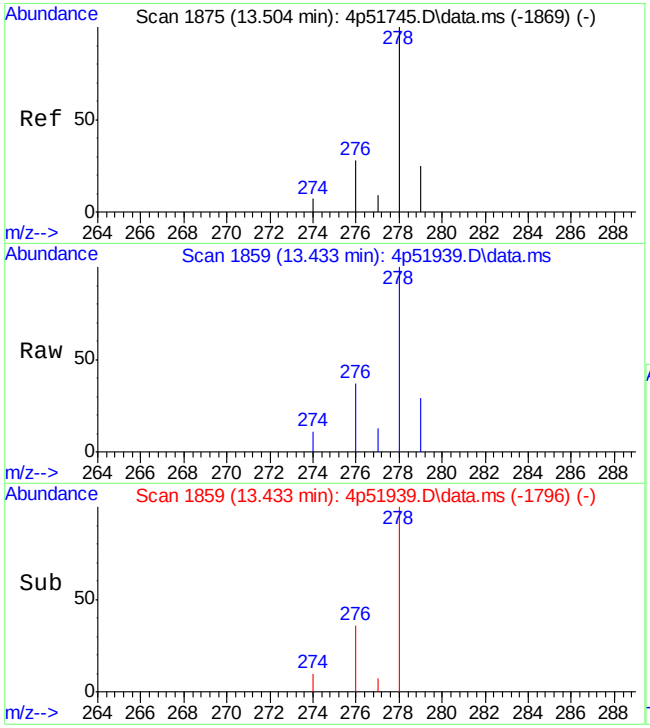


#34
Indeno[1,2,3-cd]pyrene
Concen: 17.08 ppm
RT: 13.417 min Scan# 1857
Delta R.T. 0.009 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:276 Resp: 435

Ion	Ratio	Lower	Upper
276	100		
274	19.2	0.0	52.3
277	23.9	0.0	50.9

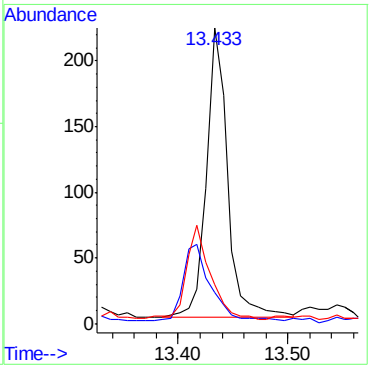


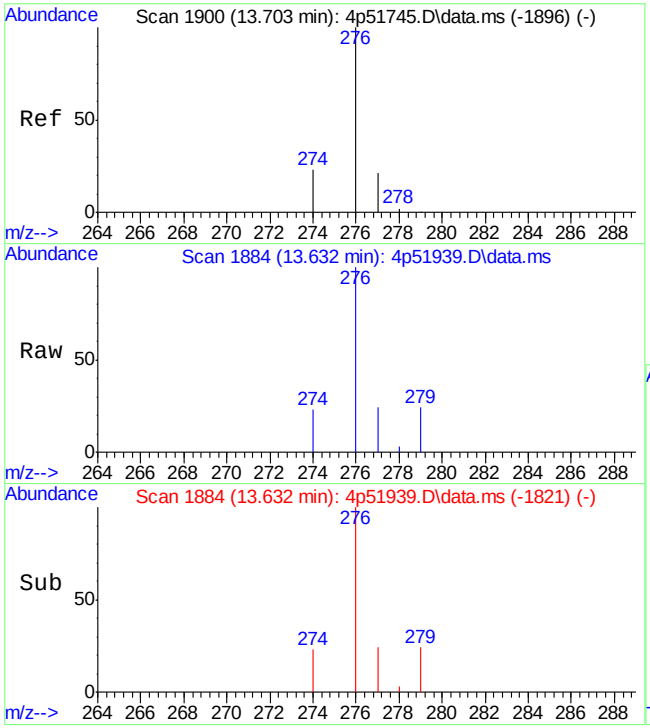


#35
Dibenz[a,h]anthracene
Concen: 13.80 ppm
RT: 13.433 min Scan# 1859
Delta R.T. 0.001 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:278 Resp: 294

Ion	Ratio	Lower	Upper
278	100		
274	9.4	0.0	37.5
277	11.2	0.0	39.1

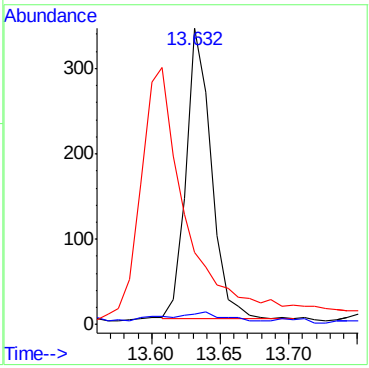




#36
Benzo[g,h,i]perylene
Concen: 18.56 ppm
RT: 13.632 min Scan# 1884
Delta R.T. 0.001 min
Lab File: 4p51939.D
Acq: 23 Feb 2022 2:18 am

Tgt Ion:276 Resp: 433

Ion	Ratio	Lower	Upper
276	100		
278	1.2	0.0	32.4
279	0.0	0.0	30.1



GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38248-MB1	7G42670.D	1	02/22/22	RK	02/21/22	OP38248	G7G1516

The QC reported here applies to the following samples: **Method:** SW846-8011

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
3017-95-6	2-Bromo-1-chloropropane	124%	52-154%
3017-95-6	2-Bromo-1-chloropropane	142%	52-154%

Method Blank Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2502-MB	AA93363.D	1	02/24/22	JN	n/a	n/a	GAA2502

The QC reported here applies to the following samples: **Method:** RSK-175

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.11	0.080	ug/l	
74-84-0	Ethane	ND	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38248-BS1	7G42671.D	1	02/22/22	RK	02/21/22	OP38248	G7G1516
OP38248-BSD	7G42672.D	1	02/22/22	RK	02/21/22	OP38248	G7G1516

The QC reported here applies to the following samples: **Method:** SW846-8011

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	0.5	0.75	150	0.77	154	3	51-197/19

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3017-95-6	2-Bromo-1-chloropropane	125%	121%	52-154%
3017-95-6	2-Bromo-1-chloropropane	140%	136%	52-154%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2502-LCS	AA93361.D	1	02/24/22	JN	n/a	n/a	GAA2502

The QC reported here applies to the following samples: **Method:** RSK-175

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
74-82-8	Methane	11	11.8	107	59-134
74-84-0	Ethane	23	25.1	109	63-135
74-85-1	Ethene	31	33.6	108	62-133

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38248-MS	7G42674.D	1	02/22/22	RK	02/21/22	OP38248	G7G1516
JD39951-1	7G42673.D	1	02/22/22	RK	02/21/22	OP38248	G7G1516

The QC reported here applies to the following samples: **Method:** SW846-8011

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	JD39951-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
106-93-4	1,2-Dibromoethane	ND		0.513	0.80	156	33-200

CAS No.	Surrogate Recoveries	MS	JD39951-1	Limits
3017-95-6	2-Bromo-1-chloropropane	121%	118%	52-154%
3017-95-6	2-Bromo-1-chloropropane	149%	141%	52-154%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP38248-DUP	7G42676.D	1	02/22/22	RK	02/21/22	OP38248	G7G1516
JD39951-2	7G42675.D	1	02/22/22	RK	02/21/22	OP38248	G7G1516

The QC reported here applies to the following samples: **Method:** SW846-8011

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	JD39951-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
106-93-4	1,2-Dibromoethane	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JD39951-2	Limits
3017-95-6	2-Bromo-1-chloropropane	116%	109%	52-154%
3017-95-6	2-Bromo-1-chloropropane	142%	139%	52-154%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD39963-3DUP	AA93366.D	200	02/24/22	JN	n/a	n/a	GAA2502
JD39963-3	AA93364.D	1	02/24/22	JN	n/a	n/a	GAA2502
JD39963-3	AA93365.D	200	02/24/22	JN	n/a	n/a	GAA2502

The QC reported here applies to the following samples: **Method:** RSK-175

JD40008-1, JD40008-2, JD40008-3, JD40008-4

CAS No.	Compound	JD39963-3 ug/l	Q	DUP ug/l	Q	RPD	Limits
74-82-8	Methane	9350 [a]		8580		9	20
74-84-0	Ethane	158		229		37* [b]	20
74-85-1	Ethene	12.3		ND		200* [b]	20

(a) Result is from Run #2.
(b) Outside control limits.

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846-8011 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JD40008-1	7G42684.D	107	116
JD40008-2	7G42685.D	104	100
JD40008-3	7G42686.D	109	109
JD40008-4	7G42687.D	108	129
OP38248-BS1	7G42671.D	125	140
OP38248-BSD	7G42672.D	121	136
OP38248-DUP	7G42676.D	116	142
OP38248-MB1	7G42670.D	124	142
OP38248-MS	7G42674.D	121	149

Surrogate Compounds	Recovery Limits
S1 = 2-Bromo-1-chloropropane	52-154%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	G7G1516-CC1500	**Injection Date:**	02/22/22
Lab File ID:	7G42668.D	**Injection Time:**	01:16
Instrument ID:	GC7G	**Method:**	SW846-8011

	S1 [a] RT	S1 [b] RT
Check Std	3.13	2.71

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP38248-MB1	7G42670.D	02/22/22	01:53	3.13	2.71
OP38248-BS1	7G42671.D	02/22/22	02:12	3.13	2.71
OP38248-BSD	7G42672.D	02/22/22	02:31	3.13	2.71
JD39951-1	7G42673.D	02/22/22	02:50	3.13	2.71
OP38248-MS	7G42674.D	02/22/22	03:09	3.13	2.71
JD39951-2	7G42675.D	02/22/22	03:27	3.13	2.71
OP38248-DUP	7G42676.D	02/22/22	03:46	3.13	2.71
ZZZZZZ	7G42677.D	02/22/22	04:04	3.13	2.71
ZZZZZZ	7G42678.D	02/22/22	04:23	3.13	2.71

Surrogate Compounds

S1 = 2-Bromo-1-chloropropane

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	G7G1516-CC1500	**Injection Date:**	02/22/22
Lab File ID:	7G42679.D	**Injection Time:**	04:42
Instrument ID:	GC7G	**Method:**	SW846-8011

	S1 [a] RT	S1 [b] RT
Check Std	3.13	2.71

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	7G42681.D	02/22/22	05:19	3.13	2.71
ZZZZZZ	7G42682.D	02/22/22	05:38	3.13	2.71
ZZZZZZ	7G42683.D	02/22/22	05:56	3.13	2.71
JD40008-1	7G42684.D	02/22/22	06:15	3.13	2.71
JD40008-2	7G42685.D	02/22/22	06:33	3.13	2.71
JD40008-3	7G42686.D	02/22/22	06:52	3.13	2.71
JD40008-4	7G42687.D	02/22/22	07:10	3.13	2.71

Surrogate Compounds

S1 = 2-Bromo-1-chloropropane

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

Initial Calibration Summary

Job Number: JD40008 **Sample:** G7G1500-ICC1500
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G42195.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report HP G1530A

Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M (Chemstation Integrator)
Title : GC/ECD- EDB
Last Update : Thu Dec 09 20:12:15 2021
Response via : Initial Calibration

Calibration Files
2 =7g42197.D 1 =7g42196.D 0.5 =7g42195.D 0.2 =7g42194.D
0.1 =7g42193.D 0.02 =7g42192.D

	Compound	2	1	0.5	0.2	0.1	0.02	Avg	%RSD
1) S	2-Bromo-1-Chloropro	3.258	3.347	3.492	3.287	3.461		3.369 E6	3.08
2)	1,2-Dibromoethane	1.998	2.000	2.059	1.968	1.981	1.666	1.945 E7	7.21
3)	1,2,3-Trichloroprop	2.608	2.497	2.586	2.332	2.573		2.519 E6	4.48
4)	1,2-Dibromo-3-Chlor	4.610	4.733	4.767	4.518	4.679	5.220	4.754 E7	5.15

Signal #2

1) S	2-Bromo-1-Chloropro	2.284	2.393	2.552	2.552	2.882		2.533 E6	8.92
2)	1,2-Dibromoethane	1.271	1.190	1.098	1.008	1.034	1.139	1.123 E7	8.76
3)	1,2,3-Trichloroprop	1.787	1.782	1.882	2.000	2.169		1.924 E6	8.48
4)	1,2-Dibromo-3-Chlor	3.169	3.271	3.334	3.091	3.274	3.985	3.354 E7	9.58

(#) = Out of Range

7GV8011M1500.M Fri Dec 10 01:11:27 2021

Initial Calibration Verification

Job Number: JD40008 **Sample:** G7G1500-ICV1500
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G42198.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Signal #1 : C:\msdchem\1\DATA\7G1500\7g42198.D\ECD1A.CH  Vial: 57
Signal #2 : C:\msdchem\1\DATA\7G1500\7g42198.D\ECD2B.CH
Acq On    : 09 Dec 2021  12:43 pm                    Operator: rebeccak
Sample    : icv1500-0.5                              Inst    : HP G1530A
Misc      : op36925,g7g1500,35.0,,,2,1               Multiplr: 1.00
IntFile Signal #1: autoint1.e   IntFile Signal #2: autoint2.e

Method       : C:\MSDCHEM\1\METHODS\7GV8011M1500.M (Chemstation Integrator)
Title        : GC/ECD- EDB
Last Update  : Thu Dec 09 20:12:15 2021
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	3.369	3.683 E6	-9.3	105	0.00	2.68- 2.74
2	1,2-Dibromoethane	19.453	21.232 E6	-9.1	103	0.00	2.84- 2.90
3	1,2,3-Trichloropropane	2.519	2.534 E6	-0.6	98	0.00	3.91- 3.97
4	1,2-Dibromo-3-Chloropr	47.545	45.465 E6	4.4	95	0.00	4.85- 4.91
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.533	2.676 E6	-5.6	105	0.00	3.10- 3.16
2	1,2-Dibromoethane	11.235	11.500 E6	-2.4	105	0.00	3.43- 3.49
3	1,2,3-Trichloropropane	1.924	1.834 E6	4.7	97	0.00	4.37- 4.43
4	1,2-Dibromo-3-Chloropr	33.540	31.654 E6	5.6	95	0.00	5.41- 5.47

```
   (#) = Out of Range              SPCC's out = 0  CCC's out = 0
    7g42195.D  7GV8011M1500.M      Fri Dec 10 01:11:18 2021
```

10.8.2 10

Continuing Calibration Summary

Job Number: JD40008 **Sample:** G7G1516-CC1500
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G42668.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\7g1516\7g42668.d\ECD1A.CH Vial: 2
Signal #2 : C:\msdchem\1\data\7g1516\7g42668.d\ECD2B.CH
Acq On : 22 Feb 2022 1:16 am Operator: rebeccak
Sample : cc1500-0.5 Inst : HP G1530A
Misc : op38170,g7g1516,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Thu Dec 23 08:50:19 2021
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	3.369	3.883 E6	-15.3	111	0.00	2.68- 2.74
2	1,2-Dibromoethane	19.453	23.226 E6	-19.4	113	0.00	2.84- 2.90
3	1,2,3-Trichloropropane	2.519	2.857 E6	-13.4	111	0.00	3.91- 3.97
4	1,2-Dibromo-3-Chloropr	47.545	51.323 E6	-7.9	108	0.00	4.85- 4.91
***** Signal #2 *****							
1 S	2-Bromo-1-Chloropropan	2.533	2.576 E6	-1.7	101	0.00	3.10- 3.16
2	1,2-Dibromoethane	11.235	16.173 E6	-44.0#	147	0.00	3.43- 3.49
3	1,2,3-Trichloropropane	1.924	2.069 E6	-7.5	110	0.00	4.37- 4.43
4	1,2-Dibromo-3-Chloropr	33.540	35.485 E6	-5.8	106	0.00	5.41- 5.47

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g42195.D 7GV8011M1500.M Tue Feb 22 07:23:04 2022

10.8.3 10

Continuing Calibration Summary

Job Number: JD40008 **Sample:** G7G1516-CC1500
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G42679.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\7g1516\7g42679.d\ECD1A.CH Vial: 3
Signal #2 : C:\msdchem\1\data\7g1516\7g42679.d\ECD2B.CH
Acq On : 22 Feb 2022 4:42 am Operator: rebeccak
Sample : cc1500-1.0 Inst : HP G1530A
Misc : op38248,g7g1516,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Thu Dec 23 08:50:19 2021
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	3.369	3.713 E6	-10.2	111	0.00	2.68- 2.74
2	1,2-Dibromoethane	19.453	23.216 E6	-19.3	116	0.00	2.84- 2.90
3	1,2,3-Trichloropropane	2.519	3.640 E6	-44.5#	146	0.00	3.91- 3.97
4	1,2-Dibromo-3-Chloropr	47.545	51.006 E6	-7.3	108	0.00	4.85- 4.91
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.533	2.420 E6	4.5	101	0.00	3.10- 3.16
2	1,2-Dibromoethane	11.235	15.484 E6	-37.8#	130	0.00	3.43- 3.49
3	1,2,3-Trichloropropane	1.924	1.940 E6	-0.8	109	0.00	4.37- 4.43
4	1,2-Dibromo-3-Chloropr	33.540	34.217 E6	-2.0	105	0.00	5.41- 5.47

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g42196.D 7GV8011M1500.M Tue Feb 22 07:22:47 2022

10.8.4 10

Continuing Calibration Summary

Job Number: JD40008 **Sample:** G7G1516-CC1500
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G42689.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\sa...16\7g42689.d\ECD1A.CH Vial: 2
Signal #2 : C:\msdchem\1\data\sarah\7g1516\7g42689.d\ECD2B.CH
Acq On : 22 Feb 2022 7:47 am Operator: rebeccak
Sample : cc1500-0.5 Inst : HP G1530A
Misc : op38248,g7g1516,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Wed Dec 29 20:00:49 2021
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	3.369	4.184 E6	-24.2#	120	0.00	2.68- 2.74
2	1,2-Dibromoethane	19.453	24.940 E6	-28.2#	121	0.00	2.85- 2.91
3	1,2,3-Trichloropropane	2.519	3.102 E6	-23.1#	120	0.00	3.91- 3.97
4	1,2-Dibromo-3-Chloropr	47.545	52.652 E6	-10.7	110	0.00	4.85- 4.91
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.533	2.670 E6	-5.4	105	0.00	3.10- 3.16
2	1,2-Dibromoethane	11.235	16.213 E6	-44.3#	148	0.00	3.43- 3.49
3	1,2,3-Trichloropropane	1.924	2.191 E6	-13.9	116	0.00	4.37- 4.43
4	1,2-Dibromo-3-Chloropr	33.540	35.695 E6	-6.4	107	0.00	5.41- 5.47

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g42195.D 7GV8011M1500.M Tue Feb 22 16:46:58 2022

10.8.5 10

Initial Calibration Summary

Job Number: JD40008 **Sample:** GAA2456-ICC2456
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** AA92263.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report GCAA

Method : C:\MSDCHEM\1\METHODS\MAA2456.M (ChemStation Integrator)
Title : METHOD V8015 DG by GC-FID
Last Update : Mon Dec 06 16:10:37 2021
Response via : Initial Calibration

Calibration Files
200 =AA92264.d 100 =AA92263.d 20 =AA92262.d 10 =AA92261.d
2 =AA92258.d 1 =AA92256.d 500 =AA92265.d 1000=AA92269.d
= =

Compound	200	100	20	10	2	1	500	1000	Avg	%RSD
1) Methane	2.585	2.531	2.152	2.154	2.718	3.010	2.286	2.195	2.454 E4	12.68
2) Ethane	4.867	4.800	3.704	4.135	4.795	4.358	4.277	4.192	4.391 E4	9.23
3) Ethene	4.908	4.814	3.689	4.094	5.190	4.127	4.310	4.210	4.418 E4	11.38
4) Propane	7.479	7.619	5.136	6.489	7.688	6.323	6.605	6.555	6.737 E4	12.65
5) n-Butane	0.965	1.028	0.705	0.864	1.029	0.940	0.868	0.870	0.909 E5	11.74
6) n-Pentane	1.130	1.243	1.041	1.125	1.267	1.169	1.053	1.085	1.139 E5	7.29
7) Hexane	1.197	1.337	1.165	1.503	1.503	1.741	1.135	1.307	1.361 E5	15.33

(#) = Out of Range ### Number of calibration levels exceeded format ###

MAA2456.M Tue Dec 07 13:09:06 2021

10.8.6 10

Initial Calibration Verification

Job Number: JD40008 **Sample:** GAA2456-ICV2456
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** AA92270.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : AA92270.d
Signal(s) : FID1A.ch
Acq On : 6 Dec 2021 4:14 pm
Operator : williamc
Sample : icv2456-100
Misc : GC58872,GAA2456,,,,,1
ALS Vial : 21 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Dec 06 16:24:40 2021
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	Methane	24.540	25.806 E3	-5.2	102	0.00
2	Ethane	43.912	48.133 E3	-9.6	100	0.00
3	Ethene	44.177	48.632 E3	-10.1	101	0.00
4	Propane	67.367	68.304 E3	-1.4	90	0.00
5	n-Butane	90.851	86.895 E3	4.4	85	0.00
6	n-Pentane	113.932	85.778 E3	24.7#	69	0.00
7	Hexane	136.098	82.086 E3	39.7#	61	0.01

Evaluate Continuing Calibration Report - Not Founds

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MAA2456.M Tue Dec 07 13:08:39 2021

10.8.7 10

Continuing Calibration Summary

Job Number: JD40008 **Sample:** GAA2502-CC2456
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** AA93360.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : AA93360.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 8:27 am
Operator : johnn
Sample : cc2456-100
Misc : GC59224,GAA2502,,,,,1
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 24 08:37:36 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	Methane	24.540	24.502 E3	0.2	97	0.00
2	Ethane	43.912	45.542 E3	-3.7	95	0.00
3	Ethene	44.177	45.939 E3	-4.0	95	0.00
4	Propane	67.367	67.619 E3	-0.4	89	0.00
5	n-Butane	90.851	79.555 E3	12.4	77	0.00
6	n-Pentane	113.932	81.018 E3	28.9#	65	0.02
7	Hexane	136.098	72.505 E3	46.7#	54	0.04

Evaluate Continuing Calibration Report - Not Founds

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MAA2456.M Fri Feb 25 09:40:20 2022

Continuing Calibration Summary

Job Number: JD40008 **Sample:** GAA2502-CC2456
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** AA93375.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\DATA\
Data File : AA93375.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 12:34 pm
Operator : johnn
Sample : cc2456-100
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 16 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 25 10:34:24 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	Methane	24.540	24.819 E3	-1.1	98	0.00
2	Ethane	43.912	45.875 E3	-4.5	96	0.00
3	Ethene	44.177	46.195 E3	-4.6	96	0.00
4	Propane	67.367	69.540 E3	-3.2	91	0.00
5	n-Butane	90.851	89.090 E3	1.9	87	0.00
6	n-Pentane	113.932	111.023 E3	2.6	89	0.00
7	Hexane	136.098	83.286 E3	38.8#	62	0.00

Evaluate Continuing Calibration Report - Not Founds

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MAA2456.M Fri Feb 25 10:34:49 2022

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: G7G1500 **Method:** SW846-8011 **Instrument ID:** GC7G

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
G7G1500-IC1500	7G42192.D	12/09/21 10:55	n/a	Initial cal 0.02
G7G1500-IC1500	7G42193.D	12/09/21 11:13	n/a	Initial cal 0.1
G7G1500-IC1500	7G42194.D	12/09/21 11:31	n/a	Initial cal 0.2
G7G1500-ICC1500	7G42195.D	12/09/21 11:49	n/a	Initial cal 0.5
G7G1500-IC1500	7G42196.D	12/09/21 12:07	n/a	Initial cal 1
G7G1500-IC1500	7G42197.D	12/09/21 12:25	n/a	Initial cal 2
G7G1500-ICV1500	7G42198.D	12/09/21 12:43	n/a	Initial cal verification 0.5

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: G7G1516	**Method:** SW846-8011	**Instrument ID:** GC7G

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
G7G1516-CC1500	7G42658.D	02/21/22 22:06	n/a	Continuing cal 1.0
OP38170-BS1	7G42661.D	02/21/22 23:03	OP38170	Blank Spike
OP38170-BSD	7G42662.D	02/21/22 23:23	OP38170	Blank Spike Duplicate
ZZZZZZ	7G42663.D	02/21/22 23:42	OP38170	(unrelated sample)
ZZZZZZ	7G42664.D	02/22/22 00:01	OP38170	(unrelated sample)
ZZZZZZ	7G42665.D	02/22/22 00:20	OP38170	(unrelated sample)
ZZZZZZ	7G42666.D	02/22/22 00:38	OP38170	(unrelated sample)
OP38170-MS	7G42667.D	02/22/22 00:57	OP38170	Matrix Spike
G7G1516-CC1500	7G42668.D	02/22/22 01:16	n/a	Continuing cal 0.5
OP38248-MB1	7G42670.D	02/22/22 01:53	OP38248	Method Blank
OP38248-BS1	7G42671.D	02/22/22 02:12	OP38248	Blank Spike
OP38248-BSD	7G42672.D	02/22/22 02:31	OP38248	Blank Spike Duplicate
JD39951-1	7G42673.D	02/22/22 02:50	OP38248	(used for QC only; not part of job JD40008)
OP38248-MS	7G42674.D	02/22/22 03:09	OP38248	Matrix Spike
JD39951-2	7G42675.D	02/22/22 03:27	OP38248	(used for QC only; not part of job JD40008)
OP38248-DUP	7G42676.D	02/22/22 03:46	OP38248	Duplicate
ZZZZZZ	7G42677.D	02/22/22 04:04	OP38248	(unrelated sample)
ZZZZZZ	7G42678.D	02/22/22 04:23	OP38248	(unrelated sample)
G7G1516-CC1500	7G42679.D	02/22/22 04:42	n/a	Continuing cal 1.0
ZZZZZZ	7G42681.D	02/22/22 05:19	OP38248	(unrelated sample)
ZZZZZZ	7G42682.D	02/22/22 05:38	OP38248	(unrelated sample)
ZZZZZZ	7G42683.D	02/22/22 05:56	OP38248	(unrelated sample)
JD40008-1	7G42684.D	02/22/22 06:15	OP38248	N-167_20220216
JD40008-2	7G42685.D	02/22/22 06:33	OP38248	N-168_20220217
JD40008-3	7G42686.D	02/22/22 06:52	OP38248	N-169_20220217
JD40008-4	7G42687.D	02/22/22 07:10	OP38248	N-165_20220217
G7G1516-CC1500	7G42689.D	02/22/22 07:47	n/a	Continuing cal 0.5

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: GAA2456	**Method:** RSK-175	**Instrument ID:** GCAA

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GAA2456-IC2456	AA92256.D	12/06/21 11:08	n/a	Initial cal 1
GAA2456-IC2456	AA92258.D	12/06/21 11:35	n/a	Initial cal 2
GAA2456-IC2456	AA92261.D	12/06/21 13:19	n/a	Initial cal 10
GAA2456-IC2456	AA92262.D	12/06/21 13:32	n/a	Initial cal 20
GAA2456-ICC2456	AA92263.D	12/06/21 13:46	n/a	Initial cal 100
GAA2456-IC2456	AA92264.D	12/06/21 13:59	n/a	Initial cal 200
GAA2456-IC2456	AA92265.D	12/06/21 14:28	n/a	Initial cal 500
GAA2456-IC2456	AA92269.D	12/06/21 15:58	n/a	Initial cal 1000
GAA2456-ICV2456	AA92270.D	12/06/21 16:14	n/a	Initial cal verification 100

Run Sequence Report

Job Number: JD40008
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: GAA2502	**Method:** RSK-175	**Instrument ID:** GCAA

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
GAA2502-CC2456	AA93360.D	02/24/22 08:27	n/a	Continuing cal 100
GAA2502-LCS	AA93361.D	02/24/22 08:43	n/a	Laboratory Control Sample
GAA2502-MB	AA93363.D	02/24/22 09:37	n/a	Method Blank
JD39963-3	AA93364.D	02/24/22 09:51	n/a	(used for QC only; not part of job JD40008)
JD39963-3	AA93365.D	02/24/22 10:05	n/a	(used for QC only; not part of job JD40008)
JD39963-3DUP	AA93366.D	02/24/22 10:18	n/a	Duplicate
JD40008-1	AA93367.D	02/24/22 10:38	n/a	N-167_20220216
JD40008-1	AA93368.D	02/24/22 10:56	n/a	N-167_20220216
JD40008-2	AA93369.D	02/24/22 11:08	n/a	N-168_20220217
JD40008-2	AA93370.D	02/24/22 11:22	n/a	N-168_20220217
JD40008-3	AA93371.D	02/24/22 11:39	n/a	N-169_20220217
JD40008-3	AA93372.D	02/24/22 11:52	n/a	N-169_20220217
JD40008-4	AA93373.D	02/24/22 12:07	n/a	N-165_20220217
JD40008-4	AA93374.D	02/24/22 12:20	n/a	N-165_20220217
GAA2502-CC2456	AA93375.D	02/24/22 12:34	n/a	Continuing cal 100
ZZZZZZ	AA93376.D	02/24/22 12:47	n/a	(unrelated sample)
ZZZZZZ	AA93378.D	02/24/22 13:15	n/a	(unrelated sample)
ZZZZZZ	AA93379.D	02/24/22 13:45	n/a	(unrelated sample)
ZZZZZZ	AA93380.D	02/24/22 14:02	n/a	(unrelated sample)
ZZZZZZ	AA93381.D	02/24/22 14:17	n/a	(unrelated sample)
ZZZZZZ	AA93382.D	02/24/22 14:30	n/a	(unrelated sample)
ZZZZZZ	AA93383.D	02/24/22 14:52	n/a	(unrelated sample)
ZZZZZZ	AA93384.D	02/24/22 15:10	n/a	(unrelated sample)
ZZZZZZ	AA93385.D	02/24/22 15:23	n/a	(unrelated sample)
ZZZZZZ	AA93386.D	02/24/22 15:45	n/a	(unrelated sample)
JD39963-9	AA93387.D	02/24/22 16:03	n/a	(used for QC only; not part of job JD40008)
JD39963-9	AA93389.D	02/24/22 17:25	n/a	(used for QC only; not part of job JD40008)
GAA2502-CC2456	AA93390.D	02/24/22 17:38	n/a	Continuing cal 100
JD39963-9DUP	AA93391.D	02/24/22 17:51	n/a	Duplicate
GAA2502-CC2456	AA93392.D	02/24/22 18:04	n/a	Continuing cal 100

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 02/25/22 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42684.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 6:15 am
Operator : rebeccak
Sample : jd40008-1
Misc : op38248,g7g1516,34.2,,,2,1
ALS Vial : 25 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 17:00:29 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) S	2-Bromo-1...	2.712	3.129	38921285	27078003	11.552m	10.692
	Spiked Amount 10.000			Recovery =		115.52%	106.92%
	Target Compounds						
4)	1,2-Dibro...	4.867	5.447	3843053	9341938	0.081	0.279 #

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

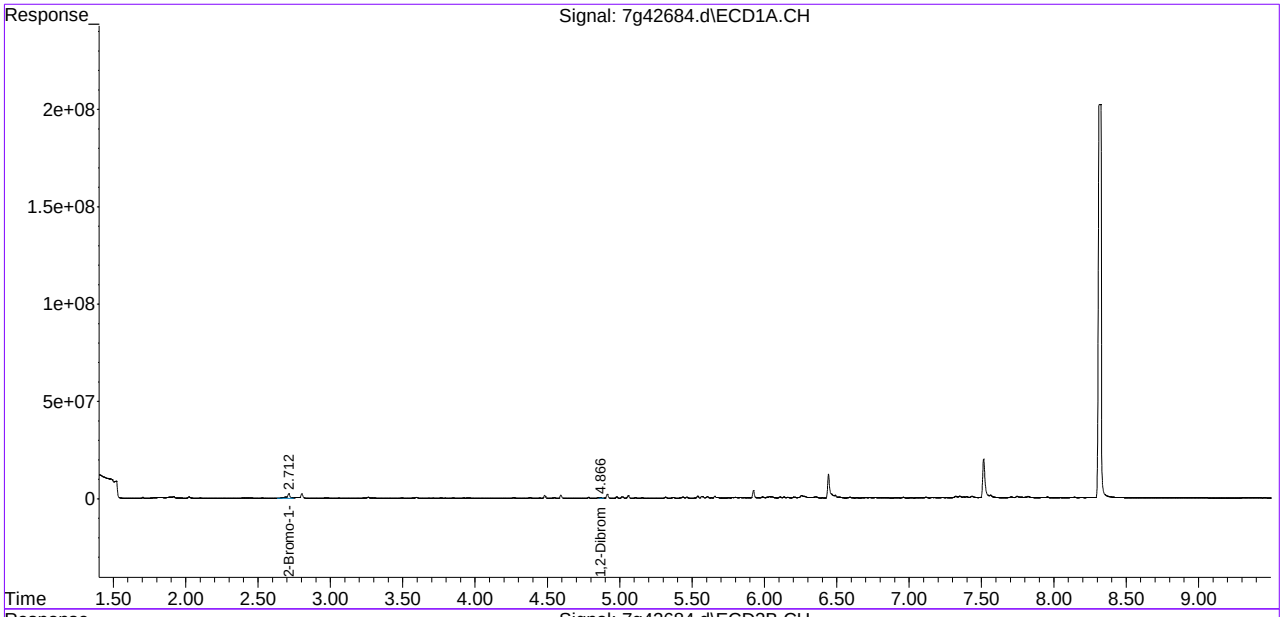
11.1.1 11

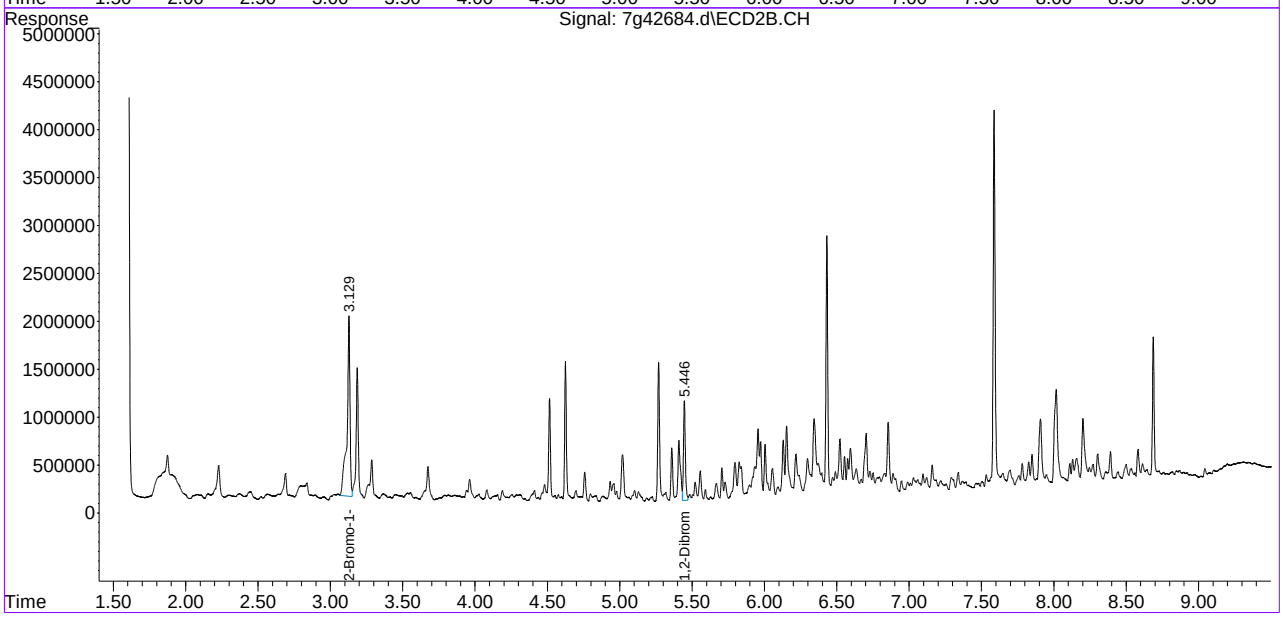
Quantitation Report (QT Reviewed)

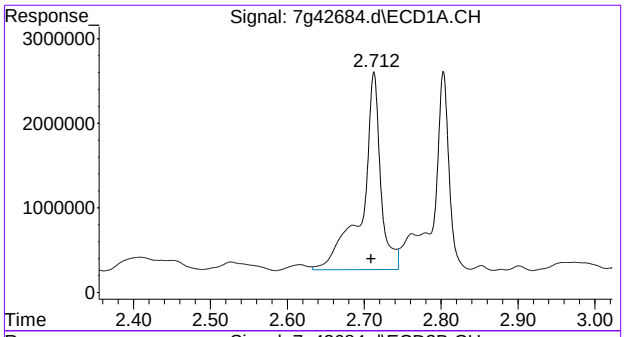
Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42684.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 6:15 am
Operator : rebeccak
Sample : jd40008-1
Misc : op38248,g7g1516,34.2,,,2,1
ALS Vial : 25 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 17:00:29 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

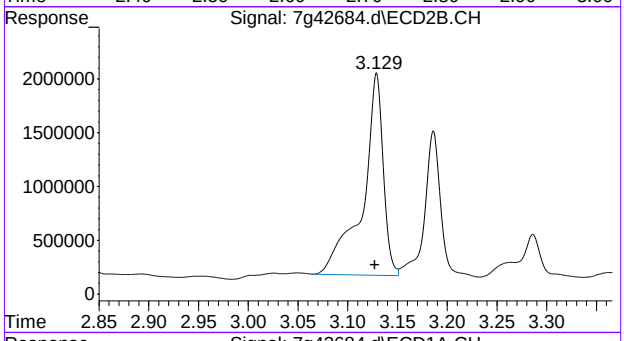






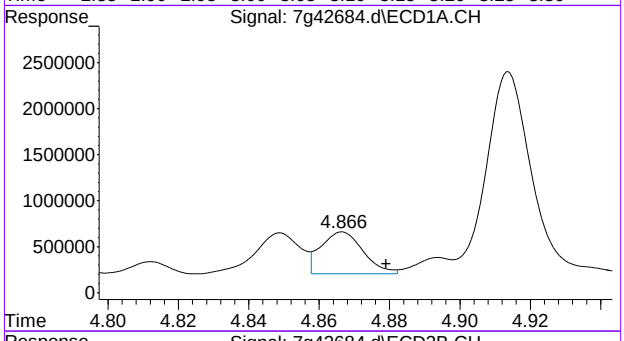
#1 2-Bromo-1-Chloropropane

R.T.: 2.712 min
Delta R.T.: 0.003 min
Response: 38921285
Conc: 11.55 PPB m



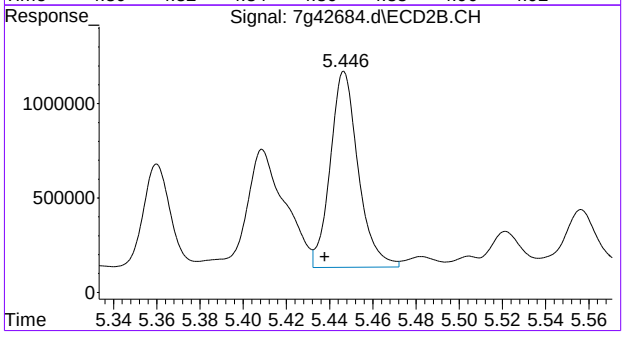
#1 2-Bromo-1-Chloropropane

R.T.: 3.129 min
Delta R.T.: 0.002 min
Response: 27078003
Conc: 10.69 PPB



#4 1,2-Dibromo-3-Chloropropane

R.T.: 4.867 min
Delta R.T.: -0.013 min
Response: 3843053
Conc: 0.08 PPB



#4 1,2-Dibromo-3-Chloropropane

R.T.: 5.447 min
Delta R.T.: 0.009 min
Response: 9341938
Conc: 0.28 PPB

Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 02/25/22 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42685.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 6:33 am
Operator : rebeccak
Sample : jd40008-2
Misc : op38248,g7g1516,34.1,,,2,1
ALS Vial : 26 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 16:59:51 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) S	2-Bromo-1...	2.712	3.129	33744464	26294417	10.016m	10.382m
	Spiked Amount 10.000			Recovery	=	100.16%	103.82%
	Target Compounds						
4)	1,2-Dibro...	4.867	5.446	3211598	5596555	0.068	0.167 #

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

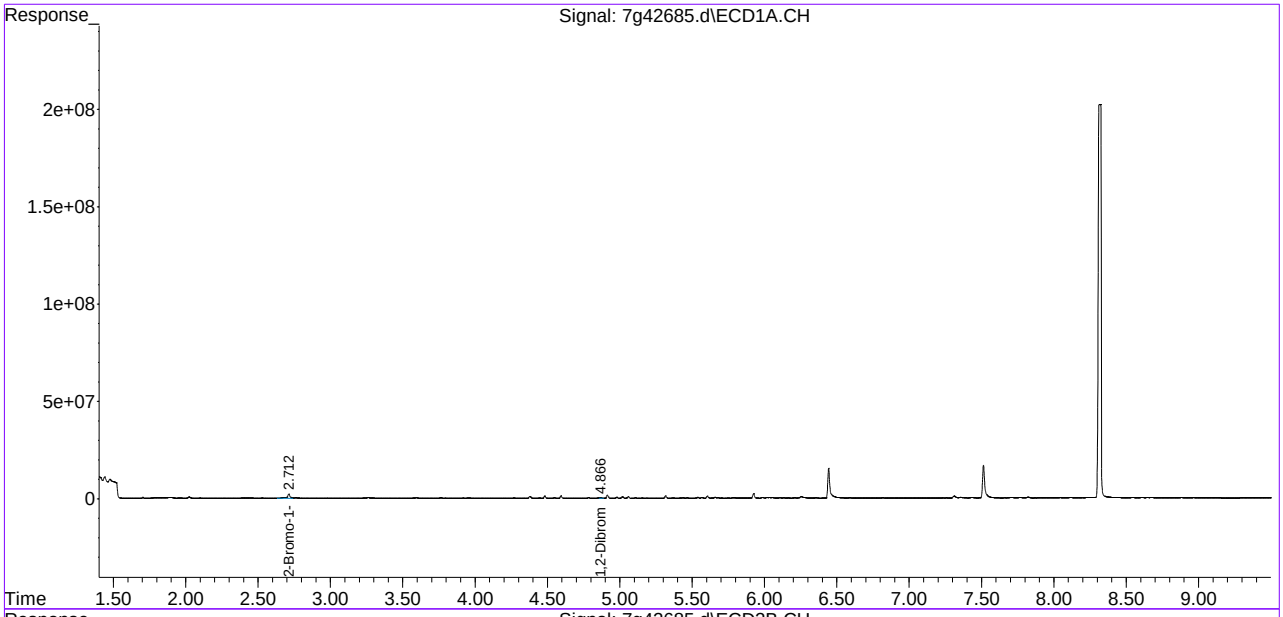
11.1.2 11

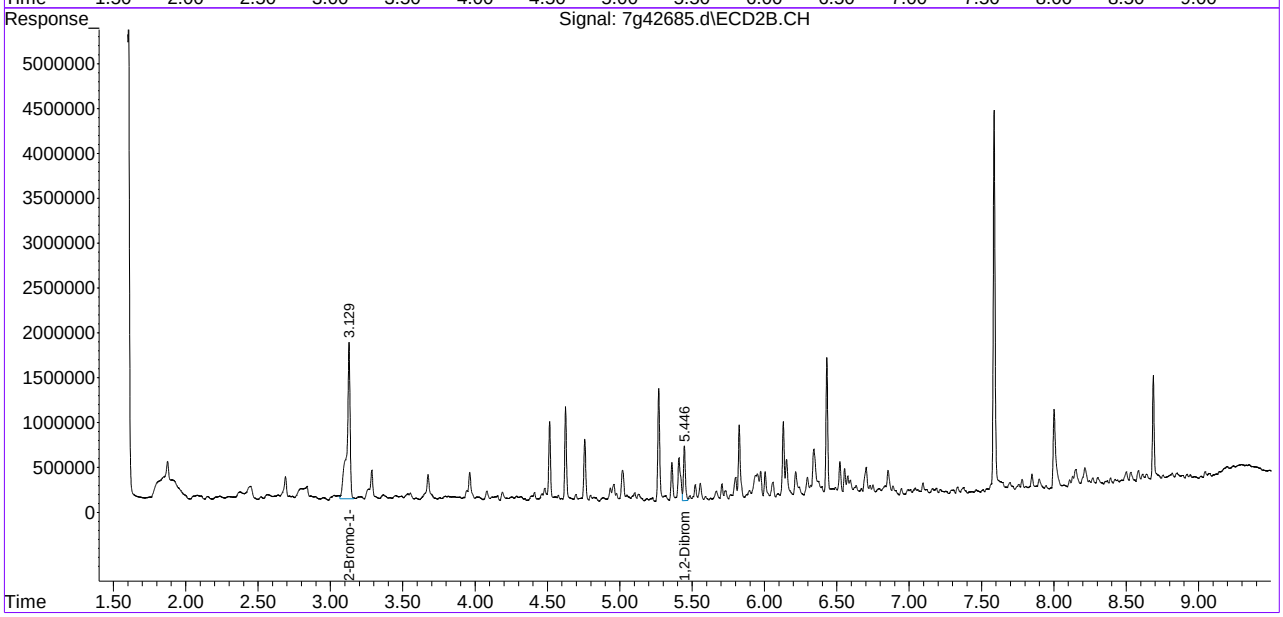
Quantitation Report (QT Reviewed)

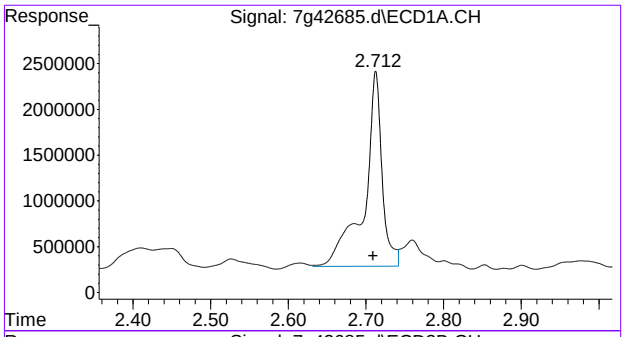
Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42685.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 6:33 am
Operator : rebeccak
Sample : jd40008-2
Misc : op38248,g7g1516,34.1,,,2,1
ALS Vial : 26 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 16:59:51 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

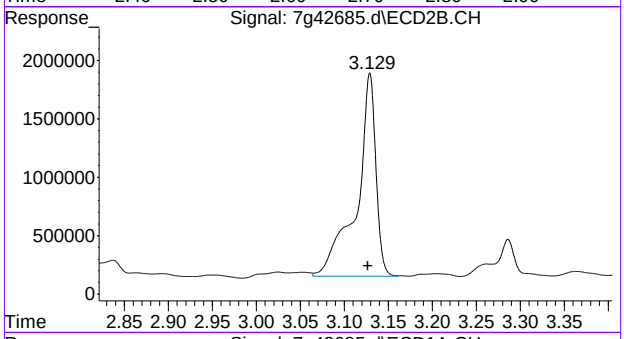






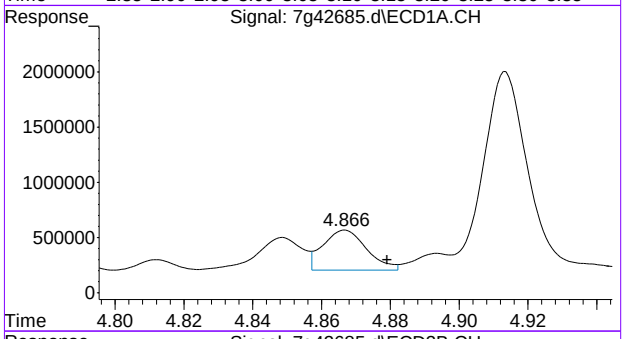
#1 2-Bromo-1-Chloropropane

R.T.: 2.712 min
Delta R.T.: 0.003 min
Response: 33744464
Conc: 10.02 PPB m



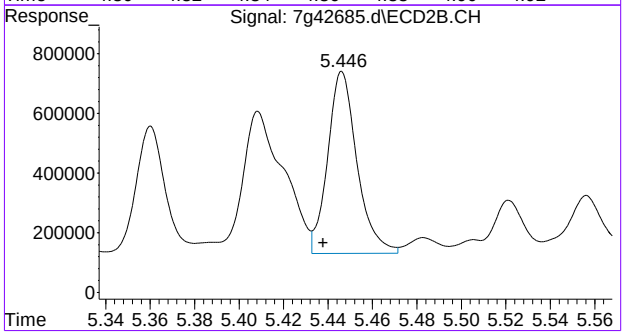
#1 2-Bromo-1-Chloropropane

R.T.: 3.129 min
Delta R.T.: 0.002 min
Response: 26294417
Conc: 10.38 PPB m



#4 1,2-Dibromo-3-Chloropropane

R.T.: 4.867 min
Delta R.T.: -0.012 min
Response: 3211598
Conc: 0.07 PPB



#4 1,2-Dibromo-3-Chloropropane

R.T.: 5.446 min
Delta R.T.: 0.009 min
Response: 5596555
Conc: 0.17 PPB

Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 02/25/22 15:49

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42686.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 6:52 am
Operator : rebeccak
Sample : jd40008-3
Misc : op38248,g7g1516,34.4,,,2,1
ALS Vial : 27 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 17:03:33 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) S	2-Bromo-1...	2.712	3.129	36612307	27618437	10.867m	10.905m
	Spiked Amount 10.000			Recovery =		108.67%	109.05%
	Target Compounds						
4)	1,2-Dibro...	4.867	5.446	5106706	3702428	0.107	0.110

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

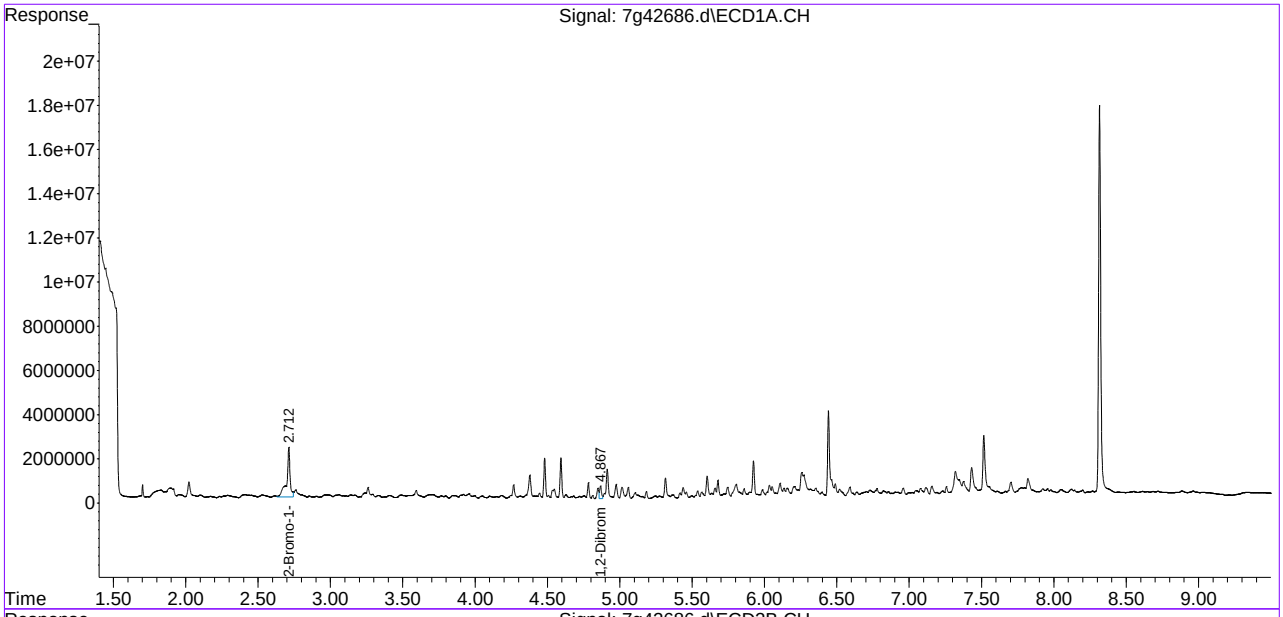
11.1.3
11

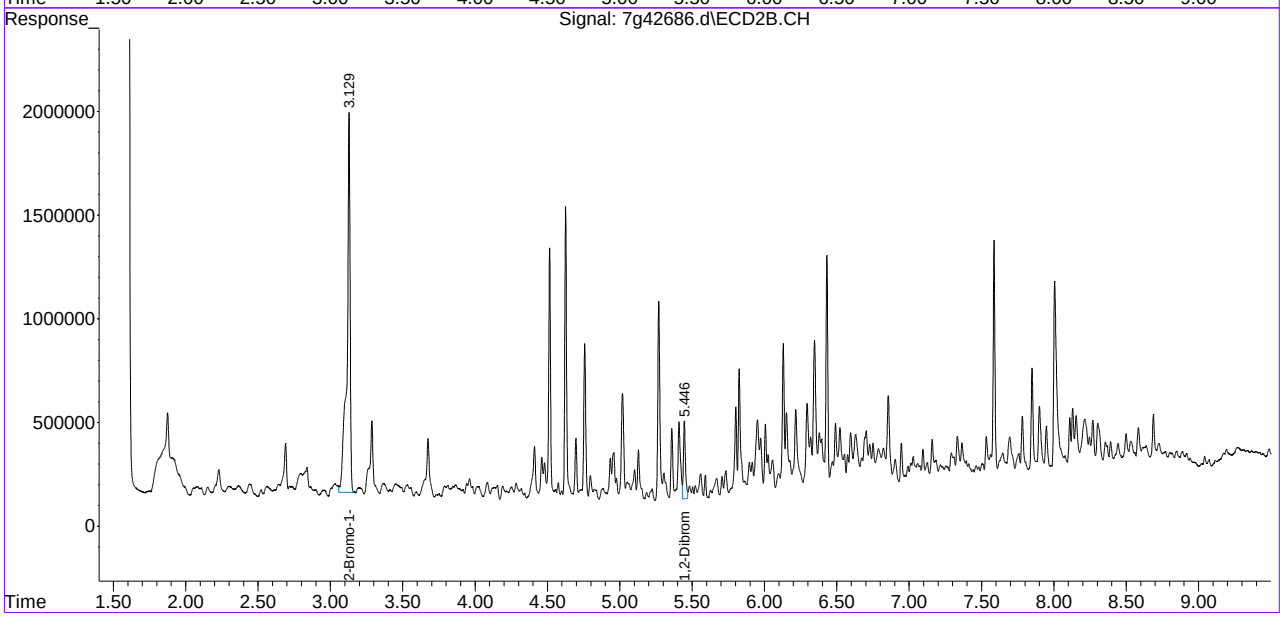
Quantitation Report (QT Reviewed)

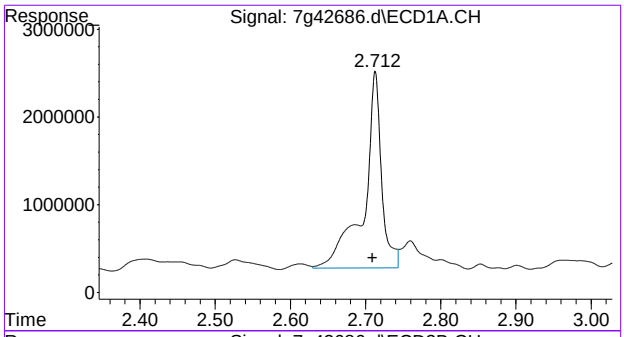
Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42686.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 6:52 am
Operator : rebeccak
Sample : jd40008-3
Misc : op38248,g7g1516,34.4,,,2,1
ALS Vial : 27 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 17:03:33 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

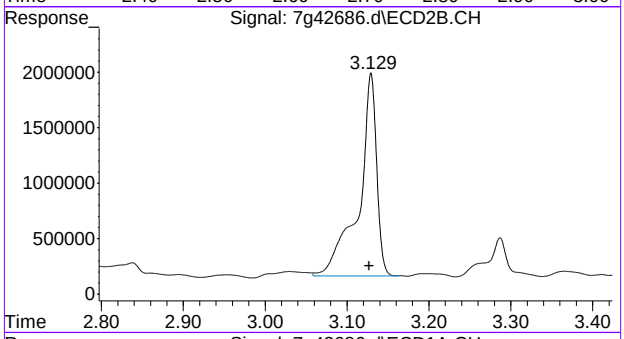






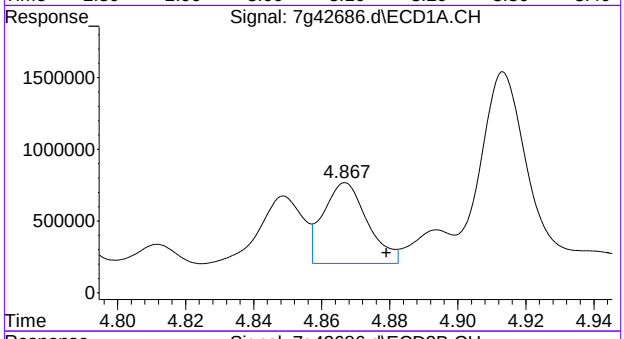
#1 2-Bromo-1-Chloropropane

R.T.: 2.712 min
Delta R.T.: 0.003 min
Response: 36612307
Conc: 10.87 PPB m



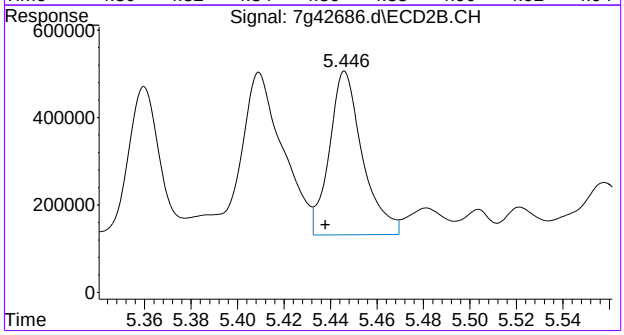
#1 2-Bromo-1-Chloropropane

R.T.: 3.129 min
Delta R.T.: 0.002 min
Response: 27618437
Conc: 10.91 PPB m



#4 1,2-Dibromo-3-Chloropropane

R.T.: 4.867 min
Delta R.T.: -0.012 min
Response: 5106706
Conc: 0.11 PPB



#4 1,2-Dibromo-3-Chloropropane

R.T.: 5.446 min
Delta R.T.: 0.009 min
Response: 3702428
Conc: 0.11 PPB

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42687.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 7:10 am
Operator : rebeccak
Sample : jd40008-4
Misc : op38248,g7g1516,34.4,,,2,1
ALS Vial : 28 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 17:03:42 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) S	2-Bromo-1...	2.714	3.130	43334571	27464010	12.862	10.844
	Spiked Amount	10.000		Recovery	=	128.62%	108.44%
	Target Compounds						
4)	1,2-Dibro...	4.867	5.447	6934776	14558768	0.146	0.434 #

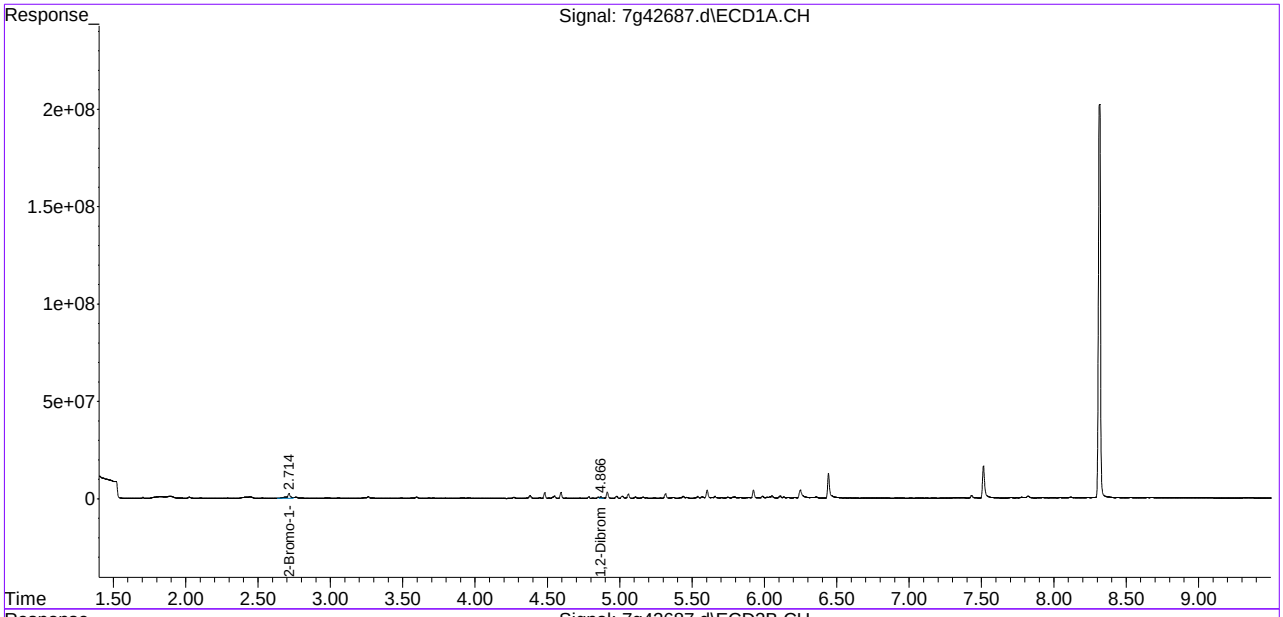
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

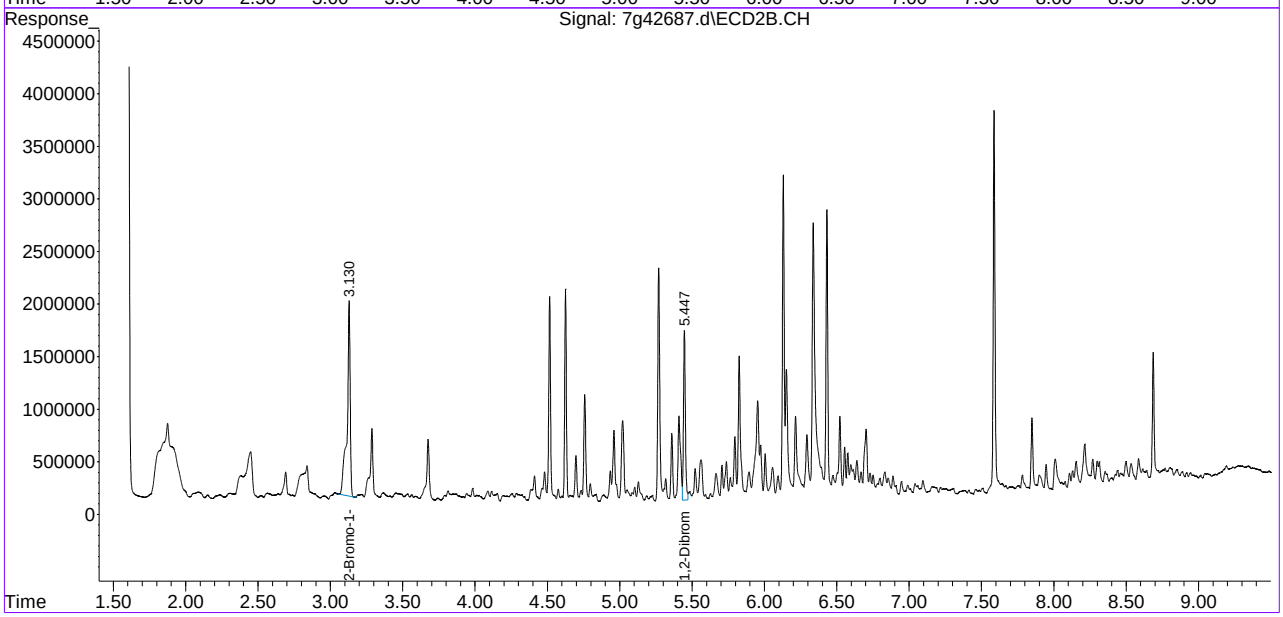
Quantitation Report (QT Reviewed)

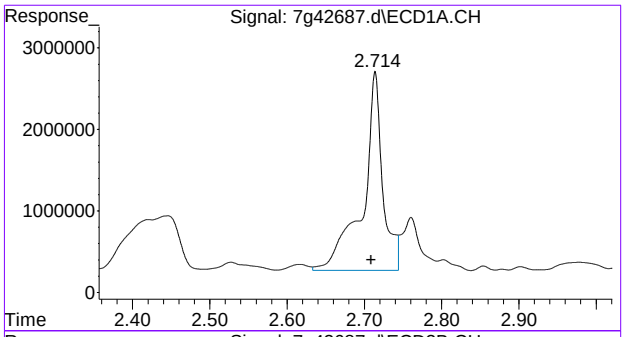
Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42687.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 7:10 am
Operator : rebeccak
Sample : jd40008-4
Misc : op38248,g7g1516,34.4,,,2,1
ALS Vial : 28 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 17:03:42 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

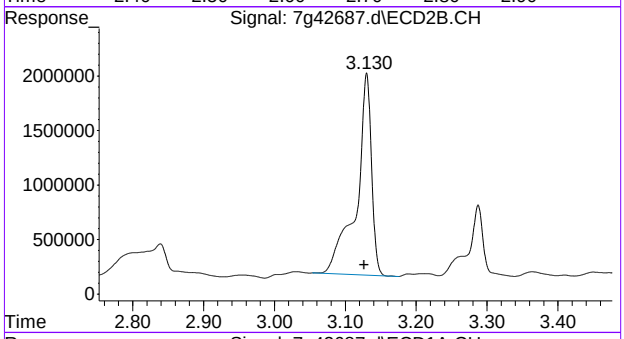






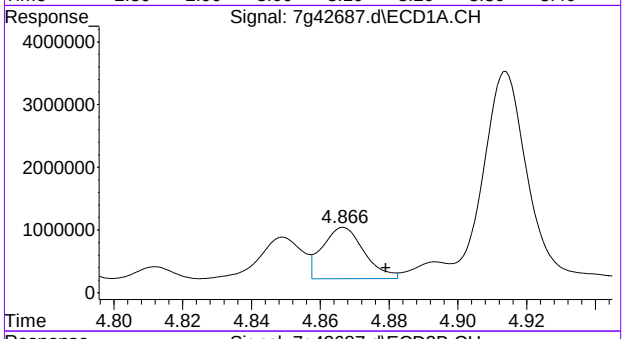
#1 2-Bromo-1-Chloropropane

R.T.: 2.714 min
Delta R.T.: 0.005 min
Response: 43334571
Conc: 12.86 PPB



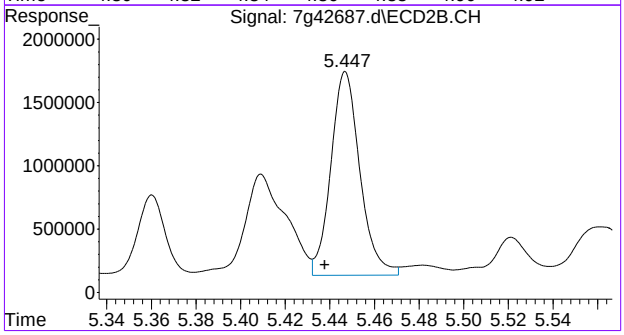
#1 2-Bromo-1-Chloropropane

R.T.: 3.130 min
Delta R.T.: 0.003 min
Response: 27464010
Conc: 10.84 PPB



#4 1,2-Dibromo-3-Chloropropane

R.T.: 4.867 min
Delta R.T.: -0.012 min
Response: 6934776
Conc: 0.15 PPB



#4 1,2-Dibromo-3-Chloropropane

R.T.: 5.447 min
Delta R.T.: 0.009 min
Response: 14558768
Conc: 0.43 PPB

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93367.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 10:38 am
Operator : johnn
Sample : jd40008-1
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 24 10:48:12 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.350	232738665	9484.157	PPMV
2)	Ethane	1.759	1024070	23.321	PPMV
3)	Ethene	2.434	457417	10.354	PPMV
4)	Propane	2.867	427910	6.352	PPMV
5)	n-Butane	4.085	1597207	17.581	PPMV
6)	n-Pentane	5.122	32113771	281.868	PPMV
7)	Hexane	6.270	41950262	308.236	PPMV

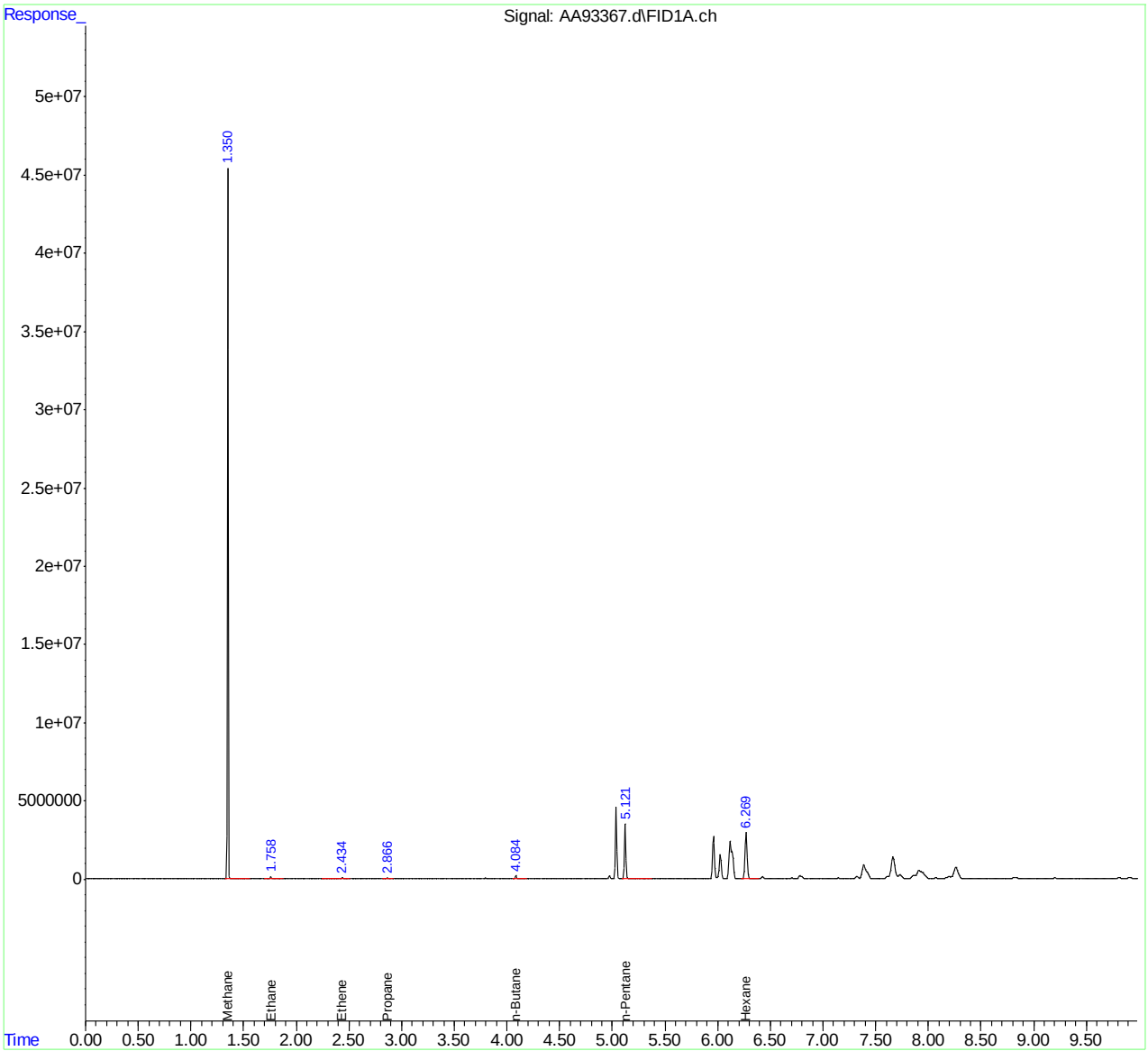
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93367.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 10:38 am
Operator : johnn
Sample : jd40008-1
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 24 10:48:12 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



1

Dissolved Gas Calculation Worksheet

Data File Name **AA93367.d**
Date Acquired **2/24/2022 10:38**
Sample Name **jd40008-1**
Sample Multiplier **1**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **38**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	232738665	98038	9480.16	6287.86	827.35	38340	219.572	1046.92	0.11	**1046.92**
Ethane	30	22.4	55.5	294	24.12	1024070.1	0	23.32	29.00	3.82	27080	1.434	5.250	0.23	**5.250**
Ethene	28	22.4	55.5	294	24.12	457417	0	10.35	12.02	1.58	10440	1.541	3.123	0.31	**3.123**
Propane	44	22.4	55.5	294	24.12	427910	0	6.35	11.59	1.52	32552	0.48	2.00	0.32	**2.00**
n-Butane	42	22.4	55.5	294	24.12	1597207	0	17.58	30.61	4.03	12440	3.29	7.32	0.43	**7.32**
n-Pentane	58	22.4	55.5	294	24.12	32113771	0	281.87	677.71	89.17	56501	16.06	105.23	0.38	**105.23**
Hexane	58	22.4	55.5	294	24.12	41950262	0	308.24	741.10	97.51	39507	25.11	122.63	0.41	**122.63**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	**The volume of 1 mole of any gas at standard temperature and pressure(STP)**
Water g/Moles	**1 Liter of water is equal to 55.5g-moles**
Temp-kelvin	**Is defined as 273 + degress C**
Corrected Gas Density	**Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)**
Headspace conc(ug/l)	**Is equal to (ppmv reading) x (mw/corrected gas density)**
Water Concentration(ug/l)	**Is equal to headspace conc(ug/l) x headspace vol/sample vol**
Saturation Concentration(ug/l)	**Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)**

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93368.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 10:56 am
Operator : johnn
Sample : jd40008-1
Misc : GC59229,GAA2502,,,,,25
ALS Vial : 9 Sample Multiplier: 25

Integration File: autoint1.e
Quant Time: Feb 25 10:28:18 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.357	17686211	18017.934	PPMV
2)	Ethane	1.764	78628	44.765	PPMV
3)	Ethene	2.438	113636	64.307	PPMV

(f)=RT Delta > 1/2 Window (m)=manual int.

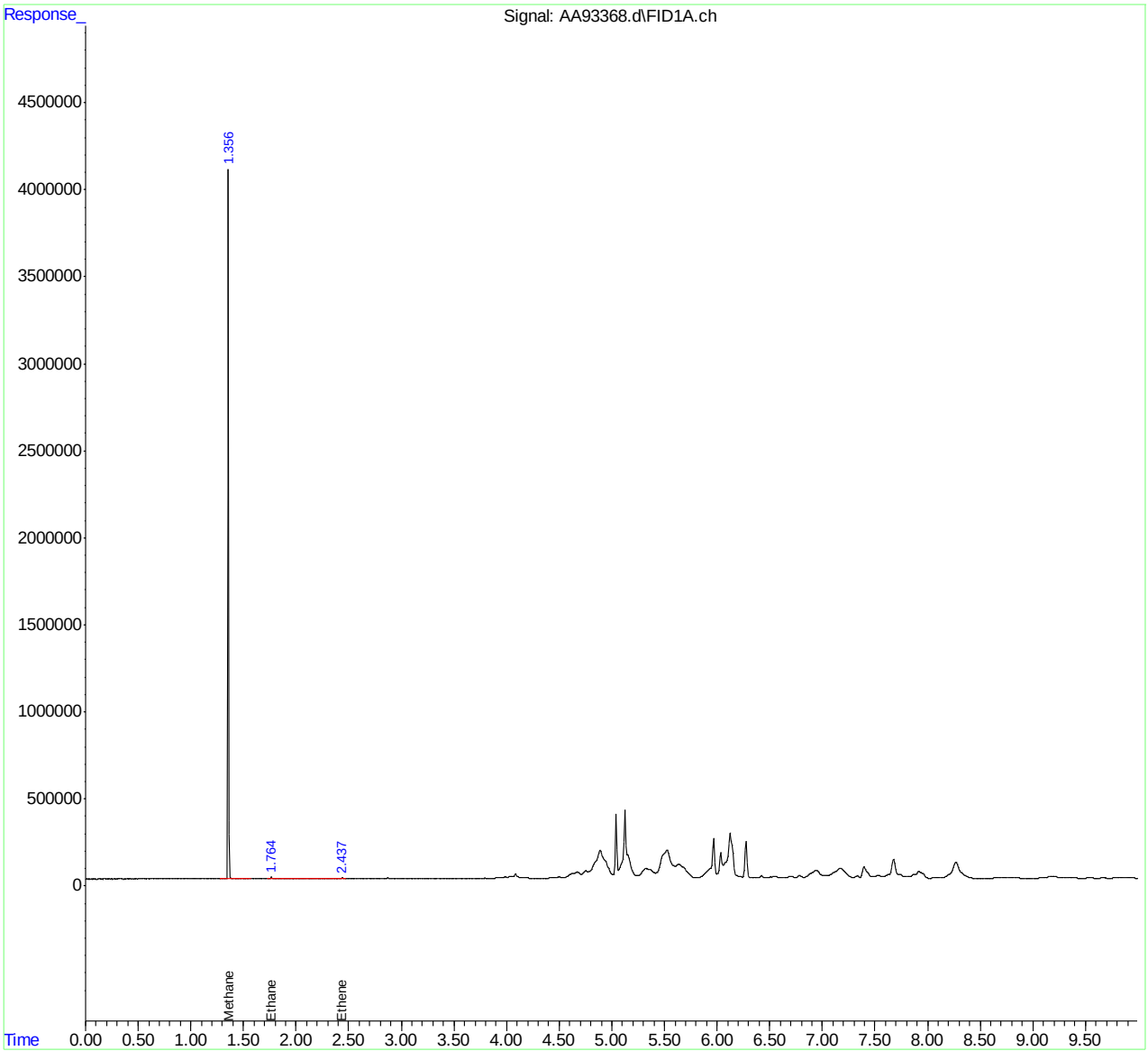
11.1.7 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93368.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 10:56 am
Operator : johnn
Sample : jd40008-1
Misc : GC59229,GAA2502,,,,,25
ALS Vial : 9 Sample Multiplier: 25

Integration File: autoint1.e
Quant Time: Feb 25 10:28:18 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



1

Dissolved Gas Calculation Worksheet

Data File Name **AA93368.d**
Date Acquired **2/24/2022 10:56**
Sample Name **jd40008-1**
Sample Multiplier **25**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **38**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	17686211	98038	17918.06	11884.43	1563.74	38340	415.004	1978.74	2.75	**1978.74**
Ethane	30	22.4	55.5	294	24.12	78627.75	0	44.76	55.67	7.33	27080	2.752	10.077	5.75	**10.077**
Ethene	28	22.4	55.5	294	24.12	113636	0	64.31	74.64	9.82	10440	9.572	19.393	7.75	**19.393**
Propane	44	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	32552	#DIV/0!	#DIV/0!	8.00	**#DIV/0!**
n-Butane	42	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	12440	#DIV/0!	#DIV/0!	10.75	**#DIV/0!**
n-Pentane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	56501	#DIV/0!	#DIV/0!	9.50	**#DIV/0!**
Hexane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	39507	#DIV/0!	#DIV/0!	10.25	**#DIV/0!**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	**The volume of 1 mole of any gas at standard temperature and pressure(STP)**
Water g/Moles	**1 Liter of water is equal to 55.5g-moles**
Temp-kelvin	**Is defined as 273 + degress C**
Corrected Gas Density	**Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)**
Headspace conc(ug/l)	**Is equal to (ppmv reading) x (mw/corrected gas density)**
Water Concentration(ug/l)	**Is equal to headspace conc(ug/l) x headspace vol/sample vol**
Saturation Concentration(ug/l)	**Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)**

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93369.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 11:08 am
Operator : johnn
Sample : jd40008-2
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 24 11:19:02 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.343	81298715	3312.942	PPMV
2)	Ethane	1.753	90795	2.068	PPMV
3)	Ethene	2.431	70541	1.597	PPMV
4)	Propane	2.863	178541	2.650	PPMV
5)	n-Butane	4.082	9300203	102.368	PPMV
6)	n-Pentane	5.112	45284583	397.471	PPMV
7)	Hexane	6.257	15297618	112.401	PPMV

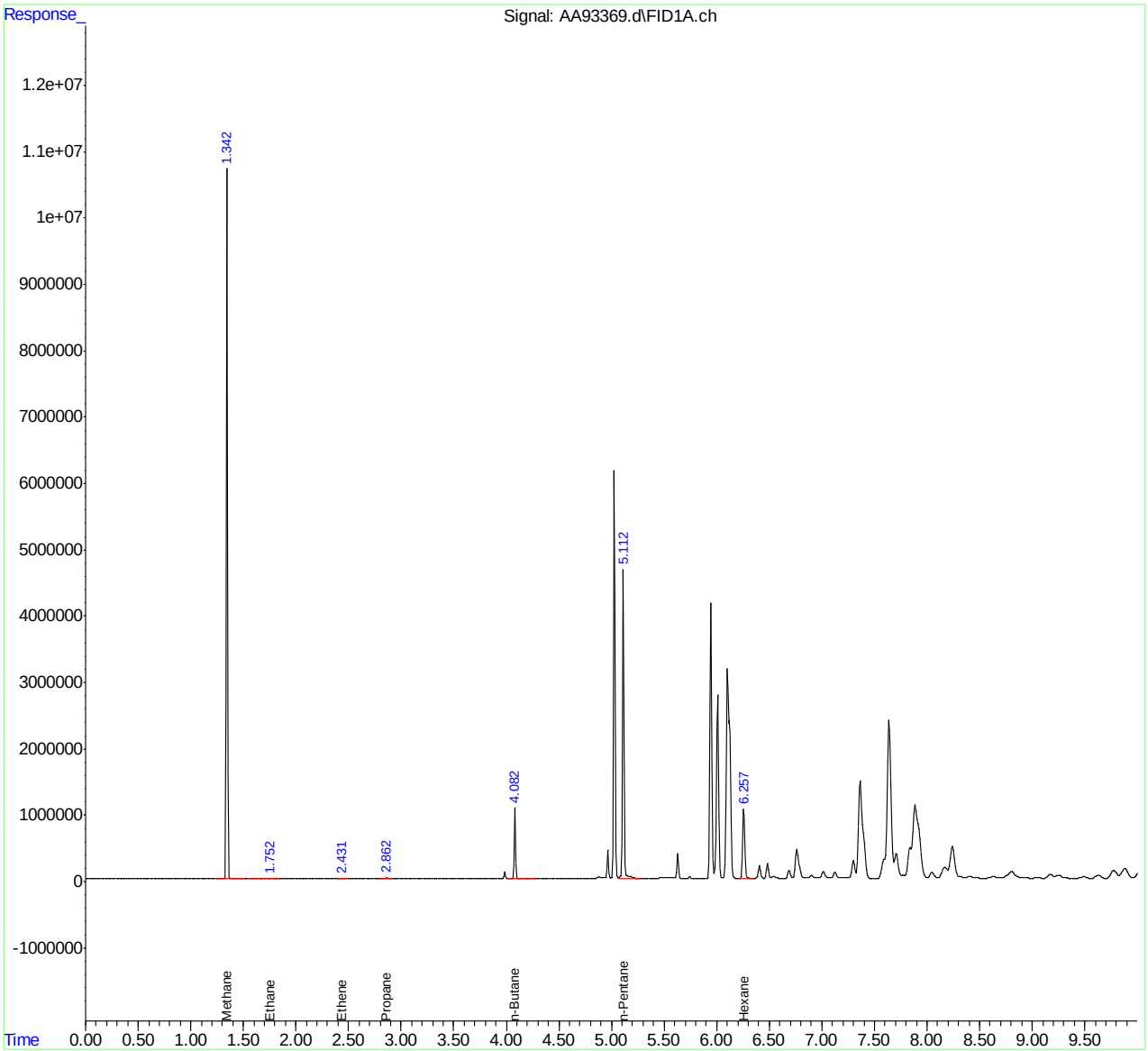
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93369.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 11:08 am
Operator : johnn
Sample : jd40008-2
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 10 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 24 11:19:02 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



1

Dissolved Gas Calculation Worksheet

Data File Name **AA93369.d**
Date Acquired **2/24/2022 11:08**
Sample Name **jd40008-2**
Sample Multiplier **1**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **39**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	81298715	98038	3308.95	2194.71	281.37	38340	76.639	358.01	0.11	**358.01**
Ethane	30	22.4	55.5	294	24.12	90795.433	0	2.07	2.57	0.33	27080	0.127	0.457	0.23	**0.457**
Ethene	28	22.4	55.5	294	24.12	70541	0	1.60	1.85	0.24	10440	0.238	0.475	0.31	**0.475**
Propane	44	22.4	55.5	294	24.12	178541	0	2.65	4.83	0.62	32552	0.20	0.82	0.32	**0.82**
n-Butane	42	22.4	55.5	294	24.12	9300203	0	102.37	178.23	22.85	12440	19.18	42.03	0.43	**42.03**
n-Pentane	58	22.4	55.5	294	24.12	45284583	0	397.47	955.65	122.52	56501	22.64	145.16	0.38	**145.16**
Hexane	58	22.4	55.5	294	24.12	15297618	0	112.40	270.25	34.65	39507	9.16	43.81	0.41	**43.81**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	**The volume of 1 mole of any gas at standard temperature and pressure(STP)**
Water g/Moles	**1 Liter of water is equal to 55.5g-moles**
Temp-kelvin	**Is defined as 273 + degress C**
Corrected Gas Density	**Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)**
Headspace conc(ug/l)	**Is equal to (ppmv reading) x (mw/corrected gas density)**
Water Concentration(ug/l)	**Is equal to headspace conc(ug/l) x headspace vol/sample vol**
Saturation Concentration(ug/l)	**Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)**

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93370.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 11:22 am
Operator : johnn
Sample : jd40008-2
Misc : GC59229,GAA2502,,,,,10
ALS Vial : 11 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Feb 25 10:29:48 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.354	12514079	5099.517	PPMV
2)	Ethane	1.761	13751	3.131	PPMV
3)	Ethene	2.435	17959	4.065	PPMV

(f)=RT Delta > 1/2 Window (m)=manual int.

11.1.11

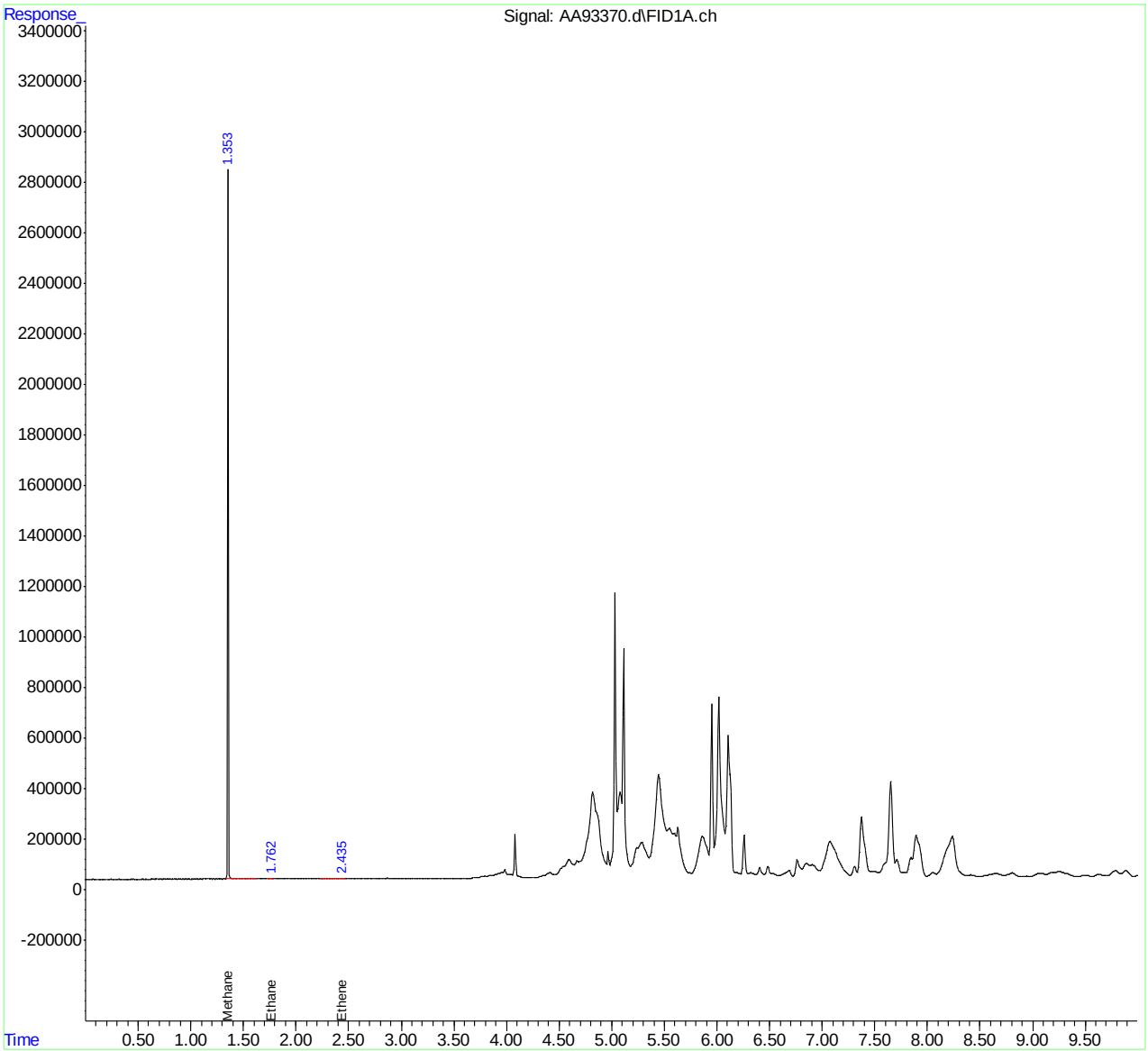
11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93370.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 11:22 am
Operator : johnn
Sample : jd40008-2
Misc : GC59229,GAA2502,,,,,10
ALS Vial : 11 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Feb 25 10:29:48 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



1

Dissolved Gas Calculation Worksheet

Data File Name **AA93370.d**
Date Acquired **2/24/2022 11:22**
Sample Name **jd40008-2**
Sample Multiplier **10**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **39**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	12514079	98038	5059.57	3355.84	430.24	38340	117.186	547.42	1.10	**547.42**
Ethane	30	22.4	55.5	294	24.12	13750.825	0	3.13	3.89	0.50	27080	0.193	0.692	2.30	**ND**
Ethene	28	22.4	55.5	294	24.12	17959	0	4.07	4.72	0.60	10440	0.605	1.210	3.10	**ND**
Propane	44	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	32552	#DIV/0!	#DIV/0!	3.20	**#DIV/0!**
n-Butane	42	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	12440	#DIV/0!	#DIV/0!	4.30	**#DIV/0!**
n-Pentane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	56501	#DIV/0!	#DIV/0!	3.80	**#DIV/0!**
Hexane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	39507	#DIV/0!	#DIV/0!	4.10	**#DIV/0!**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	**The volume of 1 mole of any gas at standard temperature and pressure(STP)**
Water g/Moles	**1 Liter of water is equal to 55.5g-moles**
Temp-kelvin	**Is defined as 273 + degress C**
Corrected Gas Density	**Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)**
Headspace conc(ug/l)	**Is equal to (ppmv reading) x (mw/corrected gas density)**
Water Concentration(ug/l)	**Is equal to headspace conc(ug/l) x headspace vol/sample vol**
Saturation Concentration(ug/l)	**Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)**

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93371.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 11:39 am
Operator : johnn
Sample : jd40008-3
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 25 10:30:40 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.346	1507072220	61413.557	PPMV
2)	Ethane	1.757	206472	4.702	PPMV
3)	Ethene	2.432	103429	2.341	PPMV

(f)=RT Delta > 1/2 Window (m)=manual int.

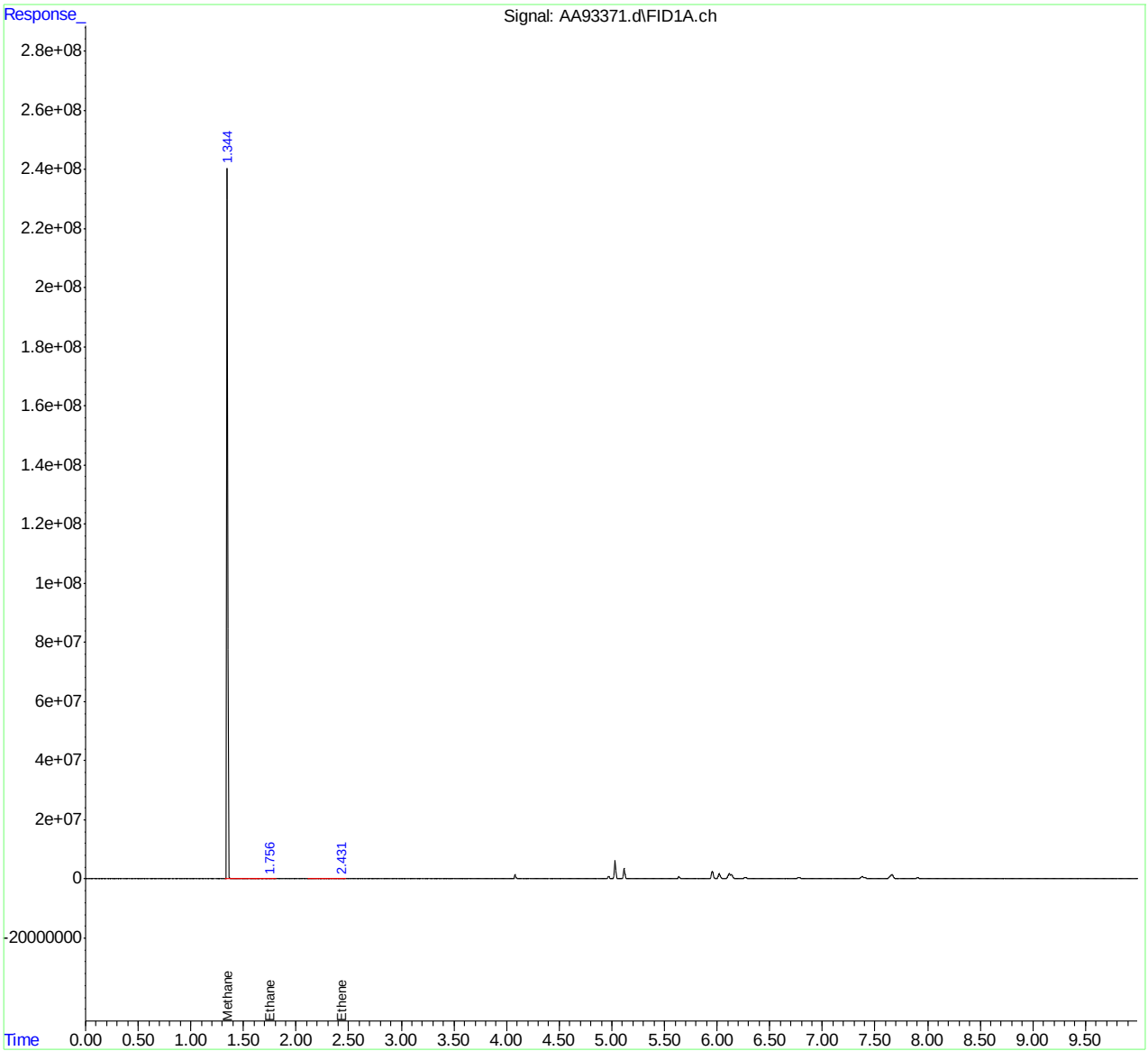
11.1.13 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93371.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 11:39 am
Operator : johnn
Sample : jd40008-3
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 25 10:30:40 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



1

Dissolved Gas Calculation Worksheet

Data File Name **AA93371.d**
Date Acquired **2/24/2022 11:39**
Sample Name **jd40008-3**
Sample Multiplier **1**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **39**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	1.51E+009	98038	61409.56	40730.83	5221.90	38340	1422.318	6644.22	0.11	**6644.22**
Ethane	30	22.4	55.5	294	24.12	206471.77	0	4.70	5.85	0.75	27080	0.289	1.039	0.23	**1.039**
Ethene	28	22.4	55.5	294	24.12	103429	0	2.34	2.72	0.35	10440	0.348	0.697	0.31	**0.697**
Propane	44	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	32552	#DIV/0!	#DIV/0!	0.32	**#DIV/0!**
n-Butane	42	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	12440	#DIV/0!	#DIV/0!	0.43	**#DIV/0!**
n-Pentane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	56501	#DIV/0!	#DIV/0!	0.38	**#DIV/0!**
Hexane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	39507	#DIV/0!	#DIV/0!	0.41	**#DIV/0!**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	**The volume of 1 mole of any gas at standard temperature and pressure(STP)**
Water g/Moles	**1 Liter of water is equal to 55.5g-moles**
Temp-kelvin	**Is defined as 273 + degress C**
Corrected Gas Density	**Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)**
Headspace conc(ug/l)	**Is equal to (ppmv reading) x (mw/corrected gas density)**
Water Concentration(ug/l)	**Is equal to headspace conc(ug/l) x headspace vol/sample vol**
Saturation Concentration(ug/l)	**Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)**

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93372.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 11:52 am
Operator : johnn
Sample : jd40008-3
Misc : GC59229,GAA2502,,,,,200
ALS Vial : 13 Sample Multiplier: 200

Integration File: autoint1.e
Quant Time: Feb 25 10:31:20 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Methane	1.356	10204593	83167.925	PPMV

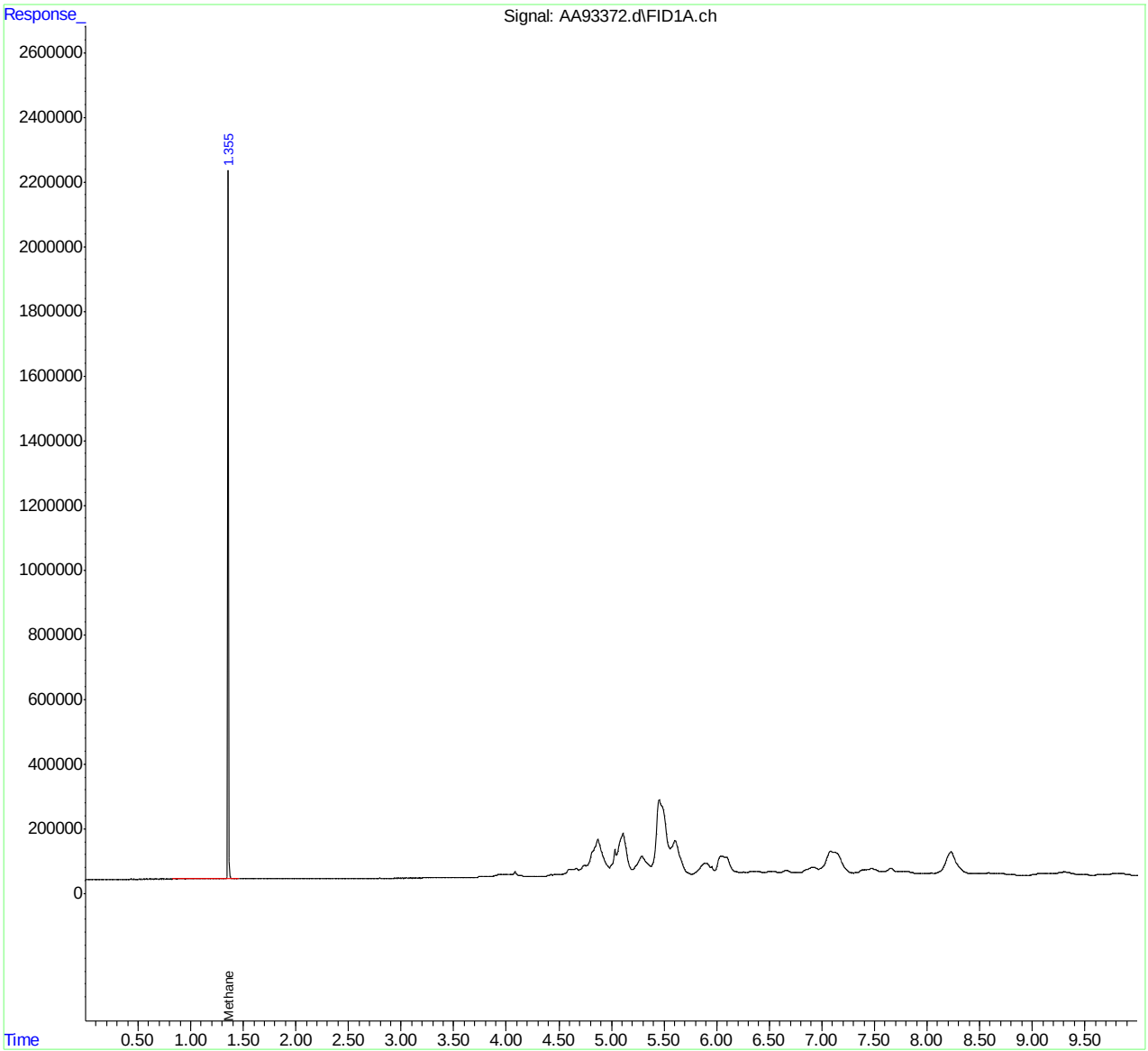
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93372.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 11:52 am
Operator : johnn
Sample : jd40008-3
Misc : GC59229,GAA2502,,,,,200
ALS Vial : 13 Sample Multiplier: 200

Integration File: autoint1.e
Quant Time: Feb 25 10:31:20 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



1

Dissolved Gas Calculation Worksheet

Data File Name **AA93372.d**
Date Acquired **2/24/2022 11:52**
Sample Name **jd40008-3**
Sample Multiplier **200**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **39**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	10204593	98038	82368.91	54632.44	7004.16	38340	1907.762	8911.92	22.00	**8911.92**
Ethane	30	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	27080	#DIV/0!	#DIV/0!	46.00	**#DIV/0!**
Ethene	28	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	10440	#DIV/0!	#DIV/0!	62.00	**#DIV/0!**
Propane	44	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	32552	#DIV/0!	#DIV/0!	64.00	**#DIV/0!**
n-Butane	42	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	12440	#DIV/0!	#DIV/0!	86.00	**#DIV/0!**
n-Pentane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	56501	#DIV/0!	#DIV/0!	76.00	**#DIV/0!**
Hexane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	39507	#DIV/0!	#DIV/0!	82.00	**#DIV/0!**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	**The volume of 1 mole of any gas at standard temperature and pressure(STP)**
Water g/Moles	**1 Liter of water is equal to 55.5g-moles**
Temp-kelvin	**Is defined as 273 + degress C**
Corrected Gas Density	**Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)**
Headspace conc(ug/l)	**Is equal to (ppmv reading) x (mw/corrected gas density)**
Water Concentration(ug/l)	**Is equal to headspace conc(ug/l) x headspace vol/sample vol**
Saturation Concentration(ug/l)	**Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)**

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93373.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 12:07 pm
Operator : johnn
Sample : jd40008-4
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 25 10:32:26 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Methane	1.349	79441362	3237.255	PPMV

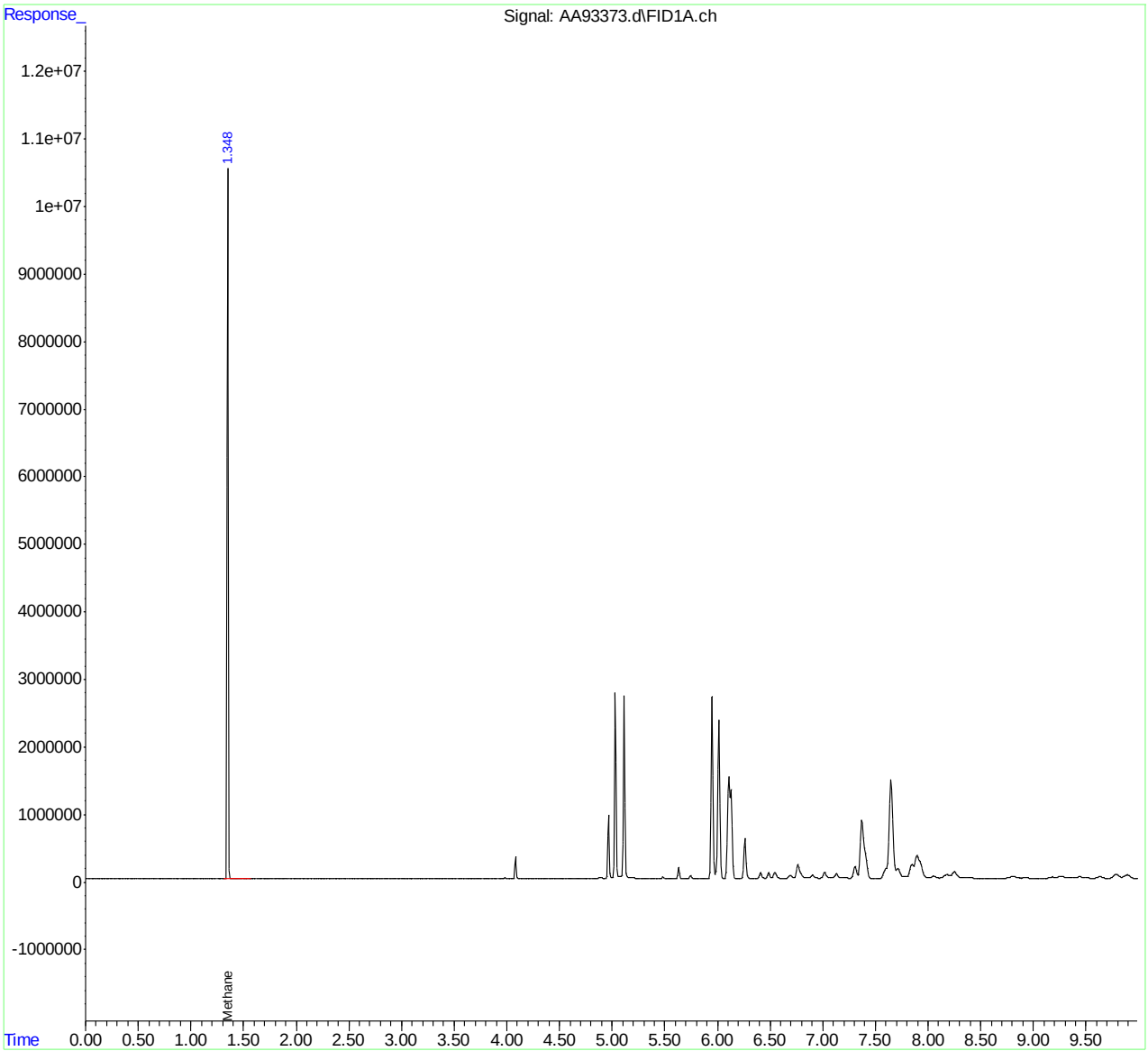
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93373.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 12:07 pm
Operator : johnn
Sample : jd40008-4
Misc : GC59229,GAA2502,,,,,1
ALS Vial : 14 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 25 10:32:26 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



MAA2456.M Fri Feb 25 10:32:47 2022 Page: 2

1

Dissolved Gas Calculation Worksheet

Data File Name **AA93373.d**
Date Acquired **2/24/2022 12:07**
Sample Name **jd40008-4**
Sample Multiplier **1**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **39**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	79441362	98038	3233.26	2144.51	274.94	38340	74.886	349.82	0.11	**349.82**
Ethane	30	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	27080	#DIV/0!	#DIV/0!	0.23	**#DIV/0!**
Ethene	28	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	10440	#DIV/0!	#DIV/0!	0.31	**#DIV/0!**
Propane	44	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	32552	#DIV/0!	#DIV/0!	0.32	**#DIV/0!**
n-Butane	42	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	12440	#DIV/0!	#DIV/0!	0.43	**#DIV/0!**
n-Pentane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	56501	#DIV/0!	#DIV/0!	0.38	**#DIV/0!**
Hexane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	39507	#DIV/0!	#DIV/0!	0.41	**#DIV/0!**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	**The volume of 1 mole of any gas at standard temperature and pressure(STP)**
Water g/Moles	**1 Liter of water is equal to 55.5g-moles**
Temp-kelvin	**Is defined as 273 + degress C**
Corrected Gas Density	**Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)**
Headspace conc(ug/l)	**Is equal to (ppmv reading) x (mw/corrected gas density)**
Water Concentration(ug/l)	**Is equal to headspace conc(ug/l) x headspace vol/sample vol**
Saturation Concentration(ug/l)	**Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)**

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93374.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 12:20 pm
Operator : johnn
Sample : jd40008-4
Misc : GC59229,GAA2502,,,,,20
ALS Vial : 15 Sample Multiplier: 20

Integration File: autoint1.e
Quant Time: Feb 25 10:33:04 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) Methane	1.357	6405982	5220.906	PPMV

(f)=RT Delta > 1/2 Window (m)=manual int.

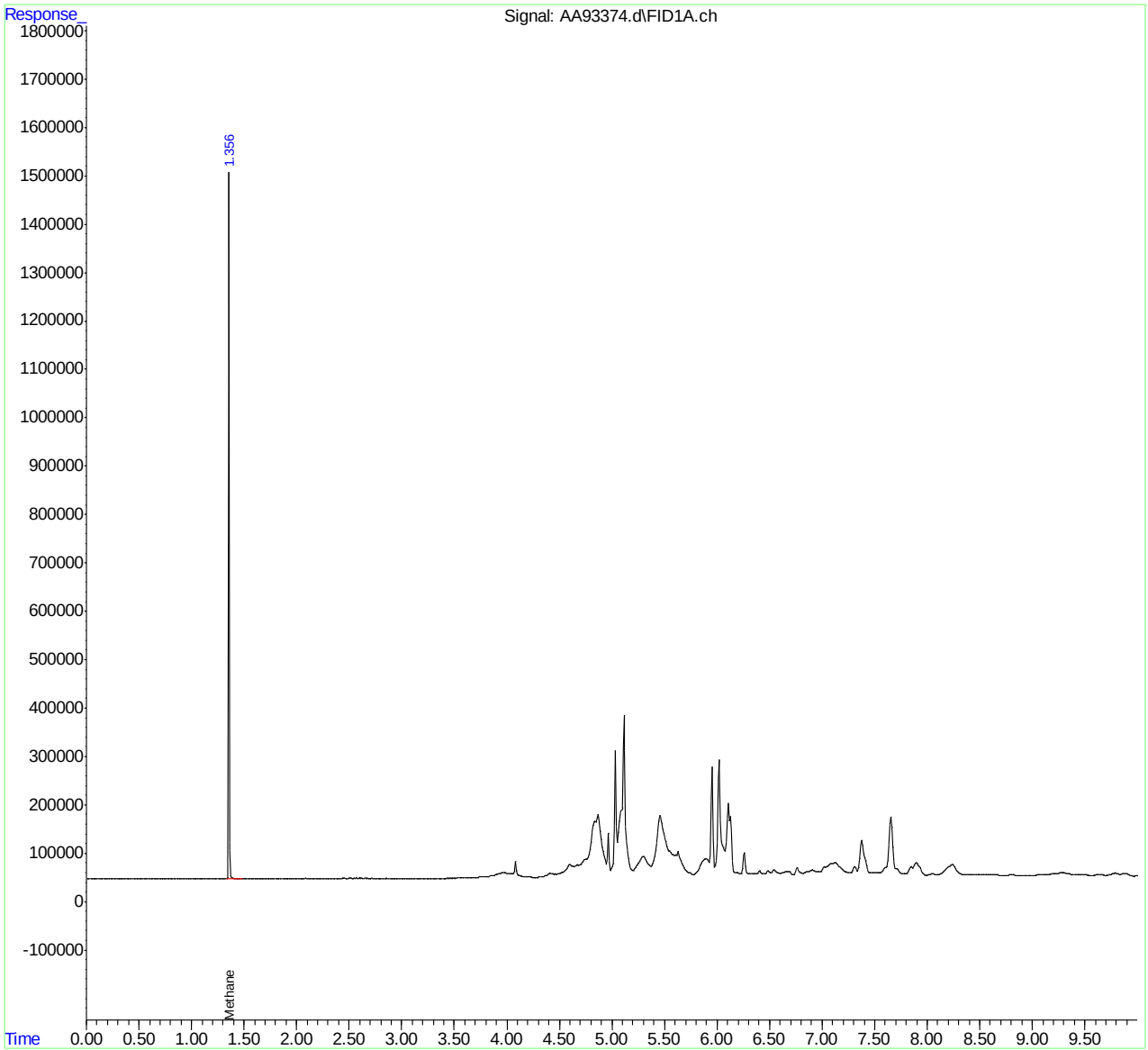
11.1.19 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93374.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 12:20 pm
Operator : johnn
Sample : jd40008-4
Misc : GC59229,GAA2502,,,,,20
ALS Vial : 15 Sample Multiplier: 20

Integration File: autoint1.e
Quant Time: Feb 25 10:33:04 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



1

Dissolved Gas Calculation Worksheet

Data File Name **AA93374.d**
Date Acquired **2/24/2022 12:20**
Sample Name **jd40008-4**
Sample Multiplier **20**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **39**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	6405982	98038	5141.00	3409.85	437.16	38340	119.072	556.23	2.20	**556.23**
Ethane	30	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	27080	#DIV/0!	#DIV/0!	4.60	**#DIV/0!**
Ethene	28	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	10440	#DIV/0!	#DIV/0!	6.20	**#DIV/0!**
Propane	44	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	32552	#DIV/0!	#DIV/0!	6.40	**#DIV/0!**
n-Butane	42	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	12440	#DIV/0!	#DIV/0!	8.60	**#DIV/0!**
n-Pentane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	56501	#DIV/0!	#DIV/0!	7.60	**#DIV/0!**
Hexane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	39507	#DIV/0!	#DIV/0!	8.20	**#DIV/0!**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	The volume of 1 mole of any gas at standard temperature and pressure(STP)
Water g/Moles	1 Liter of water is equal to 55.5g-moles
Temp-kelvin	Is defined as 273 + degress C
Corrected Gas Density	Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)
Headspace conc(ug/l)	Is equal to (ppmv reading) x (mw/corrected gas density)
Water Concentration(ug/l)	Is equal to headspace conc(ug/l) x headspace vol/sample vol
Saturation Concentration(ug/l)	Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42670.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 1:53 am
Operator : rebeccak
Sample : op38248-mb1
Misc : op38248,g7g1516,35.0,,,2,1
ALS Vial : 13 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 16:53:01 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	2.714	3.130	47843161	31419901	14.201	12.406
Spiked Amount 10.000			Recovery =		142.01%	124.06%
Target Compounds						

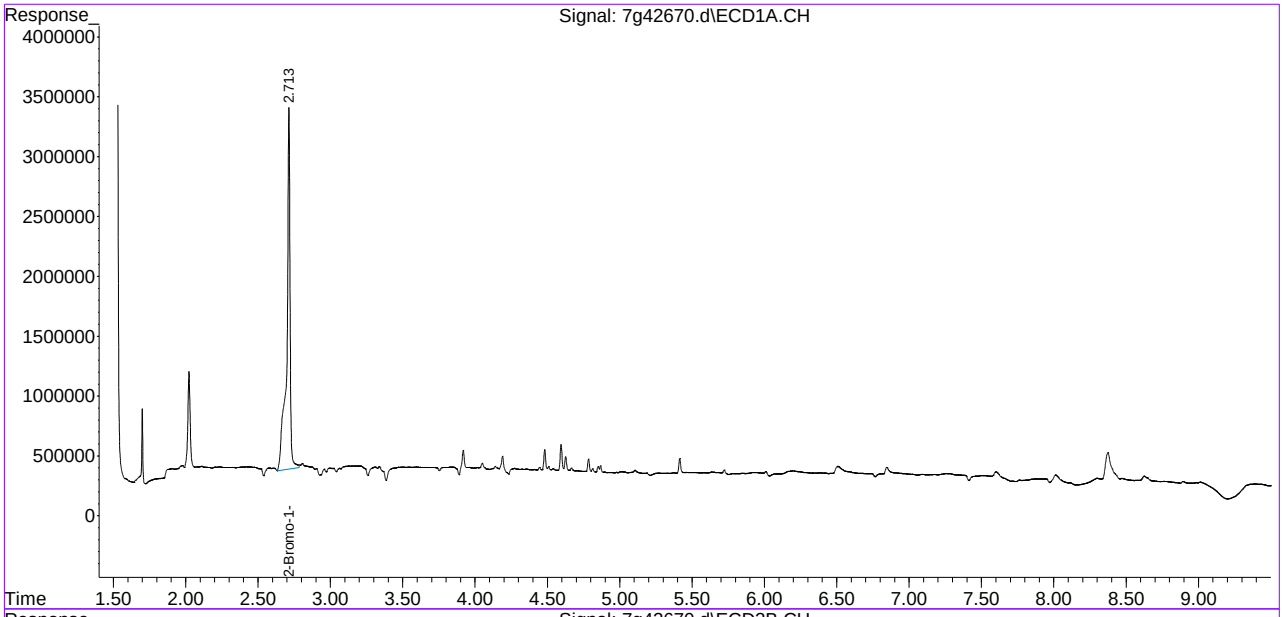
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

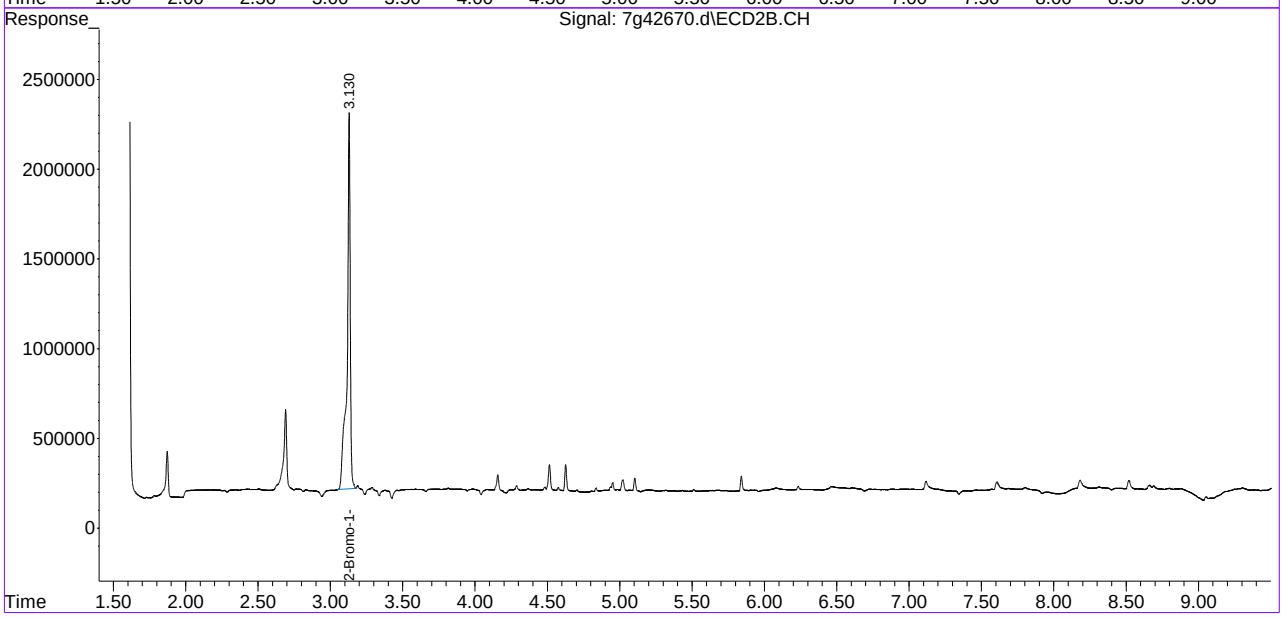
Quantitation Report (QT Reviewed)

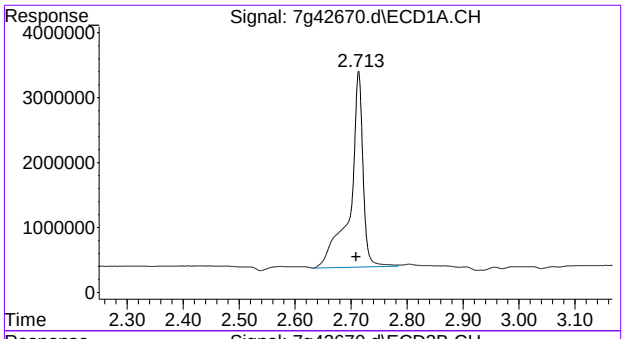
Data Path : C:\msdchem\1\data\sarah\7g1516\
Data File : 7g42670.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Feb 2022 1:53 am
Operator : rebeccak
Sample : op38248-mb1
Misc : op38248,g7g1516,35.0,,,2,1
ALS Vial : 13 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Feb 22 16:53:01 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1500.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Dec 29 20:00:49 2021
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

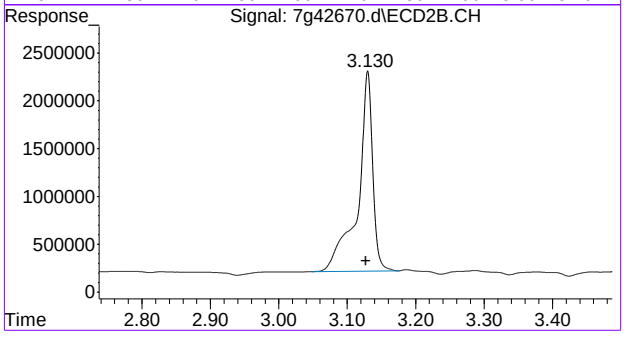






#1 2-Bromo-1-Chloropropane

R.T.: 2.714 min
Delta R.T.: 0.005 min
Response: 47843161
Conc: 14.20 PPB



#1 2-Bromo-1-Chloropropane

R.T.: 3.130 min
Delta R.T.: 0.003 min
Response: 31419901
Conc: 12.41 PPB

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93363.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 9:37 am
Operator : johnn
Sample : mb
Misc : GC59224,GAA2502,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 25 09:50:22 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df

	Compound	R.T.	Response	Conc	Units
Target Compounds					
1)	Methane	1.348	57766	2.354	PPMV

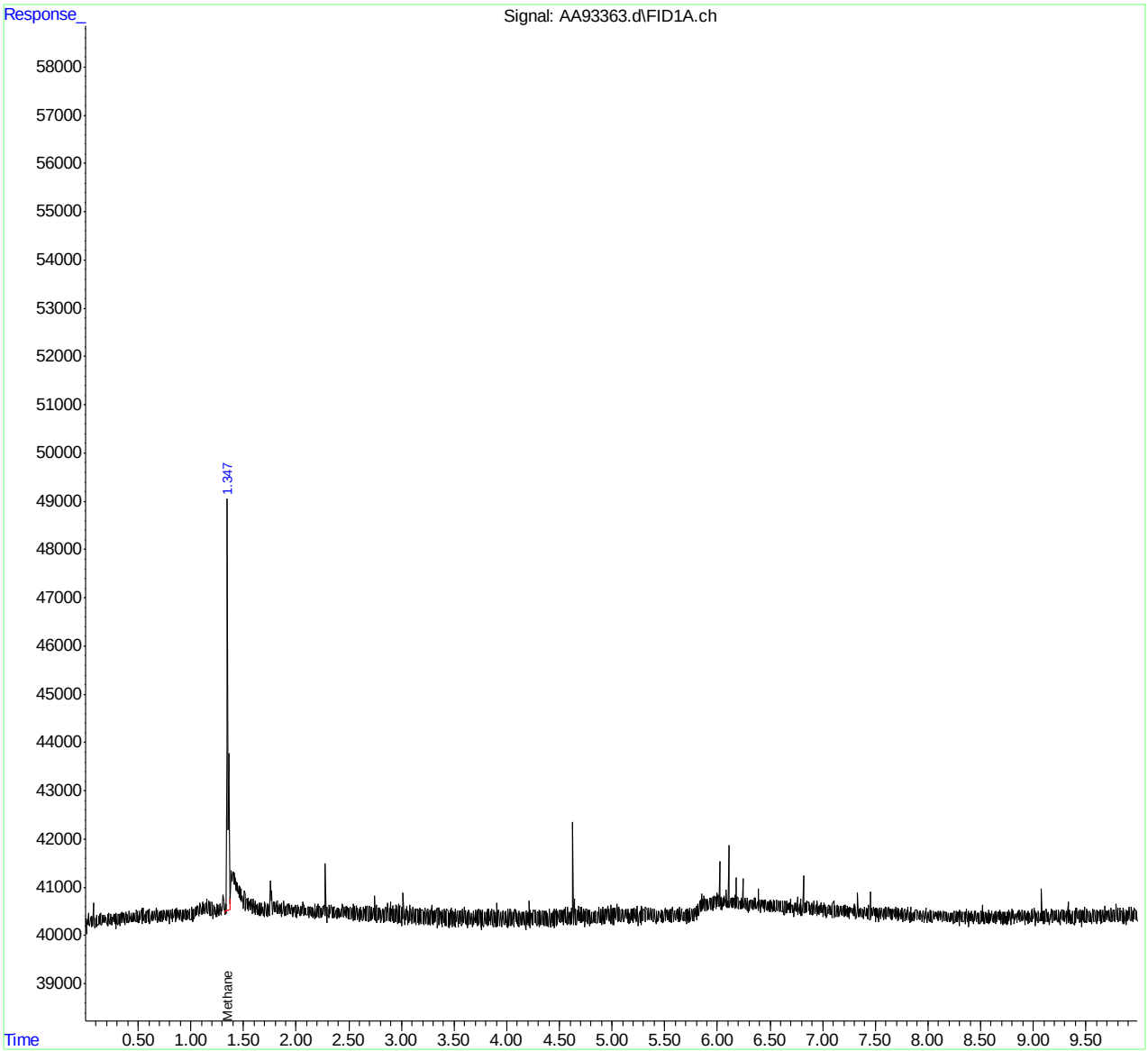
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : AA93363.d
Signal(s) : FID1A.ch
Acq On : 24 Feb 2022 9:37 am
Operator : johnn
Sample : mb
Misc : GC59224,GAA2502,,,,,1
ALS Vial : 4 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Feb 25 09:50:22 2022
Quant Method : C:\MSDCHEM\1\METHODS\MAA2456.M
Quant Title : METHOD V8015 DG by GC-FID
QLast Update : Mon Dec 06 16:10:39 2021
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 0.5 ml
Signal Phase : Rt-Alumina BOND/Na2SO4
Signal Info : 50m x 0.53 mm ID x 10um df



Dissolved Gas Calculation Worksheet

Data File Name **AA93363.d**
Date Acquired 2/24/2022 9:37
Sample Name **mb**
Sample Multiplier **1**
Temperature(C) **21**
Headspace Vol. (cc) **5**
Sample Vol(cc) **38**

Compound	MW	Molar Volume(L)	Water g-moles/L	Temp K	Corrected Gas dens.	Peak Area	Helium Blank	Headspace (ppmv)*	Headspace (ug/l)	Water (ug/l)	Henry's Constant	Saturation Conc.(ug/l)	Total (ug/L)	RL (ug/l)	Report (ug/l)
Methane	16	22.4	55.5	294	24.12	57766.388	98038	-1.64	-1.09	-0.14	38340	-0.038	-0.18	0.11	**ND**
Ethane	30	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	27080	#DIV/0!	#DIV/0!	0.23	**#DIV/0!**
Ethene	28	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	10440	#DIV/0!	#DIV/0!	0.31	**#DIV/0!**
Propane	44	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	32552	#DIV/0!	#DIV/0!	0.32	**#DIV/0!**
n-Butane	42	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	12440	#DIV/0!	#DIV/0!	0.43	**#DIV/0!**
n-Pentane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	56501	#DIV/0!	#DIV/0!	0.38	**#DIV/0!**
Hexane	58	22.4	55.5	294	24.12	0	0	#DIV/0!	#DIV/0!	#DIV/0!	39507	#DIV/0!	#DIV/0!	0.41	**#DIV/0!**

*** ppmv is corrected for helium blank background peak area**

Definitions,

Molar Volume	**The volume of 1 mole of any gas at standard temperature and pressure(STP)**
Water g/Moles	**1 Liter of water is equal to 55.5g-moles**
Temp-kelvin	**Is defined as 273 + degress C**
Corrected Gas Density	**Gas density corrected for temperature is equal to (molar volume) x (temp-k/273)**
Headspace conc(ug/l)	**Is equal to (ppmv reading) x (mw/corrected gas density)**
Water Concentration(ug/l)	**Is equal to headspace conc(ug/l) x headspace vol/sample vol**
Saturation Concentration(ug/l)	**Gas which remains at equilibrium in the sample is equal to (headspace conc-ppm) x (mw) x (55.5)/(Henry's Constant)**

Henry's Constants

temp-c	20	21	22	23	24	25	26	27	28	29	30
Methane	37600	38340	39080	39820	40560	41300	42020	42740	43460	44180	44900
Ethane	26300	27080	27860	28640	29420	30200	31000	31800	32600	33400	34200
Ethene	10200	10440	10680	10920	11160	11400	11660	11920	12180	12440	12700
Propane	31474	32552	33643	34744	35857	36978	38107	39244	40387	41535	42688
Proylene	11959	12440	12937	13451	13981	14529	15094	15677	16279	16899	17539
IsoButane	54757	56501	58287	60118	61993	63913	65879	67892	69953	72062	74220
n-Butane	38111	39507	40945	42425	43947	45514	47125	48782	50486	52238	52239
Oxygen	40100	40840	41580	42320	43060	43800	44540	45280	46020	46760	47500
CO	52600	53680	54760	55840	56920	58000	58800	59600	60400	61200	62000
CO2	14200	14640	15080	15520	15960	16400	16840	17280	17720	18160	18600
Nitrogen	80400	81620	82840	84060	85280	86500	87680	88860	90040	91220	92400
Hydrogen	68300	68780	69260	69740	70220	70700	71140	71580	72020	72460	72900

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:45	MA51950-STD1	1		STDA
08:50	MA51950-STD2	1		STDB
08:56	MA51950-ICV1	1		
09:04	MA51950-ICB1	1		
09:11	MA51950-ICCV1	1		
09:23	MA51950-CCB1	1		
09:30	MA51950-CRI1	1		
09:35	MA51950-CRID1	1		
09:40	MA51950-ICSA1	1		
09:45	MA51950-ICSAB1	1		
09:50	MA51950-HSTD1	1		
09:56	MA51950-HSTD2	1		
10:01	ZZZZZZ	1		
10:06	ZZZZZZ	1		
10:11	ZZZZZZ	1		
10:16	MA51950-CCV1	1		
10:21	MA51950-CCB2	1		
10:26	ZZZZZZ	1		
10:31	ZZZZZZ	1		
10:36	MP31384-S1	5		
10:41	MP31384-S2	5		
10:46	JD39923-6A	5		(sample used for QC only; not part of login JD40008)
10:51	MP31384-SD1	25		
10:56	ZZZZZZ	5		
11:01	ZZZZZZ	5		
11:06	ZZZZZZ	1		
11:11	MA51950-CCV2	1		
11:16	MA51950-CCB3	1		
11:21	ZZZZZZ	1		
11:26	ZZZZZZ	5		
11:31	ZZZZZZ	5		
11:36	MP31401-B1	1		
11:40	MP31401-MB1	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:45	MP31401-B2	1		
11:50	MP31401-S1	1		
11:55	MP31401-S2	1		
12:01	JD40008-4	1		
12:06	MA51950-CCV3	1		
12:11	MA51950-CCB4	1		
12:16	MP31401-SD1	5		
12:21	JD40008-1	1		
12:26	JD40008-2	1		
12:31	JD40008-3	1		
---------->	Last reportable sample/prep for job JD40008			
12:38	MA51950-CRI2	1		
12:43	MA51950-ICSA2	1		
12:48	MA51950-ICSAB2	1		
12:53	MA51950-CCV4	1		
12:58	MA51950-CCB5	1		
---------->	Last reportable CCB for job JD40008			
13:03	ZZZZZZ	20		
13:08	ZZZZZZ	5		
13:13	ZZZZZZ	20		
13:18	ZZZZZZ	10		
13:23	ZZZZZZ	20		
13:28	ZZZZZZ	10		
13:33	ZZZZZZ	1		
13:38	ZZZZZZ	1		
13:43	MP31403-S1	5		
13:48	MA51950-CCV5	1		
13:53	MA51950-CCB6	1		
13:58	MP31403-S2	5		
14:03	JD40046-1A	5		(sample used for QC only; not part of login JD40008)
14:08	MP31403-SD1	25		
14:13	ZZZZZZ	1		
14:18	ZZZZZZ	1		
14:23	ZZZZZZ	1		
14:28	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:33	ZZZZZZ	1		
14:37	ZZZZZZ	1		
14:42	MA51950-CCV6	1		
14:47	MA51950-CCB7	1		
14:52	ZZZZZZ	1		
14:57	ZZZZZZ	1		
15:02	ZZZZZZ	1		
15:07	ZZZZZZ	1		
15:12	ZZZZZZ	1		
15:17	ZZZZZZ	1		
15:22	ZZZZZZ	1		
15:27	ZZZZZZ	1		
15:32	MA51950-CCV7	1		
15:37	MA51950-CCB8	1		
15:42	MP31429-MB1	1		
15:47	MP31429-LB1	1		
15:52	MP31429-B1	1		
15:57	MP31429-LS1	1		
16:02	MP31429-S1	1		
16:07	MP31429-S2	1		
16:11	JD39985-1A	1		(sample used for QC only; not part of login JD40008)
16:17	MP31429-SD1	5		
16:22	ZZZZZZ	1		
16:27	ZZZZZZ	1		
16:32	MA51950-CCV8	1		
16:37	MA51950-CCB9	1		
16:42	ZZZZZZ	1		
16:47	ZZZZZZ	1		
16:52	ZZZZZZ	1		
16:57	ZZZZZZ	1		
17:02	ZZZZZZ	1		
17:07	ZZZZZZ	1		
17:12	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:17	ZZZZZZ	1		
17:22	ZZZZZZ	1		
17:30	MA51950-CCV9	1		
17:35	MA51950-CCB10	1		
17:40	MP31434-MB1	1		
17:44	MP31434-LB1	1		
17:49	MP31434-B1	1		
17:54	MP31434-LS1	1		
17:59	MP31434-S1	1		
18:04	MP31434-S2	1		
18:10	DA42113-1	1		(sample used for QC only; not part of login JD40008)
18:15	MP31434-SD1	5		
18:22	MA51950-CCV10	1		
18:27	MA51950-CCB11	1		
18:34	ZZZZZZ	1		
18:39	ZZZZZZ	1		
18:44	ZZZZZZ	1		
18:49	ZZZZZZ	1		
18:54	ZZZZZZ	1		
18:59	ZZZZZZ	1		
19:04	ZZZZZZ	1		
19:09	MA51950-CCV11	1		
19:14	MA51950-CCB12	1		
19:19	ZZZZZZ	1		
19:24	ZZZZZZ	1		
19:24	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Element: Dilution	Ca	Fe	
08:56	MA51950-ICV1	1	X	X	
09:04	MA51950-ICB1	1	X	X	
09:11	MA51950-ICCV1	1	X	X	
09:23	MA51950-CCB1	1	X	X	
09:30	MA51950-CRI1	1	X	X	
09:35	MA51950-CRID1	1	X	X	
09:40	MA51950-ICSA1	1	X	X	
09:45	MA51950-ICSAB1	1	X	X	
09:50	MA51950-HSTD1	1	X	X	
09:56	MA51950-HSTD2	1	X	X	
10:01	ZZZZZZ	1			
10:06	ZZZZZZ	1			
10:11	ZZZZZZ	1			
10:16	MA51950-CCV1	1	X	X	
10:21	MA51950-CCB2	1	X	X	
10:26	ZZZZZZ	1			
10:31	ZZZZZZ	1			
10:36	MP31384-S1	5			
10:41	MP31384-S2	5			
10:46	JD39923-6A	5			(a)
10:51	MP31384-SD1	25			
10:56	ZZZZZZ	5			
11:01	ZZZZZZ	5			
11:06	ZZZZZZ	1			
11:11	MA51950-CCV2	1	X	X	
11:16	MA51950-CCB3	1	X	X	
11:21	ZZZZZZ	1			
11:26	ZZZZZZ	5			
11:31	ZZZZZZ	5			
11:36	MP31401-B1	1	X	X	
11:40	MP31401-MB1	1	X	X	
11:45	MP31401-B2	1	X	X	
11:50	MP31401-S1	1	X	X	
		Element:	Ca	Fe	

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Element: Dilution	Ca	Fe	
11:55	MP31401-S2	1	X	X	
12:01	JD40008-4	1	X	X	
12:06	MA51950-CCV3	1	X	X	
12:11	MA51950-CCB4	1	X	X	
12:16	MP31401-SD1	5	X	X	
12:21	JD40008-1	1	X	X	
12:26	JD40008-2	1	X	X	
12:31	JD40008-3	1	X	X	
12:38	MA51950-CRI2	1	X	X	
12:43	MA51950-ICSA2	1	X	X	
12:48	MA51950-ICSAB2	1	X	X	
12:53	MA51950-CCV4	1	X	X	
12:58	MA51950-CCB5	1	X	X	
13:03	ZZZZZZ	20			
13:08	ZZZZZZ	5			
13:13	ZZZZZZ	20			
13:18	ZZZZZZ	10			
13:23	ZZZZZZ	20			
13:28	ZZZZZZ	10			
13:33	ZZZZZZ	1			
13:38	ZZZZZZ	1			
13:43	MP31403-S1	5			
13:48	MA51950-CCV5	1	X	X	
13:53	MA51950-CCB6	1	X	X	
13:58	MP31403-S2	5			
14:03	JD40046-1A	5			(a)
14:08	MP31403-SD1	25			
14:13	ZZZZZZ	1			
14:18	ZZZZZZ	1			
14:23	ZZZZZZ	1			
14:28	ZZZZZZ	1			
14:33	ZZZZZZ	1			
14:37	ZZZZZZ	1			
		Element:	Ca	Fe	

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Element: Dilution	Ca	Fe	
14:42	MA51950-CCV6	1	X	X	
14:47	MA51950-CCB7	1	X	X	
14:52	ZZZZZZ	1			
14:57	ZZZZZZ	1			
15:02	ZZZZZZ	1			
15:07	ZZZZZZ	1			
15:12	ZZZZZZ	1			
15:17	ZZZZZZ	1			
15:22	ZZZZZZ	1			
15:27	ZZZZZZ	1			
15:32	MA51950-CCV7	1	X	X	
15:37	MA51950-CCB8	1	X	X	
15:42	MP31429-MB1	1			
15:47	MP31429-LB1	1			
15:52	MP31429-B1	1			
15:57	MP31429-LS1	1			
16:02	MP31429-S1	1			
16:07	MP31429-S2	1			
16:11	JD39985-1A	1			(a)
16:17	MP31429-SD1	5			
16:22	ZZZZZZ	1			
16:27	ZZZZZZ	1			
16:32	MA51950-CCV8	1	X	X	
16:37	MA51950-CCB9	1	X	X	
16:42	ZZZZZZ	1			
16:47	ZZZZZZ	1			
16:52	ZZZZZZ	1			
16:57	ZZZZZZ	1			
17:02	ZZZZZZ	1			
17:07	ZZZZZZ	1			
17:12	ZZZZZZ	1			
17:17	ZZZZZZ	1			
17:22	ZZZZZZ	1			
		Element:	Ca	Fe	

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Element: Dilution	Ca	Fe	
17:30	MA51950-CCV9	1	X	X	
17:35	MA51950-CCB10	1	X	X	
17:40	MP31434-MB1	1			
17:44	MP31434-LB1	1			
17:49	MP31434-B1	1			
17:54	MP31434-LS1	1			
17:59	MP31434-S1	1			
18:04	MP31434-S2	1			
18:10	DA42113-1	1			(a)
18:15	MP31434-SD1	5			
18:22	MA51950-CCV10	1	X	X	
18:27	MA51950-CCB11	1	X	X	
18:34	ZZZZZZ	1			
18:39	ZZZZZZ	1			
18:44	ZZZZZZ	1			
18:49	ZZZZZZ	1			
18:54	ZZZZZZ	1			
18:59	ZZZZZZ	1			
19:04	ZZZZZZ	1			
19:09	MA51950-CCV11	1	X	X	
19:14	MA51950-CCB12	1	X	X	
19:19	ZZZZZZ	1			
19:24	ZZZZZZ	1			
19:24	ZZZZZZ	1			

(a) Sample used for QC only; not part of login JD40008.

Element:	Ca	Fe

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:45	MA51950-STD1	5202 R	200840 R	27584 R	11534 R
08:50	MA51950-STD2	4945	189090	27066	10475
08:56	MA51950-ICV1	5085	194330	27211	10753
09:04	MA51950-ICB1	5262	204680	27909	11609
09:11	MA51950-ICCV1	5106	197260	27476	10762
09:23	MA51950-CCB1	5214	208200	28183	11467
09:30	MA51950-CRI1	5391	210880	28981	11722
09:35	MA51950-CRID1	5415	212180	29044	11857
09:40	MA51950-ICSA1	4797	185860	27201	9824
09:45	MA51950-ICSAB1	4801	185470	27135	9841
09:50	MA51950-HSTD1	5175	203080	28618	11465
09:56	MA51950-HSTD2	4828	187770	27013	9849
10:01	ZZZZZZ	5240	205120	28018	11644
10:06	ZZZZZZ	5149	207650	28027	11525
10:11	ZZZZZZ	5513	216490	29470	12064
10:16	MA51950-CCV1	5148	200580	27836	10757
10:21	MA51950-CCB2	5376	209320	28480	11713
10:26	ZZZZZZ	5334	210730	28626	11605
10:31	ZZZZZZ	5215	204010	28465	10980
10:36	MP31384-S1	5079	198590	27891	10491
10:41	MP31384-S2	5071	198170	27716	10481
10:46	JD39923-6A	5070	199160	27784	10529
10:51	MP31384-SD1	5251	206230	28185	11207
10:56	ZZZZZZ	5245	204800	28255	11130
11:01	ZZZZZZ	5203	204080	28118	10923
11:06	ZZZZZZ	5358	211100	28773	11658
11:11	MA51950-CCV2	5145	199980	27876	10772
11:16	MA51950-CCB3	5322	208620	28135	11635
11:21	ZZZZZZ	5212	204150	28355	11005
11:26	ZZZZZZ	5132	201700	28155	10752
11:31	ZZZZZZ	5182	203100	28386	10870
11:36	MP31401-B1	5229	203960	28640	11029
11:40	MP31401-MB1	5356	210090	28681	11671

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:45	MP31401-B2	5237	202820	28401	11045
11:50	MP31401-S1	5092	198040	28193	10433
11:55	MP31401-S2	5087	198040	28290	10442
12:01	JD40008-4	5092	200070	28255	10550
12:06	MA51950-CCV3	5182	199530	27894	10857
12:11	MA51950-CCB4	5323	207810	28437	11658
12:16	MP31401-SD1	5250	205470	28369	11282
12:21	JD40008-1	5357	206940	29184	10996
12:26	JD40008-2	5230	203160	28491	10881
12:31	JD40008-3	5196	203400	27925	10869
12:38	MA51950-CRI2	5417	211750	28610	11795
12:43	MA51950-ICSA2	4815	185070	27185	9870
12:48	MA51950-ICSAB2	4857	187250	27432	9960
12:53	MA51950-CCV4	5203	200960	28094	10907
12:58	MA51950-CCB5	5386	210660	28614	11773
13:03	ZZZZZZ	5287	206180	28327	11839
13:08	ZZZZZZ	5341	207400	28657	11261
13:13	ZZZZZZ	5294	206770	28509	11853
13:18	ZZZZZZ	5417	210250	28721	11710
13:23	ZZZZZZ	5279	206220	28343	11813
13:28	ZZZZZZ	5408	211110	28763	11670
13:33	ZZZZZZ	5354	213710	29191	11852
13:38	ZZZZZZ	5321	204860	29182	11301
13:43	MP31403-S1	5070	197690	28357	10478
13:48	MA51950-CCV5	5213	201590	28572	10933
13:53	MA51950-CCB6	5379	210440	28676	11788
13:58	MP31403-S2	5023	195720	27633	10415
14:03	JD40046-1A	5066	198090	27990	10485
14:08	MP31403-SD1	5268	206390	28532	11245
14:13	ZZZZZZ	5370	211670	28942	11693
14:18	ZZZZZZ	5342	210940	29074	11591
14:23	ZZZZZZ	5350	209590	29290	11584
14:28	ZZZZZZ	5241	206630	28284	11289

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:33	ZZZZZZ	5321	208580	28723	11454
14:37	ZZZZZZ	5347	210440	29103	11626
14:42	MA51950-CCV6	5190	200900	28064	10891
14:47	MA51950-CCB7	5301	208550	28104	11653
14:52	ZZZZZZ	5276	207300	28214	11409
14:57	ZZZZZZ	5042	200190	27838	10641
15:02	ZZZZZZ	5244	206270	28057	11255
15:07	ZZZZZZ	5223	206540	27845	11165
15:12	ZZZZZZ	5405	213330	28670	11573
15:17	ZZZZZZ	5350	211440	28637	11578
15:22	ZZZZZZ	5371	212710	28557	11629
15:27	ZZZZZZ	5317	211210	28366	11492
15:32	MA51950-CCV7	5228	204150	27876	10882
15:37	MA51950-CCB8	5425	212980	28386	11781
15:42	MP31429-MB1	5438	214740	28680	11781
15:47	MP31429-LB1	4887	187460	27692	9734
15:52	MP31429-B1	5287	206120	27927	11121
15:57	MP31429-LS1	4878	186650	27392	9560
16:02	MP31429-S1	4918	188320	27462	9640
16:07	MP31429-S2	4914	188590	27260	9636
16:11	JD39985-1A	4876	186480	27125	9648
16:17	MP31429-SD1	5112	199060	27133	10511
16:22	ZZZZZZ	4662	180100	26433	9228
16:27	ZZZZZZ	4830	185620	27170	9619
16:32	MA51950-CCV8	5243	203950	27384	10958
16:37	MA51950-CCB9	5389	213560	28247	11761
16:42	ZZZZZZ	4876	186390	27192	9691
16:47	ZZZZZZ	4880	185740	27046	9688
16:52	ZZZZZZ	4925	187920	27561	9773
16:57	ZZZZZZ	4945	186750	27497	9797
17:02	ZZZZZZ	4911	188740	28054	9793
17:07	ZZZZZZ	4989	192070	28221	9870
17:12	ZZZZZZ	4888	186940	27052	9750

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA51950
Parameters: Ca,Fe

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:17	ZZZZZZ	4819	183800	27588	9647
17:22	ZZZZZZ	4696	182820	27092	9401
17:30	MA51950-CCV9	5286	207870	28284	11083
17:35	MA51950-CCB10	5496	218850	28955	12013
17:40	MP31434-MB1	5431	216100	28956	11859
17:44	MP31434-LB1	5423	215340	28596	11854
17:49	MP31434-B1	5242	206410	28073	11099
17:54	MP31434-LS1	5161	202260	27308	10962
17:59	MP31434-S1	4662	183050	26272	9360
18:04	MP31434-S2	4638	182320	26115	9325
18:10	DA42113-1	4670	181060	25737	9387
18:15	MP31434-SD1	5069	199240	27106	10510
18:22	MA51950-CCV10	5205	201010	26951	10944
18:27	MA51950-CCB11	5332	209210	27370	11737
18:34	ZZZZZZ	5356	210120	27374	11760
18:39	ZZZZZZ	5359	210660	26143	11852
18:44	ZZZZZZ	5342	210140	27339	11755
18:49	ZZZZZZ	5349	209070	27192	11766
18:54	ZZZZZZ	5329	208960	27113	11769
18:59	ZZZZZZ	5479	199650	27649	10882
19:04	ZZZZZZ	5020	186490	26426	10616
19:09	MA51950-CCV11	5144	199430	26647	10899
19:14	MA51950-CCB12	5328	208850	26960	11774
19:19	ZZZZZZ	5181	200790	27427	10786
19:24	ZZZZZZ	No results reported for the elements associated with this internal standard.			
19:24	ZZZZZZ	No results reported for the elements associated with this internal standard.			

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA51950 Units: ug/l

Time:			09:04		09:23		10:21		11:16	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27								
Antimony	6.0	2.2								
Arsenic	3.0	1.3	anr							
Barium	200	1	anr							
Beryllium	1.0	.2								
Bismuth	20	2.1								
Boron	100	1								
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	-7.00	<5000	-5.00	<5000	-4.00	<5000	-6.80	<5000
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4								
Copper	10	6.8								
Iron	100	15	-4.40	<100	-4.40	<100	0.200	<100	-3.70	<100
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54								
Manganese	15	.1								
Molybdenum	20	.5								
Nickel	10	.3								
Phosphorus	50	1.8								
Potassium	10000	77								
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1								
Thallium	10	1.6								
Tin	10	.9								
Titanium	10	.9								
Tungsten	50	2								
Vanadium	50	.8								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA51950 Units: ug/l

Time: / Sample ID:			09:04 ICB1		09:23 CCB1		10:21 CCB2		11:16 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA51950 Units: ug/l

Time:			12:11		12:58	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	27				
Antimony	6.0	2.2				
Arsenic	3.0	1.3	anr			
Barium	200	1	anr			
Beryllium	1.0	.2				
Bismuth	20	2.1				
Boron	100	1				
Cadmium	3.0	.2	anr			
Calcium	5000	7.7	-5.70	<5000	-3.40	<5000
Cerium	100					
Chromium	10	.5	anr			
Cobalt	50	.4				
Copper	10	6.8				
Iron	100	15	-2.10	<100	-1.00	<100
Lead	3.0	1.6	anr			
Lithium	50	3.7				
Magnesium	5000	54				
Manganese	15	.1				
Molybdenum	20	.5				
Nickel	10	.3				
Phosphorus	50	1.8				
Potassium	10000	77				
Selenium	10	2	anr			
Silicon	200	1.3				
Silver	10	.9	anr			
Sodium	10000	23	anr			
Strontium	10	.4				
Sulfur	50	4.1				
Thallium	10	1.6				
Tin	10	.9				
Titanium	10	.9				
Tungsten	50	2				
Vanadium	50	.8				

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA51950 Units: ug/l

Time:			12:11		12:58	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	.2	anr			
Zirconium	10	.5				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA51950 Units: ug/l

Time:		09:11	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	anr		
Barium	anr		
Beryllium			
Bismuth			
Boron			
Cadmium	anr		
Calcium	40000	39200	98.0
Cerium			
Chromium	anr		
Cobalt			
Copper			
Iron	40000	39000	97.5
Lead	anr		
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Phosphorus			
Potassium			
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA51950 Units: ug/l

Time:		09:11	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA51950 Units: ug/l

Time:		08:56			10:16			11:11	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Bismuth									
Boron									
Cadmium	anr								
Calcium	40000	39600	99.0	40000	38800	97.0	40000	39100	97.8
Cerium									
Chromium	anr								
Cobalt									
Copper									
Iron	40000	39700	99.3	40000	38400	96.0	40000	38700	96.8
Lead	anr								
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Phosphorus									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA51950 Units: ug/l

Time:		08:56			10:16			11:11	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA51950 Units: ug/l

Time:		12:06			12:53	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium	40000	39100	97.8	40000	38700	96.8
Cerium						
Chromium	anr					
Cobalt						
Copper						
Iron	40000	38700	96.8	40000	38200	95.5
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA51950 Units: ug/l

Time:		12:06			12:53	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA51950 Units: ug/l

Time:		09:50			09:56	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium				200000	195000	97.5
Cerium						
Chromium	anr					
Cobalt						
Copper						
Iron				200000	195000	97.5
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA51950 Units: ug/l

Time:		09:50			09:56	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA51950 Units: ug/l

Time:				09:30		09:35		12:38	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	5140	102.8	994	99.4	5140	102.8
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500		99.0	99.0			101	101.0
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0						
Molybdenum	20								
Nickel	10		4.0						
Phosphorus	50								
Potassium	5000		2000						
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA51950 Units: ug/l

Time:				09:30		09:35		12:38	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA51950 Units: ug/l

Time:			09:40		09:45		12:43		12:48	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	486000	97.2	482000	96.4	486000	97.2	477000	95.4
Antimony		1000	-4.00		1000	100.0	-4.00		994	99.4
Arsenic		1000	2.00		1010	101.0	2.10		991	99.1
Barium		500	-44.8		459	91.8	-45.2		455	91.0
Beryllium		500	0.300		494	98.8	0.300		486	97.2
Bismuth		500	-9.70		470	94.0	-8.80		474	94.8
Boron		500	-3.60		475	95.0	-2.90		471	94.2
Cadmium		1000	0.600		1030	103.0	0.900		1020	102.0
Calcium	400000	400000	374000	93.5	371000	92.8	373000	93.3	368000	92.0
Cerium			51.7		535*		50.6		532*	
Chromium		500	-0.700		478	95.6	-0.800		471	94.2
Cobalt		500	0.300		474	94.8	0.300		471	94.2
Copper		500	2.80		499	99.8	3.50		498	99.6
Iron	200000	200000	190000	95.0	188000	94.0	187000	93.5	185000	92.5
Lead		1000	-0.200		963	96.3	2.50		950	95.0
Lithium		500	3.90		516	103.2	3.30		509	101.8
Magnesium	500000	500000	495000	99.0	495000	99.0	488000	97.6	484000	96.8
Manganese		500	-0.100		493	98.6	0.00		489	97.8
Molybdenum		500	-2.60		449	89.8	-2.50		446	89.2
Nickel		1000	2.20		957	95.7	2.20		946	94.6
Phosphorus		500	-9.00		466	93.2	-8.90		462	92.4
Potassium			-12.6		-28.3		-75.5		-43.4	
Selenium		1000	9.60		953	95.3	7.90		942	94.2
Silicon		500	-23.8		463	92.6	-23.5		460	92.0
Silver		1000	4.70		1020	102.0	3.70		1020	102.0
Sodium			-124		-104		-112		-95.7	
Strontium		500	0.900		495	99.0	1.00		492	98.4
Sulfur		500	-10.5		453	90.6	-10.2		454	90.8
Thallium		1000	-0.300		946	94.6	-1.00		942	94.2
Tin		500	-4.60		458	91.6	-4.50		454	90.8
Titanium		500	-1.60		504	100.8	-1.60		487	97.4
Tungsten		500	-0.500		434	86.8	-0.200		436	87.2
Vanadium		500	-12.5		471	94.2	-12.7		465	93.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: SD022322M1.ICP Date Analyzed: 02/23/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA51950 Units: ug/l

Time:			09:40		09:45		12:43		12:48	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.60		950	95.0	2.70		940	94.0
Zirconium		500	1.70		435	87.0	1.70		433	86.6

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:56	MA51960-STD1	1		Sample introduction not stable, see rerun.
10:02	MA51960-STD2	1		Sample introduction not stable, see rerun.
10:08	MA51960-STD3	1		STDA
10:14	MA51960-STD4	1		STDB
10:20	MA51960-STD5	1		STDC
10:27	MA51960-STD6	1		STDD
10:36	MA51960-STD7	1		STDE
10:42	MA51960-STD8	1		STDF
10:48	MA51960-STD9	1		STDG
10:54	MA51960-STD10	1		STDH
11:00	MA51960-STD11	1		STDI
11:06	MA51960-STD12	1		STDJ
11:12	MA51960-STD13	1		STDB
11:18	MA51960-STD14	1		STDG
11:24	MA51960-STD15	1		STDI
11:31	MA51960-STD16	1		STDA
11:37	MA51960-STD17	1		STDA
11:43	ZZZZZZ	1		
11:49	ZZZZZZ	1		
12:02	ZZZZZZ	1		
12:20	MA51960-ICVA1	1		
12:26	MA51960-ICV1	1		
12:32	MA51960-ICB1	1		
12:38	MA51960-CCVA1	1		
12:44	MA51960-CCB1	1		
12:50	MA51960-CRI1	1		
12:58	ZZZZZZ	1		
13:04	MA51960-ICSA1	1		
13:10	MA51960-ICSAB1	1		
13:17	ZZZZZZ	1		
13:24	ZZZZZZ	1		
13:30	MA51960-CCVA2	1		
13:36	MA51960-CCB2	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:43	MP31402-MB1	2		
13:49	MP31402-B1	2		
13:55	MP31402-S1	2		
14:01	MP31402-S2	2		
14:07	JD40008-3F	2		
14:14	MP31402-SD1	10		
14:20	JD40008-1F	2		
14:26	JD40008-2F	2		
14:32	JD40008-4F	2		
---------->	Last reportable sample/prep for job JD40008			
14:38	ZZZZZZ	1		
14:45	MA51960-CCVA3	1		
14:51	MA51960-CCB3	1		
14:57	MA51960-CRI2	1		
15:04	MA51960-ICSA2	1		
15:10	MA51960-ICSAB2	1		
15:16	ZZZZZZ	1		
15:22	MA51960-CCVA4	1		
15:28	MA51960-CCB4	1		
---------->	Last reportable CCB for job JD40008			
15:34	MP31361-MB1	2		
15:40	MP31361-B1	2		
15:46	MP31361-S1	5		
15:52	MP31361-S2	5		
15:58	JD39397-68	5		(sample used for QC only; not part of login JD40008)
16:05	MP31361-SD1	25		
16:11	ZZZZZZ	10		
16:17	ZZZZZZ	5		
16:23	ZZZZZZ	5		
16:29	MA51960-CCVA5	1		
16:35	MA51960-CCB5	1		
16:41	ZZZZZZ	2		
16:47	ZZZZZZ	2		
16:53	ZZZZZZ	2		
16:59	ZZZZZZ	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:06	ZZZZZZ	5		
17:12	ZZZZZZ	10		
17:18	ZZZZZZ	5		
17:24	ZZZZZZ	5		
17:30	JD39397-68	5		(sample used for QC only; not part of login JD40008)
17:36	MA51960-CCVA6	1		
17:42	MA51960-CCB6	1		
17:48	ZZZZZZ	2		
17:54	ZZZZZZ	2		
18:00	MP31467-MB1	2		
18:06	MP31467-B1	2		
18:12	MA51960-CCVA7	1		
18:18	MA51960-CCB7	1		
18:24	MP31460-MB1	5		CCV out
18:30	MP31460-B1	5		CCV out
18:36	MP31460-S1	5		CCV out. Ba, Pb high
18:43	MP31460-S2	5		CCV out. Ba, Pb high
18:49	JD40113-1	5		(sample used for QC only; not part of login JD40008)
18:55	MP31460-SD1	25		CCV out
19:01	ZZZZZZ	5		
19:07	ZZZZZZ	5		
19:13	ZZZZZZ	1		
19:19	MA51960-CCVA8	1		
19:25	MA51960-CCB8	1		
19:31	MP31463-MB1	2		
19:37	MP31463-LB1	2		
19:43	MP31463-B1	2		
19:49	MP31463-LS1	2		
19:55	MP31463-S1	2		
20:01	MP31463-S2	2		
20:07	JD40003-1A	2		(sample used for QC only; not part of login JD40008)
20:14	MP31463-SD1	10		
20:20	MA51960-CCVA9	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:26	MA51960-CCB9	1		
20:32	MP31430A-MB1	2		
20:38	MP31430A-B2	2		
20:44	MP31430A-S3	2		
20:50	MP31430A-S4	2		
20:56	JD40060-1	2		(sample used for QC only; not part of login JD40008)
21:02	MP31430A-SD1	10		
21:08	ZZZZZZ	2		
21:14	ZZZZZZ	2		
21:20	ZZZZZZ	2		
21:26	ZZZZZZ	1		
21:32	MA51960-CCVA10	1		
21:38	MA51960-CCB10	1		
21:44	ZZZZZZ	5		
21:50	ZZZZZZ	10		
21:56	ZZZZZZ	5		
22:03	ZZZZZZ	2		
22:09	ZZZZZZ	2		
22:15	ZZZZZZ	2		
22:21	ZZZZZZ	5		
22:27	ZZZZZZ	10		
22:33	MA51960-CCVA11	1		
22:39	MA51960-CCB11	1		
22:45	ZZZZZZ	5		
22:51	ZZZZZZ	2		
22:57	ZZZZZZ	2		
23:03	ZZZZZZ	2		
23:09	ZZZZZZ	2		
23:15	ZZZZZZ	1		
23:21	MA51960-CCVA12	1		
23:28	MA51960-CCB12	1		
23:34	MP31458A-MB1	2		
23:40	MP31458A-B2	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
23:46	MP31458A-S3	2		
23:52	MP31458A-S4	2		
23:58	JD40103-1	2		(sample used for QC only; not part of login JD40008)
00:04	MP31458A-SD1	10		
00:10	ZZZZZZ	2		
00:16	ZZZZZZ	2		
00:22	ZZZZZZ	2		
00:28	ZZZZZZ	1		
00:35	MA51960-CCVA13	1		
00:41	MA51960-CCB13	1		
00:47	MA51960-CCVA14	1		
00:53	MA51960-CCB14	1		
00:59	MP31386-MB1	1		
01:05	MP31386-B1	1		
01:11	MP31386-S1	1		
01:17	MP31386-S2	1		
01:23	JD39991-6	1		(sample used for QC only; not part of login JD40008)
01:29	MP31386-S1	10		
01:35	MP31386-S2	10		
01:41	JD39991-6	10		(sample used for QC only; not part of login JD40008)
01:47	MA51960-CCVA15	1		
01:54	MA51960-CCB15	1		
02:00	ZZZZZZ	25		
02:06	ZZZZZZ	100		
02:12	ZZZZZZ	25		
02:18	ZZZZZZ	100		
02:24	ZZZZZZ	1		
02:30	ZZZZZZ	1		
02:36	ZZZZZZ	1		
02:42	MA51960-CCVA16	1		
02:48	MA51960-CCB16	1		
02:54	ZZZZZZ	1		
03:00	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Dilution Factor	PS Recov	Comments
03:06	ZZZZZZ	1		
03:13	ZZZZZZ	5		
03:19	ZZZZZZ	1		
03:25	ZZZZZZ	5		
03:31	MA51960-CCVA17	1		
03:37	MA51960-CCB17	1		
03:43	MP31459-MB1	1		
03:49	MP31459-B1	1		high recovery for Fe
03:55	MP31459-S1	1		MN high
04:01	MP31459-S2	1		MN high
04:07	JD40114-1	1		(sample used for QC only; not part of login JD40008)
04:13	ZZZZZZ	1		
04:19	ZZZZZZ	1		
04:25	ZZZZZZ	1		
04:32	MA51960-CCVA18	1		
04:38	MA51960-CCB18	1		
04:44	ZZZZZZ	1		
04:50	ZZZZZZ	1		
04:56	ZZZZZZ	1		
05:02	ZZZZZZ	1		
05:08	ZZZZZZ	1		
05:14	MA51960-CCVA19	1		
05:20	MA51960-CCB19	1		
05:26	ZZZZZZ	1		
05:32	ZZZZZZ	1		
05:38	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Element: Dilution	P b
11:43	ZZZZZZ	1	
11:49	ZZZZZZ	1	
12:02	ZZZZZZ	1	
12:20	MA51960-ICVA1	1	X
12:26	MA51960-ICV1	1	X
12:32	MA51960-ICB1	1	X
12:38	MA51960-CCVA1	1	X
12:44	MA51960-CCB1	1	X
12:50	MA51960-CRI1	1	X
12:58	ZZZZZZ	1	
13:04	MA51960-ICSA1	1	X
13:10	MA51960-ICSAB1	1	X
13:17	ZZZZZZ	1	
13:24	ZZZZZZ	1	
13:30	MA51960-CCVA2	1	X
13:36	MA51960-CCB2	1	X
13:43	MP31402-MB1	2	X
13:49	MP31402-B1	2	X
13:55	MP31402-S1	2	X
14:01	MP31402-S2	2	X
14:07	JD40008-3F	2	X
14:14	MP31402-SD1	10	X
14:20	JD40008-1F	2	X
14:26	JD40008-2F	2	X
14:32	JD40008-4F	2	X
14:38	ZZZZZZ	1	
14:45	MA51960-CCVA3	1	X
14:51	MA51960-CCB3	1	X
14:57	MA51960-CRI2	1	X
15:04	MA51960-ICSA2	1	X
15:10	MA51960-ICSAB2	1	X
15:16	ZZZZZZ	1	
15:22	MA51960-CCVA4	1	X
		Element:	P b

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Element: Dilution	P b	
15:28	MA51960-CCB4	1	X	
15:34	MP31361-MB1	2		
15:40	MP31361-B1	2		
15:46	MP31361-S1	5		
15:52	MP31361-S2	5		
15:58	JD39397-68	5		
16:05	MP31361-SD1	25		
16:11	ZZZZZZ	10		
16:17	ZZZZZZ	5		
16:23	ZZZZZZ	5		
16:29	MA51960-CCVA5	1	X	
16:35	MA51960-CCB5	1	X	
16:41	ZZZZZZ	2		
16:47	ZZZZZZ	2		
16:53	ZZZZZZ	2		
16:59	ZZZZZZ	2		
17:06	ZZZZZZ	5		
17:12	ZZZZZZ	10		
17:18	ZZZZZZ	5		
17:24	ZZZZZZ	5		
17:30	JD39397-68	5		(a)
17:36	MA51960-CCVA6	1	X	
17:42	MA51960-CCB6	1	X	
17:48	ZZZZZZ	2		
17:54	ZZZZZZ	2		
18:00	MP31467-MB1	2		
18:06	MP31467-B1	2		
18:12	MA51960-CCVA7	1	X	
18:18	MA51960-CCB7	1	X	
18:24	MP31460-MB1	5		
18:30	MP31460-B1	5		
18:36	MP31460-S1	5		
18:43	MP31460-S2	5		
		Element:	P b	

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Element: Dilution	P b	
18:49	JD40113-1	5		(a)
18:55	MP31460-SD1	25		
19:01	ZZZZZZ	5		
19:07	ZZZZZZ	5		
19:13	ZZZZZZ	1		
19:19	MA51960-CCVA8	1	X	
19:25	MA51960-CCB8	1	X	
19:31	MP31463-MB1	2		
19:37	MP31463-LB1	2		
19:43	MP31463-B1	2		
19:49	MP31463-LS1	2		
19:55	MP31463-S1	2		
20:01	MP31463-S2	2		
20:07	JD40003-1A	2		(a)
20:14	MP31463-SD1	10		
20:20	MA51960-CCVA9	1	X	
20:26	MA51960-CCB9	1	X	
20:32	MP31430A-MB1	2		
20:38	MP31430A-B2	2		
20:44	MP31430A-S3	2		
20:50	MP31430A-S4	2		
20:56	JD40060-1	2		(a)
21:02	MP31430A-SD1	10		
21:08	ZZZZZZ	2		
21:14	ZZZZZZ	2		
21:20	ZZZZZZ	2		
21:26	ZZZZZZ	1		
21:32	MA51960-CCVA10	1	X	
21:38	MA51960-CCB10	1	X	
21:44	ZZZZZZ	5		
21:50	ZZZZZZ	10		
21:56	ZZZZZZ	5		
22:03	ZZZZZZ	2		
		Element:	P b	

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Element: Dilution	P b	
22:09	ZZZZZZ	2		
22:15	ZZZZZZ	2		
22:21	ZZZZZZ	5		
22:27	ZZZZZZ	10		
22:33	MA51960-CCVA11	1	X	
22:39	MA51960-CCB11	1	X	
22:45	ZZZZZZ	5		
22:51	ZZZZZZ	2		
22:57	ZZZZZZ	2		
23:03	ZZZZZZ	2		
23:09	ZZZZZZ	2		
23:15	ZZZZZZ	1		
23:21	MA51960-CCVA12	1	X	
23:28	MA51960-CCB12	1	X	
23:34	MP31458A-MB1	2		
23:40	MP31458A-B2	2		
23:46	MP31458A-S3	2		
23:52	MP31458A-S4	2		
23:58	JD40103-1	2		(a)
00:04	MP31458A-SD1	10		
00:10	ZZZZZZ	2		
00:16	ZZZZZZ	2		
00:22	ZZZZZZ	2		
00:28	ZZZZZZ	1		
00:35	MA51960-CCVA13	1	X	
00:41	MA51960-CCB13	1	X	
00:47	MA51960-CCVA14	1	X	
00:53	MA51960-CCB14	1	X	
00:59	MP31386-MB1	1		
01:05	MP31386-B1	1		
01:11	MP31386-S1	1		
01:17	MP31386-S2	1		
01:23	JD39991-6	1		(a)
		Element:	P b	

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Element: Dilution	P b	
01:29	MP31386-S1	10		
01:35	MP31386-S2	10		
01:41	JD39991-6	10		(a)
01:47	MA51960-CCVA15	1	X	
01:54	MA51960-CCB15	1	X	
02:00	ZZZZZZ	25		
02:06	ZZZZZZ	100		
02:12	ZZZZZZ	25		
02:18	ZZZZZZ	100		
02:24	ZZZZZZ	1		
02:30	ZZZZZZ	1		
02:36	ZZZZZZ	1		
02:42	MA51960-CCVA16	1	X	
02:48	MA51960-CCB16	1	X	
02:54	ZZZZZZ	1		
03:00	ZZZZZZ	5		
03:06	ZZZZZZ	1		
03:13	ZZZZZZ	5		
03:19	ZZZZZZ	1		
03:25	ZZZZZZ	5		
03:31	MA51960-CCVA17	1	X	
03:37	MA51960-CCB17	1	X	
03:43	MP31459-MB1	1		
03:49	MP31459-B1	1		
03:55	MP31459-S1	1		
04:01	MP31459-S2	1		
04:07	JD40114-1	1		(a)
04:13	ZZZZZZ	1		
04:19	ZZZZZZ	1		
04:25	ZZZZZZ	1		
04:32	MA51960-CCVA18	1	X	
04:38	MA51960-CCB18	1	X	
04:44	ZZZZZZ	1		
		Element:	P b	

REPORTED ELEMENTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Element: P Dilution b	
04:50	ZZZZZZ	1	
04:56	ZZZZZZ	1	
05:02	ZZZZZZ	1	
05:08	ZZZZZZ	1	
05:14	MA51960-CCVA19	1	X
05:20	MA51960-CCB19	1	X
05:26	ZZZZZZ	1	
05:32	ZZZZZZ	1	
05:38	ZZZZZZ	1	

(a) Sample used for QC only; not part of login JD40008.

Element: P
b

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
09:56	MA51960-STD1	100	100	100	100	100	100	100	100
10:02	MA51960-STD2	100	100	100	100	100	100	100	100
10:08	MA51960-STD3	100	100	100	100	100	100	100	100
10:14	MA51960-STD4	102.353	102.239	101.471	89.307	101.749	101.573	88.646	102.02
10:20	MA51960-STD5	101.875	101.324	103.232	101.104	101.952	102.489	100.909	101.451
10:27	MA51960-STD6	102.909	102.147	103.051	94.683	102.473	103.829	98.909	102.485
10:36	MA51960-STD7	101.613	100.929	101.273	100.351	101.302	101.461	102.365	101.045
10:42	MA51960-STD8	101.785	102.363	104.827	101.963	102.216	103.217	101.695	102.241
10:48	MA51960-STD9	84.145	85.219	104.901	102.671	84.179	105.008	104.153	84.22
10:54	MA51960-STD10	102.695	103.262	104.424	103.154	103.51	104.153	104.549	104.006
11:00	MA51960-STD11	87.426	87.86	103.992	102.342	86.025	104.588	103.796	86.467
11:06	MA51960-STD12	105.066	106.614	110.338	104.947	104.888	107	106.136	104.226
11:12	MA51960-STD13	104.199	103.863	105.566	103.807	103.936	107.273	105.805	103.454
11:18	MA51960-STD14	102.568	100.079	107.63	106.283	102.259	109.147	108.394	102.546
11:24	MA51960-STD15	108.402	109.301	111.215	108.315	107.213	109.298	108.188	107.555
11:31	MA51960-STD16	100	100	100	100	100	100	100	100
11:37	MA51960-STD17	100	100	100	100	100	100	100	100
11:43	ZZZZZZ	100.573	101.894	111.417	103.998	100.901	108.98	102.162	101.303
11:49	ZZZZZZ	98.677	99.042	104.497	76.071	99.159	102.446	74.136	100.502
12:02	ZZZZZZ	99.912	102.927	108.512	88.264	100.787	104.163	90.184	101.347
12:20	MA51960-ICVA1	99.603	101.691	107.68	103.164	99.91	105.785	101.706	100.158
12:26	MA51960-ICV1	99.217	100.729	105.221	99.197	100.358	102.431	99.611	101.43
12:32	MA51960-ICB1	100.649	101.693	107.854	96.013	101.577	104.166	97.807	102.095
12:38	MA51960-CCVA1	101.908	103.852	109.898	104.145	102.972	106.134	102.27	103.56
12:44	MA51960-CCB1	101.136	101.8	107.274	102.077	102.045	104.838	102.083	102.33
12:50	MA51960-CRI1	102.606	102.99	108.462	103.003	103.311	105.516	103.21	103.713
12:58	ZZZZZZ	103.569	104.97	102.474	102.896	103.663	99.141	103.356	104.244
13:04	MA51960-ICSA1	98.529	99.638	106.693	105.04	95.919	99.354	96.531	94.241
13:10	MA51960-ICSAB1	100.304	100.584	112.374	109.41	98.537	104.89	102.835	97.846
13:17	ZZZZZZ	86.79	90.642	95.545	93.061	93.485	95.844	94.067	93.513
13:24	ZZZZZZ	79.013	82.378	95.118	93.585	85.493	93.422	93.925	85.431
13:30	MA51960-CCVA2	84.223	88.873	91.181	92.819	90.242	90.511	92.762	91.503
13:36	MA51960-CCB2	84.196	87.29	92.271	91.88	89.661	92.382	92.581	90.326

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
13:43	MP31402-MB1	79.236	84.141	84.943	89.214	86.271	85.633	90.568	87.502
13:49	MP31402-B1	78.708	83.905	89.43	90.375	85.497	87.72	89.662	86.531
13:55	MP31402-S1	77.111	82.695	88.082	90.92	84.985	87.104	89.68	85.032
14:01	MP31402-S2	79.414	85.318	89.612	91.996	86.573	89.439	90.881	88.01
14:07	JD40008-3F	81.197	85.886	91.241	86.844	87.97	90.13	88.194	88.303
14:14	MP31402-SD1	87.379	86.727	100.395	97.541	89.827	98.397	98.102	90.04
14:20	JD40008-1F	81.503	87.735	92.158	92.977	87.924	91.631	92.399	88.671
14:26	JD40008-2F	74.531	81.768	90.544	91.74	80.989	89.982	91.655	81.313
14:32	JD40008-4F	85.856	91.222	99.234	98.461	92.142	97.001	96.536	92.041
14:38	ZZZZZZ	99.389	101.538	105.982	101.034	102.853	104.26	101.387	102.83
14:45	MA51960-CCVA3	94.927	98.344	94.459	97.981	98.061	91.622	96.906	98.8
14:51	MA51960-CCB3	95.054	96.945	99.709	98.774	98.246	98.608	99.21	98.364
14:57	MA51960-CRI2	97.876	100.254	104.966	101.441	100.197	103.679	101.019	100.799
15:04	MA51960-ICSA2	90.594	94.778	106.068	105.858	90.552	101.82	100.121	89.573
15:10	MA51960-ICSAB2	96.972	99.654	112.57	108.487	97.353	104.505	102.313	96.165
15:16	ZZZZZZ	84.548	89.635	94.922	91.644	92.358	93.903	93.562	93.165
15:22	MA51960-CCVA4	80.573	86.456	93.695	90.868	89.251	93.124	91.27	89.859
15:28	MA51960-CCB4	80.203	85.237	82.847	79.586	87.879	82.573	83.188	88.176
15:34	MP31361-MB1	75.375	80.98	86.148	88.046	83.543	87.205	88.595	84.763
15:40	MP31361-B1	74.695	81.051	82.466	87.986	82.997	82.123	87.748	83.896
15:46	MP31361-S1	76.641	81.32	88.696	87.906	81.991	85.924	86.241	82.554
15:52	MP31361-S2	77.126	83.794	86.619	90.838	84.478	85.413	88.197	84.304
15:58	JD39397-68	No results reported for the elements associated with this internal standard.							
16:05	MP31361-SD1	82.19	85.907	93.295	82.775	90.378	94.317	87.626	91.064
16:11	ZZZZZZ	79.761	85.363	86.817	88.723	88.081	87.923	88.677	88.131
16:17	ZZZZZZ	85.818	92.214	103.084	99.493	91.31	98.247	96.382	92.408
16:23	ZZZZZZ	99.505	106.753	118.48	110.238	102.84	110.624	105.299	103.38
16:29	MA51960-CCVA5	91.271	98.071	100.408	93.441	98.473	98.372	94.195	98.948
16:35	MA51960-CCB5	85.2	90.419	95.271	90.243	92.265	95.412	92.381	93.413
16:41	ZZZZZZ	77.899	83.949	89.848	82.95	87.102	90.52	84.229	87.066
16:47	ZZZZZZ	78.131	84.049	89.191	88.978	87.423	89.358	88.656	88.114
16:53	ZZZZZZ	77.6	83.038	83.695	87.996	86.407	85.426	88.936	87.503
16:59	ZZZZZZ	71.927	78.528	89.094	88.256	80.749	90.251	88.279	81.11

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
17:06	ZZZZZZ	78.164	84.108	90.269	83.956	84.227	87.827	81.444	85.268
17:12	ZZZZZZ	83.522	88.934	94.529	89.594	91.87	94.567	90.352	92.935
17:18	ZZZZZZ	87.383	93.565	102.736	98.63	92.509	99.061	95.002	92.478
17:24	ZZZZZZ	100.294	107.544	119.328	111.589	102.835	110.432	105.516	103.392
17:30	JD39397-68	86.808	92.504	98.035	91.161	92.117	94.6	89.229	92.275
17:36	MA51960-CCVA6	82.886	90.256	96.132	89.401	91.497	95.191	89.227	92.868
17:42	MA51960-CCB6	78.955	84.169	94.648	88.752	87.398	94.501	89.38	87.512
17:48	ZZZZZZ	92.055	93.329	102.393	93.394	98.807	103.025	94.809	99.474
17:54	ZZZZZZ	77.854	84.41	86.394	87.427	87.486	85.608	88.302	87.985
18:00	MP31467-MB1	84.113	88.75	91.735	88.953	91.704	91.915	89.553	91.809
18:06	MP31467-B1	77.461	85.617	90.332	86.836	86.468	89.645	87.294	87.296
18:12	MA51960-CCVA7	71.904	70.762	94.491	89.757	77.142	93.671	87.939	78.032
18:18	MA51960-CCB7	84.858	89.416	94.989	90.106	91.556	94.252	89.945	92.135
18:24	MP31460-MB1	85.32	89.114	94.58	89.542	91.412	93.764	90.136	91.439
18:30	MP31460-B1	84.246	89.554	94.954	89.953	90.799	93.707	89.532	91.647
18:36	MP31460-S1	83.981	92.27	97.517	93.001	91.278	94.713	90.827	91.158
18:43	MP31460-S2	82.744	89.435	99.315	92.661	89.896	95.226	90.195	90.752
18:49	JD40113-1	85.571	93.291	99.996	93.804	93.227	96.26	91.79	93.66
18:55	MP31460-SD1	91.061	94.563	102.778	93.89	97.352	101.739	93.931	97.418
19:01	ZZZZZZ	86.351	100.234	106.801	99.075	94.022	97.203	91.649	93.43
19:07	ZZZZZZ	85.178	98.384	107.332	91.076	92.967	97.468	81.788	92.12
19:13	ZZZZZZ	87.971	93.661	99.69	93.867	95.506	98.724	94.191	96.651
19:19	MA51960-CCVA8	88.311	94.45	100.11	96.932	95.906	98.049	96.085	96.568
19:25	MA51960-CCB8	88.454	93.419	98.475	78.746	94.839	98.324	79.779	95.872
19:31	MP31463-MB1	82.924	89.755	93.596	90.502	92.028	93.065	90.197	92.189
19:37	MP31463-LB1	81.797	88.077	93.085	86.728	90.642	92.184	88.353	91.288
19:43	MP31463-B1	81.339	87.041	92.931	90.268	89.597	91.109	89.397	89.896
19:49	MP31463-LS1	80.547	86.207	91.508	89.502	89.02	90.972	89.542	90.024
19:55	MP31463-S1	78.955	84.413	90.623	89.36	87.707	90.514	88.182	87.765
20:01	MP31463-S2	77.769	84.176	90.286	88.151	86.492	89.475	88.439	87.007
20:07	JD40003-1A	78.324	83.85	88.929	87.793	86.705	88.51	87.216	87.339
20:14	MP31463-SD1	78.039	81.552	90.335	86.582	83.423	91.689	87.943	83.665
20:20	MA51960-CCVA9	82.644	86.657	93.645	88.722	88.646	91.792	88.142	88.673

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
20:26	MA51960-CCB9	85.771	88.85	94.134	89.075	91.052	94.053	89.479	91.62
20:32	MP31430A-MB1	81.658	85.923	91.222	88.726	88.643	91.613	88.608	88.941
20:38	MP31430A-B2	80.418	85.625	90.668	89.108	86.518	89.463	88.052	87.764
20:44	MP31430A-S3	75.521	81.614	87.022	83.413	80.759	84.128	80.561	81.529
20:50	MP31430A-S4	74.074	80.279	86.459	82.791	80.253	85.102	80.912	81.319
20:56	JD40060-1	73.924	80.054	85.073	81.378	79.16	83.178	79.956	80.573
21:02	MP31430A-SD1	76.682	80.413	87.56	81.969	82.795	86.522	82.632	82.977
21:08	ZZZZZZ	67.506 !	75.1	79.264	77.754	75.733	80.232	78.582	75.853
21:14	ZZZZZZ	74.477	82.113	91.551	87.93	80.963	85.766	83.64	80.758
21:20	ZZZZZZ	77.715	83.122	87.678	82.965	86.302	87.884	84.185	86.508
21:26	ZZZZZZ	77.112	81.553	77.111	80.171	84.084	77.47	80.1	84.482
21:32	MA51960-CCVA10	72.408	78.012	81.835	76.54	79.802	81.689	77.781	80.075
21:38	MA51960-CCB10	71.792	75.857	74.18	77.074	78.205	75.866	78.311	79.582
21:44	ZZZZZZ	76.775	82.764	93.314	88.393	81.098	88.716	84.426	81.361
21:50	ZZZZZZ	76.667	80.534	90.538	84.686	80.529	86.168	82.55	80.929
21:56	ZZZZZZ	75.519	83.018	92.161	84.502	82.231	87.74	82.49	82.814
22:03	ZZZZZZ	71.854	79.839	86.136	80.84	79.559	83.501	78.028	79.818
22:09	ZZZZZZ	73.33	82.519	86.893	84.906	80.295	82.165	82.075	80.42
22:15	ZZZZZZ	72.905	78.809	82.725	77.455	82.291	82.887	78.402	81.863
22:21	ZZZZZZ	74.232	80.716	91.442	85.072	78.645	85.833	81.11	78.822
22:27	ZZZZZZ	74.018	79.08	89.38	83.591	78.256	84.18	80.4	78.947
22:33	MA51960-CCVA11	68.54 !	75.095	79.561	74.246	77.72	78.191	75.728	77.732
22:39	MA51960-CCB11	64.27 !	69.959 !	75.178	71.255	72.994	76.164	72.474	73.492
22:45	ZZZZZZ	67.117 !	74.232	83.802	72.8	74.494	81.622	70.548	74.876
22:51	ZZZZZZ	67.345 !	73.419	78.11	73.402	75.895	78.429	74.876	76.261
22:57	ZZZZZZ	65.077 !	72.045	78.809	69.489 !	71.888	76.77	69.575 !	72.387
23:03	ZZZZZZ	65.724 !	71.547	77.796	74.774	72.722	75.924	73.611	73.733
23:09	ZZZZZZ	67.041 !	73.793	79.41	76.102	74.261	78.876	75.173	74.511
23:15	ZZZZZZ	70.454	74.508	78.944	71.926	77.198	79.353	73.456	77.777
23:21	MA51960-CCVA12	64.228 !	69.925 !	75.04	70.213	71.539	75.38	70.911	72.384
23:28	MA51960-CCB12	63.539 !	68.359 !	73.089	67.806 !	70.915	73.084	69.6 !	71.751
23:34	MP31458A-MB1	62.786 !	67.589 !	70.871	69.806 !	69.675 !	73.057	71.797	70.541
23:40	MP31458A-B2	63.086 !	68.187 !	73.245	71.429	70.187	72.76	71.237	71.005

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
23:46	MP31458A-S3	67.127 !	73.808	81.448	68.251 !	71.875	76.696	65.773 !	71.986
23:52	MP31458A-S4	71.757	77.811	83.968	78.317	75.888	78.195	76.081	76.233
23:58	JD40103-1	72.065	78.164	83.509	78.559	75.829	79.012	75.878	76.041
00:04	MP31458A-SD1	75.304	79.212	85.578	76.514	80.124	83.14	76.811	80.523
00:10	ZZZZZZ	67.541 !	73.902	80.102	74.438	73.317	76.495	72.625	73.049
00:16	ZZZZZZ	66.848 !	72.193	77.474	72.517	72.725	76.118	72.214	72.976
00:22	ZZZZZZ	61.303 !	66.117 !	77.726	72.836	68.482 !	76.532	72.564	68.893 !
00:28	ZZZZZZ	68.082 !	71.742	76.745	59.532 !	73.783	76.918	59.046 !	74.725
00:35	MA51960-CCVA13	64.32 !	69.178 !	74.389	69.691 !	70.336	74.392	69.051 !	71.147
00:41	MA51960-CCB13	64.449 !	67.883 !	74.048	68.06 !	71.033	73.852	69.383 !	70.741
00:47	MA51960-CCVA14	64.498	69.011	74.823	68.874	70.527	74.658	69.569	71.078
00:53	MA51960-CCB14	64.975	68.928	68.982	68.804	71.387	68.91	69.329	71.958
00:59	MP31386-MB1	65.952	69.278	75.1	68.824	71.815	74.711	69.602	72.116
01:05	MP31386-B1	65.063	68.225	74.86	69.862	71.304	74.751	70.582	71.464
01:11	MP31386-S1	No results reported for the elements associated with this internal standard.							
01:17	MP31386-S2	No results reported for the elements associated with this internal standard.							
01:23	JD39991-6	67.705	73.728	80.912	73.678	74.557	79.357	74.298	74.997
01:29	MP31386-S1	71.945	73.92	77.659	72.572	78.021	79.682	73.906	77.912
01:35	MP31386-S2	70.99	72.999	81.127	70.932	76.391	81.214	73.775	77.372
01:41	JD39991-6	70.592	72.293	80.508	70.594	76.687	80.666	73.167	76.544
01:47	MA51960-CCVA15	67.156	71.427	77.417	71.568	72.923	77.799	71.929	74.148
01:54	MA51960-CCB15	67.286	71.282	73.554	70.608	73.181	74.062	72.053	73.433
02:00	ZZZZZZ	70.151	72.171	80.821	70.732	75.396	79.793	71.621	75.543
02:06	ZZZZZZ	70.154	71.558	78.862	70.206	75.553	79.151	71.986	76.054
02:12	ZZZZZZ	70.883	73.503	79.201	70.54	76.741	79.379	70.851	77.519
02:18	ZZZZZZ	69.346	70.887	75.12	69.077	75.083	75.157	71.456	75.65
02:24	ZZZZZZ	66.717	71.64	80.971	76.099	72.033	79.577	76.195	73.228
02:30	ZZZZZZ	67.316	72.057	78.313	72.183	72.7	75.897	72.226	73.172
02:36	ZZZZZZ	69.641	72.881	70.456	71.798	75.327	70.198	72.041	75.76
02:42	MA51960-CCVA16	66.669	70.394	75.591	70.382	72.356	75.584	71.229	73.133
02:48	MA51960-CCB16	66.91	70.65	76.889	67.031	72.838	76.235	68.953	73.585
02:54	ZZZZZZ	66.548	71.237	77.805	72.223	72.672	76.902	71.655	72.696
03:00	ZZZZZZ	71.7	73.631	80.544	71.481	77.235	80.1	73.237	77.581

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
03:06	ZZZZZZ	59.871 !	64.347	70.194	66.006	65.741	69.039	66.083	66.214
03:13	ZZZZZZ	58.668 !	63.279	68.515	65.611	65.323	71.135	66.857	66.186
03:19	ZZZZZZ	59.728 !	65.744	72.991	68.962	66.9	72.607	70.205	68.4
03:25	ZZZZZZ	65.944	69.061	75.409	68.805	73.66	76.689	70.176	73.315
03:31	MA51960-CCVA17	61.9	67.354	72.846	68.519	69.858	73.009	69.605	70.321
03:37	MA51960-CCB17	61.633	66.701	72.268	68.097	69.793	72.96	69.665	69.902
03:43	MP31459-MB1	62.597	67.705	72.495	67.886	71.108	73.622	69.737	71.298
03:49	MP31459-B1	61.811	67.61	63.734	67.703	70.625	63.927	69.278	70.856
03:55	MP31459-S1	60.579	66.071	71.058	67.125	68.64	71.531	68.462	68.742
04:01	MP31459-S2	59.796 !	65.823	70.44	66.625	67.846	71.778	67.575	69
04:07	JD40114-1	59.618 !	64.995	67.643	66.706	67.668	68.128	68.494	68.171
04:13	ZZZZZZ	62.199	67.982	75.424	72.182	69.659	74.539	73.197	70.293
04:19	ZZZZZZ	64.579	70.709	75.653	73.816	73.039	76.609	74.122	73.201
04:25	ZZZZZZ	65.622	71.152	75.96	65.083	73.505	75.865	68.166	73.226
04:32	MA51960-CCVA18	60.172	64.378	73.499	69.267	66.405	73.46	69.176	68.015
04:38	MA51960-CCB18	64.146	68.613	73.798	69.422	71.38	74.8	70.821	71.891
04:44	ZZZZZZ	62.47	67.853	74.524	69.69	69.866	74.028	70.175	70.627
04:50	ZZZZZZ	64.646	69.812	72.788	70.728	71.754	72.744	71.256	72.503
04:56	ZZZZZZ	64.683	69.732	75.293	69.44	71.6	75.192	71.35	72.135
05:02	ZZZZZZ	65.027	71.039	77.22	71.695	71.763	76.612	71.615	72.371
05:08	ZZZZZZ	66.701	70.616	76.196	70.438	74.048	76.212	70.589	74.389
05:14	MA51960-CCVA19	65.541	71.004	74.857	69.415	72.871	75.216	70.224	73.63
05:20	MA51960-CCB19	65.149	69.649	74.397	69.439	72.53	75.677	70.221	72.497
05:26	ZZZZZZ	64.729	68.889	73.483	69.626	70.874	74.165	70.585	71.963
05:32	ZZZZZZ	64.978	68.599	73.861	68.517	71.692	75.574	70.284	72.57
05:38	ZZZZZZ	191.843 !	154.869 !	270.908 !	67.46	173.007 !	271.691 !	67.986	175.626 !

! = Outside limits.

Istd#	Parameter	Limits	CCV/CCB Limits
Istd#1	Lithium	60-125 %	60-125 %
Istd#2	Scandium (45-1)	60-125 %	60-125 %
Istd#3	Scandium (45-2)	60-125 %	60-125 %
Istd#4	Scandium (45-3)	60-125 %	60-125 %
Istd#5	Germanium (72-1)	60-125 %	60-125 %
Istd#6	Germanium (72-2)	60-125 %	60-125 %
Istd#7	Germanium (72-3)	60-125 %	60-125 %
Istd#8	Germanium (74-1)	60-125 %	60-125 %

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
09:56	MA51960-STD1	100	100	100	100	100	100	100	100
10:02	MA51960-STD2	100	100	100	100	100	100	100	100
10:08	MA51960-STD3	100	100	100	100	100	100	100	100
10:14	MA51960-STD4	101.51	86.493	100.752	101.445	87.27	101.189	101.671	102.525
10:20	MA51960-STD5	101.962	100.572	101.11	101.969	100.412	100.929	101.983	101.485
10:27	MA51960-STD6	104.027	97.55	101.706	102.92	96.203	101.29	102.678	102.4
10:36	MA51960-STD7	102.843	100.296	100.69	101.384	100.56	100.561	101.464	100.388
10:42	MA51960-STD8	103.949	100.993	101.628	102.528	101.141	101.829	103.055	102.966
10:48	MA51960-STD9	105.782	102.778	83.21	102.978	101.479	83.193	103.831	83.914
10:54	MA51960-STD10	105.591	102.515	101.882	103.59	101.871	102.496	104.443	103.321
11:00	MA51960-STD11	105.98	102.423	83.531	102.072	100.911	84.938	103.173	86.203
11:06	MA51960-STD12	107.873	103.57	101.321	104.634	100.425	102.692	106.19	104.964
11:12	MA51960-STD13	106.703	104.085	102.477	105.395	104.153	103.249	106.406	103.713
11:18	MA51960-STD14	108.323	105.782	99.417	106.612	104.703	100.255	106.88	100.58
11:24	MA51960-STD15	110.552	105.498	104.227	106.31	103.371	104.727	107.36	105.969
11:31	MA51960-STD16	100	100	100	100	100	100	100	100
11:37	MA51960-STD17	100	100	100	100	100	100	100	100
11:43	ZZZZZZ	108.904	101.793	98.478	107.296	98.605	99.769	109.223	101.669
11:49	ZZZZZZ	101.841	73.385	99.156	102.318	73.766	98.683	103.26	99.698
12:02	ZZZZZZ	105.338	90.189	97.744	103.298	86.279	98.814	104.714	100.253
12:20	MA51960-ICVA1	106.358	102.529	96.577	103.362	98.888	97.807	105.483	98.722
12:26	MA51960-ICV1	103.918	98.83	99.948	103.88	99.141	100.118	104.245	100.841
12:32	MA51960-ICB1	104.372	97.185	101.252	104.93	96.979	101.186	106.597	101.713
12:38	MA51960-CCVA1	107.357	102.191	100.448	105.194	100.078	101.042	106.631	102.835
12:44	MA51960-CCB1	105.27	101.312	101.349	105.314	101.483	101.361	105.614	102.246
12:50	MA51960-CRI1	106.293	102.525	102.582	106.107	102.633	102.974	106.645	102.435
12:58	ZZZZZZ	100.654	102.749	102.82	99.885	102.295	102.891	101.322	102.77
13:04	MA51960-ICSA1	98.381	94.666	88.15	91.603	88.754	89.557	91.711	97.132
13:10	MA51960-ICSAB1	103.834	101.021	90.098	96.492	92.971	92.094	95.594	100.139
13:17	ZZZZZZ	94.879	93.896	93.884	96.783	94.246	95.808	97.852	97.677
13:24	ZZZZZZ	94.449	93.262	84.214	94.451	91.882	86.638	96.885	90.341
13:30	MA51960-CCVA2	90.785	92.711	90.486	90.59	91.26	92.017	92.586	96.233
13:36	MA51960-CCB2	92.894	91.947	90.815	94.623	93.003	93.009	95.671	94.663

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
13:43	MP31402-MB1	86.81	90.049	88.475	88.581	90.614	88.239	88.779	91.874
13:49	MP31402-B1	88.601	90.215	86.663	89.693	89.697	88.589	91.28	93.258
13:55	MP31402-S1	88.248	90.202	82.701	86.329	86.892	86.526	88.841	92.454
14:01	MP31402-S2	89.38	91.193	83.947	87.817	87.668	88.1	90.199	93.743
14:07	JD40008-3F	89.419	87.651	85.211	88.086	83.736	88.643	90.509	94.039
14:14	MP31402-SD1	99.68	98.229	87.794	98.792	95.676	89.99	101.789	91.17
14:20	JD40008-1F	92.102	92.651	86.344	89.527	89.296	90.094	91.267	93.972
14:26	JD40008-2F	89.916	90.811	79.953	88.67	88.763	82.567	91.387	87.47
14:32	JD40008-4F	97.919	96.743	87.936	93.712	90.954	91.188	96.518	96.341
14:38	ZZZZZZ	104.614	101.124	102.272	104.528	100.787	101.839	105.656	102.312
14:45	MA51960-CCVA3	91.917	98.135	96.462	90.379	95.533	97.235	91.897	99.651
14:51	MA51960-CCB3	97.916	98.758	97.967	98.059	98.685	98.705	98.862	98.793
14:57	MA51960-CRI2	104.388	100.783	100.67	103.756	100.9	100.937	106.064	100.68
15:04	MA51960-ICSA2	100.206	98.985	84.222	93.876	91.247	85.285	93.775	92.923
15:10	MA51960-ICSAB2	103.706	100.407	90.308	96.478	92.071	92.145	96.362	100.147
15:16	ZZZZZZ	94.795	92.441	93.534	96.011	93.271	95.737	97.974	98.354
15:22	MA51960-CCVA4	92.038	91.205	89.158	93.073	90.111	91.784	95.776	96.131
15:28	MA51960-CCB4	82.18	82.791	89.848	84.387	82.694	91.912	86.848	94.56
15:34	MP31361-MB1	88.263	88.294	85.435	89.559	89.933	87.945	90.241	91.427
15:40	MP31361-B1	83.465	87.243	84.234	84.66	87.998	87.12	86.049	92.265
15:46	MP31361-S1	87.049	85.967	80.402	84.361	82.655	86.172	89.397	92.546
15:52	MP31361-S2	86.139	88.363	81.54	82.839	85.371	87.616	88.031	93.853
15:58	JD39397-68	No results reported for the elements associated with this internal standard.							
16:05	MP31361-SD1	94.458	87.523	89.59	93.621	84.818	94.179	98.411	97.963
16:11	ZZZZZZ	88.882	89.252	87.735	87.154	87.124	92.026	91.799	96.674
16:17	ZZZZZZ	97.948	96.106	87.765	94.261	91.062	93.972	99.801	99.557
16:23	ZZZZZZ	110.893	104.552	96.186	103.573	96.182	101.396	108.826	104.965
16:29	MA51960-CCVA5	99.243	93.347	97.609	97.187	91.917	100.04	100.194	102.341
16:35	MA51960-CCB5	95.784	92.046	94.413	97.309	92.742	95.918	100.159	98.395
16:41	ZZZZZZ	91.382	85.04	88.224	92.182	84.635	90.886	93.633	94.283
16:47	ZZZZZZ	90.413	88.044	88.88	92.041	89.671	90.593	92.837	94.837
16:53	ZZZZZZ	86.427	88.155	87.646	87.134	88.889	90.015	88.825	93.572
16:59	ZZZZZZ	90.53	88.233	82.071	92.301	89.437	83.839	92.918	87.033

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
17:06	ZZZZZZ	88.634	81.583	82.229	86.584	78.673	87.675	92.193	93.785
17:12	ZZZZZZ	94.325	90.015	90.752	93.883	87.884	95.488	97.8	99.134
17:18	ZZZZZZ	99.107	95.042	88.166	94.848	88.887	94.392	100.091	100.337
17:24	ZZZZZZ	109.088	103.979	95.935	102.745	95.262	101.044	107.855	105.142
17:30	JD39397-68	95.355	88.675	88.23	91.439	84.504	94.13	97.563	99.696
17:36	MA51960-CCVA6	94.303	88.813	92.185	94.954	87.871	94.939	97.873	98.727
17:42	MA51960-CCB6	94.663	89.629	88.418	96.098	90.226	90.521	98.474	93.163
17:48	ZZZZZZ	102.578	94.727	98.834	102.879	94.403	100.539	106.26	101.963
17:54	ZZZZZZ	86.68	87.105	88.698	88.259	88.788	90.808	89.609	94.519
18:00	MP31467-MB1	92.303	89.457	93.022	94.081	90.206	95.082	96.469	97.272
18:06	MP31467-B1	90.321	87.158	87.846	92.239	86.774	90.812	93.932	95.137
18:12	MA51960-CCVA7	94.236	89.127	75.131	94.119	88.341	77.727	97.325	80.718
18:18	MA51960-CCB7	94.578	90.659	92.582	95.843	91.305	94.796	98.18	97.48
18:24	MP31460-MB1	94.502	89.341	92.863	96.236	90.856	94.941	98.665	97.164
18:30	MP31460-B1	93.905	89.787	91.903	95.371	89.742	94.228	98.009	97.599
18:36	MP31460-S1	95.124	89.912	90.483	94.046	88.087	93.568	96.536	98.105
18:43	MP31460-S2	95.365	89.21	89.889	95.08	88.519	92.692	97.831	96.764
18:49	JD40113-1	97.136	91.381	93.656	97.068	90.177	95.612	100.03	98.556
18:55	MP31460-SD1	100.955	92.223	96.967	101.808	92.179	98.951	104.019	100.701
19:01	ZZZZZZ	97.071	89.708	92.832	96.377	87.678	95.372	99.632	98.627
19:07	ZZZZZZ	96.396	80.318	91.154	95.396	78.517	94.041	99.256	98.307
19:13	ZZZZZZ	98.792	95.233	97.147	101.083	94.199	98.148	102.061	99.681
19:19	MA51960-CCVA8	98.35	96.272	95.674	98.993	95.199	97.942	101.47	100.685
19:25	MA51960-CCB8	98.256	79.162	96.617	100.055	79.977	97.625	101.894	99.764
19:31	MP31463-MB1	93.987	90.61	93.472	95.766	91.31	94.851	97.099	97.571
19:37	MP31463-LB1	93.299	87.877	91.364	94.567	88.063	94.24	95.954	97.14
19:43	MP31463-B1	92.082	89.716	89.993	94.084	89.949	92.802	95.453	96.898
19:49	MP31463-LS1	92.199	90.066	89.49	93.227	89.238	92.565	94.674	97.201
19:55	MP31463-S1	90.653	88.766	86.375	90.112	87.01	90.01	92.466	95.314
20:01	MP31463-S2	89.364	87.847	85.862	89.8	86.416	89.774	92.238	94.801
20:07	JD40003-1A	88.534	87.086	86.312	89.672	86.24	90.262	92.266	94.661
20:14	MP31463-SD1	92.302	86.947	84.832	92.927	87.368	87.45	95.534	90.136
20:20	MA51960-CCVA9	91.363	87.074	87.609	92	86.139	90.805	94.998	94.321

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
20:26	MA51960-CCB9	94.03	89.062	92.369	95.296	90.07	93.773	97.255	95.993
20:32	MP31430A-MB1	91.577	88.331	89.274	92.84	89.406	90.916	93.919	95.365
20:38	MP31430A-B2	89.773	87.557	88.233	91.223	88.303	90.325	92.791	94.831
20:44	MP31430A-S3	84.866	81.086	77.829	82.332	76.798	83.668	86.142	91.039
20:50	MP31430A-S4	84.239	80.407	76.607	81.175	76.956	82.542	85.311	89.931
20:56	JD40060-1	83.186	80.173	76.471	80.505	75.947	81.892	84.321	89.129
21:02	MP31430A-SD1	87.533	83.289	81.603	86.696	80.712	86.092	90.233	91.113
21:08	ZZZZZZ	79.056	77.8	76.021	79.987	77.113	79.771	82.992	86.368
21:14	ZZZZZZ	86.653	83.875	77.028	82.845	78.174	82.806	87.774	89.73
21:20	ZZZZZZ	88.198	83.082	86.965	89.705	84.767	88.742	90.95	91.857
21:26	ZZZZZZ	76.637	80.443	85.856	79.711	82.296	88.102	81.592	91.174
21:32	MA51960-CCVA10	80.748	77.656	80.142	82.641	78.223	83.845	85.655	88.762
21:38	MA51960-CCB10	76.771	78.239	80.574	78.473	80.67	83.099	80.587	86.559
21:44	ZZZZZZ	88.603	84.029	78.028	85.187	79.986	83.961	90.245	89.273
21:50	ZZZZZZ	86.618	82.31	77.268	82.941	78.207	82.88	87.975	89.338
21:56	ZZZZZZ	87.081	83.087	80.065	84.963	79.075	85.072	89.248	90.63
22:03	ZZZZZZ	84.135	78.958	76.459	81.101	74.7	81.634	85.065	87.873
22:09	ZZZZZZ	82.211	80.98	76.21	77.819	76.135	81.836	82.868	89.032
22:15	ZZZZZZ	83.449	77.897	82.299	84.668	79.185	84.096	86.687	88.058
22:21	ZZZZZZ	86.065	81.473	76.103	82.604	77.244	81.177	87.654	87.251
22:27	ZZZZZZ	85.184	80.236	75.849	81.949	76.775	81.609	86.994	87.895
22:33	MA51960-CCVA11	79.085	74.933	78.635	79.864	75.814	81.756	83.134	87.054
22:39	MA51960-CCB11	76.474	71.954	76.115	79.202	75.149	78.512	81.74	82.548
22:45	ZZZZZZ	82.503	70.812	72.372	79.368	67.946 !	77.361	84.227	83.986
22:51	ZZZZZZ	78.479	73.832	77.807	80.643	76.524	79.383	82.571	83.946
22:57	ZZZZZZ	76.941	68.946 !	70.239	74.74	65.825 !	75.116	79.019	82.352
23:03	ZZZZZZ	76.471	74.086	70.749	74.981	71.424	75.738	78.895	82.226
23:09	ZZZZZZ	78.542	75.107	71.222	75.947	72.102	76.922	80.198	83.495
23:15	ZZZZZZ	78.929	74.468	79.664	81.81	75.694	81.833	84.136	85.31
23:21	MA51960-CCVA12	74.572	71.138	72.748	76.632	72.033	76.15	79.818	81.17
23:28	MA51960-CCB12	74.314	69.379 !	73.81	76.266	72.641	75.929	79.006	80.057
23:34	MP31458A-MB1	72.851	71.58	72.308	75.734	73.469	74.656	77.184	79.696
23:40	MP31458A-B2	74.164	71.801	72.408	76.286	72.907	75.21	78.326	80.621

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
23:46	MP31458A-S3	77.573	65.799 !	68.911 !	74.255	61.882 !	74.554	78.55	82.245
23:52	MP31458A-S4	78.995	75.394	72.07	76.442	71.264	77.837	80.311	85.219
23:58	JD40103-1	79.335	75.463	72.107	75.848	70.564	77.924	80.438	84.021
00:04	MP31458A-SD1	83.325	76.167	78.876	81.692	74.45	82.959	86.72	87.479
00:10	ZZZZZZ	77.292	72.507	69.949 !	73.901	69.149 !	75.342	78.795	82.162
00:16	ZZZZZZ	76.756	71.903	71.455	74.445	69.797 !	75.798	79.294	81.685
00:22	ZZZZZZ	77.19	73.398	69.611 !	78.695	74.406	71.436	81.247	75.688
00:28	ZZZZZZ	77.518	59.738 !	76.276	79.177	61.059 !	78.372	81.884	82.269
00:35	MA51960-CCVA13	74.39	69.055 !	71.884	75.552	70.1	74.806	79.081	79.896
00:41	MA51960-CCB13	74.84	69.48 !	73.257	77.092	71.321	75.646	79.712	79.456
00:47	MA51960-CCVA14	75.314	69.849	71.509	75.998	70.463	74.951	79.363	79.952
00:53	MA51960-CCB14	69.149	70.243	74.155	71.195	72.422	76.459	73.924	80.58
00:59	MP31386-MB1	75.785	70.075	73.917	77.928	71.993	76.65	80.974	80.461
01:05	MP31386-B1	74.78	70.153	73.121	76.873	71.79	75.573	80.276	79.937
01:11	MP31386-S1	No results reported for the elements associated with this internal standard.							
01:17	MP31386-S2	No results reported for the elements associated with this internal standard.							
01:23	JD39991-6	80.655	73.067	74.13	78.748	72.356	78.446	83.537	83.67
01:29	MP31386-S1	79.465	73.803	78.18	77.9	74.33	81.493	82.132	84.336
01:35	MP31386-S2	81.303	73.514	78.027	81.503	73.143	80.676	85.352	83.85
01:41	JD39991-6	80.851	72.229	76.566	80.376	72.928	79.991	84.49	82.77
01:47	MA51960-CCVA15	77.88	72.765	74.495	78.531	72.448	77.653	81.965	82.003
01:54	MA51960-CCB15	74.411	71.949	75.898	76.289	73.745	78.346	78.803	81.596
02:00	ZZZZZZ	79.687	71.579	75.195	79.26	71.565	79.308	83.526	82.671
02:06	ZZZZZZ	79.759	71.364	76.516	79.904	72.405	79.221	83.997	82.837
02:12	ZZZZZZ	79.913	72.02	76.942	79.024	71.137	80.673	83.576	84.513
02:18	ZZZZZZ	76.256	70.992	76.13	75.597	71.942	78.612	79.746	83.053
02:24	ZZZZZZ	80.136	76.05	72.085	78.296	73.616	76.399	82.616	81.359
02:30	ZZZZZZ	76.775	71.651	71.517	75.6	70.52	76.375	80.795	81.818
02:36	ZZZZZZ	70.838	72.933	77.67	72.757	74.608	79.54	74.765	83.023
02:42	MA51960-CCVA16	76.708	71.67	73.137	77.201	71.86	76.829	80.666	81.128
02:48	MA51960-CCB16	76.756	69.37	75.584	79.368	70.553	78.334	81.849	81.742
02:54	ZZZZZZ	77.452	72.271	71.685	76.506	70.975	76.227	80.956	82.037
03:00	ZZZZZZ	81.064	72.622	77.506	80.042	73.217	80.561	83.87	84.698

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
03:06	ZZZZZZ	69.989	66.132	66.857	70.114	66.432	71.532	74.563	77.827
03:13	ZZZZZZ	71.487	67.386	69.041	72.444	68.824	72.815	76.388	78.039
03:19	ZZZZZZ	73.764	70	67.993	72.987	68.788	72.302	78.081	79.018
03:25	ZZZZZZ	76.716	70.441	73.85	77.229	71.364	77.778	81.147	81.694
03:31	MA51960-CCVA17	73.463	69.672	71.291	75.504	70.63	75.053	78.777	79.95
03:37	MA51960-CCB17	73.611	70.151	72.984	76.41	72.681	75.334	79.29	79.669
03:43	MP31459-MB1	74.551	69.732	73.632	76.974	72.096	76.879	79.968	80.336
03:49	MP31459-B1	64.929	69.256	72.318	66.356	70.474	75.862	69.06	80.443
03:55	MP31459-S1	72.763	68.114	69.735	73.093	68.873	73.728	76.755	79.264
04:01	MP31459-S2	72.142	67.623	69.588	72.797	68.619	73.432	76.929	79.096
04:07	JD40114-1	67.539	68.435	69.743	69.713	69.372	73.326	73.45	78.48
04:13	ZZZZZZ	75.474	72.042	70.29	74.94	72.254	75.185	79.886	80.838
04:19	ZZZZZZ	77.441	74.189	73.026	77.15	73.69	77.798	82.048	82.581
04:25	ZZZZZZ	76.722	68.022	75.673	79.232	70.123	78.486	81.846	82.164
04:32	MA51960-CCVA18	74.391	69.634	68.271	76.299	70.855	71.254	79.541	76.583
04:38	MA51960-CCB18	75.26	70.672	74.761	77.359	73.155	77.025	80.441	81.502
04:44	ZZZZZZ	74.588	70.16	70.924	75.485	70.327	75.682	79.834	80.673
04:50	ZZZZZZ	72.978	70.691	71.893	73.689	71.091	76.651	78.289	82.014
04:56	ZZZZZZ	75.906	71.224	72.677	76.306	71.079	77.023	80.659	82.202
05:02	ZZZZZZ	76.376	71.535	71.669	75.755	70.332	76.624	80.361	82.612
05:08	ZZZZZZ	77.111	71.696	76.712	79.14	73.719	79.422	81.806	82.749
05:14	MA51960-CCVA19	75.754	70.558	74.308	76.649	71.351	78.22	79.839	83.288
05:20	MA51960-CCB19	76.34	70.722	75.023	78.391	73.524	78.072	81.031	82.078
05:26	ZZZZZZ	74.826	70.394	74.141	78.207	73.242	76.935	80.457	81.437
05:32	ZZZZZZ	74.557	70.339	74.382	77.668	72.823	76.772	80.387	81.093
05:38	ZZZZZZ	273.969 !	68.395	174.637 !	288.409 !	71.189	194.72 !	288.852 !	212.229 !

! = Outside limits.

LEGEND:			CCV/CCB
Istd#	Parameter	Limits	Limits
Istd#9	Germanium (74-2)	60-125 %	60-125 %
Istd#10	Germanium (74-3)	60-125 %	60-125 %
Istd#11	Rhodium (103-1)	60-125 %	60-125 %
Istd#12	Rhodium (103-2)	60-125 %	60-125 %
Istd#13	Rhodium (103-3)	60-125 %	60-125 %
Istd#14	Indium (115-1)	60-125 %	60-125 %
Istd#15	Indium (115-2)	60-125 %	60-125 %
Istd#16	Terbium (159-1)	60-125 %	60-125 %

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
09:56	MA51960-STD1	100	100	100	100	100	100
10:02	MA51960-STD2	100	100	100	100	100	100
10:08	MA51960-STD3	100	100	100	100	100	100
10:14	MA51960-STD4	101.505	87.236	101.383	101.459	101.729	100.969
10:20	MA51960-STD5	102.152	100.013	100.745	101.403	100.461	101.366
10:27	MA51960-STD6	102.584	95.846	101.334	102.466	101.897	102.551
10:36	MA51960-STD7	101.444	100.676	100.321	101.9	101.115	102.065
10:42	MA51960-STD8	103.3	101.656	102.58	103.119	103.486	103.748
10:48	MA51960-STD9	103.391	102.122	84.617	103.648	83.782	102.626
10:54	MA51960-STD10	104.202	102.908	103.005	104.176	102.122	103.676
11:00	MA51960-STD11	104.224	102.782	85.936	104.783	84.944	102.073
11:06	MA51960-STD12	107.202	102.927	104.426	107.34	100.495	103.392
11:12	MA51960-STD13	105.286	103.907	102.791	105.561	103.504	104.313
11:18	MA51960-STD14	106.474	104.583	99.954	106.591	99.693	105.399
11:24	MA51960-STD15	107.74	105.058	105.325	107.893	102.63	104.817
11:31	MA51960-STD16	100	100	100	100	100	100
11:37	MA51960-STD17	100	100	100	100	100	100
11:43	ZZZZZZ	110.33	102.522	100.739	111.2	100.038	108.29
11:49	ZZZZZZ	102.32	74.011	99.668	103.156	99.741	103.018
12:02	ZZZZZZ	105.009	88.7	99.521	105.878	98.275	104.002
12:20	MA51960-ICVA1	105.347	101.814	99.038	106.587	96.65	103.693
12:26	MA51960-ICV1	103.837	99.687	100.491	103.873	100.926	103.588
12:32	MA51960-ICB1	104.763	96.967	101.309	105.555	101.374	105.189
12:38	MA51960-CCVA1	106.71	102.672	102.232	107.488	101.037	104.544
12:44	MA51960-CCB1	105.483	101.804	101.212	105.265	100.746	104.875
12:50	MA51960-CRI1	104.853	103	102.227	105.66	101.642	105.129
12:58	ZZZZZZ	99.878	102.205	102.337	99.952	102.063	98.748
13:04	MA51960-ICSA1	99.56	97.089	96.845	100.011	90.671	92.704
13:10	MA51960-ICSAB1	104.421	101.632	99.686	104.838	93.356	96.194
13:17	ZZZZZZ	99.044	96.45	97.681	99.859	98.18	99.866
13:24	ZZZZZZ	98.895	96.638	90.543	99.707	90.113	98.466
13:30	MA51960-CCVA2	95.455	96.19	96.33	96.28	96.053	94.897
13:36	MA51960-CCB2	97.369	95.707	94.854	97.927	96.24	98.174

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
13:43	MP31402-MB1	91.321	94.176	92.203	92.796	98.65	96.979
13:49	MP31402-B1	95.291	94.679	93.418	96.154	96.017	98.058
13:55	MP31402-S1	94.489	94.244	93.055	95.868	91.375	93.011
14:01	MP31402-S2	95.471	95.03	94.205	96.786	92.407	93.5
14:07	JD40008-3F	95.485	91.134	94.281	96.697	92.594	92.892
14:14	MP31402-SD1	102.377	99.678	91.599	103.087	91.057	102.226
14:20	JD40008-1F	96.456	95.817	94.506	97.508	93.528	95.876
14:26	JD40008-2F	95.877	94.967	87.176	96.933	86.37	94.699
14:32	JD40008-4F	101.209	97.701	96.661	101.918	92.189	96.327
14:38	ZZZZZZ	104.859	100.621	101.579	105.042	101.109	103.988
14:45	MA51960-CCVA3	93.347	99.126	99.823	93.939	97.767	91.903
14:51	MA51960-CCB3	98.447	99.213	98.528	99.154	98.751	98.415
14:57	MA51960-CRI2	103.386	101.036	99.763	104.057	99.46	102.931
15:04	MA51960-ICSA2	102.54	100.539	92.758	103.378	87.121	94.967
15:10	MA51960-ICSAB2	105.319	101.393	100.265	105.805	93.686	97.338
15:16	ZZZZZZ	99.516	95.88	97.913	100.708	100.044	100.975
15:22	MA51960-CCVA4	98.697	95.618	95.998	100.074	96.301	98.749
15:28	MA51960-CCB4	87.971	85.463	94.382	88.756	95.954	89.213
15:34	MP31361-MB1	94.281	93.326	92.226	94.773	97.057	98.754
15:40	MP31361-B1	90.841	93.033	92.296	91.505	94.56	92.778
15:46	MP31361-S1	95.286	92.275	92.976	96.5	90.76	92.915
15:52	MP31361-S2	93.26	94.649	94.234	94.409	91.957	90.858
15:58	JD39397-68	No results reported for the elements associated with this internal standard.					
16:05	MP31361-SD1	100.987	90.956	98.834	101.809	95.388	101.984
16:11	ZZZZZZ	94.787	94.208	96.975	95.773	98.323	96.119
16:17	ZZZZZZ	104.603	98.743	99.63	106.213	95.36	98.97
16:23	ZZZZZZ	111.293	102.117	104.89	112.27	95.68	100.921
16:29	MA51960-CCVA5	102.372	96.73	102.791	103.634	101.967	101.493
16:35	MA51960-CCB5	100.863	95.031	98.444	101.613	99.328	102.315
16:41	ZZZZZZ	96.34	88.091	94.189	97.308	98.541	100.152
16:47	ZZZZZZ	96.316	93.199	94.033	97.354	98.161	99.803
16:53	ZZZZZZ	91.734	93.148	93.834	92.076	96.696	94.183
16:59	ZZZZZZ	96.469	93.345	87.15	97.315	89.98	99.476

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
17:06	ZZZZZZ	96.895	87.119	94.132	98.29	91.75	94.6
17:12	ZZZZZZ	100.88	94.415	98.86	101.553	99.676	101.482
17:18	ZZZZZZ	104.674	96.515	100.033	105.195	94.576	97.83
17:24	ZZZZZZ	110.491	102.251	105.504	111.475	96.004	100.068
17:30	JD39397-68	101.8	93.171	99.608	102.453	96.409	98.06
17:36	MA51960-CCVA6	101.707	92.966	98.854	102.413	98.225	100.643
17:42	MA51960-CCB6	100.16	93.045	93.059	100.948	94.15	100.965
17:48	ZZZZZZ	105.504	96.414	101.608	105.731	83.82	100.677
17:54	ZZZZZZ	93.464	91.954	94.414	93.444	99.16	96.482
18:00	MP31467-MB1	97.627	93.381	97.148	98.009	98.609	98.724
18:06	MP31467-B1	98.019	92.009	95.479	99.21	97.559	100.275
18:12	MA51960-CCVA7	100.746	93.597	80.952	101.659	80.289	99.81
18:18	MA51960-CCB7	100.041	93.906	97.36	100.622	98.652	101.195
18:24	MP31460-MB1	99.833	93.603	96.98	100.663	99.947	102.686
18:30	MP31460-B1	100.654	94.343	97.434	101.049	98.361	101.091
18:36	MP31460-S1	100.549	93.853	98.459	101.618	96.914	99.939
18:43	MP31460-S2	101.678	94.088	96.48	102.375	95.949	100.822
18:49	JD40113-1	102.589	94.416	99.096	103.207	98.362	102.147
18:55	MP31460-SD1	104.491	95.275	100.007	105.081	95.088	104.787
19:01	ZZZZZZ	103.317	93.586	98.626	103.752	96.353	100.561
19:07	ZZZZZZ	102.775	84.248	98.092	103.536	95.799	100.233
19:13	ZZZZZZ	102.963	95.893	99.488	103.226	99.806	102.93
19:19	MA51960-CCVA8	103.83	99.356	100.861	104.263	99.817	102.427
19:25	MA51960-CCB8	102.52	81.232	99.421	103.063	100.434	102.882
19:31	MP31463-MB1	99.211	93.942	97.675	99.811	102.319	103.549
19:37	MP31463-LB1	98.962	91.457	97.25	99.46	100.322	102.138
19:43	MP31463-B1	100.341	94.24	97.443	101.032	98.936	101.632
19:49	MP31463-LS1	99.185	93.912	97.009	99.958	97.797	100.598
19:55	MP31463-S1	97.89	93.319	95.361	99.15	95.703	98.48
20:01	MP31463-S2	97.467	92.961	94.996	98.728	95.545	98.194
20:07	JD40003-1A	96.788	92.316	94.495	97.426	97.196	98.461
20:14	MP31463-SD1	97.942	91.608	90.541	98.372	92.289	101.214
20:20	MA51960-CCVA9	98.407	91.765	94.577	99.182	94.911	97.949

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
20:26	MA51960-CCB9	99.083	92.409	96.193	99.499	97.229	100.072
20:32	MP31430A-MB1	97.369	92.032	94.854	97.906	98.111	100.225
20:38	MP31430A-B2	97.281	93.171	95.223	98.36	96.159	98.263
20:44	MP31430A-S3	93.833	86.96	91.547	95.426	86.093	88.742
20:50	MP31430A-S4	93.004	86.596	90.551	94.217	84.522	87.362
20:56	JD40060-1	91.865	85.443	89.835	93.213	84.157	86.304
21:02	MP31430A-SD1	95.032	87.665	91.045	96.251	90.928	95.214
21:08	ZZZZZZ	89.653	84.83	87.122	90.466	86.753	89.326
21:14	ZZZZZZ	95.365	87.817	89.916	96.128	82.715	86.198
21:20	ZZZZZZ	94.368	88.661	92.469	95.153	94.234	96.199
21:26	ZZZZZZ	84.083	86.325	91.493	85.295	93.229	85.711
21:32	MA51960-CCVA10	90.204	84.936	88.799	91.341	88.916	91.395
21:38	MA51960-CCB10	83.074	84.733	86.828	83.899	88.705	85.446
21:44	ZZZZZZ	95.921	88.374	90.001	96.839	84.438	89.675
21:50	ZZZZZZ	94.273	87.261	89.987	95.355	83.56	88.732
21:56	ZZZZZZ	95.168	87.66	90.727	96.199	86.181	89.991
22:03	ZZZZZZ	92.455	83.91	88.713	93.882	83.853	87.914
22:09	ZZZZZZ	89.461	85.754	89.615	90.813	81.799	81.936
22:15	ZZZZZZ	89.785	83.649	88.251	91.002	90.561	92.622
22:21	ZZZZZZ	93.549	85.834	87.406	94.76	81.854	87.372
22:27	ZZZZZZ	93.234	85.862	88.473	94.244	82.95	88.083
22:33	MA51960-CCVA11	87.758	82.036	87.133	89.045	87.24	88.903
22:39	MA51960-CCB11	85.132	79.795	82.827	86.244	85.689	88.21
22:45	ZZZZZZ	90.235	75.601	84.491	91.176	80.518	85.743
22:51	ZZZZZZ	87.212	81.776	84.142	87.576	88.201	90.25
22:57	ZZZZZZ	86.767	74.852	82.949	87.827	78.81	82.784
23:03	ZZZZZZ	86.021	81.131	83.18	87.102	79.887	83.239
23:09	ZZZZZZ	86.748	81.13	84.247	88.343	79.702	83.128
23:15	ZZZZZZ	87.418	80.17	85.487	88.259	87.746	89.826
23:21	MA51960-CCVA12	85.059	79.074	81.3	86.387	82.724	86.715
23:28	MA51960-CCB12	83.381	77.437	80.43	83.841	82.457	86.12
23:34	MP31458A-MB1	82.171	78.917	80.039	83.036	84.145	86.386
23:40	MP31458A-B2	83.756	79.3	81.188	84.958	83.446	86.333

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
23:46	MP31458A-S3	86.731	70.983	82.514	87.875	75.61	80.198
23:52	MP31458A-S4	88.721	81.351	85.358	89.732	77.989	81.494
23:58	JD40103-1	87.432	80.259	84.648	88.451	77.523	80.914
00:04	MP31458A-SD1	90.645	81.929	87.311	91.631	85.038	88.831
00:10	ZZZZZZ	85.543	78.509	81.724	86.744	76.287	79.927
00:16	ZZZZZZ	85.324	79.209	82.409	86.352	79.844	83.149
00:22	ZZZZZZ	85.402	79.34	75.412	86.264	77.67	88.086
00:28	ZZZZZZ	85.118	65.372 !	82.572	85.827	84.505	87.403
00:35	MA51960-CCVA13	84.153	77.488	80.065	84.763	80.951	85.409
00:41	MA51960-CCB13	83.08	76.55	79.986	83.988	81.91	85.682
00:47	MA51960-CCVA14	84.26	77.211	80.548	85.413	80.876	85.795
00:53	MA51960-CCB14	76.927	77.546	80.854	77.571	83.078	79.482
00:59	MP31386-MB1	83.524	76.819	80.262	84.79	83.846	88.127
01:05	MP31386-B1	84.319	77.969	80.056	85.609	82.156	87.059
01:11	MP31386-S1	No results reported for the elements associated with this internal standard.					
01:17	MP31386-S2	No results reported for the elements associated with this internal standard.					
01:23	JD39991-6	88.318	80.886	83.721	89.394	82.205	86.96
01:29	MP31386-S1	84.049	79.885	84.317	84.923	74.365	83.959
01:35	MP31386-S2	88.146	78.622	83.624	89.144	69.56	85.738
01:41	JD39991-6	87.027	78.077	83.327	88.012	73.427	86.979
01:47	MA51960-CCVA15	86.068	79.336	81.948	87.196	83.161	87.791
01:54	MA51960-CCB15	81.49	78.361	81.739	82.547	83.859	84.142
02:00	ZZZZZZ	86.884	78.572	82.949	88.276	69.706	85.453
02:06	ZZZZZZ	86.646	77.854	82.635	87.409	67.781	83.709
02:12	ZZZZZZ	86.944	77.947	84.433	87.896	71.624	85.338
02:18	ZZZZZZ	81.893	77.456	82.659	82.728	66.896	79.735
02:24	ZZZZZZ	87.606	81.869	81.776	89.065	81.279	87.413
02:30	ZZZZZZ	86.018	79.003	82.187	87.24	80.1	84.559
02:36	ZZZZZZ	77.498	79.15	83.193	77.846	85.077	79.748
02:42	MA51960-CCVA16	85.206	78.871	81.603	86.246	83.068	87.034
02:48	MA51960-CCB16	85.049	75.2	81.697	85.783	84.135	88.042
02:54	ZZZZZZ	86.926	79.653	82.314	88.176	81.31	86.361
03:00	ZZZZZZ	87.867	79.718	84.988	89.015	78.497	88.79

INTERNAL STANDARD SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA51960
Parameters: Pb

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
03:06	ZZZZZZ	80.795	74.998	78.015	81.857	78.961	82.295
03:13	ZZZZZZ	81.413	76.098	78.407	82.828	73.069	84.837
03:19	ZZZZZZ	84.172	78.113	79.59	85.536	78.674	84.266
03:25	ZZZZZZ	85.722	78.039	82.587	86.74	76.646	86.62
03:31	MA51960-CCVA17	84.158	77.477	80.61	85.257	81.951	86.409
03:37	MA51960-CCB17	83.156	77.633	80.253	84.255	82.735	86.528
03:43	MP31459-MB1	83.34	77.293	80.576	84.525	84.367	88.131
03:49	MP31459-B1	73.214	77.099	80.843	74.027	82.528	76.083
03:55	MP31459-S1	82.506	76.834	80.484	83.961	81.548	85.615
04:01	MP31459-S2	82.834	76.534	79.708	83.72	81.966	85.175
04:07	JD40114-1	78.603	76.823	78.705	79.634	81.245	81.514
04:13	ZZZZZZ	85.635	80.823	81.183	86.691	80.633	85.563
04:19	ZZZZZZ	86.636	81.788	82.966	87.823	83.57	87.9
04:25	ZZZZZZ	85.523	75.143	82.419	86.683	85.269	88.887
04:32	MA51960-CCVA18	85.095	78.299	76.918	86.048	78.19	87.063
04:38	MA51960-CCB18	84.294	78.216	81.994	85.407	84.464	87.731
04:44	ZZZZZZ	85.016	78.969	81.398	86.12	81.419	86.123
04:50	ZZZZZZ	83.011	79.453	82.398	83.865	83.429	83.989
04:56	ZZZZZZ	85.998	79.235	82.791	86.977	83.691	87.248
05:02	ZZZZZZ	86.131	79.2	82.923	87.87	82.415	85.809
05:08	ZZZZZZ	86.093	78.709	83.33	87.018	85.705	88.552
05:14	MA51960-CCVA19	85.125	78.411	84.008	86.211	84.677	86.793
05:20	MA51960-CCB19	84.875	78.348	82.563	85.898	85.068	87.68
05:26	ZZZZZZ	84.464	78.219	80.888	85.189	84.311	87.42
05:32	ZZZZZZ	84.34	78.085	80.966	85.456	83.183	87.312
05:38	ZZZZZZ	319.668 !	76.421	216.038 !	326.407 !	223.047 !	339.714 !

! = Outside limits.

LEGEND: Istd#	Parameter	Limits	CCV/CCB Limits
Istd#17	Terbium (159-2)	60-125 %	60-125 %
Istd#18	Terbium (159-3)	60-125 %	60-125 %
Istd#19	Holmium (165-1)	60-125 %	60-125 %
Istd#20	Holmium (165-2)	60-125 %	60-125 %
Istd#21	Bismuth (209-1)	60-125 %	60-125 %
Istd#22	Bismuth (209-2)	60-125 %	60-125 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA51960 Units: ug/l

Time:			12:32		12:44		13:36		14:51	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.42	anr							
Antimony	2.0	.085								
Arsenic	0.50	.025	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.005								
Boron	25	.85								
Cadmium	0.50	.01	anr							
Calcium	250	3.6	anr							
Chromium	1.0	.018	anr							
Cobalt	0.50	.003	anr							
Copper	2.0	.024	anr							
Iron	25	.24	anr							
Lead	0.50	.008	0.00702	<0.50	0.0145	<0.50	0.0190	<0.50	0.0135	<0.50
Magnesium	250	.19	anr							
Manganese	1.0	.012	anr							
Molybdenum	1.0	.017								
Nickel	1.0	.017								
Potassium	250	.78								
Selenium	0.50	.044	anr							
Silver	0.50	.004	anr							
Sodium	250	1.5								
Strontium	5.0	.014								
Thallium	0.50	.002	anr							
Tin	5.0	.041								
Titanium	1.0	.11								
Vanadium	1.0	.013								
Zinc	5.0	.078	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA51960 Units: ug/l

Time:			15:28	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Aluminum	25	.42	anr	
Antimony	2.0	.085		
Arsenic	0.50	.025	anr	
Barium	1.0	.009	anr	
Beryllium	0.50	.005		
Boron	25	.85		
Cadmium	0.50	.01	anr	
Calcium	250	3.6	anr	
Chromium	1.0	.018	anr	
Cobalt	0.50	.003	anr	
Copper	2.0	.024	anr	
Iron	25	.24	anr	
Lead	0.50	.008	0.0623	<0.50
Magnesium	250	.19	anr	
Manganese	1.0	.012	anr	
Molybdenum	1.0	.017		
Nickel	1.0	.017		
Potassium	250	.78		
Selenium	0.50	.044	anr	
Silver	0.50	.004	anr	
Sodium	250	1.5		
Strontium	5.0	.014		
Thallium	0.50	.002	anr	
Tin	5.0	.041		
Titanium	1.0	.11		
Vanadium	1.0	.013		
Zinc	5.0	.078	anr	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA51960 Units: ug/l

Time:		12:20			12:26			12:38	
Sample ID:	ICVA	ICVA1		ICV	ICV1		CCVA	CCVA1	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	60	59.8	99.7				50	50.8	101.6
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel									
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA51960 Units: ug/l

Time:		13:30			14:45			15:22	
Sample ID:	CCVA	CCVA2		CCVA	CCVA3		CCVA	CCVA4	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Boron									
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	50	50.7	101.4	50	50.8	101.6	50	50.9	101.8
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel									
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA51960 Units: ug/l

Time:			12:50		14:57	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	25	25	anr			
Antimony	2.0	0.25				
Arsenic	0.50	0.50	anr			
Barium	1.0	0.50	anr			
Beryllium	0.50	0.25				
Boron	25	2.5				
Cadmium	0.50	0.25	anr			
Calcium	250	125	anr			
Chromium	1.0	2.0	anr			
Cobalt	0.50	0.25	anr			
Copper	2.0	2.0	anr			
Iron	25	25	anr			
Lead	0.50	0.25	0.505	101.0	0.479	95.8
Magnesium	250	125	anr			
Manganese	1.0	0.25	anr			
Molybdenum	1.0	0.50				
Nickel	1.0	2.0				
Potassium	250	125				
Selenium	0.50	0.50	anr			
Silver	0.50	1.0	anr			
Sodium	250	125				
Strontium	5.0	0.50				
Thallium	0.50	0.25	anr			
Tin	5.0	0.50				
Titanium	1.0	0.50				
Vanadium	1.0	2.0				
Zinc	5.0	2.0	anr			

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA022422M1.CSV Date Analyzed: 02/24/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA51960 Units: ug/l

Time:			13:04		13:10		15:04		15:10	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	100000	100000	96400	96.4	95000	95.0	96200	96.2	94500	94.5
Antimony			0.0297		0.0159		0.0129		-0.00312	
Arsenic		20	0.0904		18.0	90.0	0.0765		18.7	93.5
Barium			0.169		0.159		0.158		0.151	
Beryllium			-0.00149		0.116		0.00702		0.116	
Boron		50	2.07		49.6	99.2	4.10		52.3	104.6
Cadmium		20	-0.271		19.4	97.0	-0.267		20.7	103.5
Calcium	100000	100000	96000	96.0	98700	98.7	99500	99.5	98400	98.4
Chromium		20	0.847		20.9	104.5	0.896		21.2	106.0
Cobalt		20	0.108		18.8	94.0	0.0859		19.6	98.0
Copper		20	0.198		17.8	89.0	0.200		18.4	92.0
Iron	100000	100000	92900	92.9	90700	90.7	94000	94.0	90500	90.5
Lead			0.0336		0.0860		0.0357		0.0792	
Magnesium	100000	100000	95600	95.6	93900	93.9	95600	95.6	93100	93.1
Manganese		20	0.268		19.1	95.5	0.289		20.0	100.0
Molybdenum	2000	2000	2150HH	107.5	2200HH	110.0	2230HH	111.5	2190HH	109.5
Nickel		20	0.334		17.9	89.5	0.354		18.5	92.5
Potassium	100000	100000	96600HH	96.6	95700HH	95.7	97900HH	97.9	95300HH	95.3
Selenium		20	0.0516		19.4	97.0	0.0487		19.5	97.5
Silver		20	0.0221		19.4	97.0	0.0173		20.1	100.5
Sodium	100000	100000	96900HH	96.9	95300HH	95.3	96500HH	96.5	94200HH	94.2
Strontium	2000	2000	2130HH	106.5	2090HH	104.5	2230HH	111.5	2080HH	104.0
Thallium			0.0104		0.0288		0.00984		0.0323	
Tin	2000	2000	2000HH	100.0	1980HH	99.0	1970HH	98.5	1980HH	99.0
Titanium	2000	2000	1930HH	96.5	1870HH	93.5	1930HH	96.5	1880HH	94.0
Vanadium		20	0.0335		18.5	92.5	0.0180		18.1	90.5
Zinc		20	-0.367		15.5	77.5*(a)	-0.502		16.2	81.0

(*) Outside of QC limits
(anr) Analyte not requested
(a) No samples reported for this element in the area bracketed by this QC.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/22/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	27	150		
Antimony	6.0	2.2	4.7		
Arsenic	3.0	1.3	2.8		
Barium	200	1	13		
Beryllium	1.0	.2	.5		
Bismuth	20	2.1	8.6		
Boron	100	1	10		
Cadmium	3.0	.2	1		
Calcium	5000	7.7	99	2.3	<5000
Cerium	100				
Chromium	10	.5	2		
Cobalt	50	.4	2.6		
Copper	10	6.8	5.9		
Iron	100	15	32	0.50	<100
Lead	3.0	1.6	1.8		
Lithium	50	3.7	7.3		
Magnesium	5000	54	140		
Manganese	15	.1	1.4		
Molybdenum	20	.5	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	1.8	18		
Potassium	10000	77	200		
Selenium	10	2	4.9		
Silicon	200	1.3	32		
Silver	10	.9	6.1		
Sodium	10000	23	570		
Strontium	10	.4	2.7		
Sulfur	50	4.1	45		
Thallium	10	1.6	1.8		
Tin	10	.9	3.7		
Titanium	10	.9	2.5		
Tungsten	50	2	40		
Vanadium	50	.8	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/22/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.2	6.9		
Zirconium	10	.5	4.1		

Associated samples MP31401: JD40008-1, JD40008-2, JD40008-3, JD40008-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-4 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium	106000	129000	25000	92.0	75-125
Cerium					
Chromium					
Cobalt					
Copper					
Iron	7240	31300	25000	96.2	75-125
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-4 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP31401: JD40008-1, JD40008-2, JD40008-3, JD40008-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-4 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium	106000	124000	25000	72.0 (a)	4.0	20
Cerium						
Chromium						
Cobalt						
Copper						
Iron	7240	30800	25000	94.2	1.6	20
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-4 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc					
Zirconium					

Associated samples MP31401: JD40008-1, JD40008-2, JD40008-3, JD40008-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:		02/22/22				02/22/22		
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Bismuth								
Boron								
Cadmium								
Calcium	24700	25000	98.8	80-120	24600	25000	98.4	80-120
Cerium								
Chromium								
Cobalt								
Copper								
Iron	24400	25000	97.6	80-120	24400	25000	97.6	80-120
Lead	anr							
Lithium								
Magnesium								
Manganese								
Molybdenum								
Nickel								
Phosphorus								
Potassium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfur								
Thallium								
Tin								
Titanium								
Tungsten								
Vanadium								

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/22/22 02/22/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc								
Zirconium								

Associated samples MP31401: JD40008-1, JD40008-2, JD40008-3, JD40008-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-4 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium	106000	109000	3.1	0-10
Cerium				
Chromium				
Cobalt				
Copper				
Iron	7240	7360	1.5	0-10
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31401 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-4 Original SDL 1:5	%DIF	QC Limits
Zinc			
Zirconium			

Associated samples MP31401: JD40008-1, JD40008-2, JD40008-3, JD40008-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31402
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 02/22/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.83	32		
Antimony	4.0	.17	1.7		
Arsenic	1.0	.05	.39		
Barium	2.0	.018	.73		
Beryllium	1.0	.01	.15		
Boron	50	1.7	14		
Cadmium	1.0	.02	.17		
Calcium	500	7.2	200		
Chromium	2.0	.036	.62		
Cobalt	1.0	.006	.17		
Copper	4.0	.048	1.9		
Iron	50	.47	19		
Lead	1.0	.016	.52	0.042	<1.0
Magnesium	500	.38	46		
Manganese	2.0	.024	.63		
Molybdenum	2.0	.034	.45		
Nickel	2.0	.034	.95		
Potassium	500	1.6	68		
Selenium	1.0	.088	.55		
Silver	1.0	.008	.16		
Sodium	500	3	470		
Strontium	10	.028	2.4		
Thallium	1.0	.004	.17		
Tin	10	.082	2.6		
Titanium	2.0	.22	1.6		
Vanadium	2.0	.026	1.8		
Zinc	10	.16	5.4		

Associated samples MP31402: JD40008-1F, JD40008-2F, JD40008-3F, JD40008-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31402
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-3F Original MS		Spikelot MP6020AQ3% Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	0.16	82.1	80	102.4	75-125
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP31402: JD40008-1F, JD40008-2F, JD40008-3F, JD40008-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31402
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-3F Original	MSD	Spikelot MP6020AQ3%	Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead	0.16	83.4	80	104.1	1.6	20
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP31402: JD40008-1F, JD40008-2F, JD40008-3F, JD40008-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31402 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/22/22

Metal	BSP Result	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	80.7	80	100.9	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP31402: JD40008-1F, JD40008-2F, JD40008-3F, JD40008-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP31402 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 02/22/22

Metal	JD40008-3F Original	SDL 2:10	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	0.162	0.153	5.7	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP31402: JD40008-1F, JD40008-2F, JD40008-3F, JD40008-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries
- Instrument Runlogs/QC

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN26594	5.0	0.0	mg/l	50.00	48.5	97.0	90-110%
Alkalinity, Total as CaCO3	GN26594			mg/l	250.00	249	99.6	90-110%
Alkalinity, Total as CaCO3	GN26627	5.0	0.0	mg/l	50	49.0	98.0	90-110%
Alkalinity, Total as CaCO3	GN26627			mg/l	250	249	99.6	90-110%
Nitrogen, Total Kjeldahl	GP38657/GN26734	0.20	0.0	mg/l	1.5	1.43	95.3	90-110%
Sulfate	GP38640/GN26585	2.0	0.0	mg/l	80	82.9	103.6	90-110%
Total Carbon	GP38635/GN26657	1.0	0.0	mg/l	10	10.9	109.0	90-110%
Total Organic Carbon	GP38634/GN26655	1.0	0.0	mg/l	10	10.5	105.0	90-110%

Associated Samples:
Batch GN26594: JD40008-1, JD40008-2, JD40008-3
Batch GN26627: JD40008-4
Batch GP38634: JD40008-1, JD40008-2, JD40008-3, JD40008-4
Batch GP38635: JD40008-1, JD40008-2, JD40008-3, JD40008-4
Batch GP38640: JD40008-1, JD40008-2, JD40008-3, JD40008-4
Batch GP38657: JD40008-1, JD40008-2, JD40008-3, JD40008-4
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN26594	JD39850-2	mg/l	215	215	0.0	0-10%
Alkalinity, Total as CaCO3	GN26627	JD40035-1	mg/l	299	298	0.3	0-10%
Nitrogen, Total Kjeldahl	GP38657/GN26734	JD40008-3	mg/l	0.34	0.33	3.0	0-43%
Sulfate	GP38640/GN26585	JD39964-10	mg/l	20.6	21.2	2.9	0-20%

Associated Samples:
Batch GN26594: JD40008-1, JD40008-2, JD40008-3
Batch GN26627: JD40008-4
Batch GP38640: JD40008-1, JD40008-2, JD40008-3, JD40008-4
Batch GP38657: JD40008-1, JD40008-2, JD40008-3, JD40008-4
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Nitrogen, Total Kjeldahl	GP38657/GN26734	JD40008-3	mg/l	0.34	1.5	1.9	104.0	90-110%
Sulfate	GP38640/GN26585	JD39964-10	mg/l	20.6	80	102	101.8	80-120%
Total Carbon	GP38635/GN26657	JD40008-1	mg/l	2.7	50	51.4	97.4	10-152%
Total Organic Carbon	GP38634/GN26655	JD39968-1	mg/l	1.1	10	10.8	97.0	71-132%

Associated Samples:
Batch GP38634: JD40008-1, JD40008-2, JD40008-3, JD40008-4
Batch GP38635: JD40008-1, JD40008-2, JD40008-3, JD40008-4
Batch GP38640: JD40008-1, JD40008-2, JD40008-3, JD40008-4
Batch GP38657: JD40008-1, JD40008-2, JD40008-3, JD40008-4
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Total Carbon	GP38635/GN26657	JD40008-1	mg/l	2.7	50	51.4	0.0	10%
Total Organic Carbon	GP38634/GN26655	JD39968-1	mg/l	1.1	10	10.9	0.9	10%

Associated Samples:
Batch GP38634: JD40008-1, JD40008-2, JD40008-3, JD40008-4
Batch GP38635: JD40008-1, JD40008-2, JD40008-3, JD40008-4
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: C22022101.TXT Date Analyzed: 02/21/22 Methods: EPA 300/SW846 9056A
Analyst: JD Run ID: GN26585
Parameters: Sulfate

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:10	GN26585-STD1	1		STDA
10:23	GN26585-STD2	1		STDC
10:36	GN26585-STD3	1		STDD
10:49	GN26585-STD4	1		STDE
11:20	GN26585-STD5	1		STDF
11:33	GN26585-STD6	1		STDG
11:46	GN26585-ICV1	1		
11:59	GN26585-CCV1	1		
12:12	GN26585-CCB1	1		
12:24	ZZZZZZ	1		
12:37	ZZZZZZ	1		
12:50	ZZZZZZ	1		
13:03	ZZZZZZ	1		
13:16	GP38616-MB1	1		
13:29	GP38616-B1	1		
13:42	GP38616-S1	1		
13:55	GP38616-D1	1		
14:08	JD39923-6A	1		(sample used for QC only; not part of login JD40008)
14:21	ZZZZZZ	1		
14:34	GN26585-CCV2	1		
14:47	GN26585-CCB2	1		
15:00	ZZZZZZ	1		
15:13	ZZZZZZ	1		
15:29	ZZZZZZ	1		
15:41	ZZZZZZ	1		
15:54	ZZZZZZ	1		
16:07	ZZZZZZ	35		
16:20	GP38615-S1	3		
16:33	GP38615-D1	3		
16:46	JD39875-4	3		(sample used for QC only; not part of login JD40008)
16:59	ZZZZZZ	2		
17:12	GN26585-CCV3	1		
17:25	GN26585-CCB3	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: C22022101.TXT Date Analyzed: 02/21/22 Methods: EPA 300/SW846 9056A
Analyst: JD Run ID: GN26585
Parameters: Sulfate

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:37	ZZZZZZ	2		
17:50	ZZZZZZ	2		
18:03	ZZZZZZ	2		
18:16	ZZZZZZ	3		
18:29	ZZZZZZ	2		
18:42	ZZZZZZ	6		
18:55	GP38640-MB1	1		
19:08	GP38640-B1	1		
19:21	GP38640-S1	1		
19:34	GP38640-D1	1		
19:47	ZZZZZZ	1		
20:00	ZZZZZZ	1		
09:15	GN26585-CCV4	1		
09:28	GN26585-CCB4	1		
09:41	JD39964-10	1		(sample used for QC only; not part of login JD40008)
09:54	ZZZZZZ	1		
10:07	ZZZZZZ	1		
10:20	ZZZZZZ	1		
10:33	JD40008-1	1		
10:46	JD40008-2	1		
10:59	JD40008-3	1		
11:12	JD40008-4	1		
11:25	ZZZZZZ	1		
11:37	ZZZZZZ	1		
11:50	GN26585-CCV5	1		
12:03	GN26585-CCB5	1		
12:16	ZZZZZZ	1		
12:29	ZZZZZZ	1		
12:42	ZZZZZZ	1		
12:55	ZZZZZZ	1		
13:08	ZZZZZZ	1		
13:21	ZZZZZZ	1		
13:34	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: C22022101.TXT Date Analyzed: 02/21/22 Methods: EPA 300/SW846 9056A
Analyst: JD Run ID: GN26585
Parameters: Sulfate

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:47	ZZZZZZ	1		
14:00	ZZZZZZ	1		
14:13	GN26585-CCV6	1		
14:26	GN26585-CCB6	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: C22022101.TXT Date Analyzed: 02/21/22 Methods: EPA 300/SW846 9056A
Run ID: GN26585 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN26585-ICV1	Sulfate	101	2.0	0.89	100	101.0	90-110
GN26585-CCV1	Sulfate	199	2.0	0.89	200	99.5	90-110
GN26585-CCB1	Sulfate	0.89 U	2.0	0.89			
GN26585-CCV2	Sulfate	202	2.0	0.89	200	101.0	90-110
GN26585-CCB2	Sulfate	0.89 U	2.0	0.89			
GN26585-CCV3	Sulfate	201	2.0	0.89	200	100.5	90-110
GN26585-CCB3	Sulfate	0.89 U	2.0	0.89			
GN26585-CCV4	Sulfate	201	2.0	0.89	200	100.5	90-110
GN26585-CCB4	Sulfate	0.89 U	2.0	0.89			
GN26585-CCV5	Sulfate	198	2.0	0.89	200	99.0	90-110
GN26585-CCB5	Sulfate	0.89 U	2.0	0.89			
GN26585-CCV6	Sulfate	200	2.0	0.89	200	100.0	90-110
GN26585-CCB6	Sulfate	0.89 U	2.0	0.89			

(!) Outside of QC limits

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: F220221W2.TXT Date Analyzed: 02/21/22 Methods: SM5310 B-11
Analyst: NA Run ID: GN26655
Parameters: Total Organic Carbon

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:16	GN26655-STD1	1		STDA
14:19	GN26655-STD2	1		STDB
15:17	GN26655-STD3	1		STDC
16:15	GN26655-STD4	1		STDD
17:14	GN26655-STD5	1		STDE
18:14	GN26655-STD6	1		STDF
19:14	GN26655-STD7	1		STDG
20:15	GN26655-STD8	1		STDH
09:56	ZZZZZZ	1		
10:24	GN26655-CRI1	1		
10:48	GN26655-HSTD1	1		
11:14	GN26655-ICV1	1		
11:41	GN26655-ICB1	1		
12:10	GN26655-CCV1	1		
12:36	GN26655-CCB1	1		
13:02	ZZZZZZ	1		
10:41	GP38634-MB1	1		
11:04	GP38634-B1	1		
11:23	JD39968-1	1		(sample used for QC only; not part of login JD40008)
11:42	GP38634-S1	1		
12:02	GP38634-MSD1	1		
12:22	ZZZZZZ	1		
12:41	ZZZZZZ	1		
13:00	JD40008-1	1		
13:19	JD40008-2	1		
13:39	GN26655-CCVA1	1		
14:00	GN26655-CCB2	1		
14:19	JD40008-3	1		
14:38	JD40008-4	1		
17:39	GN26655-CCV2	1		
18:00	GN26655-CCB3	1		
18:21	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: F220221W2.TXT Date Analyzed: 02/21/22 Methods: SM5310 B-11
Run ID: GN26655 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN26655-CRI1	Total Organic Carbon	0.862	1.0	0.72	1	86.2	70-130
GN26655-HSTD1	Total Organic Carbon	48.4	1.0	0.72	50	96.8	90-110
GN26655-ICV1	Total Organic Carbon	20.4	1.0	0.72	20	102.0	90-110
GN26655-ICB1	Total Organic Carbon	0.72 U	1.0	0.72			
GN26655-CCV1	Total Organic Carbon	23.0	1.0	0.72	25	92.0	90-110
GN26655-CCB1	Total Organic Carbon	0.72 U	1.0	0.72			
GN26655-CCVA1	Total Organic Carbon	47.6	1.0	0.72	50	95.2	
GN26655-CCB2	Total Organic Carbon	0.72 U	1.0	0.72			
GN26655-CCV2	Total Organic Carbon	23.4	1.0	0.72	25	93.6	90-110
GN26655-CCB3	Total Organic Carbon	0.72 U	1.0	0.72			

(!) Outside of QC limits

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: F220221W3.TXT Date Analyzed: 02/21/22 Methods: SM5310 B-11
Analyst: NA Run ID: GN26657
Parameters: Total Carbon

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:16	GN26657-STD1	1		STDA
14:19	GN26657-STD2	1		STDB
15:17	GN26657-STD3	1		STDC
16:15	GN26657-STD4	1		STDD
17:14	GN26657-STD5	1		STDE
18:14	GN26657-STD6	1		STDF
19:14	GN26657-STD7	1		STDG
20:15	GN26657-STD8	1		STDH
09:56	ZZZZZZ	1		
10:24	GN26657-CRI1	1		
10:48	GN26657-HSTD1	1		
11:14	GN26657-ICV1	1		
11:41	GN26657-ICB1	1		
12:10	GN26657-CCV1	1		
12:36	GN26657-CCB1	1		
13:02	ZZZZZZ	1		
14:59	GP38635-MB1	1		
15:20	GP38635-B1	1		
15:41	JD40008-1	5		
16:00	GP38635-S1	5		
16:20	GP38635-MSD1	5		
16:40	JD40008-2	5		
17:01	JD40008-3	5		
17:19	JD40008-4	5		
17:39	GN26657-CCV2	1		
18:00	GN26657-CCB2	1		
18:21	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: F220221W3.TXT Date Analyzed: 02/21/22 Methods: SM5310 B-11
Run ID: GN26657 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN26657-CRI1	Total Carbon	0.862	1.0	0.47	1	86.2	70-130
GN26657-HSTD1	Total Carbon	48.4	1.0	0.47	30	96.5	90-110
GN26657-ICV1	Total Carbon	20.4	1.0	0.47	20	102.0	90-110
GN26657-ICB1	Total Carbon	0.47 U	1.0	0.47			
GN26657-CCV1	Total Carbon	23.0	1.0	0.47	25	92.0	90-110
GN26657-CCB1	Total Carbon	0.47 U	1.0	0.47			
GN26657-CCV2	Total Carbon	23.4	1.0	0.47	25	93.6	90-110
GN26657-CCB2	Total Carbon	0.47 U	1.0	0.47			

(!) Outside of QC limits

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: D022422W2.TKN Date Analyzed: 02/24/22 Methods: EPA 351.2/LACHAT
Analyst: MM Run ID: GN26734
Parameters: Nitrogen, Total Kjeldahl

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:24	GN26734-STD1	1		STDA
15:25	GN26734-STD2	1		STDB
15:26	GN26734-STD3	1		STDC
15:27	GN26734-STD4	1		STDD
15:28	GN26734-STD5	1		STDE
15:29	GN26734-STD6	1		STDF
15:29	GN26734-STD7	1		STDG
15:30	GN26734-STD8	1		STDH
15:42	GN26734-ICV1	1		
15:43	GN26734-ICB1	1		
15:44	GN26734-CCV1	1		
15:44	GN26734-CCB1	1		
15:45	GP38657-MB1	1		
15:46	GP38657-B1	1		
15:47	GP38657-S1	1		
15:48	GP38657-D1	1		
15:49	JD40008-3	1		
15:50	JD40008-1	1		
15:51	JD40008-2	1		
15:52	JD40008-4	1		
15:52	ZZZZZZ	1		
15:53	ZZZZZZ	1		
15:54	GN26734-CCV2	1		
15:55	GN26734-CCB2	1		
16:06	GN26734-CCV3	1		
16:07	GN26734-CCB3	1		
16:08	ZZZZZZ	1		
16:09	ZZZZZZ	1		
16:10	ZZZZZZ	30		
16:11	ZZZZZZ	20		
16:12	ZZZZZZ	20		
16:13	ZZZZZZ	30		
16:23	GN26734-CCV4	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: D022422W2.TKN Date Analyzed: 02/24/22 Methods: EPA 351.2/LACHAT
Analyst: MM Run ID: GN26734
Parameters: Nitrogen, Total Kjeldahl

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:24	GN26734-CCB4	1		

Refer to raw data for calibration curve and standards.

Instrument QC Summary
Inorganics Analyses

Login Number: JD40008
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: D022422W2.TKN Date Analyzed: 02/24/22 Methods: EPA 351.2/LACHAT
Run ID: GN26734 Units: mg/l

Sample Number	Parameter	Result	RL	IDL/MDL	True Value	% Recov.	QC Limits
GN26734-ICV1	Nitrogen, Total Kjeldahl	1.53	0.20	0.14	1.5	102.0	90-110
GN26734-ICB1	Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14			
GN26734-CCV1	Nitrogen, Total Kjeldahl	1.50	0.20	0.14	1.5	100.0	90-110
GN26734-CCB1	Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14			
GN26734-CCV2	Nitrogen, Total Kjeldahl	1.42	0.20	0.14	1.5	94.7	90-110
GN26734-CCB2	Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14			
GN26734-CCV3	Nitrogen, Total Kjeldahl	1.35	0.20	0.14	1.5	90.0	90-110
GN26734-CCB3	Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14			
GN26734-CCV4	Nitrogen, Total Kjeldahl	1.32	0.20	0.14	1.5	88.0(a)	90-110
GN26734-CCB4	Nitrogen, Total Kjeldahl	0.14 U	0.20	0.14			

(!) Outside of QC limits
(a) CCV outside control limit with marginal exceedance, data are qualified and reported.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

213403363

SGS Job Number: JD43215

Sampling Dates: 04/13/22 - 04/15/22



Report to:

Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380
Jennifer.Menges@stantec.com; Andrew.klingbeil@stantec.com;
Andrew.Bradley@stantec.com; Jenny.Kachel@stantec.com;
ATTN: Jennifer Menges

Total number of pages in report: **1085**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

May, 6th 2022

Jennifer Menges
Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380

SGS – Dayton, Job # JD43215-Reissue

Dear Ms. Menges,

The final report for SGS job number JD43215 has been edited to reflect corrections to the final results. These edits have been incorporated into the revised report which is attached.

Specifically, the COMS, NIMS,VMS,ZNMS were retrieved in sample JD43215-2F per your request on 4/27/2022. The attached revised report incorporates these revisions.

SGS apologizes for this occurrence and for any inconvenience this situation may have caused. Please contact me if I can be of further assistance in this matter.

Sincerely,

Report Department

SGS North America Inc.



CONTINUOUS SERVICE IMPROVEMENT!

Our goal is to continuously improve our service to you. Please share your ideas about how we can serve you better at EHS.US.CustomerCare@sgs.com. Your feedback is appreciated!

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SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
JD43215-1	04/13/22	10:55	DC	04/15/22	AQ	Ground Water	S-355_SL_20220413
JD43215-1F	04/13/22	10:55	DC	04/15/22	AQ	Groundwater Filtered	S-355_SL_20220413
JD43215-2	04/13/22	12:25	JM	04/15/22	AQ	Ground Water	C-61_20220413
JD43215-2F	04/13/22	12:25	JM	04/15/22	AQ	Groundwater Filtered	C-61_20220413
JD43215-3	04/13/22	13:00	MV	04/15/22	AQ	Ground Water	C-129D_20220413
JD43215-3F	04/13/22	13:00	MV	04/15/22	AQ	Groundwater Filtered	C-129D_20220413
JD43215-4	04/13/22	14:23	JN	04/15/22	AQ	Ground Water	A-4_20220413
JD43215-4F	04/13/22	14:23	JN	04/15/22	AQ	Groundwater Filtered	A-4_20220413
JD43215-5	04/13/22	14:10	DC	04/15/22	AQ	Ground Water	S-423_SL_20220413
JD43215-5F	04/13/22	14:10	DC	04/15/22	AQ	Groundwater Filtered	S-423_SL_20220413
JD43215-6	04/14/22	09:25	MV	04/15/22	AQ	Ground Water	S-150SRTF_20220414
JD43215-6F	04/14/22	09:25	MV	04/15/22	AQ	Groundwater Filtered	S-150SRTF_20220414

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD43215-7	04/14/22	09:32	JN	04/15/22	AQ	Ground Water	N-152_20220414
JD43215-7F	04/14/22	09:32	JN	04/15/22	AQ	Groundwater Filtered	N-152_20220414
JD43215-8	04/14/22	09:30	DC	04/15/22	AQ	Ground Water	S-357_SL_20220414
JD43215-8F	04/14/22	09:30	DC	04/15/22	AQ	Groundwater Filtered	S-357_SL_20220414
JD43215-9	04/14/22	11:00	MV	04/15/22	AQ	Ground Water	S-149SRTF_20220414
JD43215-9F	04/14/22	11:00	MV	04/15/22	AQ	Groundwater Filtered	S-149SRTF_20220414
JD43215-10	04/14/22	11:55	MV	04/15/22	AQ	Ground Water	S-147SRTF_20220414
JD43215-10F	04/14/22	11:55	MV	04/15/22	AQ	Groundwater Filtered	S-147SRTF_20220414
JD43215-11	04/14/22	11:50	DC	04/15/22	AQ	Ground Water	S-337_SL_20220414
JD43215-11F	04/14/22	11:50	DC	04/15/22	AQ	Groundwater Filtered	S-337_SL_20220414
JD43215-12	04/14/22	11:50	JN	04/15/22	AQ	Ground Water	N-85_20220414
JD43215-12F	04/14/22	11:50	JN	04/15/22	AQ	Groundwater Filtered	N-85_20220414
JD43215-13	04/14/22	14:20	JN	04/15/22	AQ	Ground Water	N-163_20220414

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD43215-13F	04/14/22	14:20	JN	04/15/22	AQ	Groundwater Filtered	N-163_20220414
JD43215-14	04/14/22	14:10	DC	04/15/22	AQ	Ground Water	S-480_SL_20220414
JD43215-14F	04/14/22	14:10	DC	04/15/22	AQ	Groundwater Filtered	S-480_SL_20220414
JD43215-15	04/14/22	00:00	JG	04/15/22	AQ	Ground Water	DUP-7_20220414
JD43215-15F	04/14/22	00:00	JG	04/15/22	AQ	Groundwater Filtered	DUP-7_20220414
JD43215-16	04/14/22	10:05	JG	04/15/22	AQ	Ground Water	URS-5_20220414
JD43215-16F	04/14/22	10:05	JG	04/15/22	AQ	Groundwater Filtered	URS-5_20220414
JD43215-17	04/15/22	09:15	DC	04/15/22	AQ	Ground Water	W-1_SL_20220415
JD43215-17F	04/15/22	09:15	DC	04/15/22	AQ	Groundwater Filtered	W-1_SL_20220415
JD43215-18	04/15/22	10:35	JN	04/15/22	AQ	Ground Water	S-110DSRTF_20220415
JD43215-18F	04/15/22	10:35	JN	04/15/22	AQ	Groundwater Filtered	S-110DSRTF_20220415
JD43215-19	04/15/22	09:45	MV	04/15/22	AQ	Ground Water	W-13_20220415
JD43215-19F	04/15/22	09:45	MV	04/15/22	AQ	Groundwater Filtered	W-13_20220415

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD43215-20	04/15/22	11:05	MV	04/15/22	AQ	Ground Water	W-32D_20220415
JD43215-20F	04/15/22	11:05	MV	04/15/22	AQ	Groundwater Filtered	W-32D_20220415
JD43215-21	04/15/22	12:10	JN	04/15/22	AQ	Ground Water	S-78SRTF_20220415
JD43215-21F	04/15/22	12:10	JN	04/15/22	AQ	Groundwater Filtered	S-78SRTF_20220415
JD43215-22	04/15/22	11:40	DC	04/15/22	AQ	Ground Water	W-31_SL_20220415
JD43215-22F	04/15/22	11:40	DC	04/15/22	AQ	Groundwater Filtered	W-31_SL_20220415
JD43215-23	04/15/22	13:20	DC	04/15/22	AQ	Ground Water	W-32_SL_20220415
JD43215-23F	04/15/22	13:20	DC	04/15/22	AQ	Groundwater Filtered	W-32_SL_20220415
JD43215-24	04/15/22	13:50	JN	04/15/22	AQ	Ground Water	S-118DSRTF_20220415
JD43215-24F	04/15/22	13:50	JN	04/15/22	AQ	Groundwater Filtered	S-118DSRTF_20220415
JD43215-25	04/13/22	10:47	JN	04/15/22	AQ	Ground Water	C-175_20220413
JD43215-25F	04/13/22	10:47	JN	04/15/22	AQ	Groundwater Filtered	C-175_20220413
JD43215-26	04/13/22	10:45	JM	04/15/22	AQ	Ground Water	C-176_20220413

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD43215-26F	04/13/22	10:45	JM	04/15/22	AQ	Groundwater Filtered	C-176_20220413
JD43215-27	04/15/22	13:50		04/15/22	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Sunoco/Evergreen	**Job No**	JD43215
Site:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue,	**Report Date**	5/6/2022 2:30:44 PM

On 04/15/2022, 26 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.9 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD43215 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260D

Matrix: AQ **Batch ID:** VL10281

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD43215-1MS, JD43215-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** VL10283

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD43215-21MS, JD43215-21MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JD43215-21MS/MSD Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- JD43215-23: (pH=6) Sample pH did not satisfy field preservation criteria.
- JD43215-21: Dilution required due to high concentration of target compound.
- JD43215-16: Dilution required due to high concentration of target compound.
- JD43215-15: Dilution required due to high concentration of target compound.
- JD43215-21MS/MSD for 4-Bromofluorobenzene: Outside of in house control limits, but within reasonable method recovery limits.

Matrix: AQ **Batch ID:** VL10284

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD43502-5MS, JD43502-5MSD were used as the QC samples indicated.
- JD43502-5MS/MSD for 4-Bromofluorobenzene: Outside of in house control limits, but within reasonable method recovery limits.

MS Semi-volatiles By Method SW846 8270E

Matrix: AQ **Batch ID:** OP39191A

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- OP39191A-BS1/BSD for 2,4-Dinitrophenol: Outside of in house control limits.
- RPD of OP39191A-BSD for 2,4-Dinitrophenol: Analytical precision exceeds in-house control limits.

Matrix: AQ **Batch ID:** OP39192

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- RPD of OP39192-BSD for Pyridine: Analytical precision exceeds in-house control limits.
- RPD of OP39192-BSD for 2,4-Dinitrophenol: Analytical precision exceeds in-house control limits.
- OP39192-BS1 for Pyridine: Outside of in house control limits.
- JD43215-26 for 4-Nitrophenol: Associated CCV outside of control limits high, sample was ND.
- JD43215-25 for 4-Nitrophenol: Associated CCV outside of control limits high, sample was ND.

MS Semi-volatiles By Method SW846 8270E BY SIM

Matrix: AQ **Batch ID:** OP39191

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** OP39192A

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD43215-26 have compounds reported with “E” qualifiers indicating estimated value exceeding calibration range.
- Blank Spike Recovery(s) for Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene are outside control limits. The spike standard was not added.
- OP39192A-BS12: Spike omitted out. Since balnk spike duplicate recoveries are within control limits, data are qualified and reported.
- OP39192A-BS12 for 2-Fluorobiphenyl: Outside of in house control limits.
- RPD of OP39192A-BSD12 for all compounds: Analytical precision exceeds in-house control limits.
- JD43215-23 for Terphenyl-d14: Outside of in house control limits.

GC Volatiles By Method SW846-8011

Matrix: AQ **Batch ID:** OP39196

- All samples were extracted within the recommended method holding time.
- Sample(s) JD43215-1MS, JD43215-2DUP, JD43215-1MS were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for 1,2-Dibromoethane are outside control limits. Outside control limits due to matrix interference.

Matrix: AQ **Batch ID:** OP39197

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD43215-21MS, JD43215-22DUP were used as the QC samples indicated.
- JD43215-22 for 2-Bromo-1-chloropropane: Outside control limits due to matrix interference.

Metals Analysis By Method SW846 6020B

Matrix: AQ **Batch ID:** MP32378

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD43215-14FMS, JD43215-14FMSD, JD43215-14FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Lead, Vanadium are outside control limits for sample MP32378-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: AQ **Batch ID:** MP32396

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD43215-21FMS, JD43215-21FMSD, JD43215-21FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Vanadium, Zinc are outside control limits for sample MP32396-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43215-1	**S-355_SL_20220413**					
Benzene		6.1	0.50	0.43	ug/l	SW846 8260D
Isopropylbenzene		18.2	1.0	0.65	ug/l	SW846 8260D
Methyl Tert Butyl Ether		4.7	1.0	0.51	ug/l	SW846 8260D
Tert Butyl Alcohol		35.0	10	5.8	ug/l	SW846 8260D
Toluene		2.3	1.0	0.53	ug/l	SW846 8260D
Xylene (total)		7.0	1.0	0.59	ug/l	SW846 8260D
Benzo(a)anthracene		0.0556	0.037	0.022	ug/l	SW846 8270E BY SIM
Naphthalene		16.0	0.74	0.037	ug/l	SW846 8270E BY SIM
Pyrene		0.0957	0.074	0.037	ug/l	SW846 8270E BY SIM
JD43215-1F	**S-355_SL_20220413**					
No hits reported in this sample.						
JD43215-2	**C-61_20220413**					
Cyclohexane		1.3 J	5.0	0.78	ug/l	SW846 8260D
Methyl Tert Butyl Ether		2.5	1.0	0.51	ug/l	SW846 8260D
Acenaphthene		0.118	0.080	0.040	ug/l	SW846 8270E BY SIM
Anthracene		0.0957	0.080	0.040	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0369 J	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0309 J	0.040	0.024	ug/l	SW846 8270E BY SIM
Fluoranthene		0.0737 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		0.150	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		0.149	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.115	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43215-2F	**C-61_20220413**					
Nickel		2.2	2.0		ug/l	SW846 6020B
Vanadium		8.1	2.0		ug/l	SW846 6020B
JD43215-3	**C-129D_20220413**					
Tert Butyl Alcohol		88.1	10	5.8	ug/l	SW846 8260D
Fluorene		0.0577 J	0.071	0.036	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0689 J	0.071	0.036	ug/l	SW846 8270E BY SIM
Pyrene		0.111	0.071	0.036	ug/l	SW846 8270E BY SIM
1,2-Dibromoethane		0.047	0.020	0.0070	ug/l	SW846-8011
JD43215-3F	**C-129D_20220413**					
No hits reported in this sample.						

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43215-4	**A-4_20220413**					
Benzo(a)anthracene		0.0368 J	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0508	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0830	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.121	0.080	0.040	ug/l	SW846 8270E BY SIM
Chrysene		0.0472 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0548 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.0766 J	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43215-4F	**A-4_20220413**					
No hits reported in this sample.						
JD43215-5	**S-423_SL_20220413**					
Benzene		1.0	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		0.64 J	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		38.2	1.0	0.65	ug/l	SW846 8260D
Methyl Tert Butyl Ether		2.4	1.0	0.51	ug/l	SW846 8260D
Tert Butyl Alcohol		18.0	10	5.8	ug/l	SW846 8260D
Toluene		1.3	1.0	0.53	ug/l	SW846 8260D
Xylene (total)		2.1	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.365	0.069	0.034	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.385	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.155	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.228	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.112	0.069	0.034	ug/l	SW846 8270E BY SIM
Chrysene		0.626	0.069	0.034	ug/l	SW846 8270E BY SIM
Fluorene		19.8	0.69	0.034	ug/l	SW846 8270E BY SIM
Phenanthrene		27.2	0.69	0.034	ug/l	SW846 8270E BY SIM
Pyrene		0.525	0.069	0.034	ug/l	SW846 8270E BY SIM
JD43215-5F	**S-423_SL_20220413**					
Lead		4.3	1.0		ug/l	SW846 6020B
JD43215-6	**S-150SRTF_20220414**					
Benzene		0.43 J	0.50	0.43	ug/l	SW846 8260D
1,2-Dichloroethane		0.93 J	1.0	0.60	ug/l	SW846 8260D
Methyl Tert Butyl Ether		83.9	1.0	0.51	ug/l	SW846 8260D
Anthracene		0.0640 J	0.071	0.036	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0273 J	0.036	0.021	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(b)fluoranthene		0.0225 J	0.036	0.021	ug/l	SW846 8270E BY SIM
Pyrene		0.0606 J	0.071	0.036	ug/l	SW846 8270E BY SIM
JD43215-6F	**S-150SRTF_20220414**					
No hits reported in this sample.						
JD43215-7	**N-152_20220414**					
Anthracene		0.0454 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		0.0471 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0560 J	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43215-7F	**N-152_20220414**					
No hits reported in this sample.						
JD43215-8	**S-357_SL_20220414**					
Benzene		1.3	0.50	0.43	ug/l	SW846 8260D
Isopropylbenzene		5.0	1.0	0.65	ug/l	SW846 8260D
Methyl Tert Butyl Ether		0.56 J	1.0	0.51	ug/l	SW846 8260D
Tert Butyl Alcohol		15.1	10	5.8	ug/l	SW846 8260D
Toluene		0.54 J	1.0	0.53	ug/l	SW846 8260D
Xylene (total)		1.4	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.112	0.069	0.034	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.142	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0627	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0554	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0524 J	0.069	0.034	ug/l	SW846 8270E BY SIM
Chrysene		0.174	0.069	0.034	ug/l	SW846 8270E BY SIM
Naphthalene		0.115	0.069	0.034	ug/l	SW846 8270E BY SIM
Pyrene		0.374	0.069	0.034	ug/l	SW846 8270E BY SIM
JD43215-8F	**S-357_SL_20220414**					
No hits reported in this sample.						
JD43215-9	**S-149SRTF_20220414**					
Methyl Tert Butyl Ether		5.7	1.0	0.51	ug/l	SW846 8260D
Tert Butyl Alcohol		7.3 J	10	5.8	ug/l	SW846 8260D
Anthracene		0.0482 J	0.074	0.037	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0563	0.037	0.022	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0524	0.037	0.022	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(b)fluoranthene		0.0810	0.037	0.022	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0433 J	0.074	0.037	ug/l	SW846 8270E BY SIM
Chrysene		0.0498 J	0.074	0.037	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0666 J	0.074	0.037	ug/l	SW846 8270E BY SIM
Pyrene		0.101	0.074	0.037	ug/l	SW846 8270E BY SIM
JD43215-9F	**S-149SRTF_20220414**					
No hits reported in this sample.						
JD43215-10	**S-147SRTF_20220414**					
Methyl Tert Butyl Ether		3.1	1.0	0.51	ug/l	SW846 8260D
Benzo(a)anthracene		0.0248 J	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0288 J	0.034	0.021	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0345 J	0.069	0.034	ug/l	SW846 8270E BY SIM
Pyrene		0.0372 J	0.069	0.034	ug/l	SW846 8270E BY SIM
JD43215-10F	**S-147SRTF_20220414**					
No hits reported in this sample.						
JD43215-11	**S-337_SL_20220414**					
Benzene		3.0	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		1.8	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		35.4	1.0	0.65	ug/l	SW846 8260D
Toluene		1.8	1.0	0.53	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		1.8 J	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		2.3	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.0395 J	0.069	0.034	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0324 J	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0276 J	0.034	0.021	ug/l	SW846 8270E BY SIM
Fluorene		0.202	0.069	0.034	ug/l	SW846 8270E BY SIM
Naphthalene		1.17	0.069	0.034	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0500 J	0.069	0.034	ug/l	SW846 8270E BY SIM
Pyrene		0.103	0.069	0.034	ug/l	SW846 8270E BY SIM
JD43215-11F	**S-337_SL_20220414**					
No hits reported in this sample.						
JD43215-12	**N-85_20220414**					
No hits reported in this sample.						

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43215-12F	**N-85_20220414**					
No hits reported in this sample.						
JD43215-13	**N-163_20220414**					
Benzene		149	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		2.0	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		33.8	1.0	0.65	ug/l	SW846 8260D
Toluene		2.6	1.0	0.53	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		1.4 J	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		5.7	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.176	0.080	0.040	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0309 J	0.040	0.024	ug/l	SW846 8270E BY SIM
Fluorene		0.588	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		0.202	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		0.524	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.179	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43215-13F	**N-163_20220414**					
No hits reported in this sample.						
JD43215-14	**S-480_SL_20220414**					
Benzene		172	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		118	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		25.0	1.0	0.65	ug/l	SW846 8260D
Methyl Tert Butyl Ether		7.7	1.0	0.51	ug/l	SW846 8260D
Tert Butyl Alcohol		23.2	10	5.8	ug/l	SW846 8260D
Toluene		3.4	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		118	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		36.2	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		311	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.420	0.071	0.036	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0360	0.036	0.021	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0237 J	0.036	0.021	ug/l	SW846 8270E BY SIM
Chrysene		0.0379 J	0.071	0.036	ug/l	SW846 8270E BY SIM
Fluorene		1.73	0.071	0.036	ug/l	SW846 8270E BY SIM
Naphthalene		27.9	0.71	0.036	ug/l	SW846 8270E BY SIM
Phenanthrene		4.90	0.71	0.036	ug/l	SW846 8270E BY SIM
Pyrene		0.345	0.071	0.036	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43215-14F	**S-480_SL_20220414**					
No hits reported in this sample.						
JD43215-15	**DUP-7_20220414**					
Benzene [a]		4680	25	21	ug/l	SW846 8260D
Ethylbenzene [a]		817	50	30	ug/l	SW846 8260D
Isopropylbenzene [a]		34.1 J	50	32	ug/l	SW846 8260D
Toluene [a]		7770	50	27	ug/l	SW846 8260D
1,2,4-Trimethylbenzene [a]		346	100	50	ug/l	SW846 8260D
1,3,5-Trimethylbenzene [a]		78.3 J	100	50	ug/l	SW846 8260D
Xylene (total) [a]		3880	50	30	ug/l	SW846 8260D
Anthracene		2.76	0.077	0.038	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0935	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0341 J	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0416	0.038	0.023	ug/l	SW846 8270E BY SIM
Chrysene		0.0447 J	0.077	0.038	ug/l	SW846 8270E BY SIM
Fluorene		15.3	15	0.77	ug/l	SW846 8270E BY SIM
Naphthalene		207	15	0.77	ug/l	SW846 8270E BY SIM
Phenanthrene		23.8	15	0.77	ug/l	SW846 8270E BY SIM
Pyrene		1.16	0.077	0.038	ug/l	SW846 8270E BY SIM
1,2-Dibromoethane		0.051	0.020	0.0072	ug/l	SW846-8011
JD43215-15F	**DUP-7_20220414**					
No hits reported in this sample.						
JD43215-16	**URS-5_20220414**					
Benzene [a]		4850	25	21	ug/l	SW846 8260D
Ethylbenzene [a]		828	50	30	ug/l	SW846 8260D
Isopropylbenzene [a]		32.1 J	50	32	ug/l	SW846 8260D
Toluene [a]		7950	50	27	ug/l	SW846 8260D
1,2,4-Trimethylbenzene [a]		295	100	50	ug/l	SW846 8260D
1,3,5-Trimethylbenzene [a]		81.8 J	100	50	ug/l	SW846 8260D
Xylene (total) [a]		3910	50	30	ug/l	SW846 8260D
Anthracene		2.84	0.077	0.038	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.143	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0347 J	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0581	0.038	0.023	ug/l	SW846 8270E BY SIM
Chrysene		0.0564 J	0.077	0.038	ug/l	SW846 8270E BY SIM
Fluorene		20.7	15	0.77	ug/l	SW846 8270E BY SIM
Naphthalene		261	15	0.77	ug/l	SW846 8270E BY SIM
Phenanthrene		30.0	15	0.77	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Pyrene		1.45	0.077	0.038	ug/l	SW846 8270E BY SIM
1,2-Dibromoethane		0.066	0.020	0.0070	ug/l	SW846-8011
JD43215-16F	**URS-5_20220414**					
No hits reported in this sample.						
JD43215-17	**W-1_SL_20220415**					
Methyl Tert Butyl Ether		0.57 J	1.0	0.51	ug/l	SW846 8260D
Anthracene		0.560	0.069	0.034	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.315	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.150	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.215	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.123	0.069	0.034	ug/l	SW846 8270E BY SIM
Chrysene		0.337	0.069	0.034	ug/l	SW846 8270E BY SIM
Fluorene		1.45	0.069	0.034	ug/l	SW846 8270E BY SIM
Naphthalene		0.0524 J	0.069	0.034	ug/l	SW846 8270E BY SIM
Phenanthrene		1.40	0.069	0.034	ug/l	SW846 8270E BY SIM
Pyrene		0.911	0.069	0.034	ug/l	SW846 8270E BY SIM
JD43215-17F	**W-1_SL_20220415**					
No hits reported in this sample.						
JD43215-18	**S-110DSRTF_20220415**					
1,2-Dichloroethane		3.9	1.0	0.60	ug/l	SW846 8260D
Methyl Tert Butyl Ether		38.9	1.0	0.51	ug/l	SW846 8260D
Tert Butyl Alcohol		37.9	10	5.8	ug/l	SW846 8260D
Anthracene		0.0497 J	0.074	0.037	ug/l	SW846 8270E BY SIM
JD43215-18F	**S-110DSRTF_20220415**					
No hits reported in this sample.						
JD43215-19	**W-13_20220415**					
Methyl Tert Butyl Ether		0.74 J	1.0	0.51	ug/l	SW846 8260D
Tert Butyl Alcohol		28.5	10	5.8	ug/l	SW846 8260D
JD43215-19F	**W-13_20220415**					
Lead		1.1	1.0		ug/l	SW846 6020B

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43215-20	**W-32D_20220415**					
Tert Butyl Alcohol		62.8	10	5.8	ug/l	SW846 8260D
Anthracene		0.0615 J	0.077	0.038	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0428	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0391	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0464	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0402 J	0.077	0.038	ug/l	SW846 8270E BY SIM
Chrysene		0.0477 J	0.077	0.038	ug/l	SW846 8270E BY SIM
Fluorene		0.113	0.077	0.038	ug/l	SW846 8270E BY SIM
Naphthalene		0.0387 J	0.077	0.038	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0567 J	0.077	0.038	ug/l	SW846 8270E BY SIM
Pyrene		0.0821	0.077	0.038	ug/l	SW846 8270E BY SIM
JD43215-20F	**W-32D_20220415**					
No hits reported in this sample.						
JD43215-21	**S-78SRTF_20220415**					
Benzene		1490	25	21	ug/l	SW846 8260D
Ethylbenzene [a]		7.2	5.0	3.0	ug/l	SW846 8260D
Isopropylbenzene [a]		49.7	5.0	3.2	ug/l	SW846 8260D
Methyl Tert Butyl Ether [a]		14.5	5.0	2.5	ug/l	SW846 8260D
Tert Butyl Alcohol [a]		643	50	29	ug/l	SW846 8260D
Toluene [a]		53.3	5.0	2.7	ug/l	SW846 8260D
Xylene (total) [a]		99.3	5.0	3.0	ug/l	SW846 8260D
Anthracene		0.144	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		0.632	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		0.214	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		0.559	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.0946	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43215-21F	**S-78SRTF_20220415**					
Lead		1.7	1.0		ug/l	SW846 6020B
JD43215-22	**W-31_SL_20220415**					
Isopropylbenzene		3.6	1.0	0.65	ug/l	SW846 8260D
Tert Butyl Alcohol		8.5 J	10	5.8	ug/l	SW846 8260D
Benzo(a)anthracene		1.69	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		1.14	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.374	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		1.23	0.077	0.038	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Chrysene		2.09	0.077	0.038	ug/l	SW846 8270E BY SIM
Fluorene		0.717	0.077	0.038	ug/l	SW846 8270E BY SIM
Naphthalene		0.200	0.077	0.038	ug/l	SW846 8270E BY SIM
Phenanthrene		1.58	0.077	0.038	ug/l	SW846 8270E BY SIM
Pyrene		4.98	0.15	0.077	ug/l	SW846 8270E BY SIM
JD43215-22F	**W-31_SL_20220415**					
No hits reported in this sample.						
JD43215-23	**W-32_SL_20220415**					
Benzene [b]		8.8	0.50	0.43	ug/l	SW846 8260D
Isopropylbenzene [b]		2.1	1.0	0.65	ug/l	SW846 8260D
Tert Butyl Alcohol [b]		57.7	10	5.8	ug/l	SW846 8260D
Benzo(a)anthracene		0.159	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.306	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.146	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.364	0.080	0.040	ug/l	SW846 8270E BY SIM
Chrysene		0.290	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		1.41	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		0.627	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		0.298	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.514	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43215-23F	**W-32_SL_20220415**					
Lead		1.8	1.0		ug/l	SW846 6020B
JD43215-24	**S-118DSRTF_20220415**					
Benzene		0.86	0.50	0.43	ug/l	SW846 8260D
Methyl Tert Butyl Ether		105	1.0	0.51	ug/l	SW846 8260D
Tert Butyl Alcohol		33.5	10	5.8	ug/l	SW846 8260D
Anthracene		0.0801 J	0.087	0.043	ug/l	SW846 8270E BY SIM
JD43215-24F	**S-118DSRTF_20220415**					
No hits reported in this sample.						
JD43215-25	**C-175_20220413**					
Benzene		1.3	0.50	0.43	ug/l	SW846 8260D
Cyclohexane		12.9	5.0	0.78	ug/l	SW846 8260D
Ethylbenzene		1.1	1.0	0.60	ug/l	SW846 8260D

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Client Sample ID / Analyte	Result/ Qual	RL	MDL	Units	Method
Isopropylbenzene	9.7	1.0	0.65	ug/l	SW846 8260D
Naphthalene	4.4 J	5.0	2.5	ug/l	SW846 8260D
Tert Butyl Alcohol	60.3	10	5.8	ug/l	SW846 8260D
1,2,4-Trimethylbenzene	4.2	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene	1.4 J	2.0	1.0	ug/l	SW846 8260D
Xylene (total)	5.2	1.0	0.59	ug/l	SW846 8260D
2,4-Dimethylphenol	1.2 J	4.3	0.73	ug/l	SW846 8270E
Acenaphthene	2.40	0.087	0.043	ug/l	SW846 8270E BY SIM
Anthracene	0.277	0.087	0.043	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene	0.383	0.043	0.026	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene	0.309	0.043	0.026	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene	0.254	0.043	0.026	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene	0.213	0.087	0.043	ug/l	SW846 8270E BY SIM
Benzo(k)fluoranthene	0.107	0.087	0.043	ug/l	SW846 8270E BY SIM
Chrysene	0.315	0.087	0.043	ug/l	SW846 8270E BY SIM
Dibenzo(a,h)anthracene	0.0717 J	0.087	0.043	ug/l	SW846 8270E BY SIM
Fluoranthene	0.453	0.087	0.043	ug/l	SW846 8270E BY SIM
Fluorene	0.489	0.087	0.043	ug/l	SW846 8270E BY SIM
Indeno(1,2,3-cd)pyrene	0.176	0.087	0.043	ug/l	SW846 8270E BY SIM
Naphthalene	0.490	0.087	0.043	ug/l	SW846 8270E BY SIM
Phenanthrene	0.277	0.087	0.043	ug/l	SW846 8270E BY SIM
Pyrene	0.768	0.087	0.043	ug/l	SW846 8270E BY SIM
JD43215-25F C-175_20220413					
Cobalt	7.5	1.0		ug/l	SW846 6020B
Lead	1.7	1.0		ug/l	SW846 6020B
Nickel	10.5	2.0		ug/l	SW846 6020B
Vanadium	5.3	2.0		ug/l	SW846 6020B
JD43215-26 C-176_20220413					
Benzene	0.55	0.50	0.43	ug/l	SW846 8260D
Isopropylbenzene	4.5	1.0	0.65	ug/l	SW846 8260D
Tert Butyl Alcohol	27.0	10	5.8	ug/l	SW846 8260D
Xylene (total)	2.3	1.0	0.59	ug/l	SW846 8260D
Acenaphthene	59.1	1.1	0.67	ug/l	SW846 8270E
Fluoranthene	3.8	1.1	0.63	ug/l	SW846 8270E
2-Methylnaphthalene	0.95 J	1.1	0.70	ug/l	SW846 8270E
Phenanthrene	15.4	1.1	0.53	ug/l	SW846 8270E
Acenaphthylene	0.491	0.087	0.043	ug/l	SW846 8270E BY SIM
Anthracene	3.39	0.087	0.043	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene	1.01	0.043	0.026	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene	0.546	0.043	0.026	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene	0.486	0.043	0.026	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD43215
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/13/22 thru 04/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(g,h,i)perylene		0.250	0.087	0.043	ug/l	SW846 8270E BY SIM
Benzo(k)fluoranthene		0.197	0.087	0.043	ug/l	SW846 8270E BY SIM
Chrysene		0.746	0.087	0.043	ug/l	SW846 8270E BY SIM
Dibenzo(a,h)anthracene		0.104	0.087	0.043	ug/l	SW846 8270E BY SIM
Fluorene		18.9 E	0.087	0.043	ug/l	SW846 8270E BY SIM
Indeno(1,2,3-cd)pyrene		0.250	0.087	0.043	ug/l	SW846 8270E BY SIM
Naphthalene		0.740	0.087	0.043	ug/l	SW846 8270E BY SIM
Pyrene		2.44	0.087	0.043	ug/l	SW846 8270E BY SIM
JD43215-26F	**C-176_20220413**					
Cobalt		1.0	1.0		ug/l	SW846 6020B
Vanadium		2.1	2.0		ug/l	SW846 6020B
JD43215-27	**TRIP BLANK**					

No hits reported in this sample.

(a) Dilution required due to high concentration of target compound.
(b) (pH= 6) Sample pH did not satisfy field preservation criteria.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-355_SL_20220413		
Lab Sample ID:	JD43215-1	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340992.D	1	04/22/22 14:21	NH	n/a	n/a	VL10284
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	6.1	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	18.2	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	4.7	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	35.0	10	5.8	ug/l	
108-88-3	Toluene	2.3	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	7.0	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-355_SL_20220413		
Lab Sample ID:	JD43215-1	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96475.D	1	04/20/22 04:27	CS	04/19/22 13:45	OP39191	E3P4582
Run #2	2M123387.D	1	04/21/22 12:39	CS	04/19/22 13:45	OP39191	E2M5552

	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2	270 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.074	0.037	ug/l	
56-55-3	Benzo(a)anthracene	0.0556	0.037	0.022	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.037	0.022	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.037	0.022	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.074	0.037	ug/l	
218-01-9	Chrysene	ND	0.074	0.037	ug/l	
86-73-7	Fluorene	ND	0.074	0.037	ug/l	
91-20-3	Naphthalene	16.0 [a]	0.74	0.037	ug/l	
85-01-8	Phenanthrene	ND	0.074	0.037	ug/l	
129-00-0	Pyrene	0.0957	0.074	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	79%	72%	29-124%
321-60-8	2-Fluorobiphenyl	39%	56%	23-122%
1718-51-0	Terphenyl-d14	53%	38%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S-355_SL_20220413
Lab Sample ID: JD43215-1 **Date Sampled:** 04/13/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43525.D	1	04/21/22 04:14	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	93%		52-154%
3017-95-6	2-Bromo-1-chloropropane	94%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-355_SL_20220413		
Lab Sample ID:	JD43215-1F	**Date Sampled:**	04/13/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-61_20220413		
Lab Sample ID:	JD43215-2	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340910.D	1	04/21/22 03:42	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
110-82-7	Cyclohexane	1.3	5.0	0.78	ug/l	J
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
110-54-3	Hexane	ND	5.0	0.48	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.5	1.0	0.51	ug/l	
91-20-3	Naphthalene	ND	5.0	2.5	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	111%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-61_20220413		
Lab Sample ID:	JD43215-2	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P82723.D	1	04/25/22 16:40	KLS	04/19/22 13:45	OP39191A	E5P3929
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	4.0	0.67	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.0	1.9	ug/l	
95-48-7	2-Methylphenol	ND	2.0	0.47	ug/l	
	3&4-Methylphenol	ND	2.0	1.5	ug/l	
100-02-7	4-Nitrophenol	ND	8.0	0.45	ug/l	
108-95-2	Phenol	ND	2.0	0.26	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.59	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.53	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.58	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	1.3	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.64	ug/l	
110-86-1	Pyridine	ND	2.0	0.31	ug/l	
91-22-5	Quinoline	ND	4.0	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		10-73%
4165-62-2	Phenol-d5	27%		10-64%
118-79-6	2,4,6-Tribromophenol	77%		31-130%
4165-60-0	Nitrobenzene-d5	73%		28-126%
321-60-8	2-Fluorobiphenyl	75%		26-114%
1718-51-0	Terphenyl-d14	72%		16-122%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-61_20220413		
Lab Sample ID:	JD43215-2	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96476.D	1	04/20/22 04:50	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.118	0.080	0.040	ug/l	
208-96-8	Acenaphthylene	ND	0.080	0.040	ug/l	
120-12-7	Anthracene	0.0957	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.0369	0.040	0.024	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0309	0.040	0.024	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.080	0.040	ug/l	
206-44-0	Fluoranthene	0.0737	0.080	0.040	ug/l	J
86-73-7	Fluorene	0.150	0.080	0.040	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	0.149	0.080	0.040	ug/l	
129-00-0	Pyrene	0.115	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%		29-124%
321-60-8	2-Fluorobiphenyl	71%		23-122%
1718-51-0	Terphenyl-d14	73%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: C-61_20220413
Lab Sample ID: JD43215-2 **Date Sampled:** 04/13/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43526.D	1	04/21/22 04:31	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	104%		52-154%
3017-95-6	2-Bromo-1-chloropropane	98%		52-154%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: C-61_20220413
Lab Sample ID: JD43215-2F
Matrix: AQ - Groundwater Filtered
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Date Sampled: 04/13/22
Date Received: 04/15/22
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cobalt	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Nickel	2.2	2.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Vanadium	8.1	2.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Zinc	< 10	10	ug/l	2	05/02/22	05/05/22	NV	SW846 6020B [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA52261
(2) Instrument QC Batch: MA52339
(3) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-129D_20220413		
Lab Sample ID:	JD43215-3	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340911.D	1	04/21/22 04:05	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	88.1	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	108%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-129D_20220413		
Lab Sample ID:	JD43215-3	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96477.D	1	04/20/22 05:12	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.071	0.036	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.036	0.021	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.036	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.036	0.021	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.071	0.036	ug/l	
218-01-9	Chrysene	ND	0.071	0.036	ug/l	
86-73-7	Fluorene	0.0577	0.071	0.036	ug/l	J
91-20-3	Naphthalene	ND	0.071	0.036	ug/l	
85-01-8	Phenanthrene	0.0689	0.071	0.036	ug/l	J
129-00-0	Pyrene	0.111	0.071	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%		29-124%
321-60-8	2-Fluorobiphenyl	64%		23-122%
1718-51-0	Terphenyl-d14	71%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: C-129D_20220413
Lab Sample ID: JD43215-3 **Date Sampled:** 04/13/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43527.D	1	04/21/22 04:48	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	0.047	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	107%		52-154%
3017-95-6	2-Bromo-1-chloropropane	98%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	C-129D_20220413		
Lab Sample ID:	JD43215-3F	**Date Sampled:**	04/13/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	A-4_20220413		
Lab Sample ID:	JD43215-4	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340912.D	1	04/21/22 04:29	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	110%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: A-4_20220413
Lab Sample ID: JD43215-4 **Date Sampled:** 04/13/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846 8270E BY SIM SW846 3510C **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96478.D	1	04/20/22 05:34	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.0368	0.040	0.024	ug/l	J
50-32-8	Benzo(a)pyrene	0.0508	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0830	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.121	0.080	0.040	ug/l	
218-01-9	Chrysene	0.0472	0.080	0.040	ug/l	J
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	0.0548	0.080	0.040	ug/l	J
129-00-0	Pyrene	0.0766	0.080	0.040	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	65%		29-124%
321-60-8	2-Fluorobiphenyl	65%		23-122%
1718-51-0	Terphenyl-d14	67%		22-130%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	A-4_20220413		
Lab Sample ID:	JD43215-4	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43528.D	1	04/21/22 05:05	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	102%		52-154%
3017-95-6	2-Bromo-1-chloropropane	110%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	A-4_20220413		
Lab Sample ID:	JD43215-4F	**Date Sampled:**	04/13/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-423_SL_20220413		
Lab Sample ID:	JD43215-5	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340921.D	1	04/21/22 08:00	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.0	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	0.64	1.0	0.60	ug/l	J
98-82-8	Isopropylbenzene	38.2	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.4	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	18.0	10	5.8	ug/l	
108-88-3	Toluene	1.3	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	2.1	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	107%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-423_SL_20220413		
Lab Sample ID:	JD43215-5	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96479.D	1	04/20/22 05:56	CS	04/19/22 13:45	OP39191	E3P4582
Run #2	2M123365.D	1	04/20/22 18:21	KLS	04/19/22 13:45	OP39191	E2M5551

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2	290 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.365	0.069	0.034	ug/l	
56-55-3	Benzo(a)anthracene	0.385	0.034	0.021	ug/l	
50-32-8	Benzo(a)pyrene	0.155	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	0.228	0.034	0.021	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.112	0.069	0.034	ug/l	
218-01-9	Chrysene	0.626	0.069	0.034	ug/l	
86-73-7	Fluorene	19.8 [a]	0.69	0.034	ug/l	
91-20-3	Naphthalene	ND	0.069	0.034	ug/l	
85-01-8	Phenanthrene	27.2 [a]	0.69	0.034	ug/l	
129-00-0	Pyrene	0.525	0.069	0.034	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%	43%	29-124%
321-60-8	2-Fluorobiphenyl	62%	36%	23-122%
1718-51-0	Terphenyl-d14	66%	34%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S-423_SL_20220413
Lab Sample ID: JD43215-5 **Date Sampled:** 04/13/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43529.D	1	04/21/22 05:23	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	97%		52-154%
3017-95-6	2-Bromo-1-chloropropane	101%		52-154%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-423_SL_20220413		
Lab Sample ID:	JD43215-5F	**Date Sampled:**	04/13/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	4.3	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-150SRTF_20220414		
Lab Sample ID:	JD43215-6	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340913.D	1	04/21/22 04:52	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.43	0.50	0.43	ug/l	J
107-06-2	1,2-Dichloroethane	0.93	1.0	0.60	ug/l	J
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	83.9	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	108%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-150SRTF_20220414		
Lab Sample ID:	JD43215-6	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96480.D	1	04/20/22 06:19	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0640	0.071	0.036	ug/l	J
56-55-3	Benzo(a)anthracene	0.0273	0.036	0.021	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.036	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0225	0.036	0.021	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.071	0.036	ug/l	
218-01-9	Chrysene	ND	0.071	0.036	ug/l	
86-73-7	Fluorene	ND	0.071	0.036	ug/l	
91-20-3	Naphthalene	ND	0.071	0.036	ug/l	
85-01-8	Phenanthrene	ND	0.071	0.036	ug/l	
129-00-0	Pyrene	0.0606	0.071	0.036	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	59%		29-124%
321-60-8	2-Fluorobiphenyl	53%		23-122%
1718-51-0	Terphenyl-d14	55%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-150SRTF_20220414		
Lab Sample ID:	JD43215-6	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43530.D	1	04/21/22 05:40	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	105%		52-154%
3017-95-6	2-Bromo-1-chloropropane	104%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-150SRTF_20220414		
Lab Sample ID:	JD43215-6F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-152_20220414		
Lab Sample ID:	JD43215-7	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340914.D	1	04/21/22 05:15	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	110%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-152_20220414		
Lab Sample ID:	JD43215-7	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96481.D	1	04/20/22 06:41	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0454	0.080	0.040	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	0.0471	0.080	0.040	ug/l	J
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	0.0560	0.080	0.040	ug/l	J
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	53%		29-124%
321-60-8	2-Fluorobiphenyl	51%		23-122%
1718-51-0	Terphenyl-d14	61%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-152_20220414		
Lab Sample ID:	JD43215-7	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43531.D	1	04/21/22 05:57	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	94%		52-154%
3017-95-6	2-Bromo-1-chloropropane	109%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-152_20220414		
Lab Sample ID:	JD43215-7F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-357_SL_20220414		
Lab Sample ID:	JD43215-8	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340915.D	1	04/21/22 05:39	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.3	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	5.0	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.56	1.0	0.51	ug/l	J
75-65-0	Tert Butyl Alcohol	15.1	10	5.8	ug/l	
108-88-3	Toluene	0.54	1.0	0.53	ug/l	J
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	1.4	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	108%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-357_SL_20220414		
Lab Sample ID:	JD43215-8	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96482.D	1	04/20/22 07:03	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.112	0.069	0.034	ug/l	
56-55-3	Benzo(a)anthracene	0.142	0.034	0.021	ug/l	
50-32-8	Benzo(a)pyrene	0.0627	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0554	0.034	0.021	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0524	0.069	0.034	ug/l	J
218-01-9	Chrysene	0.174	0.069	0.034	ug/l	
86-73-7	Fluorene	ND	0.069	0.034	ug/l	
91-20-3	Naphthalene	0.115	0.069	0.034	ug/l	
85-01-8	Phenanthrene	ND	0.069	0.034	ug/l	
129-00-0	Pyrene	0.374	0.069	0.034	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	78%		29-124%
321-60-8	2-Fluorobiphenyl	71%		23-122%
1718-51-0	Terphenyl-d14	61%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-357_SL_20220414		
Lab Sample ID:	JD43215-8	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43534.D	1	04/21/22 06:48	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	98%		52-154%
3017-95-6	2-Bromo-1-chloropropane	101%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-357_SL_20220414		
Lab Sample ID:	JD43215-8F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-149SRTF_20220414		
Lab Sample ID:	JD43215-9	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340916.D	1	04/21/22 06:02	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	5.7	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	7.3	10	5.8	ug/l	J
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	110%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-149SRTF_20220414		
Lab Sample ID:	JD43215-9	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96483.D	1	04/20/22 07:25	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0482	0.074	0.037	ug/l	J
56-55-3	Benzo(a)anthracene	0.0563	0.037	0.022	ug/l	
50-32-8	Benzo(a)pyrene	0.0524	0.037	0.022	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0810	0.037	0.022	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0433	0.074	0.037	ug/l	J
218-01-9	Chrysene	0.0498	0.074	0.037	ug/l	J
86-73-7	Fluorene	ND	0.074	0.037	ug/l	
91-20-3	Naphthalene	ND	0.074	0.037	ug/l	
85-01-8	Phenanthrene	0.0666	0.074	0.037	ug/l	J
129-00-0	Pyrene	0.101	0.074	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		29-124%
321-60-8	2-Fluorobiphenyl	52%		23-122%
1718-51-0	Terphenyl-d14	51%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-149SRTF_20220414		
Lab Sample ID:	JD43215-9	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43535.D	1	04/21/22 07:05	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	95%		52-154%
3017-95-6	2-Bromo-1-chloropropane	97%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-149SRTF_20220414		
Lab Sample ID:	JD43215-9F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-147SRTF_20220414		
Lab Sample ID:	JD43215-10	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340917.D	1	04/21/22 06:26	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.1	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	108%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-147SRTF_20220414		
Lab Sample ID:	JD43215-10	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96484.D	1	04/20/22 07:48	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.069	0.034	ug/l	
56-55-3	Benzo(a)anthracene	0.0248	0.034	0.021	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0288	0.034	0.021	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.069	0.034	ug/l	
218-01-9	Chrysene	ND	0.069	0.034	ug/l	
86-73-7	Fluorene	ND	0.069	0.034	ug/l	
91-20-3	Naphthalene	ND	0.069	0.034	ug/l	
85-01-8	Phenanthrene	0.0345	0.069	0.034	ug/l	J
129-00-0	Pyrene	0.0372	0.069	0.034	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	65%		29-124%
321-60-8	2-Fluorobiphenyl	63%		23-122%
1718-51-0	Terphenyl-d14	66%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-147SRTF_20220414		
Lab Sample ID:	JD43215-10	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43536.D	1	04/21/22 07:22	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	105%		52-154%
3017-95-6	2-Bromo-1-chloropropane	102%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-147SRTF_20220414		
Lab Sample ID:	JD43215-10F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-337_SL_20220414		
Lab Sample ID:	JD43215-11	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340993.D	1	04/22/22 14:44	NH	n/a	n/a	VL10284
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3.0	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	1.8	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	35.4	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	1.8	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.8	2.0	1.0	ug/l	J
1330-20-7	Xylene (total)	2.3	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	107%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-337_SL_20220414		
Lab Sample ID:	JD43215-11	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96485.D	1	04/20/22 08:10	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0395	0.069	0.034	ug/l	J
56-55-3	Benzo(a)anthracene	0.0324	0.034	0.021	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0276	0.034	0.021	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.069	0.034	ug/l	
218-01-9	Chrysene	ND	0.069	0.034	ug/l	
86-73-7	Fluorene	0.202	0.069	0.034	ug/l	
91-20-3	Naphthalene	1.17	0.069	0.034	ug/l	
85-01-8	Phenanthrene	0.0500	0.069	0.034	ug/l	J
129-00-0	Pyrene	0.103	0.069	0.034	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	62%		29-124%
321-60-8	2-Fluorobiphenyl	36%		23-122%
1718-51-0	Terphenyl-d14	62%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S-337_SL_20220414
Lab Sample ID: JD43215-11 **Date Sampled:** 04/14/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43537.D	1	04/21/22 07:40	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0072	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	93%		52-154%
3017-95-6	2-Bromo-1-chloropropane	98%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-337_SL_20220414		
Lab Sample ID:	JD43215-11F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-85_20220414		
Lab Sample ID:	JD43215-12	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340918.D	1	04/21/22 06:49	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	102%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	110%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-85_20220414		
Lab Sample ID:	JD43215-12	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96486.D	1	04/20/22 08:32	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.080	0.040	ug/l	
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	57%		29-124%
321-60-8	2-Fluorobiphenyl	59%		23-122%
1718-51-0	Terphenyl-d14	73%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-85_20220414		
Lab Sample ID:	JD43215-12	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43538.D	1	04/21/22 07:57	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	93%		52-154%
3017-95-6	2-Bromo-1-chloropropane	99%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-85_20220414		
Lab Sample ID:	JD43215-12F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-163_20220414		
Lab Sample ID:	JD43215-13	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340922.D	1	04/21/22 08:23	NH	n/a	n/a	VL10281
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	149	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	2.0	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	33.8	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	2.6	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.4	2.0	1.0	ug/l	J
1330-20-7	Xylene (total)	5.7	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	93%		80-120%
460-00-4	4-Bromofluorobenzene	108%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-163_20220414		
Lab Sample ID:	JD43215-13	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96487.D	1	04/20/22 08:54	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.176	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.0309	0.040	0.024	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	0.588	0.080	0.040	ug/l	
91-20-3	Naphthalene	0.202	0.080	0.040	ug/l	
85-01-8	Phenanthrene	0.524	0.080	0.040	ug/l	
129-00-0	Pyrene	0.179	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	59%		29-124%
321-60-8	2-Fluorobiphenyl	57%		23-122%
1718-51-0	Terphenyl-d14	73%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	N-163_20220414		
Lab Sample ID:	JD43215-13	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43539.D	1	04/21/22 08:14	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	98%		52-154%
3017-95-6	2-Bromo-1-chloropropane	104%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-163_20220414		
Lab Sample ID:	JD43215-13F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-480_SL_20220414		
Lab Sample ID:	JD43215-14	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340994.D	1	04/22/22 15:08	NH	n/a	n/a	VL10284
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	172	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	118	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	25.0	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	7.7	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	23.2	10	5.8	ug/l	
108-88-3	Toluene	3.4	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	118	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	36.2	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	311	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	110%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-480_SL_20220414		
Lab Sample ID:	JD43215-14	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96488.D	1	04/20/22 09:17	CS	04/19/22 13:45	OP39191	E3P4582
Run #2	2M123384.D	1	04/21/22 11:03	CS	04/19/22 13:45	OP39191	E2M5552

	Initial Volume	Final Volume
Run #1	280 ml	1.0 ml
Run #2	280 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.420	0.071	0.036	ug/l	
56-55-3	Benzo(a)anthracene	0.0360	0.036	0.021	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.036	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0237	0.036	0.021	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.071	0.036	ug/l	
218-01-9	Chrysene	0.0379	0.071	0.036	ug/l	J
86-73-7	Fluorene	1.73	0.071	0.036	ug/l	
91-20-3	Naphthalene	27.9 [a]	0.71	0.036	ug/l	
85-01-8	Phenanthrene	4.90 [a]	0.71	0.036	ug/l	
129-00-0	Pyrene	0.345	0.071	0.036	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	48%	64%	29-124%
321-60-8	2-Fluorobiphenyl	32%	63%	23-122%
1718-51-0	Terphenyl-d14	65%	66%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-480_SL_20220414		
Lab Sample ID:	JD43215-14	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43540.D	1	04/21/22 08:31	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.021	0.0072	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	105%		52-154%
3017-95-6	2-Bromo-1-chloropropane	107%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-480_SL_20220414		
Lab Sample ID:	JD43215-14F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	DUP-7_20220414		
Lab Sample ID:	JD43215-15	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L340970.D	50	04/22/22 04:14	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	4680	25	21	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	30	ug/l	
100-41-4	Ethylbenzene	817	50	30	ug/l	
98-82-8	Isopropylbenzene	34.1	50	32	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	50	25	ug/l	
75-65-0	Tert Butyl Alcohol	ND	500	290	ug/l	
108-88-3	Toluene	7770	50	27	ug/l	
95-63-6	1,2,4-Trimethylbenzene	346	100	50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	78.3	100	50	ug/l	J
1330-20-7	Xylene (total)	3880	50	30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	108%		82-114%

(a) Dilution required due to high concentration of target compound.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DUP-7_20220414		
Lab Sample ID:	JD43215-15	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96489.D	1	04/20/22 09:39	CS	04/19/22 13:45	OP39191	E3P4582
Run #2	2M123382.D	20	04/21/22 10:10	CS	04/19/22 13:45	OP39191	E2M5552

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2	260 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	2.76	0.077	0.038	ug/l	
56-55-3	Benzo(a)anthracene	0.0935	0.038	0.023	ug/l	
50-32-8	Benzo(a)pyrene	0.0341	0.038	0.023	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.0416	0.038	0.023	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.077	0.038	ug/l	
218-01-9	Chrysene	0.0447	0.077	0.038	ug/l	J
86-73-7	Fluorene	15.3 [a]	15	0.77	ug/l	
91-20-3	Naphthalene	207 [a]	15	0.77	ug/l	
85-01-8	Phenanthrene	23.8 [a]	15	0.77	ug/l	
129-00-0	Pyrene	1.16	0.077	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	44%	92%	29-124%
321-60-8	2-Fluorobiphenyl	37%	83%	23-122%
1718-51-0	Terphenyl-d14	53%	96%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DUP-7_20220414		
Lab Sample ID:	JD43215-15	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43541.D	1	04/21/22 08:48	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	0.051	0.020	0.0072	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	80%		52-154%
3017-95-6	2-Bromo-1-chloropropane	96%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-7_20220414		
Lab Sample ID:	JD43215-15F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	URS-5_20220414		
Lab Sample ID:	JD43215-16	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L340971.D	50	04/22/22 04:37	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	4850	25	21	ug/l	
107-06-2	1,2-Dichloroethane	ND	50	30	ug/l	
100-41-4	Ethylbenzene	828	50	30	ug/l	
98-82-8	Isopropylbenzene	32.1	50	32	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	50	25	ug/l	
75-65-0	Tert Butyl Alcohol	ND	500	290	ug/l	
108-88-3	Toluene	7950	50	27	ug/l	
95-63-6	1,2,4-Trimethylbenzene	295	100	50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	81.8	100	50	ug/l	J
1330-20-7	Xylene (total)	3910	50	30	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	107%		82-114%

(a) Dilution required due to high concentration of target compound.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	URS-5_20220414		
Lab Sample ID:	JD43215-16	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96490.D	1	04/20/22 10:01	CS	04/19/22 13:45	OP39191	E3P4582
Run #2	2M123383.D	20	04/21/22 10:36	CS	04/19/22 13:45	OP39191	E2M5552

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2	260 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	2.84	0.077	0.038	ug/l	
56-55-3	Benzo(a)anthracene	0.143	0.038	0.023	ug/l	
50-32-8	Benzo(a)pyrene	0.0347	0.038	0.023	ug/l	J
205-99-2	Benzo(b)fluoranthene	0.0581	0.038	0.023	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.077	0.038	ug/l	
218-01-9	Chrysene	0.0564	0.077	0.038	ug/l	J
86-73-7	Fluorene	20.7 [a]	15	0.77	ug/l	
91-20-3	Naphthalene	261 [a]	15	0.77	ug/l	
85-01-8	Phenanthrene	30.0 [a]	15	0.77	ug/l	
129-00-0	Pyrene	1.45	0.077	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	55%	102%	29-124%
321-60-8	2-Fluorobiphenyl	63%	99%	23-122%
1718-51-0	Terphenyl-d14	63%	121%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	URS-5_20220414		
Lab Sample ID:	JD43215-16	**Date Sampled:**	04/14/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43542.D	1	04/21/22 09:06	RK	04/19/22 16:17	OP39196	G7G1544
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	0.066	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	84%		52-154%
3017-95-6	2-Bromo-1-chloropropane	105%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	URS-5_20220414		
Lab Sample ID:	JD43215-16F	**Date Sampled:**	04/14/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-1_SL_20220415		
Lab Sample ID:	JD43215-17	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340972.D	1	04/22/22 05:01	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.57	1.0	0.51	ug/l	J
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	108%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-1_SL_20220415		
Lab Sample ID:	JD43215-17	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96491.D	1	04/20/22 10:23	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.560	0.069	0.034	ug/l	
56-55-3	Benzo(a)anthracene	0.315	0.034	0.021	ug/l	
50-32-8	Benzo(a)pyrene	0.150	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	0.215	0.034	0.021	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.123	0.069	0.034	ug/l	
218-01-9	Chrysene	0.337	0.069	0.034	ug/l	
86-73-7	Fluorene	1.45	0.069	0.034	ug/l	
91-20-3	Naphthalene	0.0524	0.069	0.034	ug/l	J
85-01-8	Phenanthrene	1.40	0.069	0.034	ug/l	
129-00-0	Pyrene	0.911	0.069	0.034	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		29-124%
321-60-8	2-Fluorobiphenyl	64%		23-122%
1718-51-0	Terphenyl-d14	68%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: W-1_SL_20220415
Lab Sample ID: JD43215-17 **Date Sampled:** 04/15/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43600.D	1	04/22/22 11:49	RK	04/19/22 16:17	OP39196	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	111%		52-154%
3017-95-6	2-Bromo-1-chloropropane	100%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-1_SL_20220415		
Lab Sample ID:	JD43215-17F	**Date Sampled:**	04/15/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-110DSRTF_20220415		
Lab Sample ID:	JD43215-18	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340973.D	1	04/22/22 05:24	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	3.9	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	38.9	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	37.9	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-110DSRTF_20220415		
Lab Sample ID:	JD43215-18	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96492.D	1	04/20/22 10:46	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0497	0.074	0.037	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.037	0.022	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.037	0.022	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.037	0.022	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.074	0.037	ug/l	
218-01-9	Chrysene	ND	0.074	0.037	ug/l	
86-73-7	Fluorene	ND	0.074	0.037	ug/l	
91-20-3	Naphthalene	ND	0.074	0.037	ug/l	
85-01-8	Phenanthrene	ND	0.074	0.037	ug/l	
129-00-0	Pyrene	ND	0.074	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%		29-124%
321-60-8	2-Fluorobiphenyl	72%		23-122%
1718-51-0	Terphenyl-d14	74%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S-110DSRTF_20220415
Lab Sample ID: JD43215-18 **Date Sampled:** 04/15/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43601.D	1	04/22/22 12:06	RK	04/19/22 16:17	OP39196	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	98%		52-154%
3017-95-6	2-Bromo-1-chloropropane	101%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-110DSRTF_20220415		
Lab Sample ID:	JD43215-18F	**Date Sampled:**	04/15/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-13_20220415		
Lab Sample ID:	JD43215-19	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340974.D	1	04/22/22 05:48	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.74	1.0	0.51	ug/l	J
75-65-0	Tert Butyl Alcohol	28.5	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	112%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-13_20220415		
Lab Sample ID:	JD43215-19	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96493.D	1	04/20/22 11:08	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.074	0.037	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.037	0.022	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.037	0.022	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.037	0.022	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.074	0.037	ug/l	
218-01-9	Chrysene	ND	0.074	0.037	ug/l	
86-73-7	Fluorene	ND	0.074	0.037	ug/l	
91-20-3	Naphthalene	ND	0.074	0.037	ug/l	
85-01-8	Phenanthrene	ND	0.074	0.037	ug/l	
129-00-0	Pyrene	ND	0.074	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	56%		29-124%
321-60-8	2-Fluorobiphenyl	53%		23-122%
1718-51-0	Terphenyl-d14	67%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-13_20220415		
Lab Sample ID:	JD43215-19	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43604.D	1	04/22/22 12:57	RK	04/19/22 16:17	OP39196	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	105%		52-154%
3017-95-6	2-Bromo-1-chloropropane	98%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-13_20220415		
Lab Sample ID:	JD43215-19F	**Date Sampled:**	04/15/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	1.1	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-32D_20220415		
Lab Sample ID:	JD43215-20	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340975.D	1	04/22/22 06:11	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	62.8	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	110%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-32D_20220415		
Lab Sample ID:	JD43215-20	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96494.D	1	04/20/22 11:30	CS	04/19/22 13:45	OP39191	E3P4582
Run #2							

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0615	0.077	0.038	ug/l	J
56-55-3	Benzo(a)anthracene	0.0428	0.038	0.023	ug/l	
50-32-8	Benzo(a)pyrene	0.0391	0.038	0.023	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0464	0.038	0.023	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0402	0.077	0.038	ug/l	J
218-01-9	Chrysene	0.0477	0.077	0.038	ug/l	J
86-73-7	Fluorene	0.113	0.077	0.038	ug/l	
91-20-3	Naphthalene	0.0387	0.077	0.038	ug/l	J
85-01-8	Phenanthrene	0.0567	0.077	0.038	ug/l	J
129-00-0	Pyrene	0.0821	0.077	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	53%		29-124%
321-60-8	2-Fluorobiphenyl	48%		23-122%
1718-51-0	Terphenyl-d14	43%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: W-32D_20220415
Lab Sample ID: JD43215-20 **Date Sampled:** 04/15/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43605.D	1	04/22/22 13:14	RK	04/19/22 16:17	OP39196	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	107%		52-154%
3017-95-6	2-Bromo-1-chloropropane	101%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-32D_20220415		
Lab Sample ID:	JD43215-20F	**Date Sampled:**	04/15/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32378

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-78SRTF_20220415		
Lab Sample ID:	JD43215-21	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L340962.D	5	04/22/22 01:06	NH	n/a	n/a	VL10283
Run #2	L340991.D	50	04/22/22 13:58	NH	n/a	n/a	VL10284

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1490 [b]	25	21	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	3.0	ug/l	
100-41-4	Ethylbenzene	7.2	5.0	3.0	ug/l	
98-82-8	Isopropylbenzene	49.7	5.0	3.2	ug/l	
1634-04-4	Methyl Tert Butyl Ether	14.5	5.0	2.5	ug/l	
75-65-0	Tert Butyl Alcohol	643	50	29	ug/l	
108-88-3	Toluene	53.3	5.0	2.7	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	10	5.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	10	5.0	ug/l	
1330-20-7	Xylene (total)	99.3	5.0	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	105%	80-120%
2037-26-5	Toluene-D8	94%	100%	80-120%
460-00-4	4-Bromofluorobenzene	109%	109%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-78SRTF_20220415		
Lab Sample ID:	JD43215-21	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P53081.D	1	04/21/22 06:41	CS	04/20/22 12:00	OP39192A	E4P2772
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.144	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	0.632	0.080	0.040	ug/l	
91-20-3	Naphthalene	0.214	0.080	0.040	ug/l	
85-01-8	Phenanthrene	0.559	0.080	0.040	ug/l	
129-00-0	Pyrene	0.0946	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	60%		29-124%
321-60-8	2-Fluorobiphenyl	66%		23-122%
1718-51-0	Terphenyl-d14	53%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-78SRTF_20220415		
Lab Sample ID:	JD43215-21	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43594.D	1	04/22/22 10:06	RK	04/19/22 16:10	OP39197	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.021	0.0073	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	94%		52-154%
3017-95-6	2-Bromo-1-chloropropane	97%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-78SRTF_20220415		
Lab Sample ID:	JD43215-21F	**Date Sampled:**	04/15/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	1.7	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32396

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-31_SL_20220415		
Lab Sample ID:	JD43215-22	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340976.D	1	04/22/22 06:35	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	3.6	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	8.5	10	5.8	ug/l	J
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	110%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-31_SL_20220415		
Lab Sample ID:	JD43215-22	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P53086.D	1	04/21/22 08:36	CS	04/20/22 12:00	OP39192A	E4P2772
Run #2	4P53088.D	2	04/21/22 11:09	CS	04/20/22 12:00	OP39192A	E4P2772

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2	260 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.077	0.038	ug/l	
56-55-3	Benzo(a)anthracene	1.69	0.038	0.023	ug/l	
50-32-8	Benzo(a)pyrene	1.14	0.038	0.023	ug/l	
205-99-2	Benzo(b)fluoranthene	0.374	0.038	0.023	ug/l	
191-24-2	Benzo(g,h,i)perylene	1.23	0.077	0.038	ug/l	
218-01-9	Chrysene	2.09	0.077	0.038	ug/l	
86-73-7	Fluorene	0.717	0.077	0.038	ug/l	
91-20-3	Naphthalene	0.200	0.077	0.038	ug/l	
85-01-8	Phenanthrene	1.58	0.077	0.038	ug/l	
129-00-0	Pyrene	4.98 [a]	0.15	0.077	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67%	66%	29-124%
321-60-8	2-Fluorobiphenyl	58%	64%	23-122%
1718-51-0	Terphenyl-d14	26%	28%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-31_SL_20220415		
Lab Sample ID:	JD43215-22	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43595.D	1	04/22/22 10:23	RK	04/19/22 16:10	OP39197	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.021	0.0072	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	186% [a]		52-154%
3017-95-6	2-Bromo-1-chloropropane	191% [a]		52-154%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-31_SL_20220415		
Lab Sample ID:	JD43215-22F	**Date Sampled:**	04/15/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32396

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-32_SL_20220415		
Lab Sample ID:	JD43215-23	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L340977.D	1	04/22/22 06:58	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	8.8	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	2.1	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	57.7	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	113%		82-114%

(a) (pH= 6) Sample pH did not satisfy field preservation criteria.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	W-32_SL_20220415		
Lab Sample ID:	JD43215-23	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P53082.D	1	04/21/22 07:04	CS	04/20/22 12:00	OP39192A	E4P2772
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.159	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	0.306	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.146	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.364	0.080	0.040	ug/l	
218-01-9	Chrysene	0.290	0.080	0.040	ug/l	
86-73-7	Fluorene	1.41	0.080	0.040	ug/l	
91-20-3	Naphthalene	0.627	0.080	0.040	ug/l	
85-01-8	Phenanthrene	0.298	0.080	0.040	ug/l	
129-00-0	Pyrene	0.514	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	59%		29-124%
321-60-8	2-Fluorobiphenyl	44%		23-122%
1718-51-0	Terphenyl-d14	19% [a]		22-130%

(a) Outside of in house control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: W-32_SL_20220415
Lab Sample ID: JD43215-23 **Date Sampled:** 04/15/22
Matrix: AQ - Ground Water **Date Received:** 04/15/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43596.D	1	04/22/22 10:40	RK	04/19/22 16:10	OP39197	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	93%		52-154%
3017-95-6	2-Bromo-1-chloropropane	94%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	W-32_SL_20220415		
Lab Sample ID:	JD43215-23F	**Date Sampled:**	04/15/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	1.8	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32396

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-118DSRTF_20220415		
Lab Sample ID:	JD43215-24	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340978.D	1	04/22/22 07:22	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.86	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	105	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	33.5	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	107%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-118DSRTF_20220415		
Lab Sample ID:	JD43215-24	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P53083.D	1	04/21/22 07:27	CS	04/20/22 12:00	OP39192A	E4P2772
Run #2							

	Initial Volume	Final Volume
Run #1	230 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0801	0.087	0.043	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.043	0.026	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.043	0.026	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.043	0.026	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.087	0.043	ug/l	
218-01-9	Chrysene	ND	0.087	0.043	ug/l	
86-73-7	Fluorene	ND	0.087	0.043	ug/l	
91-20-3	Naphthalene	ND	0.087	0.043	ug/l	
85-01-8	Phenanthrene	ND	0.087	0.043	ug/l	
129-00-0	Pyrene	ND	0.087	0.043	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	73%		29-124%
321-60-8	2-Fluorobiphenyl	77%		23-122%
1718-51-0	Terphenyl-d14	40%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S-118DSRTF_20220415		
Lab Sample ID:	JD43215-24	**Date Sampled:**	04/15/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43597.D	1	04/22/22 10:57	RK	04/19/22 16:10	OP39197	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	96%		52-154%
3017-95-6	2-Bromo-1-chloropropane	95%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-118DSRTF_20220415		
Lab Sample ID:	JD43215-24F	**Date Sampled:**	04/15/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52261
(2) Prep QC Batch: MP32396

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-175_20220413		
Lab Sample ID:	JD43215-25	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340979.D	1	04/22/22 07:45	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.3	0.50	0.43	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
110-82-7	Cyclohexane	12.9	5.0	0.78	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	1.1	1.0	0.60	ug/l	
110-54-3	Hexane	ND	5.0	0.48	ug/l	
98-82-8	Isopropylbenzene	9.7	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
91-20-3	Naphthalene	4.4	5.0	2.5	ug/l	J
75-65-0	Tert Butyl Alcohol	60.3	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	4.2	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.4	2.0	1.0	ug/l	J
1330-20-7	Xylene (total)	5.2	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	108%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-175_20220413		
Lab Sample ID:	JD43215-25	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M123379.D	1	04/21/22 04:02	CS	04/20/22 12:00	OP39192	E2M5552
Run #2							

	Initial Volume	Final Volume
Run #1	230 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	1.2	4.3	0.73	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	4.3	2.0	ug/l	
95-48-7	2-Methylphenol	ND	2.2	0.51	ug/l	
	3&4-Methylphenol	ND	2.2	1.6	ug/l	
100-02-7	4-Nitrophenol [a]	ND	8.7	0.49	ug/l	
108-95-2	Phenol	ND	2.2	0.29	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.1	0.64	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.2	0.58	ug/l	
84-66-2	Diethyl phthalate	ND	2.2	0.63	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.2	1.4	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.1	0.70	ug/l	
110-86-1	Pyridine	ND	2.2	0.33	ug/l	
91-22-5	Quinoline	ND	4.3	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		10-73%
4165-62-2	Phenol-d5	27%		10-64%
118-79-6	2,4,6-Tribromophenol	82%		31-130%
4165-60-0	Nitrobenzene-d5	67%		28-126%
321-60-8	2-Fluorobiphenyl	59%		26-114%
1718-51-0	Terphenyl-d14	22%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-175_20220413		
Lab Sample ID:	JD43215-25	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P53084.D	1	04/21/22 07:50	CS	04/20/22 12:00	OP39192A	E4P2772
Run #2							

	Initial Volume	Final Volume
Run #1	230 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	2.40	0.087	0.043	ug/l	
208-96-8	Acenaphthylene	ND	0.087	0.043	ug/l	
120-12-7	Anthracene	0.277	0.087	0.043	ug/l	
56-55-3	Benzo(a)anthracene	0.383	0.043	0.026	ug/l	
50-32-8	Benzo(a)pyrene	0.309	0.043	0.026	ug/l	
205-99-2	Benzo(b)fluoranthene	0.254	0.043	0.026	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.213	0.087	0.043	ug/l	
207-08-9	Benzo(k)fluoranthene	0.107	0.087	0.043	ug/l	
218-01-9	Chrysene	0.315	0.087	0.043	ug/l	
53-70-3	Dibenzo(a,h)anthracene	0.0717	0.087	0.043	ug/l	J
206-44-0	Fluoranthene	0.453	0.087	0.043	ug/l	
86-73-7	Fluorene	0.489	0.087	0.043	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	0.176	0.087	0.043	ug/l	
91-20-3	Naphthalene	0.490	0.087	0.043	ug/l	
85-01-8	Phenanthrene	0.277	0.087	0.043	ug/l	
129-00-0	Pyrene	0.768	0.087	0.043	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	51%		29-124%
321-60-8	2-Fluorobiphenyl	58%		23-122%
1718-51-0	Terphenyl-d14	26%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-175_20220413		
Lab Sample ID:	JD43215-25	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43598.D	1	04/22/22 11:15	RK	04/19/22 16:10	OP39197	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	108%		52-154%
3017-95-6	2-Bromo-1-chloropropane	102%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	C-175_20220413		
Lab Sample ID:	JD43215-25F	**Date Sampled:**	04/13/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/15/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cobalt	7.5	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Lead	1.7	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Nickel	10.5	2.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Vanadium	5.3	2.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Zinc	< 10	10	ug/l	2	04/20/22	04/21/22	FW	SW846 6020B [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA52261
(2) Instrument QC Batch: MA52271
(3) Prep QC Batch: MP32396

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-176_20220413		
Lab Sample ID:	JD43215-26	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340980.D	1	04/22/22 08:09	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.55	0.50	0.43	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
110-54-3	Hexane	ND	5.0	0.48	ug/l	
98-82-8	Isopropylbenzene	4.5	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
91-20-3	Naphthalene	ND	5.0	2.5	ug/l	
75-65-0	Tert Butyl Alcohol	27.0	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	2.3	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	95%		80-120%
460-00-4	4-Bromofluorobenzene	109%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-176_20220413		
Lab Sample ID:	JD43215-26	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M123380.D	1	04/21/22 04:28	CS	04/20/22 12:00	OP39192	E2M5552
Run #2							

	Initial Volume	Final Volume
Run #1	230 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	4.3	0.73	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.3	2.0	ug/l	
95-48-7	2-Methylphenol	ND	2.2	0.51	ug/l	
	3&4-Methylphenol	ND	2.2	1.6	ug/l	
100-02-7	4-Nitrophenol [a]	ND	8.7	0.49	ug/l	
108-95-2	Phenol	ND	2.2	0.29	ug/l	
83-32-9	Acenaphthene	59.1	1.1	0.67	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.1	0.64	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.2	0.58	ug/l	
84-66-2	Diethyl phthalate	ND	2.2	0.63	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.2	1.4	ug/l	
206-44-0	Fluoranthene	3.8	1.1	0.63	ug/l	
91-57-6	2-Methylnaphthalene	0.95	1.1	0.70	ug/l	J
85-01-8	Phenanthrene	15.4	1.1	0.53	ug/l	
110-86-1	Pyridine	ND	2.2	0.33	ug/l	
91-22-5	Quinoline	ND	4.3	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	56%		10-73%
4165-62-2	Phenol-d5	39%		10-64%
118-79-6	2,4,6-Tribromophenol	92%		31-130%
4165-60-0	Nitrobenzene-d5	81%		28-126%
321-60-8	2-Fluorobiphenyl	79%		26-114%
1718-51-0	Terphenyl-d14	53%		16-122%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-176_20220413		
Lab Sample ID:	JD43215-26	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4P53085.D	1	04/21/22 08:14	CS	04/20/22 12:00	OP39192A	E4P2772
Run #2							

	Initial Volume	Final Volume
Run #1	230 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
208-96-8	Acenaphthylene	0.491	0.087	0.043	ug/l	
120-12-7	Anthracene	3.39	0.087	0.043	ug/l	
56-55-3	Benzo(a)anthracene	1.01	0.043	0.026	ug/l	
50-32-8	Benzo(a)pyrene	0.546	0.043	0.026	ug/l	
205-99-2	Benzo(b)fluoranthene	0.486	0.043	0.026	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.250	0.087	0.043	ug/l	
207-08-9	Benzo(k)fluoranthene	0.197	0.087	0.043	ug/l	
218-01-9	Chrysene	0.746	0.087	0.043	ug/l	
53-70-3	Dibenzo(a,h)anthracene	0.104	0.087	0.043	ug/l	
86-73-7	Fluorene	18.9	0.087	0.043	ug/l	E
193-39-5	Indeno(1,2,3-cd)pyrene	0.250	0.087	0.043	ug/l	
91-20-3	Naphthalene	0.740	0.087	0.043	ug/l	
129-00-0	Pyrene	2.44	0.087	0.043	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	72%		29-124%
321-60-8	2-Fluorobiphenyl	55%		23-122%
1718-51-0	Terphenyl-d14	66%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	C-176_20220413		
Lab Sample ID:	JD43215-26	**Date Sampled:**	04/13/22
Matrix:	AQ - Ground Water	**Date Received:**	04/15/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43599.D	1	04/22/22 11:32	RK	04/19/22 16:10	OP39197	G7G1546
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	115%		52-154%
3017-95-6	2-Bromo-1-chloropropane	95%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: C-176_20220413
Lab Sample ID: JD43215-26F
Matrix: AQ - Groundwater Filtered
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Date Sampled: 04/13/22
Date Received: 04/15/22
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cobalt	1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Lead	< 1.0	1.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Nickel	< 2.0	2.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Vanadium	2.1	2.0	ug/l	2	04/19/22	04/20/22	FW	SW846 6020B [1]	SW846 3010A [3]
Zinc	< 10	10	ug/l	2	04/20/22	04/21/22	FW	SW846 6020B [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA52261
(2) Instrument QC Batch: MA52271
(3) Prep QC Batch: MP32396

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JD43215-27	**Date Sampled:**	04/15/22
Matrix:	AQ - Trip Blank Water	**Date Received:**	04/15/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L340961.D	1	04/22/22 00:43	NH	n/a	n/a	VL10283
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	109%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #:
Bottle Order Control #: VP-033022-131
SGS Quote #:
SGS Job #: JD43215

Client / Reporting Information

Company Name: Evergreen c/o Stantec
Street Address: 1060 Andrew Drive Suite 140
City / State / Zip: West Chester PA 19380
Project Contact / E-mail: Andrew Bradley andrew.bradley@stantec.com; Jenny Kachel jenny.kachel@stantec.com
Phone #: 610-425-7820, 484-757-7890
Sampler(s) Name(s) / Phone #: J. Gorcyca, M. Vitale, J. Mulqueen, J. Nair, S. Pierce, D. Campbell

Project Information

Project Name: Evergreen Former Philadelphia Refinery Annual GWS
Street: 3144 Passyunk Avenue
City / State: Philadelphia PA
Project #: 213403363
Client Purchase Order #:
Project Manager: Andrew Bradley, Jenny Kachel

Billing Information (if different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

pH Check (Lab Use Only)

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Evergreen Petroleum Short List + TBA VOCs by 8260	Evergreen Petroleum Short List SVOCs by 8270	Evergreen Petroleum Short List EDB by 8011	Dissolved Lead (field filtered)	LAB USE ONLY
1F	S-355_SL_20220413		4/13/22	10:55	DC	G	N	GW	8	5		1	2					X	X	X	X	E104
2F	C-61_20220413		4/13/22	12:25	JM	G	N	GW	8	5		1	2					X	X	X	X	A10
3F	C-129D_20220413		4/13/22	13:00	MV	G	N	GW	8	5		1	2					X	X	X	X	V651
4F	A-4_20220413		4/13/22	14:23	JN	G	N	GW	8	5		1	2					X	X	X	X	V652
5F	S-423_SL_20220413		4/13/22	14:10	DC	G	N	GW	8	5		1	2					X	X	X	X	V658
6F	S-150SRTF_20220414		4/14/22	9:25	MV	G	N	GW	8	5		1	2					X	X	X	X	
7F	N-152_20220414		4/14/22	9:32	JN	G	N	GW	8	5		1	2					X	X	X	X	
8F	S-357_SL_20220414		4/14/22	9:30	DC	G	N	GW	8	5		1	2					X	X	X	X	
9F	S-149SRTF_20220414		4/14/22	11:00	MV	G	N	GW	8	5		1	2					X	X	X	X	
10F	S-147SRTF_20220414		4/14/22	11:55	MV	G	N	GW	8	5		1	2					X	X	X	X	
11F	S-337_SL_20220414		4/14/22	11:50	DC	G	N	GW	8	5		1	2					X	X	X	X	
12F	N-85_20220414		4/14/22	11:50	JN	G	N	GW	8	5		1	2					X	X	X	X	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format: Evergreen/Sunoco EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Lead has been field filtered. Naphthalene to be analyzed by 8270. Evergreen Petroleum Short List attached.
• 2x250ml NP Out
Initial Assessment JJ 3/5
Label Verification

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:
1	[signature]	4/15/22 1446	1 [signature]
2	[signature]	4/15/22 1906	2
3			3
4			4
5			5

Custody Seal #: ☐ Intact ☐ Not intact | Absent ☐
Therm ID: See Sample Receipt Summary D
On Ice
Cooler Temp. °C: 1.8

2.7 2.1
3.2
2.8 r-ID

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote #: | SGS Job #: JD43215

Client / Reporting Information

Company Name: Evergreen c/o Stantec
Street Address: 1060 Andrew Drive Suite 140
City / State / Zip: West Chester PA 19380
Project Contact / E-mail: Andrew Bradley andrew.bradley@stantec.com; Jenny Kachel jenny.kachel@stantec.com
Phone #: 610-425-7820, 484-757-7890
Sampler(s) Name(s) / Phone #: J. Gorcyca, M. Vitale, J. Mulqueen, J. Nair, S. Pierce, D. Campbell

Project Information

Project Name: Evergreen Former Philadelphia Refinery Annual GWS
Street: 3144 Passyunk Avenue
City / State: Philadelphia PA
Project #: 213403363
Client Purchase Order #:
Project Manager: Andrew Bradley, Jenny Kachel

Billing Information (if different from Report to)

Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Evergreen Petroleum Short List + TBA VOCs by 8260	Evergreen Petroleum Short List SVOCs by 8270	Evergreen Petroleum Short List EDB by 8011	Dissolved Lead (field filtered)	pH Check (Lab Use Only)	LAB USE ONLY
13F	N-163_20220414		4/14/22	14:20	JN	G	N	GW	8	5		1		2				X	X	X	X		
14F	S-480_SL_20220414		4/14/22	14:10	DC	G	N	GW	8	5		1		2				X	X	X	X		
15F	DUP-7_20220414		4/14/22	--	JG	G	N	GW	8	5		1		2				X	X	X	X		
16F	URS-5_20220414		4/14/22	10:05	JG	G	N	GW	8	5		1		2				X	X	X	X		
17F	W-1_SL_20220415		4/15/22	9:15	DC	G	N	GW	8	5		1		2				X	X	X	X		
18F	S-110DSRTF_20220415		4/15/22	10:35	JN	G	N	GW	8	5		1		2				X	X	X	X		
19F	W-13_20220415		4/15/22	9:45	MV	G	N	GW	8	5		1		2				X	X	X	X		
20F	W-32D_20220415		4/15/22	11:05	MV	G	N	GW	8	5		1		2				X	X	X	X		
21F	S-78SRTF_20220415		4/15/22	12:10	JN	G	N	GW	8	5		1		2				X	X	X	X		
22F	W-31_SL_20220415		4/15/22	11:40	DC	G	N	GW	8	5		1		2				X	X	X	X		
23F	W-32_SL_20220415		4/15/22	13:20	DC	G	N	GW	8	5		1		2				X	X	X	X		
24F	S-118DSRTF_20220415		4/15/22	13:50	JN	G	N	GW	8	5		1		2				X	X	X	X		

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
~~SED - Sediment~~
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [x] EDD Format Evergreen/Sunoco EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Lead has been field filtered. Naphthalene to be analyzed by 8270. Evergreen Petroleum Short List attached.

• 2x250ml NP Lab

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	4/15/22 1446	1	2	4/15/22 1906	2
3		3	4		4
5		5	Custody Seal #	Intact / Not intact / Absent	Therm ID: / See Sample Receipt Summary / On Ice / Cooler Temp. °C

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote #: | SGS Job #: JD43215

Client / Reporting Information

Company Name: Evergreen c/o Stantec
Street Address: 1060 Andrew Drive Suite 140
City State Zip: West Chester PA 19380
Project Contact E-mail: Andrew Bradley andrew.bradley@stantec.com; Jenny Kachel jenny.kachel@stantec.com
Phone #: 610-425-7820, 484-757-7890
Sampler(s) Name(s) Phone #: J. Gorcyca, M. Vitale, J. Mulqueen, J. Nair, S. Pierce, D. Campbell

Project Information

Project Name: Evergreen Former Philadelphia Refinery Annual GWS
Street: 3144 Passyunk Avenue
City State: Philadelphia PA
Project #: 213403363
Client Purchase Order #:
Project Manager: Andrew Bradley, Jenny Kachel

Billing Information (if different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analysis

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Evergreen Comprehensive List + TBA VOCs by 8260	Evergreen Comprehensive List SVOCs by 8270	Evergreen Comprehensive List EDB by 8011	Evergreen Comprehensive List Metals (field filtered)	Evergreen Petroleum Short List + TBA VOCs by 8260	pH Check (Lab Use Only)	LAB USE ONLY
25	C-175_20220413	F	4/13/22	10:47	JN	G	N	GW	8	5		1		2				X	X	X	X			
26	C-176_20220413	E	4/13/22	10:45	JM	G	N	GW	8	5		1		2				X	X	X	X			
27	TRIP BLANK		--	--	--	--	--	TB	2	2												X		

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [x] EDD Format Evergreen/Sunoco EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Metals have been field filtered. Naphthalene to be analyzed by 8270. Evergreen Comprehensive List attached.

• 2x250ml NP Ext

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	4/15/22 1446	1	2	4/18/22 1906	2
3		3	4		4
5		5	Custody Seal #	Intact / Not intact / Absent	Therm ID: / See Sample Receipt Summary / On Ice / Cooler Temp. °C

JD43215

Evergreen Comprehensive List (June 2016)

VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Butylbenzene, sec-	135-98-8
Butylbenzene, tert-	98-06-6
Cumene	98-82-8
Cyclohexane	110-82-7
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Hexane	110-54-3
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7

Metals by Method 6010/6020	CAS No.
Cobalt ***	7440-48-4
Lead***	7439-92-1
Nickel***	7440-02-0
Vanadium***	7440-62-2
Zinc***	7440-66-6

SVOCs by EPA Method 8270	CAS No.
Acenaphthene	83-32-9
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(b)fluroranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Benzo(k)fluoranthene	207-08-9
Biphenyl, 1,1-	92-52-4
Bis(2-ethylhexyl) phthalate	117-81-7
Chrysene	218-01-9
Cresol, m- (3-methylphenol)	108-39-4
Cresol, o- (2-methylphenol)	95-48-7
Cresol, p- (4-methylphenol)	106-44-5
Dibenz(a,h)anthracene	53-70-3
Diethyl phthalate	84-66-2
Dimethylphenol, 2,4-	105-67-9
Dibutyl phthalate, n-	84-74-2
Dinitrophenol, 2,4-	51-28-5
Fluoranthene	206-44-0
Fluorene	86-73-7
Indeno(1,2,3-cd)pyrene	193-39-5
Methylnaphthalene, 2-	91-57-6
Naphthalene**	91-20-3
Nitrophenol, 4-	100-02-7
Phenanthrene	85-01-8
Phenol	108-95-2
Pyrene	129-00-0
Pyridine	110-86-1
Quinoline	91-22-5

*Ethylene Dibromide (EDB) should be analyzed by Method 8011 instead of 8260 in soil for tank investigations and in **all groundwater samples**. EDB in all trip blank samples should be analyzed by 8260 regardless of method used for primary samples.

**Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

***Metals analysis should be total in soil and dissolved in groundwater.

This list is generated from the PADEP SERO Crude Oil Parameters for Corrective Action (CDB|SERO|PADEP|9 Aug 2013) combined with PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

Page 4 of 5

JD43215

page 5 of 5

Evergreen Petroleum Short List (June 2016)

VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7

SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(b)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0

Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1

*Ethylene Dibromide (EDB) should be analyzed by Method 8011 instead of 8260 in soil for tank investigations and in **all groundwater samples**. EDB in all trip blank samples should be analyzed by 8260 regardless of method used for primary samples.

**Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

***Metals analysis should be total in soil and dissolved in groundwater.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

SGS Sample Receipt Summary

Job Number: JD43215 **Client:** STANTEC **Project:** EVERGREEN FORMER PHILADELPHIA R

Date / Time Received: 4/15/2022 7:06:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.1); Cooler 2: (1.8); Cooler 3: (3.2); Cooler 4: (2.8); Cooler 5: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (1.8); Cooler 2: (1.5); Cooler 3: (2.9); Cooler 4: (2.5); Cooler 5: (1.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	5		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

Job Change Order: JD43215

Requested Date:	4/22/2022	**Received Date:**	4/15/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/22/2022
Project Description:	SECORPAE:Former Philadelphia Refinery, 3144	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP	**TAT (Days):**	7
	PM: VP		

==========

Sample #: JD43215--2

Dept:

TAT: 7

Change:
Please revise VOC from V8260SL to V8260SL1, add ABLV8270SL

==========

Above Changes Per: Andrea Hill **Date/Time:** 4/22/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

JD43215: Chain of Custody
Page 7 of 9

Job Change Order: JD43215

Requested Date:	4/22/2022	**Received Date:**	4/15/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/22/2022
Project Description:	SECORPAE:Former Philadelphia Refinery, 3144	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD43215-2

Dept:

TAT: 7

C-61_20220413

Change:
Please revise BLV8270SIMSL to BLV8270SIMPAH

==========

Above Changes Per: Andrea Hill **Date/Time:** 4/22/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD43215

Requested Date: 4/27/2022 **Received Date:** 4/15/2022

Account Name: Sunoco/Evergreen **Due Date:** 4/27/2022

Project Description: SECORPAE:Former Philadelphia Refinery, 3144 **Deliverable:** REDT2

C/O Initiated By: VICKYP **PM:** VP **TAT (Days):** 7

==========

Sample #: JD43215-2F **Change:**

Dept: Relog/retrieve COMS, NIMS,VMS,ZNMS

TAT: 7

C-61_20220413

==========

Above Changes Per: Andrea Hill **Date/Time:** 4/27/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

JD43215: Chain of Custody
Page 9 of 9

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-1 Collected: 13-APR-22 10:55 By: DC S-355_SL_20220413			Received: 15-APR-22 By: TS			
JD43215-1	SW846 8270E BY SIM	20-APR-22 04:27	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-1	SW846-8011	21-APR-22 04:14	RK	19-APR-22	AC	V8011EDB
JD43215-1	SW846 8270E BY SIM	21-APR-22 12:39	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-1	SW846 8260D	22-APR-22 14:21	NH			V8260SL
JD43215-2 Collected: 13-APR-22 12:25 By: JM C-61_20220413			Received: 15-APR-22 By: TS			
JD43215-2	SW846 8270E BY SIM	20-APR-22 04:50	CS	19-APR-22	TG	BLV8270SIMPAH
JD43215-2	SW846 8260D	21-APR-22 03:42	NH			V8260SL1
JD43215-2	SW846-8011	21-APR-22 04:31	RK	19-APR-22	AC	V8011EDB
JD43215-2	SW846 8270E	25-APR-22 16:40	KLS	19-APR-22	TG	ABLV8270SL
JD43215-3 Collected: 13-APR-22 13:00 By: MV C-129D_20220413			Received: 15-APR-22 By: TS			
JD43215-3	SW846 8270E BY SIM	20-APR-22 05:12	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-3	SW846 8260D	21-APR-22 04:05	NH			V8260SL
JD43215-3	SW846-8011	21-APR-22 04:48	RK	19-APR-22	AC	V8011EDB
JD43215-4 Collected: 13-APR-22 14:23 By: JN A-4_20220413			Received: 15-APR-22 By: TS			
JD43215-4	SW846 8270E BY SIM	20-APR-22 05:34	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-4	SW846 8260D	21-APR-22 04:29	NH			V8260SL
JD43215-4	SW846-8011	21-APR-22 05:05	RK	19-APR-22	AC	V8011EDB
JD43215-5 Collected: 13-APR-22 14:10 By: DC S-423_SL_20220413			Received: 15-APR-22 By: TS			
JD43215-5	SW846 8270E BY SIM	20-APR-22 05:56	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-5	SW846 8270E BY SIM	20-APR-22 18:21	KLS	19-APR-22	RS	BLV8270SIMSL
JD43215-5	SW846-8011	21-APR-22 05:23	RK	19-APR-22	AC	V8011EDB
JD43215-5	SW846 8260D	21-APR-22 08:00	NH			V8260SL

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-6	Collected: 14-APR-22 09:25 By: MV		Received: 15-APR-22	By: TS		
S-150SRTF_20220414						
JD43215-6	SW846 8270E BY SIM	20-APR-22 06:19	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-6	SW846 8260D	21-APR-22 04:52	NH			V8260SL
JD43215-6	SW846-8011	21-APR-22 05:40	RK	19-APR-22	AC	V8011EDB
JD43215-7	Collected: 14-APR-22 09:32 By: JN		Received: 15-APR-22	By: TS		
N-152_20220414						
JD43215-7	SW846 8270E BY SIM	20-APR-22 06:41	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-7	SW846 8260D	21-APR-22 05:15	NH			V8260SL
JD43215-7	SW846-8011	21-APR-22 05:57	RK	19-APR-22	AC	V8011EDB
JD43215-8	Collected: 14-APR-22 09:30 By: DC		Received: 15-APR-22	By: TS		
S-357_SL_20220414						
JD43215-8	SW846 8270E BY SIM	20-APR-22 07:03	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-8	SW846 8260D	21-APR-22 05:39	NH			V8260SL
JD43215-8	SW846-8011	21-APR-22 06:48	RK	19-APR-22	AC	V8011EDB
JD43215-9	Collected: 14-APR-22 11:00 By: MV		Received: 15-APR-22	By: TS		
S-149SRTF_20220414						
JD43215-9	SW846 8270E BY SIM	20-APR-22 07:25	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-9	SW846 8260D	21-APR-22 06:02	NH			V8260SL
JD43215-9	SW846-8011	21-APR-22 07:05	RK	19-APR-22	AC	V8011EDB
JD43215-10	Collected: 14-APR-22 11:55 By: MV		Received: 15-APR-22	By: TS		
S-147SRTF_20220414						
JD43215-10	SW846 8270E BY SIM	20-APR-22 07:48	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-10	SW846 8260D	21-APR-22 06:26	NH			V8260SL
JD43215-10	SW846-8011	21-APR-22 07:22	RK	19-APR-22	AC	V8011EDB
JD43215-11	Collected: 14-APR-22 11:50 By: DC		Received: 15-APR-22	By: TS		
S-337_SL_20220414						
JD43215-11	SW846 8270E BY SIM	20-APR-22 08:10	CS	19-APR-22	RS	BLV8270SIMSL

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-11	SW846-8011	21-APR-22 07:40	RK	19-APR-22	AC	V8011EDB
JD43215-11	SW846 8260D	22-APR-22 14:44	NH			V8260SL
JD43215-12	Collected: 14-APR-22 11:50 By: JN		Received: 15-APR-22 By: TS			
N-85_20220414						
JD43215-12	SW846 8270E BY SIM	20-APR-22 08:32	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-12	SW846 8260D	21-APR-22 06:49	NH			V8260SL
JD43215-12	SW846-8011	21-APR-22 07:57	RK	19-APR-22	AC	V8011EDB
JD43215-13	Collected: 14-APR-22 14:20 By: JN		Received: 15-APR-22 By: TS			
N-163_20220414						
JD43215-13	SW846 8270E BY SIM	20-APR-22 08:54	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-13	SW846-8011	21-APR-22 08:14	RK	19-APR-22	AC	V8011EDB
JD43215-13	SW846 8260D	21-APR-22 08:23	NH			V8260SL
JD43215-14	Collected: 14-APR-22 14:10 By: DC		Received: 15-APR-22 By: TS			
S-480_SL_20220414						
JD43215-14	SW846 8270E BY SIM	20-APR-22 09:17	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-14	SW846-8011	21-APR-22 08:31	RK	19-APR-22	AC	V8011EDB
JD43215-14	SW846 8270E BY SIM	21-APR-22 11:03	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-14	SW846 8260D	22-APR-22 15:08	NH			V8260SL
JD43215-15	Collected: 14-APR-22 00:00 By: JG		Received: 15-APR-22 By: TS			
DUP-7_20220414						
JD43215-15	SW846 8270E BY SIM	20-APR-22 09:39	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-15	SW846-8011	21-APR-22 08:48	RK	19-APR-22	AC	V8011EDB
JD43215-15	SW846 8270E BY SIM	21-APR-22 10:10	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-15	SW846 8260D	22-APR-22 04:14	NH			V8260SL
JD43215-16	Collected: 14-APR-22 10:05 By: JG		Received: 15-APR-22 By: TS			
URS-5_20220414						
JD43215-16	SW846 8270E BY SIM	20-APR-22 10:01	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-16	SW846-8011	21-APR-22 09:06	RK	19-APR-22	AC	V8011EDB
JD43215-16	SW846 8270E BY SIM	21-APR-22 10:36	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-16	SW846 8260D	22-APR-22 04:37	NH			V8260SL

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-17 Collected: 15-APR-22 09:15 By: DC W-1_SL_20220415			Received: 15-APR-22 By: TS			
JD43215-17	SW846 8270E BY SIM	20-APR-22 10:23	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-17	SW846 8260D	22-APR-22 05:01	NH			V8260SL
JD43215-17	SW846-8011	22-APR-22 11:49	RK	19-APR-22	AC	V8011EDB
JD43215-18 Collected: 15-APR-22 10:35 By: JN S-110DSRTF_20220415			Received: 15-APR-22 By: TS			
JD43215-18	SW846 8270E BY SIM	20-APR-22 10:46	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-18	SW846 8260D	22-APR-22 05:24	NH			V8260SL
JD43215-18	SW846-8011	22-APR-22 12:06	RK	19-APR-22	AC	V8011EDB
JD43215-19 Collected: 15-APR-22 09:45 By: MV W-13_20220415			Received: 15-APR-22 By: TS			
JD43215-19	SW846 8270E BY SIM	20-APR-22 11:08	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-19	SW846 8260D	22-APR-22 05:48	NH			V8260SL
JD43215-19	SW846-8011	22-APR-22 12:57	RK	19-APR-22	AC	V8011EDB
JD43215-1F Collected: 13-APR-22 10:55 By: DC S-355_SL_20220413			Received: 15-APR-22 By: TS			
JD43215-1F	SW846 6020B	20-APR-22 15:36	FW	19-APR-22	AK	PBMS
JD43215-20 Collected: 15-APR-22 11:05 By: MV W-32D_20220415			Received: 15-APR-22 By: TS			
JD43215-20	SW846 8270E BY SIM	20-APR-22 11:30	CS	19-APR-22	RS	BLV8270SIMSL
JD43215-20	SW846 8260D	22-APR-22 06:11	NH			V8260SL
JD43215-20	SW846-8011	22-APR-22 13:14	RK	19-APR-22	AC	V8011EDB
JD43215-21 Collected: 15-APR-22 12:10 By: JN S-78SRTF_20220415			Received: 15-APR-22 By: TS			
JD43215-21	SW846 8270E BY SIM	21-APR-22 06:41	CS	20-APR-22	RS	BLV8270SIMSL
JD43215-21	SW846 8260D	22-APR-22 01:06	NH			V8260SL
JD43215-21	SW846-8011	22-APR-22 10:06	RK	19-APR-22	AC	V8011EDB

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-21	SW846 8260D	22-APR-22 13:58	NH			V8260SL
JD43215-22	Collected: 15-APR-22 11:40 By: DC		Received: 15-APR-22 By: TS			
	W-31_SL_20220415					
JD43215-22	SW846 8270E BY SIM	21-APR-22 08:36	CS	20-APR-22	RS	BLV8270SIMSL
JD43215-22	SW846 8270E BY SIM	21-APR-22 11:09	CS	20-APR-22	RS	BLV8270SIMSL
JD43215-22	SW846 8260D	22-APR-22 06:35	NH			V8260SL
JD43215-22	SW846-8011	22-APR-22 10:23	RK	19-APR-22	AC	V8011EDB
JD43215-23	Collected: 15-APR-22 13:20 By: DC		Received: 15-APR-22 By: TS			
	W-32_SL_20220415					
JD43215-23	SW846 8270E BY SIM	21-APR-22 07:04	CS	20-APR-22	RS	BLV8270SIMSL
JD43215-23	SW846 8260D	22-APR-22 06:58	NH			V8260SL
JD43215-23	SW846-8011	22-APR-22 10:40	RK	19-APR-22	AC	V8011EDB
JD43215-24	Collected: 15-APR-22 13:50 By: JN		Received: 15-APR-22 By: TS			
	S-118DSRTF_20220415					
JD43215-24	SW846 8270E BY SIM	21-APR-22 07:27	CS	20-APR-22	RS	BLV8270SIMSL
JD43215-24	SW846 8260D	22-APR-22 07:22	NH			V8260SL
JD43215-24	SW846-8011	22-APR-22 10:57	RK	19-APR-22	AC	V8011EDB
JD43215-25	Collected: 13-APR-22 10:47 By: JN		Received: 15-APR-22 By: TS			
	C-175_20220413					
JD43215-25	SW846 8270E	21-APR-22 04:02	CS	20-APR-22	RS	ABLV8270SL
JD43215-25	SW846 8270E BY SIM	21-APR-22 07:50	CS	20-APR-22	RS	BLV8270SIMPAH
JD43215-25	SW846 8260D	22-APR-22 07:45	NH			V8260SL1
JD43215-25	SW846-8011	22-APR-22 11:15	RK	19-APR-22	AC	V8011EDB
JD43215-26	Collected: 13-APR-22 10:45 By: JM		Received: 15-APR-22 By: TS			
	C-176_20220413					
JD43215-26	SW846 8270E	21-APR-22 04:28	CS	20-APR-22	RS	ABLV8270SL
JD43215-26	SW846 8270E BY SIM	21-APR-22 08:14	CS	20-APR-22	RS	BLV8270SIMPAH
JD43215-26	SW846 8260D	22-APR-22 08:09	NH			V8260SL1
JD43215-26	SW846-8011	22-APR-22 11:32	RK	19-APR-22	AC	V8011EDB

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE: Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-27 Collected: 15-APR-22 13:50 By: TRIP BLANK			Received: 15-APR-22 By: TS			
JD43215-27	SW846 8260D	22-APR-22 00:43	NH			V8260SL
JD43215-2F Collected: 13-APR-22 12:25 By: JM C-61_20220413			Received: 15-APR-22 By: TS			
JD43215-2F	SW846 6020B	20-APR-22 15:42	FW	19-APR-22	MET	COMS, NIMS, PBMS, VMS
JD43215-2F	SW846 6020B	05-MAY-22 17:28	NV	02-MAY-22	MET	ZNMS
JD43215-3F Collected: 13-APR-22 13:00 By: MV C-129D_20220413			Received: 15-APR-22 By: TS			
JD43215-3F	SW846 6020B	20-APR-22 15:47	FW	19-APR-22	AK	PBMS
JD43215-4F Collected: 13-APR-22 14:23 By: JN A-4_20220413			Received: 15-APR-22 By: TS			
JD43215-4F	SW846 6020B	20-APR-22 15:53	FW	19-APR-22	AK	PBMS
JD43215-5F Collected: 13-APR-22 14:10 By: DC S-423_SL_20220413			Received: 15-APR-22 By: TS			
JD43215-5F	SW846 6020B	20-APR-22 15:58	FW	19-APR-22	AK	PBMS
JD43215-6F Collected: 14-APR-22 09:25 By: MV S-150SRTF_20220414			Received: 15-APR-22 By: TS			
JD43215-6F	SW846 6020B	20-APR-22 16:03	FW	19-APR-22	AK	PBMS
JD43215-7F Collected: 14-APR-22 09:32 By: JN N-152_20220414			Received: 15-APR-22 By: TS			
JD43215-7F	SW846 6020B	20-APR-22 16:25	FW	19-APR-22	AK	PBMS
JD43215-8F Collected: 14-APR-22 09:30 By: DC S-357_SL_20220414			Received: 15-APR-22 By: TS			

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE: Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-8F	SW846 6020B	20-APR-22 16:30	FW	19-APR-22	AK	PBMS
JD43215-9F	Collected: 14-APR-22 11:00 By: MV		Received: 15-APR-22 By: TS			
S-149SRTF_20220414						
JD43215-9F	SW846 6020B	20-APR-22 16:36	FW	19-APR-22	AK	PBMS
JD43215-10F	Collected: 14-APR-22 11:55 By: MV		Received: 15-APR-22 By: TS			
S-147SRTF_20220414						
JD43215-10F	SW846 6020B	20-APR-22 16:41	FW	19-APR-22	AK	PBMS
JD43215-11F	Collected: 14-APR-22 11:50 By: DC		Received: 15-APR-22 By: TS			
S-337_SL_20220414						
JD43215-11F	SW846 6020B	20-APR-22 16:47	FW	19-APR-22	AK	PBMS
JD43215-12F	Collected: 14-APR-22 11:50 By: JN		Received: 15-APR-22 By: TS			
N-85_20220414						
JD43215-12F	SW846 6020B	20-APR-22 16:52	FW	19-APR-22	AK	PBMS
JD43215-13F	Collected: 14-APR-22 14:20 By: JN		Received: 15-APR-22 By: TS			
N-163_20220414						
JD43215-13F	SW846 6020B	20-APR-22 16:57	FW	19-APR-22	AK	PBMS
JD43215-14F	Collected: 14-APR-22 14:10 By: DC		Received: 15-APR-22 By: TS			
S-480_SL_20220414						
JD43215-14F	SW846 6020B	20-APR-22 15:04	FW	19-APR-22	AK	PBMS
JD43215-15F	Collected: 14-APR-22 00:00 By: JG		Received: 15-APR-22 By: TS			
DUP-7_20220414						
JD43215-15F	SW846 6020B	20-APR-22 17:03	FW	19-APR-22	AK	PBMS
JD43215-16F	Collected: 14-APR-22 10:05 By: JG		Received: 15-APR-22 By: TS			
URS-5_20220414						

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE: Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-16E	SW846 6020B	20-APR-22 17:24	FW	19-APR-22	AK	PBMS
JD43215-17F	Collected: 15-APR-22 09:15 By: DC W-1_SL_20220415	Received: 15-APR-22 By: TS				
JD43215-17E	SW846 6020B	20-APR-22 17:30	FW	19-APR-22	AK	PBMS
JD43215-18F	Collected: 15-APR-22 10:35 By: JN S-110DSRTF_20220415	Received: 15-APR-22 By: TS				
JD43215-18E	SW846 6020B	20-APR-22 17:35	FW	19-APR-22	AK	PBMS
JD43215-19F	Collected: 15-APR-22 09:45 By: MV W-13_20220415	Received: 15-APR-22 By: TS				
JD43215-19E	SW846 6020B	20-APR-22 17:41	FW	19-APR-22	AK	PBMS
JD43215-20F	Collected: 15-APR-22 11:05 By: MV W-32D_20220415	Received: 15-APR-22 By: TS				
JD43215-20E	SW846 6020B	20-APR-22 17:46	FW	19-APR-22	AK	PBMS
JD43215-21F	Collected: 15-APR-22 12:10 By: JN S-78SRTF_20220415	Received: 15-APR-22 By: TS				
JD43215-21E	SW846 6020B	20-APR-22 13:43	FW	19-APR-22	SF	PBMS
JD43215-22F	Collected: 15-APR-22 11:40 By: DC W-31_SL_20220415	Received: 15-APR-22 By: TS				
JD43215-22E	SW846 6020B	20-APR-22 13:54	FW	19-APR-22	SF	PBMS
JD43215-23F	Collected: 15-APR-22 13:20 By: DC W-32_SL_20220415	Received: 15-APR-22 By: TS				
JD43215-23E	SW846 6020B	20-APR-22 13:59	FW	19-APR-22	SF	PBMS
JD43215-24F	Collected: 15-APR-22 13:50 By: JN S-118DSRTF_20220415	Received: 15-APR-22 By: TS				

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD43215

SECORPAE: Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD43215-24E	SW846 6020B	20-APR-22 14:21	FW	19-APR-22	SF	PBMS
JD43215-25F	Collected: 13-APR-22 10:47 By: JN C-175_20220413			Received: 15-APR-22 By: TS		
JD43215-25E	SW846 6020B	20-APR-22 14:26	FW	19-APR-22	SF	COMS, NIMS, PBMS, VMS
JD43215-25E	SW846 6020B	21-APR-22 14:13	FW	20-APR-22	NV	ZNMS
JD43215-26F	Collected: 13-APR-22 10:45 By: JM C-176_20220413			Received: 15-APR-22 By: TS		
JD43215-26E	SW846 6020B	20-APR-22 14:32	FW	19-APR-22	SF	COMS, NIMS, PBMS, VMS
JD43215-26E	SW846 6020B	21-APR-22 14:18	FW	20-APR-22	NV	ZNMS

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-1.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-1.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-1.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-1.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-1.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-1.1
JD43215-1.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-1.1
JD43215-1.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-1.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-1.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-1.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-1.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-1.1.1	Extract Freezer	Kristi Schollenberger	04/20/22 16:08	Retrieve from Storage
JD43215-1.1.1	Kristi Schollenberger	GCMS2M	04/20/22 16:08	Load on Instrument
JD43215-1.1.1	GCMS2M	Christopher Sowa	04/21/22 02:50	Unload from Instrument
JD43215-1.1.1	Christopher Sowa	Extract Freezer	04/21/22 02:50	Return to Storage
JD43215-1.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-1.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-1.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-1.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-1.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-1.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-1.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-1.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-1.4
JD43215-1.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-1.4
JD43215-1.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-1.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-1.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-1.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-1.5	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-1.5	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-1.5	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-1.5	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-1.5	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-1.5.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-1.5
JD43215-1.5.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-1.5

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-1.5.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-1.5.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-1.5.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-1.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-1.6	Secured Storage	Nicole Hornlien	04/22/22 18:01	Retrieve from Storage
JD43215-1.6	Nicole Hornlien	GCMSL	04/22/22 18:01	Load on Instrument
JD43215-1.6	GCMSL	Nicole Hornlien	04/25/22 12:45	Unload from Instrument
JD43215-1.6	Nicole Hornlien	Secured Storage	04/25/22 12:45	Return to Storage
JD43215-1.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-1.7	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-1.7	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-1.7	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-1.7	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-1.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-1F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-1F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-1F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-1F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-1F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-1F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-1F.3
JD43215-1F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-1F.3
JD43215-1F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-2.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-2.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-2.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-2.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-2.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-2.1
JD43215-2.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-2.1
JD43215-2.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-2.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-2.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-2.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-2.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-2.1.1	Extract Freezer	Christopher Sowa	04/23/22 03:43	Retrieve from Storage
JD43215-2.1.1	Christopher Sowa	GCMS5P	04/23/22 03:43	Load on Instrument
JD43215-2.1.1	GCMS5P	Kristi Schollenberger	04/26/22 14:35	Unload from Instrument

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-2.1.1	Kristi Schollenberger	Extract Freezer	04/26/22 14:35	Return to Storage
JD43215-2.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-2.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-2.4 stage	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
JD43215-2.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-2.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-2.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-2.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-2.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-2.4
JD43215-2.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-2.4
JD43215-2.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-2.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-2.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-2.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-2.5 stage	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
JD43215-2.5	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-2.5	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-2.5	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-2.5	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-2.5.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-2.5
JD43215-2.5.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-2.5
JD43215-2.5.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-2.5.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-2.5.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-2.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-2.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-2.7	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-2.7	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-2.7	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-2.7	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-2.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-2F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-2F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-2F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-2F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-2F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-2F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-2F.3
JD43215-2F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-2F.3
JD43215-2F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-3.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-3.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-3.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-3.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-3.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-3.1
JD43215-3.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-3.1
JD43215-3.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-3.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-3.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-3.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-3.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-3.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-3.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-3.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-3.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-3.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-3.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-3.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-3.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-3.4
JD43215-3.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-3.4
JD43215-3.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-3.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-3.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-3.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-3.5	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-3.5	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-3.5	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-3.5	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-3.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-3.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-3.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-3F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-3F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-3F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-3F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-3F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-3F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-3F.3
JD43215-3F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-3F.3
JD43215-3F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-4.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-4.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-4.2 stage	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
JD43215-4.2	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-4.2	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-4.2.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-4.2
JD43215-4.2.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-4.2
JD43215-4.2.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-4.2.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-4.2.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-4.2.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-4.2.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-4.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-4.4 stage	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
JD43215-4.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-4.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-4.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-4.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-4.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-4.4
JD43215-4.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-4.4
JD43215-4.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-4.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-4.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-4.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-4.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-4.6	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-4.6	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-4.6	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-4.6	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-4.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-4.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-4F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-4F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-4F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-4F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-4F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-4F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-4F.3
JD43215-4F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-4F.3
JD43215-4F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-5.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-5.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-5.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-5.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-5.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-5.1
JD43215-5.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-5.1
JD43215-5.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-5.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-5.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-5.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-5.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-5.1.1	Extract Freezer	Kristi Schollenberger	04/20/22 16:08	Retrieve from Storage
JD43215-5.1.1	Kristi Schollenberger	GCMS2M	04/20/22 16:08	Load on Instrument
JD43215-5.1.1	GCMS2M	Christopher Sowa	04/21/22 02:50	Unload from Instrument
JD43215-5.1.1	Christopher Sowa	Extract Freezer	04/21/22 02:50	Return to Storage
JD43215-5.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-5.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-5.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-5.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-5.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-5.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-5.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-5.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-5.4
JD43215-5.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-5.4
JD43215-5.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-5.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-5.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-5.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-5.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-5.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-5.7	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-5.7	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-5.7	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-5.7	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-5.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-5F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-5F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-5F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-5F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-5F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-5F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-5F.3
JD43215-5F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-5F.3
JD43215-5F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-6.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-6.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-6.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-6.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-6.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-6.1
JD43215-6.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-6.1

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-6.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-6.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-6.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-6.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-6.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-6.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-6.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-6.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-6.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-6.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-6.4	Secured Storage	Alejandra Cruz	04/19/22 17:39	Retrieve from Storage
JD43215-6.4	Alejandra Cruz	Secured Storage	04/19/22 19:41	Return to Storage
JD43215-6.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-6.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-6.4.1	Alejandra Cruz	Organics Prep	04/19/22 17:39	Extract from JD43215-6.4
JD43215-6.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-6.4
JD43215-6.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-6.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-6.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-6.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-6.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-6.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-6.7	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-6.7	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-6.7	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-6.7	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-6.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-6F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-6F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-6F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-6F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-6F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-6F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-6F.3
JD43215-6F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-6F.3

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Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
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Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-6F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-7.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-7.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-7.2	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-7.2	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-7.2	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-7.2.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-7.2
JD43215-7.2.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-7.2
JD43215-7.2.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-7.2.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-7.2.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-7.2.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-7.2.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-7.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-7.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-7.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-7.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-7.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-7.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-7.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-7.4
JD43215-7.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-7.4
JD43215-7.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-7.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-7.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-7.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-7.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-7.6	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-7.6	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-7.6	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-7.6	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-7.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-7.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage

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Job Number: JD43215
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Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-7F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-7F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-7F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-7F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-7F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-7F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-7F.3
JD43215-7F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-7F.3
JD43215-7F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-8.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-8.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-8.2 stage	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
JD43215-8.2	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-8.2	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-8.2.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-8.2
JD43215-8.2.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-8.2
JD43215-8.2.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-8.2.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-8.2.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-8.2.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-8.2.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-8.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-8.4 stage	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
JD43215-8.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-8.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-8.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-8.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-8.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-8.4
JD43215-8.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-8.4
JD43215-8.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-8.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-8.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-8.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-8.5	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-8.5	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-8.5	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument

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Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
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Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-8.5	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-8.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-8.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-8.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-8F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-8F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-8F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-8F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-8F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-8F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-8F.3
JD43215-8F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-8F.3
JD43215-8F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-9.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-9.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-9.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-9.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-9.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-9.1
JD43215-9.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-9.1
JD43215-9.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-9.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-9.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-9.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-9.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-9.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-9.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-9.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-9.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-9.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-9.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-9.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-9.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-9.4
JD43215-9.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-9.4

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Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-9.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-9.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-9.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-9.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-9.5	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-9.5	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-9.5	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-9.5	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-9.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-9.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-9.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-9F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-9F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-9F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-9F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-9F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-9F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-9F.3
JD43215-9F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-9F.3
JD43215-9F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-10.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-10.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-10.2	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-10.2	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-10.2	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-10.2.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-10.2
JD43215-10.2.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-10.2
JD43215-10.2.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-10.2.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-10.2.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-10.2.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-10.2.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-10.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-10.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage

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Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
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Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
stage				
JD43215-10.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-10.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-10.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-10.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-10.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-10.4
JD43215-10.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-10.4
JD43215-10.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-10.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-10.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-10.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-10.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-10.6	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-10.6	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-10.6	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-10.6	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-10.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-10.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-10F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-10F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-10F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-10F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-10F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-10F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-10F.3
JD43215-10F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-10F.3
JD43215-10F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-11.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-11.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-11.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-11.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-11.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-11.1
JD43215-11.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-11.1
JD43215-11.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-11.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-11.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-11.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-11.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-11.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-11.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-11.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-11.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-11.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-11.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-11.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-11.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-11.4
JD43215-11.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-11.4
JD43215-11.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-11.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-11.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-11.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-11.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-11.6	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-11.6	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-11.6	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-11.6	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-11.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-11.7	Secured Storage	Nicole Hornlien	04/22/22 18:01	Retrieve from Storage
JD43215-11.7	Nicole Hornlien	GCMSL	04/22/22 18:01	Load on Instrument
JD43215-11.7	GCMSL	Nicole Hornlien	04/25/22 12:45	Unload from Instrument
JD43215-11.7	Nicole Hornlien	Secured Storage	04/25/22 12:45	Return to Storage
JD43215-11.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-11F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-11F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-11F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-11F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-11F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-11F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-11F.3
JD43215-11F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-11F.3

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-11F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-12.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-12.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-12.2	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-12.2	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-12.2	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-12.2.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-12.2
JD43215-12.2.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-12.2
JD43215-12.2.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-12.2.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-12.2.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-12.2.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-12.2.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-12.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-12.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-12.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-12.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-12.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-12.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-12.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-12.4
JD43215-12.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-12.4
JD43215-12.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-12.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-12.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-12.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-12.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-12.6	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-12.6	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-12.6	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-12.6	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-12.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-12.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-12F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-12F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-12F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-12F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-12F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-12F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-12F.3
JD43215-12F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-12F.3
JD43215-12F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-13.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-13.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-13.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-13.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-13.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-13.1
JD43215-13.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-13.1
JD43215-13.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-13.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-13.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-13.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-13.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-13.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-13.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-13.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-13.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-13.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-13.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-13.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-13.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-13.4
JD43215-13.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-13.4
JD43215-13.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-13.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-13.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-13.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-13.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-13.6	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-13.6	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-13.6	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-13.6	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-13.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-13.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-13F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-13F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-13F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-13F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-13F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-13F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-13F.3
JD43215-13F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-13F.3
JD43215-13F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-14.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-14.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-14.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-14.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-14.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-14.1
JD43215-14.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-14.1
JD43215-14.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-14.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-14.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-14.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-14.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-14.1.1	Extract Freezer	Kristi Schollenberger	04/20/22 16:08	Retrieve from Storage
JD43215-14.1.1	Kristi Schollenberger	GCMS2M	04/20/22 16:08	Load on Instrument
JD43215-14.1.1	GCMS2M	Christopher Sowa	04/21/22 02:50	Unload from Instrument
JD43215-14.1.1	Christopher Sowa	Extract Freezer	04/21/22 02:50	Return to Storage
JD43215-14.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-14.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-14.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-14.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-14.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-14.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-14.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-14.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-14.4
JD43215-14.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-14.4
JD43215-14.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-14.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-14.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-14.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-14.5	Secured Storage	Nicole Hornlien	04/22/22 18:01	Retrieve from Storage
JD43215-14.5	Nicole Hornlien	GCMSL	04/22/22 18:01	Load on Instrument
JD43215-14.5	GCMSL	Nicole Hornlien	04/25/22 12:45	Unload from Instrument
JD43215-14.5	Nicole Hornlien	Secured Storage	04/25/22 12:45	Return to Storage
JD43215-14.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-14.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-14.7	Secured Storage	Nicole Hornlien	04/20/22 19:15	Retrieve from Storage
JD43215-14.7	Nicole Hornlien	GCMSL	04/20/22 19:15	Load on Instrument
JD43215-14.7	GCMSL	Nicole Hornlien	04/21/22 15:32	Unload from Instrument
JD43215-14.7	Nicole Hornlien	Secured Storage	04/21/22 15:32	Return to Storage
JD43215-14.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-14F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-14F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-14F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-14F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-14F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-14F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-14F.3
JD43215-14F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-14F.3
JD43215-14F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-15.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-15.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-15.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-15.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-15.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-15.1
JD43215-15.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-15.1
JD43215-15.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-15.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-15.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-15.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-15.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-15.1.1	Extract Freezer	Kristi Schollenberger	04/20/22 16:08	Retrieve from Storage
JD43215-15.1.1	Kristi Schollenberger	GCMS2M	04/20/22 16:08	Load on Instrument
JD43215-15.1.1	GCMS2M	Christopher Sowa	04/21/22 02:50	Unload from Instrument
JD43215-15.1.1	Christopher Sowa	Extract Freezer	04/21/22 02:50	Return to Storage
JD43215-15.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-15.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-15.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-15.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-15.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-15.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-15.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-15.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-15.4
JD43215-15.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-15.4
JD43215-15.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-15.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-15.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-15.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-15.5	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-15.5	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-15.5	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-15.5	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-15.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-15.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-15.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-15F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-15F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-15F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-15F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-15F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-15F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-15F.3
JD43215-15F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-15F.3

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-15F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-16.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-16.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-16.2	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-16.2	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-16.2	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-16.2.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-16.2
JD43215-16.2.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-16.2
JD43215-16.2.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-16.2.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-16.2.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-16.2.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-16.2.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-16.2.1	Extract Freezer	Kristi Schollenberger	04/20/22 16:08	Retrieve from Storage
JD43215-16.2.1	Kristi Schollenberger	GCMS2M	04/20/22 16:08	Load on Instrument
JD43215-16.2.1	GCMS2M	Christopher Sowa	04/21/22 02:50	Unload from Instrument
JD43215-16.2.1	Christopher Sowa	Extract Freezer	04/21/22 02:50	Return to Storage
JD43215-16.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-16.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-16.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-16.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-16.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-16.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-16.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-16.4
JD43215-16.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-16.4
JD43215-16.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-16.4.1	Extract Storage	Rebecca Krug	04/21/22 00:11	Retrieve from Storage
JD43215-16.4.1	Rebecca Krug	GC7G	04/21/22 00:11	Load on Instrument
JD43215-16.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-16.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-16.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-16.7	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-16.7	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-16.7	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-16.7	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-16.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-16F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-16F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-16F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-16F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-16F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-16F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-16F.3
JD43215-16F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-16F.3
JD43215-16F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-17.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-17.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-17.2	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-17.2	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-17.2	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-17.2.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-17.2
JD43215-17.2.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-17.2
JD43215-17.2.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-17.2.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-17.2.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-17.2.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-17.2.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-17.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-17.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-17.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-17.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-17.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-17.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-17.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-17.4
JD43215-17.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-17.4
JD43215-17.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-17.4.1	Extract Storage	Rebecca Krug	04/22/22 00:50	Retrieve from Storage
JD43215-17.4.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-17.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-17.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-17.6	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-17.6	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-17.6	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-17.6	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-17.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-17.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-17F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-17F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-17F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-17F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-17F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-17F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-17F.3
JD43215-17F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-17F.3
JD43215-17F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-18.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-18.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-18.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-18.1	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-18.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-18.1
JD43215-18.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-18.1
JD43215-18.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-18.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-18.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-18.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-18.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-18.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-18.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-18.6	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-18.6	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-18.6	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-18.6	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-18.6	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-18.6.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-18.6
JD43215-18.6.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-18.6
JD43215-18.6.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-18.6.1	Extract Storage	Rebecca Krug	04/22/22 00:50	Retrieve from Storage
JD43215-18.6.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-18.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-18.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-18.9	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-18.9	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-18.9	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-18.9	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-18.9	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-18.10	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-18F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-18F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-18F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-18F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-18F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-18F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-18F.3
JD43215-18F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-18F.3
JD43215-18F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-19.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-19.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-19.2 stage	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
JD43215-19.2	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-19.2	Taylor Gorman		04/20/22 06:27	Depleted
JD43215-19.2.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-19.2
JD43215-19.2.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-19.2
JD43215-19.2.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-19.2.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-19.2.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-19.2.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
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Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-19.2.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-19.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-19.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-19.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-19.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-19.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-19.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-19.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-19.4
JD43215-19.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-19.4
JD43215-19.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-19.4.1	Extract Storage	Rebecca Krug	04/22/22 00:50	Retrieve from Storage
JD43215-19.4.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-19.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-19.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-19.6	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-19.6	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-19.6	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-19.6	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-19.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-19.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-19F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-19F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-19F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-19F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-19F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-19F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-19F.3
JD43215-19F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-19F.3
JD43215-19F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-20.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-20.1	Christian King	Secured Staging Area	04/18/22 21:06	Return to Storage
stage				
JD43215-20.1	Secured Staging Area	Taylor Gorman	04/19/22 06:54	Retrieve from Storage
JD43215-20.1	Taylor Gorman		04/20/22 06:27	Depleted

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-20.1.1	Taylor Gorman	Organics Prep	04/19/22 07:00	Extract from JD43215-20.1
JD43215-20.1.1	Organics Prep	Rocquan Salters	04/19/22 22:54	Extract from JD43215-20.1
JD43215-20.1.1	Rocquan Salters	Extract Storage	04/19/22 22:56	Return to Storage
JD43215-20.1.1	Extract Storage	Christopher Sowa	04/20/22 03:19	Retrieve from Storage
JD43215-20.1.1	Christopher Sowa	GCMS3P	04/20/22 03:19	Load on Instrument
JD43215-20.1.1	GCMS3P	Kristi Schollenberger	04/20/22 15:52	Unload from Instrument
JD43215-20.1.1	Kristi Schollenberger	Extract Freezer	04/20/22 15:52	Return to Storage
JD43215-20.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-20.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-20.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-20.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-20.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-20.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-20.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-20.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:50	Extract from JD43215-20.4
JD43215-20.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:08	Extract from JD43215-20.4
JD43215-20.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:08	Return to Storage
JD43215-20.4.1	Extract Storage	Rebecca Krug	04/22/22 00:50	Retrieve from Storage
JD43215-20.4.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-20.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-20.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-20.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-20.7	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-20.7	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-20.7	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-20.7	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-20.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-20F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-20F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-20F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-20F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-20F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-20F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:13	Digestate from JD43215-20F.3
JD43215-20F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:13	Digestate from JD43215-20F.3

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-20F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:13	Return to Storage
JD43215-21.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-21.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-21.2	Secured Storage	Benjamin Gaines	04/19/22 16:27	Retrieve from Storage
JD43215-21.2	Benjamin Gaines	Secured Staging Area	04/19/22 16:27	Return to Storage
JD43215-21.2	Secured Staging Area	Taylor Gorman	04/20/22 06:51	Retrieve from Storage
JD43215-21.2	Taylor Gorman		04/21/22 07:54	Depleted
JD43215-21.2.1	Taylor Gorman	Organics Prep	04/20/22 06:58	Extract from JD43215-21.2
JD43215-21.2.1	Organics Prep	Rocquan Salters	04/20/22 19:44	Extract from JD43215-21.2
JD43215-21.2.1	Rocquan Salters	Extract Storage	04/20/22 19:44	Return to Storage
JD43215-21.2.1	Extract Storage	Christopher Sowa	04/21/22 00:30	Retrieve from Storage
JD43215-21.2.1	Christopher Sowa	GCMS4P	04/21/22 00:30	Load on Instrument
JD43215-21.2.1	GCMS4P	Christopher Sowa	04/22/22 05:34	Unload from Instrument
JD43215-21.2.1	Christopher Sowa	Extract Freezer	04/22/22 05:34	Return to Storage
JD43215-21.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-21.6	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-21.6	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-21.6	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-21.6	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-21.6	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-21.6.1	Ellen Dondeo	Organics Prep	04/19/22 08:53	Extract from JD43215-21.6
JD43215-21.6.1	Organics Prep	Alejandra Cruz	04/19/22 20:09	Extract from JD43215-21.6
JD43215-21.6.1	Alejandra Cruz	Extract Storage	04/19/22 20:09	Return to Storage
JD43215-21.6.1	Extract Storage	Rebecca Krug	04/22/22 00:51	Retrieve from Storage
JD43215-21.6.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-21.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-21.7	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-21.7	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-21.7	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-21.7	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-21.7	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-21.7.1	Ellen Dondeo	Organics Prep	04/19/22 08:53	Extract from JD43215-21.7
JD43215-21.7.1	Organics Prep	Alejandra Cruz	04/19/22 20:09	Extract from JD43215-21.7
JD43215-21.7.1	Alejandra Cruz	Extract Storage	04/19/22 20:09	Return to Storage
JD43215-21.7.1	Extract Storage	Rebecca Krug	04/22/22 00:51	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-21.7.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-21.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-21.8	Secured Storage	Nicole Hornlien	04/22/22 18:01	Retrieve from Storage
JD43215-21.8	Nicole Hornlien	GCMSL	04/22/22 18:01	Load on Instrument
JD43215-21.8	GCMSL	Nicole Hornlien	04/25/22 12:45	Unload from Instrument
JD43215-21.8	Nicole Hornlien	Secured Storage	04/25/22 12:45	Return to Storage
JD43215-21.9	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-21.9	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-21.9	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-21.9	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-21.9	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-21.10	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-21F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-21F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-21F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-21F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-21F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-21F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:40	Digestate from JD43215-21F.3
JD43215-21F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:40	Digestate from JD43215-21F.3
JD43215-21F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:40	Return to Storage
JD43215-22.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-22.1	Secured Storage	Benjamin Gaines	04/19/22 16:27	Retrieve from Storage
JD43215-22.1	Benjamin Gaines	Secured Staging Area	04/19/22 16:27	Return to Storage
JD43215-22.1	Secured Staging Area	Taylor Gorman	04/20/22 06:51	Retrieve from Storage
JD43215-22.1	Taylor Gorman		04/21/22 07:54	Depleted
JD43215-22.1.1	Taylor Gorman	Organics Prep	04/20/22 06:58	Extract from JD43215-22.1
JD43215-22.1.1	Organics Prep	Rocquan Salters	04/20/22 19:44	Extract from JD43215-22.1
JD43215-22.1.1	Rocquan Salters	Extract Storage	04/20/22 19:44	Return to Storage
JD43215-22.1.1	Extract Storage	Christopher Sowa	04/21/22 00:30	Retrieve from Storage
JD43215-22.1.1	Christopher Sowa	GCMS4P	04/21/22 00:30	Load on Instrument
JD43215-22.1.1	GCMS4P	Christopher Sowa	04/22/22 05:34	Unload from Instrument
JD43215-22.1.1	Christopher Sowa	Extract Freezer	04/22/22 05:34	Return to Storage
JD43215-22.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-22.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-22.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
stage				
JD43215-22.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-22.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-22.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-22.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-22.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:53	Extract from JD43215-22.4
JD43215-22.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:09	Extract from JD43215-22.4
JD43215-22.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:09	Return to Storage
JD43215-22.4.1	Extract Storage	Rebecca Krug	04/22/22 00:51	Retrieve from Storage
JD43215-22.4.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-22.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-22.5	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-22.5	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-22.5	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-22.5	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-22.5	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-22.5.1	Ellen Dondeo	Organics Prep	04/19/22 08:53	Extract from JD43215-22.5
JD43215-22.5.1	Organics Prep	Alejandra Cruz	04/19/22 20:09	Extract from JD43215-22.5
JD43215-22.5.1	Alejandra Cruz	Extract Storage	04/19/22 20:09	Return to Storage
JD43215-22.5.1	Extract Storage	Rebecca Krug	04/22/22 00:51	Retrieve from Storage
JD43215-22.5.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-22.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-22.6	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-22.6	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-22.6	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-22.6	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-22.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-22.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-22F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-22F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-22F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-22F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-22F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-22F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:40	Digestate from JD43215-22F.3
JD43215-22F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:40	Digestate from JD43215-22F.3

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-22F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:40	Return to Storage
JD43215-23.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-23.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-23.2	Secured Storage	Benjamin Gaines	04/19/22 16:27	Retrieve from Storage
JD43215-23.2	Benjamin Gaines	Secured Staging Area	04/19/22 16:27	Return to Storage
JD43215-23.2	Secured Staging Area	Taylor Gorman	04/20/22 06:51	Retrieve from Storage
JD43215-23.2	Taylor Gorman		04/21/22 07:54	Depleted
JD43215-23.2.1	Taylor Gorman	Organics Prep	04/20/22 06:58	Extract from JD43215-23.2
JD43215-23.2.1	Organics Prep	Rocquan Salters	04/20/22 19:44	Extract from JD43215-23.2
JD43215-23.2.1	Rocquan Salters	Extract Storage	04/20/22 19:44	Return to Storage
JD43215-23.2.1	Extract Storage	Christopher Sowa	04/21/22 00:30	Retrieve from Storage
JD43215-23.2.1	Christopher Sowa	GCMS4P	04/21/22 00:30	Load on Instrument
JD43215-23.2.1	GCMS4P	Christopher Sowa	04/22/22 05:34	Unload from Instrument
JD43215-23.2.1	Christopher Sowa	Extract Freezer	04/22/22 05:34	Return to Storage
JD43215-23.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-23.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-23.5	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-23.5	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-23.5	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-23.5	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-23.5	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-23.5.1	Ellen Dondeo	Organics Prep	04/19/22 08:53	Extract from JD43215-23.5
JD43215-23.5.1	Organics Prep	Alejandra Cruz	04/19/22 20:09	Extract from JD43215-23.5
JD43215-23.5.1	Alejandra Cruz	Extract Storage	04/19/22 20:09	Return to Storage
JD43215-23.5.1	Extract Storage	Rebecca Krug	04/22/22 00:51	Retrieve from Storage
JD43215-23.5.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-23.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-23.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-23.7	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-23.7	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-23.7	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-23.7	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-23.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-23F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-23F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-23F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-23F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-23F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-23F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:40	Digestate from JD43215-23F.3
JD43215-23F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:40	Digestate from JD43215-23F.3
JD43215-23F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:40	Return to Storage
JD43215-24.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-24.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-24.2	Secured Storage	Benjamin Gaines	04/19/22 16:27	Retrieve from Storage
JD43215-24.2	Benjamin Gaines	Secured Staging Area	04/19/22 16:27	Return to Storage
JD43215-24.2	Secured Staging Area	Taylor Gorman	04/20/22 06:51	Retrieve from Storage
JD43215-24.2	Taylor Gorman		04/21/22 07:54	Depleted
JD43215-24.2.1	Taylor Gorman	Organics Prep	04/20/22 06:58	Extract from JD43215-24.2
JD43215-24.2.1	Organics Prep	Rocquan Salters	04/20/22 19:44	Extract from JD43215-24.2
JD43215-24.2.1	Rocquan Salters	Extract Storage	04/20/22 19:44	Return to Storage
JD43215-24.2.1	Extract Storage	Christopher Sowa	04/21/22 00:30	Retrieve from Storage
JD43215-24.2.1	Christopher Sowa	GCMS4P	04/21/22 00:30	Load on Instrument
JD43215-24.2.1	GCMS4P	Christopher Sowa	04/22/22 05:34	Unload from Instrument
JD43215-24.2.1	Christopher Sowa	Extract Freezer	04/22/22 05:34	Return to Storage
JD43215-24.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-24.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-24.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-24.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-24.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-24.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-24.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:53	Extract from JD43215-24.4
JD43215-24.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:09	Extract from JD43215-24.4
JD43215-24.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:09	Return to Storage
JD43215-24.4.1	Extract Storage	Rebecca Krug	04/22/22 00:51	Retrieve from Storage
JD43215-24.4.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-24.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-24.5	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-24.5	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-24.5	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-24.5	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-24.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-24.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-24.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-24F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-24F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-24F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-24F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-24F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-24F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:40	Digestate from JD43215-24F.3
JD43215-24F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:40	Digestate from JD43215-24F.3
JD43215-24F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:40	Return to Storage
JD43215-25.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-25.1	Secured Storage	Taylor Gorman	04/20/22 07:12	Retrieve from Storage
JD43215-25.1	Taylor Gorman		04/21/22 07:54	Depleted
JD43215-25.1.1	Taylor Gorman	Organics Prep	04/20/22 07:13	Extract from JD43215-25.1
JD43215-25.1.1	Organics Prep	Rocquan Salters	04/20/22 19:44	Extract from JD43215-25.1
JD43215-25.1.1	Rocquan Salters	Extract Storage	04/20/22 19:44	Return to Storage
JD43215-25.1.1	Extract Storage	Christopher Sowa	04/21/22 00:30	Retrieve from Storage
JD43215-25.1.1	Christopher Sowa	GCMS4P	04/21/22 00:30	Load on Instrument
JD43215-25.1.1	GCMS4P	Christopher Sowa	04/21/22 02:50	Unload from Instrument
JD43215-25.1.1	Christopher Sowa	GCMS2M	04/21/22 02:50	Load on Instrument
JD43215-25.1.1	GCMS2M	Christopher Sowa	04/21/22 04:46	Unload from Instrument
JD43215-25.1.1	Christopher Sowa	GCMS4P	04/21/22 04:46	Load on Instrument
JD43215-25.1.1	GCMS4P	Christopher Sowa	04/22/22 05:34	Unload from Instrument
JD43215-25.1.1	Christopher Sowa	Extract Freezer	04/22/22 05:34	Return to Storage
JD43215-25.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-25.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-25.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-25.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-25.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-25.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-25.4	Alejandra Cruz		04/19/22 19:58	Depleted

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-25.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:53	Extract from JD43215-25.4
JD43215-25.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:09	Extract from JD43215-25.4
JD43215-25.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:09	Return to Storage
JD43215-25.4.1	Extract Storage	Rebecca Krug	04/22/22 00:51	Retrieve from Storage
JD43215-25.4.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-25.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-25.5	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-25.5	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-25.5	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-25.5	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-25.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-25.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-25.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-25F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-25F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-25F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-25F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-25F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-25F.3	Secured Storage	Todd Shoemaker	04/19/22 16:16	Retrieve from Storage
JD43215-25F.3	Todd Shoemaker	Secured Staging Area	04/19/22 16:16	Return to Storage
JD43215-25F.3	Secured Staging Area	Alyssa Koshy	04/20/22 08:47	Retrieve from Storage
JD43215-25F.3	Alyssa Koshy	Secured Storage	04/20/22 12:18	Return to Storage
JD43215-25F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:40	Digestate from JD43215-25F.3
JD43215-25F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:40	Digestate from JD43215-25F.3
JD43215-25F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:40	Return to Storage
JD43215-26.1	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-26.1	Secured Storage	Taylor Gorman	04/20/22 07:12	Retrieve from Storage
JD43215-26.1	Taylor Gorman		04/21/22 07:54	Depleted
JD43215-26.1.1	Taylor Gorman	Organics Prep	04/20/22 07:13	Extract from JD43215-26.1
JD43215-26.1.1	Organics Prep	Rocquan Salters	04/20/22 19:44	Extract from JD43215-26.1
JD43215-26.1.1	Rocquan Salters	Extract Storage	04/20/22 19:44	Return to Storage
JD43215-26.1.1	Extract Storage	Christopher Sowa	04/21/22 00:30	Retrieve from Storage
JD43215-26.1.1	Christopher Sowa	GCMS4P	04/21/22 00:30	Load on Instrument
JD43215-26.1.1	GCMS4P	Christopher Sowa	04/21/22 02:50	Unload from Instrument
JD43215-26.1.1	Christopher Sowa	GCMS2M	04/21/22 02:50	Load on Instrument
JD43215-26.1.1	GCMS2M	Christopher Sowa	04/21/22 04:46	Unload from Instrument

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Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-26.1.1	Christopher Sowa	GCMS4P	04/21/22 04:46	Load on Instrument
JD43215-26.1.1	GCMS4P	Christopher Sowa	04/22/22 05:34	Unload from Instrument
JD43215-26.1.1	Christopher Sowa	Extract Freezer	04/22/22 05:34	Return to Storage
JD43215-26.2	Aleandi Rodriguez	Secured Storage	04/15/22 21:50	Return to Storage
JD43215-26.4	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-26.4	Christian King	Secured Staging Area	04/18/22 23:06	Return to Storage
stage				
JD43215-26.4	Secured Staging Area	Ellen Dondeo	04/19/22 08:22	Retrieve from Storage
JD43215-26.4	Ellen Dondeo	Secured Storage	04/19/22 13:01	Return to Storage
JD43215-26.4	Secured Storage	Alejandra Cruz	04/19/22 19:44	Retrieve from Storage
JD43215-26.4	Alejandra Cruz		04/19/22 19:58	Depleted
JD43215-26.4.1	Ellen Dondeo	Organics Prep	04/19/22 08:53	Extract from JD43215-26.4
JD43215-26.4.1	Organics Prep	Alejandra Cruz	04/19/22 20:09	Extract from JD43215-26.4
JD43215-26.4.1	Alejandra Cruz	Extract Storage	04/19/22 20:09	Return to Storage
JD43215-26.4.1	Extract Storage	Rebecca Krug	04/22/22 00:51	Retrieve from Storage
JD43215-26.4.1	Rebecca Krug	GC7G	04/22/22 00:51	Load on Instrument
JD43215-26.5	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-26.6	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-26.6	Secured Storage	Nicole Hornlien	04/21/22 18:56	Retrieve from Storage
JD43215-26.6	Nicole Hornlien	GCMSL	04/21/22 18:56	Load on Instrument
JD43215-26.6	GCMSL	Nicole Hornlien	04/22/22 12:39	Unload from Instrument
JD43215-26.6	Nicole Hornlien	Secured Storage	04/22/22 12:39	Return to Storage
JD43215-26.7	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-26.8	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-26F.3	Christian King	Secured Storage	04/15/22 21:45	Return to Storage
JD43215-26F.3	Secured Storage	Todd Shoemaker	04/18/22 16:31	Retrieve from Storage
JD43215-26F.3	Todd Shoemaker	Secured Staging Area	04/18/22 16:31	Return to Storage
JD43215-26F.3	Secured Staging Area	Alyssa Koshy	04/19/22 08:19	Retrieve from Storage
JD43215-26F.3	Alyssa Koshy	Secured Storage	04/19/22 12:16	Return to Storage
JD43215-26F.3	Secured Storage	Todd Shoemaker	04/19/22 16:16	Retrieve from Storage
JD43215-26F.3	Todd Shoemaker	Secured Staging Area	04/19/22 16:16	Return to Storage
JD43215-26F.3	Secured Staging Area	Alyssa Koshy	04/20/22 08:47	Retrieve from Storage
JD43215-26F.3	Alyssa Koshy	Secured Storage	04/20/22 12:18	Return to Storage
JD43215-26F.3.1	Alyssa Koshy	Metals Digestion	04/19/22 10:40	Digestate from JD43215-26F.3
JD43215-26F.3.1	Metals Digestion	Alyssa Koshy	04/19/22 10:40	Digestate from JD43215-26F.3

SGS Internal Chain of Custody

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Received: 04/15/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD43215-26F.3.1	Alyssa Koshy	Metals Digestate Storage	04/19/22 10:40	Return to Storage
JD43215-27.1	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage
JD43215-27.2	Tyler Strong	Secured Storage	04/15/22 21:55	Return to Storage

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10281-MB	L340903.D	1	04/21/22	NH	n/a	n/a	VL10281

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-12, JD43215-13

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
110-54-3	Hexane	ND	5.0	0.48	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
91-20-3	Naphthalene	ND	5.0	2.5	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	108%	80-120%
2037-26-5	Toluene-D8	98%	80-120%
460-00-4	4-Bromofluorobenzene	109%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	7.57	5.4	ug/l	J
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10283-MB	L340959.D	1	04/21/22	NH	n/a	n/a	VL10283

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20, JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26, JD43215-27

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.78	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
110-54-3	Hexane	ND	5.0	0.48	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
91-20-3	Naphthalene	ND	5.0	2.5	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	80-120%
2037-26-5	Toluene-D8	98%	80-120%
460-00-4	4-Bromofluorobenzene	112%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10284-MB	L340986.D	1	04/22/22	NH	n/a	n/a	VL10284

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-1, JD43215-11, JD43215-14, JD43215-21

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	80-120%
2037-26-5	Toluene-D8	101%	80-120%
460-00-4	4-Bromofluorobenzene	111%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10281-BS	L340901.D	1	04/21/22	NH	n/a	n/a	VL10281

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-12, JD43215-13

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	55.2	110	80-115
135-98-8	sec-Butylbenzene	50	52.0	104	75-121
98-06-6	tert-Butylbenzene	50	53.4	107	74-120
110-82-7	Cyclohexane	50	55.1	110	66-129
107-06-2	1,2-Dichloroethane	50	49.6	99	73-117
100-41-4	Ethylbenzene	50	47.1	94	78-116
110-54-3	Hexane	50	58.0	116	61-136
98-82-8	Isopropylbenzene	50	50.7	101	78-121
1634-04-4	Methyl Tert Butyl Ether	50	55.5	111	76-123
91-20-3	Naphthalene	50	60.8	122	64-136
75-65-0	Tert Butyl Alcohol	250	290	116	75-123
108-88-3	Toluene	50	47.9	96	79-116
95-63-6	1,2,4-Trimethylbenzene	50	50.8	102	78-120
108-67-8	1,3,5-Trimethylbenzene	50	51.6	103	77-120
1330-20-7	Xylene (total)	150	146	97	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	97%	80-120%
2037-26-5	Toluene-D8	89%	80-120%
460-00-4	4-Bromofluorobenzene	113%	82-114%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10283-BS	L340957.D	1	04/21/22	NH	n/a	n/a	VL10283

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20, JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26, JD43215-27

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	55.7	111	80-115
135-98-8	sec-Butylbenzene	50	51.4	103	75-121
98-06-6	tert-Butylbenzene	50	53.3	107	74-120
110-82-7	Cyclohexane	50	55.4	111	66-129
106-93-4	1,2-Dibromoethane	50	50.4	101	67-138
107-06-2	1,2-Dichloroethane	50	49.8	100	73-117
100-41-4	Ethylbenzene	50	47.1	94	78-116
110-54-3	Hexane	50	58.1	116	61-136
98-82-8	Isopropylbenzene	50	50.5	101	78-121
1634-04-4	Methyl Tert Butyl Ether	50	55.0	110	76-123
91-20-3	Naphthalene	50	58.2	116	64-136
75-65-0	Tert Butyl Alcohol	250	277	111	75-123
108-88-3	Toluene	50	47.6	95	79-116
95-63-6	1,2,4-Trimethylbenzene	50	50.0	100	78-120
108-67-8	1,3,5-Trimethylbenzene	50	50.9	102	77-120
1330-20-7	Xylene (total)	150	145	97	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	97%	80-120%
2037-26-5	Toluene-D8	89%	80-120%
460-00-4	4-Bromofluorobenzene	113%	82-114%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10284-BS	L340984.D	1	04/22/22	NH	n/a	n/a	VL10284

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-1, JD43215-11, JD43215-14, JD43215-21

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	48.5	97	80-115
107-06-2	1,2-Dichloroethane	50	43.4	87	73-117
100-41-4	Ethylbenzene	50	44.0	88	78-116
98-82-8	Isopropylbenzene	50	47.8	96	78-121
1634-04-4	Methyl Tert Butyl Ether	50	47.2	94	76-123
75-65-0	Tert Butyl Alcohol	250	266	106	75-123
108-88-3	Toluene	50	44.4	89	79-116
95-63-6	1,2,4-Trimethylbenzene	50	48.3	97	78-120
108-67-8	1,3,5-Trimethylbenzene	50	48.9	98	77-120
1330-20-7	Xylene (total)	150	137	91	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	100%	80-120%
2037-26-5	Toluene-D8	93%	80-120%
460-00-4	4-Bromofluorobenzene	113%	82-114%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43215-1MS	L340905.D	4	04/21/22	NH	n/a	n/a	VL10281
JD43215-1MSD	L340906.D	4	04/21/22	NH	n/a	n/a	VL10281
JD43215-1 [a]	L340904.D	4	04/21/22	NH	n/a	n/a	VL10281

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-12, JD43215-13

CAS No.	Compound	JD43215-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	6.3		200	230	112	200	231	112	0	49-137/12
135-98-8	sec-Butylbenzene	7.1	J	200	215	104	200	220	106	2	69-127/14
98-06-6	tert-Butylbenzene	3.6	J	200	217	107	200	223	110	3	69-124/14
110-82-7	Cyclohexane	4.3	J	200	220	108	200	217	106	1	53-146/14
107-06-2	1,2-Dichloroethane	ND		200	204	102	200	201	101	1	66-120/13
100-41-4	Ethylbenzene	ND		200	190	95	200	192	96	1	37-144/12
110-54-3	Hexane	ND		200	226	113	200	221	111	2	51-149/17
98-82-8	Isopropylbenzene	19.3		200	214	97	200	219	100	2	71-126/13
1634-04-4	Methyl Tert Butyl Ether	5.2		200	228	111	200	225	110	1	66-124/12
91-20-3	Naphthalene	ND		200	240	120	200	251	126	4	49-146/18
75-65-0	Tert Butyl Alcohol	39.8	J	1000	1210	117	1000	1170	113	3	63-133/15
108-88-3	Toluene	2.4	J	200	196	97	200	199	98	2	46-139/12
95-63-6	1,2,4-Trimethylbenzene	ND		200	201	101	200	205	103	2	39-147/13
108-67-8	1,3,5-Trimethylbenzene	ND		200	205	103	200	209	105	2	56-136/14
1330-20-7	Xylene (total)	7.1		600	593	98	600	598	98	1	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD43215-1	Limits
1868-53-7	Dibromofluoromethane	101%	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%	96%		80-120%
2037-26-5	Toluene-D8	90%	91%		80-120%
460-00-4	4-Bromofluorobenzene	113%	115%* [b]		82-114%

(a) Sample used for QC purposes only.
(b) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43215-21MS	L340963.D	5	04/22/22	NH	n/a	n/a	VL10283
JD43215-21MSD	L340964.D	5	04/22/22	NH	n/a	n/a	VL10283
JD43215-21 [a]	L340962.D	5	04/22/22	NH	n/a	n/a	VL10283

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20, JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26, JD43215-27

CAS No.	Compound	JD43215-21 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1200	E	250	1250	20* [b]	250	1220	8* [b]	2	49-137/12
135-98-8	sec-Butylbenzene	7.2	J	250	286	112	250	284	111	1	69-127/14
98-06-6	tert-Butylbenzene	ND		250	291	116	250	293	117	1	69-124/14
110-82-7	Cyclohexane	49.4		250	269	88	250	261	85	3	53-146/14
106-93-4	1,2-Dibromoethane	ND		250	262	105	250	263	105	0	63-134/12
107-06-2	1,2-Dichloroethane	ND		250	272	109	250	266	106	2	66-120/13
100-41-4	Ethylbenzene	7.2		250	253	98	250	252	98	0	37-144/12
110-54-3	Hexane	8.1	J	250	314	122	250	297	116	6	51-149/17
98-82-8	Isopropylbenzene	49.7		250	304	102	250	301	101	1	71-126/13
1634-04-4	Methyl Tert Butyl Ether	14.5		250	304	116	250	300	114	1	66-124/12
91-20-3	Naphthalene	ND		250	298	119	250	304	122	2	49-146/18
75-65-0	Tert Butyl Alcohol	643		1250	2000	109	1250	1990	108	1	63-133/15
108-88-3	Toluene	53.3		250	296	97	250	292	95	1	46-139/12
95-63-6	1,2,4-Trimethylbenzene	ND		250	273	109	250	269	108	1	39-147/13
108-67-8	1,3,5-Trimethylbenzene	ND		250	277	111	250	276	110	0	56-136/14
1330-20-7	Xylene (total)	99.3		750	837	98	750	832	98	1	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD43215-21	Limits
1868-53-7	Dibromofluoromethane	101%	99%	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	98%	98%	106%	80-120%
2037-26-5	Toluene-D8	88%	89%	94%	80-120%
460-00-4	4-Bromofluorobenzene	114%	115%* [c]	109%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Outside control limits due to high level in sample relative to spike amount.
(c) Outside of in house control limits, but within reasonable method recovery limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43502-5MS	L340997.D	1	04/22/22	NH	n/a	n/a	VL10284
JD43502-5MSD	L340998.D	1	04/22/22	NH	n/a	n/a	VL10284
JD43502-5	L340988.D	1	04/22/22	NH	n/a	n/a	VL10284

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43215-1, JD43215-11, JD43215-14, JD43215-21

CAS No.	Compound	JD43502-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		50	54.7	109	50	54.2	108	1	49-137/12
107-06-2	1,2-Dichloroethane	ND		50	46.3	93	50	47.0	94	2	66-120/13
100-41-4	Ethylbenzene	ND		50	49.0	98	50	48.0	96	2	37-144/12
98-82-8	Isopropylbenzene	ND		50	52.6	105	50	51.2	102	3	71-126/13
1634-04-4	Methyl Tert Butyl Ether	ND		50	52.5	105	50	52.5	105	0	66-124/12
75-65-0	Tert Butyl Alcohol	ND		250	314	126	250	294	118	7	63-133/15
108-88-3	Toluene	ND		50	50.4	101	50	49.3	99	2	46-139/12
95-63-6	1,2,4-Trimethylbenzene	ND		50	53.1	106	50	52.6	105	1	39-147/13
108-67-8	1,3,5-Trimethylbenzene	ND		50	54.7	109	50	53.3	107	3	56-136/14
1330-20-7	Xylene (total)	ND		150	150	100	150	148	99	1	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD43502-5	Limits
1868-53-7	Dibromofluoromethane	98%	101%	96%	80-120%
17060-07-0	1,2-Dichloroethane-D4	97%	100%	107%	80-120%
2037-26-5	Toluene-D8	94%	94%	101%	80-120%
460-00-4	4-Bromofluorobenzene	115%* [a]	117%* [a]	111%	82-114%

(a) Outside of in house control limits, but within reasonable method recovery limits.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10152-BFB
Lab File ID: L337225.D
Instrument ID: GCMSL
Injection Date: 01/26/22
Injection Time: 20:56

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12563	17.8		Pass
75	30.0 - 60.0% of mass 95	35485	50.2		Pass
95	Base peak, 100% relative abundance	70691	100.0		Pass
96	5.0 - 9.0% of mass 95	4334	6.13		Pass
173	Less than 2.0% of mass 174	500	0.71	(0.76) [a]	Pass
174	50.0 - 120.0% of mass 95	65509	92.7		Pass
175	5.0 - 9.0% of mass 174	5372	7.60	(8.20) [a]	Pass
176	95.0 - 101.0% of mass 174	62744	88.8	(95.8) [a]	Pass
177	5.0 - 9.0% of mass 176	4392	6.21	(7.00) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10152-IC10152	L337226.D	01/26/22	21:33	00:37	Initial cal 0.2
VL10152-IC10152	L337227.D	01/26/22	21:56	01:00	Initial cal 0.5
VL10152-IC10152	L337228.D	01/26/22	22:20	01:24	Initial cal 1
VL10152-IC10152	L337229.D	01/26/22	22:43	01:47	Initial cal 2
VL10152-IC10152	L337230.D	01/26/22	23:07	02:11	Initial cal 4
VL10152-IC10152	L337231.D	01/26/22	23:30	02:34	Initial cal 8
VL10152-IC10152	L337232.D	01/26/22	23:53	02:57	Initial cal 20
VL10152-ICC10152	L337233.D	01/27/22	00:17	03:21	Initial cal 50
VL10152-IC10152	L337234.D	01/27/22	00:40	03:44	Initial cal 100
VL10152-IC10152	L337235.D	01/27/22	01:04	04:08	Initial cal 200
VL10152-ICV10152	L337239.D	01/27/22	02:37	05:41	Initial cal verification 50
VL10152-ICV10152	L337240.D	01/27/22	03:01	06:05	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10281-BFB
Lab File ID: L340897.D
Instrument ID: GCMSL
Injection Date: 04/20/22
Injection Time: 22:37

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	14568	16.8		Pass
75	30.0 - 60.0% of mass 95	40706	47.0		Pass
95	Base peak, 100% relative abundance	86534	100.0		Pass
96	5.0 - 9.0% of mass 95	5722	6.61		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	69362	80.2		Pass
175	5.0 - 9.0% of mass 174	5354	6.19	(7.72) [a]	Pass
176	95.0 - 101.0% of mass 174	66035	76.3	(95.2) [a]	Pass
177	5.0 - 9.0% of mass 176	4219	4.88	(6.39) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10281-CC10152	L340899.D	04/20/22	23:24	00:47	Continuing cal 50
VL10281-BS	L340901.D	04/21/22	00:11	01:34	Blank Spike
VL10281-MB	L340903.D	04/21/22	00:58	02:21	Method Blank
JD43215-1	L340904.D	04/21/22	01:21	02:44	S-355_SL_20220413
JD43215-1MS	L340905.D	04/21/22	01:45	03:08	Matrix Spike
JD43215-1MSD	L340906.D	04/21/22	02:08	03:31	Matrix Spike Duplicate
ZZZZZZ	L340909.D	04/21/22	03:18	04:41	(unrelated sample)
JD43215-2	L340910.D	04/21/22	03:42	05:05	C-61_20220413
JD43215-3	L340911.D	04/21/22	04:05	05:28	C-129D_20220413
JD43215-4	L340912.D	04/21/22	04:29	05:52	A-4_20220413
JD43215-6	L340913.D	04/21/22	04:52	06:15	S-150SRTF_20220414
JD43215-7	L340914.D	04/21/22	05:15	06:38	N-152_20220414
JD43215-8	L340915.D	04/21/22	05:39	07:02	S-357_SL_20220414
JD43215-9	L340916.D	04/21/22	06:02	07:25	S-149SRTF_20220414
JD43215-10	L340917.D	04/21/22	06:26	07:49	S-147SRTF_20220414
JD43215-12	L340918.D	04/21/22	06:49	08:12	N-85_20220414
JD43215-5	L340921.D	04/21/22	08:00	09:23	S-423_SL_20220413
JD43215-13	L340922.D	04/21/22	08:23	09:46	N-163_20220414

Instrument Performance Check (BFB)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10283-BFB
Lab File ID: L340955.D
Instrument ID: GCMSL
Injection Date: 04/21/22
Injection Time: 22:22

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12408	15.3		Pass
75	30.0 - 60.0% of mass 95	37312	46.0		Pass
95	Base peak, 100% relative abundance	81158	100.0		Pass
96	5.0 - 9.0% of mass 95	5264	6.49		Pass
173	Less than 2.0% of mass 174	284	0.35	(0.44) [a]	Pass
174	50.0 - 120.0% of mass 95	65170	80.3		Pass
175	5.0 - 9.0% of mass 174	4852	5.98	(7.45) [a]	Pass
176	95.0 - 101.0% of mass 174	62021	76.4	(95.2) [a]	Pass
177	5.0 - 9.0% of mass 176	4348	5.36	(7.01) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10283-CC10152	L340955.D	04/21/22	22:22	00:00	Continuing cal 50
VL10283-BS	L340957.D	04/21/22	23:09	00:47	Blank Spike
VL10283-MB	L340959.D	04/21/22	23:56	01:34	Method Blank
ZZZZZZ	L340960.D	04/22/22	00:19	01:57	(unrelated sample)
JD43215-27	L340961.D	04/22/22	00:43	02:21	TRIP BLANK
JD43215-21	L340962.D	04/22/22	01:06	02:44	S-78SRTF_20220415
JD43215-21MS	L340963.D	04/22/22	01:30	03:08	Matrix Spike
JD43215-21MSD	L340964.D	04/22/22	01:53	03:31	Matrix Spike Duplicate
ZZZZZZ	L340966.D	04/22/22	02:40	04:18	(unrelated sample)
ZZZZZZ	L340967.D	04/22/22	03:04	04:42	(unrelated sample)
ZZZZZZ	L340968.D	04/22/22	03:27	05:05	(unrelated sample)
ZZZZZZ	L340969.D	04/22/22	03:50	05:28	(unrelated sample)
JD43215-15	L340970.D	04/22/22	04:14	05:52	DUP-7_20220414
JD43215-16	L340971.D	04/22/22	04:37	06:15	URS-5_20220414
JD43215-17	L340972.D	04/22/22	05:01	06:39	W-1_SL_20220415
JD43215-18	L340973.D	04/22/22	05:24	07:02	S-110DSRTF_20220415
JD43215-19	L340974.D	04/22/22	05:48	07:26	W-13_20220415
JD43215-20	L340975.D	04/22/22	06:11	07:49	W-32D_20220415
JD43215-22	L340976.D	04/22/22	06:35	08:13	W-31_SL_20220415
JD43215-23	L340977.D	04/22/22	06:58	08:36	W-32_SL_20220415
JD43215-24	L340978.D	04/22/22	07:22	09:00	S-118DSRTF_20220415
JD43215-25	L340979.D	04/22/22	07:45	09:23	C-175_20220413
JD43215-26	L340980.D	04/22/22	08:09	09:47	C-176_20220413

Instrument Performance Check (BFB)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10284-BFB
Lab File ID: L340981.D
Instrument ID: GCMSL
Injection Date: 04/22/22
Injection Time: 09:12

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	4647	15.2		Pass
75	30.0 - 60.0% of mass 95	14389	47.2		Pass
95	Base peak, 100% relative abundance	30489	100.0		Pass
96	5.0 - 9.0% of mass 95	2073	6.80		Pass
173	Less than 2.0% of mass 174	91	0.30	(0.35) [a]	Pass
174	50.0 - 120.0% of mass 95	25863	84.8		Pass
175	5.0 - 9.0% of mass 174	1828	6.00	(7.07) [a]	Pass
176	95.0 - 101.0% of mass 174	24798	81.3	(95.9) [a]	Pass
177	5.0 - 9.0% of mass 176	1449	4.75	(5.84) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10284-CC10152	L340982.D	04/22/22	09:40	00:28	Continuing cal 20
VL10284-BS	L340984.D	04/22/22	10:39	01:27	Blank Spike
VL10284-MB	L340986.D	04/22/22	11:26	02:14	Method Blank
ZZZZZZ	L340987.D	04/22/22	12:03	02:51	(unrelated sample)
JD43502-5	L340988.D	04/22/22	12:34	03:22	(used for QC only; not part of job JD43215)
JD43215-21	L340991.D	04/22/22	13:58	04:46	S-78SRTF_20220415
JD43215-1	L340992.D	04/22/22	14:21	05:09	S-355_SL_20220413
JD43215-11	L340993.D	04/22/22	14:44	05:32	S-337_SL_20220414
JD43215-14	L340994.D	04/22/22	15:08	05:56	S-480_SL_20220414
ZZZZZZ	L340995.D	04/22/22	15:31	06:19	(unrelated sample)
JD43502-5MS	L340997.D	04/22/22	16:18	07:06	Matrix Spike
JD43502-5MSD	L340998.D	04/22/22	16:41	07:29	Matrix Spike Duplicate
ZZZZZZ	L341000.D	04/22/22	17:28	08:16	(unrelated sample)
ZZZZZZ	L341001.D	04/22/22	17:52	08:40	(unrelated sample)
ZZZZZZ	L341004.D	04/22/22	19:02	09:50	(unrelated sample)
ZZZZZZ	L341005.D	04/22/22	19:25	10:13	(unrelated sample)
ZZZZZZ	L341006.D	04/22/22	19:48	10:36	(unrelated sample)
ZZZZZZ	L341007.D	04/22/22	20:12	11:00	(unrelated sample)
ZZZZZZ	L341008.D	04/22/22	20:35	11:23	(unrelated sample)
ZZZZZZ	L341009.D	04/22/22	20:59	11:47	(unrelated sample)

Internal Standard Area Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	VL10281-CC10152	**Injection Date:**	04/20/22
Lab File ID:	L340899.D	**Injection Time:**	23:24
Instrument ID:	GCMSL	**Method:**	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	102668	3.11	216196	4.34	330487	4.91	311336	7.31	127057	9.51
Upper Limit [a]	205336	3.61	432392	4.84	660974	5.41	622672	7.81	254114	10.01
Lower Limit [b]	51334	2.61	108098	3.84	165244	4.41	155668	6.81	63529	9.01

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VL10281-BS	102888	3.11	213452	4.34	329754	4.91	311656	7.31	127713	9.51
VL10281-MB	129253	3.11	267937	4.34	390524	4.91	341205	7.31	151790	9.51
JD43215-1 [c]	115784	3.11	252582	4.34	372491	4.91	319198	7.31	143474	9.51
JD43215-1MS	94463	3.11	201839	4.34	314263	4.91	297455	7.31	121936	9.51
JD43215-1MSD	97598	3.11	207809	4.34	317050	4.91	297630	7.31	122468	9.51
ZZZZZZ	109164	3.11	232434	4.34	352770	4.91	310555	7.31	134056	9.51
JD43215-2	109712	3.11	253316	4.34	377043	4.91	318497	7.31	142793	9.51
JD43215-3	107435	3.11	256727	4.34	381828	4.91	332685	7.31	147078	9.51
JD43215-4	115449	3.11	264821	4.34	391330	4.91	340036	7.31	148399	9.50
JD43215-6	107056	3.11	243039	4.34	367235	4.91	324361	7.31	137195	9.51
JD43215-7	116069	3.11	263314	4.34	391850	4.91	338719	7.31	147566	9.51
JD43215-8	103065	3.11	239319	4.34	354645	4.91	315755	7.31	138934	9.51
JD43215-9	107448	3.11	247645	4.34	371237	4.91	325353	7.31	141745	9.51
JD43215-10	111835	3.11	255187	4.34	379912	4.91	339072	7.31	147960	9.50
JD43215-12	115652	3.11	265112	4.34	389761	4.91	337331	7.31	149359	9.50
JD43215-5	108534	3.11	228225	4.34	315813	4.91	285123	7.31	126260	9.51
JD43215-13	112830	3.12	223730	4.34	331876	4.91	313048	7.31	144487	9.51

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Sample used for QC purposes only.

Internal Standard Area Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std: VL10283-CC10152 **Injection Date:** 04/21/22
Lab File ID: L340955.D **Injection Time:** 22:22
Instrument ID: GCMSL **Method:** SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	107672	3.12	217264	4.34	340397	4.91	322642	7.31	132503	9.51
Upper Limit [a]	215344	3.62	434528	4.84	680794	5.41	645284	7.81	265006	10.01
Lower Limit [b]	53836	2.62	108632	3.84	170199	4.41	161321	6.81	66252	9.01
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**
VL10283-BS	106800	3.12	212858	4.34	328307	4.91	313161	7.31	129490	9.51
VL10283-MB	123428	3.11	262392	4.34	386669	4.91	334188	7.31	142358	9.50
ZZZZZZ	121741	3.12	257380	4.34	378244	4.91	326190	7.31	144247	9.50
JD43215-27	129473	3.12	266018	4.34	390444	4.91	340839	7.31	149553	9.51
JD43215-21 [c]	117968	3.11	241886	4.34	351852	4.91	336628	7.31	149092	9.50
JD43215-21MS	102850	3.11	203836	4.34	314248	4.91	312258	7.31	126408	9.51
JD43215-21MSD	101201	3.12	208423	4.34	322841	4.91	314126	7.31	126673	9.51
ZZZZZZ	115363	3.11	251916	4.34	370373	4.91	327175	7.31	143578	9.51
ZZZZZZ	121869	3.12	270825	4.34	397933	4.91	348295	7.31	153385	9.51
ZZZZZZ	115292	3.11	263602	4.34	385554	4.91	333794	7.31	144978	9.51
ZZZZZZ	116031	3.11	253048	4.34	371971	4.91	323550	7.31	130720	9.51
JD43215-15 [c]	119155	3.11	253006	4.34	366943	4.91	330460	7.31	145205	9.50
JD43215-16 [c]	119873	3.12	251492	4.34	365345	4.91	334236	7.31	145770	9.51
JD43215-17	113582	3.12	251991	4.34	378147	4.91	325850	7.31	144855	9.51
JD43215-18	110134	3.11	247019	4.34	371084	4.91	328190	7.31	142485	9.51
JD43215-19	105913	3.12	250734	4.34	371514	4.91	324175	7.31	138737	9.51
JD43215-20	107808	3.12	249563	4.34	373184	4.91	326444	7.31	142189	9.51
JD43215-22	104388	3.11	235717	4.34	348396	4.91	301230	7.31	130676	9.51
JD43215-23 [d]	102236	3.11	239121	4.34	360639	4.91	318373	7.31	135176	9.51
JD43215-24	105430	3.12	240883	4.34	361660	4.91	323403	7.31	139043	9.51
JD43215-25	105217	3.12	235179	4.34	347850	4.91	303629	7.31	131771	9.51
JD43215-26	107933	3.11	242417	4.34	360277	4.91	320904	7.31	139327	9.50

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Dilution required due to high concentration of target compound.
(d) (pH= 6) Sample pH did not satisfy field preservation criteria.

Internal Standard Area Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std: VL10284-CC10152 **Injection Date:** 04/22/22
Lab File ID: L340982.D **Injection Time:** 09:40
Instrument ID: GCMSL **Method:** SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	110259	3.12	257006	4.34	380552	4.91	332455	7.31	137219	9.51
Upper Limit [a]	220518	3.62	514012	4.84	761104	5.41	664910	7.81	274438	10.01
Lower Limit [b]	55130	2.62	128503	3.84	190276	4.41	166228	6.81	68610	9.01

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VL10284-BS	100781	3.12	242731	4.34	363804	4.91	328069	7.31	131637	9.51
VL10284-MB	134237	3.12	294815	4.34	421092	4.91	346865	7.31	147777	9.51
ZZZZZZ	106899	3.11	302750	4.34	417783	4.91	340021	7.31	142202	9.51
JD43502-5	124268	3.12	295782	4.34	420704	4.91	349616	7.31	151605	9.51
JD43215-21	124515	3.12	283182	4.34	401229	4.91	339026	7.31	146384	9.51
JD43215-1	114005	3.11	266968	4.34	378705	4.91	307050	7.31	134730	9.51
JD43215-11	119436	3.12	243871	4.34	351239	4.91	297043	7.31	139598	9.51
JD43215-14	121874	3.12	253432	4.34	356663	4.91	323833	7.31	134635	9.51
ZZZZZZ	132529	3.11	295873	4.34	423426	4.91	347905	7.31	151771	9.51
JD43502-5MS	108353	3.12	233309	4.34	357271	4.91	316255	7.31	124606	9.51
JD43502-5MSD	117790	3.11	237113	4.34	361420	4.91	326649	7.31	129519	9.51
ZZZZZZ	142320	3.12	302338	4.34	433031	4.91	364272	7.31	154324	9.51
ZZZZZZ	143606	3.11	296217	4.34	426027	4.91	348311	7.31	148780	9.51
ZZZZZZ	139267	3.12	297846	4.34	428795	4.91	357559	7.31	155591	9.51
ZZZZZZ	140865	3.12	293312	4.34	426431	4.91	351920	7.31	150324	9.51
ZZZZZZ	128456	3.12	267194	4.34	384722	4.91	325322	7.31	142053	9.51
ZZZZZZ	145242	3.11	291260	4.34	435214	4.91	365472	7.31	159040	9.51
ZZZZZZ	148246	3.11	298814	4.34	436222	4.91	362929	7.31	154425	9.51
ZZZZZZ	140199	3.12	294691	4.34	432571	4.91	342454	7.31	153825	9.51

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD43215-1	L340992.D	96	104	103	106
JD43215-1	L340904.D				
JD43215-2	L340910.D	98	102	100	111
JD43215-3	L340911.D	99	104	98	108
JD43215-4	L340912.D	98	104	97	110
JD43215-5	L340921.D	98	104	95	107
JD43215-6	L340913.D	96	100	97	108
JD43215-7	L340914.D	99	105	98	110
JD43215-8	L340915.D	97	102	98	108
JD43215-9	L340916.D	99	103	98	110
JD43215-10	L340917.D	99	103	96	108
JD43215-11	L340993.D	98	107	101	107
JD43215-12	L340918.D	99	102	98	110
JD43215-13	L340922.D	98	104	93	108
JD43215-14	L340994.D	98	105	99	110
JD43215-15	L340970.D	100	107	98	108
JD43215-16	L340971.D	99	107	97	107
JD43215-17	L340972.D	98	99	98	108
JD43215-18	L340973.D	97	98	97	106
JD43215-19	L340974.D	98	104	98	112
JD43215-20	L340975.D	99	103	98	110
JD43215-21	L340991.D	97	105	100	109
JD43215-21	L340962.D	99	106	94	109
JD43215-22	L340976.D	98	101	99	110
JD43215-23	L340977.D	99	99	96	113
JD43215-24	L340978.D	96	98	97	107
JD43215-25	L340979.D	99	100	98	108
JD43215-26	L340980.D	99	101	95	109
JD43215-27	L340961.D	99	104	97	109
JD43215-1MS	L340905.D	101	98	90	113
JD43215-1MSD	L340906.D	98	96	91	115* [a]
JD43215-21MS	L340963.D	101	98	88	114
JD43215-21MSD	L340964.D	99	98	89	115* [b]
JD43502-5MS	L340997.D	98	97	94	115* [b]
JD43502-5MSD	L340998.D	101	100	94	117* [b]
VL10281-BS	L340901.D	100	97	89	113
VL10281-MB	L340903.D	99	108	98	109
VL10283-BS	L340957.D	101	97	89	113
VL10283-MB	L340959.D	99	104	98	112
VL10284-BS	L340984.D	97	100	93	113

Surrogate Recovery Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
VL10284-MB	L340986.D	96	107	101	111

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

(a) Outside control limits due to matrix interference.
(b) Outside of in house control limits, but within reasonable method recovery limits.

Initial Calibration Summary

Job Number: JD43215 **Sample:** VL10152-ICC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L337233.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report GCMSL

Method : C:\MSDCHEM\1\METHODS\ML10152.M (RTE Integrator)
Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
Last Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

Calibration Files
8 =L337231.D 0.5 =L337227.D 4 =L337230.D 50 =L337233.D
100 =L337234.D 1 =L337228.D 200 =L337235.D 20 =L337232.D
2 =L337229.D 0.2 =L337226.D = =

Compound	8	0.5	4	50	100	1	200	20	2	0.2	Avg	%RSD
1) I tert butyl alcohol-d9 ----------ISTD----------												
2) 1,4-dioxane	0.180	0.172	0.164	0.163	0.138	0.163	0.161	0.168			0.164	7.50
3) ethanol	0.156	0.151	0.151	0.154	0.167	0.140	0.156	0.149			0.153	5.04
4) tertiary butyl alcohol	1.220	0.775	1.305	1.187	1.216	1.369	1.175	1.217	1.378		1.205	14.78
5) I pentafluorobenzene ----------ISTD----------												
6) chlorodifluoromethane *This compound fails Initial Calibration criteria*	0.540	0.362	0.483	0.509	0.499	0.485	0.467	0.503	0.434		0.476	10.91
7) dichlorodifluoromethane	0.795	0.844	0.797	0.794	0.778	0.764	0.666				0.777	7.05
8) chloromethane	0.644	0.575	0.607	0.613	0.591	0.569	0.543	0.646	0.533	0.576	0.590	6.51
9) vinyl chloride	0.975	0.829	0.904	0.902	0.859	0.665	0.771	0.896	0.853		0.850	10.54
10) bromomethane	0.473	0.522	0.436	0.486	0.535	0.426	0.688	0.466	0.423	0.599	0.505	16.68
11) chloroethane	0.470	0.740	0.565	0.512	0.508	0.499	0.483	0.476	0.521		0.530	15.74
12) trichlorofluoromethane	0.907	0.859	0.871	0.844	0.819	0.725	0.801	0.859	0.768	0.668	0.812	9.01
13) ethyl ether	0.313	0.306	0.293	0.303	0.303	0.283	0.241				0.292	8.37
14) acrolein	0.096	0.066	0.089	0.097	0.094	0.092					0.089	12.90
15) freon 113	0.394	0.434	0.363	0.399	0.399	0.348	0.396	0.398	0.399	0.311	0.384	8.99
16) 1,1-dichloroethene	0.462	0.406	0.478	0.450	0.447	0.481	0.426	0.434	0.444	0.361	0.439	8.05
17) acetone	0.043	0.048	0.041	0.042	0.042	0.040	0.045	0.043			0.043	5.83
18) acetonitrile	0.042	0.038	0.037	0.038	0.035	0.037	0.039				0.038	5.84
19) iodomethane	0.401	0.377	0.552	0.568	0.565	0.493	0.353				0.473	19.83
20) iso-butyl alcohol	0.024	0.029	0.021	0.021	0.019	0.021	0.026				0.023	15.72
21) carbon disulfide	1.512	1.505	1.371	1.355	1.344	1.166	1.285	1.390	1.389		1.368	7.70
22) methylene chloride	0.536	0.595	0.577	0.487	0.502	0.629	0.488	0.494	0.535		0.538	9.60
23) methyl acetate												

```
      0.096       0.093 0.094 0.100       0.093 0.085             0.093    5.02
24)  methyl tert butyl ether
      1.509 1.582 1.453 1.507 1.513 1.361 1.449 1.454 1.394 1.308  1.453    5.59
25)  trans-1,2-dichloroethene
      0.486 0.486 0.548 0.489 0.489 0.411 0.477 0.505 0.457 0.589  0.494    9.74
26)  hexane
      0.707 0.723 0.660 0.703 0.726 0.607 0.709 0.689 0.698 0.677  0.690    5.14
27)  di-isopropyl ether
      1.634 1.459 1.569 1.529 1.455 1.354 1.360 1.493 1.544        1.489    6.24
28)  ethyl tert-butyl ether
      1.547       1.477 1.476 1.521 1.288 1.450 1.440 1.321        1.440    6.33
29)  2-butanone
      0.069       0.064 0.066 0.072 0.061 0.072 0.063 0.072        0.067    6.90
30)  1,1-dichloroethane
      0.915 0.813 0.895 0.859 0.897 0.836 0.903 0.843 0.800        0.862    4.85
31)  chloroprene
      0.680 0.709 0.631 0.663 0.659 0.553 0.649 0.640 0.629 0.639  0.645    6.28
32)  acrylonitrile
      0.207 0.186 0.163 0.203 0.210 0.193 0.201 0.207 0.158        0.192   10.07
33)  vinyl acetate
      0.129       0.147 0.126 0.138       0.136 0.122 0.131        0.133    6.45
34)  ethyl acetate
      0.081       0.074 0.089 0.084       0.077 0.074              0.080    7.52
35)  2,2-dichloropropane
      0.811 0.660 0.763 0.787 0.813 0.672 0.808 0.760 0.741 0.579  0.740   10.61
36)  cis-1,2-dichloroethene
      0.529 0.599 0.546 0.551 0.565 0.516 0.567 0.535 0.495        0.545    5.64
37)  propionitrile
      0.071 0.066 0.071 0.071 0.070 0.064 0.066 0.071 0.067        0.068    4.29
38)  methyl acrylate
      0.098       0.098 0.096 0.102 0.110 0.103 0.095 0.117        0.102    7.48
39)  bromochloromethane
      0.249 0.236 0.286 0.266 0.274 0.230 0.277 0.252 0.221        0.255    8.91
40)  tetrahydrofuran
      0.077       0.071 0.070 0.080       0.084 0.067 0.084        0.076    9.17
41)  chloroform
      0.957 1.067 0.938 0.913 0.943 0.811 0.913 0.901 0.858        0.922    7.65
42)  dibromofluoromethane (s)
      0.449 0.422 0.449 0.450 0.466 0.430 0.471 0.445 0.419 0.419  0.442    4.25
43)  methacrylonitrile
      0.237       0.243 0.231 0.252 0.199 0.258 0.211 0.204        0.229    9.77
44)  1,1,1-trichloroethane
      0.792 0.873 0.761 0.783 0.824 0.715 0.805 0.736 0.644        0.770    8.66
45)  cyclohexane
      0.849 0.783 0.738 0.763 0.791 0.599 0.773 0.737 0.690        0.747    9.47
46)  1,1-dichloropropene
      0.754       0.637 0.715 0.712 0.601 0.701 0.670 0.578        0.671    9.12
47)  carbon tetrachloride
      0.693 0.728 0.639 0.698 0.716 0.653 0.700 0.642 0.576        0.672    7.15
48)  isopropyl acetate
      0.118       0.114 0.124 0.135       0.130 0.108 0.111        0.120    8.51
49)  tert amyl alcohol
      0.017       0.015 0.016 0.018       0.016 0.018              0.017    6.51

50) I   1,4-difluorobenzene   ----------------ISTD---------------------
51)  1,2-dichloroethane-d4 (s)
      0.295 0.289 0.290 0.296 0.314 0.287 0.309 0.304 0.280 0.288  0.295    3.71
52)  tert-amyl methyl ether
      0.997 0.935 1.001 0.957 0.947 0.945 0.943 0.944 0.900 0.762  0.933    7.17
53)  2,2,4-trimethylpentane
```

```
      0.951 0.830 0.889 0.892 0.845 0.717 0.836 0.907 0.767 0.822  0.846    8.13
54)  n-butyl alcohol
      0.009 0.006 0.008 0.008 0.009 0.009 0.009 0.008 0.007        0.008   10.05
55)  benzene
      1.287 1.014 1.255 1.212 1.169 1.145 1.115 1.243 1.103 1.481  1.202   10.62
56)  heptane
      0.188 0.148 0.192 0.190 0.191 0.182 0.197 0.173 0.187 0.252  0.190   13.71
57)  1,2-dichloroethane
      0.450 0.448 0.414 0.423 0.428 0.476 0.419 0.433 0.439 0.377  0.431    6.08
58)  trichloroethene
      0.351 0.229 0.316 0.329 0.339 0.363 0.346 0.330 0.325 0.310  0.324   11.47
59)  ethyl acrylate
      0.399 0.275 0.393 0.386 0.392 0.352 0.381 0.378 0.423 0.348  0.373   10.89
60)  2-nitropropane
      0.087             0.095 0.104       0.103 0.081              0.094   10.65
61)  2-chloroethyl vinyl ether
      0.159       0.144 0.164 0.177       0.176 0.161 0.133        0.159   10.07
62)  methyl methacrylate
      0.085       0.087 0.089 0.098       0.104 0.094              0.093    7.62
63)  1,2-dichloropropane
      0.313 0.300 0.305 0.313 0.325 0.319 0.331 0.313 0.314        0.315    3.01
64)  methylcyclohexane
      0.535 0.510 0.516 0.537 0.562 0.489 0.580 0.526 0.478        0.526    6.16
65)  dibromomethane
      0.219 0.182 0.197 0.203 0.211 0.189 0.218 0.200 0.179 0.194  0.199    7.01
66)  bromodichloromethane
      0.474 0.346 0.430 0.435 0.457 0.397 0.452 0.439 0.472        0.433    9.30
67)  cis-1,3-dichloropropene
      0.508 0.521 0.586 0.535 0.569 0.572 0.550 0.517 0.528 0.528  0.542    4.85
68)  epichlorohydrin
      0.030       0.034 0.031 0.034 0.031 0.032 0.030 0.035        0.032    6.58
69)  4-methyl-2-pentanone
      0.122 0.105 0.126 0.121 0.124 0.106 0.120 0.127 0.102        0.117    8.38
70)  3-methyl-1-butanol
      0.009       0.008 0.009 0.009       0.009 0.008 0.007        0.008   10.45

71) I   chlorobenzene-d5      ----------------ISTD---------------------
72)  toluene-d8 (s)
      1.373 1.411 1.365 1.366 1.304 1.405 1.304 1.340 1.413 1.400  1.368    3.01
73)  toluene
      0.922 1.065 0.986 0.951 0.914 0.955 0.887 0.955 0.906 0.899  0.944    5.55
74)  trans-1,3-dichloropropene
      0.608 0.540 0.560 0.622 0.610 0.606 0.597 0.573 0.631 0.579  0.593    4.88
75)  ethyl methacrylate
      0.517       0.482 0.530 0.527       0.501 0.509 0.425        0.499    7.29
76)  1,1,2-trichloroethane
      0.316       0.331 0.297 0.288 0.278 0.279 0.295 0.276        0.295    6.71
77)  2-hexanone
      0.130       0.140 0.134 0.127 0.130 0.115 0.132 0.132        0.130    5.46
78)  tetrachloroethene
      0.426 0.472 0.403 0.387 0.372 0.413 0.364 0.396 0.425        0.406    8.01
79)  1,3-dichloropropane
      0.592 0.634 0.612 0.585 0.562 0.602 0.533 0.569 0.637        0.592    5.77
80)  butyl acetate
      0.208       0.222 0.231 0.224       0.212 0.221              0.220    3.74
81)  dibromochloromethane
      0.407 0.374 0.380 0.401 0.404 0.386 0.387 0.397 0.376 0.339  0.385    5.16
82)  1,2-dibromoethane
      0.393 0.372 0.379 0.356 0.365 0.343 0.348 0.366 0.385        0.367    4.56
83)  n-butyl ether
```

```
      1.445 1.076 1.422 1.462 1.349 1.189 1.208 1.393 1.315        1.318   10.10
 84)  chlorobenzene
      1.054 1.086 1.034 1.043 0.991 1.062 0.943 1.027 1.038 1.098  1.038    4.32
 85)  1,1,1,2-tetrachloroethane
      0.366 0.359 0.355 0.361 0.356 0.318 0.349 0.364 0.358        0.354    4.10
 86)  ethylbenzene
      1.793 1.597 1.794 1.723 1.572 1.581 1.409 1.682 1.752 1.786  1.669    7.59
 87)  m,p-xylene
      0.689 0.619 0.691 0.700 0.641 0.694 0.622 0.675 0.641 0.579  0.655    6.22
 88)  o-xylene
      0.703 0.685 0.655 0.720 0.714 0.563 0.710 0.676 0.692 0.624  0.674    7.25
 89)  butyl acrylate
      0.624       0.582 0.698 0.665 0.541 0.628 0.632 0.527        0.612    9.58
 90)  styrene
      1.074 1.171 1.116 1.151 1.157 1.034 1.097 1.099 1.058        1.106    4.24
 91)  bromoform
      0.254 0.312 0.237 0.280 0.290 0.300 0.289 0.263 0.262        0.276    8.68
 92)  isopropylbenzene
      1.702 1.648 1.622 1.737 1.694 1.623 1.526 1.467 1.613 1.670  1.630    5.03
 93)  cis-1,4-dichloro-2-butene
      0.180       0.155 0.192 0.204       0.196 0.162 0.201        0.184   10.51

 94) I   1,4-dichlorobenzene-d ----------------ISTD---------------------
 95)  4-bromofluorobenzene (s)
      0.963 0.955 0.964 0.981 0.976 0.988 0.996 0.952 0.971 0.955  0.970    1.53
 96)  bromobenzene
      0.954 1.063 0.984 0.972 0.896 0.814 0.851 0.991 0.977 0.877  0.938    8.09
 97)  1,1,2,2-tetrachloroethane
      1.099 1.288 1.071 1.056 1.043 1.043 0.971 1.099 1.052        1.080    8.02
 98)  trans-1,4-dichloro-2-butene
      0.283       0.259 0.265 0.262       0.234 0.273              0.263    6.32
 99)  1,2,3-trichloropropane
      0.306 0.290 0.305 0.307 0.277 0.283 0.262 0.320 0.316        0.296    6.51
100)  n-propylbenzene
      4.686 4.070 4.532 4.438 3.919 4.333 3.503 4.440 4.365 4.141  4.243    8.14
101)  2-chlorotoluene
      0.949 0.841 0.883 0.934 0.874 0.901 0.841 0.909 0.911        0.894    4.19
102)  4-chlorotoluene
      0.936 0.837 0.818 0.968 0.919 1.097 0.882 0.906 0.903        0.918    8.89
103)  1,3,5-trimethylbenzene
      3.114 2.801 2.874 3.024 2.787 3.003 2.566 2.964 2.986 3.460  2.958    7.96
104)  tert-butylbenzene
      2.711       2.474 2.692 2.476 2.446 2.366 2.603 2.450        2.527    4.98
105)  1,2,4-trimethylbenzene
      3.015 2.955 2.982 3.114 2.994 2.890 2.747 3.005 2.938 3.871  3.051    9.94
106)  sec-butylbenzene
      3.930 3.818 3.810 3.909 3.673 3.523 3.331 3.732 3.623 3.257  3.661    6.30
107)  1,3-dichlorobenzene
      1.851 1.501 1.661 1.759 1.702 1.577 1.645 1.706 1.731        1.681    6.09
108)  p-isopropyltoluene
      3.173 2.978 3.148 3.172 2.994 2.859 2.714 3.175 3.082 3.060  3.035    5.06
109)  1,4-dichlorobenzene
      1.677 1.531 1.744 1.723 1.665 1.750 1.617 1.654 1.719 2.037  1.712    7.72
110)  1,2,3-trimethylbenzene
      2.858 2.307 2.798 2.996 2.784 2.886 2.521 2.838 2.896 2.777  2.766    7.33
111)  1,2-dichlorobenzene
      1.602 1.397 1.589 1.663 1.613 1.402 1.529 1.562 1.493 1.800  1.565    7.70
112)  n-butylbenzene
      1.510       1.366 1.640 1.572 1.595 1.514 1.515 1.431        1.518    5.80
113)  1,2-dibromo-3-chloropropane
```

Initial Calibration Summary

Job Number: JD43215 **Sample:** VL10152-ICC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L337233.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
       0.172       0.191 0.211 0.215       0.212 0.190 0.156        0.192   11.57
114)  1,3,5-trichlorobenzene
       1.068 1.163 0.982 1.056 0.972 0.985 0.924 1.059 0.977        1.021    7.07
115)  1,2,4-trichlorobenzene
       0.831       0.743 0.843 0.810 0.654 0.770 0.847 0.838        0.792    8.50
116)  hexachlorobutadiene
       0.323       0.340 0.321 0.288       0.278 0.351 0.441        0.335   16.01
117)  naphthalene
       2.244 1.414 1.995 2.302 2.206 2.085 2.102 2.244 1.942        2.059   13.14
118)  1,2,3-trichlorobenzene
       0.655       0.747 0.712 0.703 0.714 0.656 0.698 0.669        0.694    4.66
119)  hexachloroethane
       0.564       0.533 0.584 0.573 0.525 0.545 0.582 0.494        0.550    5.79
120)  benzyl chloride
       1.631       1.605 1.992 2.008       1.931 1.677 1.567        1.773   11.00
121)  2-methylnaphthalene  *This compound fails Initial Calibration criteria*
       6.660             8.931 8.857       8.489 8.195              8.226   11.24

122)     pentafluorobenzene(a) ----------------ISTD---------------------
123)  Freon 142B
       0.753       0.724 0.775 0.752       0.699 0.770 0.893        0.767    8.03
124)  allyl chloride
       0.251       0.253 0.276 0.280       0.273 0.269 0.333        0.276    9.93

125)     1,4-dichlorobenzene-d ----------------ISTD---------------------
126)  pentachloroethane
       0.461       0.418 0.498 0.538       0.535 0.461 0.571        0.498   10.85
 ------------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           ML10152.M         Tue Feb 08 15:31:25 2022   1
```

Initial Calibration Verification

Job Number: JD43215 **Sample:** VL10152-ICV10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L337239.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\VL10152\L337239.D Vial: 20
Acq On : 27 Jan 2022 2:37 am Operator: edwardd
Sample : icv10152-50 Inst : GCMSL
Misc : MS56214,VL10152,5,,,,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\ML10152.M (RTE Integrator)
Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
Last Update : Wed Feb 02 08:39:08 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	108	0.00	3.12
2		1,4-dioxane	0.164	0.163	0.6	108	0.00	5.34
3		ethanol	0.153	0.172	-12.4	123	0.00	2.54
4	M	tertiary butyl alcohol	1.205	1.283	-6.5	117	0.00	3.17
5	I	pentafluorobenzene	1.000	1.000	0.0	107	0.00	4.34
6		chlorodifluoromethane		----------NA----------				
7		dichlorodifluoromethane	0.777	0.580	25.4	78	0.00	1.68
8		chloromethane	0.590	0.595	-0.8	104	0.00	1.84
9		vinyl chloride	0.850	0.884	-4.0	105	0.00	1.92
10		bromomethane	0.505	0.485	4.0	107	0.00	2.18
11		chloroethane	0.530	0.503	5.1	105	0.00	2.26
12		trichlorofluoromethane	0.812	0.781	3.8	99	0.00	2.45
13		ethyl ether	0.292	0.287	1.7	105	0.00	2.63
14		acrolein	0.089	0.095	-6.7	114	0.00	2.74
15		freon 113	0.384	0.357	7.0	96	0.00	2.81
16		1,1-dichloroethene	0.439	0.400	8.9	95	0.00	2.82
17		acetone	0.043	0.046	-7.0	120	0.00	2.83
18		acetonitrile		----------NA----------				
19		iodomethane	0.473	0.506	-7.0	98	0.00	2.93
20		iso-butyl alcohol	0.023	0.024	-4.3	121	0.00	4.49
21		carbon disulfide	1.368	1.252	8.5	99	0.00	2.99
22		methylene chloride	0.538	0.485	9.9	107	0.00	3.15
23		methyl acetate	0.093	0.093	0.0	106	-0.01	3.03
24		methyl tert butyl ether	1.453	1.465	-0.8	104	0.00	3.31
25		trans-1,2-dichloroethene	0.494	0.467	5.5	102	0.00	3.33
26		hexane	0.690	0.709	-2.8	108	0.00	3.51
27		di-isopropyl ether	1.489	1.479	0.7	104	0.00	3.62
28		ethyl tert-butyl ether	1.440	1.375	4.5	100	0.00	3.87
29		2-butanone	0.067	0.069	-3.0	113	0.00	3.99
30	M	1,1-dichloroethane	0.862	0.834	3.2	104	0.00	3.63
31		chloroprene	0.645	0.652	-1.1	105	0.00	3.68
32		acrylonitrile		----------NA----------				
33		vinyl acetate	0.133	0.117	12.0	100	0.00	3.61
34		ethyl acetate	0.080	0.091	-13.7	109	0.00	4.00
35		2,2-dichloropropane	0.740	0.740	0.0	101	0.00	4.03
36		cis-1,2-dichloroethene	0.545	0.532	2.4	104	0.00	4.02
37		propionitrile	0.068	0.070	-2.9	106	0.00	4.04
38		methyl acrylate	0.102	0.097	4.9	109	0.00	4.04
39		bromochloromethane	0.255	0.270	-5.9	109	0.00	4.19
40		tetrahydrofuran	0.076	0.078	-2.6	119	0.00	4.20
41		chloroform	0.922	0.897	2.7	105	0.00	4.24

Initial Calibration Verification

Job Number: JD43215 **Sample:** VL10152-ICV10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L337239.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	S	dibromofluoromethane (s)	0.442	0.459	-3.8	109	0.00	4.35
43		methacrylonitrile	0.229	0.251	-9.6	117	0.00	4.15
44		1,1,1-trichloroethane	0.770	0.751	2.5	103	0.00	4.38
45		cyclohexane	0.747	0.789	-5.6	111	0.00	4.44
46		1,1-dichloropropene	0.671	0.702	-4.6	105	0.00	4.49
47		carbon tetrachloride	0.672	0.671	0.1	103	0.00	4.49
48		isopropyl acetate	0.120	0.125	-4.2	107	0.00	4.61
49		tert amyl alcohol	0.017	0.018	-5.9	119	0.00	4.58
50	I	1,4-difluorobenzene	1.000	1.000	0.0	105	0.00	4.91
51	S	1,2-dichloroethane-d4 (s)	0.295	0.320	-8.5	113	0.00	4.61
52		tert-amyl methyl ether	0.933	0.927	0.6	101	0.00	4.70
53		2,2,4-trimethylpentane	0.846	0.837	1.1	98	0.00	4.70
54		n-butyl alcohol	0.008	0.009	-12.5	119	0.00	4.97
55	M	benzene	1.202	1.214	-1.0	105	0.00	4.64
56		heptane	0.190	0.181	4.7	100	0.00	4.81
57		1,2-dichloroethane	0.431	0.429	0.5	106	0.00	4.66
58		trichloroethene	0.324	0.324	0.0	103	0.00	5.11
59		ethyl acrylate	0.373	0.410	-9.9	111	0.00	5.13
60		2-nitropropane	0.094	0.099	-5.3	109	0.00	5.66
61		2-chloroethyl vinyl ether	0.159	0.179	-12.6	115	0.00	5.69
62		methyl methacrylate	0.093	0.096	-3.2	113	0.00	5.31
63		1,2-dichloropropane	0.315	0.316	-0.3	106	0.00	5.31
64		methylcyclohexane	0.526	0.525	0.2	102	0.00	5.30
65		dibromomethane	0.199	0.210	-5.5	108	0.00	5.38
66		bromodichloromethane	0.433	0.437	-0.9	105	0.00	5.50
67		cis-1,3-dichloropropene	0.542	0.559	-3.1	109	0.00	5.84
68		epichlorohydrin	0.032	0.035	-9.4	115	0.00	5.75
69		4-methyl-2-pentanone	0.117	0.131	-12.0	114	0.00	5.93
70		3-methyl-1-butanol	0.008	0.010	-25.0	121	0.00	5.95
71	I	chlorobenzene-d5	1.000	1.000	0.0	108	0.00	7.31
72	S	toluene-d8 (s)	1.368	1.353	1.1	107	0.00	6.06
73		toluene	0.944	0.943	0.1	107	0.00	6.12
74		trans-1,3-dichloropropene	0.593	0.615	-3.7	106	0.00	6.29
75		ethyl methacrylate	0.499	0.547	-9.6	111	0.00	6.31
76		1,1,2-trichloroethane	0.295	0.300	-1.7	109	0.00	6.46
77		2-hexanone	0.130	0.140	-7.7	113	0.00	6.62
78		tetrachloroethene		----------NA----------				
79		1,3-dichloropropane	0.592	0.591	0.2	109	0.00	6.61
80		butyl acetate	0.220	0.256	-16.4	119	0.00	6.70
81		dibromochloromethane	0.385	0.394	-2.3	106	0.00	6.80
82		1,2-dibromoethane	0.367	0.365	0.5	111	0.00	6.91
83		n-butyl ether	1.318	1.459	-10.7	107	0.00	7.38
84		chlorobenzene	1.038	1.021	1.6	106	0.00	7.34
85		1,1,1,2-tetrachloroethane	0.354	0.385	-8.8	115	0.00	7.41
86		ethylbenzene	1.669	1.693	-1.4	106	0.00	7.41
87		m,p-xylene	0.655	0.691	-5.5	106	0.00	7.53
88		o-xylene	0.674	0.694	-3.0	104	0.00	7.89
89		butyl acrylate	0.612	0.752	-22.9	116	0.00	7.80
90		styrene	1.106	1.131	-2.3	106	0.00	7.90
91		bromoform	0.276	0.274	0.7	105	0.00	8.08
92		isopropylbenzene	1.630	1.732	-6.3	107	0.00	8.22
93		cis-1,4-dichloro-2-butene	0.184	0.188	-2.2	106	0.00	8.27
94	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	110	0.00	9.51
95	S	4-bromofluorobenzene (s)	0.970	0.976	-0.6	109	0.00	8.39
96		bromobenzene	0.938	0.948	-1.1	107	0.00	8.54
97		1,1,2,2-tetrachloroethane	1.080	1.058	2.0	110	0.00	8.51
98		trans-1,4-dichloro-2-bute	0.263	0.280	-6.5	116	0.00	8.54

Initial Calibration Verification

Job Number: JD43215 **Sample:** VL10152-ICV10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L337239.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	1,2,3-trichloropropane	0.296	0.298	-0.7	107	0.00	8.56
100	n-propylbenzene	4.243	4.231	0.3	105	0.00	8.61
101	2-chlorotoluene	0.894	0.880	1.6	104	0.00	8.71
102	4-chlorotoluene	0.918	0.943	-2.7	107	0.00	8.83
103	1,3,5-trimethylbenzene	2.958	2.963	-0.2	108	0.00	8.78
104	tert-butylbenzene	2.527	2.685	-6.3	110	0.00	9.09
105	1,2,4-trimethylbenzene	3.051	2.910	4.6	103	0.00	9.15
106	sec-butylbenzene	3.661	3.744	-2.3	105	0.00	9.31
107	1,3-dichlorobenzene	1.681	1.714	-2.0	107	0.00	9.43
108	p-isopropyltoluene	3.035	3.129	-3.1	109	0.00	9.45
109	1,4-dichlorobenzene	1.712	1.685	1.6	108	0.00	9.53
110	1,2,3-trimethylbenzene		----------NA----------				
111	1,2-dichlorobenzene	1.565	1.570	-0.3	104	0.00	9.88
112	n-butylbenzene	1.518	1.542	-1.6	103	0.00	9.85
113	1,2-dibromo-3-chloropropa	0.192	0.211	-9.9	110	0.00	10.65
114	1,3,5-trichlorobenzene	1.021	1.058	-3.6	110	0.00	10.84
115	1,2,4-trichlorobenzene	0.792	0.839	-5.9	109	0.00	11.47
116	hexachlorobutadiene	0.335	0.316	5.7	108	0.00	11.61
117	naphthalene	2.059	2.152	-4.5	103	0.00	11.73
118	1,2,3-trichlorobenzene	0.694	0.695	-0.1	107	0.00	11.95
119	hexachloroethane	0.550	0.549	0.2	103	0.00	10.15
120	benzyl chloride	1.773	1.775	-0.1	98	0.00	9.64
121	2-methylnaphthalene	8.226	1.008	87.7#	12#	0.00	12.87

(#) = Out of Range SPCC's out = 0 CCC's out = 0
L337233.D ML10152.M Wed Feb 02 08:41:00 2022 1

Initial Calibration Verification

Job Number: JD43215 **Sample:** VL10152-ICV10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L337240.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\VL10152\L337240.D Vial: 21
Acq On : 27 Jan 2022 3:01 am Operator: edwardd
Sample : icv10152-50 Inst : GCMSL
Misc : MS56214,VL10152,5,,,,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\ML10152.M (RTE Integrator)
Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
Last Update : Tue Feb 01 15:06:41 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	113	0.00	3.11
2		1,4-dioxane		----------NA----------				
3		ethanol		----------NA----------				
4	M	tertiary butyl alcohol		----------NA----------				
5	I	pentafluorobenzene	1.000	1.000	0.0	107	0.00	4.35
6		chlorodifluoromethane	0.476	0.734	-54.2#	154	0.00	1.69
7		dichlorodifluoromethane		----------NA----------				
8		chloromethane		----------NA----------				
9		vinyl chloride		----------NA----------				
10		bromomethane		----------NA----------				
11		chloroethane		----------NA----------				
12		trichlorofluoromethane		----------NA----------				
13		ethyl ether		----------NA----------				
14		acrolein		----------NA----------				
15		freon 113		----------NA----------				
16		1,1-dichloroethene		----------NA----------				
17		acetone		----------NA----------				
18		acetonitrile	0.038	0.035	7.9	100	0.00	3.02
19		iodomethane		----------NA----------				
20		iso-butyl alcohol		----------NA----------				
21		carbon disulfide		----------NA----------				
22		methylene chloride		----------NA----------				
23		methyl acetate		----------NA----------				
24		methyl tert butyl ether		----------NA----------				
25		trans-1,2-dichloroethene		----------NA----------				
26		hexane		----------NA----------				
27		di-isopropyl ether		----------NA----------				
28		ethyl tert-butyl ether		----------NA----------				
29		2-butanone		----------NA----------				
30	M	1,1-dichloroethane		----------NA----------				
31		chloroprene		----------NA----------				
32		acrylonitrile	0.192	0.165	14.1	87	0.00	3.30
33		vinyl acetate		----------NA----------				
34		ethyl acetate		----------NA----------				
35		2,2-dichloropropane		----------NA----------				
36		cis-1,2-dichloroethene		----------NA----------				
37		propionitrile		----------NA----------				
38		methyl acrylate		----------NA----------				
39		bromochloromethane		----------NA----------				
40		tetrahydrofuran		----------NA----------				
41		chloroform		----------NA----------				

Initial Calibration Verification

Job Number: JD43215 **Sample:** VL10152-ICV10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L337240.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	S	dibromofluoromethane (s)	0.442	0.460	-4.1	109	0.00	4.35
43		methacrylonitrile		----------NA----------				
44		1,1,1-trichloroethane		----------NA----------				
45		cyclohexane		----------NA----------				
46		1,1-dichloropropene		----------NA----------				
47		carbon tetrachloride		----------NA----------				
48		isopropyl acetate		----------NA----------				
49		tert amyl alcohol		----------NA----------				
50	I	1,4-difluorobenzene	1.000	1.000	0.0	106	0.00	4.91
51	S	1,2-dichloroethane-d4 (s)	0.295	0.298	-1.0	106	0.00	4.61
52		tert-amyl methyl ether		----------NA----------				
53		2,2,4-trimethylpentane		----------NA----------				
54		n-butyl alcohol		----------NA----------				
55	M	benzene		----------NA----------				
56		heptane		----------NA----------				
57		1,2-dichloroethane		----------NA----------				
58		trichloroethene		----------NA----------				
59		ethyl acrylate		----------NA----------				
60		2-nitropropane		----------NA----------				
61		2-chloroethyl vinyl ether		----------NA----------				
62		methyl methacrylate		----------NA----------				
63		1,2-dichloropropane		----------NA----------				
64		methylcyclohexane		----------NA----------				
65		dibromomethane		----------NA----------				
66		bromodichloromethane		----------NA----------				
67		cis-1,3-dichloropropene		----------NA----------				
68		epichlorohydrin		----------NA----------				
69		4-methyl-2-pentanone		----------NA----------				
70		3-methyl-1-butanol		----------NA----------				
71	I	chlorobenzene-d5	1.000	1.000	0.0	98	0.00	7.31
72	S	toluene-d8 (s)	1.368	1.420	-3.8	102	0.00	6.06
73		toluene		----------NA----------				
74		trans-1,3-dichloropropene		----------NA----------				
75		ethyl methacrylate		----------NA----------				
76		1,1,2-trichloroethane		----------NA----------				
77		2-hexanone		----------NA----------				
78		tetrachloroethene	0.406	0.394	3.0	100	0.00	6.56
79		1,3-dichloropropane		----------NA----------				
80		butyl acetate		----------NA----------				
81		dibromochloromethane		----------NA----------				
82		1,2-dibromoethane		----------NA----------				
83		n-butyl ether		----------NA----------				
84		chlorobenzene		----------NA----------				
85		1,1,1,2-tetrachloroethane		----------NA----------				
86		ethylbenzene		----------NA----------				
87		m,p-xylene		----------NA----------				
88		o-xylene		----------NA----------				
89		butyl acrylate		----------NA----------				
90		styrene		----------NA----------				
91		bromoform		----------NA----------				
92		isopropylbenzene		----------NA----------				
93		cis-1,4-dichloro-2-butene		----------NA----------				
94	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	96	0.00	9.51
95	S	4-bromofluorobenzene (s)	0.970	0.980	-1.0	96	0.00	8.39
96		bromobenzene		----------NA----------				
97		1,1,2,2-tetrachloroethane		----------NA----------				
98		trans-1,4-dichloro-2-bute		----------NA----------				

Initial Calibration Verification

Job Number: JD43215 **Sample:** VL10152-ICV10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L337240.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	1,2,3-trichloropropane		----------NA----------				
100	n-propylbenzene		----------NA----------				
101	2-chlorotoluene		----------NA----------				
102	4-chlorotoluene		----------NA----------				
103	1,3,5-trimethylbenzene		----------NA----------				
104	tert-butylbenzene		----------NA----------				
105	1,2,4-trimethylbenzene		----------NA----------				
106	sec-butylbenzene		----------NA----------				
107	1,3-dichlorobenzene		----------NA----------				
108	p-isopropyltoluene		----------NA----------				
109	1,4-dichlorobenzene		----------NA----------				
110	1,2,3-trimethylbenzene	2.766	3.340	-20.8	107	0.00	9.55
111	1,2-dichlorobenzene		----------NA----------				
112	n-butylbenzene		----------NA----------				
113	1,2-dibromo-3-chloropropa		----------NA----------				
114	1,3,5-trichlorobenzene		----------NA----------				
115	1,2,4-trichlorobenzene		----------NA----------				
116	hexachlorobutadiene		----------NA----------				
117	naphthalene		----------NA----------				
118	1,2,3-trichlorobenzene		----------NA----------				
119	hexachloroethane		----------NA----------				
120	benzyl chloride		----------NA----------				
121	2-methylnaphthalene		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
L337233.D ML10152.M Tue Feb 01 15:08:17 2022 1

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10281-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340899.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\ne...-04\vl10281\l340899.d Vial: 53
Acq On : 20 Apr 2022 11:24 pm Operator: nicoleh
Sample : CC10152-50 Inst : GCMSL
Misc : MS58116,VL10281,5,,,,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\ML10152.M (RTE Integrator)
Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
Last Update : Tue Feb 08 15:29:57 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	97	0.00	3.11
2		1,4-dioxane	0.164	0.154	6.1	91	0.00	5.34
3		ethanol	0.153	0.181	-18.3	117	0.00	2.53
4	M	tertiary butyl alcohol	1.205	1.350	-12.0	110	0.00	3.17
5	I	pentafluorobenzene	1.000	1.000	0.0	84	0.00	4.34
6		chlorodifluoromethane	0.476	0.553	-16.2	91	0.00	1.69
7		dichlorodifluoromethane	0.777	0.865	-11.3	91	0.00	1.68
8		chloromethane	0.590	0.764	-29.5#	104	0.00	1.84
9		vinyl chloride	0.850	0.832	2.1	77	0.00	1.92
10		bromomethane	0.505	0.441	12.7	76	0.00	2.18
11		chloroethane	0.530	0.426	19.6	70	0.00	2.26
12		trichlorofluoromethane	0.812	0.984	-21.2#	97	0.00	2.45
13		ethyl ether	0.292	0.342	-17.1	98	0.00	2.63
14		acrolein	0.089	0.095	-6.7	89	0.00	2.73
15		freon 113	0.384	0.436	-13.5	91	0.00	2.81
16		1,1-dichloroethene	0.439	0.472	-7.5	88	0.00	2.81
17		acetone	0.043	0.079	-83.7#	160	0.00	2.82
18		acetonitrile	0.038	0.045	-18.4	101	0.00	3.02
19		iodomethane	0.473	0.506	-7.0	77	0.00	2.93
20		iso-butyl alcohol	0.023	0.026	-13.0	101	0.00	4.48
21		carbon disulfide	1.368	1.425	-4.2	88	0.00	2.99
22		methylene chloride	0.538	0.547	-1.7	94	0.00	3.14
23		methyl acetate	0.093	0.110	-18.3	98	-0.01	3.03
24		methyl tert butyl ether	1.453	1.593	-9.6	88	0.00	3.31
25		trans-1,2-dichloroethene	0.494	0.508	-2.8	87	0.00	3.33
26		hexane	0.690	0.784	-13.6	93	0.00	3.51
27		di-isopropyl ether	1.489	1.673	-12.4	91	0.00	3.62
28		ethyl tert-butyl ether	1.440	1.631	-13.3	92	0.00	3.87
29		2-butanone	0.067	0.089	-32.8#	113	0.00	3.99
30	M	1,1-dichloroethane	0.862	0.941	-9.2	92	0.00	3.63
31		chloroprene	0.645	0.739	-14.6	93	0.00	3.68
32		acrylonitrile	0.192	0.216	-12.5	89	0.00	3.29
33		vinyl acetate	0.133	0.104	21.8#	69	-0.01	3.60
34		ethyl acetate	0.080	0.097	-21.3#	91	0.00	3.99
35		2,2-dichloropropane	0.740	0.701	5.3	74	0.00	4.03
36		cis-1,2-dichloroethene	0.545	0.548	-0.6	83	0.00	4.02
37		propionitrile	0.068	0.081	-19.1	95	0.00	4.04
38		methyl acrylate	0.102	0.095	6.9	83	0.00	4.04
39		bromochloromethane	0.255	0.270	-5.9	85	0.00	4.18
40		tetrahydrofuran	0.076	0.088	-15.8	104	0.00	4.20
41		chloroform	0.922	0.934	-1.3	85	0.00	4.24

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10281-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340899.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	S	dibromofluoromethane (s)	0.442	0.441	0.2	82	0.00	4.35
43		methacrylonitrile	0.229	0.264	-15.3	96	0.00	4.14
44		1,1,1-trichloroethane	0.770	0.773	-0.4	83	0.00	4.38
45		cyclohexane	0.747	0.805	-7.8	88	0.00	4.44
46		1,1-dichloropropene	0.671	0.691	-3.0	81	0.00	4.49
47		carbon tetrachloride	0.672	0.632	6.0	76	0.00	4.49
48		isopropyl acetate	0.120	0.125	-4.2	84	0.00	4.60
49		tert amyl alcohol	0.017	0.024	-41.2#	121	0.00	4.58
50	I	1,4-difluorobenzene	1.000	1.000	0.0	78	0.00	4.91
51	S	1,2-dichloroethane-d4 (s)	0.295	0.289	2.0	76	0.00	4.60
52		tert-amyl methyl ether	0.933	0.982	-5.3	80	0.00	4.69
53		2,2,4-trimethylpentane	0.846	0.943	-11.5	83	0.00	4.70
54		n-butyl alcohol	0.008	0.010	-25.0#	99	0.00	4.97
55	M	benzene	1.202	1.305	-8.6	84	0.00	4.63
56		heptane	0.190	0.212	-11.6	87	0.00	4.81
57		1,2-dichloroethane	0.431	0.423	1.9	78	0.00	4.66
58		trichloroethene	0.324	0.364	-12.3	87	0.00	5.10
59		ethyl acrylate	0.373	0.482	-29.2#	98	-0.01	5.12
60		2-nitropropane	0.094	0.106	-12.8	87	0.00	5.66
61		2-chloroethyl vinyl ether	0.159	0.203	-27.7#	97	0.00	5.68
62		methyl methacrylate	0.093	0.109	-17.2	96	0.00	5.30
63		1,2-dichloropropane	0.315	0.351	-11.4	88	-0.01	5.30
64		methylcyclohexane	0.526	0.570	-8.4	83	0.00	5.29
65		dibromomethane	0.199	0.202	-1.5	78	0.00	5.37
66		bromodichloromethane	0.433	0.482	-11.3	87	0.00	5.49
67		cis-1,3-dichloropropene	0.542	0.592	-9.2	87	0.00	5.83
68		epichlorohydrin	0.032	0.042	-31.3#	104	0.00	5.74
69		4-methyl-2-pentanone	0.117	0.151	-29.1#	98	0.00	5.93
70		3-methyl-1-butanol	0.008	0.010	-25.0#	91	0.00	5.95
71	I	chlorobenzene-d5	1.000	1.000	0.0	88	0.00	7.31
72	S	toluene-d8 (s)	1.368	1.226	10.4	79	0.00	6.06
73		toluene	0.944	0.896	5.1	83	0.00	6.11
74		trans-1,3-dichloropropene	0.593	0.553	6.7	78	0.00	6.28
75		ethyl methacrylate	0.499	0.541	-8.4	90	0.00	6.30
76		1,1,2-trichloroethane	0.295	0.305	-3.4	91	0.00	6.45
77		2-hexanone	0.130	0.159	-22.3#	105	0.00	6.62
78		tetrachloroethene	0.406	0.382	5.9	87	0.00	6.55
79		1,3-dichloropropane	0.592	0.581	1.9	87	0.00	6.60
80		butyl acetate	0.220	0.255	-15.9	97	0.00	6.70
81		dibromochloromethane	0.385	0.389	-1.0	85	0.00	6.79
82		1,2-dibromoethane	0.367	0.371	-1.1	92	0.00	6.91
83		n-butyl ether	1.318	1.496	-13.5	90	0.00	7.38
84		chlorobenzene	1.038	1.006	3.1	85	0.00	7.34
85		1,1,1,2-tetrachloroethane	0.354	0.329	7.1	80	0.00	7.40
86		ethylbenzene	1.669	1.552	7.0	79	0.00	7.41
87		m,p-xylene	0.655	0.617	5.8	78	0.00	7.53
88		o-xylene	0.674	0.657	2.5	80	0.00	7.88
89		butyl acrylate	0.612	0.733	-19.8	93	0.00	7.80
90		styrene	1.106	1.039	6.1	79	0.00	7.90
91		bromoform	0.276	0.247	10.5	78	0.00	8.08
92		isopropylbenzene	1.630	1.614	1.0	82	0.00	8.22
93		cis-1,4-dichloro-2-butene	0.184	0.092	50.0#	42#	0.00	8.27
94	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	82	0.00	9.51
95	S	4-bromofluorobenzene (s)	0.970	1.095	-12.9	91	0.00	8.39
96		bromobenzene	0.938	0.980	-4.5	82	0.00	8.54
97		1,1,2,2-tetrachloroethane	1.080	1.129	-4.5	87	0.00	8.50
98		trans-1,4-dichloro-2-bute	0.263	0.183	30.4#	56	0.00	8.54

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10281-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340899.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	1,2,3-trichloropropane	0.296	0.320	-8.1	85	0.00	8.57
100	n-propylbenzene	4.243	4.250	-0.2	78	0.00	8.61
101	2-chlorotoluene	0.894	0.894	0.0	78	0.00	8.71
102	4-chlorotoluene	0.918	0.882	3.9	74	0.00	8.83
103	1,3,5-trimethylbenzene	2.958	2.971	-0.4	80	0.00	8.78
104	tert-butylbenzene	2.527	2.679	-6.0	81	0.00	9.09
105	1,2,4-trimethylbenzene	3.051	3.037	0.5	80	0.00	9.15
106	sec-butylbenzene	3.661	3.765	-2.8	79	0.00	9.30
107	1,3-dichlorobenzene	1.681	1.678	0.2	78	0.00	9.44
108	p-isopropyltoluene	3.035	2.994	1.4	77	0.00	9.45
109	1,4-dichlorobenzene	1.712	1.570	8.3	74	0.00	9.53
110	1,2,3-trimethylbenzene	2.766	2.930	-5.9	80	0.00	9.55
111	1,2-dichlorobenzene	1.565	1.556	0.6	76	0.00	9.89
112	n-butylbenzene	1.518	1.497	1.4	74	0.00	9.85
113	1,2-dibromo-3-chloropropa	0.192	0.239	-24.5#	92	0.00	10.65
114	1,3,5-trichlorobenzene	1.021	1.149	-12.5	89	0.00	10.84
115	1,2,4-trichlorobenzene	0.792	0.895	-13.0	87	0.00	11.47
116	hexachlorobutadiene	0.335	0.348	-3.9	88	0.00	11.61
117	naphthalene	2.059	2.395	-16.3	85	0.00	11.74
118	1,2,3-trichlorobenzene	0.694	0.743	-7.1	85	0.00	11.96
119	hexachloroethane	0.550	0.557	-1.3	78	0.00	10.15
120	benzyl chloride	1.773	1.773	0.0	73	0.00	9.64
121	2-methylnaphthalene	8.226	0.674	91.8#	6#	0.00	12.87
122	pentafluorobenzene(a)	1.000	1.000	0.0	61	0.00	4.34
123	Freon 142B		----------NA----------				
124	allyl chloride		----------NA----------				
125	1,4-dichlorobenzene-d4(a)	1.000	1.000	0.0	75	0.00	9.51
126	pentachloroethane		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
L337233.D ML10152.M Fri Apr 22 00:54:27 2022

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10283-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340955.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\da...-22\vl10283\l340955.d Vial: 53
Acq On : 21 Apr 2022 10:22 pm Operator: nicoleh
Sample : cc10152-50 Inst : GCMSL
Misc : MS58282,VL10283,5,,,,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\ML10152.M (RTE Integrator)
Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
Last Update : Tue Feb 08 15:29:57 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	102	0.00	3.12
2		1,4-dioxane	0.164	0.145	11.6	90	0.00	5.35
3		ethanol	0.153	0.178	-16.3	120	0.00	2.54
4	M	tertiary butyl alcohol	1.205	1.304	-8.2	112	0.00	3.18
5	I	pentafluorobenzene	1.000	1.000	0.0	84	0.00	4.34
6		chlorodifluoromethane	0.476	0.529	-11.1	87	0.00	1.69
7		dichlorodifluoromethane	0.777	0.842	-8.4	89	0.00	1.68
8		chloromethane	0.590	0.796	-34.9#	109	0.00	1.84
9		vinyl chloride	0.850	0.830	2.4	77	0.00	1.92
10		bromomethane	0.505	0.457	9.5	79	0.00	2.18
11		chloroethane	0.530	0.425	19.8	70	0.00	2.26
12		trichlorofluoromethane	0.812	0.984	-21.2#	98	0.00	2.45
13		ethyl ether	0.292	0.349	-19.5	100	0.00	2.63
14		acrolein	0.089	0.105	-18.0	99	0.00	2.74
15		freon 113	0.384	0.436	-13.5	92	0.00	2.81
16		1,1-dichloroethene	0.439	0.488	-11.2	91	0.00	2.82
17		acetone	0.043	0.067	-55.8#	138	0.00	2.83
18		acetonitrile	0.038	0.045	-18.4	101	0.00	3.02
19		iodomethane	0.473	0.597	-26.2#	91	0.00	2.93
20		iso-butyl alcohol	0.023	0.023	0.0	92	0.00	4.49
21		carbon disulfide	1.368	1.438	-5.1	89	0.00	3.00
22		methylene chloride	0.538	0.552	-2.6	95	0.00	3.15
23		methyl acetate	0.093	0.110	-18.3	99	0.00	3.03
24		methyl tert butyl ether	1.453	1.579	-8.7	88	0.00	3.32
25		trans-1,2-dichloroethene	0.494	0.515	-4.3	88	0.00	3.33
26		hexane	0.690	0.800	-15.9	96	0.00	3.51
27		di-isopropyl ether	1.489	1.710	-14.8	94	0.00	3.62
28		ethyl tert-butyl ether	1.440	1.645	-14.2	94	0.00	3.87
29		2-butanone	0.067	0.081	-20.9#	104	0.00	3.99
30	M	1,1-dichloroethane	0.862	0.947	-9.9	93	0.00	3.63
31		chloroprene	0.645	0.754	-16.9	95	0.00	3.68
32		acrylonitrile	0.192	0.225	-17.2	93	0.00	3.30
33		vinyl acetate	0.133	0.103	22.6#	69	0.00	3.61
34		ethyl acetate	0.080	0.102	-27.5#	96	0.00	4.00
35		2,2-dichloropropane	0.740	0.715	3.4	76	0.00	4.03
36		cis-1,2-dichloroethene	0.545	0.558	-2.4	85	0.00	4.02
37		propionitrile	0.068	0.082	-20.6#	98	0.00	4.04
38		methyl acrylate	0.102	0.096	5.9	84	0.00	4.04
39		bromochloromethane	0.255	0.271	-6.3	86	0.00	4.19
40		tetrahydrofuran	0.076	0.085	-11.8	101	0.00	4.20
41		chloroform	0.922	0.947	-2.7	87	0.00	4.24

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10283-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340955.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	S	dibromofluoromethane (s)	0.442	0.444	-0.5	83	0.00	4.35
43		methacrylonitrile	0.229	0.269	-17.5	98	0.00	4.15
44		1,1,1-trichloroethane	0.770	0.779	-1.2	84	0.00	4.38
45		cyclohexane	0.747	0.824	-10.3	91	0.00	4.44
46		1,1-dichloropropene	0.671	0.696	-3.7	82	0.00	4.49
47		carbon tetrachloride	0.672	0.643	4.3	77	0.00	4.50
48		isopropyl acetate	0.120	0.129	-7.5	87	0.00	4.61
49		tert amyl alcohol	0.017	0.025	-47.1#	125	0.00	4.58
50	I	1,4-difluorobenzene	1.000	1.000	0.0	81	0.00	4.91
51	S	1,2-dichloroethane-d4 (s)	0.295	0.291	1.4	79	0.00	4.61
52		tert-amyl methyl ether	0.933	0.960	-2.9	81	0.00	4.70
53		2,2,4-trimethylpentane	0.846	0.933	-10.3	84	0.00	4.70
54		n-butyl alcohol	0.008	0.011	-37.5#	104	0.00	4.97
55	M	benzene	1.202	1.293	-7.6	86	0.00	4.64
56		heptane	0.190	0.214	-12.6	91	0.00	4.81
57		1,2-dichloroethane	0.431	0.413	4.2	79	0.00	4.66
58		trichloroethene	0.324	0.356	-9.9	87	0.00	5.11
59		ethyl acrylate	0.373	0.464	-24.4#	97	0.00	5.12
60		2-nitropropane	0.094	0.102	-8.5	86	0.00	5.66
61		2-chloroethyl vinyl ether	0.159	0.195	-22.6#	96	0.00	5.69
62		methyl methacrylate	0.093	0.107	-15.1	97	0.00	5.31
63		1,2-dichloropropane	0.315	0.351	-11.4	91	0.00	5.31
64		methylcyclohexane	0.526	0.570	-8.4	86	0.00	5.30
65		dibromomethane	0.199	0.201	-1.0	80	0.00	5.38
66		bromodichloromethane	0.433	0.470	-8.5	87	0.00	5.50
67		cis-1,3-dichloropropene	0.542	0.593	-9.4	89	0.00	5.84
68		epichlorohydrin	0.032	0.042	-31.3#	107	0.00	5.75
69		4-methyl-2-pentanone	0.117	0.148	-26.5#	99	0.00	5.93
70		3-methyl-1-butanol	0.008	0.010	-25.0#	93	0.00	5.95
71	I	chlorobenzene-d5	1.000	1.000	0.0	91	0.00	7.31
72	S	toluene-d8 (s)	1.368	1.213	11.3	81	0.00	6.06
73		toluene	0.944	0.873	7.5	84	0.00	6.12
74		trans-1,3-dichloropropene	0.593	0.547	7.8	80	0.00	6.29
75		ethyl methacrylate	0.499	0.521	-4.4	90	0.00	6.30
76		1,1,2-trichloroethane	0.295	0.298	-1.0	92	0.00	6.46
77		2-hexanone	0.130	0.151	-16.2	103	0.00	6.62
78		tetrachloroethene	0.406	0.379	6.7	89	0.00	6.56
79		1,3-dichloropropane	0.592	0.574	3.0	90	0.00	6.61
80		butyl acetate	0.220	0.252	-14.5	100	0.00	6.70
81		dibromochloromethane	0.385	0.380	1.3	86	0.00	6.79
82		1,2-dibromoethane	0.367	0.352	4.1	90	0.00	6.92
83		n-butyl ether	1.318	1.457	-10.5	91	0.00	7.38
84		chlorobenzene	1.038	1.006	3.1	88	0.00	7.34
85		1,1,1,2-tetrachloroethane	0.354	0.320	9.6	81	0.00	7.41
86		ethylbenzene	1.669	1.525	8.6	81	0.00	7.41
87		m,p-xylene	0.655	0.610	6.9	79	0.00	7.53
88		o-xylene	0.674	0.649	3.7	82	0.00	7.89
89		butyl acrylate	0.612	0.719	-17.5	94	0.00	7.80
90		styrene	1.106	1.026	7.2	81	0.00	7.90
91		bromoform	0.276	0.244	11.6	79	0.00	8.08
92		isopropylbenzene	1.630	1.604	1.6	84	0.00	8.22
93		cis-1,4-dichloro-2-butene	0.184	0.102	44.6#	49#	0.00	8.27
94	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	85	0.00	9.51
95	S	4-bromofluorobenzene (s)	0.970	1.083	-11.6	94	0.00	8.39
96		bromobenzene	0.938	0.955	-1.8	84	0.00	8.54
97		1,1,2,2-tetrachloroethane	1.080	1.107	-2.5	89	0.00	8.51
98		trans-1,4-dichloro-2-bute	0.263	0.197	25.1#	63	0.00	8.54

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10283-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340955.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	1,2,3-trichloropropane	0.296	0.306	-3.4	85	0.00	8.57
100	n-propylbenzene	4.243	4.169	1.7	80	0.00	8.61
101	2-chlorotoluene	0.894	0.887	0.8	81	0.00	8.71
102	4-chlorotoluene	0.918	0.867	5.6	76	0.00	8.83
103	1,3,5-trimethylbenzene	2.958	2.953	0.2	83	0.00	8.78
104	tert-butylbenzene	2.527	2.641	-4.5	83	0.00	9.09
105	1,2,4-trimethylbenzene	3.051	3.006	1.5	82	0.00	9.15
106	sec-butylbenzene	3.661	3.680	-0.5	80	0.00	9.30
107	1,3-dichlorobenzene	1.681	1.648	2.0	80	0.00	9.44
108	p-isopropyltoluene	3.035	2.913	4.0	78	0.00	9.45
109	1,4-dichlorobenzene	1.712	1.552	9.3	77	0.00	9.53
110	1,2,3-trimethylbenzene	2.766	2.846	-2.9	81	0.00	9.55
111	1,2-dichlorobenzene	1.565	1.509	3.6	77	0.00	9.88
112	n-butylbenzene	1.518	1.478	2.6	77	0.00	9.85
113	1,2-dibromo-3-chloropropa	0.192	0.236	-22.9#	95	0.00	10.66
114	1,3,5-trichlorobenzene	1.021	1.103	-8.0	89	0.00	10.84
115	1,2,4-trichlorobenzene	0.792	0.874	-10.4	88	0.00	11.47
116	hexachlorobutadiene	0.335	0.330	1.5	88	0.00	11.61
117	naphthalene	2.059	2.322	-12.8	86	0.00	11.73
118	1,2,3-trichlorobenzene	0.694	0.714	-2.9	85	0.00	11.95
119	hexachloroethane	0.550	0.552	-0.4	80	0.00	10.15
120	benzyl chloride	1.773	1.760	0.7	75	0.00	9.64
121	2-methylnaphthalene	8.226	0.682	91.7#	6#	0.00	12.87
122	pentafluorobenzene(a)	1.000	1.000	0.0	62	0.00	4.34
123	Freon 142B		----------NA----------				
124	allyl chloride		----------NA----------				
125	1,4-dichlorobenzene-d4(a)	1.000	1.000	0.0	79	0.00	9.51
126	pentachloroethane		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
L337233.D ML10152.M Sun Apr 24 22:10:13 2022

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10284-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340982.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ki...l10284-rush\l340982.d Vial: 82
Acq On : 22 Apr 2022 9:40 am Operator: nicoleh
Sample : CC10152-20 Inst : GCMSL
Misc : MS58322,VL10284,5,,,,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\ML10152.M (RTE Integrator)
Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
Last Update : Wed Feb 02 08:39:08 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	tert butyl alcohol-d9	1.000	1.000	0.0	105	0.00	3.12
2		1,4-dioxane	0.164	0.146	11.0	96	0.00	5.34
3		ethanol	0.153	0.179	-17.0	121	0.00	2.54
4	M	tertiary butyl alcohol	1.205	1.265	-5.0	110	0.00	3.17
5	I	pentafluorobenzene	1.000	1.000	0.0	102	0.00	4.34
6		chlorodifluoromethane	0.476	0.440	7.6	89	0.00	1.69
7		dichlorodifluoromethane	0.777	0.740	4.8	99	0.00	1.68
8		chloromethane	0.590	0.673	-14.1	106	0.00	1.84
9		vinyl chloride	0.850	0.751	11.6	85	0.00	1.92
10		bromomethane	0.505	0.457	9.5	100	0.00	2.18
11		chloroethane	0.530	0.397	25.1#	85	0.00	2.26
12		trichlorofluoromethane	0.812	0.911	-12.2	108	0.00	2.45
13		ethyl ether	0.292	0.310	-6.2	111	0.00	2.63
14		acrolein	0.089	0.095	-6.7	106	0.00	2.73
15		freon 113	0.384	0.391	-1.8	100	0.00	2.81
16		1,1-dichloroethene	0.439	0.434	1.1	102	0.00	2.82
17		acetone	0.043	0.083	-93.0#	186	0.00	2.83
18		acetonitrile	0.038	0.039	-2.6	107	0.00	3.02
19		iodomethane	0.473	0.493	-4.2	102	0.00	2.93
20		iso-butyl alcohol	0.023	0.022	4.3	104	0.00	4.49
21		carbon disulfide	1.368	1.259	8.0	92	0.00	2.99
22		methylene chloride	0.538	0.487	9.5	100	0.00	3.15
23		methyl acetate	0.093	0.098	-5.4	118	-0.01	3.03
24		methyl tert butyl ether	1.453	1.433	1.4	100	0.00	3.32
25		trans-1,2-dichloroethene	0.494	0.461	6.7	93	0.00	3.34
26		hexane	0.690	0.711	-3.0	105	0.00	3.51
27		di-isopropyl ether	1.489	1.576	-5.8	108	0.00	3.62
28		ethyl tert-butyl ether	1.440	1.515	-5.2	107	0.00	3.87
29		2-butanone	0.067	0.081	-20.9#	131	0.00	3.99
30	M	1,1-dichloroethane	0.862	0.831	3.6	100	0.00	3.63
31		chloroprene	0.645	0.672	-4.2	107	0.00	3.68
32		acrylonitrile	0.192	0.204	-6.2	100	0.00	3.29
33		vinyl acetate	0.133	0.106	20.3#	89	0.00	3.60
34		ethyl acetate	0.080	0.091	-13.7	126	0.00	4.00
35		2,2-dichloropropane	0.740	0.696	5.9	93	0.00	4.03
36		cis-1,2-dichloroethene	0.545	0.496	9.0	94	0.00	4.02
37		propionitrile	0.068	0.075	-10.3	108	0.00	4.04
38		methyl acrylate	0.102	0.088	13.7	94	0.00	4.04
39		bromochloromethane	0.255	0.251	1.6	101	0.00	4.19
40		tetrahydrofuran	0.076	0.081	-6.6	123	0.00	4.19
41		chloroform	0.922	0.869	5.7	98	0.00	4.24

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10284-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340982.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	S	dibromofluoromethane (s)	0.442	0.437	1.1	100	0.00	4.35
43		methacrylonitrile	0.229	0.244	-6.6	118	0.00	4.15
44		1,1,1-trichloroethane	0.770	0.675	12.3	93	0.00	4.38
45		cyclohexane	0.747	0.760	-1.7	105	0.00	4.44
46		1,1-dichloropropene	0.671	0.628	6.4	96	0.00	4.49
47		carbon tetrachloride	0.672	0.577	14.1	92	0.00	4.49
48		isopropyl acetate	0.120	0.115	4.2	108	0.00	4.60
49		tert amyl alcohol	0.017	0.020	-17.6	114	0.00	4.58
50	I	1,4-difluorobenzene	1.000	1.000	0.0	97	0.00	4.91
51	S	1,2-dichloroethane-d4 (s)	0.295	0.305	-3.4	97	0.00	4.61
52		tert-amyl methyl ether	0.933	0.941	-0.9	96	0.00	4.70
53		2,2,4-trimethylpentane	0.846	0.879	-3.9	94	0.00	4.70
54		n-butyl alcohol	0.008	0.009	-12.5	102	0.00	4.97
55	M	benzene	1.202	1.225	-1.9	95	0.00	4.64
56		heptane	0.190	0.193	-1.6	107	0.00	4.81
57		1,2-dichloroethane	0.431	0.398	7.7	89	0.00	4.66
58		trichloroethene	0.324	0.319	1.5	94	0.00	5.11
59		ethyl acrylate	0.373	0.439	-17.7	112	0.00	5.12
60		2-nitropropane	0.094	0.095	-1.1	113	0.00	5.66
61		2-chloroethyl vinyl ether	0.159	0.185	-16.4	111	0.00	5.69
62		methyl methacrylate	0.093	0.098	-5.4	101	0.00	5.31
63		1,2-dichloropropane	0.315	0.336	-6.7	104	0.00	5.31
64		methylcyclohexane	0.526	0.521	1.0	96	0.00	5.29
65		dibromomethane	0.199	0.190	4.5	91	0.00	5.38
66		bromodichloromethane	0.433	0.432	0.2	95	0.00	5.50
67		cis-1,3-dichloropropene	0.542	0.541	0.2	101	0.00	5.84
68		epichlorohydrin	0.032	0.039	-21.9#	127	0.00	5.74
69		4-methyl-2-pentanone	0.117	0.141	-20.5#	107	0.00	5.93
70		3-methyl-1-butanol	0.008	0.009	-12.5	105	0.00	5.95
71	I	chlorobenzene-d5	1.000	1.000	0.0	99	0.00	7.31
72	S	toluene-d8 (s)	1.368	1.307	4.5	97	0.00	6.06
73		toluene	0.944	0.882	6.6	92	0.00	6.12
74		trans-1,3-dichloropropene	0.593	0.534	9.9	93	0.00	6.29
75		ethyl methacrylate	0.499	0.528	-5.8	103	0.00	6.31
76		1,1,2-trichloroethane	0.295	0.298	-1.0	100	0.00	6.46
77		2-hexanone	0.130	0.165	-26.9#	124	0.00	6.62
78		tetrachloroethene	0.406	0.381	6.2	96	0.00	6.55
79		1,3-dichloropropane	0.592	0.586	1.0	102	0.00	6.61
80		butyl acetate	0.220	0.252	-14.5	113	0.00	6.70
81		dibromochloromethane	0.385	0.379	1.6	95	0.00	6.79
82		1,2-dibromoethane	0.367	0.356	3.0	97	0.00	6.91
83		n-butyl ether	1.318	1.486	-12.7	106	0.00	7.38
84		chlorobenzene	1.038	0.998	3.9	97	0.00	7.34
85		1,1,1,2-tetrachloroethane	0.354	0.336	5.1	92	0.00	7.41
86		ethylbenzene	1.669	1.614	3.3	95	0.00	7.41
87		m,p-xylene	0.655	0.623	4.9	92	0.00	7.53
88		o-xylene	0.674	0.657	2.5	97	0.00	7.89
89		butyl acrylate	0.612	0.696	-13.7	110	0.00	7.80
90		styrene	1.106	1.053	4.8	95	0.00	7.90
91		bromoform	0.276	0.231	16.3	87	0.00	8.08
92		isopropylbenzene	1.630	1.604	1.6	109	0.00	8.22
93		cis-1,4-dichloro-2-butene	0.184	0.074	59.8#	45#	0.00	8.27
94	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	98	0.00	9.51
95	S	4-bromofluorobenzene (s)	0.970	1.104	-13.8	113	0.00	8.39
96		bromobenzene	0.938	0.978	-4.3	96	0.00	8.54
97		1,1,2,2-tetrachloroethane	1.080	1.126	-4.3	100	0.00	8.51
98		trans-1,4-dichloro-2-bute	0.263	0.156	40.7#	56	0.00	8.54

Continuing Calibration Summary

Job Number: JD43215 **Sample:** VL10284-CC10152
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** L340982.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

99	1,2,3-trichloropropane	0.296	0.321	-8.4	98	0.00	8.57
100	n-propylbenzene	4.243	4.175	1.6	92	0.00	8.61
101	2-chlorotoluene	0.894	0.863	3.5	93	0.00	8.71
102	4-chlorotoluene	0.918	0.888	3.3	96	0.00	8.83
103	1,3,5-trimethylbenzene	2.958	2.960	-0.1	97	0.00	8.78
104	tert-butylbenzene	2.527	2.576	-1.9	97	0.00	9.09
105	1,2,4-trimethylbenzene	3.051	3.035	0.5	99	0.00	9.15
106	sec-butylbenzene	3.661	3.661	0.0	96	0.00	9.31
107	1,3-dichlorobenzene	1.681	1.617	3.8	93	0.00	9.44
108	p-isopropyltoluene	3.035	2.958	2.5	91	0.00	9.45
109	1,4-dichlorobenzene	1.712	1.513	11.6	89	0.00	9.53
110	1,2,3-trimethylbenzene	2.766	2.868	-3.7	99	0.00	9.55
111	1,2-dichlorobenzene	1.565	1.532	2.1	96	0.00	9.89
112	n-butylbenzene	1.518	1.381	9.0	89	0.00	9.85
113	1,2-dibromo-3-chloropropa	0.192	0.214	-11.5	110	0.00	10.66
114	1,3,5-trichlorobenzene	1.021	1.040	-1.9	96	0.00	10.84
115	1,2,4-trichlorobenzene	0.792	0.797	-0.6	92	0.00	11.48
116	hexachlorobutadiene	0.335	0.315	6.0	88	0.00	11.61
117	naphthalene	2.059	2.213	-7.5	96	0.00	11.74
118	1,2,3-trichlorobenzene	0.694	0.678	2.3	95	0.00	11.96
119	hexachloroethane	0.550	0.502	8.7	84	0.00	10.15
120	benzyl chloride	1.773	1.781	-0.5	104	0.00	9.64
121	2-methylnaphthalene	8.226	0.498	93.9#	6#	0.00	12.87
122	pentafluorobenzene(a)	N/A	1.00	0.0	112	-8.52#	4.34
123	Freon 142B	N/A	1.00	0.0	0#	0.00	0.00
124	allyl chloride	N/A	1.00	0.0	0#	-9.77#	3.09
125	1,4-dichlorobenzene-d4(a)	N/A	1.00	0.0	60	-3.36#	9.51
126	pentachloroethane	N/A	1.00	0.0	0#	0.00	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
L337232.D ML10152.M Fri Apr 22 14:14:09 2022

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: VL10152	**Method:** SW846 8260D	**Instrument ID:** GCMSL

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VL10152-BFB	L337225.D	01/26/22 20:56	n/a	BFB Tune
VL10152-IC10152	L337226.D	01/26/22 21:33	n/a	Initial cal 0.2
VL10152-IC10152	L337227.D	01/26/22 21:56	n/a	Initial cal 0.5
VL10152-IC10152	L337228.D	01/26/22 22:20	n/a	Initial cal 1
VL10152-IC10152	L337229.D	01/26/22 22:43	n/a	Initial cal 2
VL10152-IC10152	L337230.D	01/26/22 23:07	n/a	Initial cal 4
VL10152-IC10152	L337231.D	01/26/22 23:30	n/a	Initial cal 8
VL10152-IC10152	L337232.D	01/26/22 23:53	n/a	Initial cal 20
VL10152-ICC10152	L337233.D	01/27/22 00:17	n/a	Initial cal 50
VL10152-IC10152	L337234.D	01/27/22 00:40	n/a	Initial cal 100
VL10152-IC10152	L337235.D	01/27/22 01:04	n/a	Initial cal 200
VL10152-ICV10152	L337239.D	01/27/22 02:37	n/a	Initial cal verification 50
VL10152-ICV10152	L337240.D	01/27/22 03:01	n/a	Initial cal verification 50

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: VL10281	**Method:** SW846 8260D	**Instrument ID:** GCMSL

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VL10281-BFB	L340897.D	04/20/22 22:37	n/a	BFB Tune
VL10281-CC10152	L340899.D	04/20/22 23:24	n/a	Continuing cal 50
VL10281-BS	L340901.D	04/21/22 00:11	n/a	Blank Spike
VL10281-MB	L340903.D	04/21/22 00:58	n/a	Method Blank
JD43215-1	L340904.D	04/21/22 01:21	n/a	S-355_SL_20220413
JD43215-1MS	L340905.D	04/21/22 01:45	n/a	Matrix Spike
JD43215-1MSD	L340906.D	04/21/22 02:08	n/a	Matrix Spike Duplicate
ZZZZZZ	L340909.D	04/21/22 03:18	n/a	(unrelated sample)
JD43215-2	L340910.D	04/21/22 03:42	n/a	C-61_20220413
JD43215-3	L340911.D	04/21/22 04:05	n/a	C-129D_20220413
JD43215-4	L340912.D	04/21/22 04:29	n/a	A-4_20220413
JD43215-6	L340913.D	04/21/22 04:52	n/a	S-150SRTF_20220414
JD43215-7	L340914.D	04/21/22 05:15	n/a	N-152_20220414
JD43215-8	L340915.D	04/21/22 05:39	n/a	S-357_SL_20220414
JD43215-9	L340916.D	04/21/22 06:02	n/a	S-149SRTF_20220414
JD43215-10	L340917.D	04/21/22 06:26	n/a	S-147SRTF_20220414
JD43215-12	L340918.D	04/21/22 06:49	n/a	N-85_20220414
JD43215-5	L340921.D	04/21/22 08:00	n/a	S-423_SL_20220413
JD43215-13	L340922.D	04/21/22 08:23	n/a	N-163_20220414

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: VL10283	**Method:** SW846 8260D	**Instrument ID:** GCMSL

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VL10283-BFB	L340955.D	04/21/22 22:22	n/a	BFB Tune
VL10283-CC10152	L340955.D	04/21/22 22:22	n/a	Continuing cal 50
VL10283-BS	L340957.D	04/21/22 23:09	n/a	Blank Spike
VL10283-MB	L340959.D	04/21/22 23:56	n/a	Method Blank
ZZZZZZ	L340960.D	04/22/22 00:19	n/a	(unrelated sample)
JD43215-27	L340961.D	04/22/22 00:43	n/a	TRIP BLANK
JD43215-21	L340962.D	04/22/22 01:06	n/a	S-78SRTF_20220415
JD43215-21MS	L340963.D	04/22/22 01:30	n/a	Matrix Spike
JD43215-21MSD	L340964.D	04/22/22 01:53	n/a	Matrix Spike Duplicate
ZZZZZZ	L340966.D	04/22/22 02:40	n/a	(unrelated sample)
ZZZZZZ	L340967.D	04/22/22 03:04	n/a	(unrelated sample)
ZZZZZZ	L340968.D	04/22/22 03:27	n/a	(unrelated sample)
ZZZZZZ	L340969.D	04/22/22 03:50	n/a	(unrelated sample)
JD43215-15	L340970.D	04/22/22 04:14	n/a	DUP-7_20220414
JD43215-16	L340971.D	04/22/22 04:37	n/a	URS-5_20220414
JD43215-17	L340972.D	04/22/22 05:01	n/a	W-1_SL_20220415
JD43215-18	L340973.D	04/22/22 05:24	n/a	S-110DSRTF_20220415
JD43215-19	L340974.D	04/22/22 05:48	n/a	W-13_20220415
JD43215-20	L340975.D	04/22/22 06:11	n/a	W-32D_20220415
JD43215-22	L340976.D	04/22/22 06:35	n/a	W-31_SL_20220415
JD43215-23	L340977.D	04/22/22 06:58	n/a	W-32_SL_20220415
JD43215-24	L340978.D	04/22/22 07:22	n/a	S-118DSRTF_20220415
JD43215-25	L340979.D	04/22/22 07:45	n/a	C-175_20220413
JD43215-26	L340980.D	04/22/22 08:09	n/a	C-176_20220413

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: VL10284	**Method:** SW846 8260D	**Instrument ID:** GCMSL

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
VL10284-BFB	L340981.D	04/22/22 09:12	n/a	BFB Tune
VL10284-CC10152	L340982.D	04/22/22 09:40	n/a	Continuing cal 20
VL10284-BS	L340984.D	04/22/22 10:39	n/a	Blank Spike
VL10284-MB	L340986.D	04/22/22 11:26	n/a	Method Blank
ZZZZZZ	L340987.D	04/22/22 12:03	n/a	(unrelated sample)
JD43502-5	L340988.D	04/22/22 12:34	n/a	(used for QC only; not part of job JD43215)
JD43215-21	L340991.D	04/22/22 13:58	n/a	S-78SRTF_20220415
JD43215-1	L340992.D	04/22/22 14:21	n/a	S-355_SL_20220413
JD43215-11	L340993.D	04/22/22 14:44	n/a	S-337_SL_20220414
JD43215-14	L340994.D	04/22/22 15:08	n/a	S-480_SL_20220414
ZZZZZZ	L340995.D	04/22/22 15:31	n/a	(unrelated sample)
JD43502-5MS	L340997.D	04/22/22 16:18	n/a	Matrix Spike
JD43502-5MSD	L340998.D	04/22/22 16:41	n/a	Matrix Spike Duplicate
ZZZZZZ	L341000.D	04/22/22 17:28	n/a	(unrelated sample)
ZZZZZZ	L341001.D	04/22/22 17:52	n/a	(unrelated sample)
ZZZZZZ	L341004.D	04/22/22 19:02	n/a	(unrelated sample)
ZZZZZZ	L341005.D	04/22/22 19:25	n/a	(unrelated sample)
ZZZZZZ	L341006.D	04/22/22 19:48	n/a	(unrelated sample)
ZZZZZZ	L341007.D	04/22/22 20:12	n/a	(unrelated sample)
ZZZZZZ	L341008.D	04/22/22 20:35	n/a	(unrelated sample)
ZZZZZZ	L341009.D	04/22/22 20:59	n/a	(unrelated sample)

MS Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
MoHui Huang
04/25/22 17:27

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\april 2022\04252022\vl10284\
Data File : l340992.d
Acq On : 22 Apr 2022 2:21 pm
Operator : nicoleh
Sample : jd43215-1 Inst : GCMSL
Misc : MS58320,VL10284,5,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 03:05:37 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	114005	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	266968	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	378705	50.00	ug/L	0.00
71) chlorobenzene-d5	7.312	117	307050	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	134730	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	267712	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	134748	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	113545	48.12	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.24%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	115799	51.77	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 103.54%			
72) toluene-d8 (s)	6.060	98	434383	51.70	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.40%			
95) 4-bromofluorobenzene (s)	8.393	95	138470	52.97	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.94%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.175	59	9617	35.01	ug/L #	21
24) methyl tert butyl ether	3.316	73	36099	4.65	ug/L	91
55) benzene	4.635	78	56001	6.15	ug/L	94
73) toluene	6.121	92	13589	2.34	ug/L	89
86) ethylbenzene	7.411	91	3176m	0.31	ug/L	
87) m,p-xylene	7.520	106	28011	6.96	ug/L	95
88) o-xylene	7.883	106	2105	0.51	ug/L #	52
92) isopropylbenzene	8.216	105	182018	18.18	ug/L	96

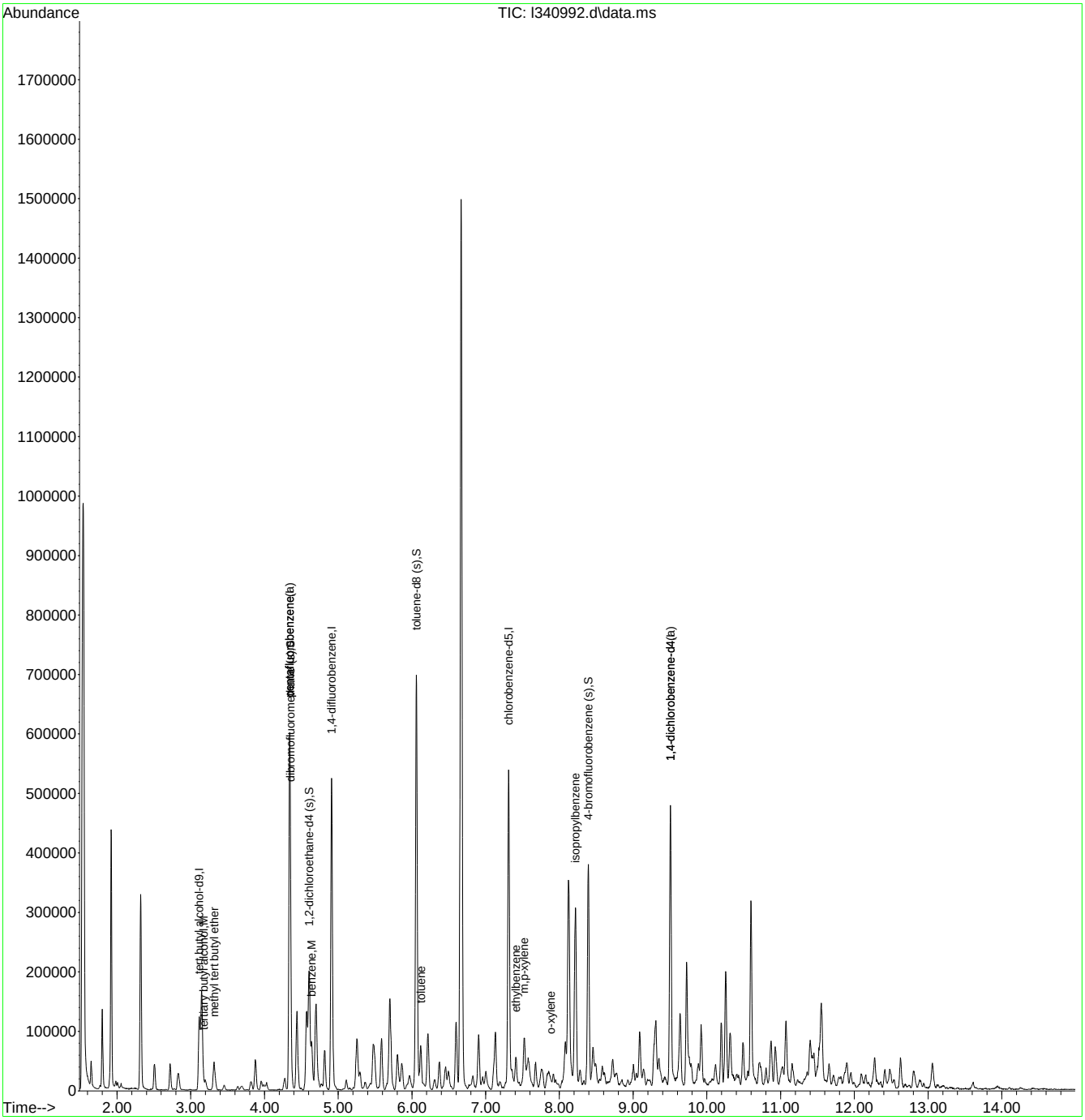
(#) = qualifier out of range (m) = manual integration (+) = signals summed

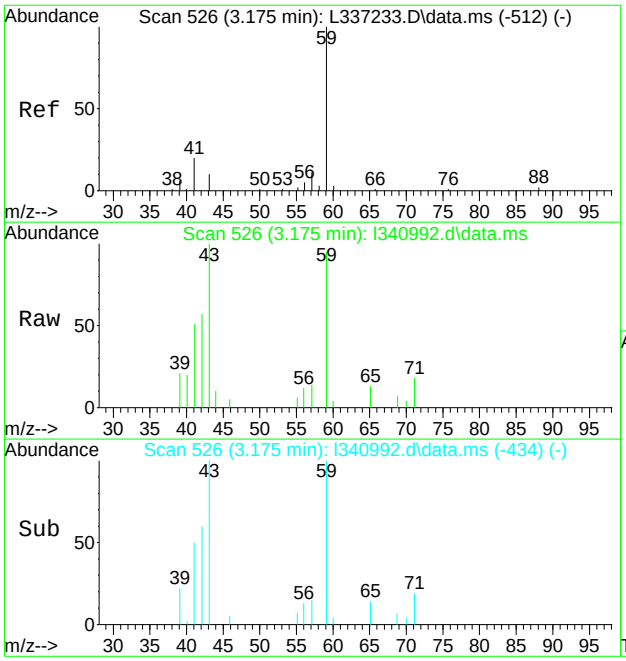
7.1.1
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\april 2022\04252022\vl10284\
Data File : l340992.d
Acq On : 22 Apr 2022 2:21 pm
Operator : nicoleh
Sample : jd43215-1 Inst : GCMSL
Misc : MS58320,VL10284,5,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 03:05:37 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

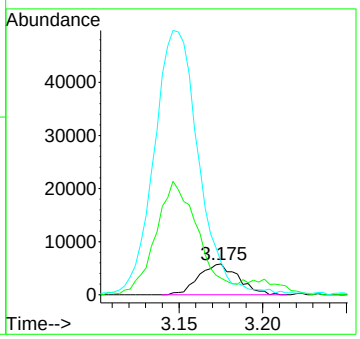


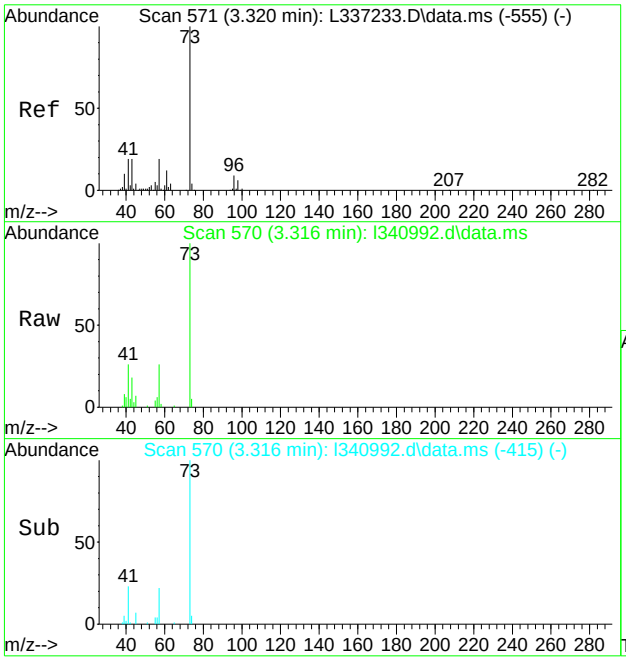


#4
tertiary butyl alcohol
Concen: 35.01 ug/L
RT: 3.175 min Scan# 526
Delta R.T. -0.006 min
Lab File: l340992.d
Acq: 22 Apr 2022 2:21 pm

Tgt Ion: 59 Resp: 9617

Ion	Ratio	Lower	Upper
59	100		
41	24.7	0.0	52.7
43	99.1	0.0	41.4#

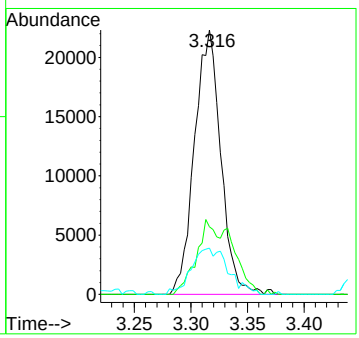


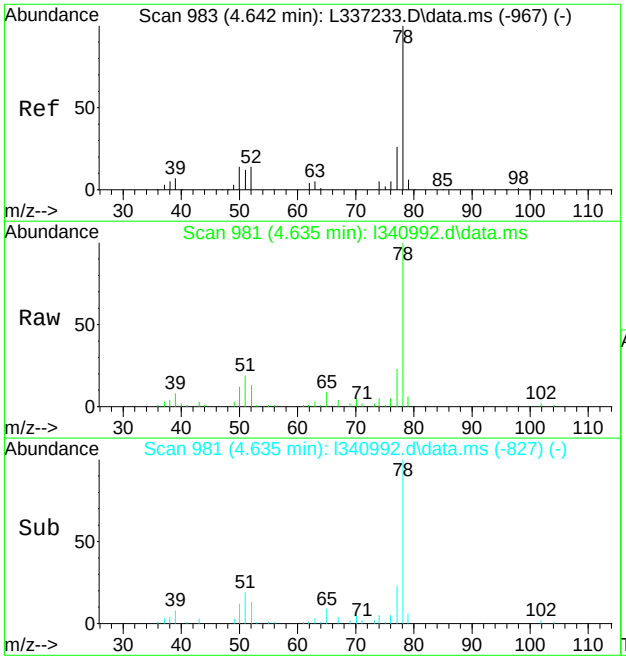


#24
methyl tert butyl ether
Concen: 4.65 ug/L
RT: 3.316 min Scan# 570
Delta R.T. -0.004 min
Lab File: l340992.d
Acq: 22 Apr 2022 2:21 pm

Tgt Ion: 73 Resp: 36099

Ion	Ratio	Lower	Upper
73	100		
57	25.6	0.0	48.6
43	17.5	0.0	49.1

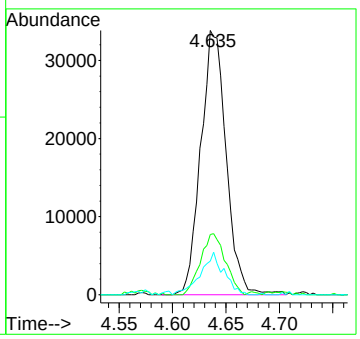


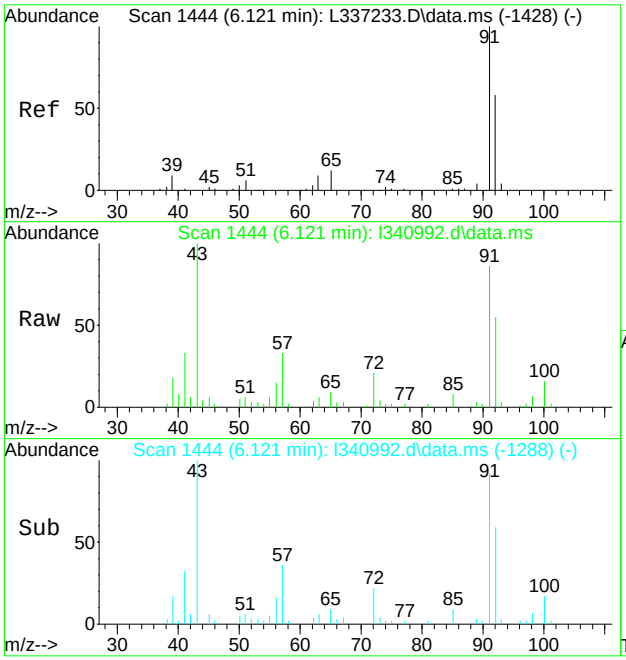


#55
benzene
Concen: 6.15 ug/L
RT: 4.635 min Scan# 981
Delta R.T. -0.007 min
Lab File: l340992.d
Acq: 22 Apr 2022 2:21 pm

Tgt Ion: 78 Resp: 56001

Ion	Ratio	Lower	Upper
78	100		
77	22.2	0.0	56.1
52	12.8	0.0	43.6

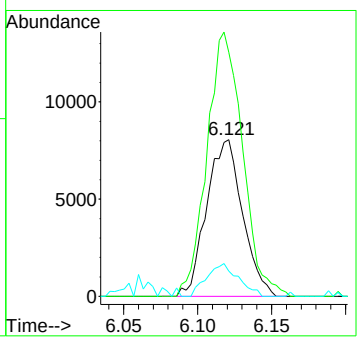


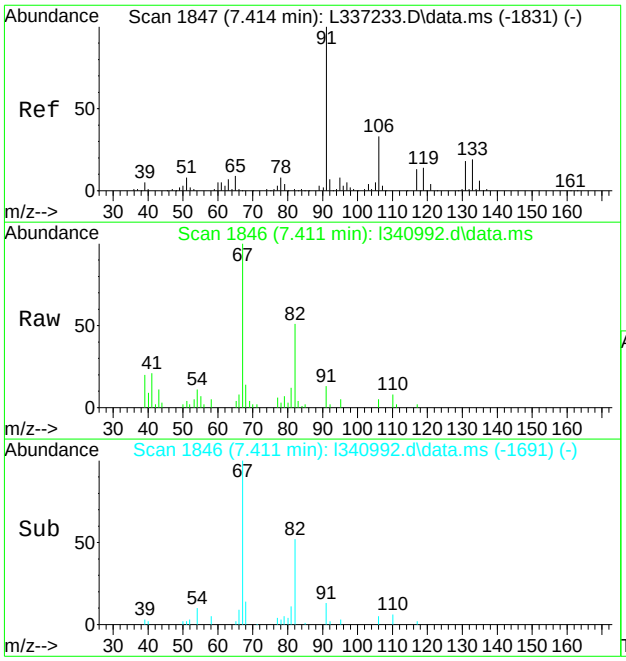


#73
toluene
Concen: 2.34 ug/L
RT: 6.121 min Scan# 1444
Delta R.T. 0.000 min
Lab File: l340992.d
Acq: 22 Apr 2022 2:21 pm

Tgt Ion: 92 Resp: 13589

Ion	Ratio	Lower	Upper
92	100		
91	155.7	141.2	201.2
65	16.1	0.0	50.5

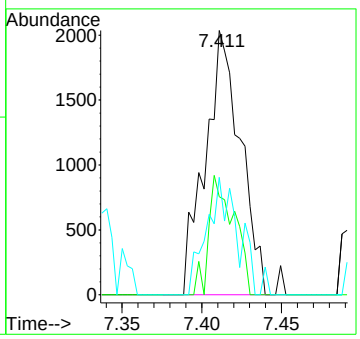


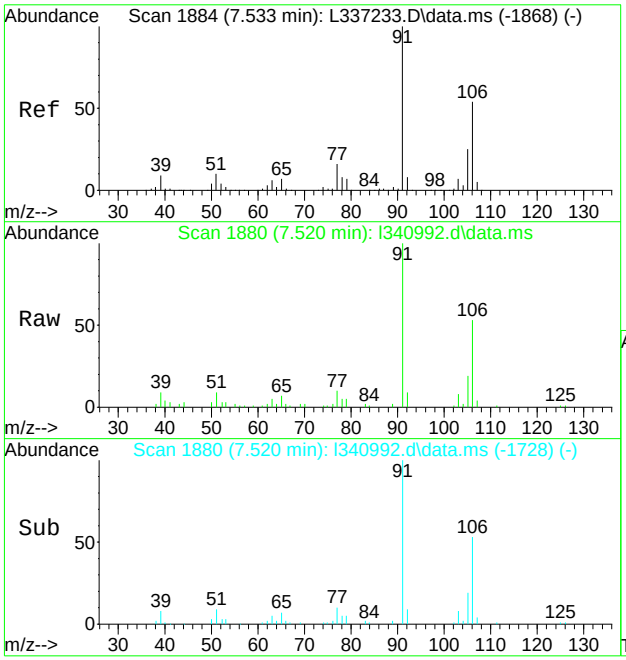


#86
ethylbenzene
Concen: 0.31 ug/L m
RT: 7.411 min Scan# 1846
Delta R.T. -0.003 min
Lab File: l340992.d
Acq: 22 Apr 2022 2:21 pm

Tgt Ion: 91 Resp: 3176

Ion	Ratio	Lower	Upper
91	100		
106	37.1	2.7	62.7
77	44.4	0.0	39.1#

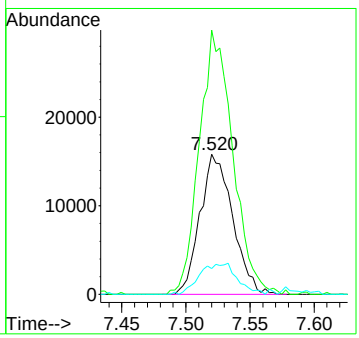


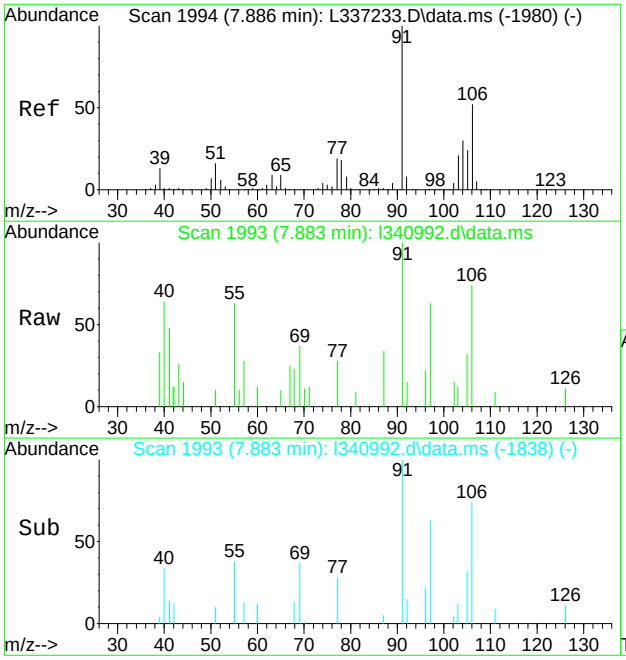


#87
m,p-xylene
Concen: 6.96 ug/L
RT: 7.520 min Scan# 1880
Delta R.T. -0.013 min
Lab File: l340992.d
Acq: 22 Apr 2022 2:21 pm

Tgt Ion:106 Resp: 28011

Ion	Ratio	Lower	Upper
106	100		
91	188.8	155.0	215.0
77	18.5	9.1	49.1

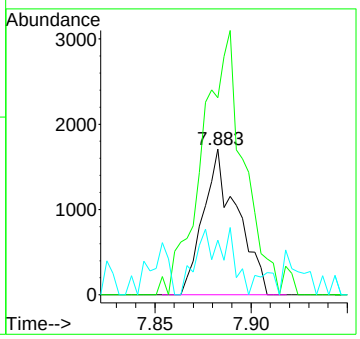


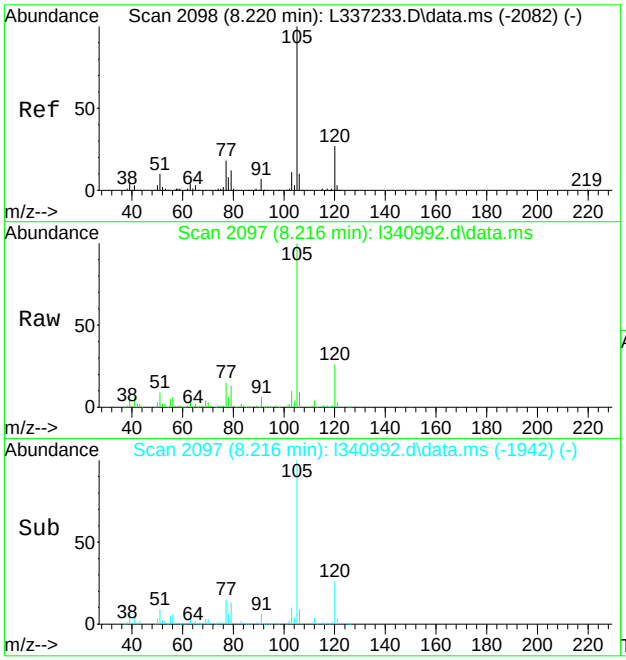


#88
o-xylene
Concen: 0.51 ug/L
RT: 7.883 min Scan# 1993
Delta R.T. -0.003 min
Lab File: l340992.d
Acq: 22 Apr 2022 2:21 pm

Tgt Ion:106 Resp: 2105

Ion	Ratio	Lower	Upper
106	100		
91	122.7	163.1	223.1#
77	6.9	17.5	57.5#

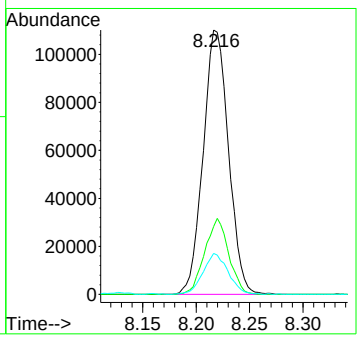




#92
isopropylbenzene
Concen: 18.18 ug/L
RT: 8.216 min Scan# 2097
Delta R.T. -0.004 min
Lab File: l340992.d
Acq: 22 Apr 2022 2:21 pm

Tgt Ion:105 Resp: 182018

Ion	Ratio	Lower	Upper
105	100		
120	25.6	7.2	47.2
77	15.5	0.0	38.3



Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340904.d
Acq On : 21 Apr 2022 1:21 am
Operator : nicoleh
Sample : jd43215-1 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,4
ALS Vial : 58 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:46:42 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

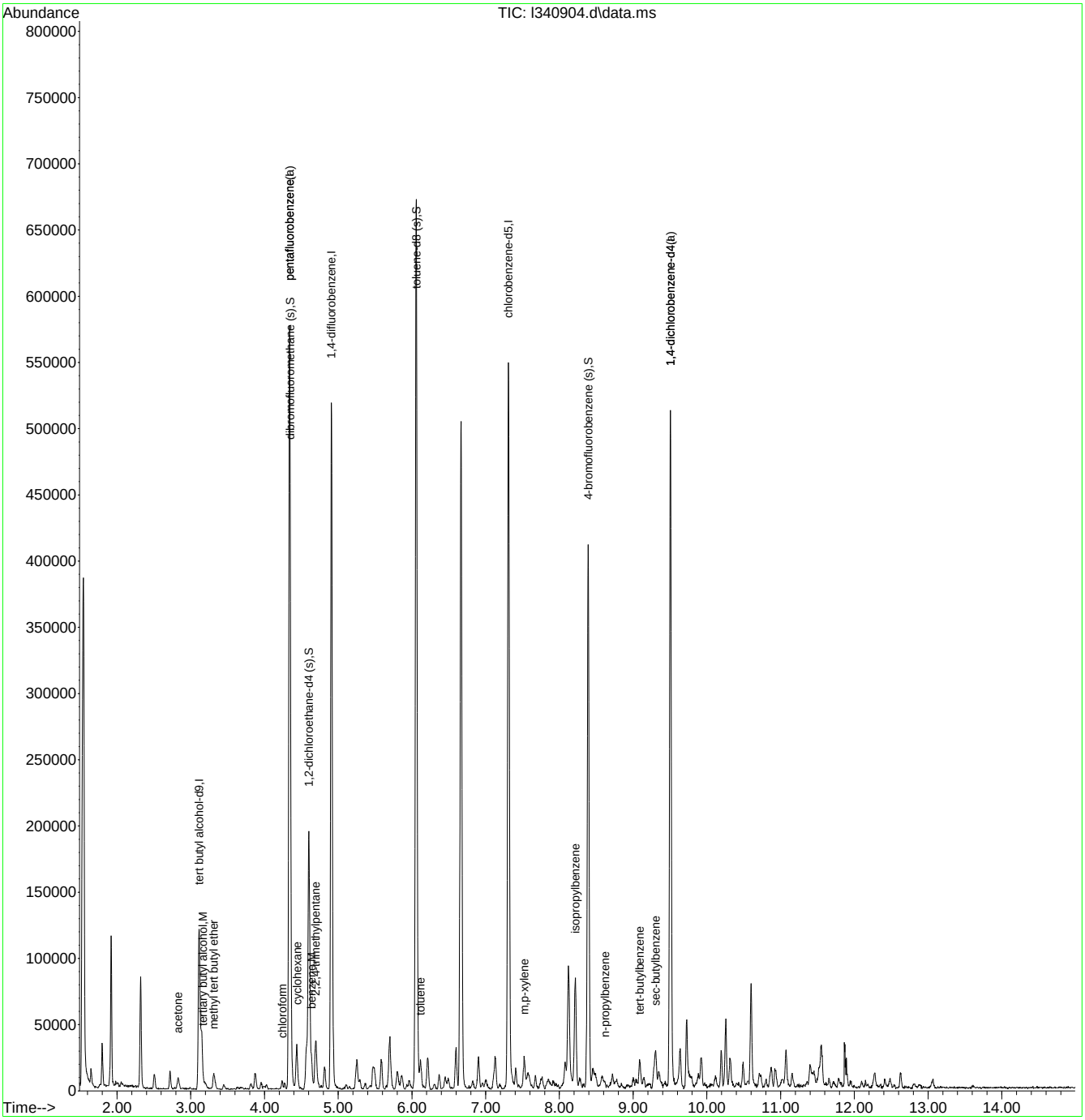
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	115784	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	252582	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.908	114	372491	50.00	ug/L	0.00
71) chlorobenzene-d5	7.308	117	319198	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	143474	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	254193	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	143476	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	109459	49.03	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.06%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	114110	51.87	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 103.74%			
72) toluene-d8 (s)	6.060	98	430044	49.24	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.48%			
95) 4-bromofluorobenzene (s)	8.390	95	148975	53.52	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.04%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.166	59	2777	9.95	ug/L	# 1
17) acetone	2.829	58	1865	8.60	ug/L	# 54
24) methyl tert butyl ether	3.310	73	9579	1.30	ug/L	91
41) chloroform	4.241	83	3722	0.80	ug/L	78
45) cyclohexane	4.443	84	4052	1.07	ug/L	90
53) 2,2,4-trimethylpentane	4.696	57	28808	4.57	ug/L	85
55) benzene	4.635	78	14178	1.58	ug/L	97
73) toluene	6.115	92	3565	0.59	ug/L	89
87) m,p-xylene	7.523	106	7420	1.77	ug/L	95
92) isopropylbenzene	8.216	105	50116	4.82	ug/L	96
100) n-propylbenzene	8.618	91	4397	0.36	ug/L	94
104) tert-butylbenzene	9.086	119	6449	0.89	ug/L	89
106) sec-butylbenzene	9.304	105	18720	1.78	ug/L	87

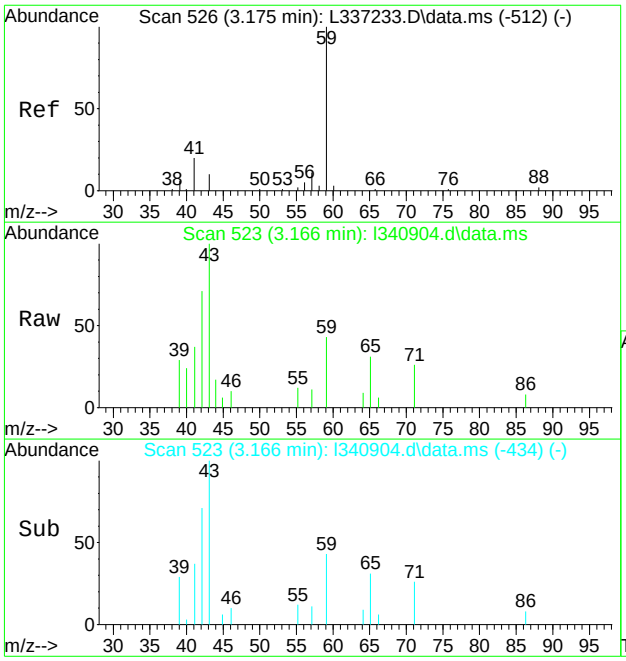
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340904.d
Acq On : 21 Apr 2022 1:21 am
Operator : nicoleh
Sample : jd43215-1 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,4
ALS Vial : 58 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:46:42 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

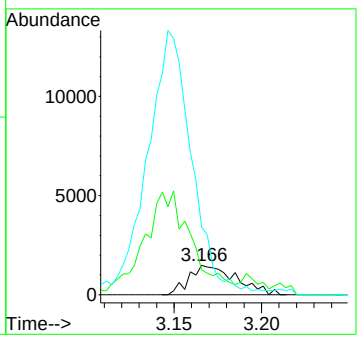


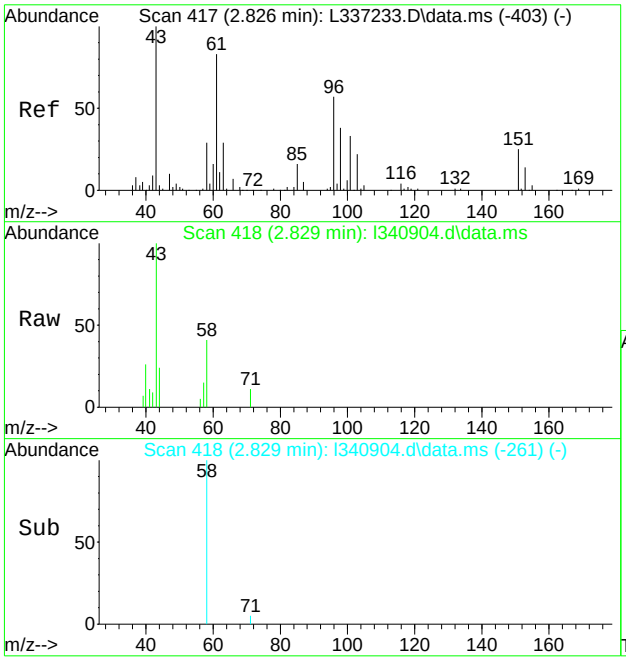


#4
tertiary butyl alcohol
Concen: 9.95 ug/L
RT: 3.166 min Scan# 523
Delta R.T. -0.015 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 59 Resp: 2777

Ion	Ratio	Lower	Upper
59	100		
41	60.8	0.0	52.7#
43	217.2	0.0	41.4#

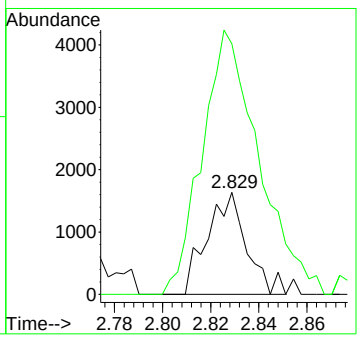


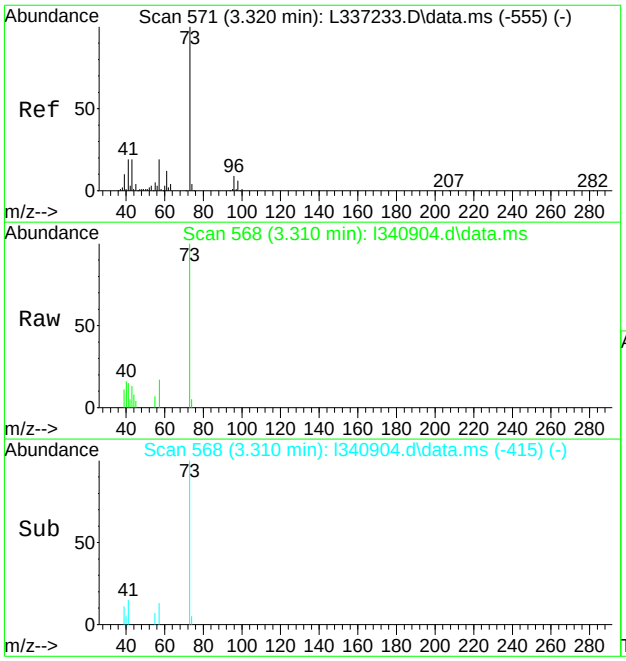


#17
acetone
Concen: 8.60 ug/L
RT: 2.829 min Scan# 418
Delta R.T. 0.003 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 58 Resp: 1865

Ion	Ratio	Lower	Upper
58	100		
43	245.1	314.0	374.0#

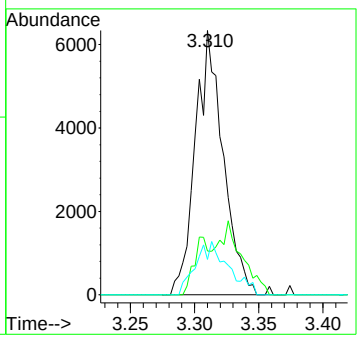


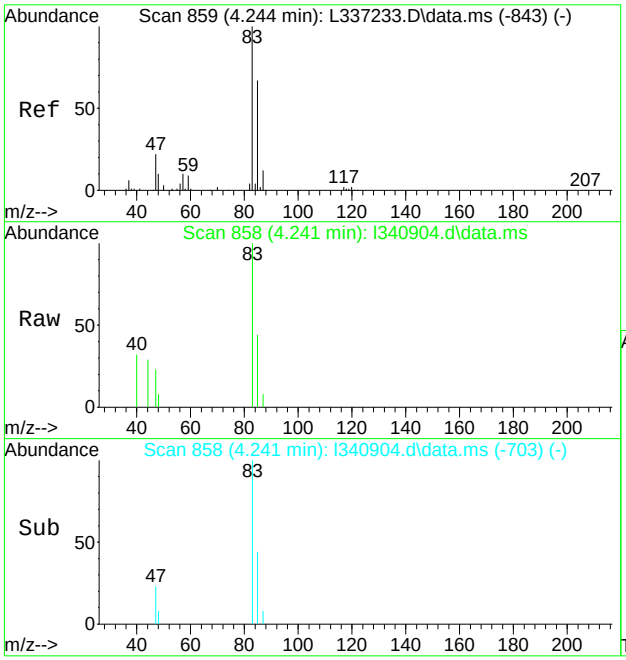


#24
methyl tert butyl ether
Concen: 1.30 ug/L
RT: 3.310 min Scan# 568
Delta R.T. -0.010 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 73 Resp: 9579

Ion	Ratio	Lower	Upper
73	100		
57	16.5	0.0	48.6
43	13.4	0.0	49.1

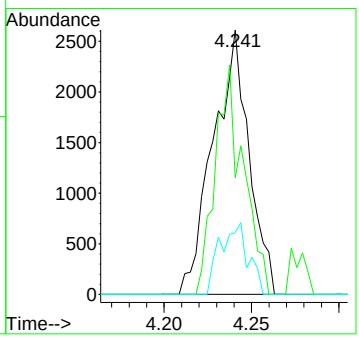


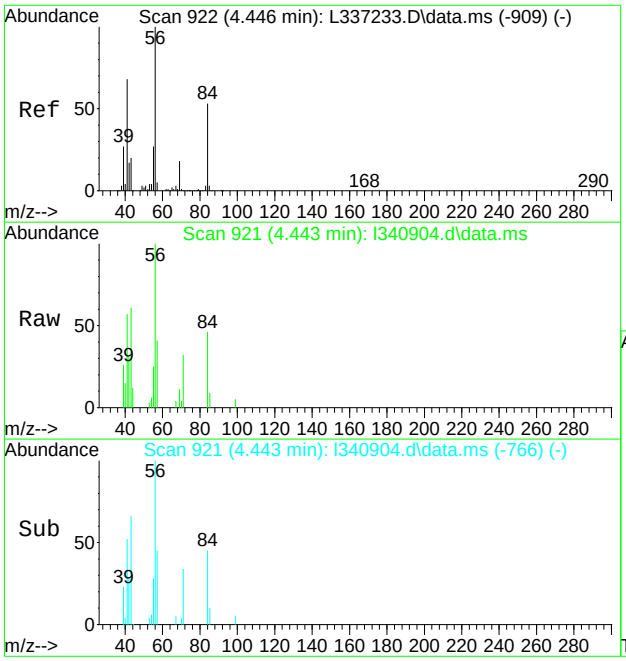


#41
chloroform
Concen: 0.80 ug/L
RT: 4.241 min Scan# 858
Delta R.T. -0.003 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 83 Resp: 3722

Ion	Ratio	Lower	Upper
83	100		
85	44.1	36.9	96.9
47	23.4	0.0	55.7

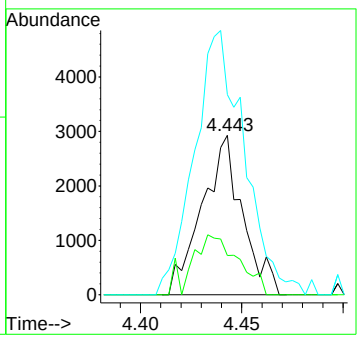


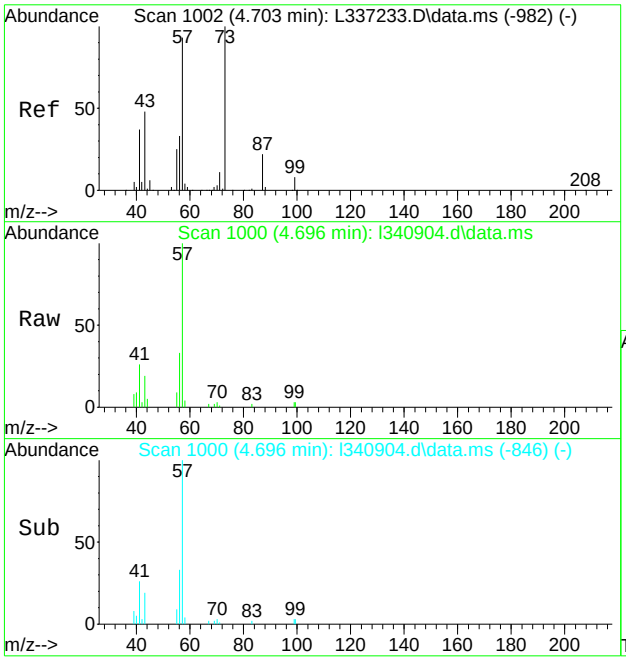


#45
cyclohexane
Concen: 1.07 ug/L
RT: 4.443 min Scan# 921
Delta R.T. -0.003 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 84 Resp: 4052

Ion	Ratio	Lower	Upper
84	100		
69	24.7	14.0	54.0
41	117.4	107.6	147.6

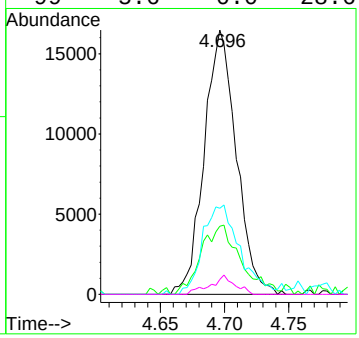


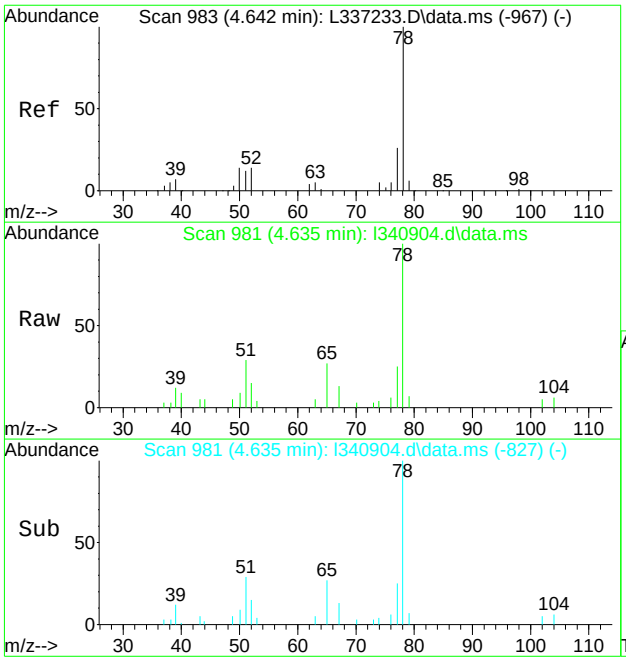


#53
2,2,4-trimethylpentane
Concen: 4.57 ug/L
RT: 4.696 min Scan# 1000
Delta R.T. -0.007 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 57 Resp: 28808

Ion	Ratio	Lower	Upper
57	100		
41	24.2	19.8	59.8
56	32.6	15.8	55.8
99	5.6	0.0	28.6

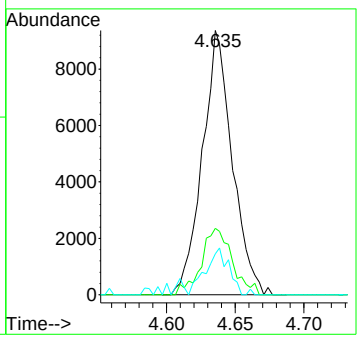


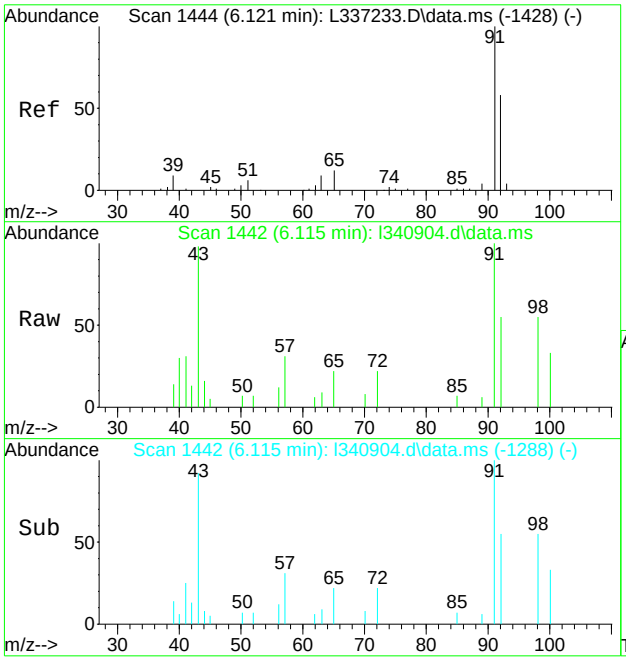


#55
benzene
Concen: 1.58 ug/L
RT: 4.635 min Scan# 981
Delta R.T. -0.007 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 78 Resp: 14178

Ion	Ratio	Lower	Upper
78	100		
77	25.2	0.0	56.1
52	15.5	0.0	43.6

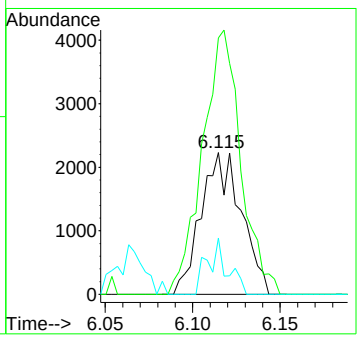


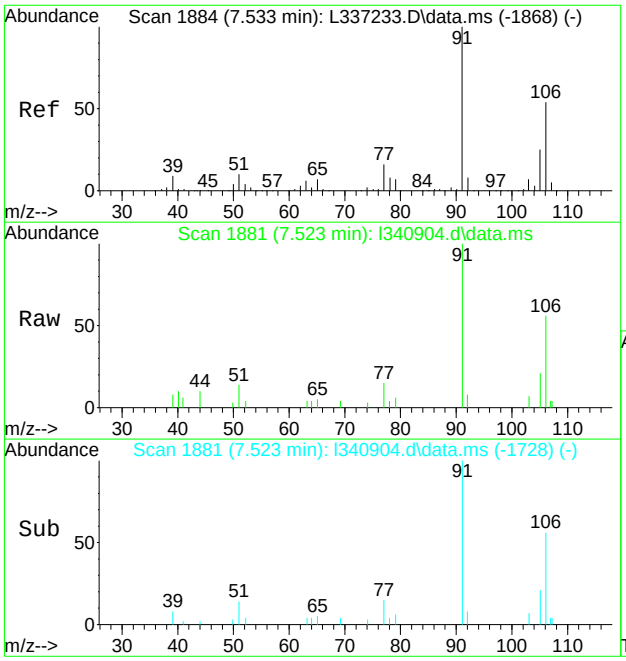


#73
toluene
Concen: 0.59 ug/L
RT: 6.115 min Scan# 1442
Delta R.T. -0.006 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 92 Resp: 3565

Ion	Ratio	Lower	Upper
92	100		
91	180.6	141.2	201.2
65	39.7	0.0	50.5

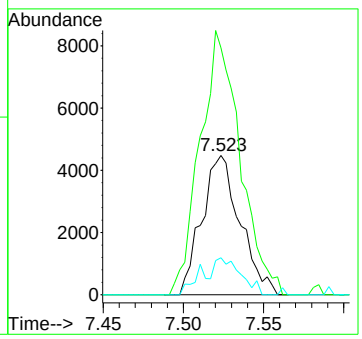


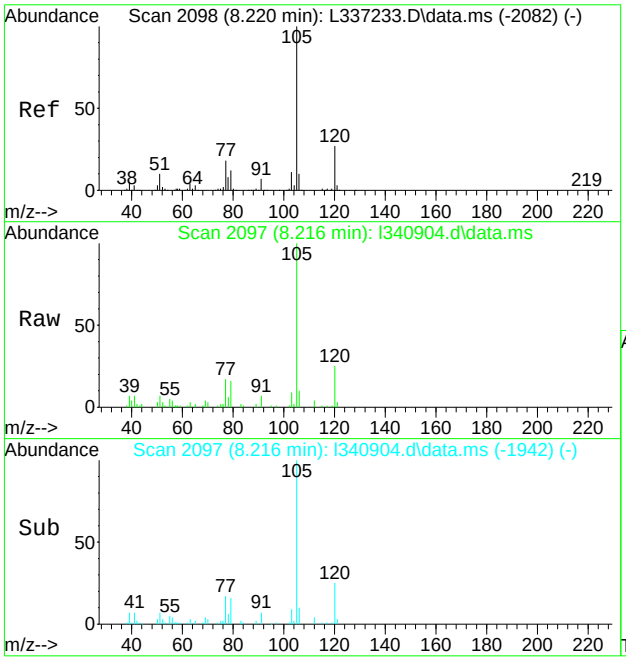


#87
m,p-xylene
Concen: 1.77 ug/L
RT: 7.523 min Scan# 1881
Delta R.T. -0.010 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion:106 Resp: 7420

Ion	Ratio	Lower	Upper
106	100		
91	177.1	155.0	215.0
77	26.5	9.1	49.1

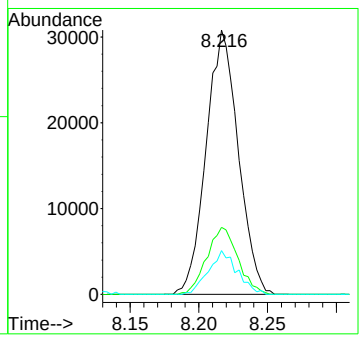


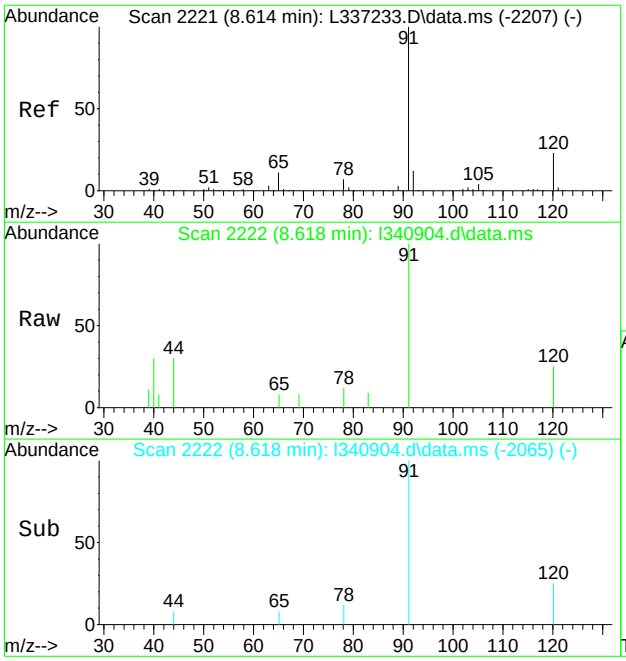


#92
isopropylbenzene
Concen: 4.82 ug/L
RT: 8.216 min Scan# 2097
Delta R.T. -0.004 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion:105 Resp: 50116

Ion	Ratio	Lower	Upper
105	100		
120	25.3	7.2	47.2
77	16.6	0.0	38.3

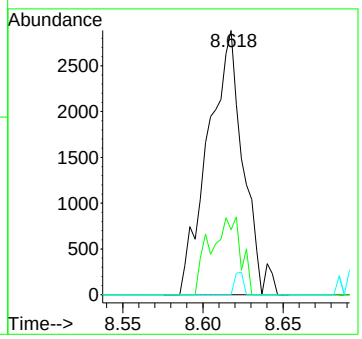


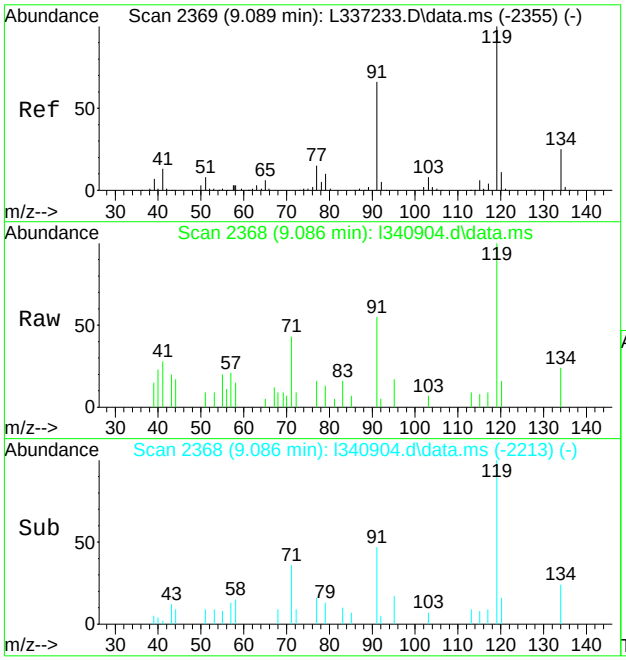


#100
n-propylbenzene
Concen: 0.36 ug/L
RT: 8.618 min Scan# 2222
Delta R.T. 0.004 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion: 91 Resp: 4397

Ion	Ratio	Lower	Upper
91	100		
120	24.6	0.0	52.6
105	0.0	0.0	34.3

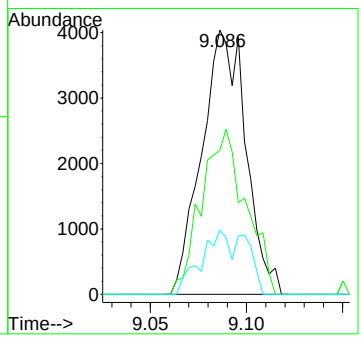


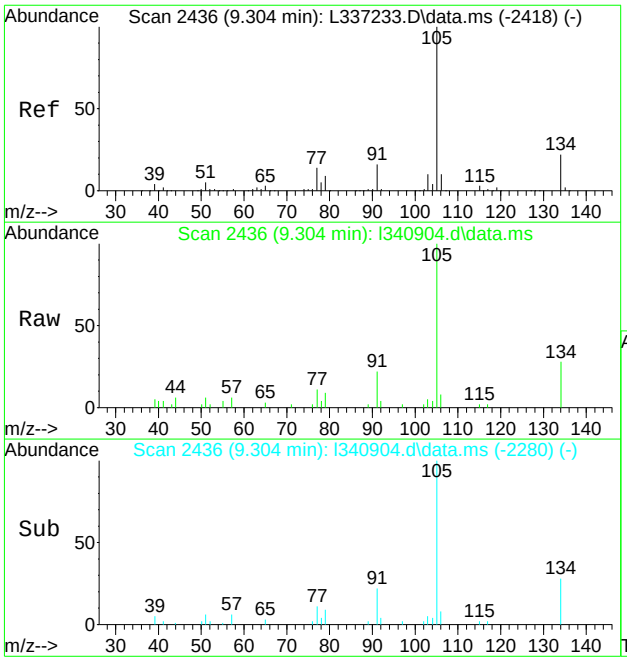


#104
tert-butylbenzene
Concen: 0.89 ug/L
RT: 9.086 min Scan# 2368
Delta R.T. -0.003 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion:119 Resp: 6449

Ion	Ratio	Lower	Upper
119	100		
91	54.5	35.7	95.7
134	24.4	0.0	54.9

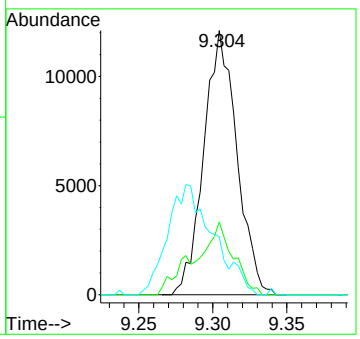




#106
sec-butylbenzene
Concen: 1.78 ug/L
RT: 9.304 min Scan# 2436
Delta R.T. 0.000 min
Lab File: l340904.d
Acq: 21 Apr 2022 1:21 am

Tgt Ion:105 Resp: 18720

Ion	Ratio	Lower	Upper
105	100		
134	27.5	0.0	51.6
91	21.9	0.0	45.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340910.d
Acq On : 21 Apr 2022 3:42 am
Operator : nicoleh
Sample : jd43215-2 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 64 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 19:16:12 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

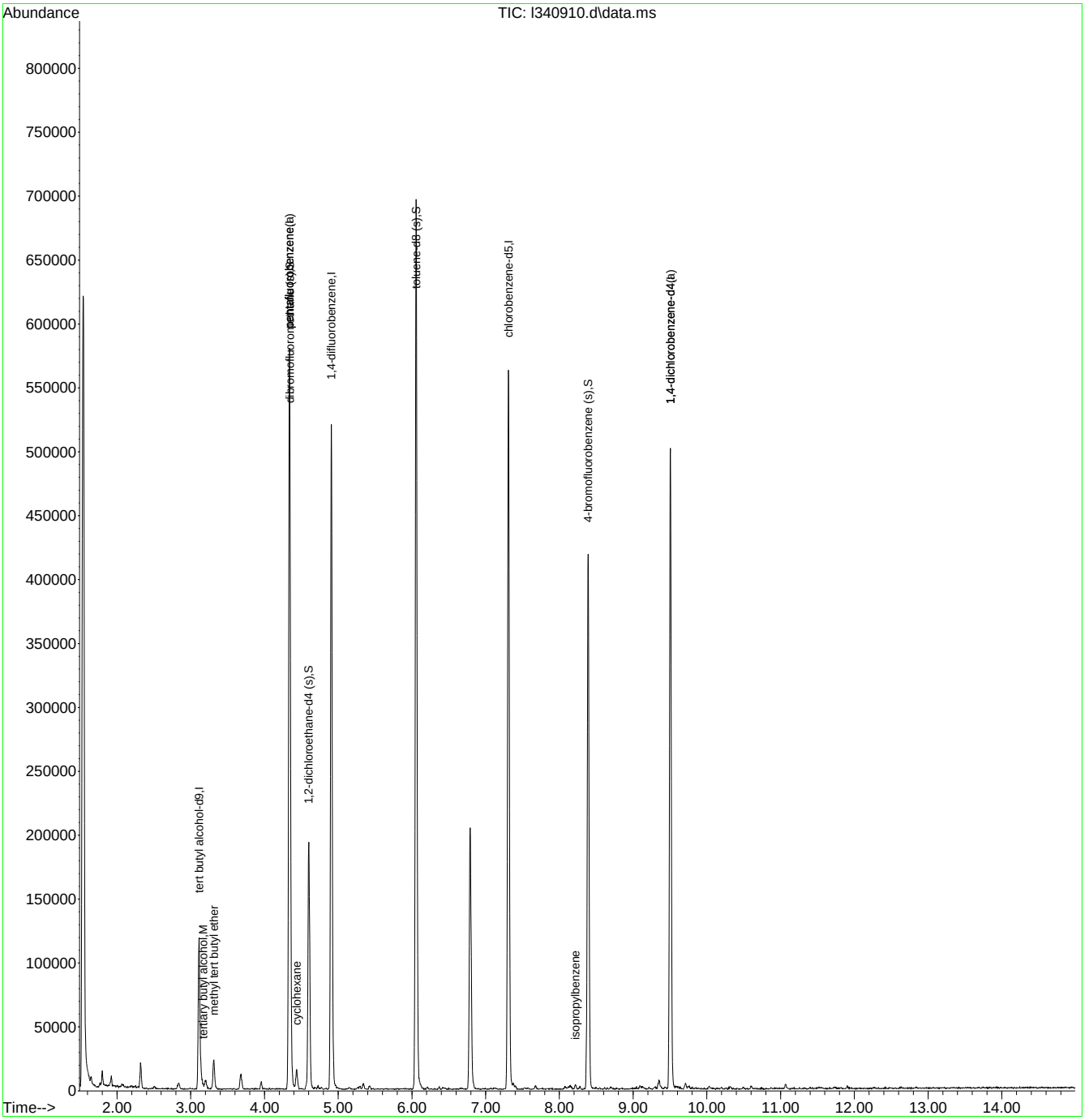
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	109712	500.00	ug/L	0.00
5) pentafluorobenzene	4.337	168	253316	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.908	114	377043	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	318497	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	142793	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.337	168	253009	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.506	152	142792	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.346	113	110251	49.24	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.48%			
51) 1,2-dichloroethane-d4 (s)	4.600	65	113124	50.80	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 101.60%			
72) toluene-d8 (s)	6.057	98	435358	49.95	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.90%			
95) 4-bromofluorobenzene (s)	8.386	95	153118	55.27	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 110.54%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.169	59	1246	4.71	ug/L #	33
24) methyl tert butyl ether	3.313	73	18149	2.47	ug/L	94
45) cyclohexane	4.436	84	4972	1.31	ug/L #	45
92) isopropylbenzene	8.216	105	2253	0.22	ug/L	93

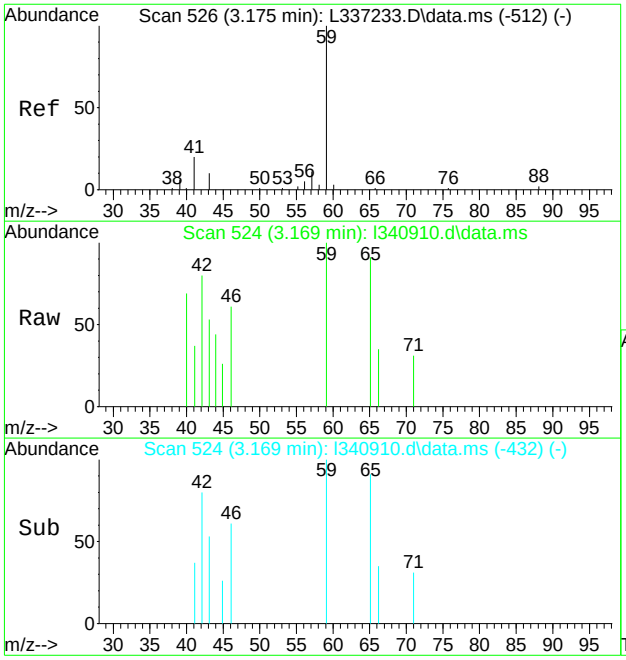
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340910.d
Acq On : 21 Apr 2022 3:42 am
Operator : nicoleh
Sample : jd43215-2 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 64 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 19:16:12 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

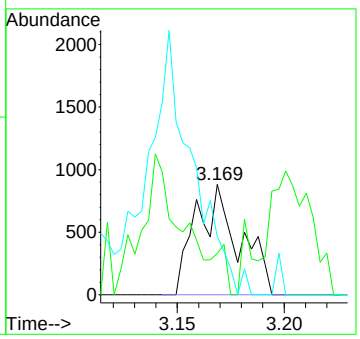


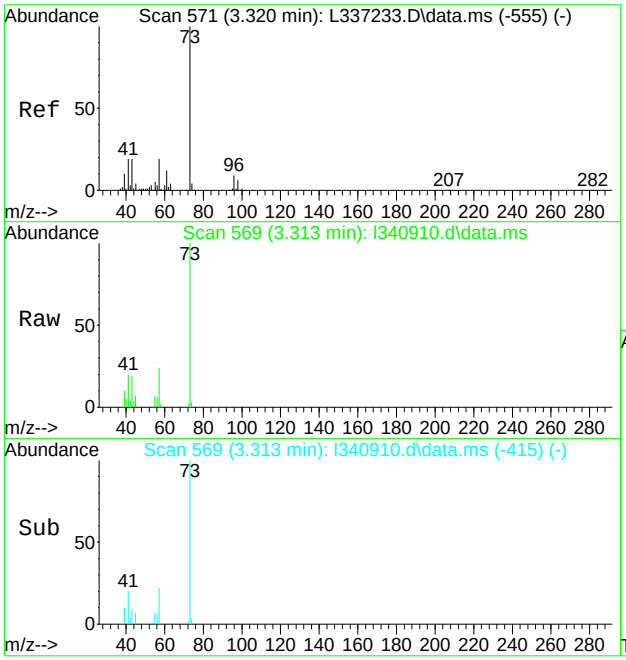


#4
tertiary butyl alcohol
Concen: 4.71 ug/L
RT: 3.169 min Scan# 524
Delta R.T. -0.006 min
Lab File: l340910.d
Acq: 21 Apr 2022 3:42 am

Tgt Ion: 59 Resp: 1246

Ion	Ratio	Lower	Upper
59	100		
41	0.0	0.0	52.7
43	52.8	0.0	41.4#

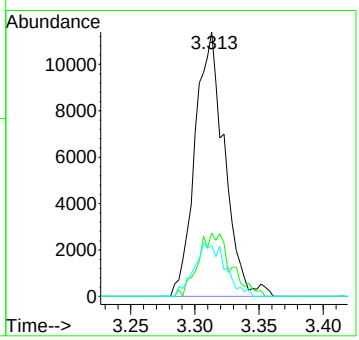


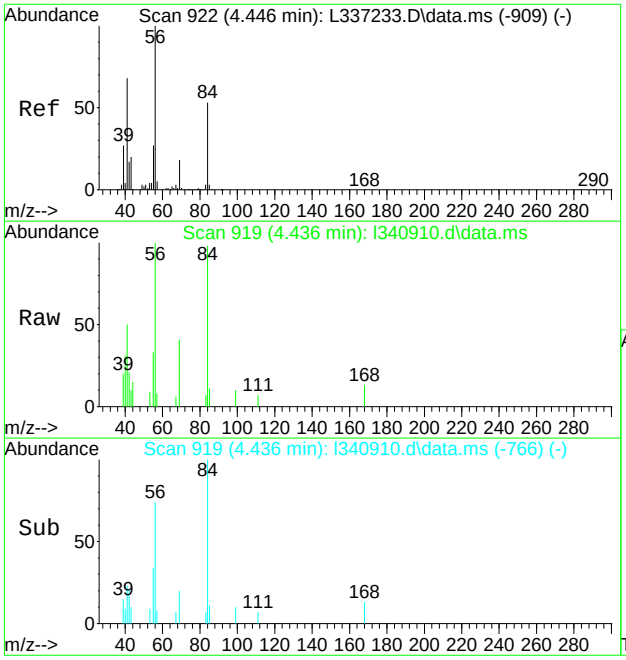


#24
methyl tert butyl ether
Concen: 2.47 ug/L
RT: 3.313 min Scan# 569
Delta R.T. -0.007 min
Lab File: l340910.d
Acq: 21 Apr 2022 3:42 am

Tgt Ion: 73 Resp: 18149

Ion	Ratio	Lower	Upper
73	100		
57	23.8	0.0	48.6
43	19.3	0.0	49.1

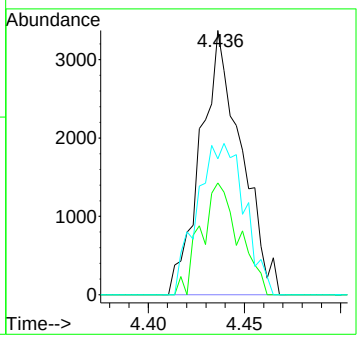


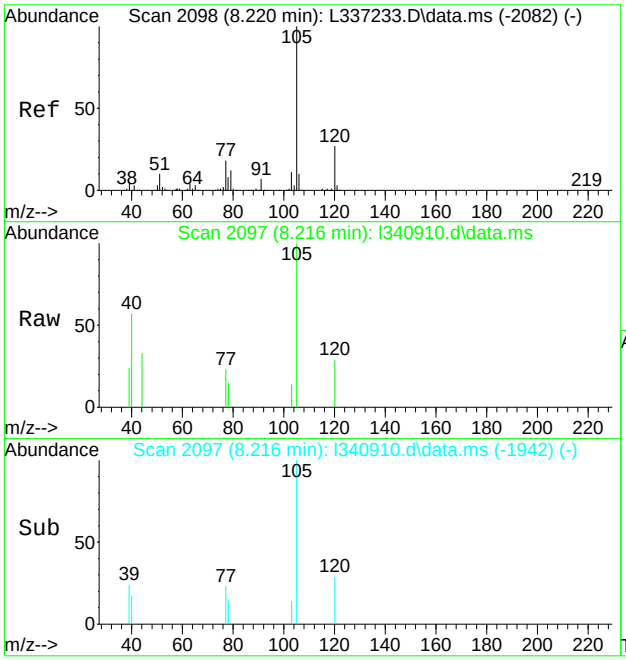


#45
cyclohexane
Concen: 1.31 ug/L
RT: 4.436 min Scan# 919
Delta R.T. -0.010 min
Lab File: l340910.d
Acq: 21 Apr 2022 3:42 am

Tgt Ion: 84 Resp: 4972

Ion	Ratio	Lower	Upper
84	100		
69	42.3	14.0	54.0
41	51.4	107.6	147.6#

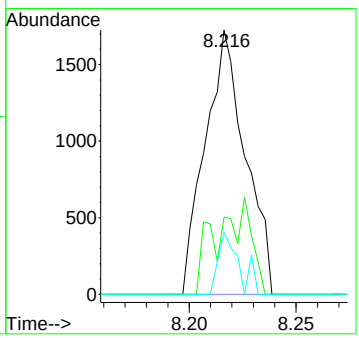




#92
isopropylbenzene
Concen: 0.22 ug/L
RT: 8.216 min Scan# 2097
Delta R.T. -0.004 min
Lab File: l340910.d
Acq: 21 Apr 2022 3:42 am

Tgt Ion:105 Resp: 2253

Ion	Ratio	Lower	Upper
105	100		
120	29.3	7.2	47.2
77	23.4	0.0	38.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340911.d
Acq On : 21 Apr 2022 4:05 am
Operator : nicoleh
Sample : jd43215-3 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 65 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:29:28 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

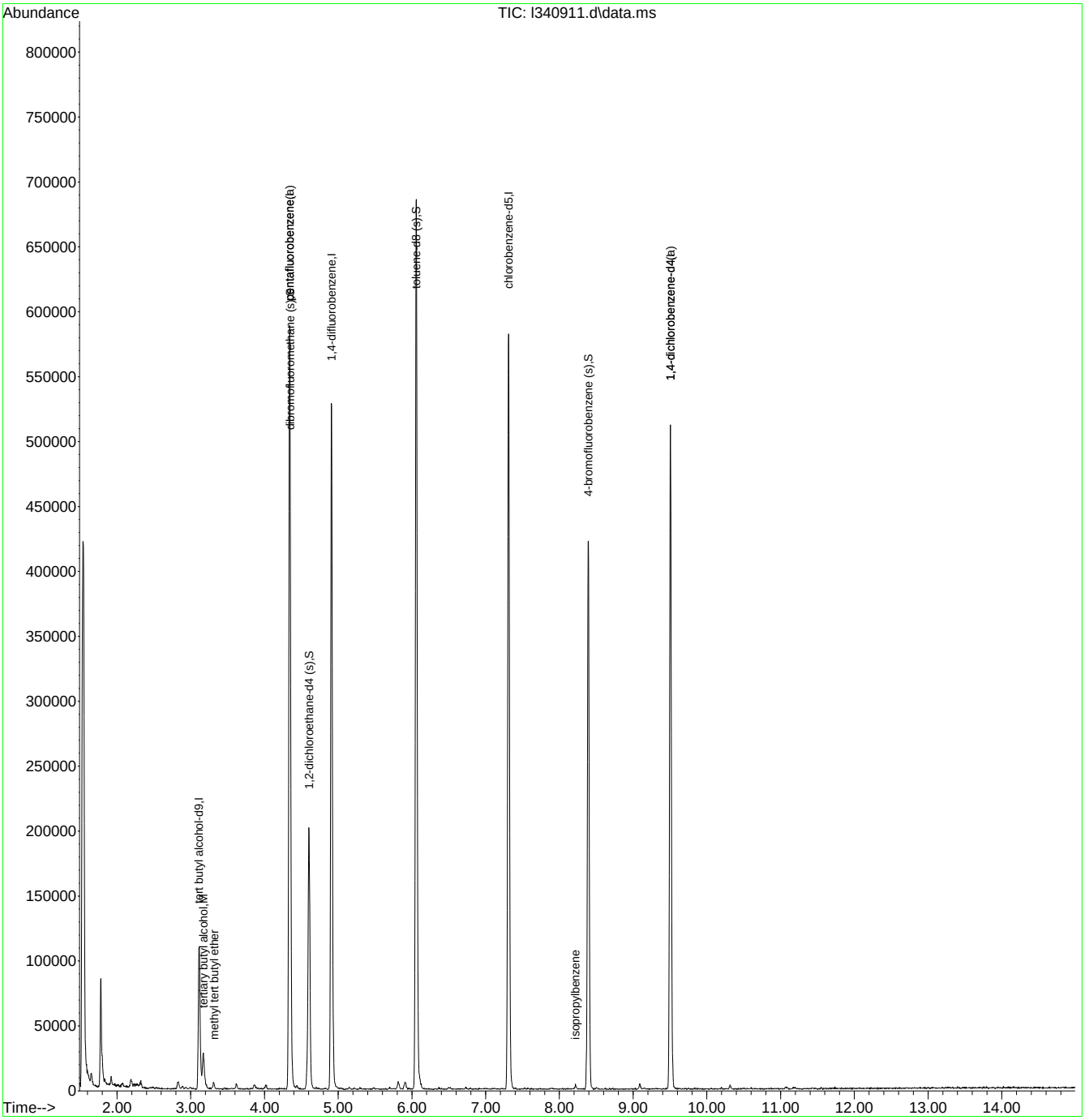
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.111	65	107435	500.00	ug/L	-0.01
5) pentafluorobenzene	4.340	168	256727	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	381828	50.00	ug/L	0.00
71) chlorobenzene-d5	7.312	117	332685	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	147078	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	256041	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	147135	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	112173	49.43	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.86%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	117308	52.02	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 104.04%			
72) toluene-d8 (s)	6.057	98	444143	48.79	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.58%			
95) 4-bromofluorobenzene (s)	8.393	95	153556	53.81	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.62%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.172	59	22797	88.07	ug/L	91
24) methyl tert butyl ether	3.316	73	3725	0.50	ug/L	90
92) isopropylbenzene	8.216	105	2199	0.20	ug/L	79

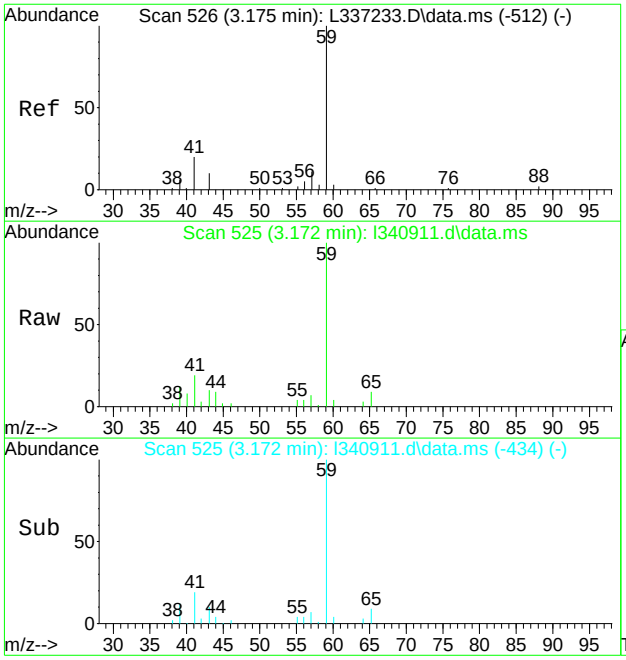
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340911.d
Acq On : 21 Apr 2022 4:05 am
Operator : nicoleh
Sample : jd43215-3 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 65 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:29:28 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

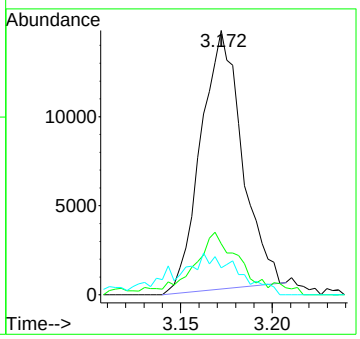


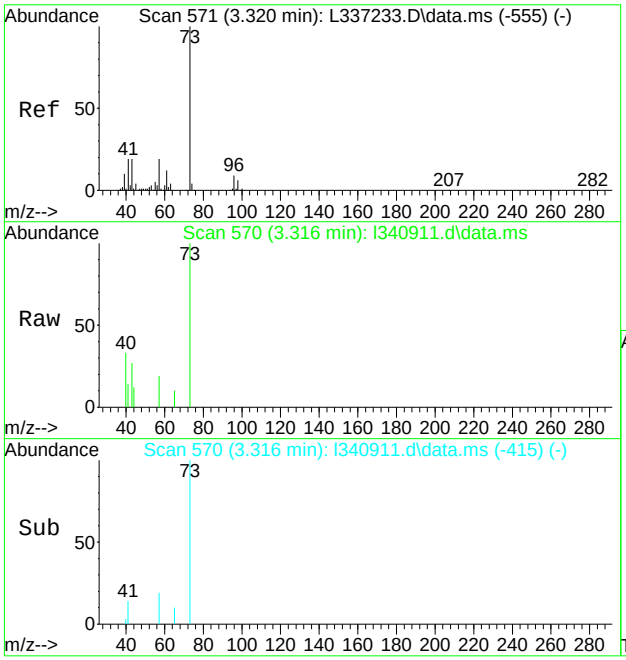


#4
tertiary butyl alcohol
Concen: 88.07 ug/L
RT: 3.172 min Scan# 525
Delta R.T. -0.009 min
Lab File: l340911.d
Acq: 21 Apr 2022 4:05 am

Tgt Ion: 59 Resp: 22797

Ion	Ratio	Lower	Upper
59	100		
41	17.1	0.0	52.7
43	10.2	0.0	41.4

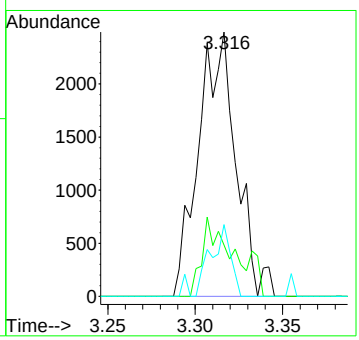


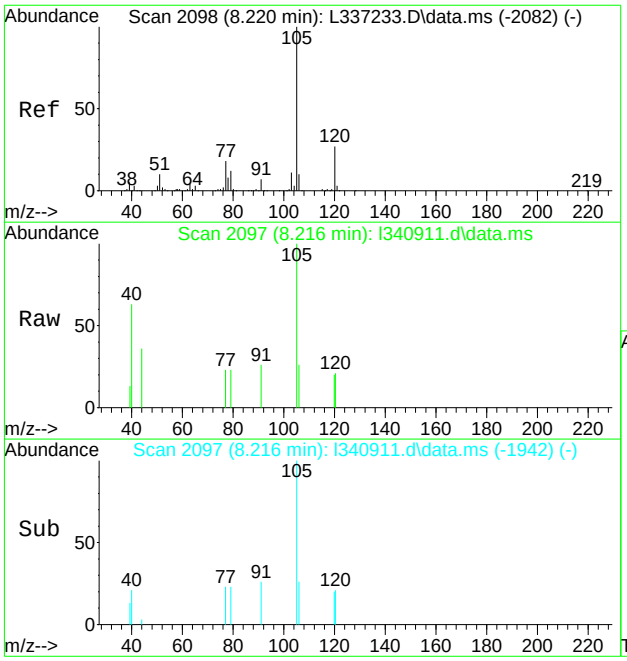


#24
methyl tert butyl ether
Concen: 0.50 ug/L
RT: 3.316 min Scan# 570
Delta R.T. -0.004 min
Lab File: l340911.d
Acq: 21 Apr 2022 4:05 am

Tgt Ion: 73 Resp: 3725

Ion	Ratio	Lower	Upper
73	100		
57	19.4	0.0	48.6
43	27.1	0.0	49.1

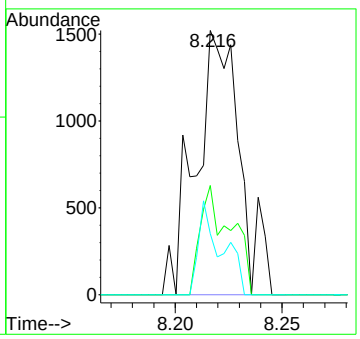




#92
isopropylbenzene
Concen: 0.20 ug/L
RT: 8.216 min Scan# 2097
Delta R.T. -0.004 min
Lab File: l340911.d
Acq: 21 Apr 2022 4:05 am

Tgt Ion:105 Resp: 2199

Ion	Ratio	Lower	Upper
105	100		
120	41.3	7.2	47.2
77	23.1	0.0	38.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340912.d
Acq On : 21 Apr 2022 4:29 am
Operator : nicoleh
Sample : jd43215-4 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 66 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:30:12 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

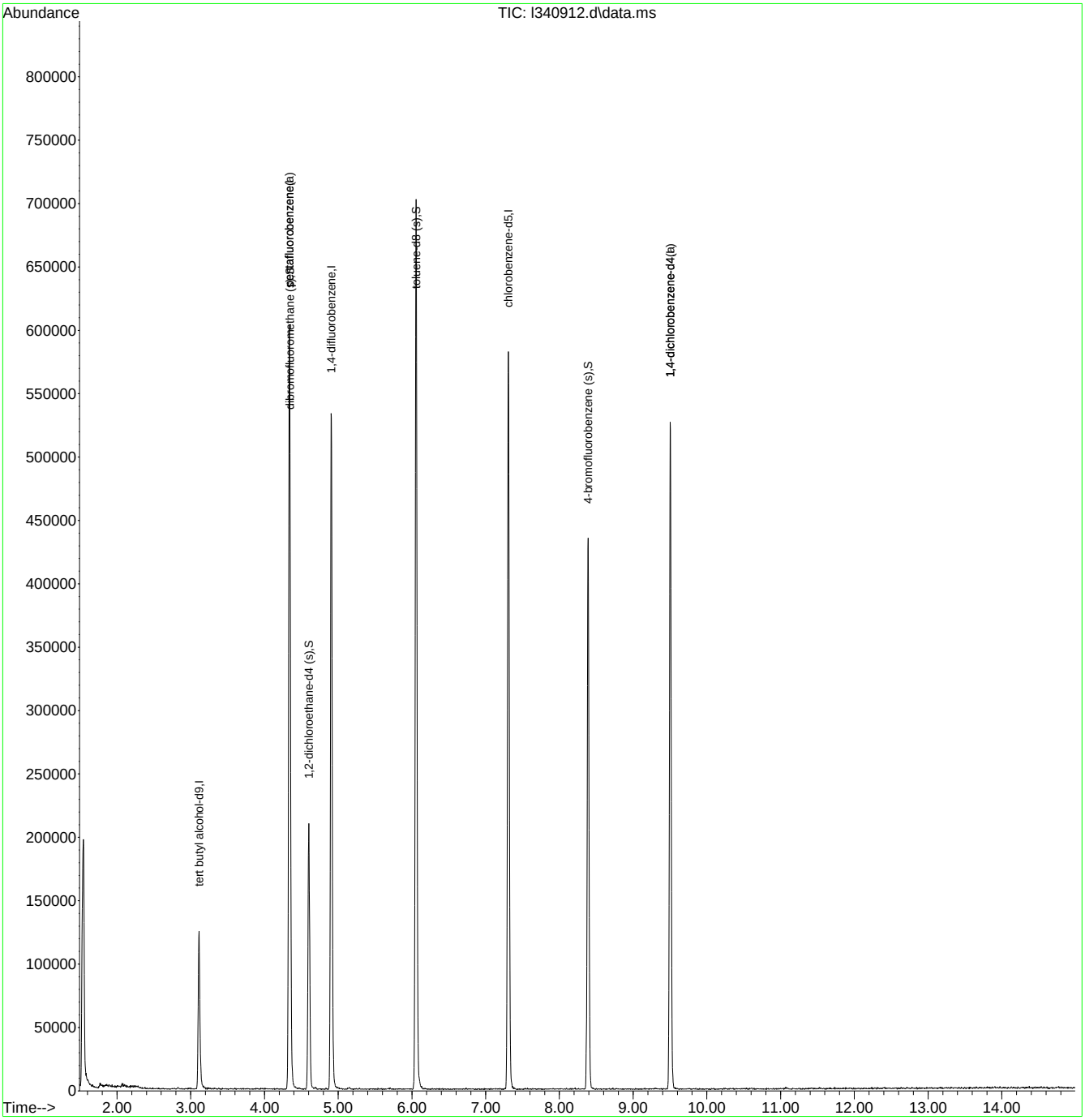
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	115449	500.00	ug/L	0.00
5) pentafluorobenzene	4.337	168	264821	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.908	114	391330	50.00	ug/L	0.00
71) chlorobenzene-d5	7.308	117	340036	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.503	152	148399	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.337	168	264698	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.503	152	148486	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.346	113	114492	48.91	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.82%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	120281	52.04	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 104.08%			
72) toluene-d8 (s)	6.057	98	450904	48.46	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.92%			
95) 4-bromofluorobenzene (s)	8.386	95	158553	55.07	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 110.14%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340912.d
Acq On : 21 Apr 2022 4:29 am
Operator : nicoleh
Sample : jd43215-4 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 66 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:30:12 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340921.d
Acq On : 21 Apr 2022 8:00 am
Operator : nicoleh
Sample : jd43215-5 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 75 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:50:07 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

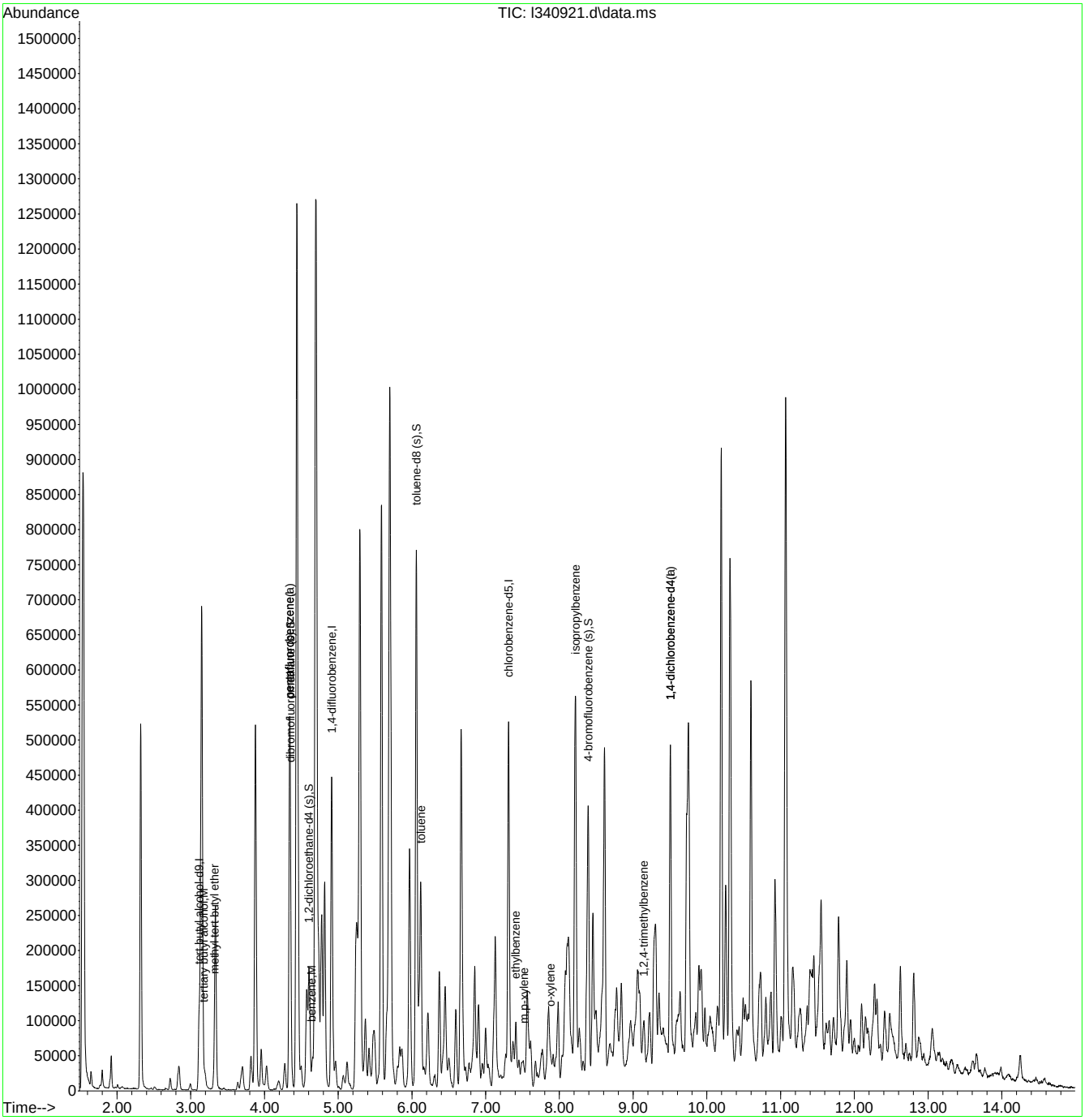
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	108534	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	228225	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.914	114	315813	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	285123	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	126260	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	227388	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	126275	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	98596	48.87	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.74%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	97427	52.23	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 104.46%			
72) toluene-d8 (s)	6.060	98	371884	47.67	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.34%			
95) 4-bromofluorobenzene (s)	8.390	95	130952	53.46	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.92%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.175	59	4697	17.96	ug/L	# 1
24) methyl tert butyl ether	3.320	73	15721	2.37	ug/L	# 1
55) benzene	4.638	78	7721	1.02	ug/L	97
73) toluene	6.121	92	7114	1.32	ug/L	# 69
86) ethylbenzene	7.408	91	6122	0.64	ug/L	78
87) m,p-xylene	7.520	106	4509	1.21	ug/L	# 71
88) o-xylene	7.879	106	3409	0.89	ug/L	# 78
92) isopropylbenzene	8.220	105	355023	38.19	ug/L	97
105) 1,2,4-trimethylbenzene	9.144	105	5390	0.70	ug/L	95

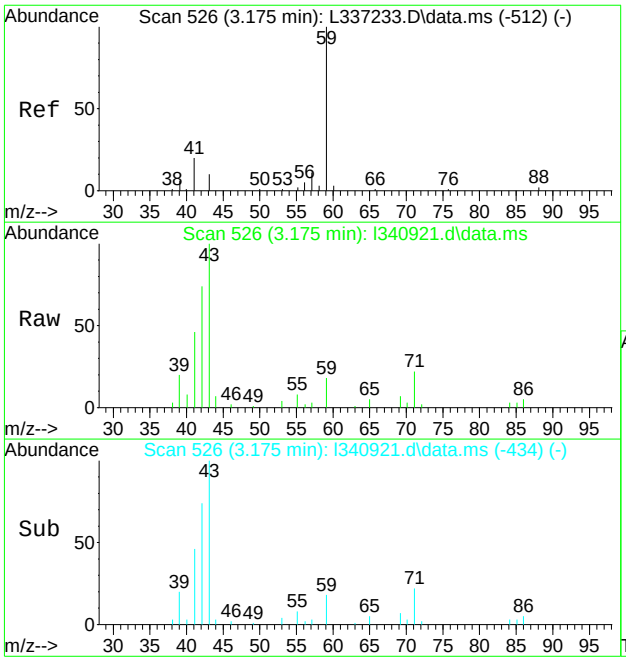
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340921.d
Acq On : 21 Apr 2022 8:00 am
Operator : nicoleh
Sample : jd43215-5 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 75 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:50:07 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

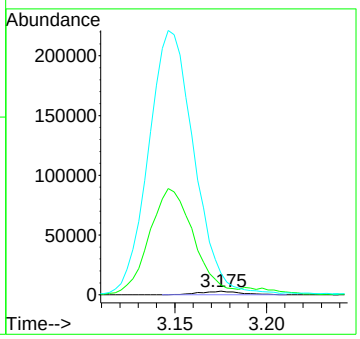


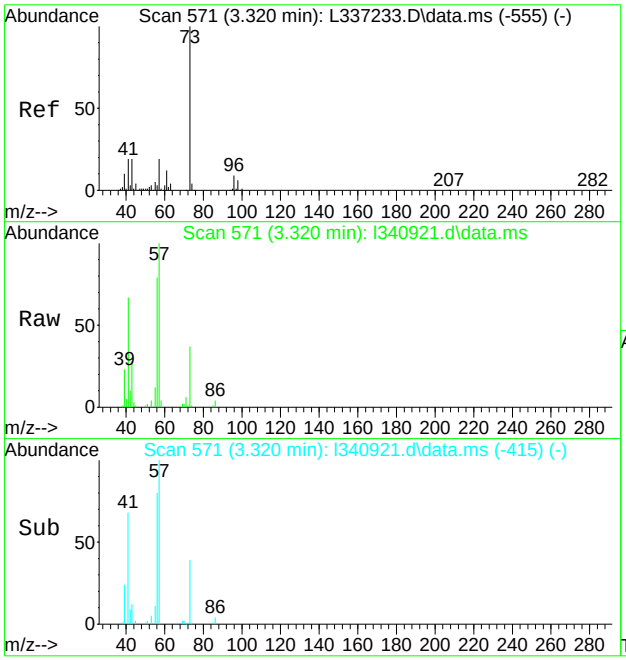


#4
tertiary butyl alcohol
Concen: 17.96 ug/L
RT: 3.175 min Scan# 526
Delta R.T. -0.006 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion: 59 Resp: 4697

Ion	Ratio	Lower	Upper
59	100		
41	183.1	0.0	52.7#
43	515.4	0.0	41.4#

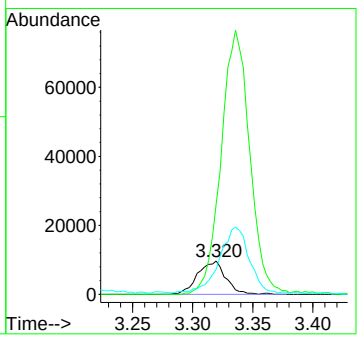


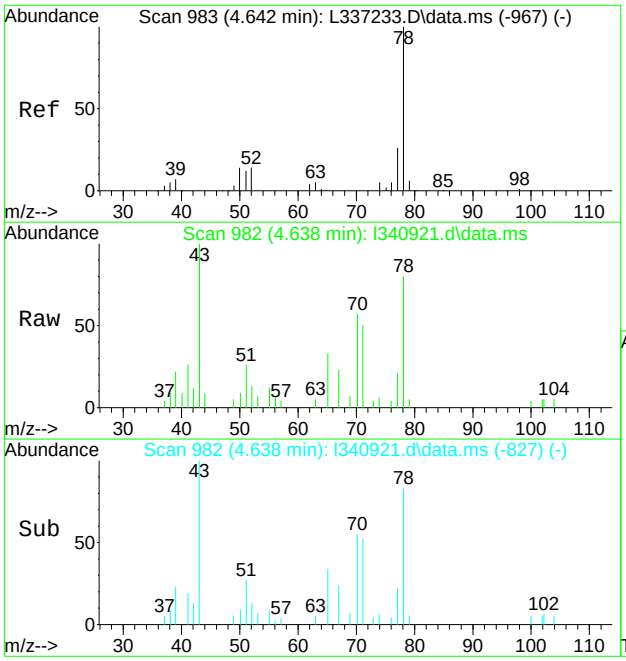


#24
methyl tert butyl ether
Concen: 2.37 ug/L
RT: 3.320 min Scan# 571
Delta R.T. -0.000 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion: 73 Resp: 15721

Ion	Ratio	Lower	Upper
73	100		
57	269.3	0.0	48.6#
43	67.9	0.0	49.1#

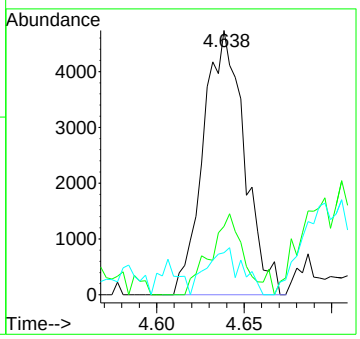


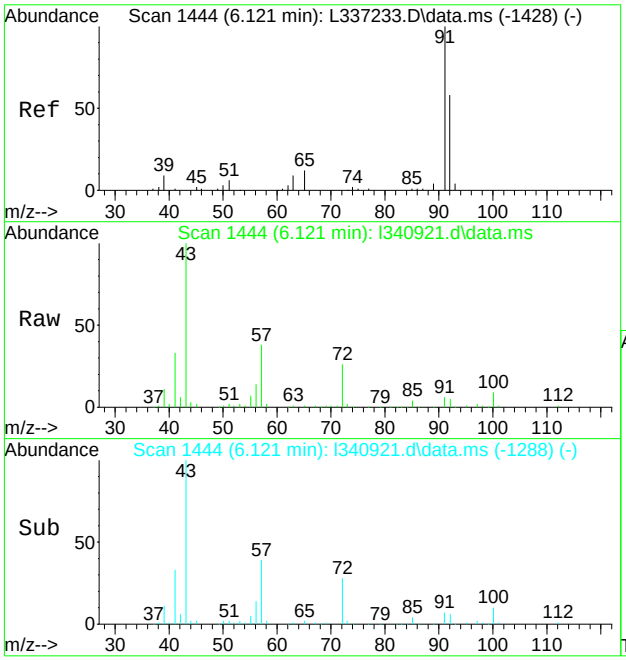


#55
benzene
Concen: 1.02 ug/L
RT: 4.638 min Scan# 982
Delta R.T. -0.004 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion: 78 Resp: 7721

Ion	Ratio	Lower	Upper
78	100		
77	25.9	0.0	56.1
52	10.2	0.0	43.6

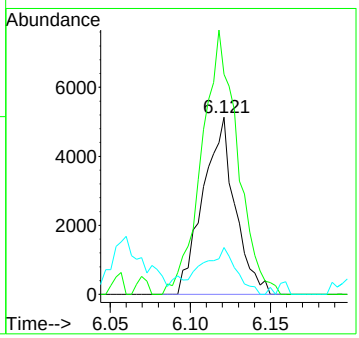


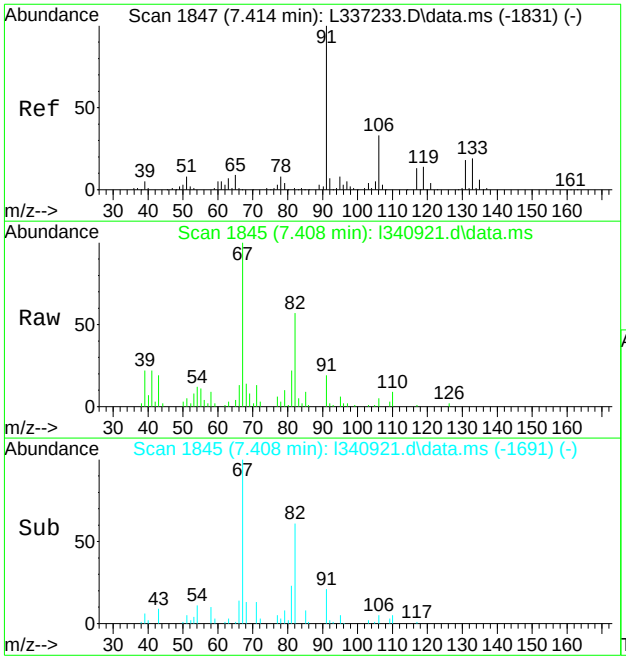


#73
toluene
Concen: 1.32 ug/L
RT: 6.121 min Scan# 1444
Delta R.T. -0.000 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion: 92 Resp: 7114

Ion	Ratio	Lower	Upper
92	100		
91	124.2	141.2	201.2#
65	19.3	0.0	50.5

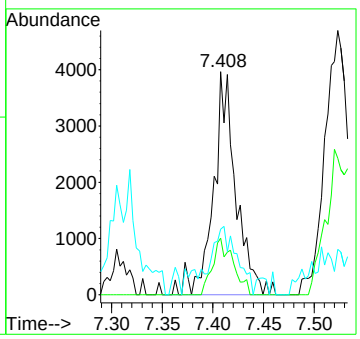


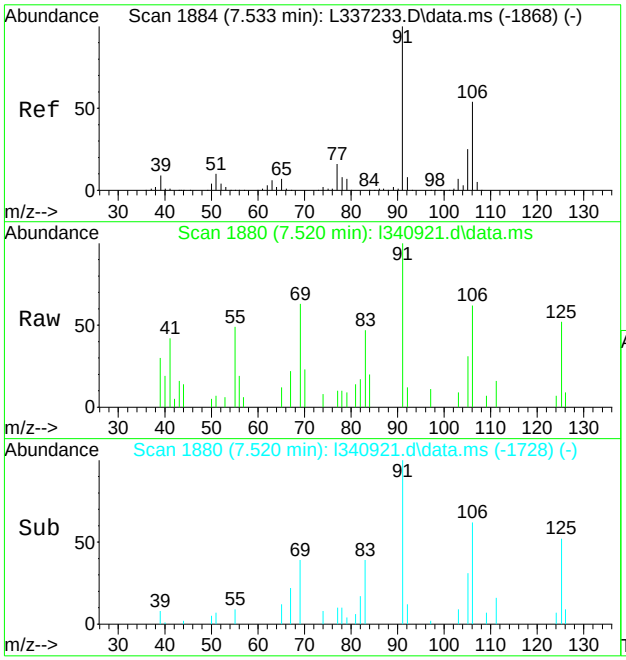


#86
ethylbenzene
Concen: 0.64 ug/L
RT: 7.408 min Scan# 1845
Delta R.T. -0.006 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion: 91 Resp: 6122

Ion	Ratio	Lower	Upper
91	100		
106	25.4	2.7	62.7
77	29.4	0.0	39.1

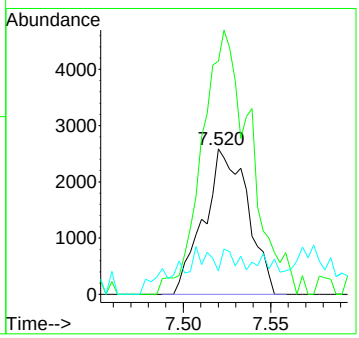


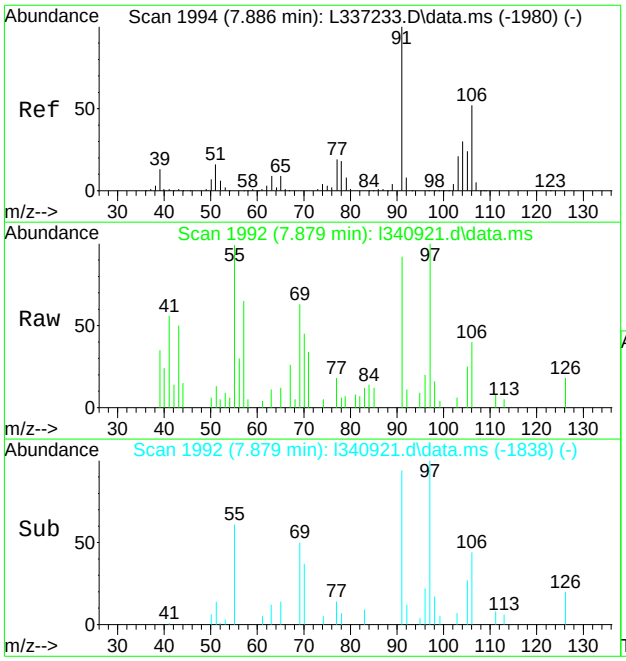


#87
m,p-xylene
Concen: 1.21 ug/L
RT: 7.520 min Scan# 1880
Delta R.T. -0.013 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion:106 Resp: 4509

Ion	Ratio	Lower	Upper
106	100		
91	149.4	155.0	215.0#
77	0.0	9.1	49.1#

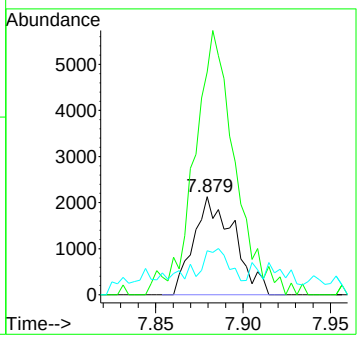


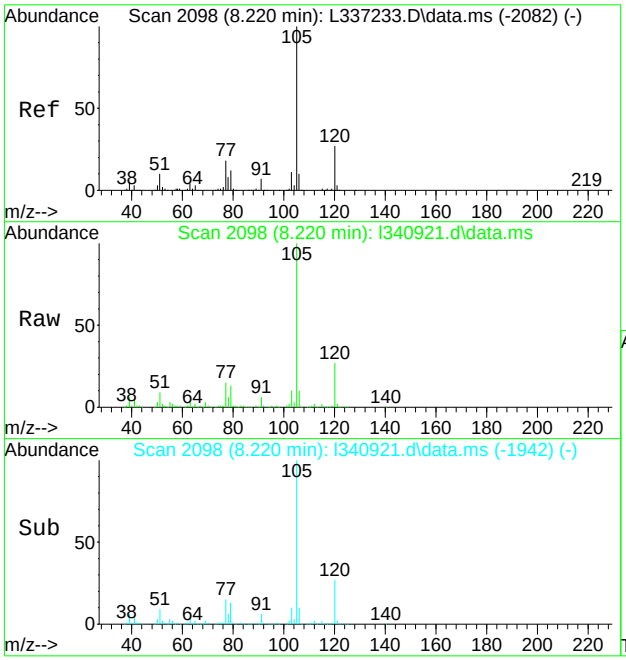


#88
o-xylene
Concen: 0.89 ug/L
RT: 7.879 min Scan# 1992
Delta R.T. -0.007 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion:106 Resp: 3409

Ion	Ratio	Lower	Upper
106	100		
91	227.2	163.1	223.1#
77	27.7	17.5	57.5

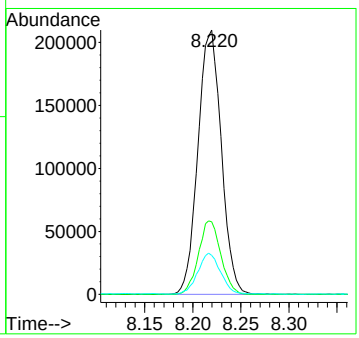


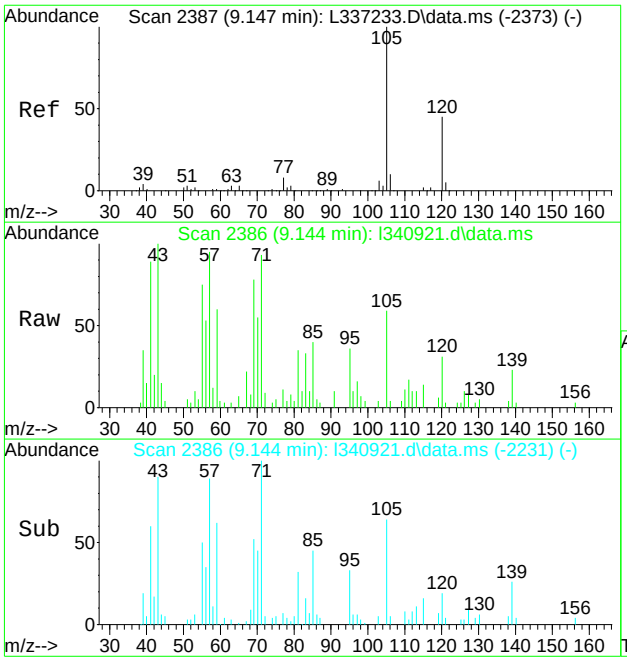


#92
isopropylbenzene
Concen: 38.19 ug/L
RT: 8.220 min Scan# 2098
Delta R.T. -0.000 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion:105 Resp: 355023

Ion	Ratio	Lower	Upper
105	100		
120	27.4	7.2	47.2
77	14.7	0.0	38.3

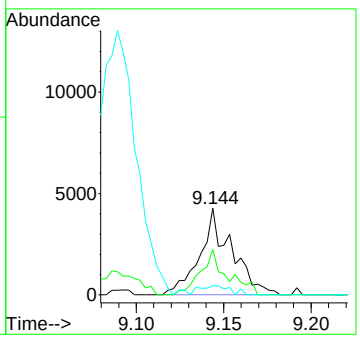




#105
1,2,4-trimethylbenzene
Concen: 0.70 ug/L
RT: 9.144 min Scan# 2386
Delta R.T. -0.003 min
Lab File: l340921.d
Acq: 21 Apr 2022 8:00 am

Tgt Ion:105 Resp: 5390

Ion	Ratio	Lower	Upper
105	100		
120	52.2	19.0	79.0
119	10.6	0.0	42.4



Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340913.d
Acq On : 21 Apr 2022 4:52 am
Operator : nicoleh
Sample : jd43215-6 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 67 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:20:07 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

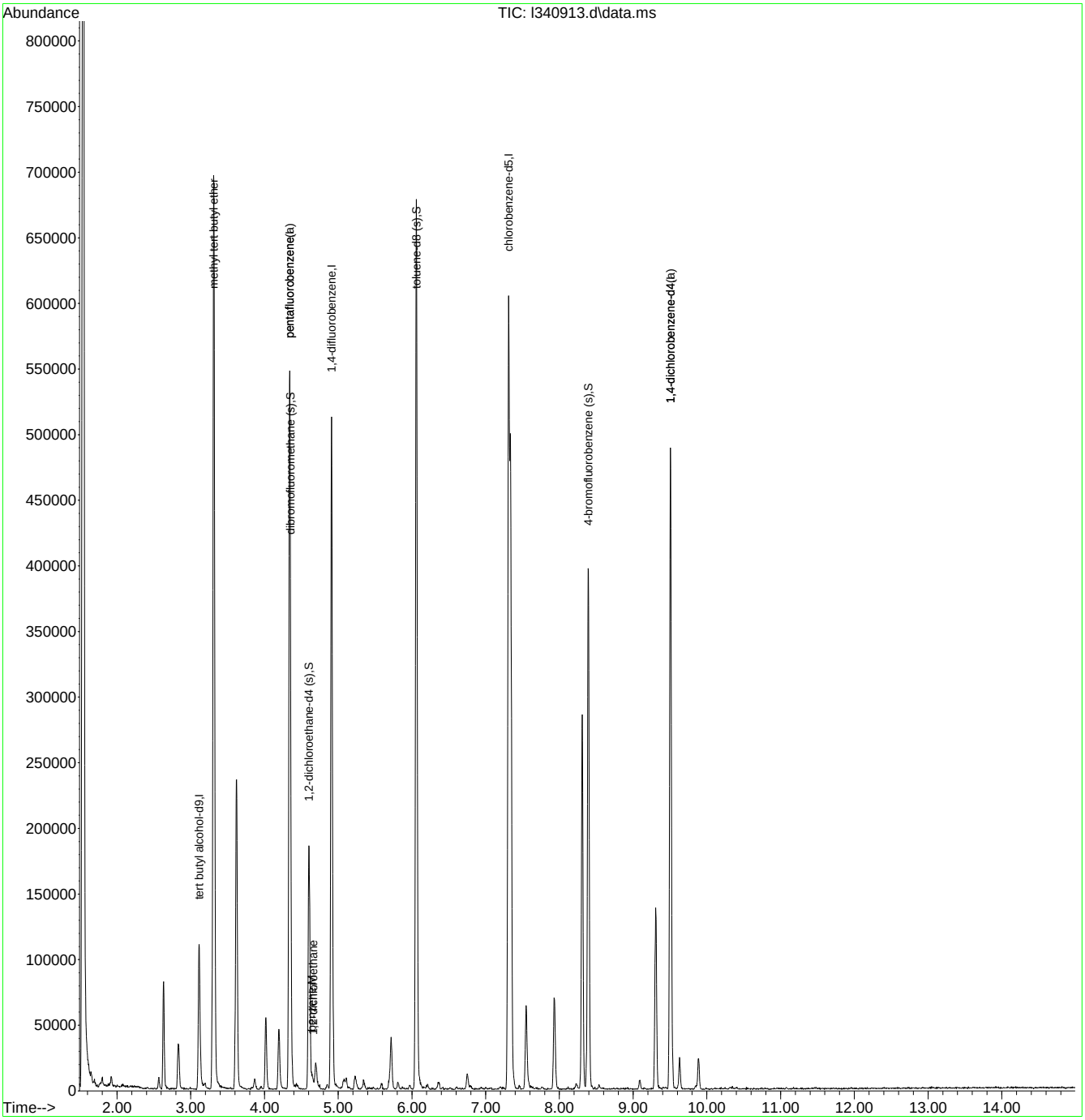
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	107056	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	243039	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	367235	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	324361	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	137195	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	242598	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.506	152	137178	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	103563	48.21	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.42%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	108292	49.93	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 99.86%			
72) toluene-d8 (s)	6.060	98	430790	48.54	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.08%			
95) 4-bromofluorobenzene (s)	8.393	95	143740	54.00	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.00%			
Target Compounds						Qvalue
24) methyl tert butyl ether	3.310	73	592601	83.90	ug/L	96
55) benzene	4.642	78	3828	0.43	ug/L	77
57) 1,2-dichloroethane	4.661	62	2931	0.93	ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

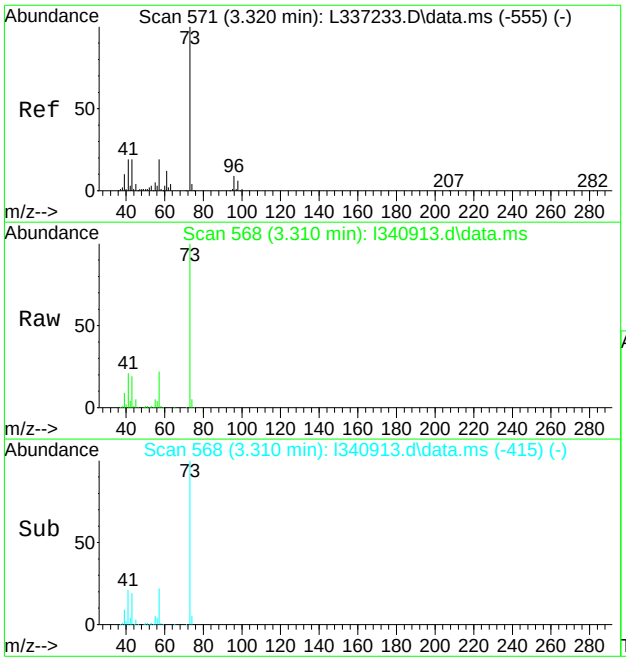
Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340913.d
Acq On : 21 Apr 2022 4:52 am
Operator : nicoleh
Sample : jd43215-6 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 67 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:20:07 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration



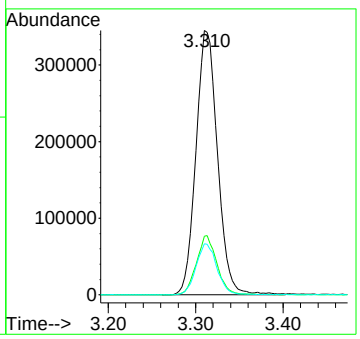
ML10152.M Fri Apr 22 20:28:27 2022 RT1 Page: 2

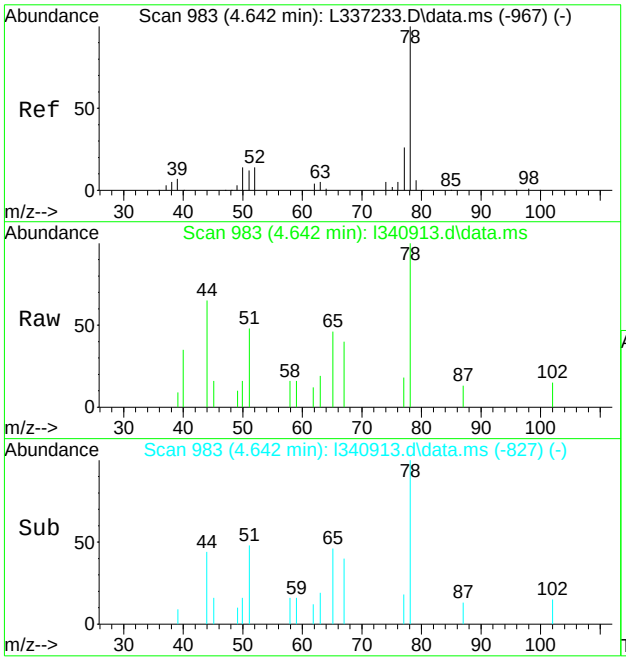


#24
methyl tert butyl ether
Concen: 83.90 ug/L
RT: 3.310 min Scan# 568
Delta R.T. -0.010 min
Lab File: l340913.d
Acq: 21 Apr 2022 4:52 am

Tgt Ion: 73 Resp: 592601

Ion	Ratio	Lower	Upper
73	100		
57	22.2	0.0	48.6
43	19.3	0.0	49.1

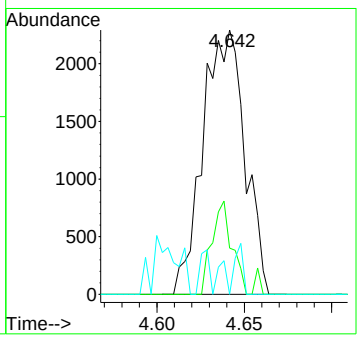


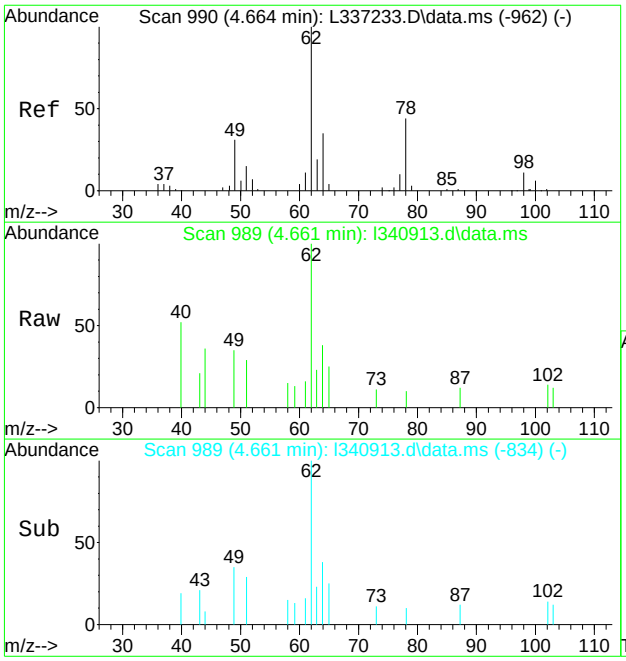


#55
benzene
Concen: 0.43 ug/L
RT: 4.642 min Scan# 983
Delta R.T. -0.000 min
Lab File: l340913.d
Acq: 21 Apr 2022 4:52 am

Tgt Ion: 78 Resp: 3828

Ion	Ratio	Lower	Upper
78	100		
77	17.5	0.0	56.1
52	0.0	0.0	43.6

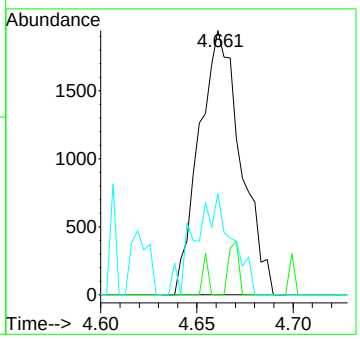




#57
1,2-dichloroethane
Concen: 0.93 ug/L
RT: 4.661 min Scan# 989
Delta R.T. -0.003 min
Lab File: l340913.d
Acq: 21 Apr 2022 4:52 am

Tgt Ion: 62 Resp: 2931

Ion	Ratio	Lower	Upper
62	100		
98	0.0	0.0	41.2
64	38.3	5.2	65.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340914.d
Acq On : 21 Apr 2022 5:15 am
Operator : nicoleh
Sample : jd43215-7 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 68 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:33:02 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

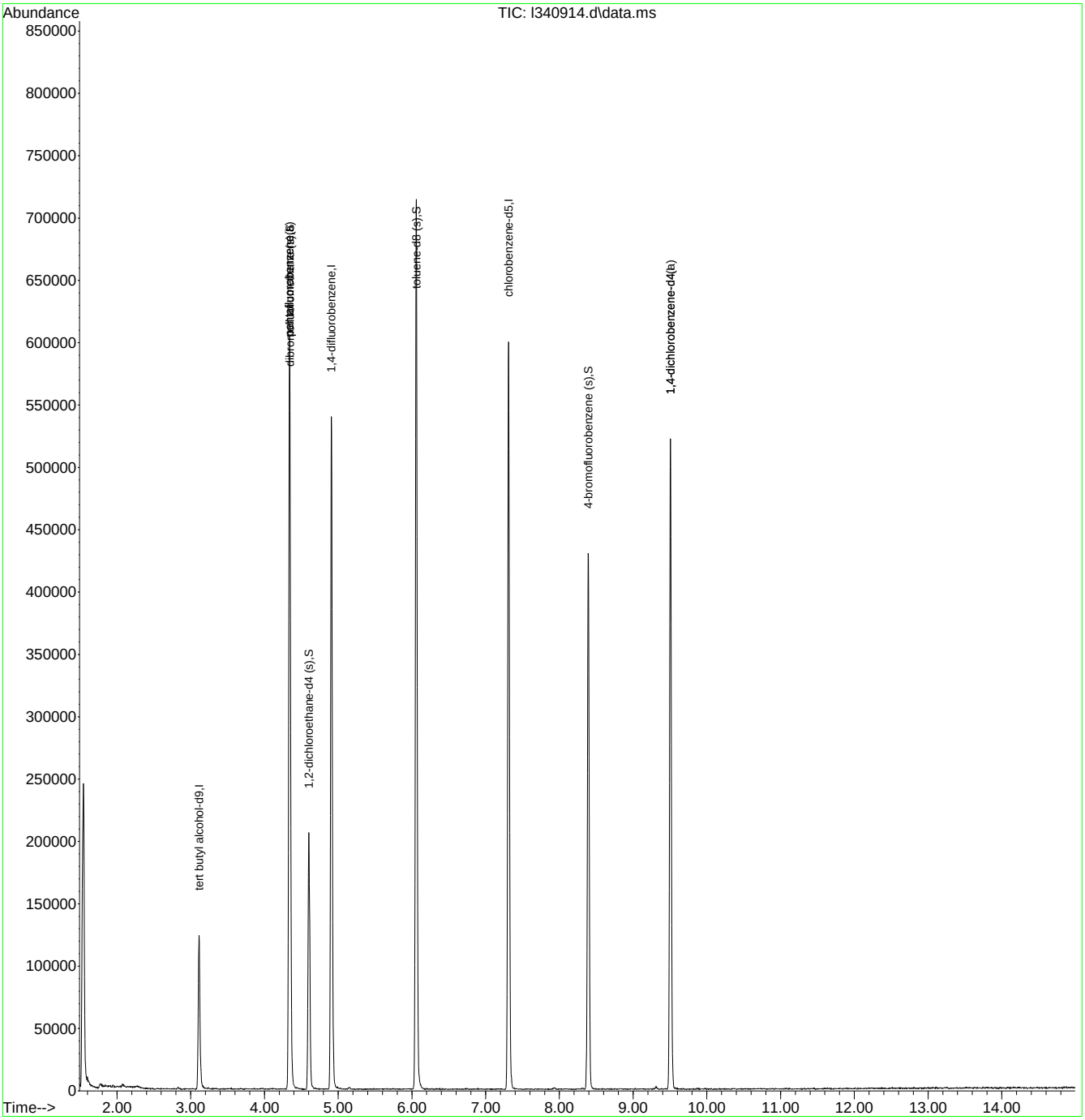
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	116069	500.00	ug/L	0.00
5) pentafluorobenzene	4.337	168	263314	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.908	114	391850	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	338719	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	147566	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.337	168	263356	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.506	152	147396	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.346	113	115185	49.49	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.98%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	121026	52.29	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 104.58%			
72) toluene-d8 (s)	6.060	98	455049	49.10	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.20%			
95) 4-bromofluorobenzene (s)	8.390	95	157847	55.13	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 110.26%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340914.d
Acq On : 21 Apr 2022 5:15 am
Operator : nicoleh
Sample : jd43215-7 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 68 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:33:02 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340915.d
Acq On : 21 Apr 2022 5:39 am
Operator : nicoleh
Sample : jd43215-8 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 69 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:28:39 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

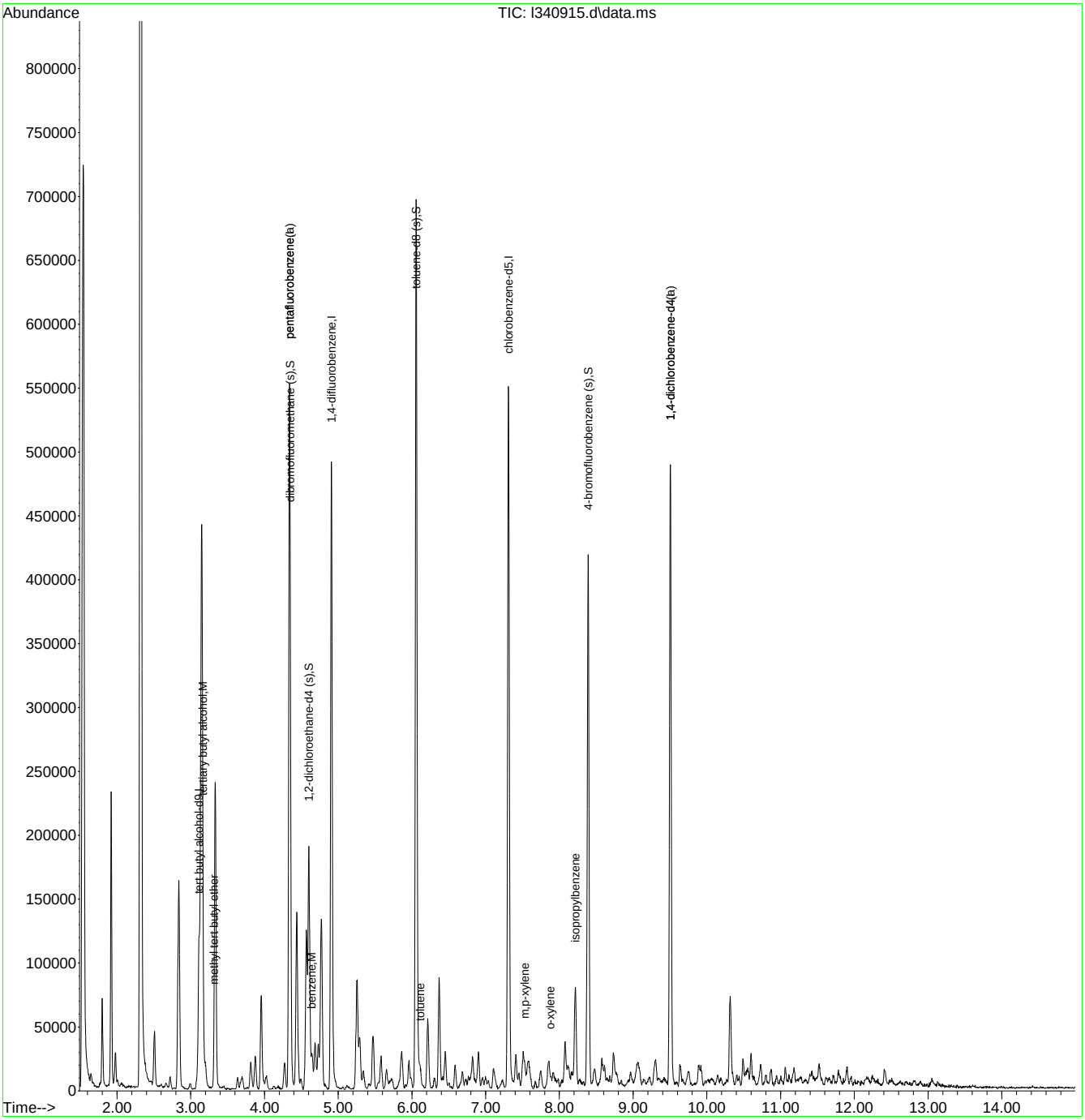
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.111	65	103065	500.00	ug/L	-0.01
5) pentafluorobenzene	4.340	168	239319	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	354645	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	315755	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	138934	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	239002	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.506	152	138935	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	102881	48.63	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.26%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	106844	51.01	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 102.02%			
72) toluene-d8 (s)	6.057	98	423181	48.98	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.96%			
95) 4-bromofluorobenzene (s)	8.390	95	145448	53.96	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.92%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.165	59	3739	15.06	ug/L #	1
24) methyl tert butyl ether	3.313	73	3883	0.56	ug/L #	1
55) benzene	4.638	78	11415	1.34	ug/L	96
73) toluene	6.111	92	3228	0.54	ug/L	81
87) m,p-xylene	7.530	106	4908	1.19	ug/L	96
88) o-xylene	7.876	106	1104	0.26	ug/L #	80
92) isopropylbenzene	8.216	105	51117	4.97	ug/L	98

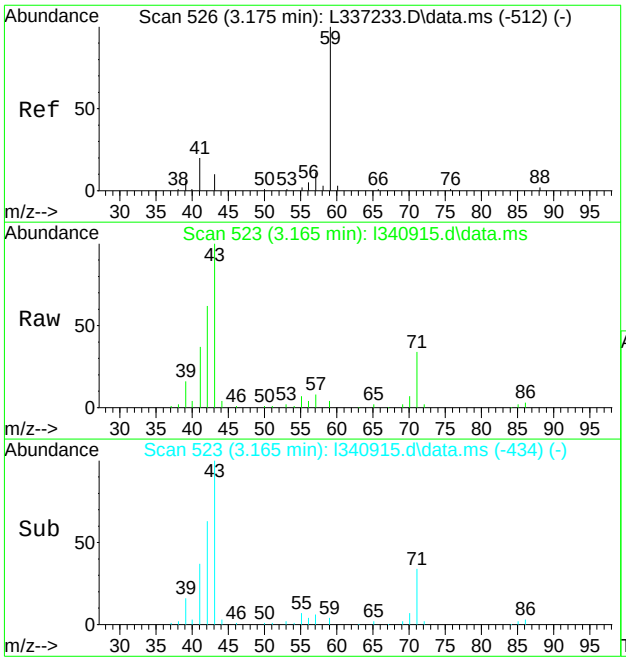
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340915.d
Acq On : 21 Apr 2022 5:39 am
Operator : nicoleh
Sample : jd43215-8 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 69 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:28:39 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

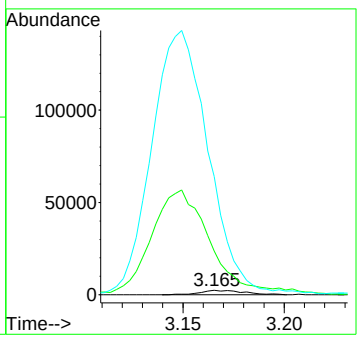


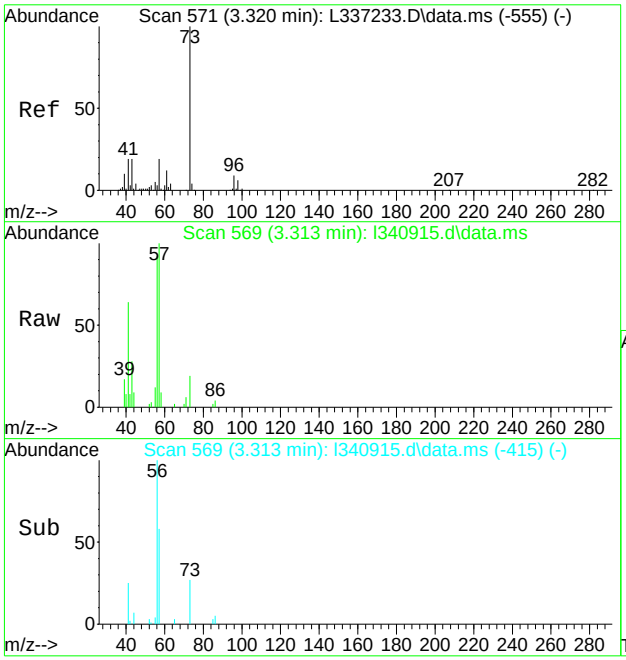


#4
tertiary butyl alcohol
Concen: 15.06 ug/L
RT: 3.165 min Scan# 523
Delta R.T. -0.016 min
Lab File: l340915.d
Acq: 21 Apr 2022 5:39 am

Tgt Ion: 59 Resp: 3739

Ion	Ratio	Lower	Upper
59	100		
41	834.9	0.0	52.7#
43	2431.6	0.0	41.4#

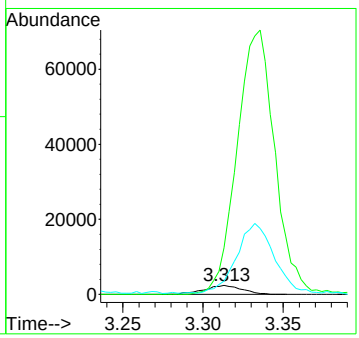


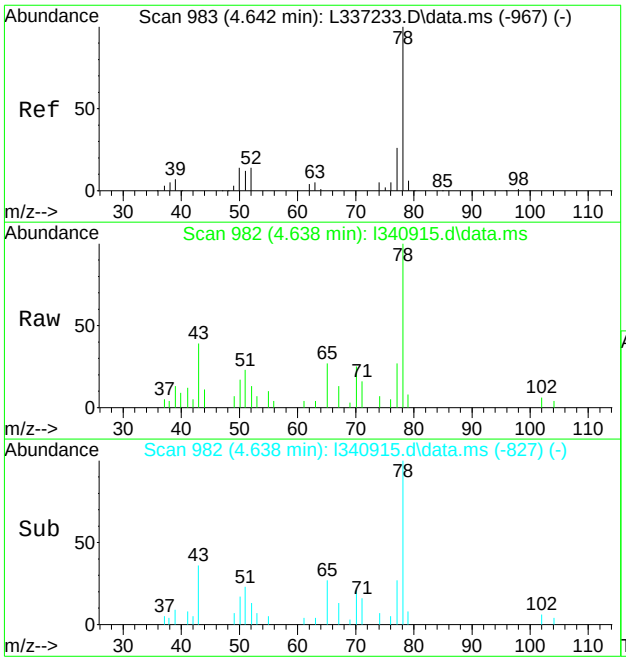


#24
methyl tert butyl ether
Concen: 0.56 ug/L
RT: 3.313 min Scan# 569
Delta R.T. -0.007 min
Lab File: l340915.d
Acq: 21 Apr 2022 5:39 am

Tgt Ion: 73 Resp: 3883

Ion	Ratio	Lower	Upper
73	100		
57	518.2	0.0	48.6#
43	136.9	0.0	49.1#

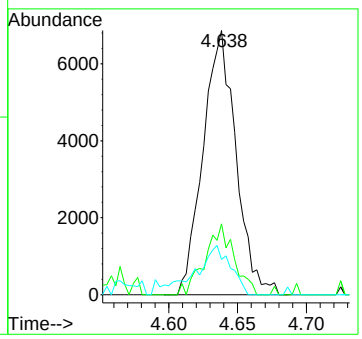


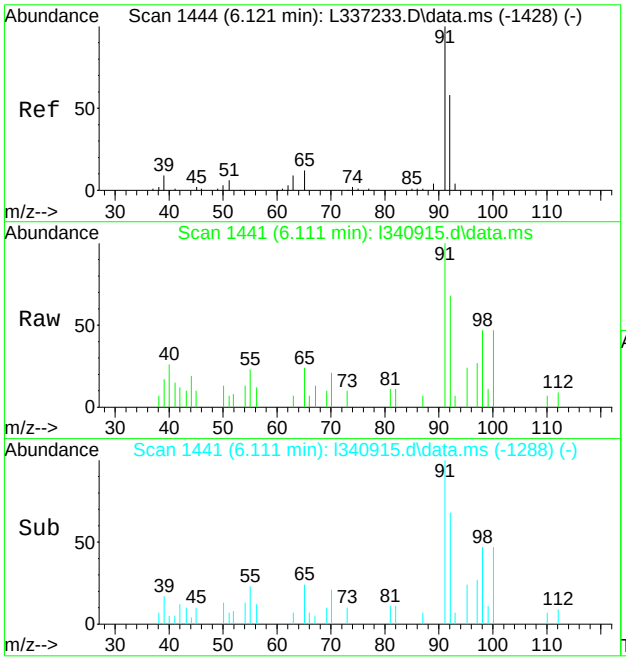


#55
benzene
Concen: 1.34 ug/L
RT: 4.638 min Scan# 982
Delta R.T. -0.004 min
Lab File: l340915.d
Acq: 21 Apr 2022 5:39 am

Tgt Ion: 78 Resp: 11415

Ion	Ratio	Lower	Upper
78	100		
77	26.8	0.0	56.1
52	10.5	0.0	43.6

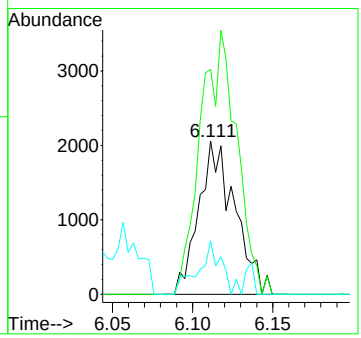


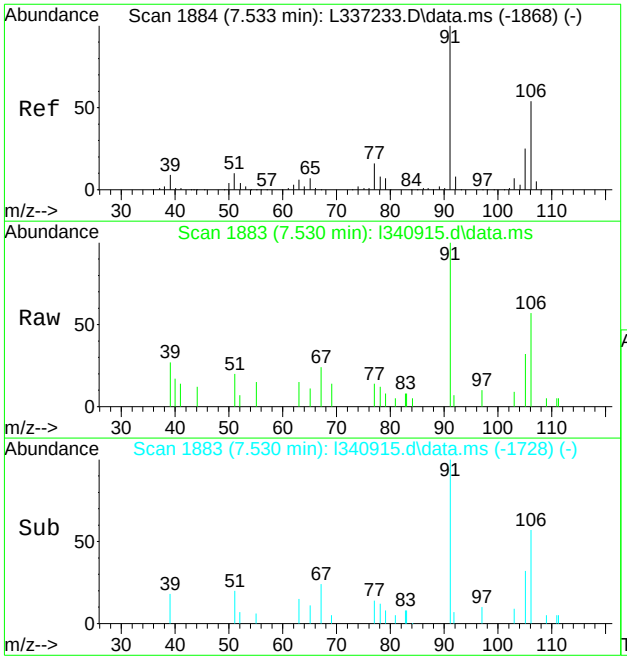


#73
toluene
Concen: 0.54 ug/L
RT: 6.111 min Scan# 1441
Delta R.T. -0.010 min
Lab File: l340915.d
Acq: 21 Apr 2022 5:39 am

Tgt Ion: 92 Resp: 3228

Ion	Ratio	Lower	Upper
92	100		
91	146.6	141.2	201.2
65	35.0	0.0	50.5

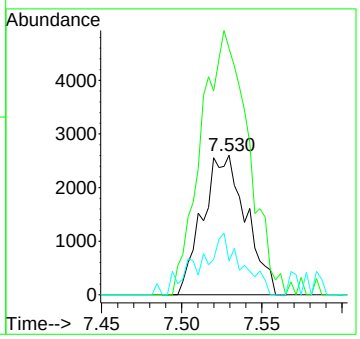


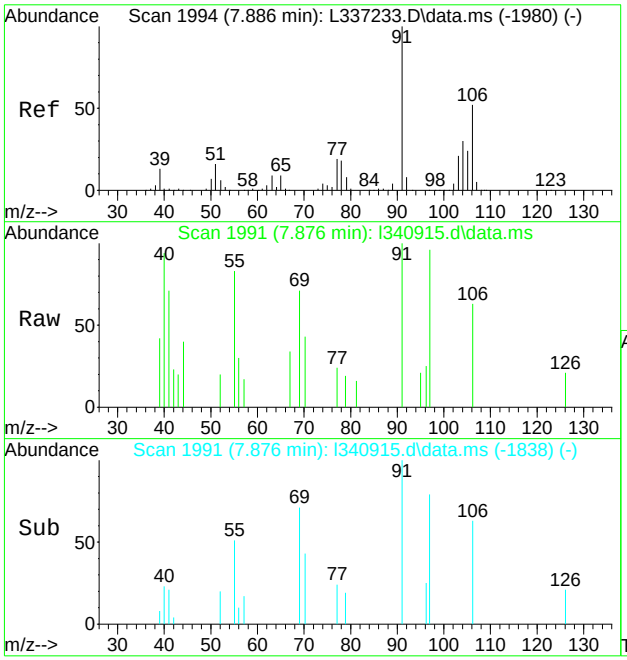


#87
m,p-xylene
Concen: 1.19 ug/L
RT: 7.530 min Scan# 1883
Delta R.T. -0.003 min
Lab File: l340915.d
Acq: 21 Apr 2022 5:39 am

Tgt Ion:106 Resp: 4908

Ion	Ratio	Lower	Upper
106	100		
91	189.1	155.0	215.0
77	24.2	9.1	49.1

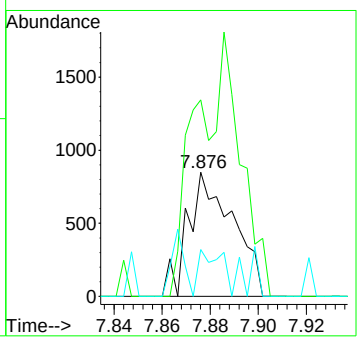


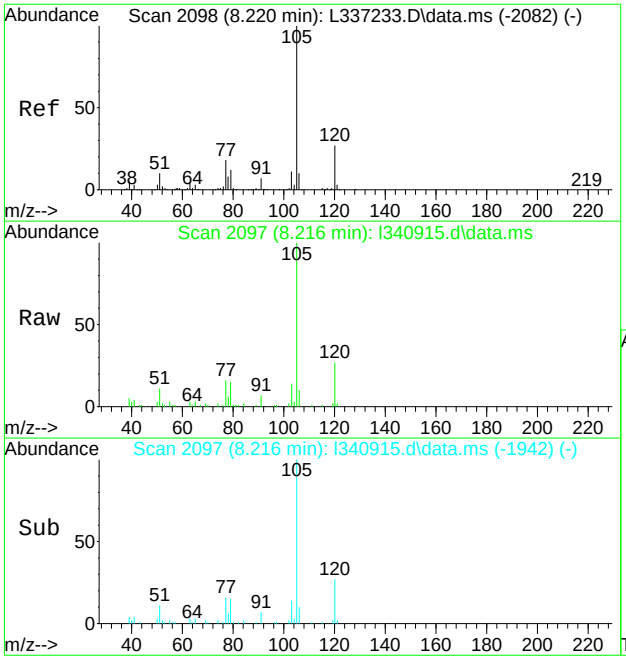


#88
o-xylene
Concen: 0.26 ug/L
RT: 7.876 min Scan# 1991
Delta R.T. -0.010 min
Lab File: l340915.d
Acq: 21 Apr 2022 5:39 am

Tgt Ion:106 Resp: 1104

Ion	Ratio	Lower	Upper
106	100		
91	158.1	163.1	223.1#
77	37.6	17.5	57.5

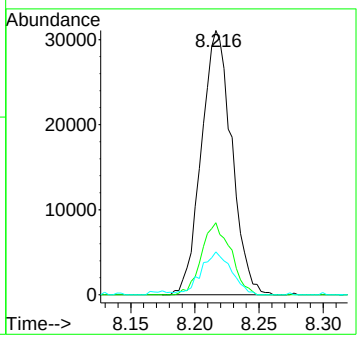




#92
isopropylbenzene
Concen: 4.97 ug/L
RT: 8.216 min Scan# 2097
Delta R.T. -0.004 min
Lab File: l340915.d
Acq: 21 Apr 2022 5:39 am

Tgt Ion:105 Resp: 51117

Ion	Ratio	Lower	Upper
105	100		
120	27.2	7.2	47.2
77	16.2	0.0	38.3



Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340916.d
Acq On : 21 Apr 2022 6:02 am
Operator : nicoleh
Sample : jd43215-9 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 70 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:34:38 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

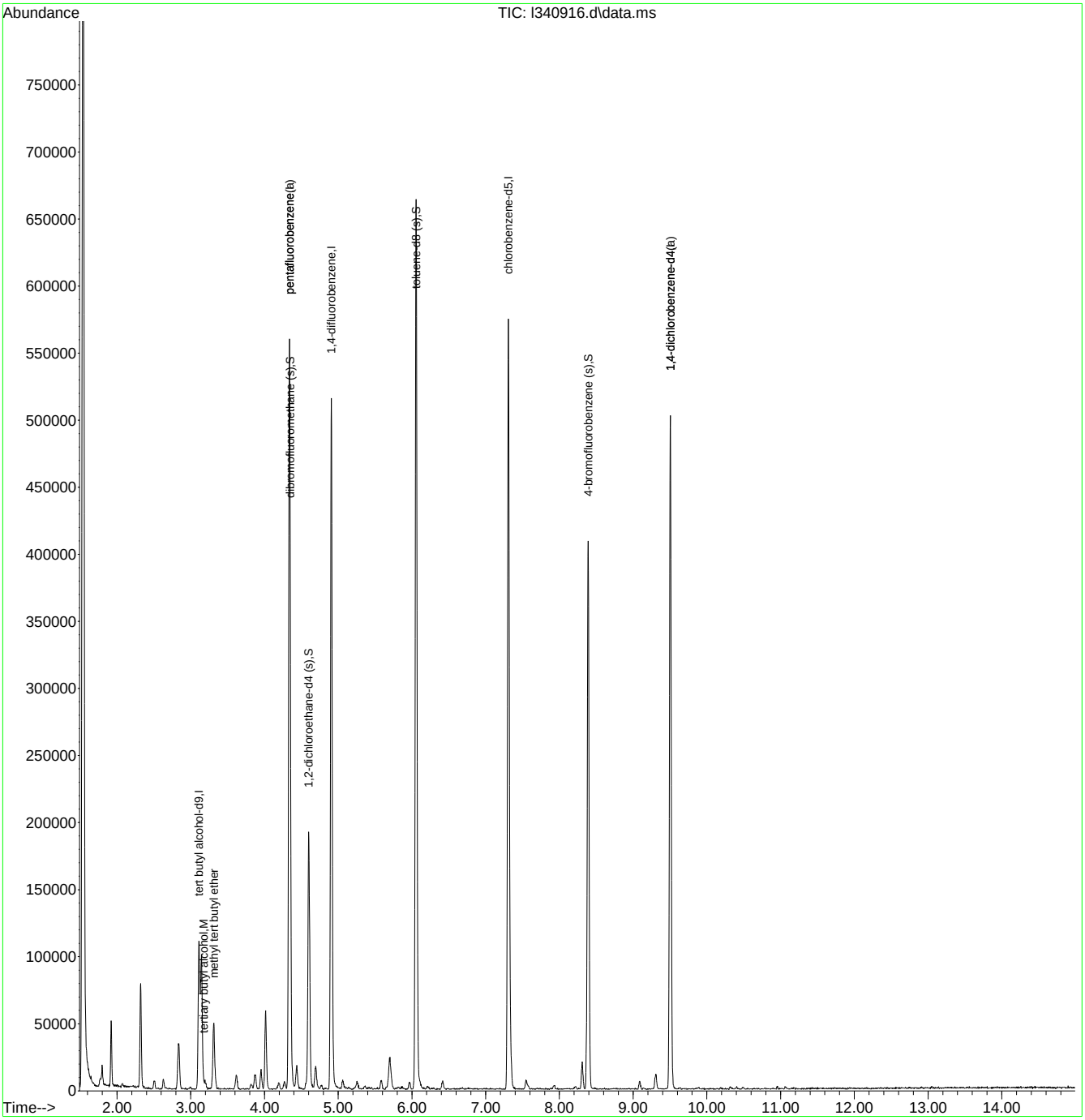
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.111	65	107448	500.00	ug/L	-0.01
5) pentafluorobenzene	4.340	168	247645	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.908	114	371237	50.00	ug/L	0.00
71) chlorobenzene-d5	7.308	117	325353	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	141745	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	247905	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.506	152	141746	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	108285	49.47	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.94%			
51) 1,2-dichloroethane-d4 (s)	4.600	65	112701	51.40	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 102.80%			
72) toluene-d8 (s)	6.057	98	435690	48.94	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.88%			
95) 4-bromofluorobenzene (s)	8.390	95	151841	55.21	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 110.42%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.175	59	1878	7.25	ug/L	# 1
24) methyl tert butyl ether	3.313	73	40850	5.68	ug/L	98

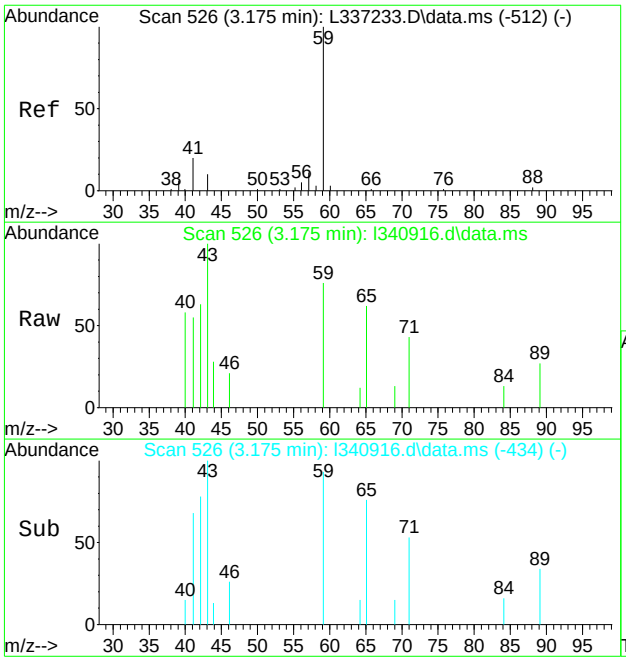
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340916.d
Acq On : 21 Apr 2022 6:02 am
Operator : nicoleh
Sample : jd43215-9 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 70 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:34:38 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

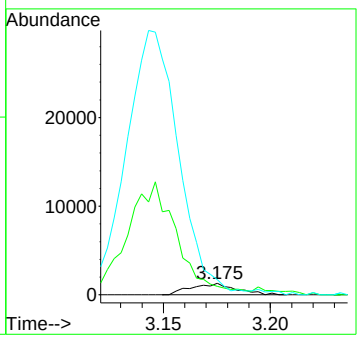


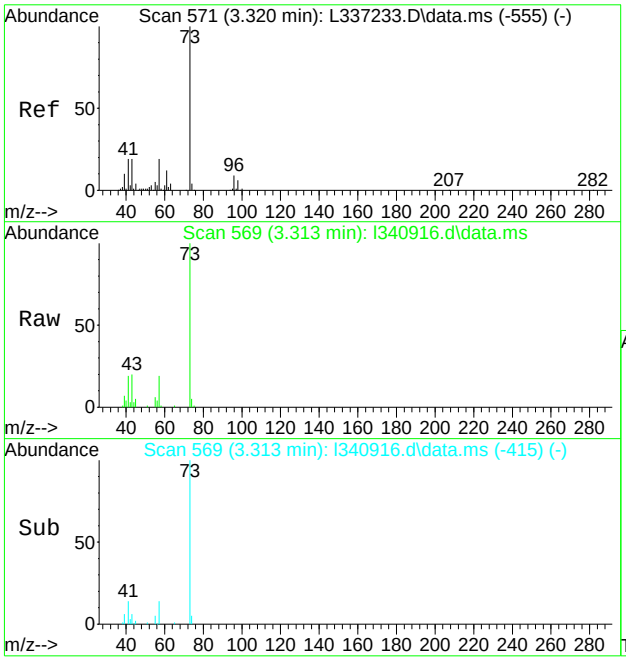


#4
tertiary butyl alcohol
Concen: 7.25 ug/L
RT: 3.175 min Scan# 526
Delta R.T. -0.006 min
Lab File: l340916.d
Acq: 21 Apr 2022 6:02 am

Tgt Ion: 59 Resp: 1878

Ion	Ratio	Lower	Upper
59	100		
41	42.8	0.0	52.7
43	132.1	0.0	41.4#

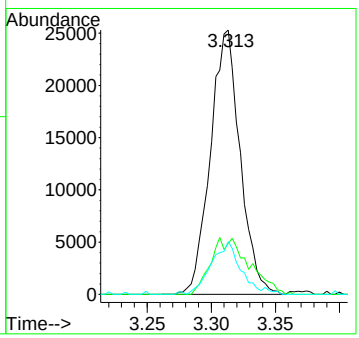




#24
methyl tert butyl ether
Concen: 5.68 ug/L
RT: 3.313 min Scan# 569
Delta R.T. -0.007 min
Lab File: l340916.d
Acq: 21 Apr 2022 6:02 am

Tgt Ion: 73 Resp: 40850

Ion	Ratio	Lower	Upper
73	100		
57	19.2	0.0	48.6
43	20.0	0.0	49.1



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340917.d
Acq On : 21 Apr 2022 6:26 am
Operator : nicoleh
Sample : jd43215-10 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 71 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:41:51 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

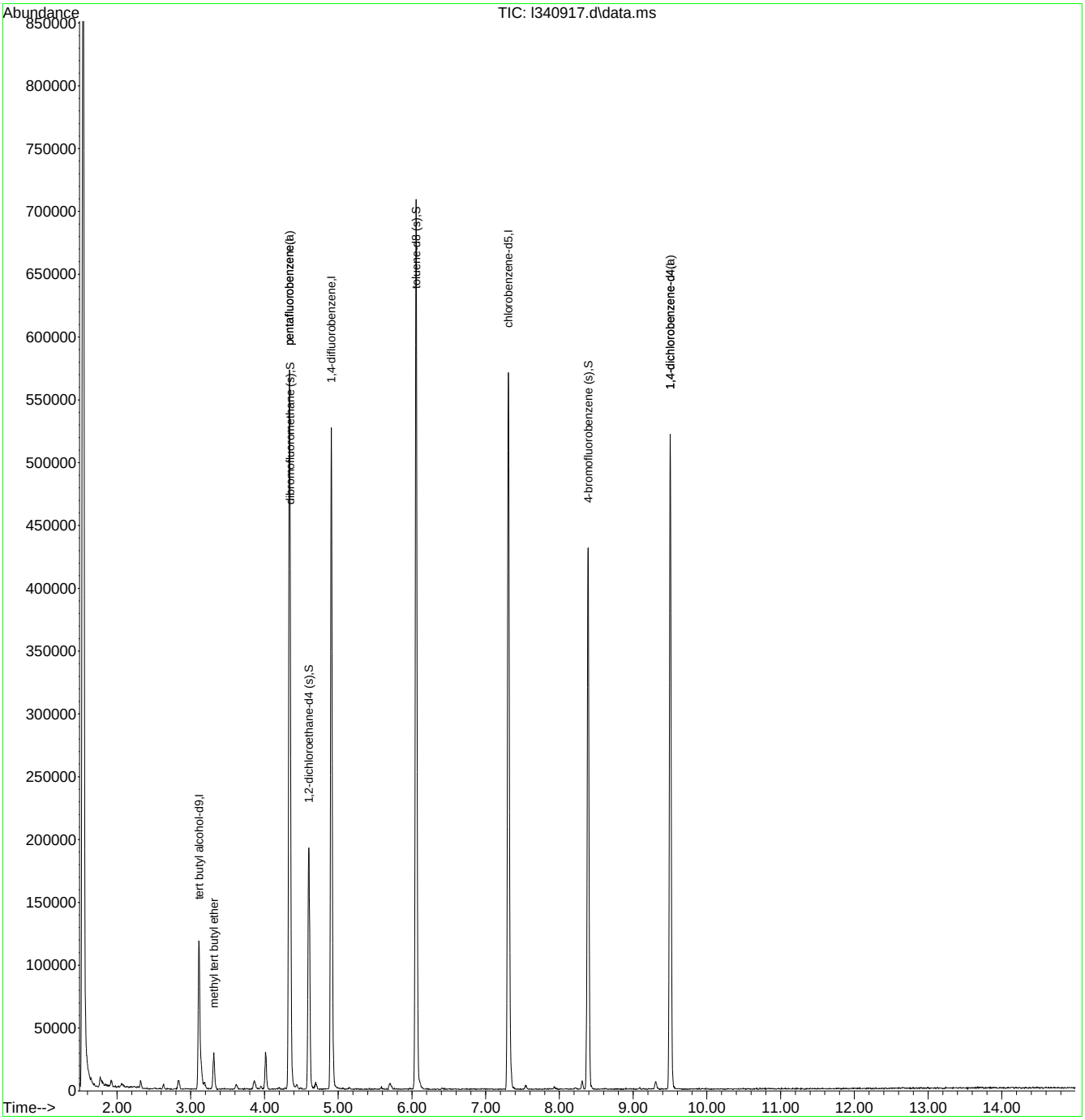
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	111835	500.00	ug/L	0.00
5) pentafluorobenzene	4.337	168	255187	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.908	114	379912	50.00	ug/L	0.00
71) chlorobenzene-d5	7.308	117	339072	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.503	152	147960	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.337	168	255842	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.503	152	147874	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	111255	49.32	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.64%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	116043	51.72	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 103.44%			
72) toluene-d8 (s)	6.057	98	444852	47.95	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.90%			
95) 4-bromofluorobenzene (s)	8.390	95	154373	53.78	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.56%			
Target Compounds						Qvalue
24) methyl tert butyl ether	3.313	73	22907	3.09	ug/L	93

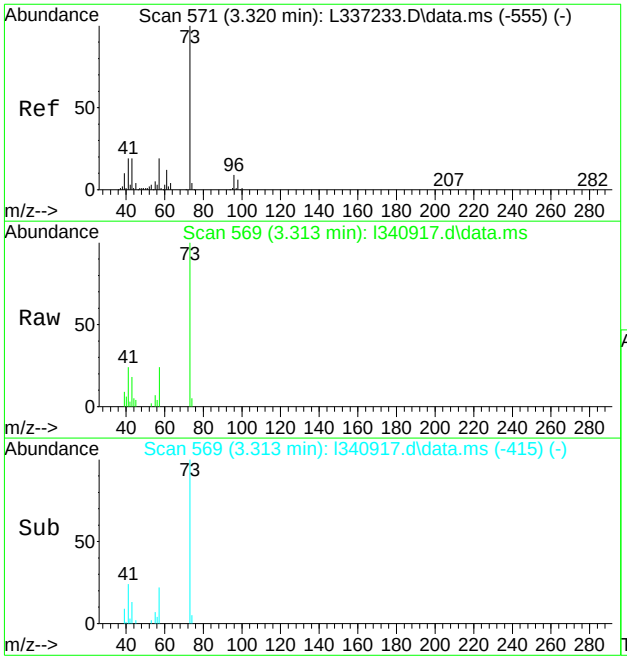
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340917.d
Acq On : 21 Apr 2022 6:26 am
Operator : nicoleh
Sample : jd43215-10 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 71 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:41:51 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

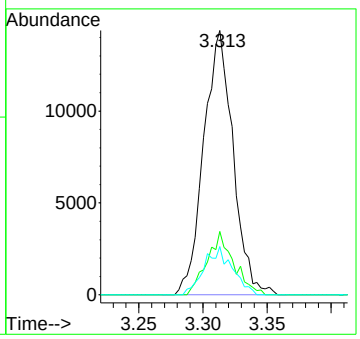




#24
methyl tert butyl ether
Concen: 3.09 ug/L
RT: 3.313 min Scan# 569
Delta R.T. -0.007 min
Lab File: l340917.d
Acq: 21 Apr 2022 6:26 am

Tgt Ion: 73 Resp: 22907

Ion	Ratio	Lower	Upper
73	100		
57	23.9	0.0	48.6
43	18.2	0.0	49.1



Manual Integrations APPROVED (compounds with "m" flag)
MoHui Huang
04/25/22 17:39

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\april 2022\04252022\vl10284\
Data File : l340993.d
Acq On : 22 Apr 2022 2:44 pm
Operator : nicoleh
Sample : jd43215-11 Inst : GCMSL
Misc : MS58320,VL10284,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 03:10:19 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

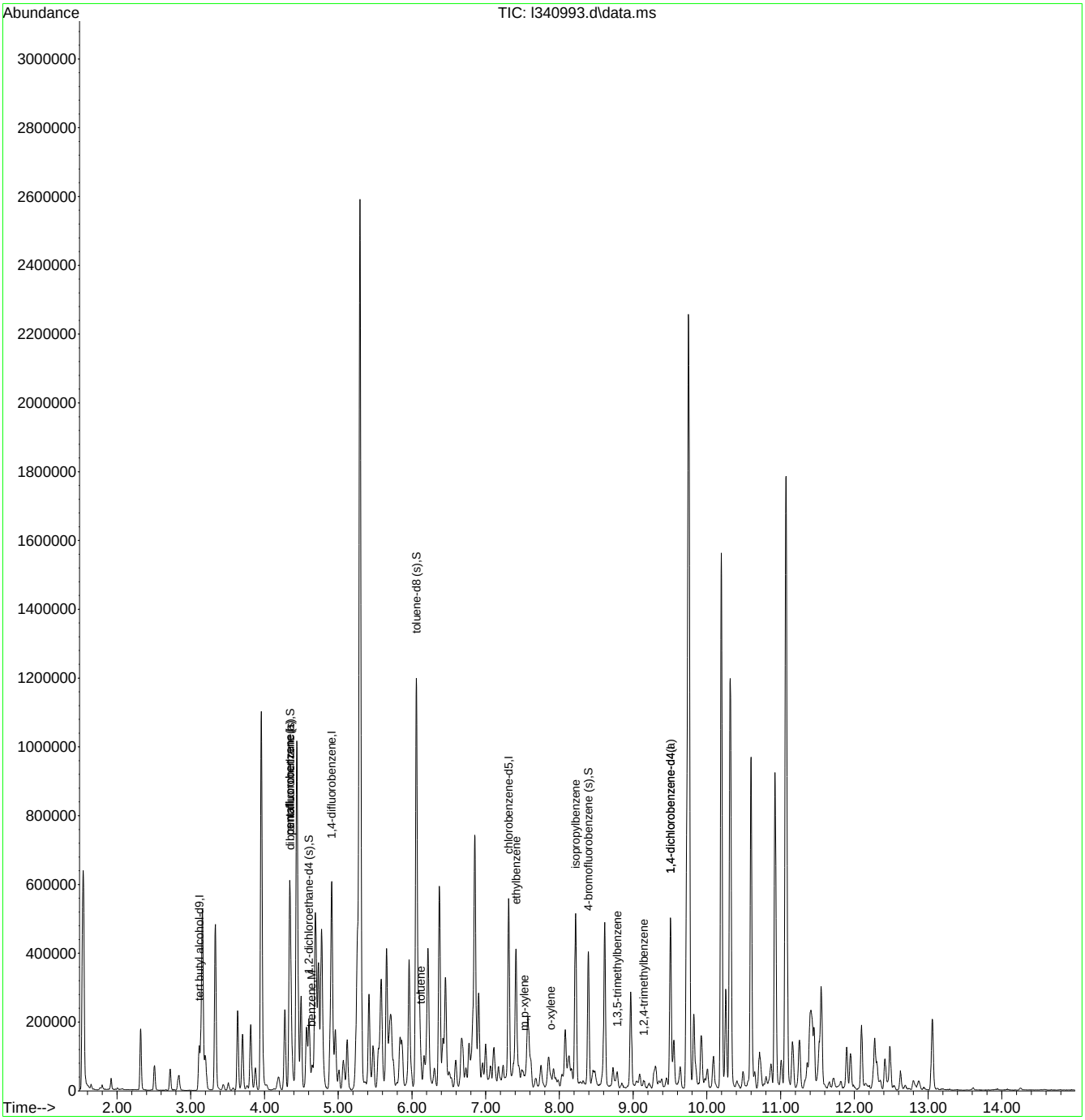
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	119436	500.00	ug/L	0.00
5) pentafluorobenzene	4.343	168	243871	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	351239	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	297043	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	139598	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.343	168	243658	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	139489	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	105091	48.75	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.50%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	110572	53.30	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 106.60%			
72) toluene-d8 (s)	6.060	98	411837	50.67	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.34%			
95) 4-bromofluorobenzene (s)	8.390	95	144377	53.31	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.62%			
Target Compounds						Qvalue
55) benzene	4.635	78	25039	2.96	ug/L	95
73) toluene	6.118	92	9974	1.78	ug/L	95
86) ethylbenzene	7.414	91	18134m	1.83	ug/L	
87) m,p-xylene	7.523	106	6615	1.70	ug/L	88
88) o-xylene	7.883	106	2392	0.60	ug/L #	79
92) isopropylbenzene	8.220	105	342877	35.40	ug/L	98
103) 1,3,5-trimethylbenzene	8.784	105	14670	1.78	ug/L	90
105) 1,2,4-trimethylbenzene	9.144	105	5055	0.59	ug/L	78

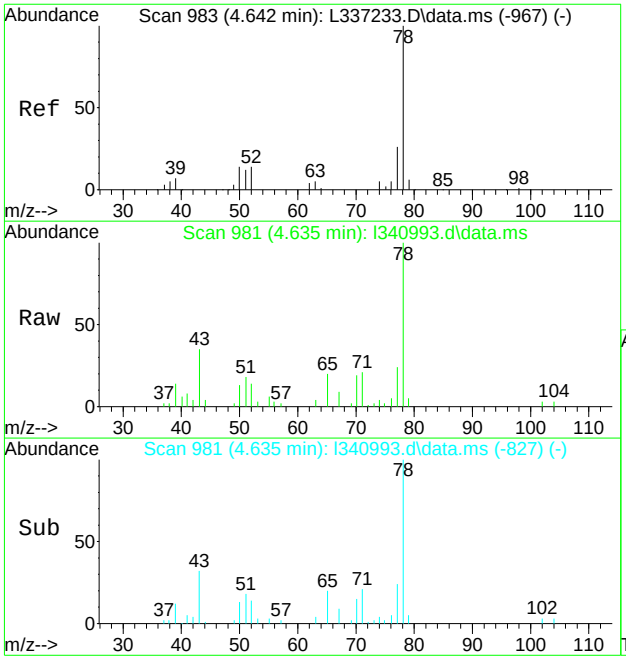
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\april 2022\04252022\vl10284\
Data File : l340993.d
Acq On : 22 Apr 2022 2:44 pm
Operator : nicoleh
Sample : jd43215-11 Inst : GCMSL
Misc : MS58320,VL10284,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 03:10:19 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

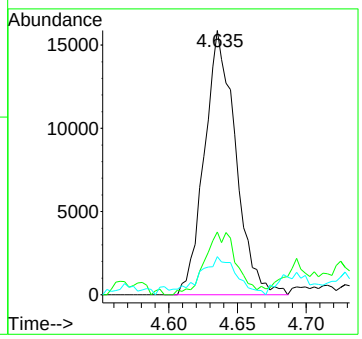


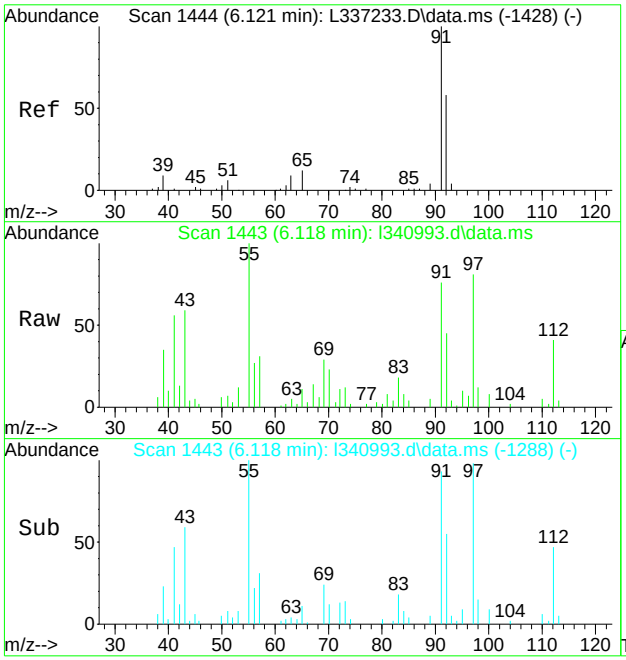


#55
benzene
Concen: 2.96 ug/L
RT: 4.635 min Scan# 981
Delta R.T. -0.007 min
Lab File: l340993.d
Acq: 22 Apr 2022 2:44 pm

Tgt Ion: 78 Resp: 25039

Ion	Ratio	Lower	Upper
78	100		
77	23.8	0.0	56.1
52	11.3	0.0	43.6

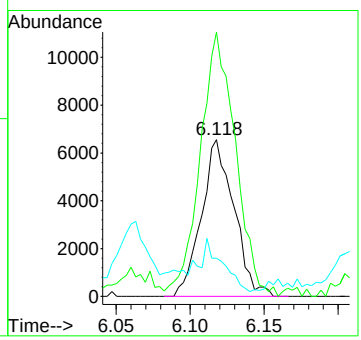


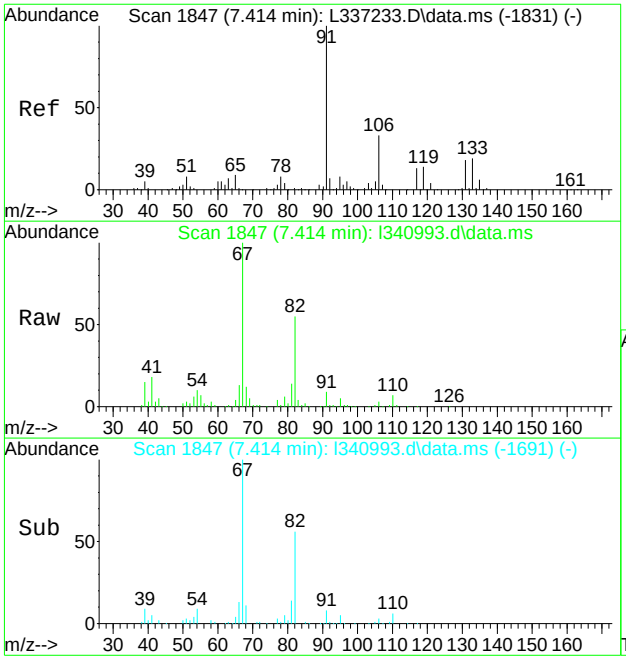


#73
toluene
Concen: 1.78 ug/L
RT: 6.118 min Scan# 1443
Delta R.T. -0.003 min
Lab File: l340993.d
Acq: 22 Apr 2022 2:44 pm

Tgt Ion: 92 Resp: 9974

Ion	Ratio	Lower	Upper
92	100		
91	165.5	141.2	201.2
65	16.0	0.0	50.5

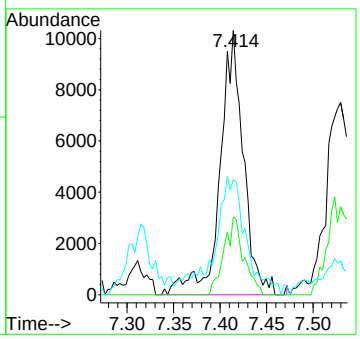


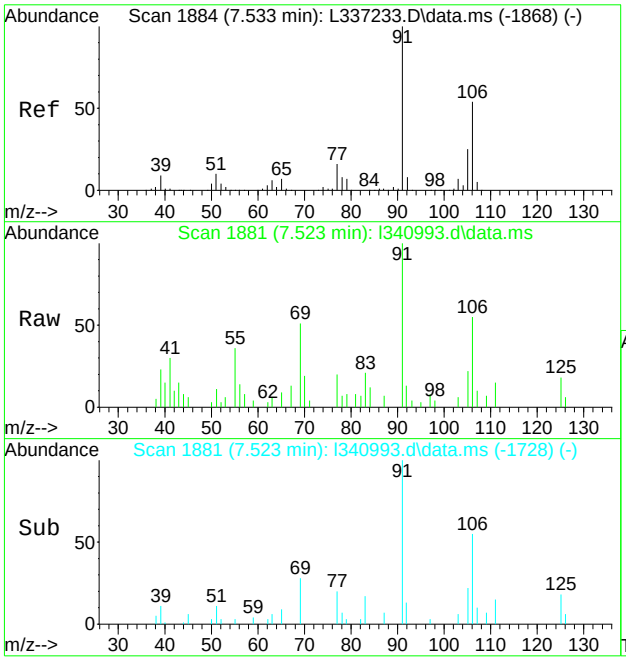


#86
ethylbenzene
Concen: 1.83 ug/L m
RT: 7.414 min Scan# 1847
Delta R.T. 0.000 min
Lab File: l340993.d
Acq: 22 Apr 2022 2:44 pm

Tgt Ion: 91 Resp: 18134

Ion	Ratio	Lower	Upper
91	100		
106	29.4	2.7	62.7
77	43.5	0.0	39.1#

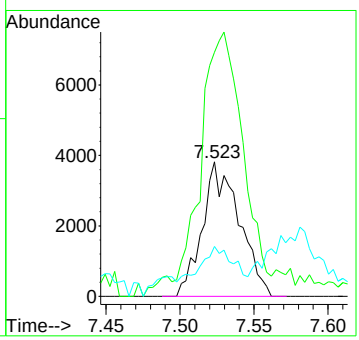


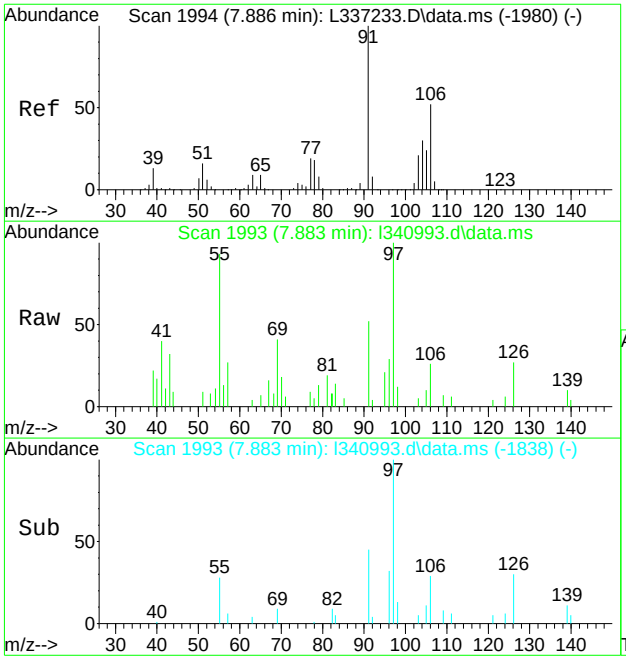


#87
m,p-xylene
Concen: 1.70 ug/L
RT: 7.523 min Scan# 1881
Delta R.T. -0.010 min
Lab File: l340993.d
Acq: 22 Apr 2022 2:44 pm

Tgt Ion:106 Resp: 6615

Ion	Ratio	Lower	Upper
106	100		
91	167.3	155.0	215.0
77	23.3	9.1	49.1

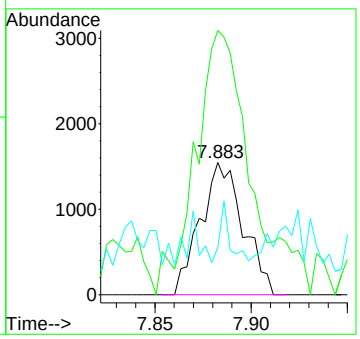


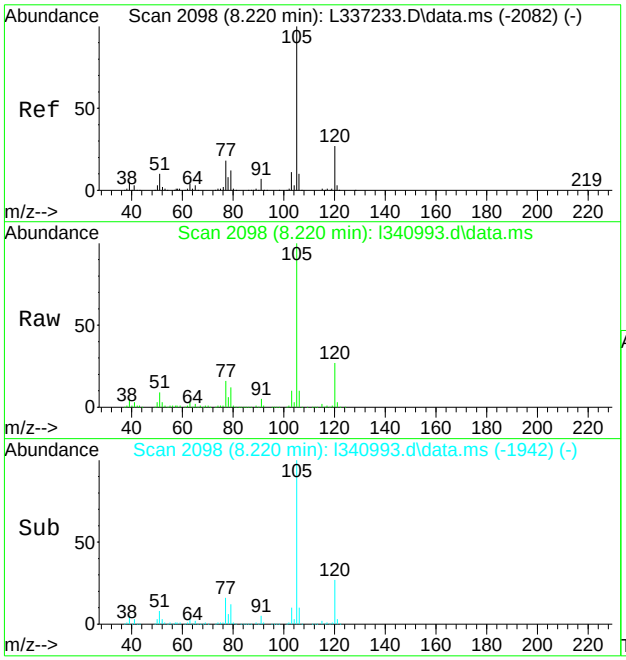


#88
o-xylene
Concen: 0.60 ug/L
RT: 7.883 min Scan# 1993
Delta R.T. -0.003 min
Lab File: l340993.d
Acq: 22 Apr 2022 2:44 pm

Tgt Ion:106 Resp: 2392

Ion	Ratio	Lower	Upper
106	100		
91	167.3	163.1	223.1
77	13.3	17.5	57.5#

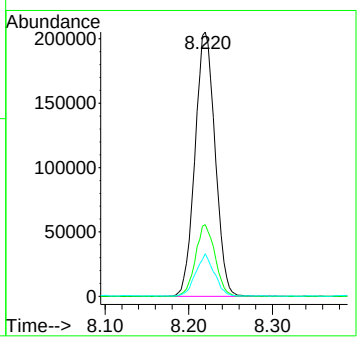


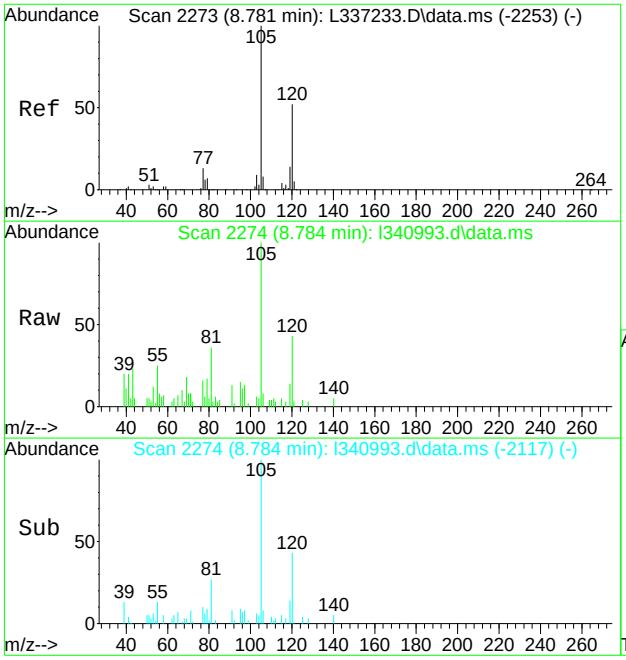


#92
isopropylbenzene
Concen: 35.40 ug/L
RT: 8.220 min Scan# 2098
Delta R.T. -0.000 min
Lab File: l340993.d
Acq: 22 Apr 2022 2:44 pm

Tgt Ion:105 Resp: 342877

Ion	Ratio	Lower	Upper
105	100		
120	27.2	7.2	47.2
77	16.1	0.0	38.3

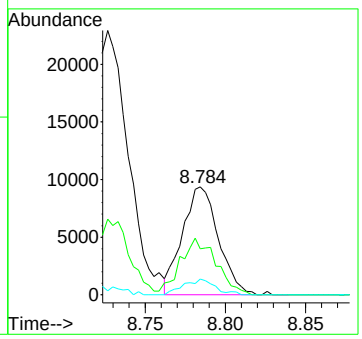


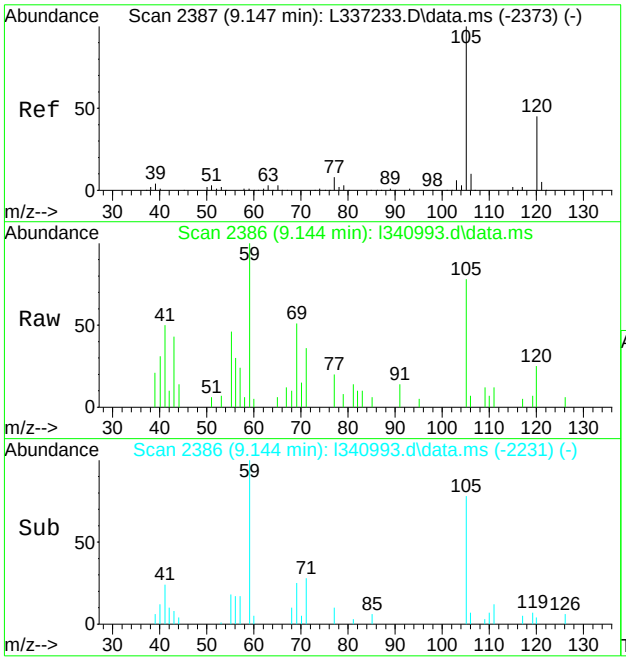


#103
1,3,5-trimethylbenzene
Concen: 1.78 ug/L
RT: 8.784 min Scan# 2274
Delta R.T. 0.003 min
Lab File: l340993.d
Acq: 22 Apr 2022 2:44 pm

Tgt Ion:105 Resp: 14670

Ion	Ratio	Lower	Upper
105	100		
120	42.7	21.9	81.9
119	14.5	0.0	44.3

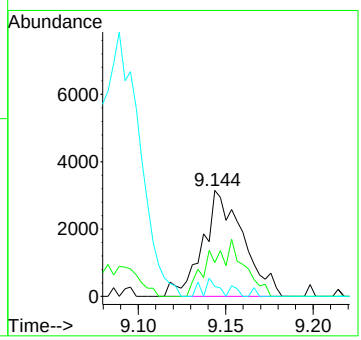




#105
1,2,4-trimethylbenzene
Concen: 0.59 ug/L
RT: 9.144 min Scan# 2386
Delta R.T. -0.003 min
Lab File: l340993.d
Acq: 22 Apr 2022 2:44 pm

Tgt Ion:105 Resp: 5055

Ion	Ratio	Lower	Upper
105	100		
120	31.7	19.0	79.0
119	9.2	0.0	42.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340918.d
Acq On : 21 Apr 2022 6:49 am
Operator : nicoleh
Sample : jd43215-12 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 72 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:42:45 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

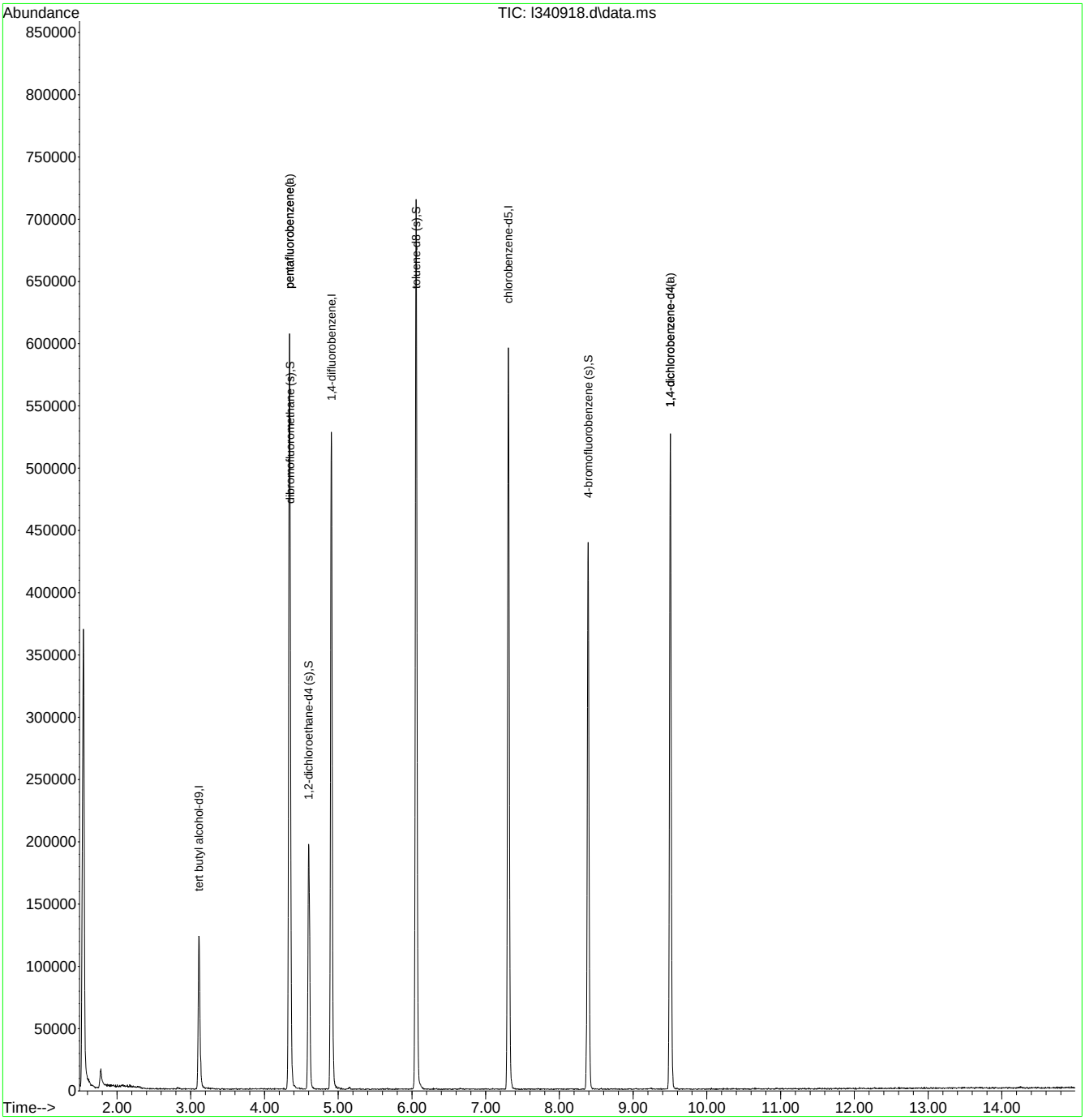
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.111	65	115652	500.00	ug/L	-0.01
5) pentafluorobenzene	4.340	168	265112	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	389761	50.00	ug/L	0.00
71) chlorobenzene-d5	7.308	117	337331	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.503	152	149359	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	263751	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.503	152	148975	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	115486	49.28	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.56%			
51) 1,2-dichloroethane-d4 (s)	4.600	65	117732	51.14	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 102.28%			
72) toluene-d8 (s)	6.057	98	452650	49.04	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.08%			
95) 4-bromofluorobenzene (s)	8.390	95	158954	54.85	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.70%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340918.d
Acq On : 21 Apr 2022 6:49 am
Operator : nicoleh
Sample : jd43215-12 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 72 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:42:45 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340922.d
Acq On : 21 Apr 2022 8:23 am
Operator : nicoleh
Sample : jd43215-13 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 76 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:42:44 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

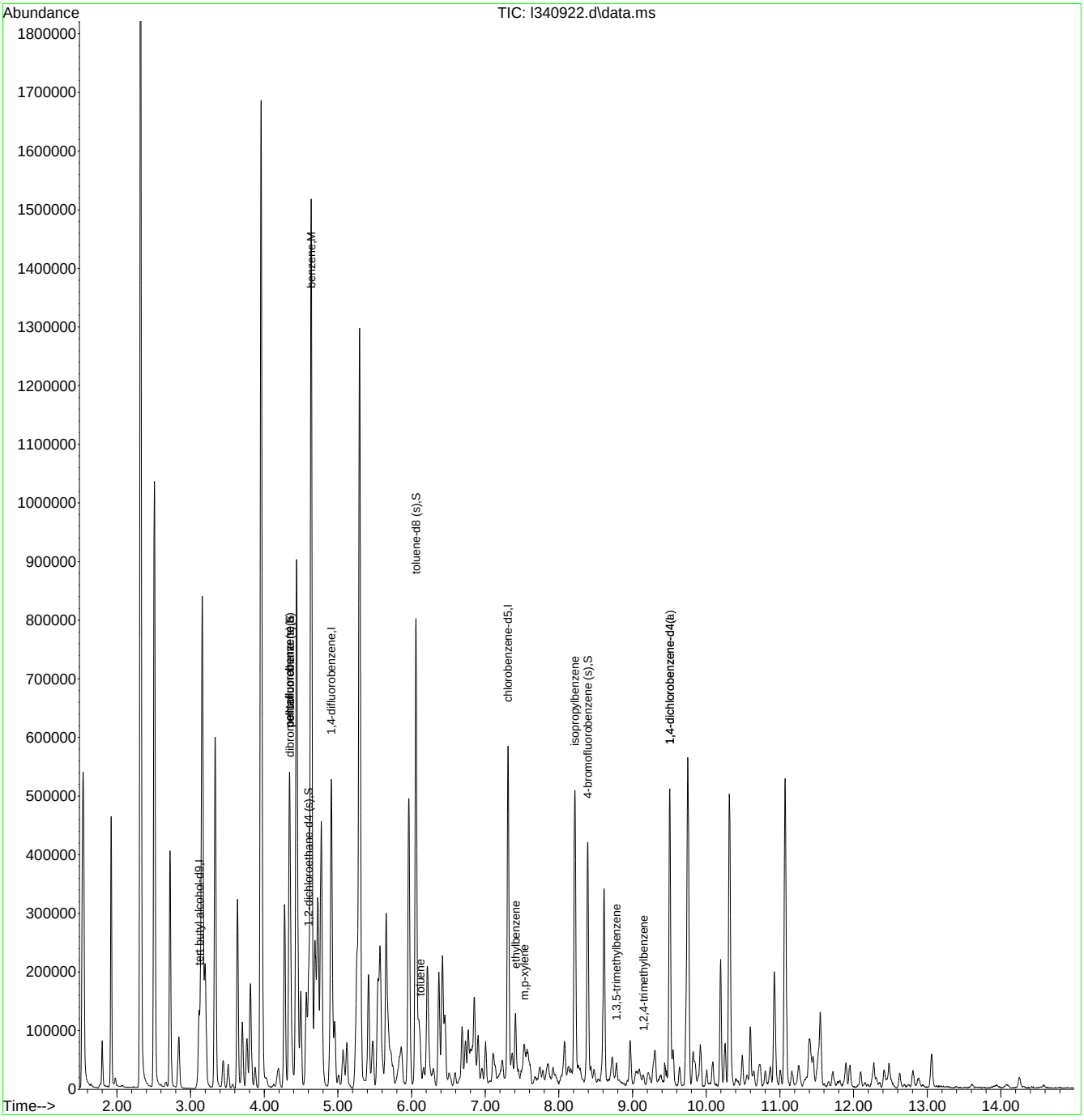
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	112830	500.00	ug/L	0.00
5) pentafluorobenzene	4.343	168	223730	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	331876	50.00	ug/L	0.00
71) chlorobenzene-d5	7.308	117	313048	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	144487	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.343	168	224660	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	144507	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	96593	48.84	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.68%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	102319	52.20	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 104.40%			
72) toluene-d8 (s)	6.060	98	398074	46.47	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.94%			
95) 4-bromofluorobenzene (s)	8.390	95	151158	53.92	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.84%			
Target Compounds						Qvalue
55) benzene	4.638	78	1192066	149.38	ug/L	97
73) toluene	6.118	92	15474	2.62	ug/L	95
86) ethylbenzene	7.414	91	20697	1.98	ug/L	91
87) m,p-xylene	7.530	106	23220	5.66	ug/L	96
92) isopropylbenzene	8.216	105	344909	33.79	ug/L	95
103) 1,3,5-trimethylbenzene	8.778	105	11546	1.35	ug/L	82
105) 1,2,4-trimethylbenzene	9.150	105	7502	0.85	ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

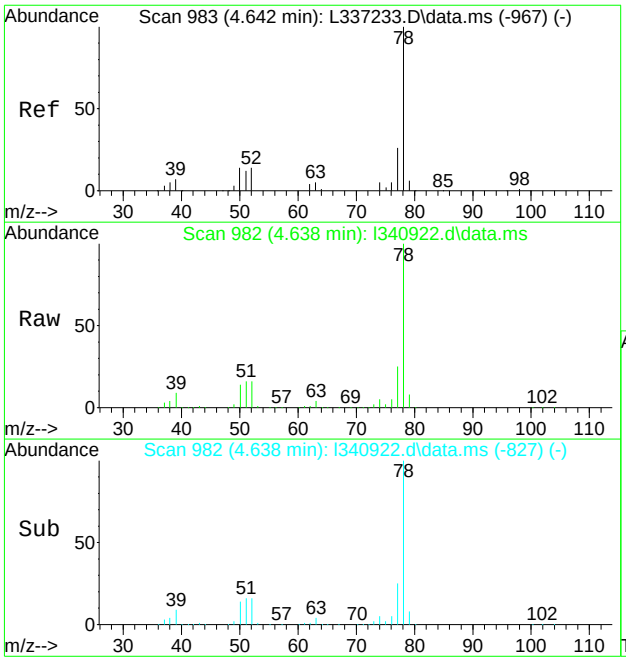
Quantitation Report (QT Reviewed)

Data Path : X:\voa-gcms\complete\2022\dayton 202204\4-22-2022\nelsonf\vl10281\
Data File : l340922.d
Acq On : 21 Apr 2022 8:23 am
Operator : nicoleh
Sample : jd43215-13 Inst : GCMSL
Misc : MS58320,VL10281,5,,,,1
ALS Vial : 76 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 20:42:44 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration



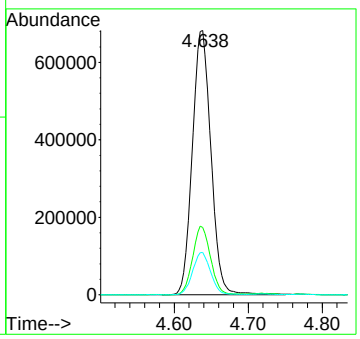
ML10152.M Fri Apr 22 20:45:46 2022 RT1 Page: 2

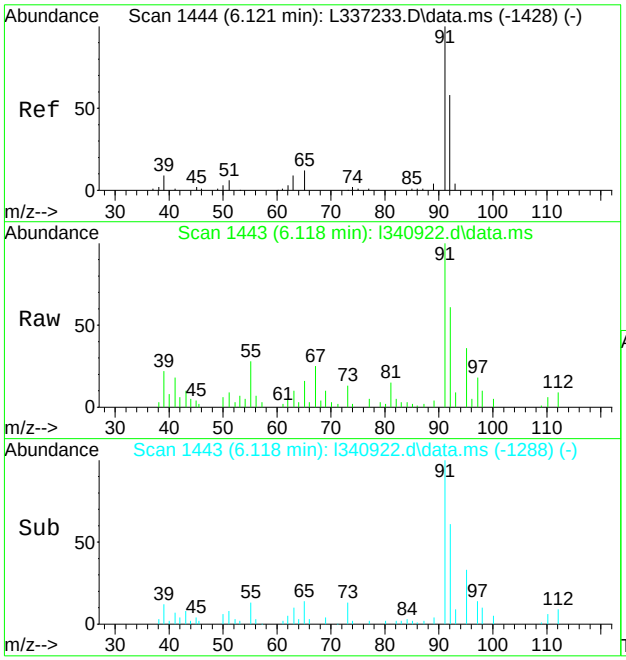


#55
benzene
Concen: 149.38 ug/L
RT: 4.638 min Scan# 982
Delta R.T. -0.004 min
Lab File: l340922.d
Acq: 21 Apr 2022 8:23 am

Tgt Ion: 78 Resp: 1192066

Ion	Ratio	Lower	Upper
78	100		
77	25.4	0.0	56.1
52	16.0	0.0	43.6

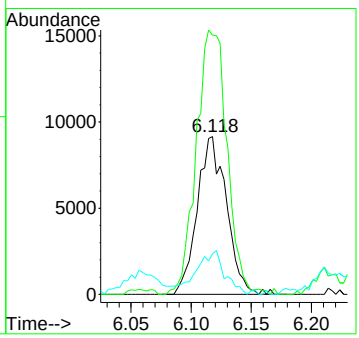


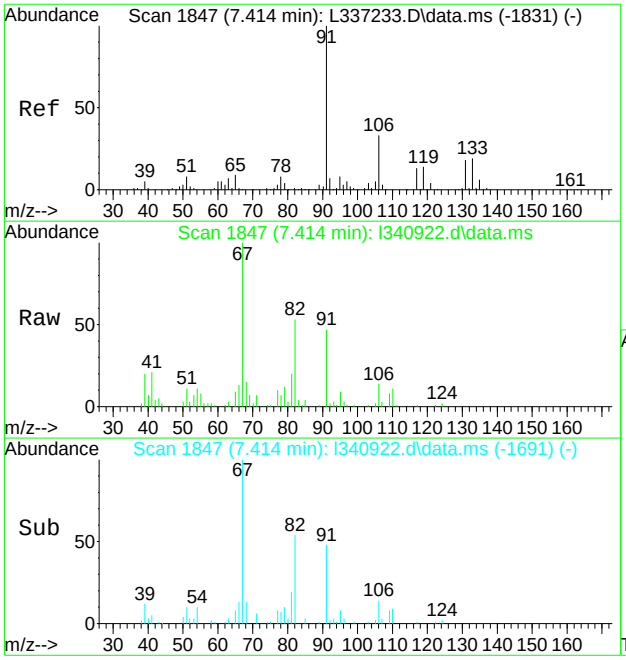


#73
toluene
Concen: 2.62 ug/L
RT: 6.118 min Scan# 1443
Delta R.T. -0.003 min
Lab File: l340922.d
Acq: 21 Apr 2022 8:23 am

Tgt Ion: 92 Resp: 15474

Ion	Ratio	Lower	Upper
92	100		
91	164.3	141.2	201.2
65	21.8	0.0	50.5

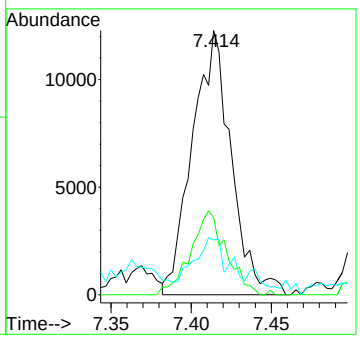


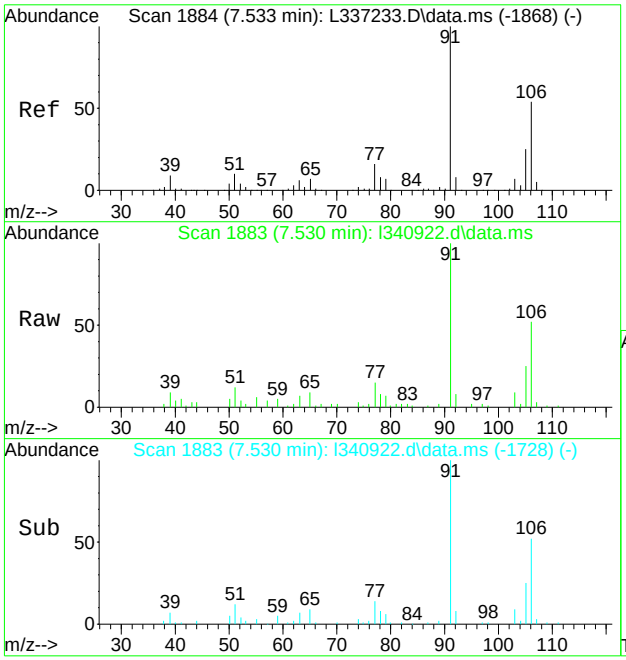


#86
ethylbenzene
Concen: 1.98 ug/L
RT: 7.414 min Scan# 1847
Delta R.T. 0.000 min
Lab File: l340922.d
Acq: 21 Apr 2022 8:23 am

Tgt Ion: 91 Resp: 20697

Ion	Ratio	Lower	Upper
91	100		
106	29.2	2.7	62.7
77	15.2	0.0	39.1

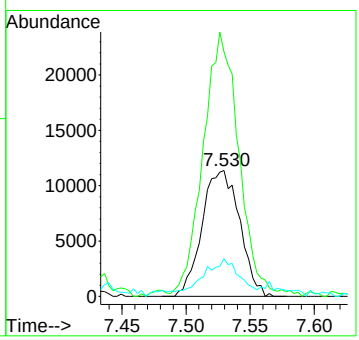


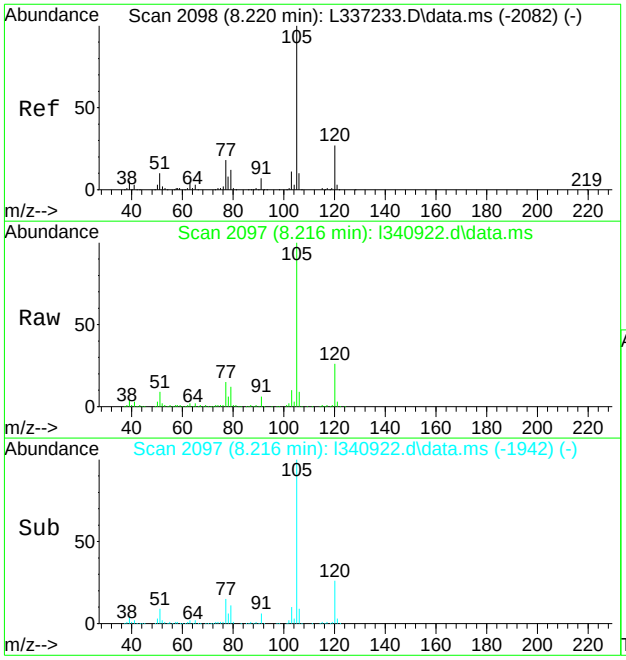


#87
m,p-xylene
Concen: 5.66 ug/L
RT: 7.530 min Scan# 1883
Delta R.T. -0.003 min
Lab File: l340922.d
Acq: 21 Apr 2022 8:23 am

Tgt Ion:106 Resp: 23220

Ion	Ratio	Lower	Upper
106	100		
91	190.6	155.0	215.0
77	25.1	9.1	49.1

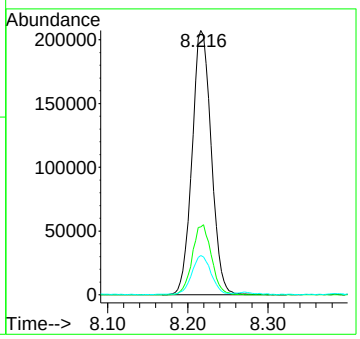


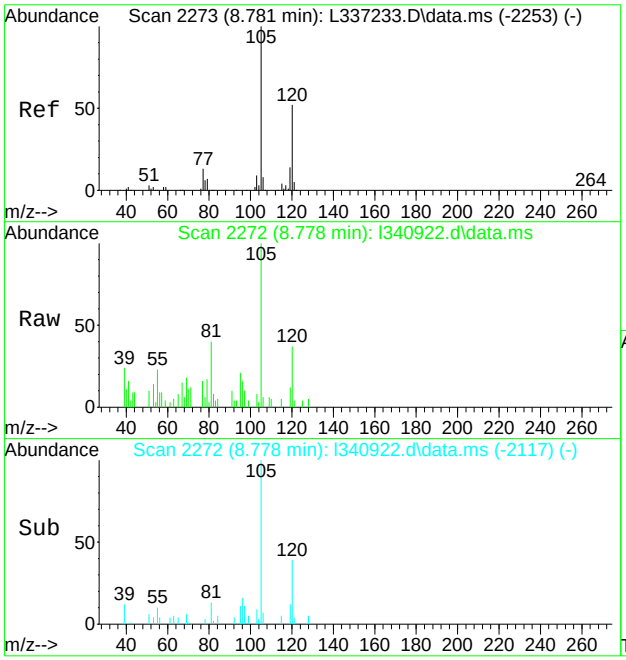


#92
isopropylbenzene
Concen: 33.79 ug/L
RT: 8.216 min Scan# 2097
Delta R.T. -0.004 min
Lab File: l340922.d
Acq: 21 Apr 2022 8:23 am

Tgt Ion:105 Resp: 344909

Ion	Ratio	Lower	Upper
105	100		
120	25.7	7.2	47.2
77	14.7	0.0	38.3

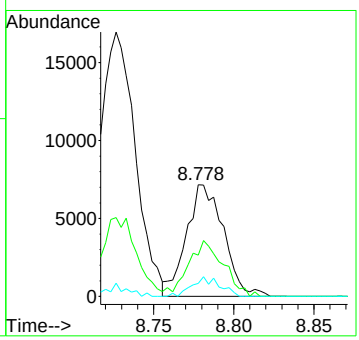


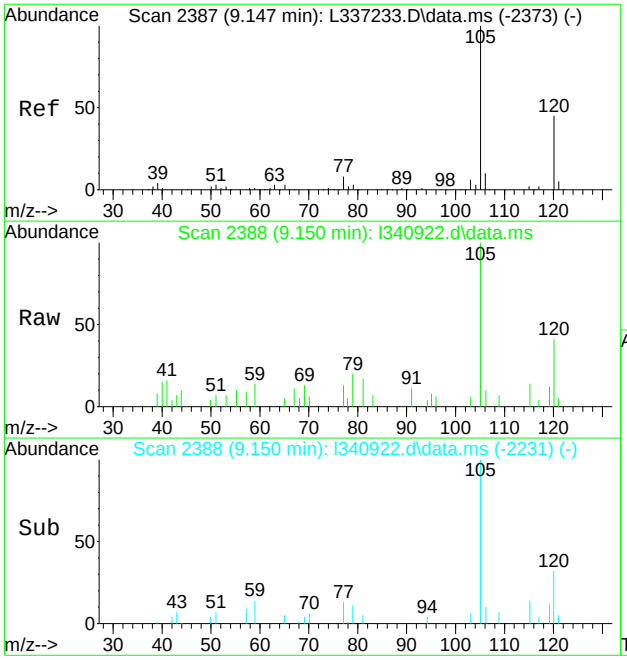


#103
1,3,5-trimethylbenzene
Concen: 1.35 ug/L
RT: 8.778 min Scan# 2272
Delta R.T. -0.003 min
Lab File: l340922.d
Acq: 21 Apr 2022 8:23 am

Tgt Ion:105 Resp: 11546

Ion	Ratio	Lower	Upper
105	100		
120	37.0	21.9	81.9
119	11.7	0.0	44.3

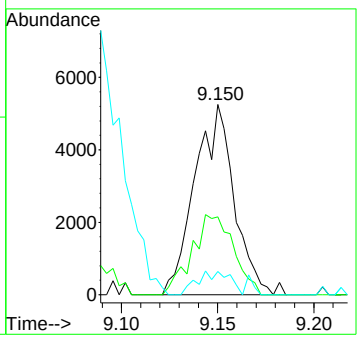




#105
1,2,4-trimethylbenzene
Concen: 0.85 ug/L
RT: 9.150 min Scan# 2388
Delta R.T. 0.003 min
Lab File: l340922.d
Acq: 21 Apr 2022 8:23 am

Tgt Ion:105 Resp: 7502

Ion	Ratio	Lower	Upper
105	100		
120	40.9	19.0	79.0
119	12.2	0.0	42.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\april 2022\04252022\vl10284\
Data File : l340994.d
Acq On : 22 Apr 2022 3:08 pm
Operator : nicoleh
Sample : jd43215-14 Inst : GCMSL
Misc : MS58320,VL10284,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 03:16:14 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

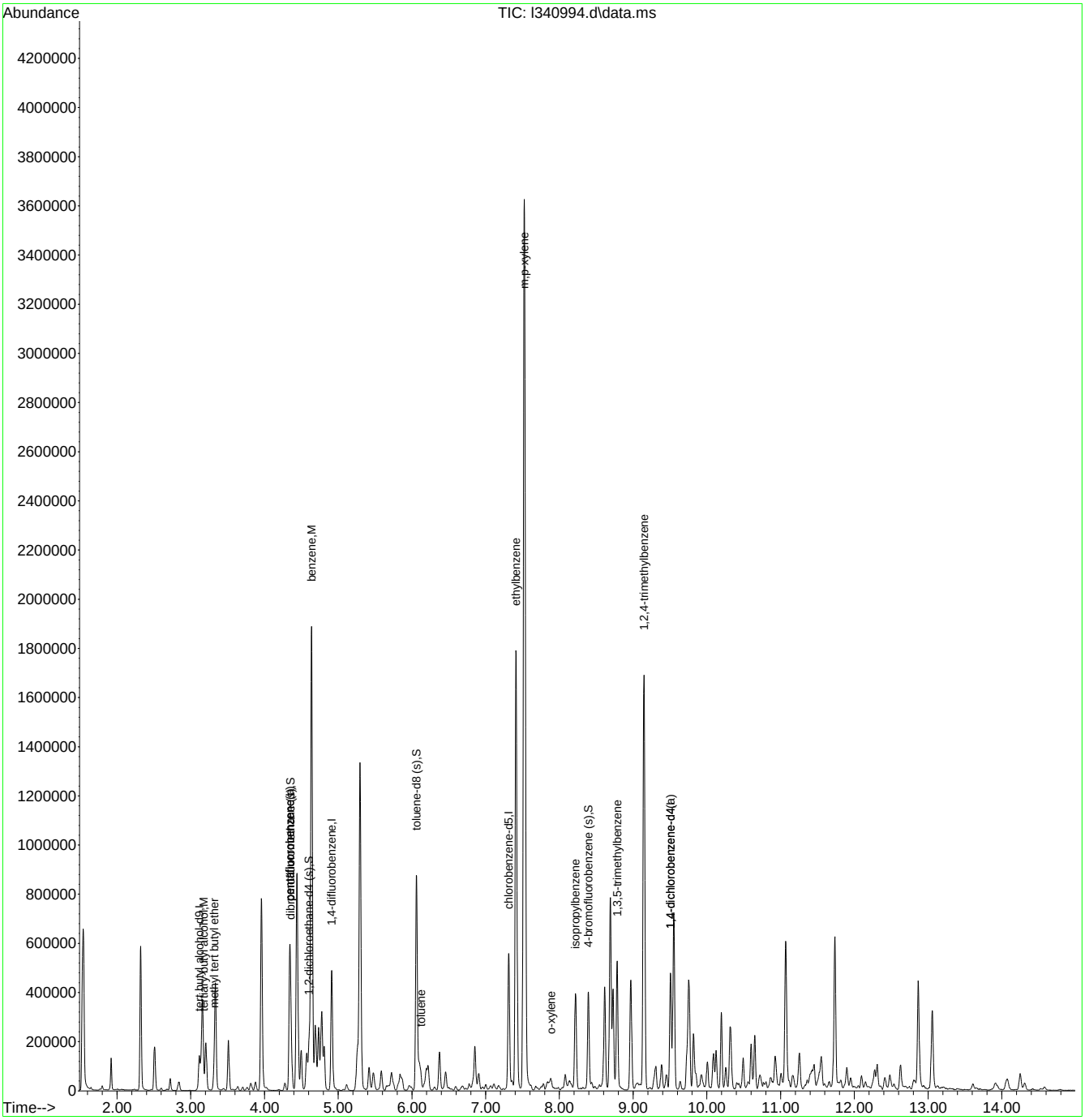
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	121874	500.00	ug/L	0.00
5) pentafluorobenzene	4.343	168	253432	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	356663	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	323833	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	134635	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.343	168	253780	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	134616	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	109466	48.86	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.72%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	110774	52.59	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 105.18%			
72) toluene-d8 (s)	6.060	98	438866	49.53	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.06%			
95) 4-bromofluorobenzene (s)	8.393	95	143234	54.84	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.68%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.175	59	6810	23.19	ug/L	# 1
24) methyl tert butyl ether	3.316	73	56399	7.66	ug/L	# 1
55) benzene	4.638	78	1478474	172.40	ug/L	97
73) toluene	6.121	92	20948	3.43	ug/L	92
86) ethylbenzene	7.411	91	1275443	118.00	ug/L	95
87) m,p-xylene	7.523	106	1306048	307.85	ug/L	90
88) o-xylene	7.886	106	11058	2.53	ug/L	88
92) isopropylbenzene	8.216	105	264416	25.04	ug/L	96
103) 1,3,5-trimethylbenzene	8.784	105	288251	36.19	ug/L	98
105) 1,2,4-trimethylbenzene	9.147	105	972034	118.32	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

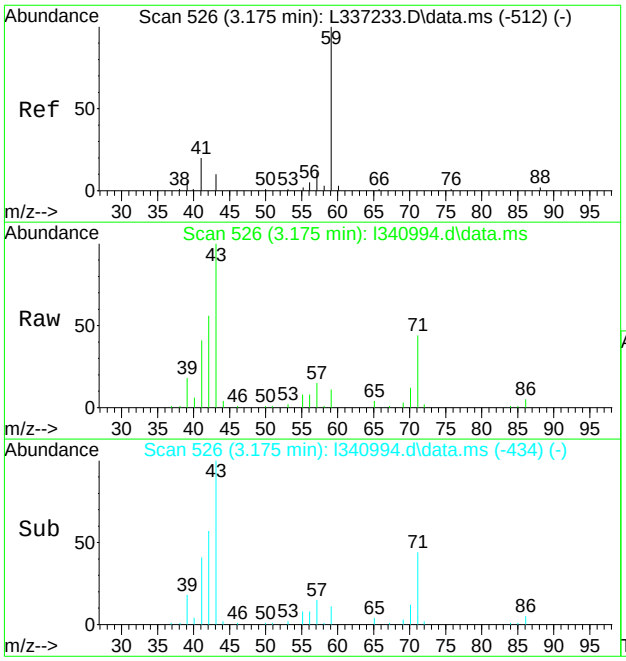
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\april 2022\04252022\vl10284\
Data File : l340994.d
Acq On : 22 Apr 2022 3:08 pm
Operator : nicoleh
Sample : jd43215-14 Inst : GCMSL
Misc : MS58320,VL10284,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 03:16:14 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration



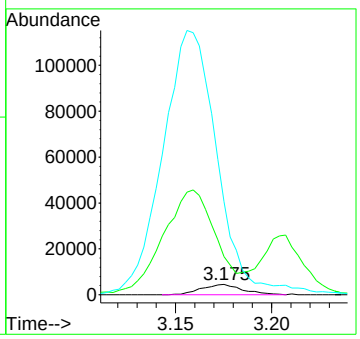
ML10152.M Mon Apr 25 03:35:53 2022 Page: 2

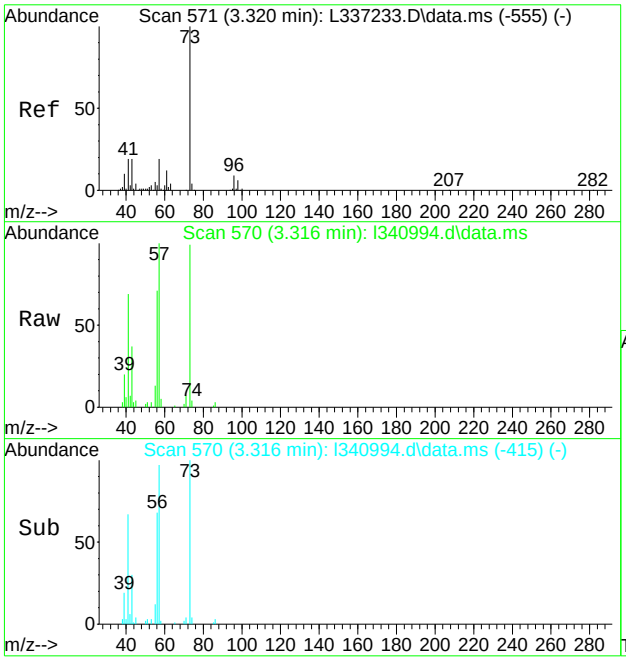


#4
tertiary butyl alcohol
Concen: 23.19 ug/L
RT: 3.175 min Scan# 526
Delta R.T. -0.006 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion: 59 Resp: 6810

Ion	Ratio	Lower	Upper
59	100		
41	0.0	0.0	52.7
43	805.8	0.0	41.4#

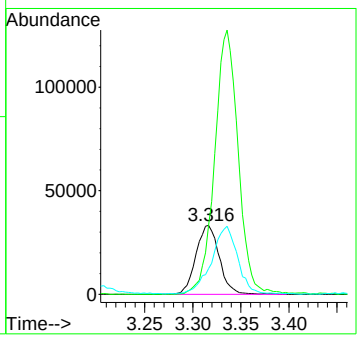


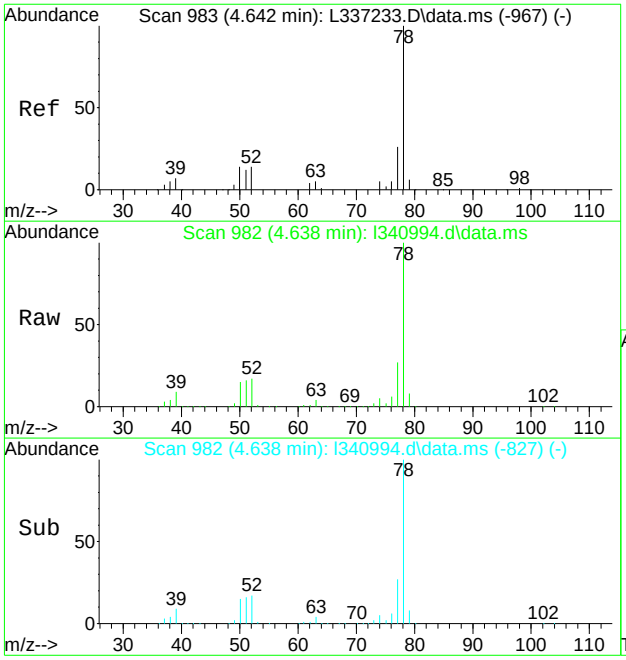


#24
methyl tert butyl ether
Concen: 7.66 ug/L
RT: 3.316 min Scan# 570
Delta R.T. -0.004 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion: 73 Resp: 56399

Ion	Ratio	Lower	Upper
73	100		
57	100.6	0.0	48.6#
43	36.9	0.0	49.1

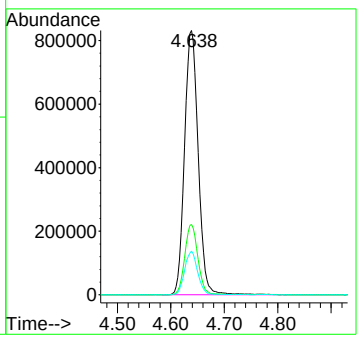


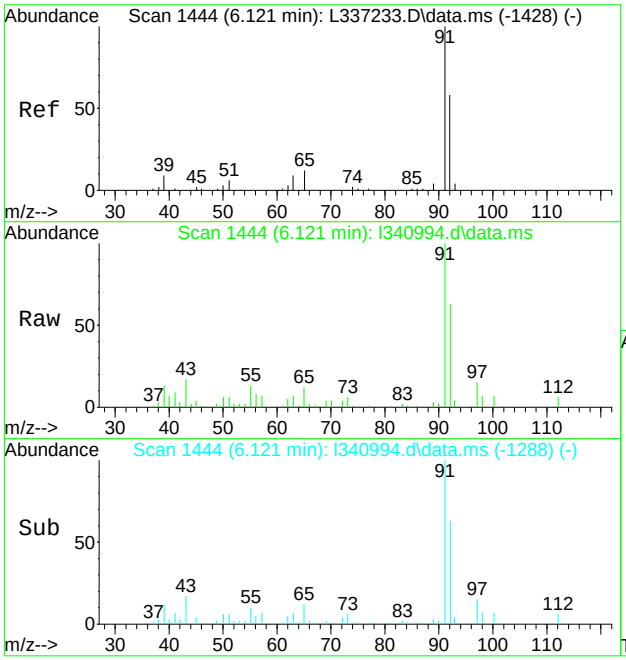


#55
benzene
Concen: 172.40 ug/L
RT: 4.638 min Scan# 982
Delta R.T. -0.004 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion: 78 Resp: 1478474

Ion	Ratio	Lower	Upper
78	100		
77	26.6	0.0	56.1
52	16.5	0.0	43.6

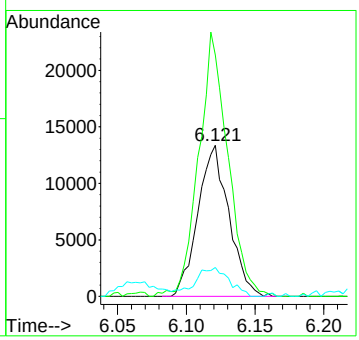


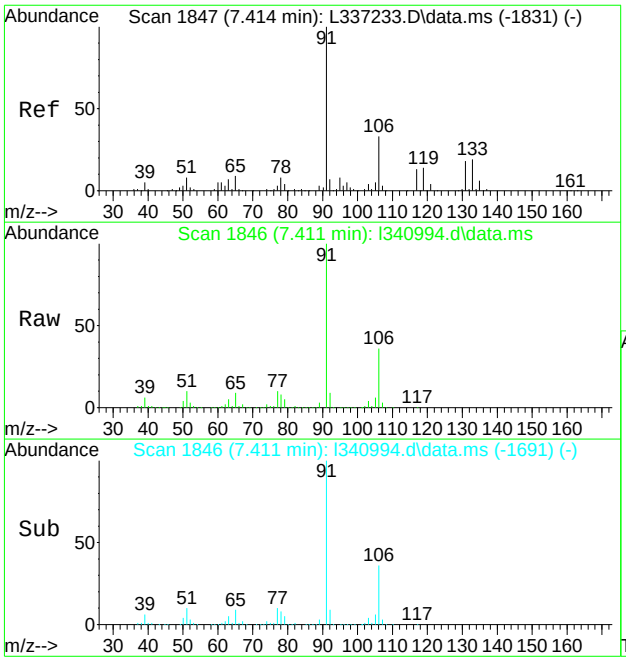


#73
toluene
Concen: 3.43 ug/L
RT: 6.121 min Scan# 1444
Delta R.T. 0.000 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion: 92 Resp: 20948

Ion	Ratio	Lower	Upper
92	100		
91	159.7	141.2	201.2
65	17.3	0.0	50.5

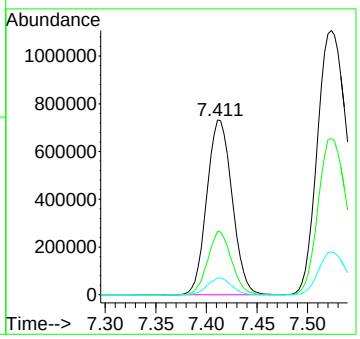


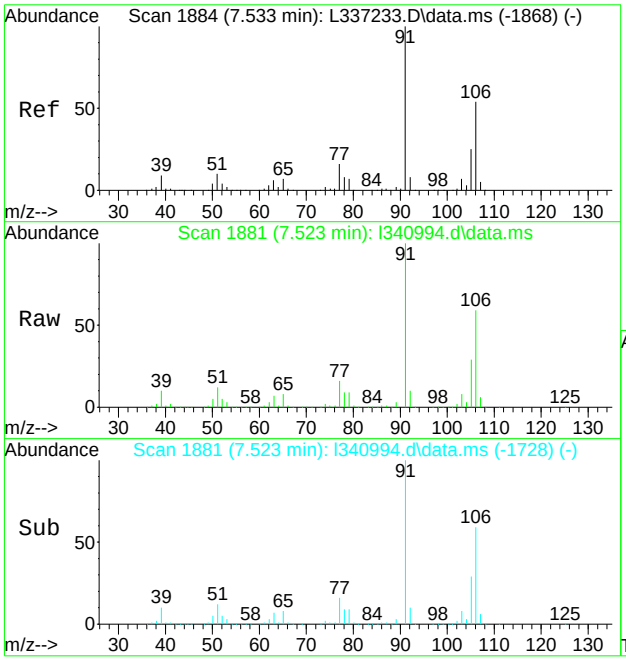


#86
ethylbenzene
Concen: 118.00 ug/L
RT: 7.411 min Scan# 1846
Delta R.T. -0.003 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion: 91 Resp: 1275443

Ion	Ratio	Lower	Upper
91	100		
106	36.3	2.7	62.7
77	9.6	0.0	39.1

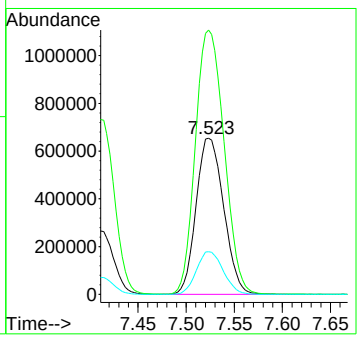


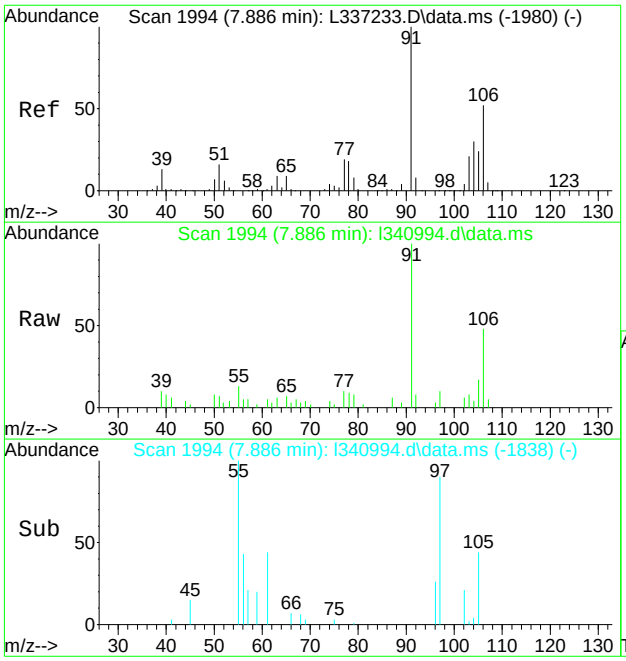


#87
m,p-xylene
Concen: 307.85 ug/L
RT: 7.523 min Scan# 1881
Delta R.T. -0.010 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion:106 Resp: 1306048

Ion	Ratio	Lower	Upper
106	100		
91	169.1	155.0	215.0
77	27.2	9.1	49.1

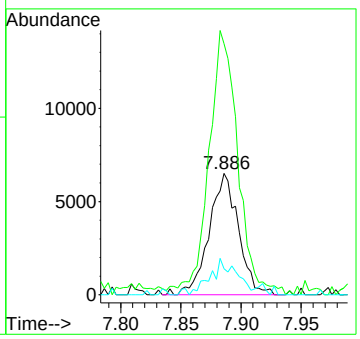


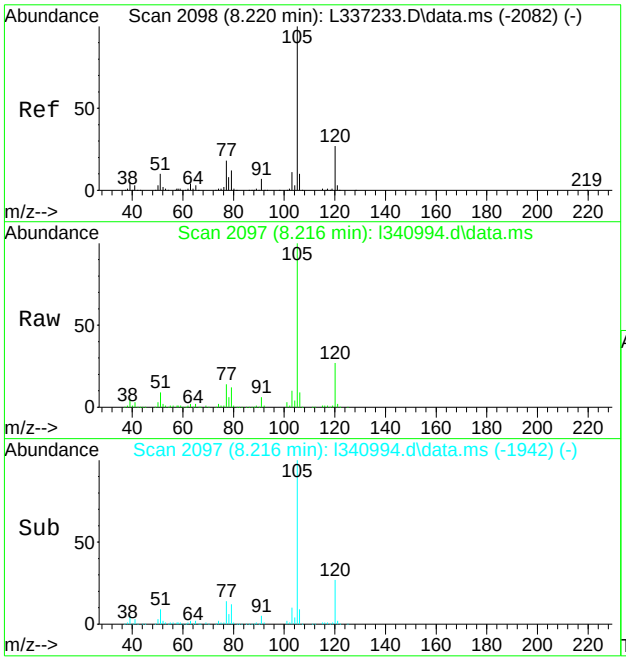


#88
o-xylene
Concen: 2.53 ug/L
RT: 7.886 min Scan# 1994
Delta R.T. -0.000 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion:106 Resp: 11058

Ion	Ratio	Lower	Upper
106	100		
91	206.8	163.1	223.1
77	21.4	17.5	57.5

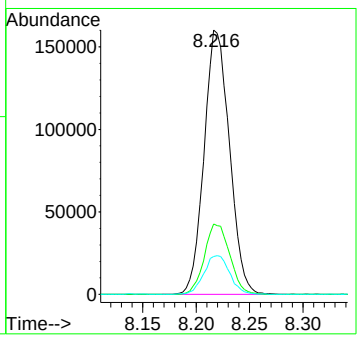


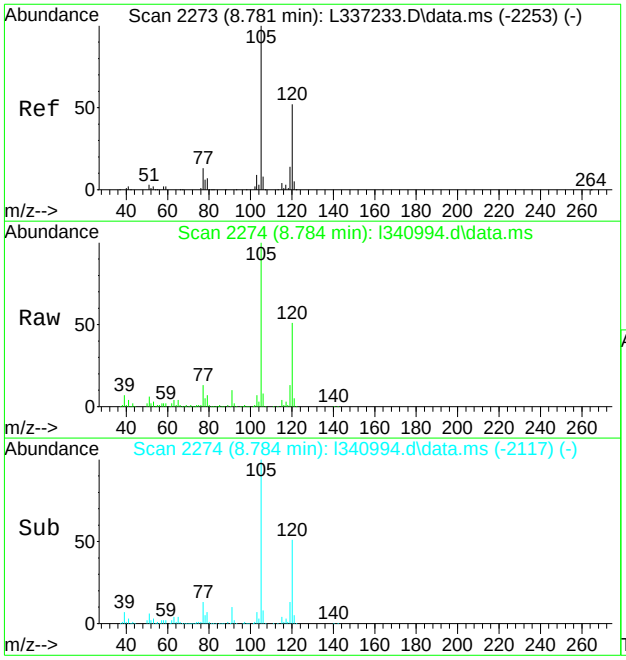


#92
isopropylbenzene
Concen: 25.04 ug/L
RT: 8.216 min Scan# 2097
Delta R.T. -0.004 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion:105 Resp: 264416

Ion	Ratio	Lower	Upper
105	100		
120	26.6	7.2	47.2
77	14.3	0.0	38.3

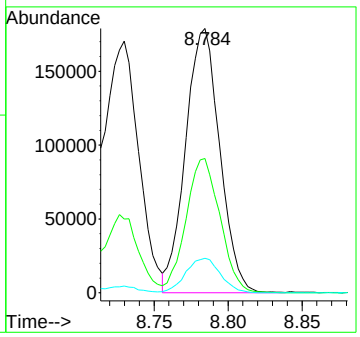


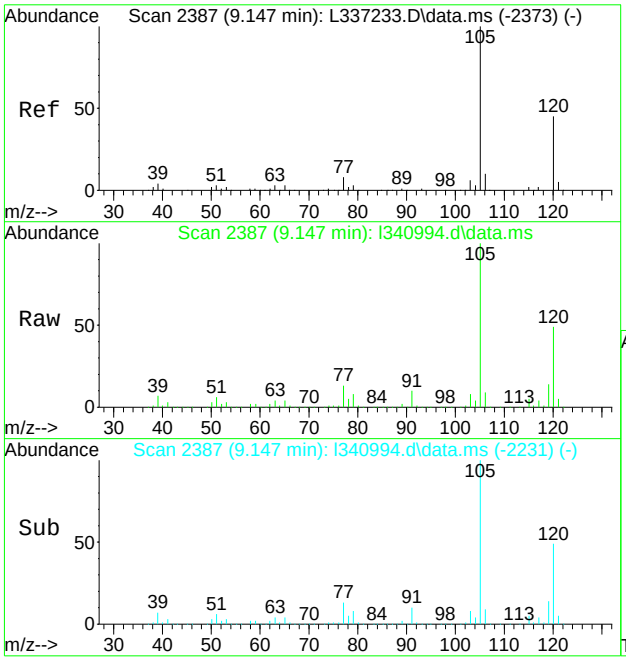


#103
1,3,5-trimethylbenzene
Concen: 36.19 ug/L
RT: 8.784 min Scan# 2274
Delta R.T. 0.003 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion:105 Resp: 288251

Ion	Ratio	Lower	Upper
105	100		
120	50.9	21.9	81.9
119	13.0	0.0	44.3

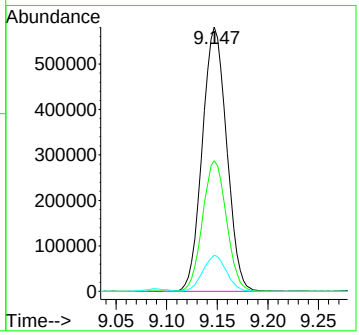




#105
1,2,4-trimethylbenzene
Concen: 118.32 ug/L
RT: 9.147 min Scan# 2387
Delta R.T. 0.000 min
Lab File: l340994.d
Acq: 22 Apr 2022 3:08 pm

Tgt Ion:105 Resp: 972034

Ion	Ratio	Lower	Upper
105	100		
120	49.3	19.0	79.0
119	13.7	0.0	42.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340970.d
Acq On : 22 Apr 2022 4:14 am
Operator : nicoleh
Sample : JD43215-15 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,50
ALS Vial : 68 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:01:21 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

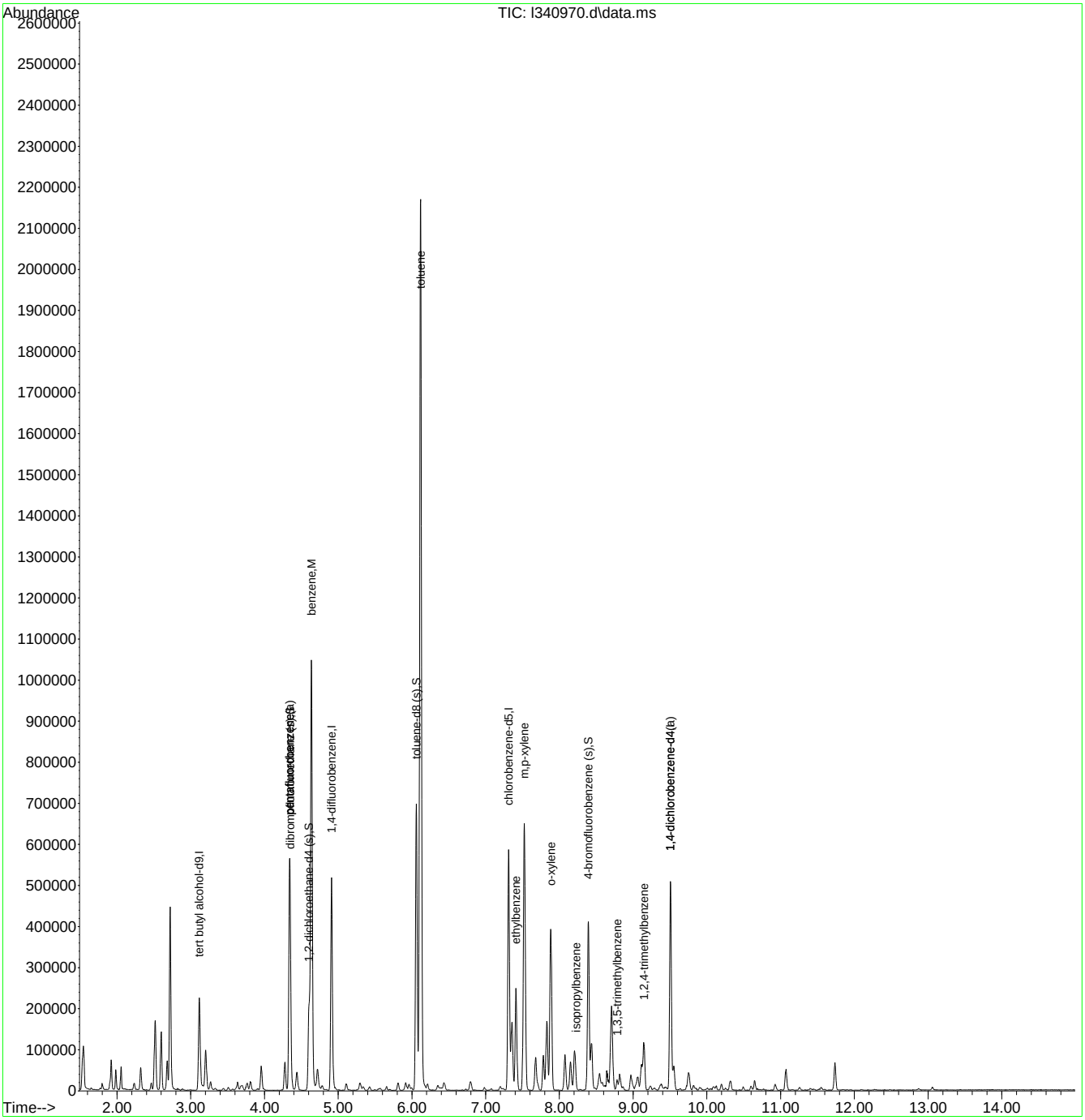
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	119155	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	253006	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	366943	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	330460	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.503	152	145205	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	252796	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.503	152	145318	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	111887	50.03	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.06%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	115609	53.34	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 106.68%			
72) toluene-d8 (s)	6.060	98	445081	49.22	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.44%			
95) 4-bromofluorobenzene (s)	8.390	95	152636	54.18	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.36%			
Target Compounds						Qvalue
55) benzene	4.635	78	826171	93.64	ug/L	97
73) toluene	6.118	92	968942	155.31	ug/L	89
86) ethylbenzene	7.411	91	180152	16.33	ug/L	97
87) m,p-xylene	7.523	106	224037	51.75	ug/L	97
88) o-xylene	7.886	106	114676	25.73	ug/L	96
92) isopropylbenzene	8.226	105	7347	0.68	ug/L	76
103) 1,3,5-trimethylbenzene	8.784	105	13458	1.57	ug/L	77
105) 1,2,4-trimethylbenzene	9.147	105	61306	6.92	ug/L	98

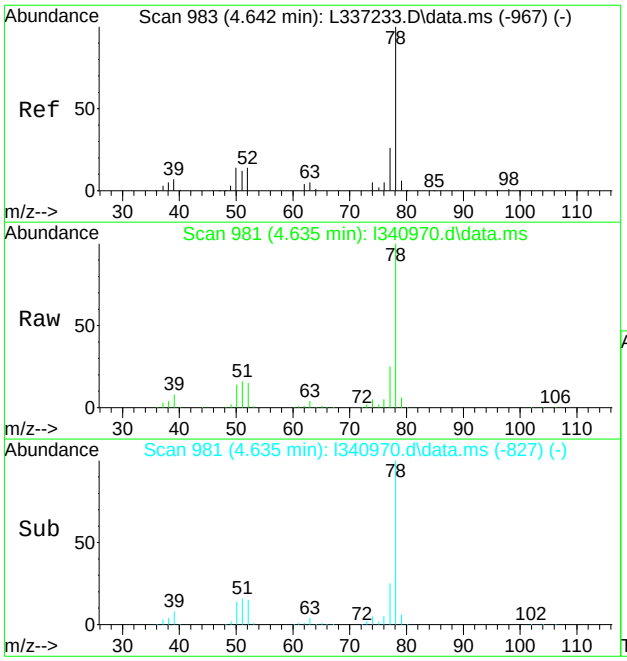
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340970.d
Acq On : 22 Apr 2022 4:14 am
Operator : nicoleh
Sample : JD43215-15 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,50
ALS Vial : 68 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:01:21 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

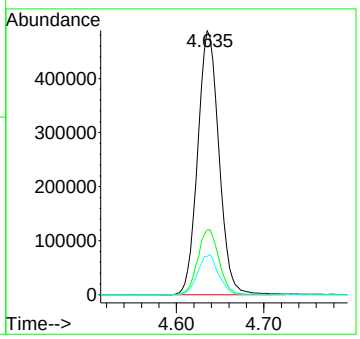


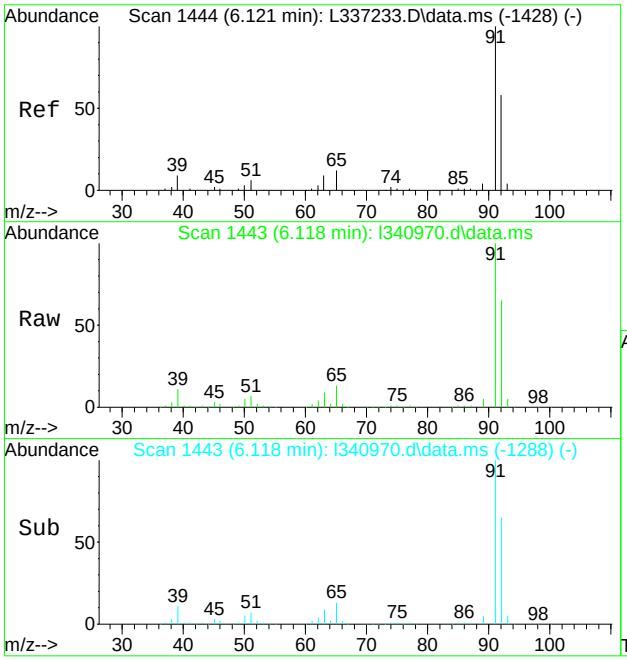


#55
benzene
Concen: 93.64 ug/L
RT: 4.635 min Scan# 981
Delta R.T. -0.007 min
Lab File: l340970.d
Acq: 22 Apr 2022 4:14 am

Tgt Ion: 78 Resp: 826171

Ion	Ratio	Lower	Upper
78	100		
77	24.5	0.0	56.1
52	14.5	0.0	43.6

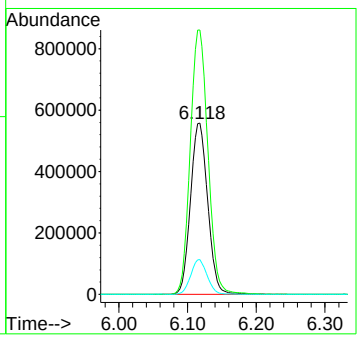


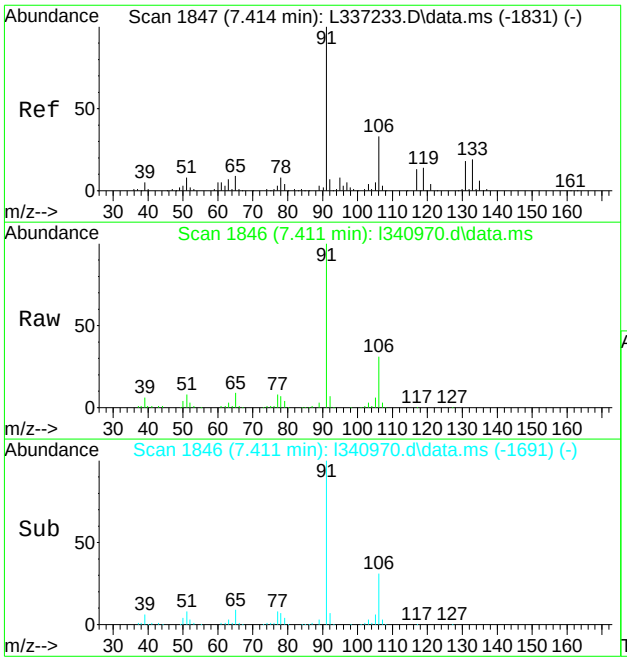


#73
toluene
Concen: 155.31 ug/L
RT: 6.118 min Scan# 1443
Delta R.T. -0.003 min
Lab File: l340970.d
Acq: 22 Apr 2022 4:14 am

Tgt Ion: 92 Resp: 968942

Ion	Ratio	Lower	Upper
92	100		
91	154.5	141.2	201.2
65	20.3	0.0	50.5

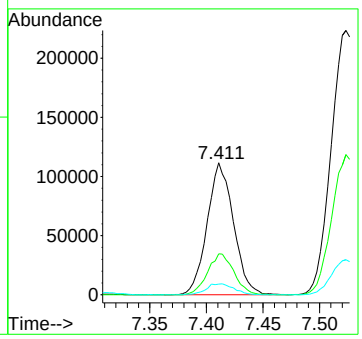


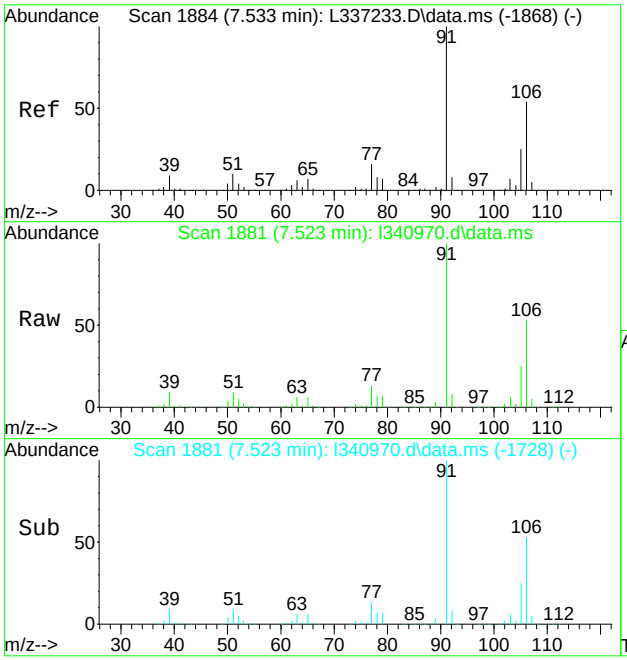


#86
ethylbenzene
Concen: 16.33 ug/L
RT: 7.411 min Scan# 1846
Delta R.T. -0.003 min
Lab File: l340970.d
Acq: 22 Apr 2022 4:14 am

Tgt Ion: 91 Resp: 180152

Ion	Ratio	Lower	Upper
91	100		
106	31.0	2.7	62.7
77	8.1	0.0	39.1

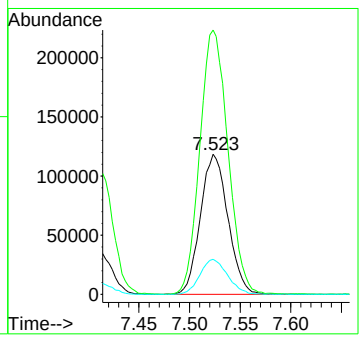


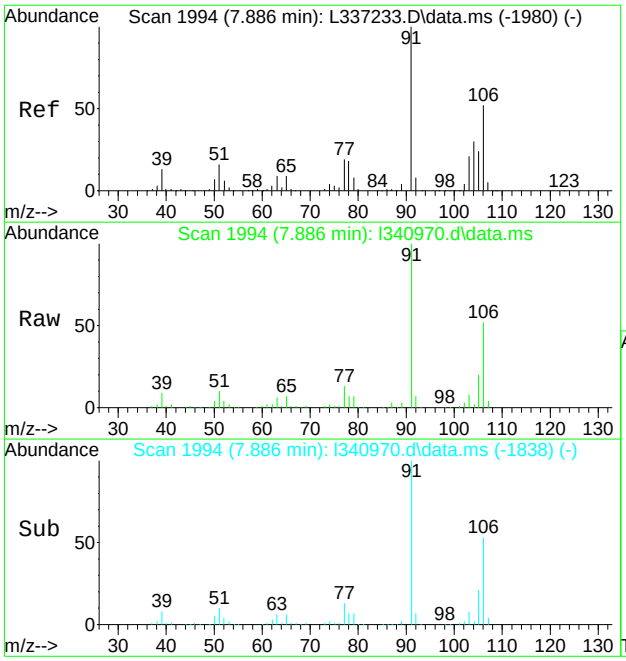


#87
m,p-xylene
Concen: 51.75 ug/L
RT: 7.523 min Scan# 1881
Delta R.T. -0.010 min
Lab File: l340970.d
Acq: 22 Apr 2022 4:14 am

Tgt Ion:106 Resp: 224037

Ion	Ratio	Lower	Upper
106	100		
91	188.5	155.0	215.0
77	25.0	9.1	49.1

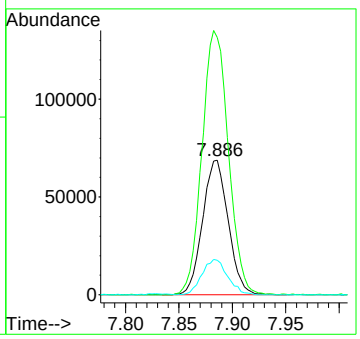


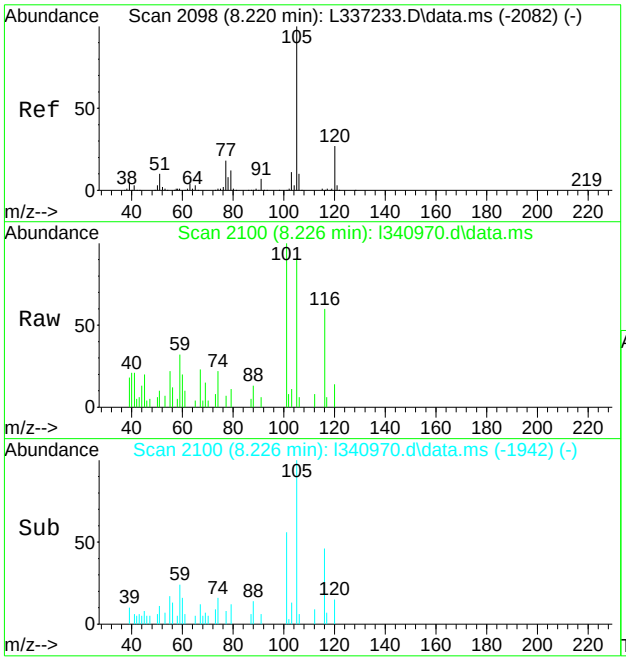


#88
o-xylene
Concen: 25.73 ug/L
RT: 7.886 min Scan# 1994
Delta R.T. -0.000 min
Lab File: l340970.d
Acq: 22 Apr 2022 4:14 am

Tgt Ion:106 Resp: 114676

Ion	Ratio	Lower	Upper
106	100		
91	191.2	163.1	223.1
77	25.7	17.5	57.5

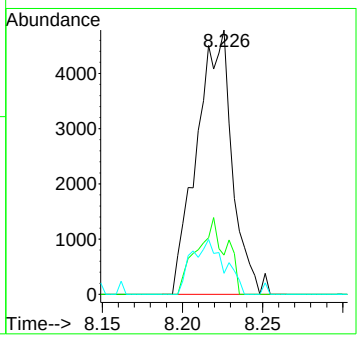


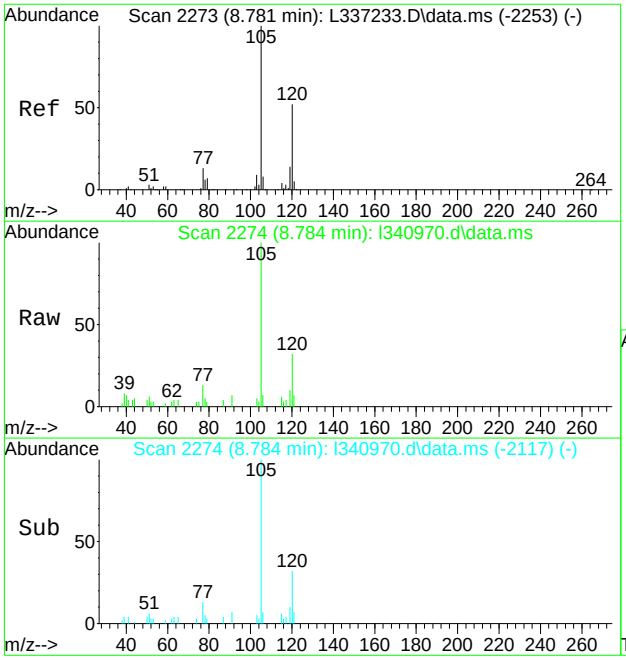


#92
isopropylbenzene
Concen: 0.68 ug/L
RT: 8.226 min Scan# 2100
Delta R.T. 0.006 min
Lab File: l340970.d
Acq: 22 Apr 2022 4:14 am

Tgt Ion:105 Resp: 7347

Ion	Ratio	Lower	Upper
105	100		
120	14.9	7.2	47.2
77	7.9	0.0	38.3

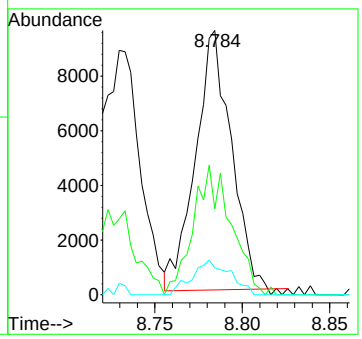


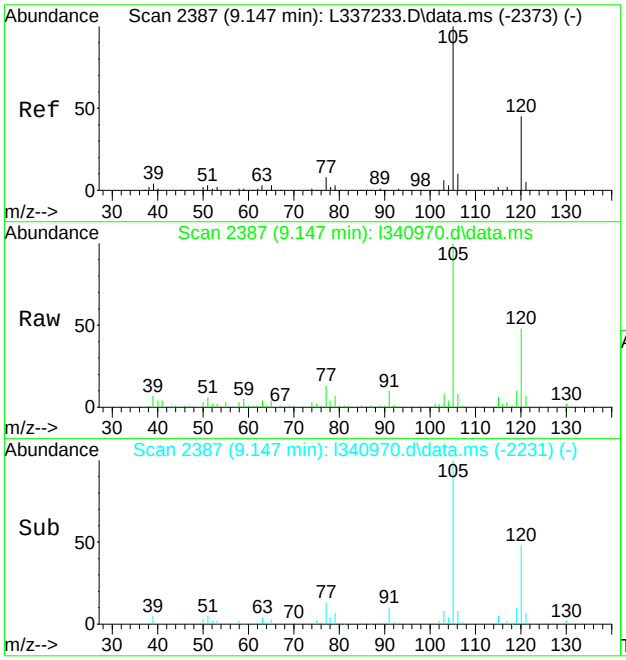


#103
1,3,5-trimethylbenzene
Concen: 1.57 ug/L
RT: 8.784 min Scan# 2274
Delta R.T. 0.003 min
Lab File: l340970.d
Acq: 22 Apr 2022 4:14 am

Tgt Ion:105 Resp: 13458

Ion	Ratio	Lower	Upper
105	100		
120	33.3	21.9	81.9
119	10.5	0.0	44.3

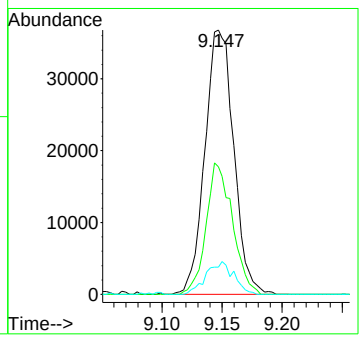




#105
1,2,4-trimethylbenzene
Concen: 6.92 ug/L
RT: 9.147 min Scan# 2387
Delta R.T. -0.000 min
Lab File: l340970.d
Acq: 22 Apr 2022 4:14 am

Tgt Ion:105 Resp: 61306

Ion	Ratio	Lower	Upper
105	100		
120	48.2	19.0	79.0
119	10.3	0.0	42.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340971.d
Acq On : 22 Apr 2022 4:37 am
Operator : nicoleh
Sample : JD43215-16 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,50
ALS Vial : 69 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:05:07 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

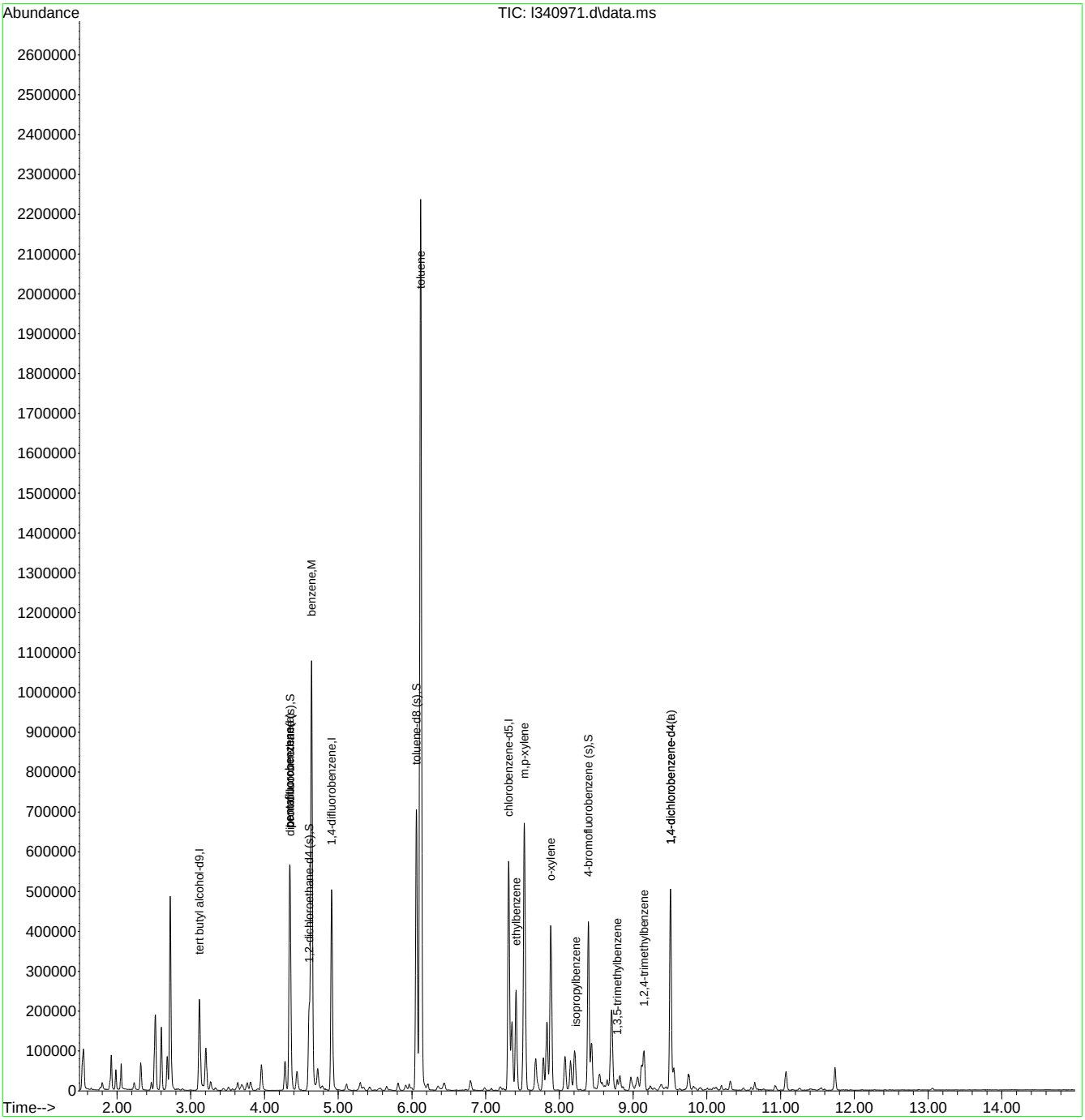
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	119873	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	251492	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	365345	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	334236	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.510	152	145770	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	251324	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.510	152	146002	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	110302	49.62	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.24%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	115570	53.56	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 107.12%			
72) toluene-d8 (s)	6.060	98	443462	48.49	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.98%			
95) 4-bromofluorobenzene (s)	8.393	95	151087	53.42	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.84%			
Target Compounds						Qvalue
55) benzene	4.638	78	852845	97.08	ug/L	99
73) toluene	6.118	92	1002933	158.94	ug/L	88
86) ethylbenzene	7.414	91	184744	16.56	ug/L	99
87) m,p-xylene	7.523	106	227508	51.96	ug/L	97
88) o-xylene	7.883	106	118259	26.23	ug/L	94
92) isopropylbenzene	8.223	105	7001	0.64	ug/L	81
103) 1,3,5-trimethylbenzene	8.784	105	14114	1.64	ug/L	88
105) 1,2,4-trimethylbenzene	9.147	105	52502	5.90	ug/L	92

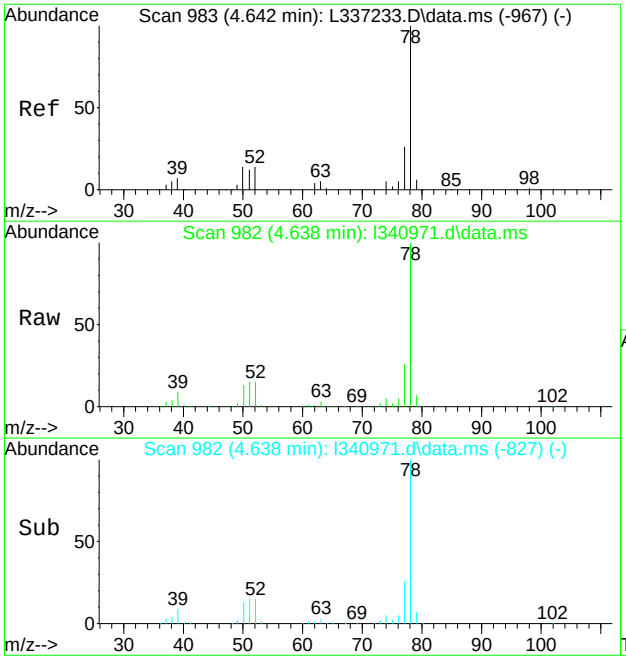
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340971.d
Acq On : 22 Apr 2022 4:37 am
Operator : nicoleh
Sample : JD43215-16 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,50
ALS Vial : 69 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:05:07 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

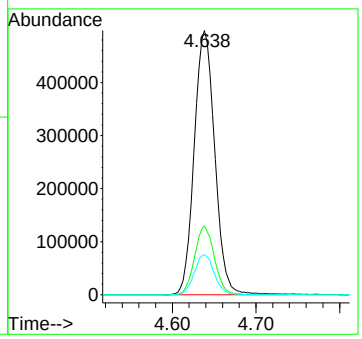


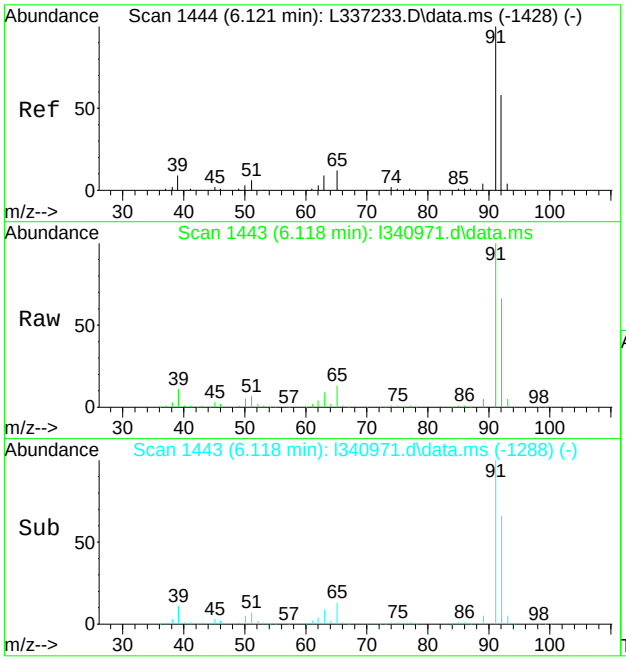


#55
benzene
Concen: 97.08 ug/L
RT: 4.638 min Scan# 982
Delta R.T. -0.004 min
Lab File: l340971.d
Acq: 22 Apr 2022 4:37 am

Tgt Ion: 78 Resp: 852845

Ion	Ratio	Lower	Upper
78	100		
77	26.1	0.0	56.1
52	15.2	0.0	43.6

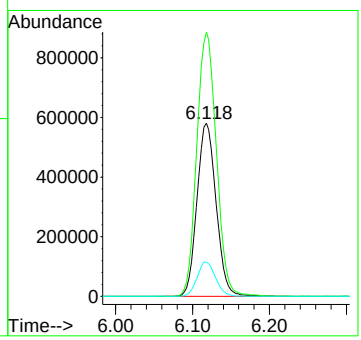


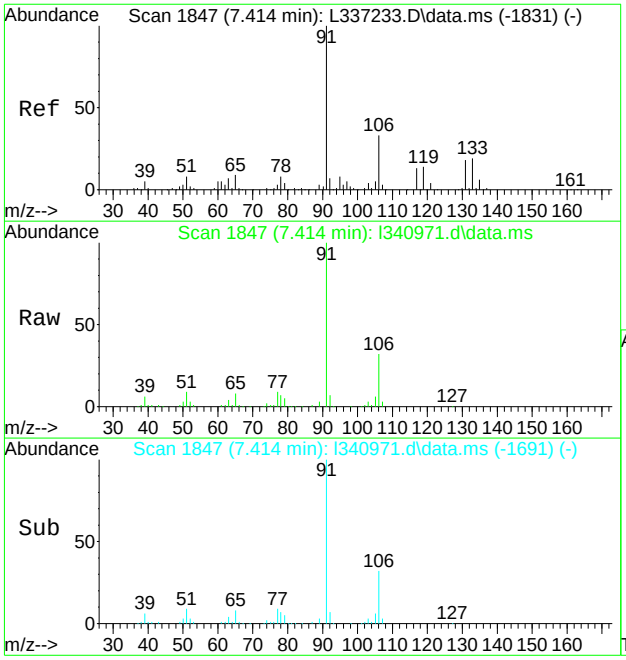


#73
toluene
Concen: 158.94 ug/L
RT: 6.118 min Scan# 1443
Delta R.T. -0.003 min
Lab File: l340971.d
Acq: 22 Apr 2022 4:37 am

Tgt Ion: 92 Resp: 1002933

Ion	Ratio	Lower	Upper
92	100		
91	152.6	141.2	201.2
65	19.7	0.0	50.5

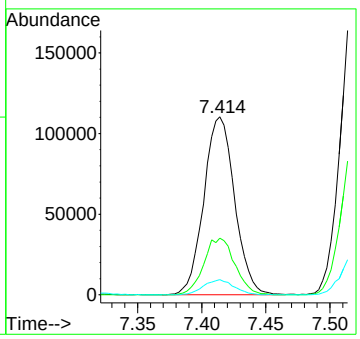


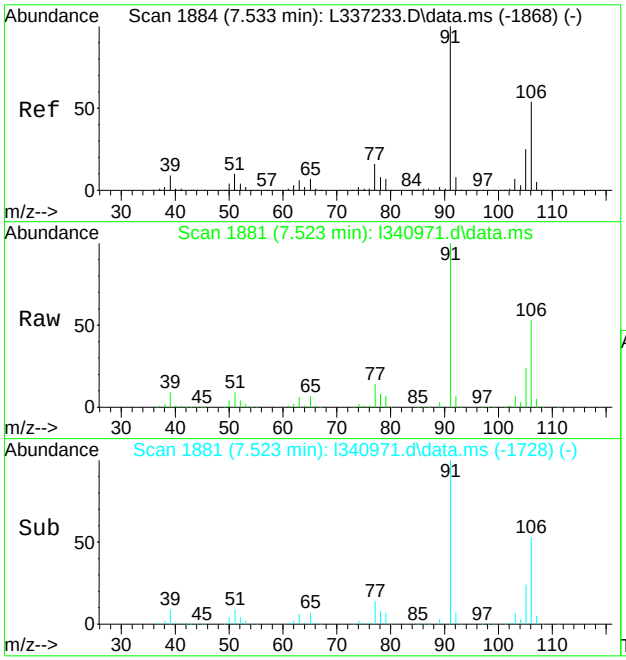


#86
ethylbenzene
Concen: 16.56 ug/L
RT: 7.414 min Scan# 1847
Delta R.T. 0.000 min
Lab File: l340971.d
Acq: 22 Apr 2022 4:37 am

Tgt Ion: 91 Resp: 184744

Ion	Ratio	Lower	Upper
91	100		
106	31.8	2.7	62.7
77	8.6	0.0	39.1

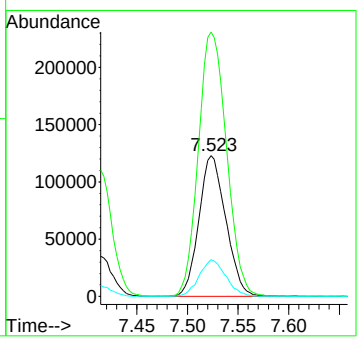


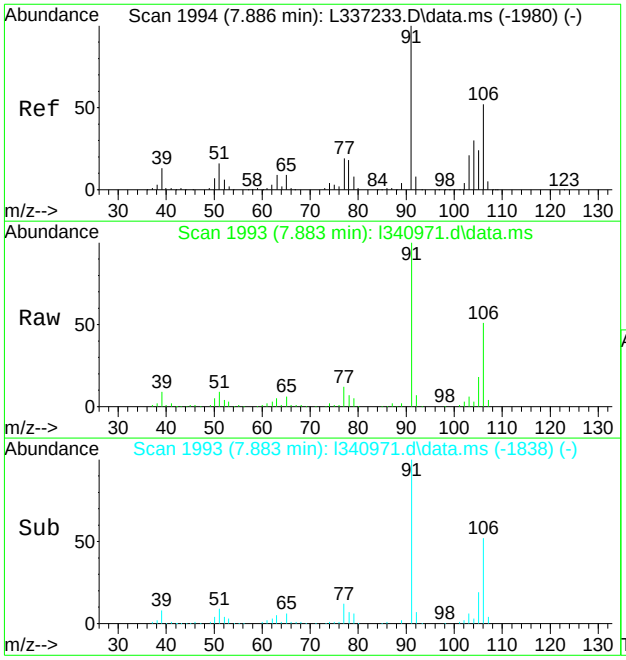


#87
m,p-xylene
Concen: 51.96 ug/L
RT: 7.523 min Scan# 1881
Delta R.T. -0.010 min
Lab File: l340971.d
Acq: 22 Apr 2022 4:37 am

Tgt Ion:106 Resp: 227508

Ion	Ratio	Lower	Upper
106	100		
91	188.0	155.0	215.0
77	26.2	9.1	49.1

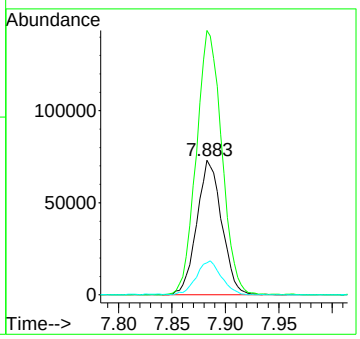


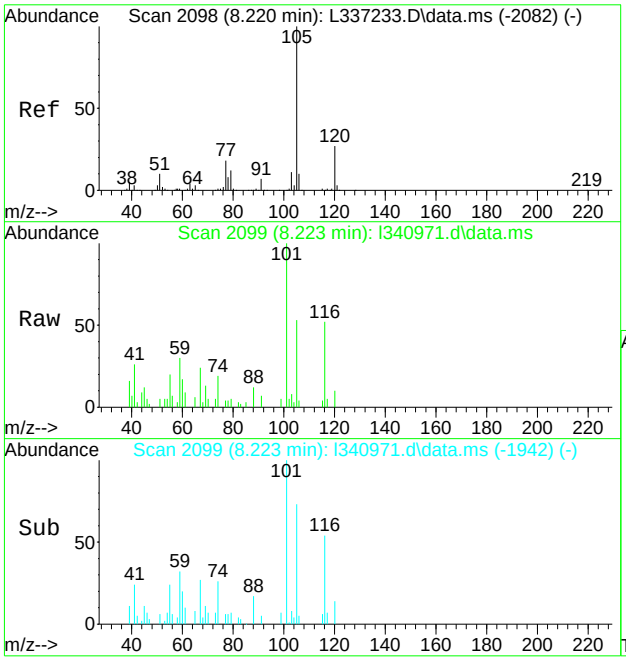


#88
o-xylene
Concen: 26.23 ug/L
RT: 7.883 min Scan# 1993
Delta R.T. -0.003 min
Lab File: l340971.d
Acq: 22 Apr 2022 4:37 am

Tgt Ion:106 Resp: 118259

Ion	Ratio	Lower	Upper
106	100		
91	196.6	163.1	223.1
77	23.8	17.5	57.5

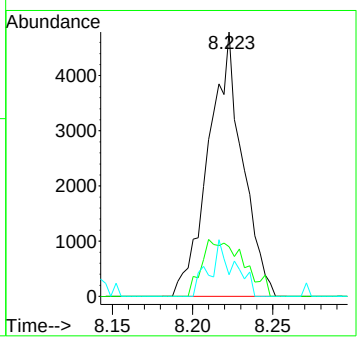


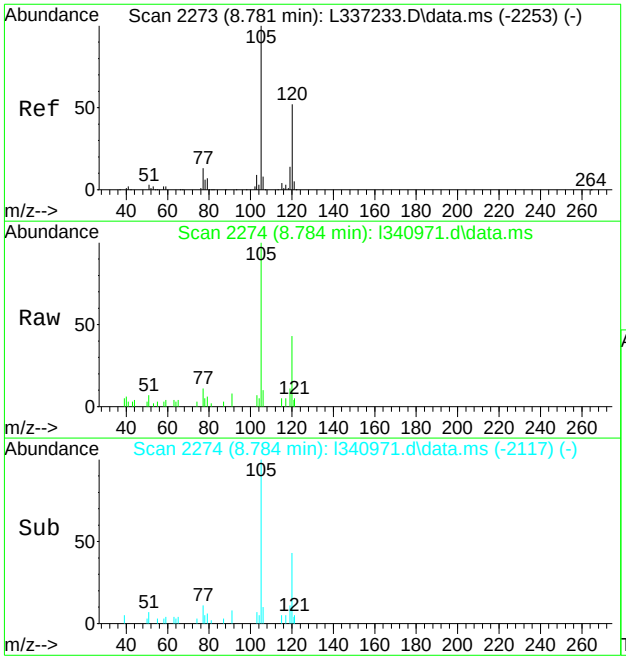


#92
isopropylbenzene
Concen: 0.64 ug/L
RT: 8.223 min Scan# 2099
Delta R.T. 0.003 min
Lab File: l340971.d
Acq: 22 Apr 2022 4:37 am

Tgt Ion:105 Resp: 7001

Ion	Ratio	Lower	Upper
105	100		
120	18.8	7.2	47.2
77	8.2	0.0	38.3

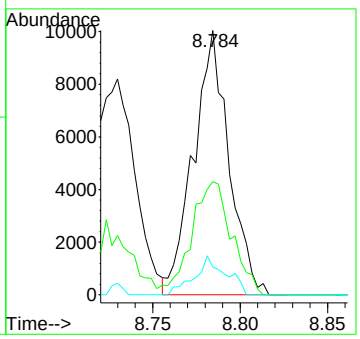


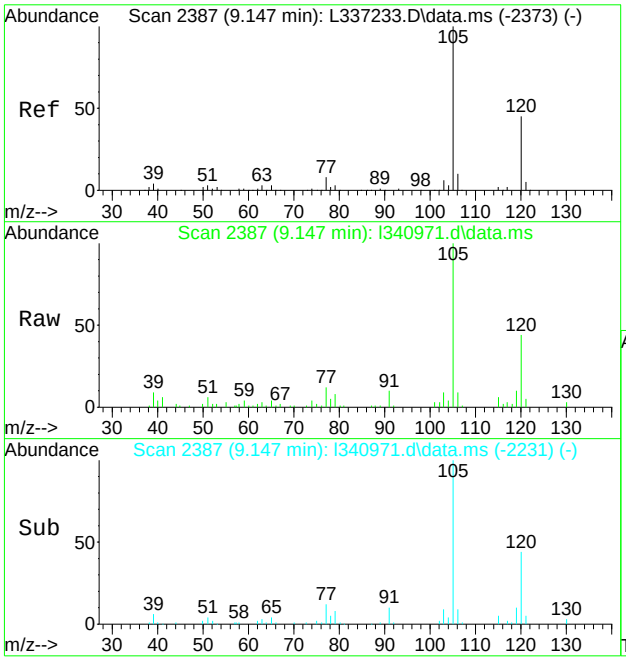


#103
1,3,5-trimethylbenzene
Concen: 1.64 ug/L
RT: 8.784 min Scan# 2274
Delta R.T. 0.003 min
Lab File: l340971.d
Acq: 22 Apr 2022 4:37 am

Tgt Ion:105 Resp: 14114

Ion	Ratio	Lower	Upper
105	100		
120	42.8	21.9	81.9
119	10.6	0.0	44.3

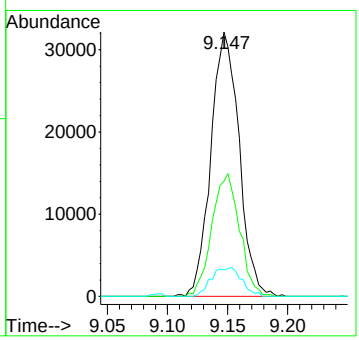




#105
1,2,4-trimethylbenzene
Concen: 5.90 ug/L
RT: 9.147 min Scan# 2387
Delta R.T. -0.000 min
Lab File: l340971.d
Acq: 22 Apr 2022 4:37 am

Tgt Ion:105 Resp: 52502

Ion	Ratio	Lower	Upper
105	100		
120	43.6	19.0	79.0
119	10.0	0.0	42.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340972.d
Acq On : 22 Apr 2022 5:01 am
Operator : nicoleh
Sample : JD43215-17 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 70 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:06:52 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

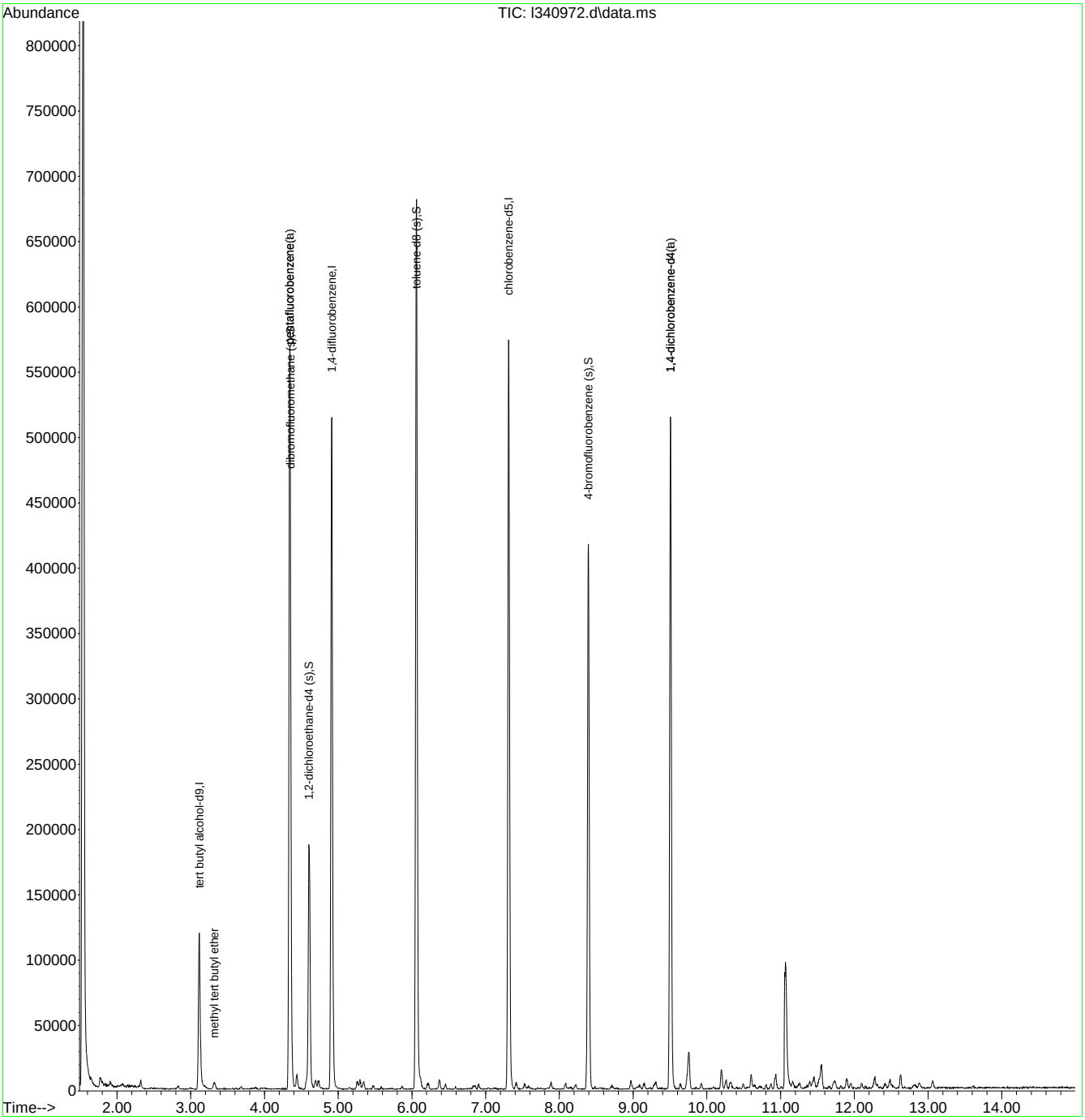
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	113582	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	251991	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.914	114	378147	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	325850	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	144855	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	250310	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	144837	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	109450	49.14	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.28%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	110532	49.49	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 98.98%			
72) toluene-d8 (s)	6.060	98	436435	48.95	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.90%			
95) 4-bromofluorobenzene (s)	8.393	95	151593	53.94	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.88%			
Target Compounds						Qvalue
24) methyl tert butyl ether	3.316	73	4155	0.57	ug/L	75

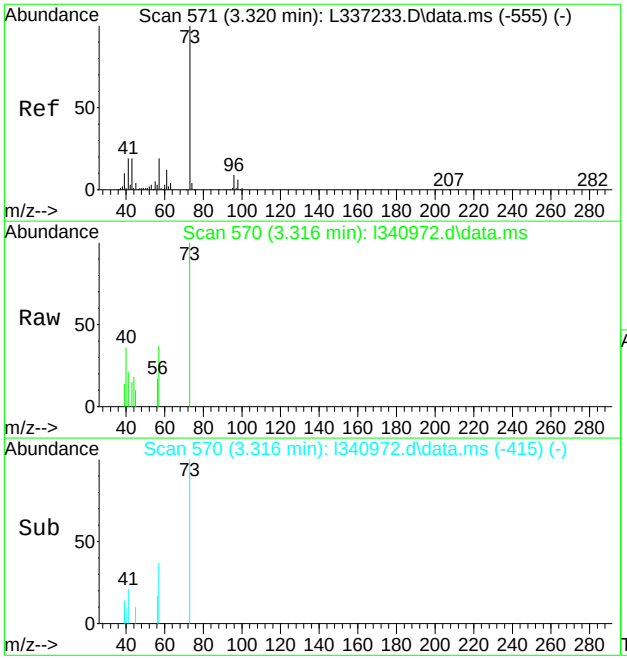
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340972.d
Acq On : 22 Apr 2022 5:01 am
Operator : nicoleh
Sample : JD43215-17 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 70 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:06:52 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

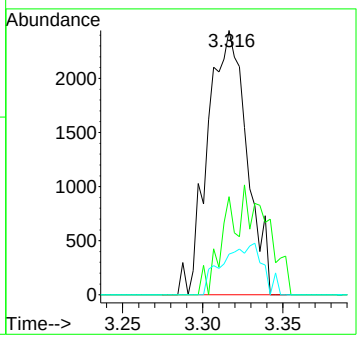




#24
methyl tert butyl ether
Concen: 0.57 ug/L
RT: 3.316 min Scan# 570
Delta R.T. -0.004 min
Lab File: l340972.d
Acq: 22 Apr 2022 5:01 am

Tgt Ion: 73 Resp: 4155

Ion	Ratio	Lower	Upper
73	100		
57	37.1	0.0	48.6
43	15.4	0.0	49.1



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340973.d
Acq On : 22 Apr 2022 5:24 am
Operator : nicoleh
Sample : JD43215-18 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 71 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:08:00 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

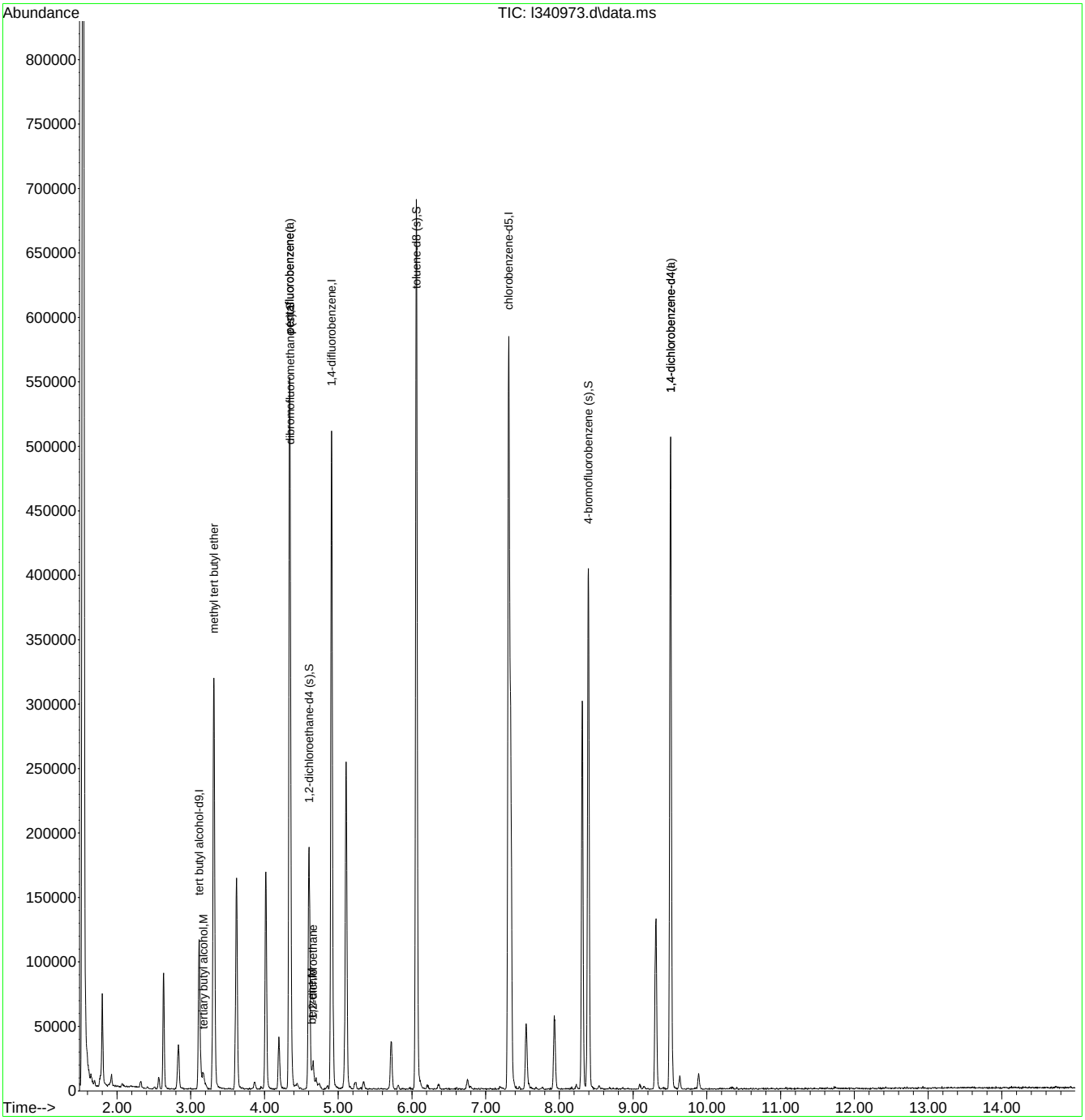
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	110134	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	247019	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	371084	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	328190	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.510	152	142485	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	247702	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.510	152	142602	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	106390	48.72	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.44%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	107616	49.10	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 98.20%			
72) toluene-d8 (s)	6.060	98	436737	48.63	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.26%			
95) 4-bromofluorobenzene (s)	8.393	95	147119	53.22	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.44%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.172	59	10046	37.86	ug/L	82
24) methyl tert butyl ether	3.313	73	279289	38.90	ug/L	97
55) benzene	4.642	78	3776	0.42	ug/L	88
57) 1,2-dichloroethane	4.658	62	12613	3.95	ug/L	85

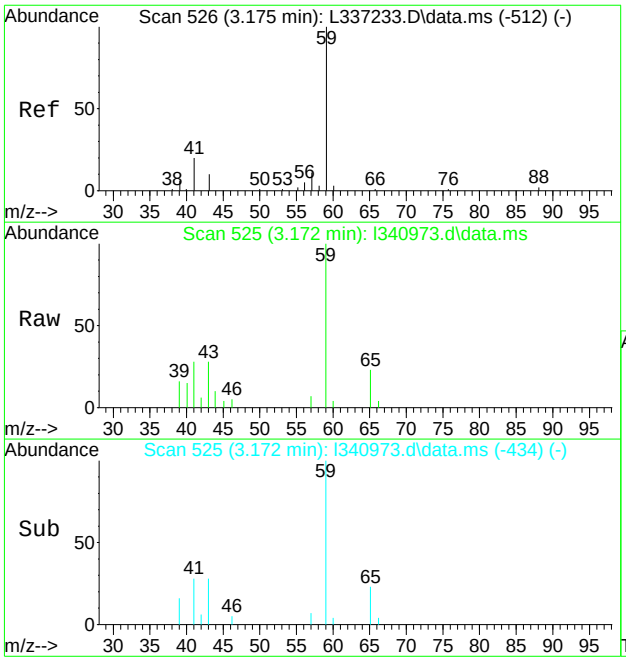
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340973.d
Acq On : 22 Apr 2022 5:24 am
Operator : nicoleh
Sample : JD43215-18 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 71 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:08:00 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

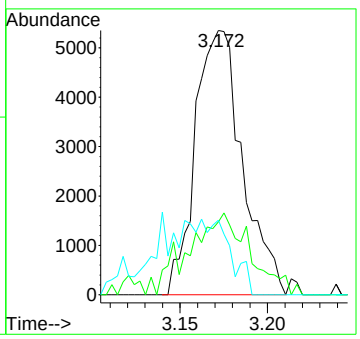


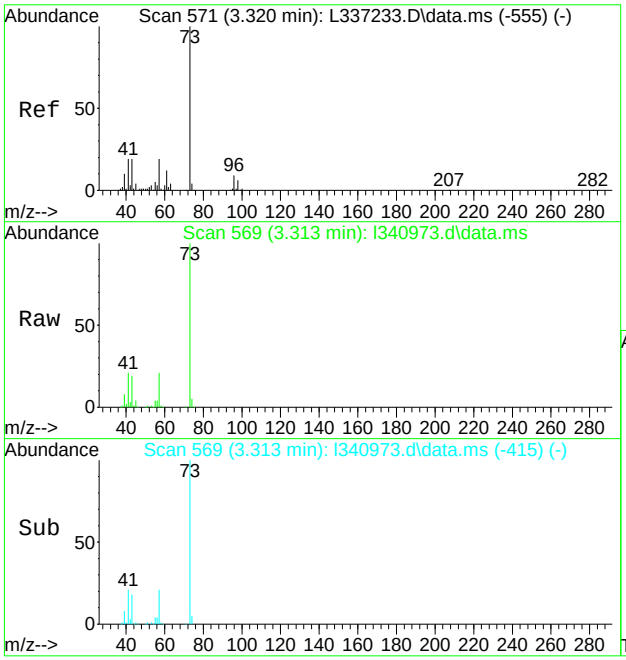


#4
tertiary butyl alcohol
Concen: 37.86 ug/L
RT: 3.172 min Scan# 525
Delta R.T. -0.009 min
Lab File: l340973.d
Acq: 22 Apr 2022 5:24 am

Tgt Ion: 59 Resp: 10046

Ion	Ratio	Lower	Upper
59	100		
41	20.1	0.0	52.7
43	28.2	0.0	41.4

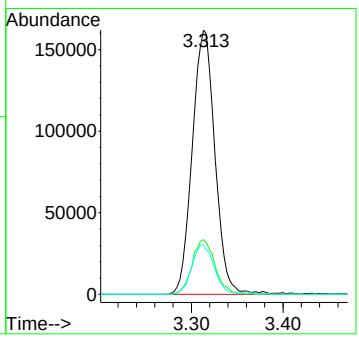


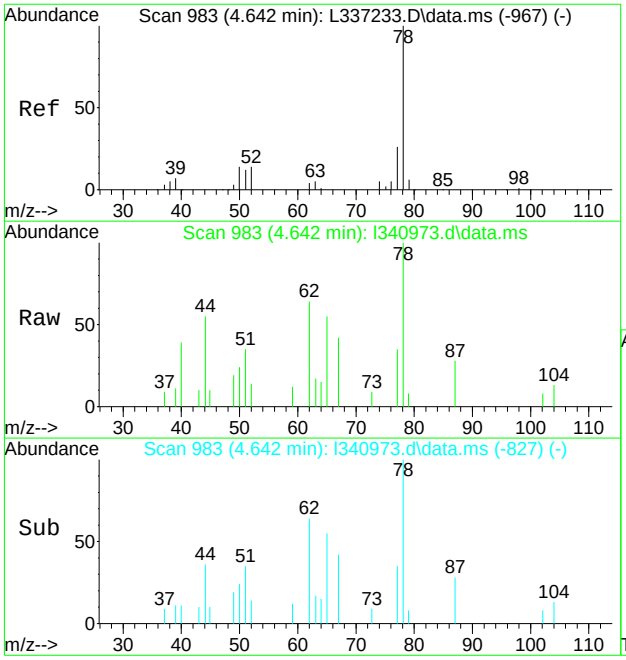


#24
methyl tert butyl ether
Concen: 38.90 ug/L
RT: 3.313 min Scan# 569
Delta R.T. -0.007 min
Lab File: l340973.d
Acq: 22 Apr 2022 5:24 am

Tgt Ion: 73 Resp: 279289

Ion	Ratio	Lower	Upper
73	100		
57	20.7	0.0	48.6
43	18.6	0.0	49.1

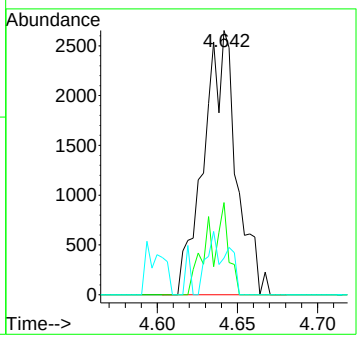


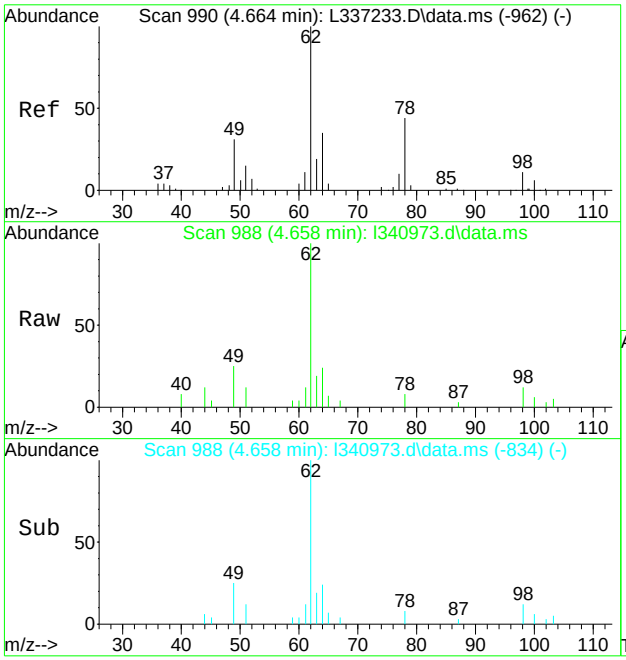


#55
benzene
Concen: 0.42 ug/L
RT: 4.642 min Scan# 983
Delta R.T. -0.000 min
Lab File: l340973.d
Acq: 22 Apr 2022 5:24 am

Tgt Ion: 78 Resp: 3776

Ion	Ratio	Lower	Upper
78	100		
77	34.9	0.0	56.1
52	13.9	0.0	43.6

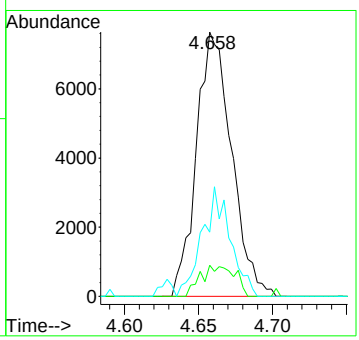




#57
1,2-dichloroethane
Concen: 3.95 ug/L
RT: 4.658 min Scan# 988
Delta R.T. -0.006 min
Lab File: l340973.d
Acq: 22 Apr 2022 5:24 am

Tgt Ion: 62 Resp: 12613

Ion	Ratio	Lower	Upper
62	100		
98	11.8	0.0	41.2
64	24.3	5.2	65.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340974.d
Acq On : 22 Apr 2022 5:48 am
Operator : nicoleh
Sample : JD43215-19 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 72 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:08:32 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

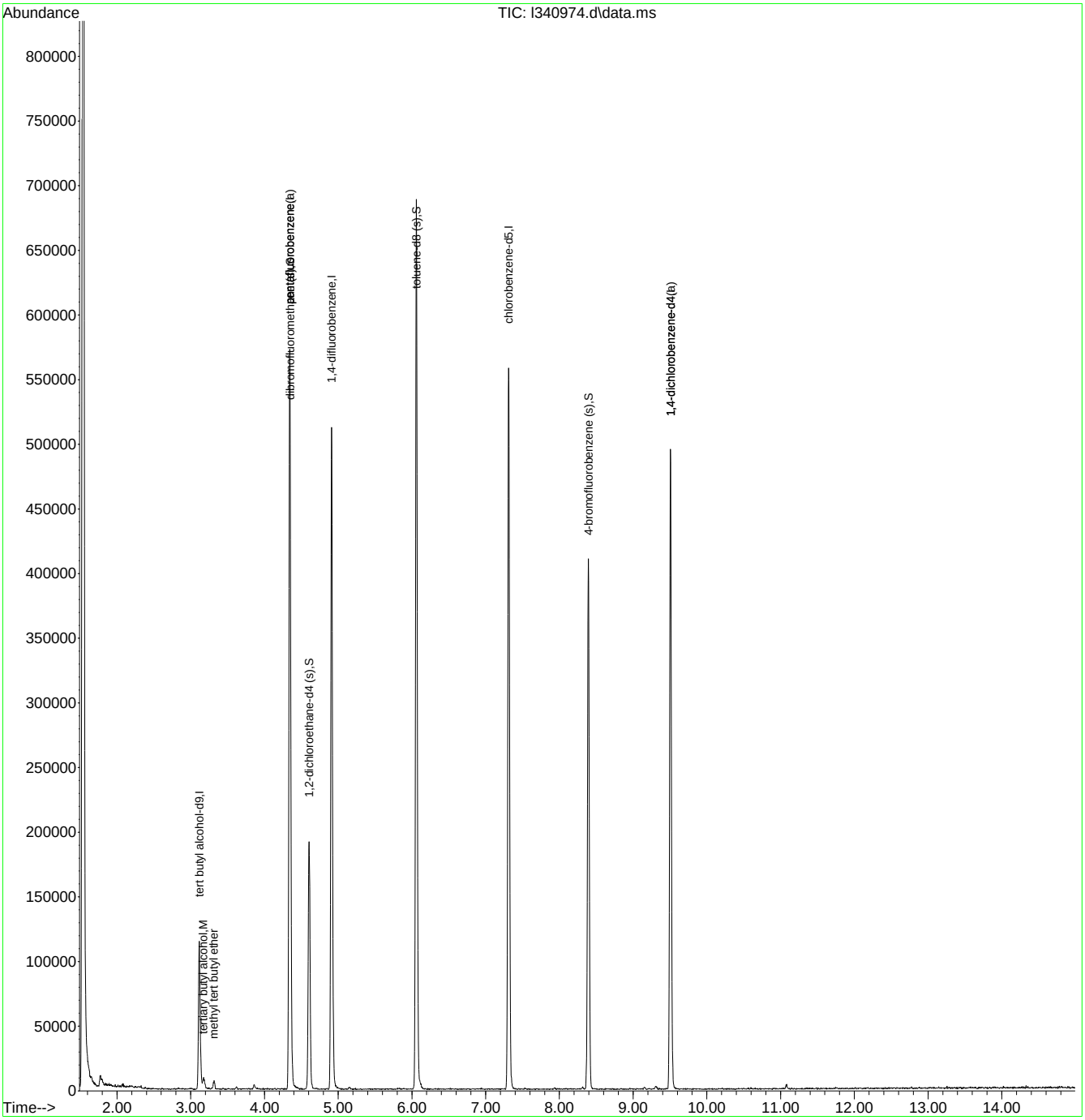
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.118	65	105913	500.00	ug/L	0.00
5) pentafluorobenzene	4.343	168	250734	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	371514	50.00	ug/L	0.00
71) chlorobenzene-d5	7.312	117	324175	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.510	152	138737	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.343	168	251489	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.510	152	138619	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	108081	48.77	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.54%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	114272	52.08	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 104.16%			
72) toluene-d8 (s)	6.060	98	433230	48.84	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.68%			
95) 4-bromofluorobenzene (s)	8.396	95	150671	55.98	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.96%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.169	59	7278	28.52	ug/L	97
24) methyl tert butyl ether	3.310	73	5387	0.74	ug/L	92

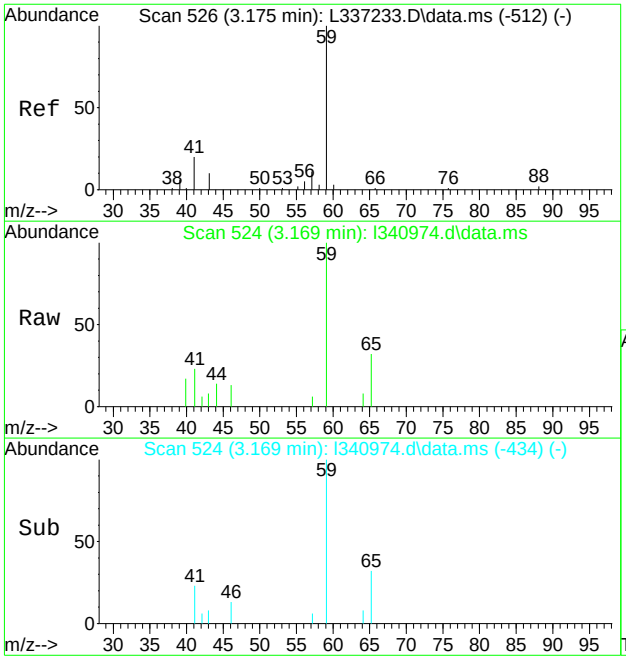
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340974.d
Acq On : 22 Apr 2022 5:48 am
Operator : nicoleh
Sample : JD43215-19 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 72 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:08:32 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

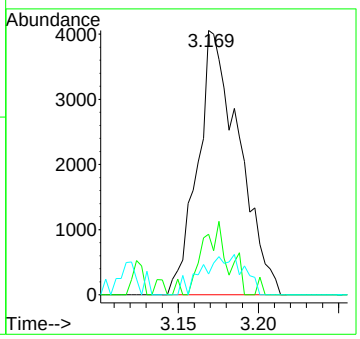


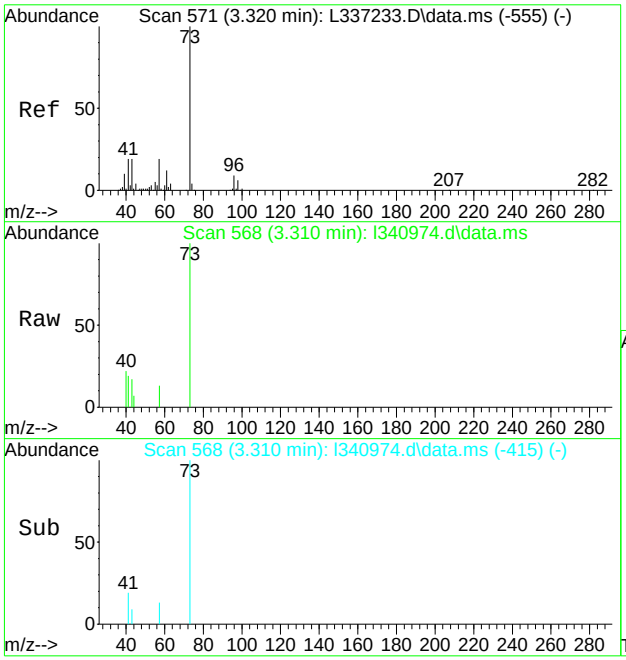


#4
tertiary butyl alcohol
Concen: 28.52 ug/L
RT: 3.169 min Scan# 524
Delta R.T. -0.012 min
Lab File: l340974.d
Acq: 22 Apr 2022 5:48 am

Tgt Ion: 59 Resp: 7278

Ion	Ratio	Lower	Upper
59	100		
41	22.9	0.0	52.7
43	7.8	0.0	41.4

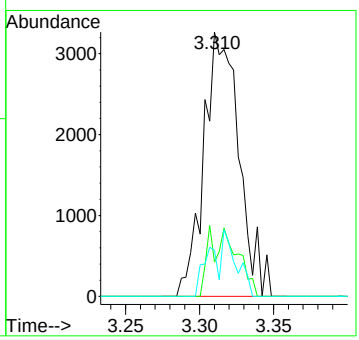




#24
methyl tert butyl ether
Concen: 0.74 ug/L
RT: 3.310 min Scan# 568
Delta R.T. -0.010 min
Lab File: l340974.d
Acq: 22 Apr 2022 5:48 am

Tgt Ion: 73 Resp: 5387

Ion	Ratio	Lower	Upper
73	100		
57	13.0	0.0	48.6
43	17.4	0.0	49.1



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340975.d
Acq On : 22 Apr 2022 6:11 am
Operator : nicoleh
Sample : JD43215-20 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 73 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:08:57 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

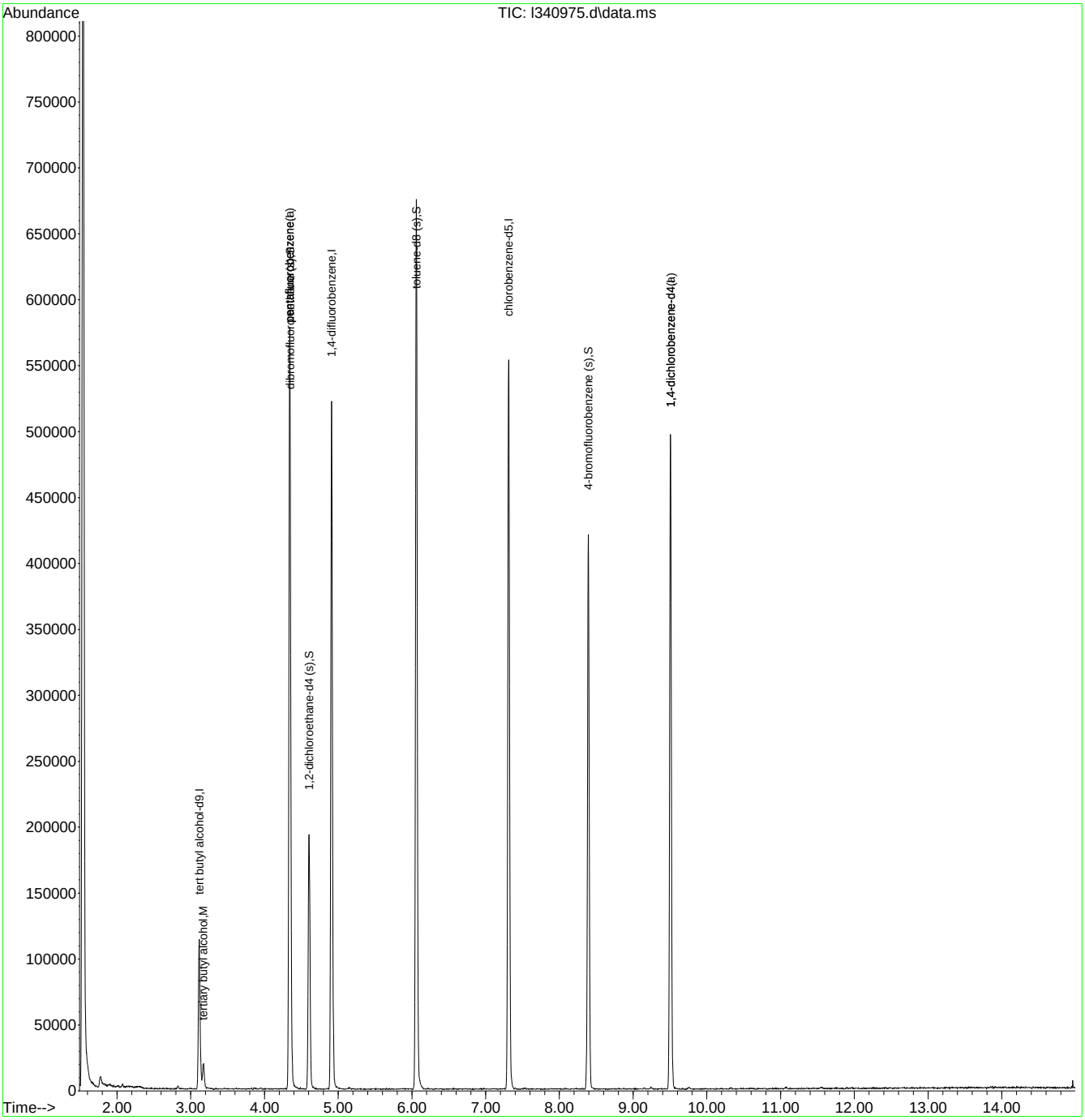
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	107808	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	249563	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	373184	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	326444	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.510	152	142189	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	250822	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.510	152	142211	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	109665	49.71	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.42%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	114000	51.72	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 103.44%			
72) toluene-d8 (s)	6.060	98	436889	48.91	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.82%			
95) 4-bromofluorobenzene (s)	8.393	95	151052	54.76	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.52%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.169	59	16306	62.78	ug/L	96

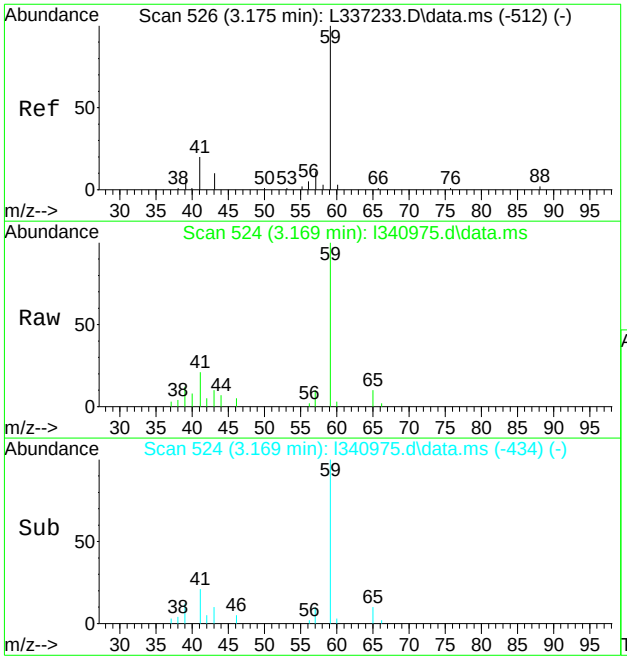
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340975.d
Acq On : 22 Apr 2022 6:11 am
Operator : nicoleh
Sample : JD43215-20 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 73 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:08:57 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

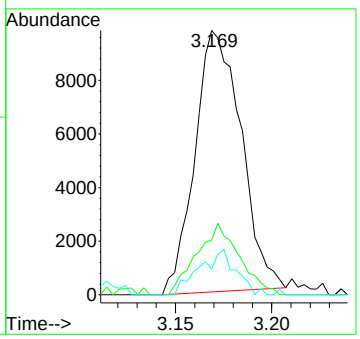




#4
tertiary butyl alcohol
Concen: 62.78 ug/L
RT: 3.169 min Scan# 524
Delta R.T. -0.012 min
Lab File: l340975.d
Acq: 22 Apr 2022 6:11 am

Tgt Ion: 59 Resp: 16306

Ion	Ratio	Lower	Upper
59	100		
41	20.7	0.0	52.7
43	9.8	0.0	41.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340962.d
Acq On : 22 Apr 2022 1:06 am
Operator : nicoleh
Sample : JD43215-21 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,5
ALS Vial : 60 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 24 22:16:37 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

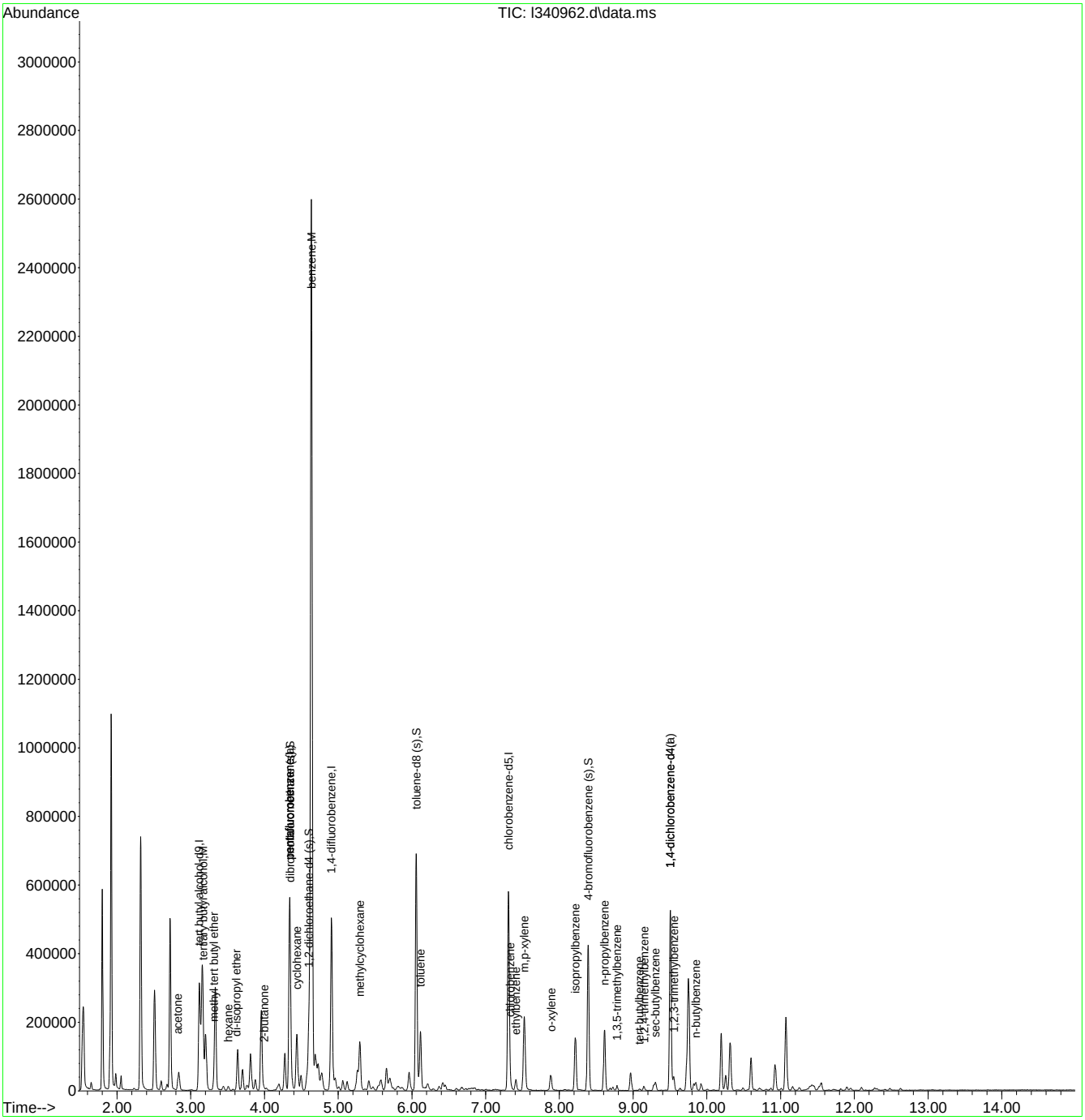
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	117968	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	241886	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.908	114	351852	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	336628	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.503	152	149092	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	242228	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.503	152	148993	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	105790	49.48	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.96%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	109989	52.93	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 105.86%			
72) toluene-d8 (s)	6.060	98	432557	46.96	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.92%			
95) 4-bromofluorobenzene (s)	8.390	95	157582	54.48	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.96%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.169	59	36531	128.53	ug/L	# 1
17) acetone	2.825	58	3969	19.12	ug/L	# 41
24) methyl tert butyl ether	3.313	73	20320	2.89	ug/L	# 1
26) hexane	3.509	57	5374	1.61	ug/L	# 82
27) di-isopropyl ether	3.618	45	2639	0.37	ug/L	88
29) 2-butanone	3.993	72	1320	4.06	ug/L	# 1
45) cyclohexane	4.439	84	35715	9.88	ug/L	85
55) benzene	4.635	78	2023526	239.18	ug/L	93
64) methylcyclohexane	5.293	83	58330	15.76	ug/L	91
73) toluene	6.114	92	67761	10.66	ug/L	90
84) chlorobenzene	7.334	112	8651	1.24	ug/L	80
86) ethylbenzene	7.411	91	16151	1.44	ug/L	96
87) m,p-xylene	7.523	106	75351	17.09	ug/L	91
88) o-xylene	7.889	106	12605	2.78	ug/L	89
92) isopropylbenzene	8.213	105	109068	9.94	ug/L	94
100) n-propylbenzene	8.611	91	149081	11.78	ug/L	98
103) 1,3,5-trimethylbenzene	8.781	105	7392	0.84	ug/L	95
104) tert-butylbenzene	9.083	119	2749	0.36	ug/L	84
105) 1,2,4-trimethylbenzene	9.150	105	7044	0.77	ug/L	88
106) sec-butylbenzene	9.301	105	15693	1.44	ug/L	91
110) 1,2,3-trimethylbenzene	9.551	105	24152	2.93	ug/L	92
112) n-butylbenzene	9.850	92	7027	1.55	ug/L	84

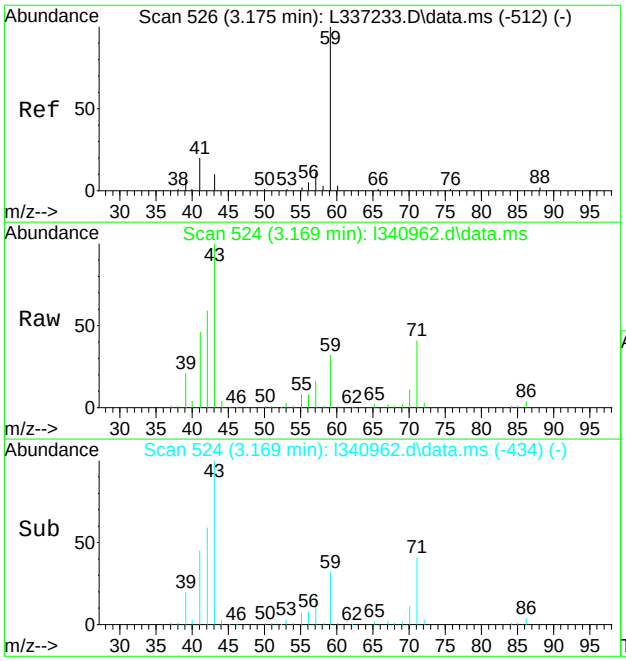
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340962.d
Acq On : 22 Apr 2022 1:06 am
Operator : nicoleh
Sample : JD43215-21 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,5
ALS Vial : 60 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 24 22:16:37 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

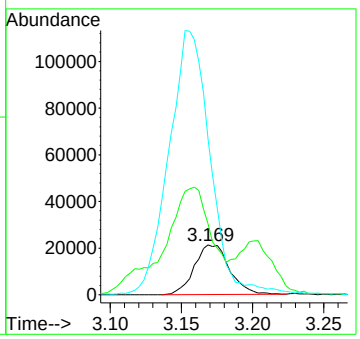


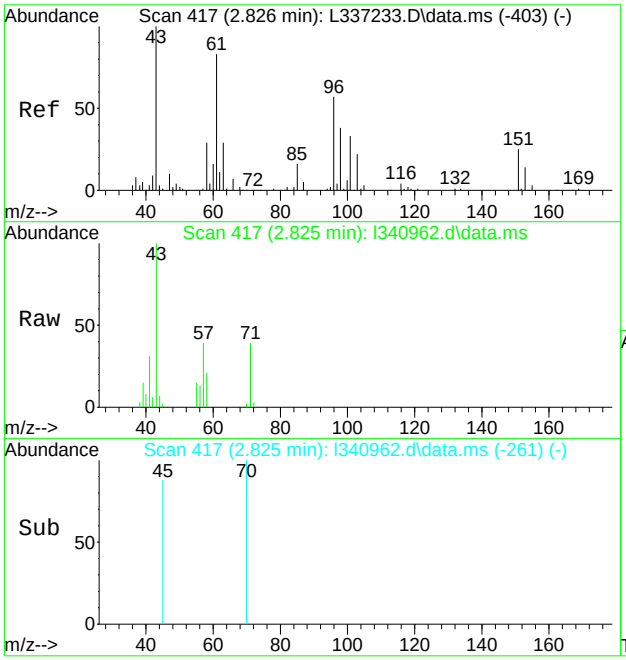


#4
tertiary butyl alcohol
Concen: 128.53 ug/L
RT: 3.169 min Scan# 524
Delta R.T. -0.012 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 59 Resp: 36531

Ion	Ratio	Lower	Upper
59	100		
41	123.6	0.0	52.7#
43	305.8	0.0	41.4#

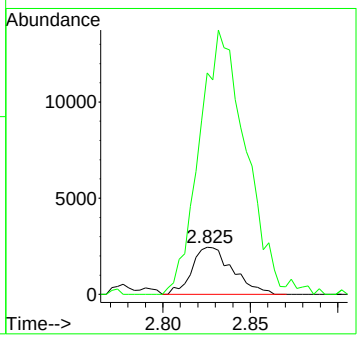


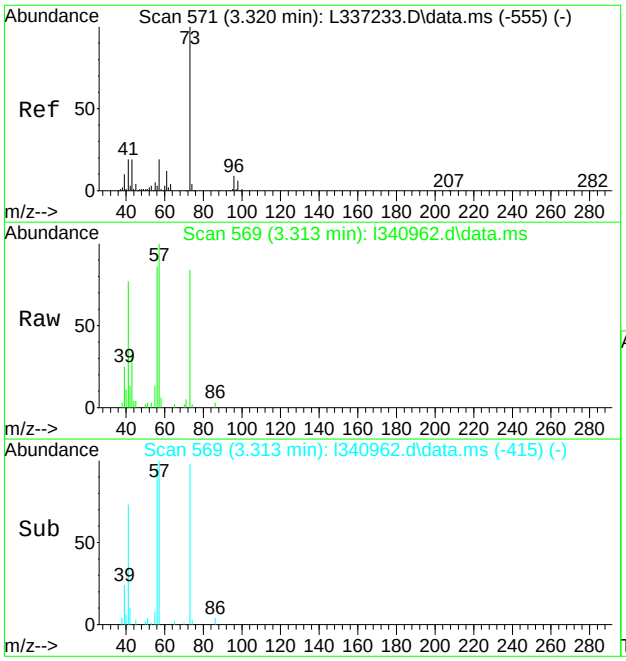


#17
acetone
Concen: 19.12 ug/L
RT: 2.825 min Scan# 417
Delta R.T. -0.001 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 58 Resp: 3969

Ion	Ratio	Lower	Upper
58	100		
43	470.1	314.0	374.0#

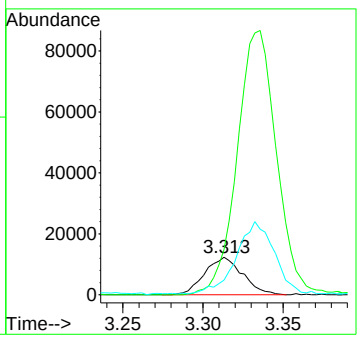


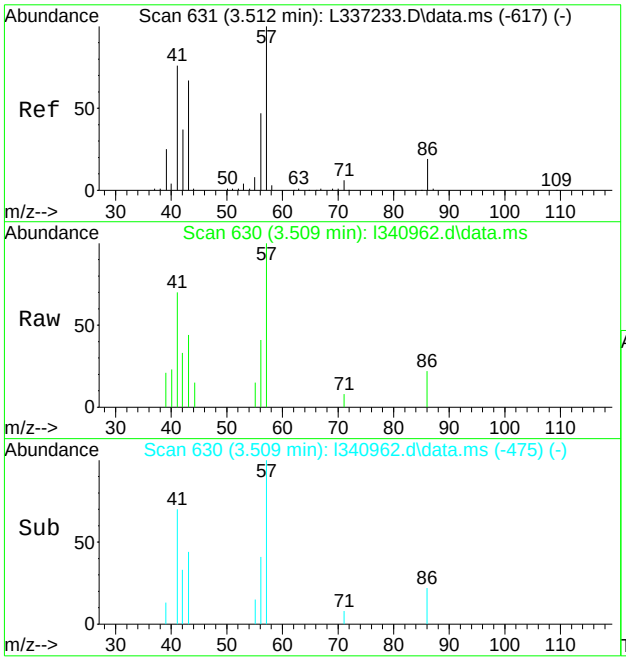


#24
methyl tert butyl ether
Concen: 2.89 ug/L
RT: 3.313 min Scan# 569
Delta R.T. -0.007 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 73 Resp: 20320

Ion	Ratio	Lower	Upper
73	100		
57	119.7	0.0	48.6#
43	36.0	0.0	49.1

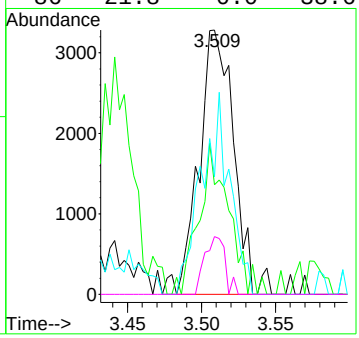


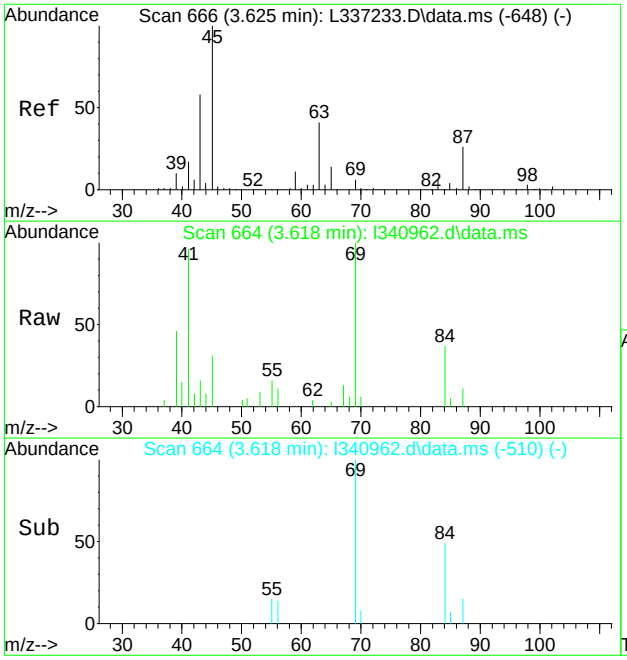


#26
hexane
Concen: 1.61 ug/L
RT: 3.509 min Scan# 630
Delta R.T. -0.003 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 57 Resp: 5374

Ion	Ratio	Lower	Upper
57	100		
56	41.5	26.9	66.9
43	44.4	47.3	87.3#
86	21.8	0.0	38.6

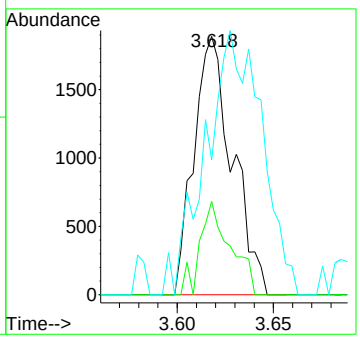


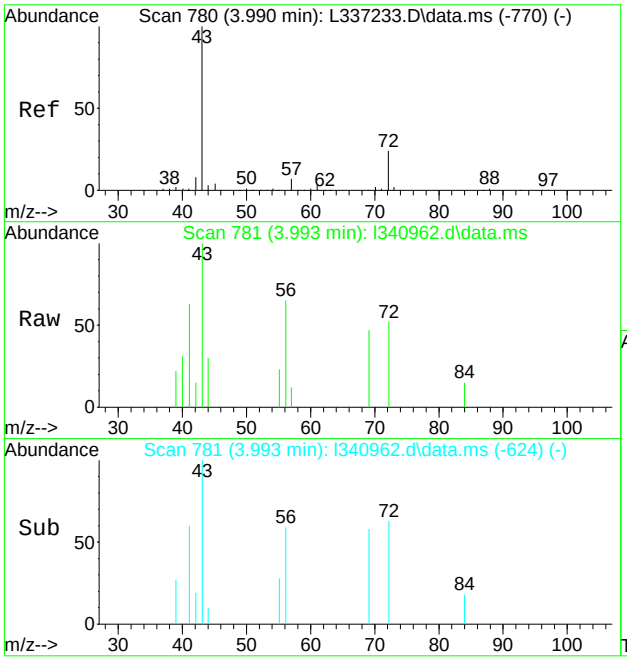


#27
di-isopropyl ether
Concen: 0.37 ug/L
RT: 3.618 min Scan# 664
Delta R.T. -0.007 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 45 Resp: 2639

Ion	Ratio	Lower	Upper
45	100		
87	36.1	0.0	56.1
43	52.2	28.5	88.5

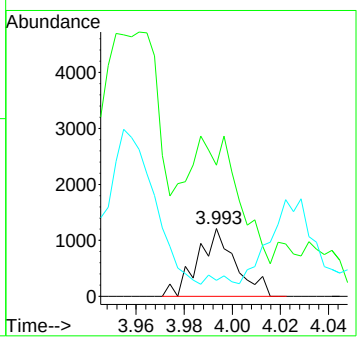


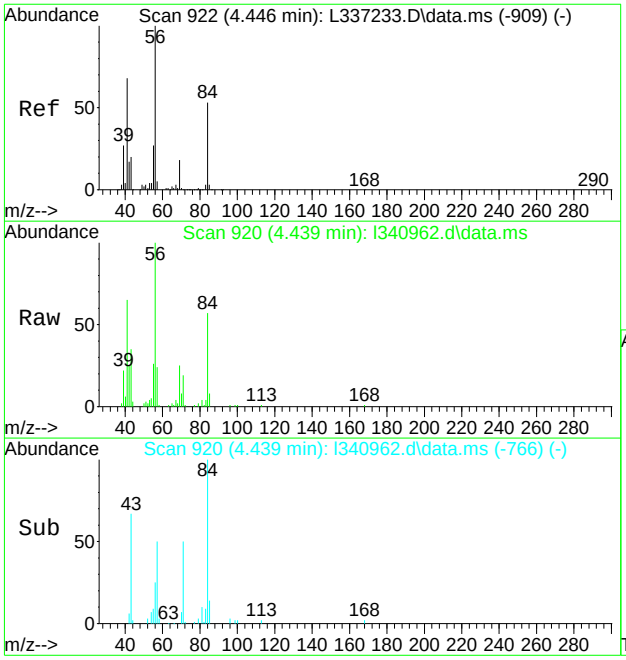


#29
2-butanone
Concen: 4.06 ug/L
RT: 3.993 min Scan# 781
Delta R.T. 0.003 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 72 Resp: 1320

Ion	Ratio	Lower	Upper
72	100		
43	115.8	384.9	444.9#
57	0.0	0.0	59.9

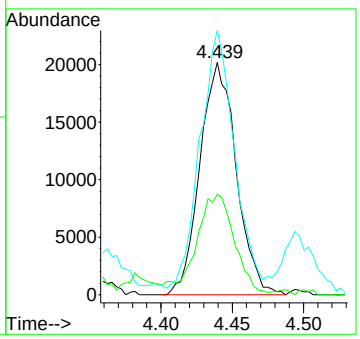


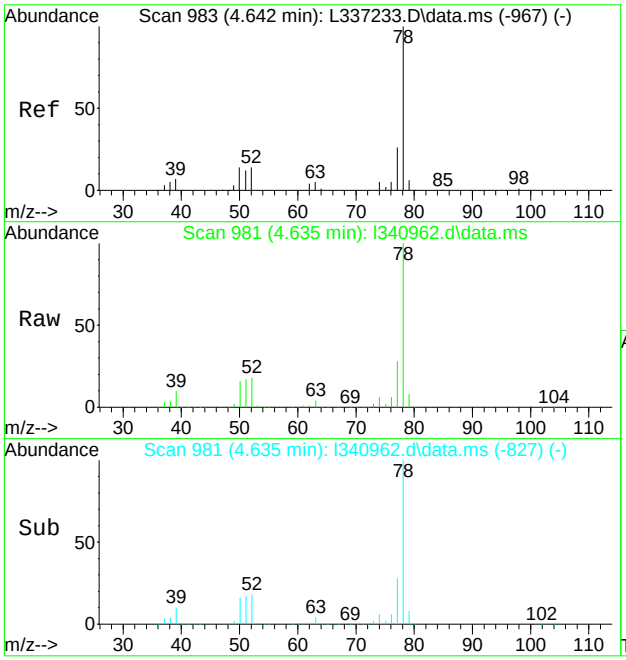


#45
cyclohexane
Concen: 9.88 ug/L
RT: 4.439 min Scan# 920
Delta R.T. -0.007 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 84 Resp: 35715

Ion	Ratio	Lower	Upper
84	100		
69	41.2	14.0	54.0
41	109.9	107.6	147.6

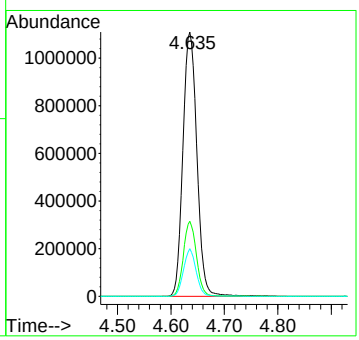


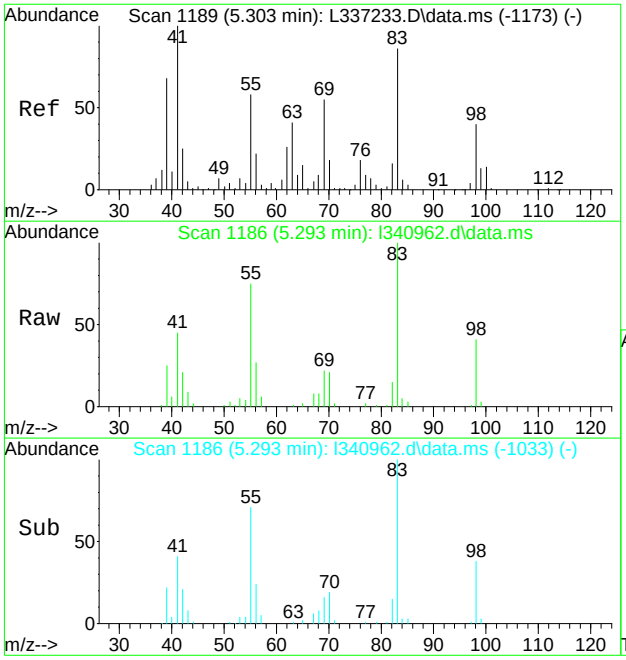


#55
benzene
Concen: 239.18 ug/L
RT: 4.635 min Scan# 981
Delta R.T. -0.007 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 78 Resp: 2023526

Ion	Ratio	Lower	Upper
78	100		
77	28.5	0.0	56.1
52	18.1	0.0	43.6

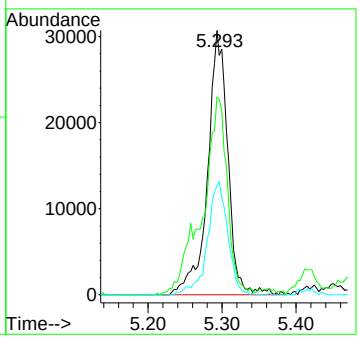


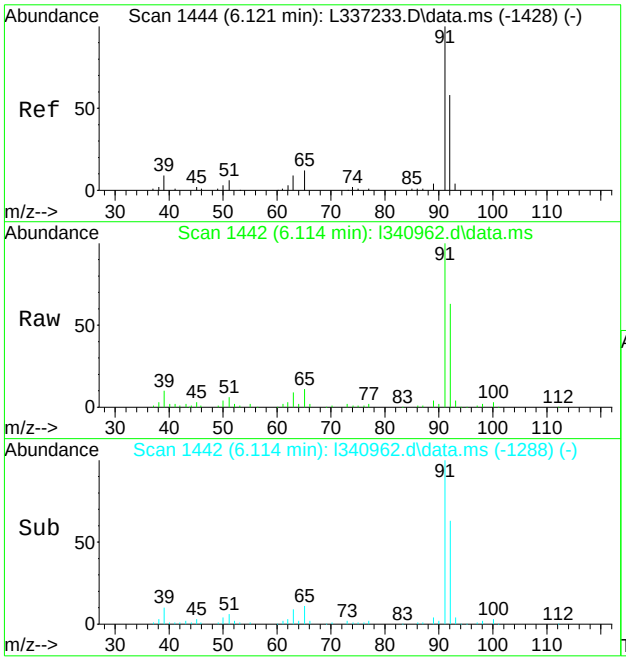


#64
methylcyclohexane
Concen: 15.76 ug/L
RT: 5.293 min Scan# 1186
Delta R.T. -0.010 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 83 Resp: 58330

Ion	Ratio	Lower	Upper
83	100		
55	74.8	37.2	97.2
98	41.1	16.3	76.3

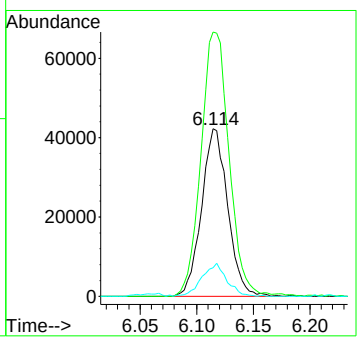


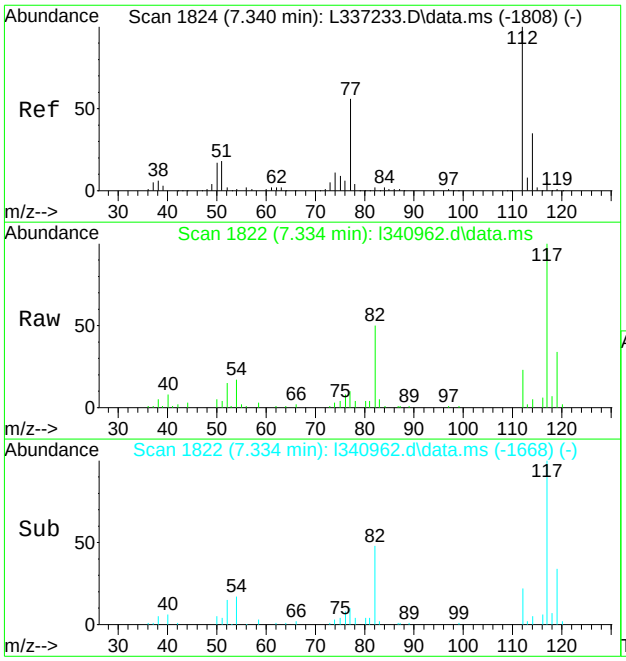


#73
toluene
Concen: 10.66 ug/L
RT: 6.114 min Scan# 1442
Delta R.T. -0.007 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 92 Resp: 67761

Ion	Ratio	Lower	Upper
92	100		
91	157.7	141.2	201.2
65	17.0	0.0	50.5

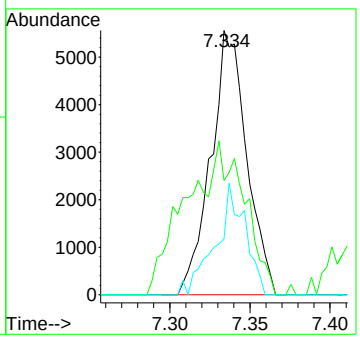


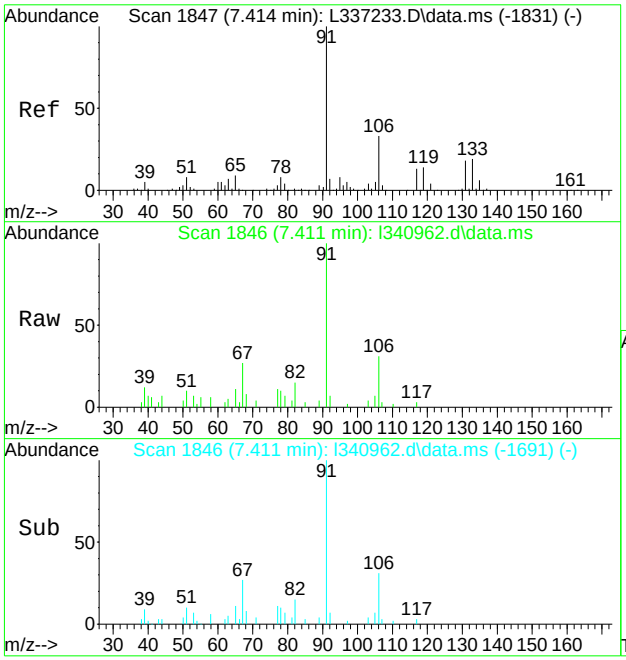


#84
chlorobenzene
Concen: 1.24 ug/L
RT: 7.334 min Scan# 1822
Delta R.T. -0.006 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:112 Resp: 8651

Ion	Ratio	Lower	Upper
112	100		
77	43.3	25.6	85.6
114	21.1	4.8	64.8

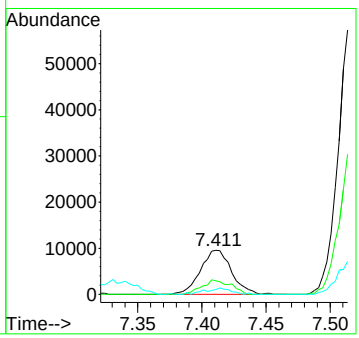


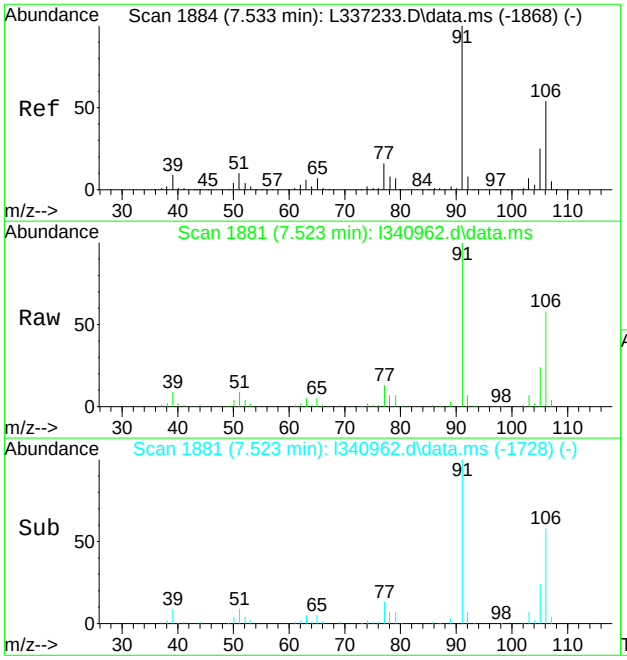


#86
ethylbenzene
Concen: 1.44 ug/L
RT: 7.411 min Scan# 1846
Delta R.T. -0.003 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 91 Resp: 16151

Ion	Ratio	Lower	Upper
91	100		
106	30.9	2.7	62.7
77	10.8	0.0	39.1

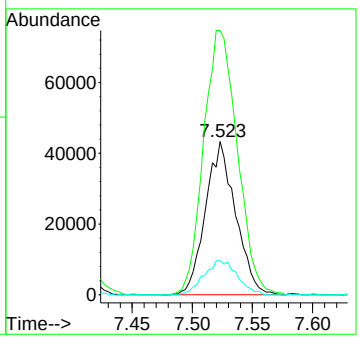


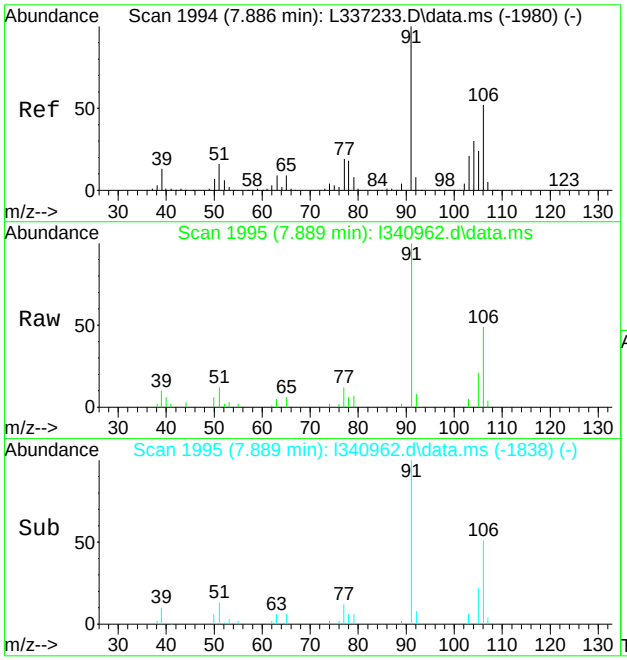


#87
m,p-xylene
Concen: 17.09 ug/L
RT: 7.523 min Scan# 1881
Delta R.T. -0.010 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:106 Resp: 75351

Ion	Ratio	Lower	Upper
106	100		
91	172.5	155.0	215.0
77	22.3	9.1	49.1

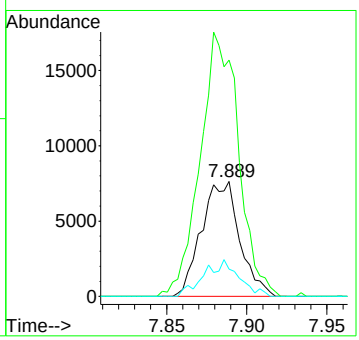


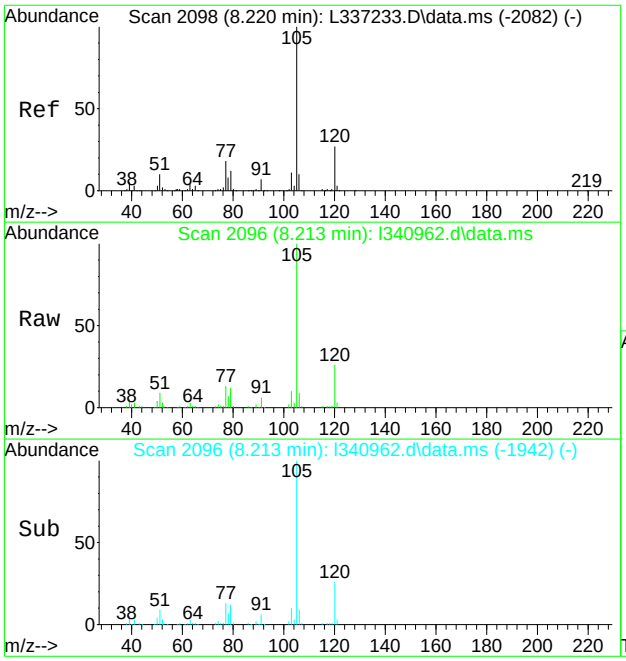


#88
o-xylene
Concen: 2.78 ug/L
RT: 7.889 min Scan# 1995
Delta R.T. 0.003 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:106 Resp: 12605

Ion	Ratio	Lower	Upper
106	100		
91	205.8	163.1	223.1
77	23.8	17.5	57.5

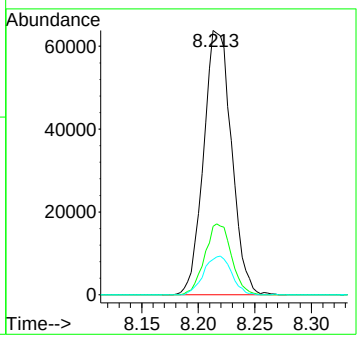


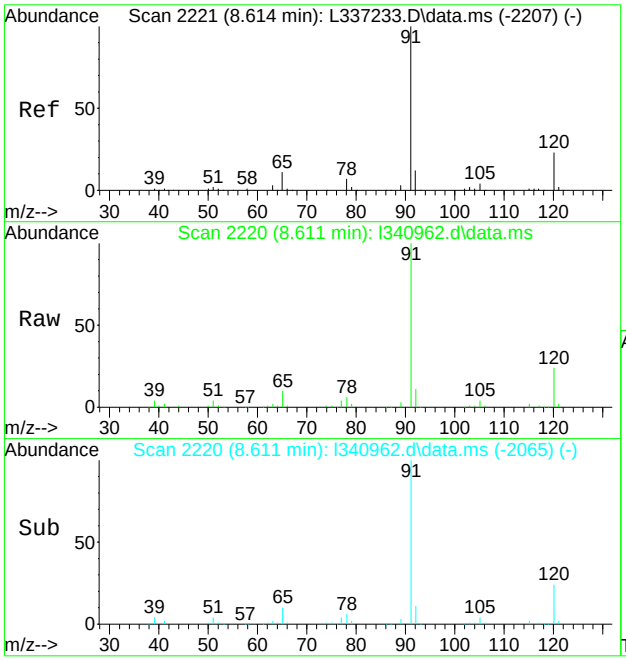


#92
isopropylbenzene
Concen: 9.94 ug/L
RT: 8.213 min Scan# 2096
Delta R.T. -0.007 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:105 Resp: 109068

Ion	Ratio	Lower	Upper
105	100		
120	25.9	7.2	47.2
77	13.4	0.0	38.3

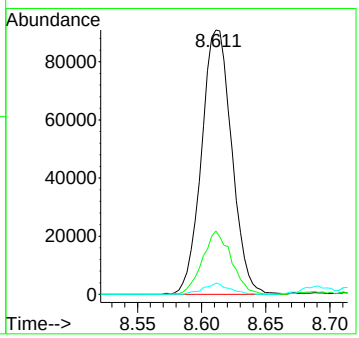


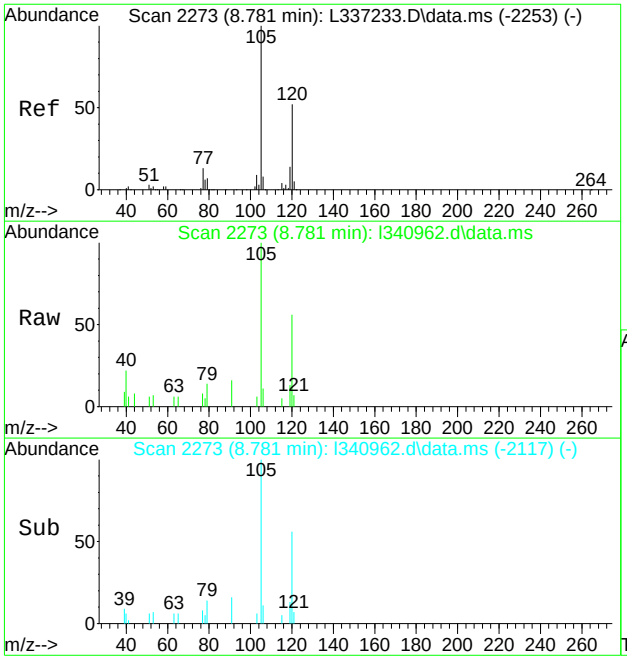


#100
n-propylbenzene
Concen: 11.78 ug/L
RT: 8.611 min Scan# 2220
Delta R.T. -0.003 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 91 Resp: 149081

Ion	Ratio	Lower	Upper
91	100		
120	23.9	0.0	52.6
105	4.3	0.0	34.3

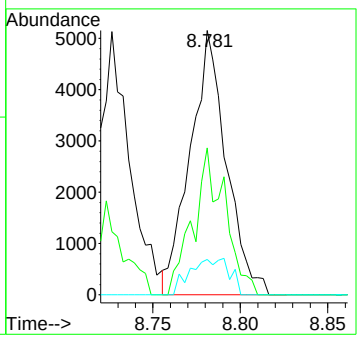


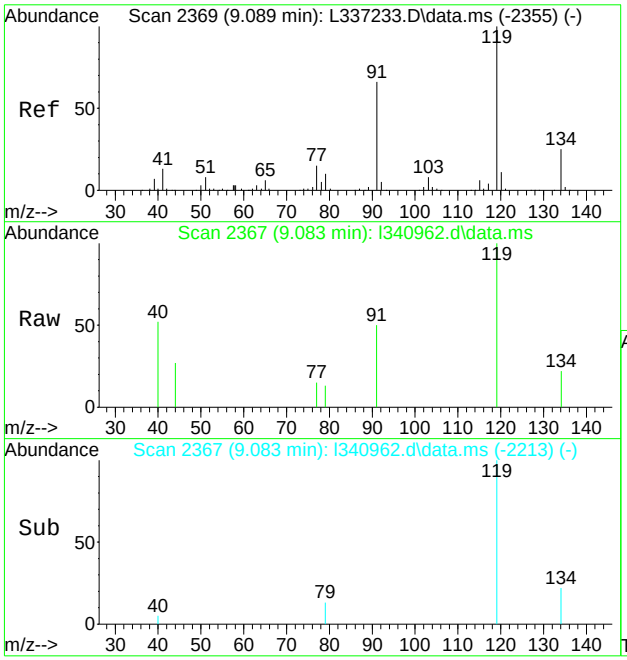


#103
1,3,5-trimethylbenzene
Concen: 0.84 ug/L
RT: 8.781 min Scan# 2273
Delta R.T. 0.000 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:105 Resp: 7392

Ion	Ratio	Lower	Upper
105	100		
120	55.5	21.9	81.9
119	13.4	0.0	44.3

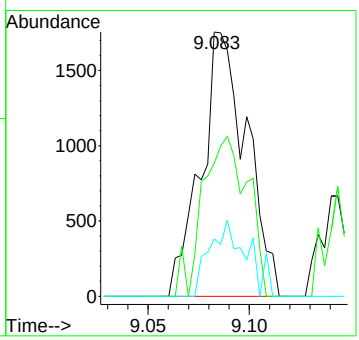


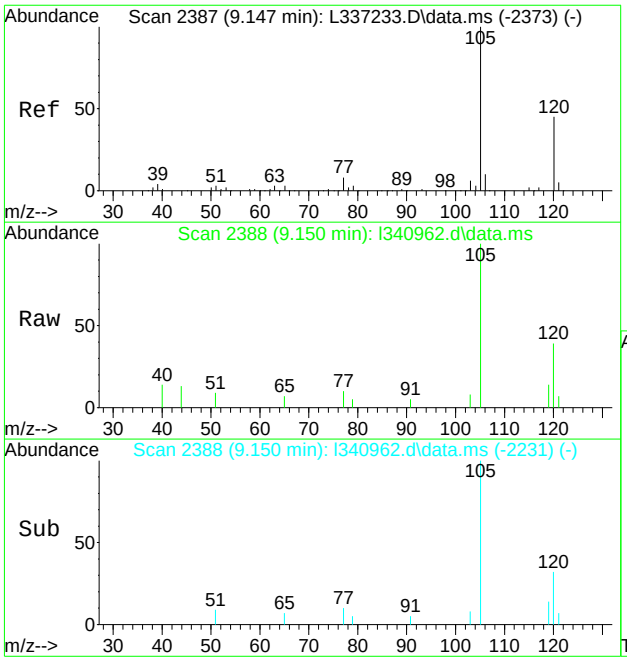


#104
tert-butylbenzene
Concen: 0.36 ug/L
RT: 9.083 min Scan# 2367
Delta R.T. -0.006 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:119 Resp: 2749

Ion	Ratio	Lower	Upper
119	100		
91	50.3	35.7	95.7
134	21.8	0.0	54.9

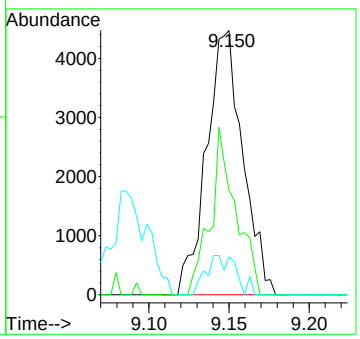


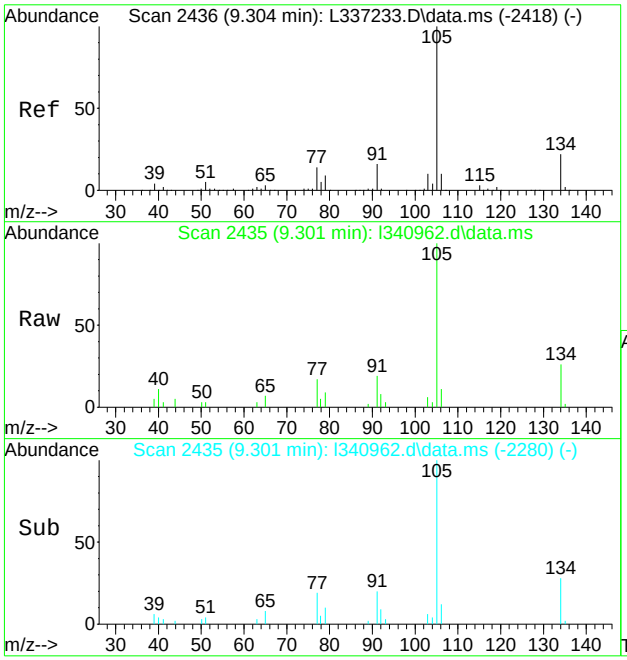


#105
1,2,4-trimethylbenzene
Concen: 0.77 ug/L
RT: 9.150 min Scan# 2388
Delta R.T. 0.003 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:105 Resp: 7044

Ion	Ratio	Lower	Upper
105	100		
120	39.5	19.0	79.0
119	14.4	0.0	42.4

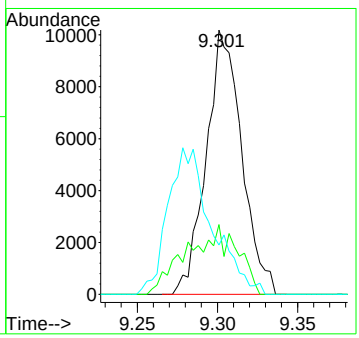


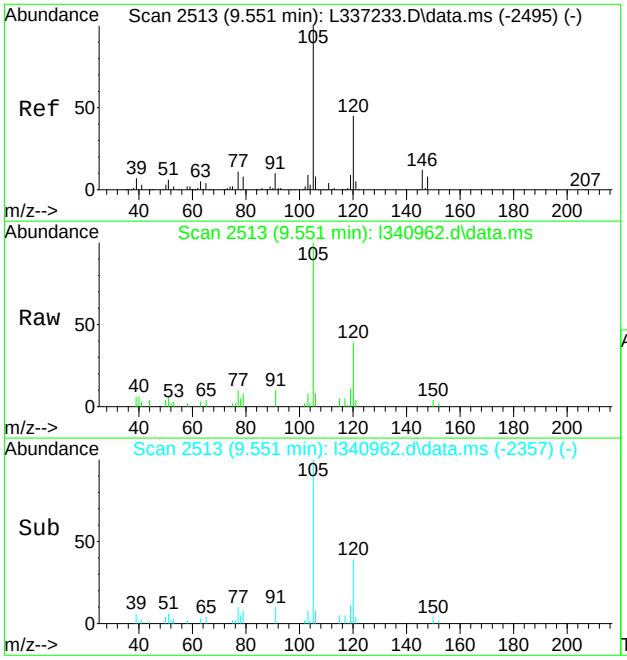


#106
sec-butylbenzene
Concen: 1.44 ug/L
RT: 9.301 min Scan# 2435
Delta R.T. -0.003 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:105 Resp: 15693

Ion	Ratio	Lower	Upper
105	100		
134	26.4	0.0	51.6
91	18.7	0.0	45.7

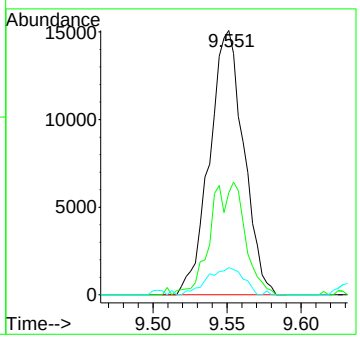


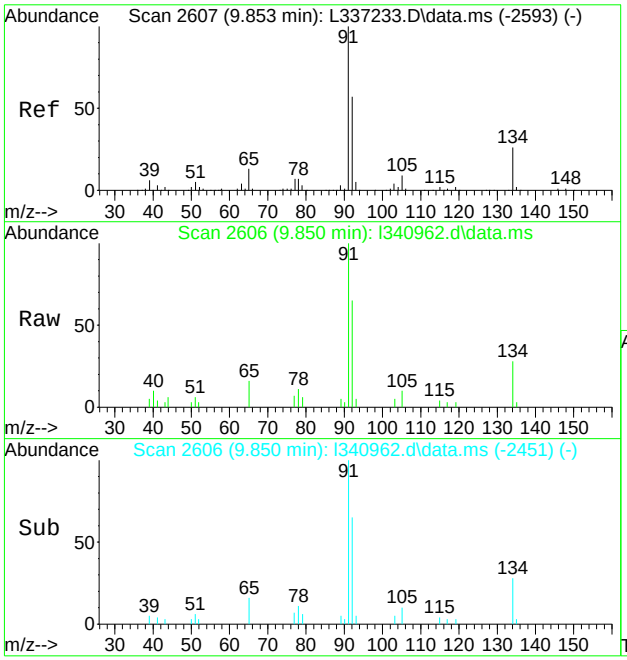


#110
1,2,3-trimethylbenzene
Concen: 2.93 ug/L
RT: 9.551 min Scan# 2513
Delta R.T. 0.000 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion:105 Resp: 24152

Ion	Ratio	Lower	Upper
105	100		
120	38.6	14.8	74.8
91	10.3	0.0	40.0

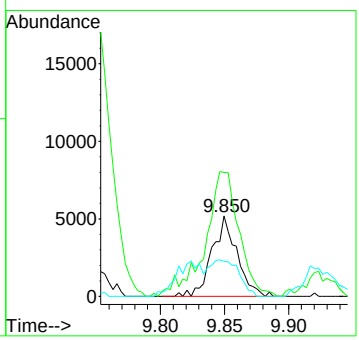




#112
n-butylbenzene
Concen: 1.55 ug/L
RT: 9.850 min Scan# 2606
Delta R.T. -0.003 min
Lab File: l340962.d
Acq: 22 Apr 2022 1:06 am

Tgt Ion: 92 Resp: 7027

Ion	Ratio	Lower	Upper
92	100		
91	147.7	144.3	204.3
134	43.6	15.7	75.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\april 2022\04252022\vl10284\
Data File : l340991.d
Acq On : 22 Apr 2022 1:58 pm
Operator : nicoleh
Sample : jd43215-21 Inst : GCMSL
Misc : MS58320,VL10284,5,,,,50
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 03:03:06 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

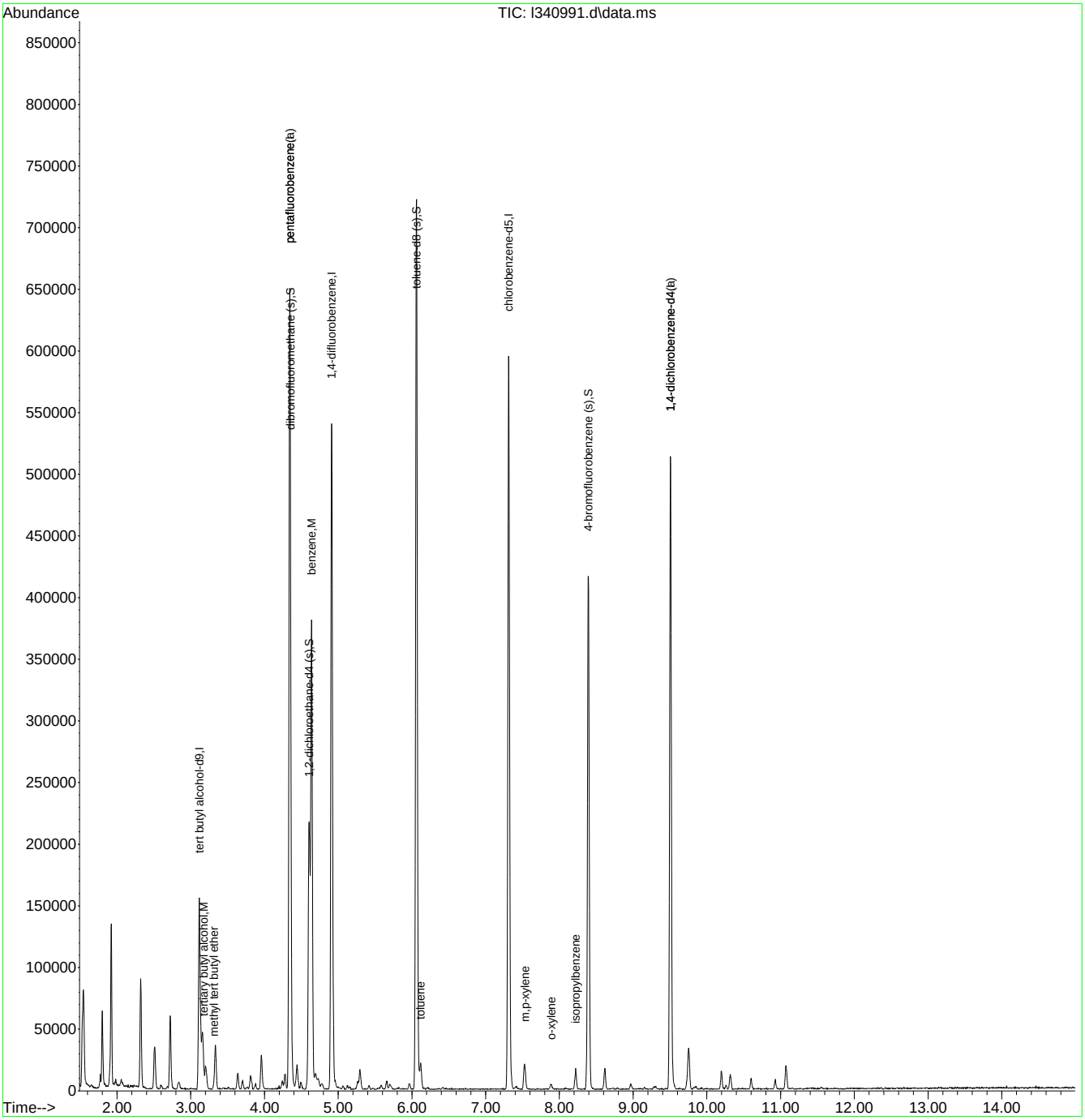
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	124515	500.00	ug/L	0.00
5) pentafluorobenzene	4.343	168	283182	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	401229	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	339026	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	146384	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.343	168	283210	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	146613	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	120794	48.26	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.52%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	123957	52.31	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 104.62%			
72) toluene-d8 (s)	6.060	98	464449	50.07	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.14%			
95) 4-bromofluorobenzene (s)	8.390	95	155256	54.67	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.34%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.175	59	4603	15.34	ug/L #	1
24) methyl tert butyl ether	3.313	73	2412	0.29	ug/L #	14
55) benzene	4.638	78	286773	29.72	ug/L	96
73) toluene	6.115	92	7534	1.18	ug/L	82
87) m,p-xylene	7.533	106	7898	1.78	ug/L	81
88) o-xylene	7.889	106	1427	0.31	ug/L #	51
92) isopropylbenzene	8.220	105	11284	1.02	ug/L	91

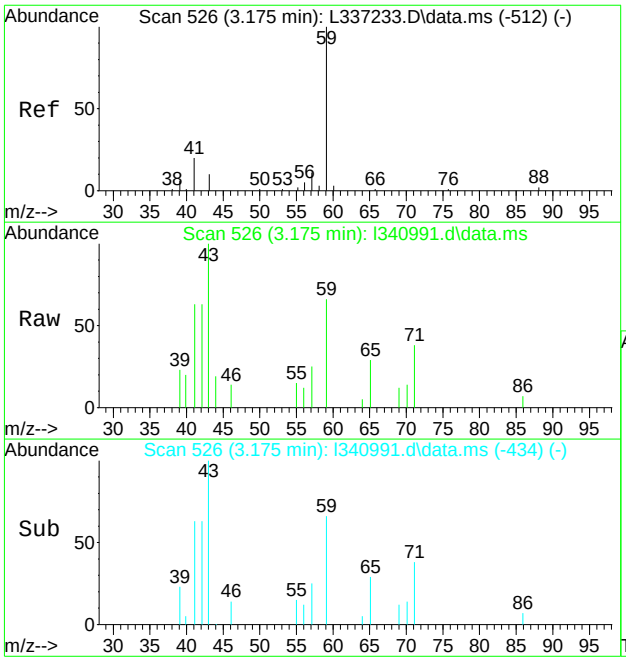
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\kristelv\2022\april 2022\04252022\vl10284\
Data File : l340991.d
Acq On : 22 Apr 2022 1:58 pm
Operator : nicoleh
Sample : jd43215-21 Inst : GCMSL
Misc : MS58320,VL10284,5,,,,50
ALS Vial : 11 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 03:03:06 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

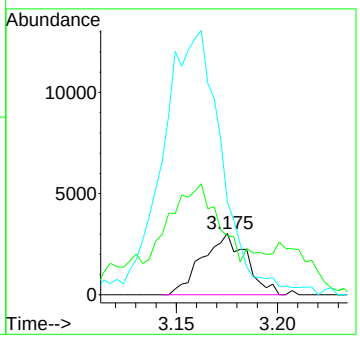


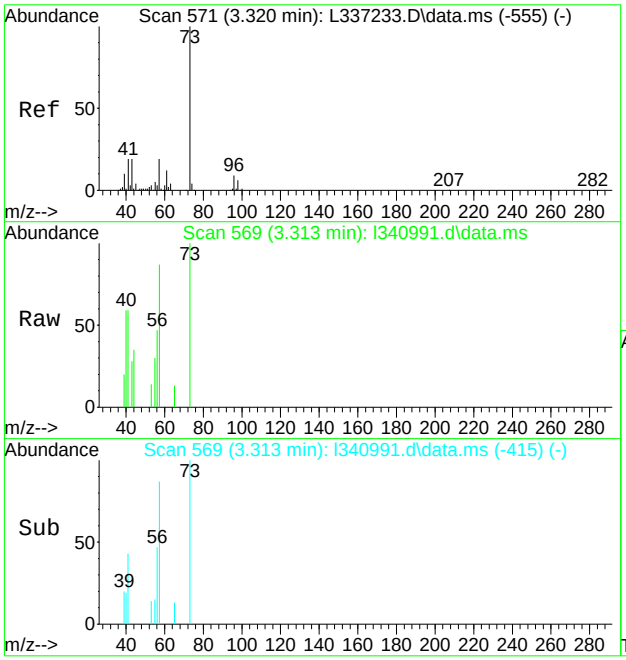


#4
tertiary butyl alcohol
Concen: 15.34 ug/L
RT: 3.175 min Scan# 526
Delta R.T. -0.006 min
Lab File: l340991.d
Acq: 22 Apr 2022 1:58 pm

Tgt Ion: 59 Resp: 4603

Ion	Ratio	Lower	Upper
59	100		
41	20.4	0.0	52.7
43	137.1	0.0	41.4#

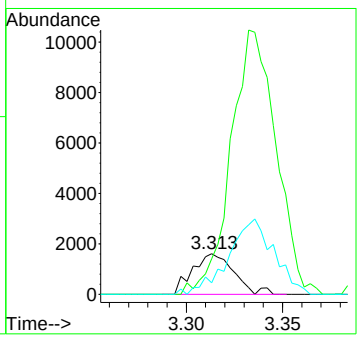


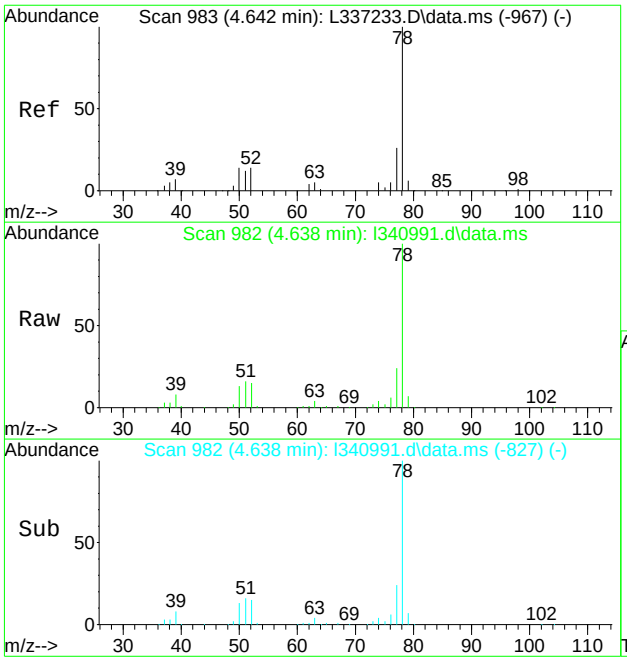


#24
methyl tert butyl ether
Concen: 0.29 ug/L
RT: 3.313 min Scan# 569
Delta R.T. -0.007 min
Lab File: l340991.d
Acq: 22 Apr 2022 1:58 pm

Tgt Ion: 73 Resp: 2412

Ion	Ratio	Lower	Upper
73	100		
57	87.4	0.0	48.6#
43	28.5	0.0	49.1

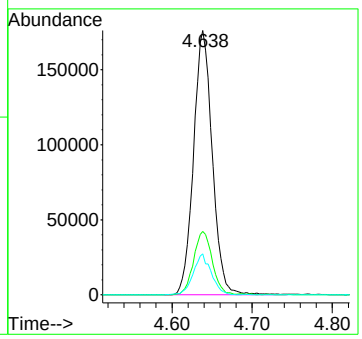


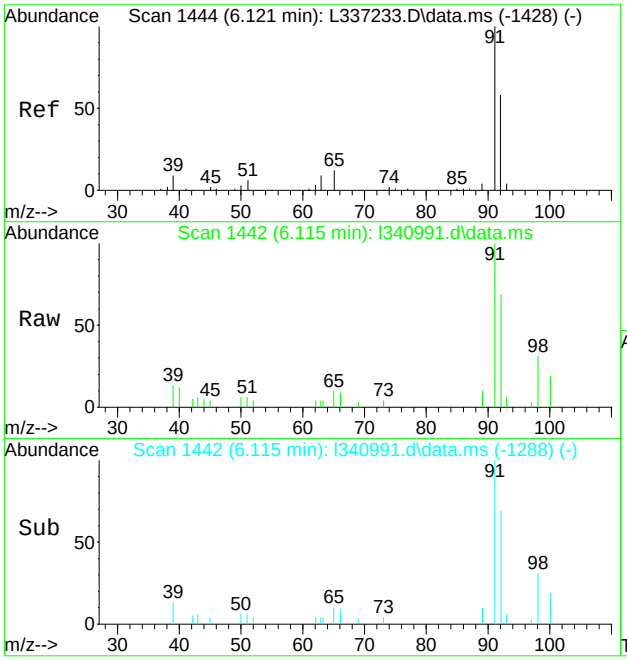


#55
benzene
Concen: 29.72 ug/L
RT: 4.638 min Scan# 982
Delta R.T. -0.004 min
Lab File: l340991.d
Acq: 22 Apr 2022 1:58 pm

Tgt Ion: 78 Resp: 286773

Ion	Ratio	Lower	Upper
78	100		
77	23.9	0.0	56.1
52	15.5	0.0	43.6

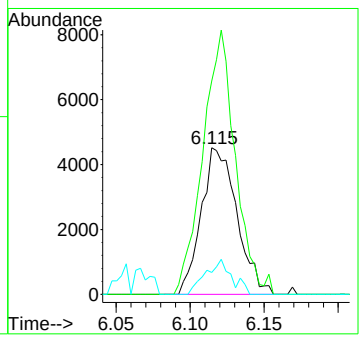


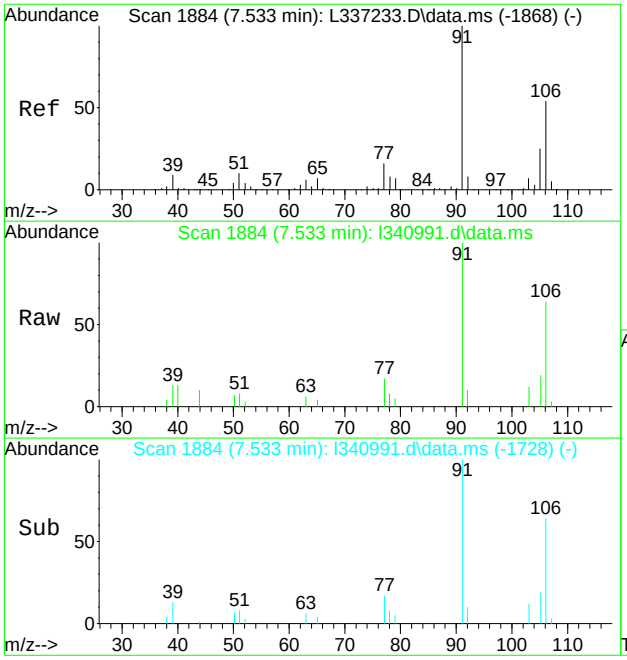


#73
toluene
Concen: 1.18 ug/L
RT: 6.115 min Scan# 1442
Delta R.T. -0.006 min
Lab File: l340991.d
Acq: 22 Apr 2022 1:58 pm

Tgt Ion: 92 Resp: 7534

Ion	Ratio	Lower	Upper
92	100		
91	145.4	141.2	201.2
65	15.0	0.0	50.5

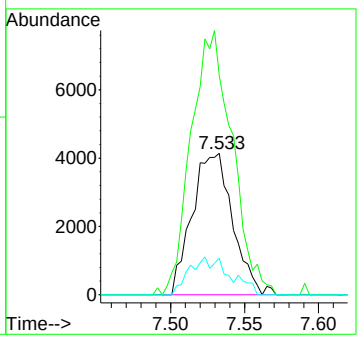


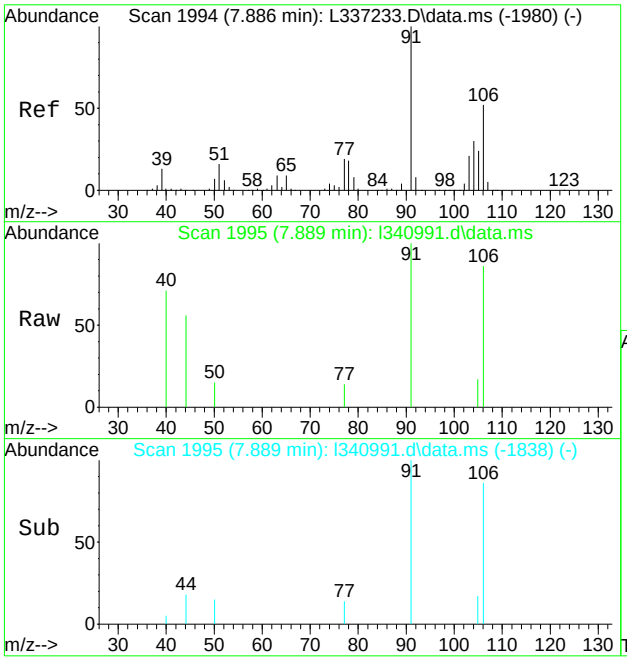


#87
m,p-xylene
Concen: 1.78 ug/L
RT: 7.533 min Scan# 1884
Delta R.T. -0.000 min
Lab File: l340991.d
Acq: 22 Apr 2022 1:58 pm

Tgt Ion:106 Resp: 7898

Ion	Ratio	Lower	Upper
106	100		
91	155.1	155.0	215.0
77	26.0	9.1	49.1

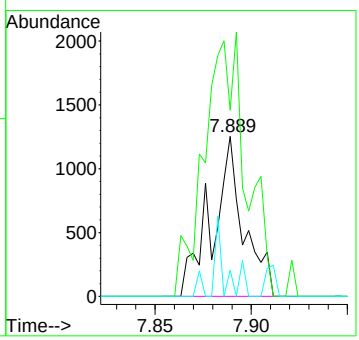


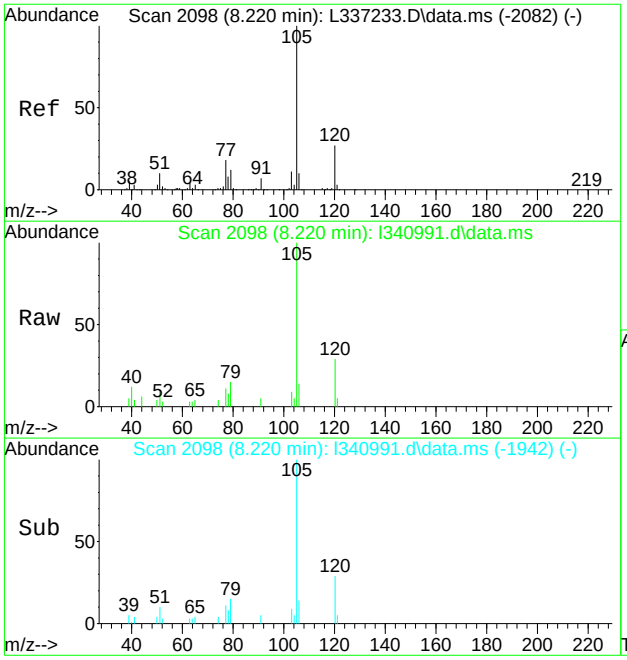


#88
o-xylene
Concen: 0.31 ug/L
RT: 7.889 min Scan# 1995
Delta R.T. 0.003 min
Lab File: l340991.d
Acq: 22 Apr 2022 1:58 pm

Tgt Ion:106 Resp: 1427

Ion	Ratio	Lower	Upper
106	100		
91	116.3	163.1	223.1#
77	16.5	17.5	57.5#

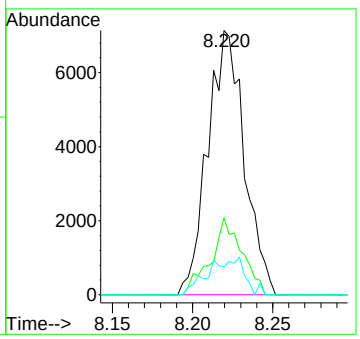




#92
isopropylbenzene
Concen: 1.02 ug/L
RT: 8.220 min Scan# 2098
Delta R.T. -0.000 min
Lab File: l340991.d
Acq: 22 Apr 2022 1:58 pm

Tgt Ion:105 Resp: 11284

Ion	Ratio	Lower	Upper
105	100		
120	29.1	7.2	47.2
77	10.5	0.0	38.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340976.d
Acq On : 22 Apr 2022 6:35 am
Operator : nicoleh
Sample : JD43215-22 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 74 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:10:05 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

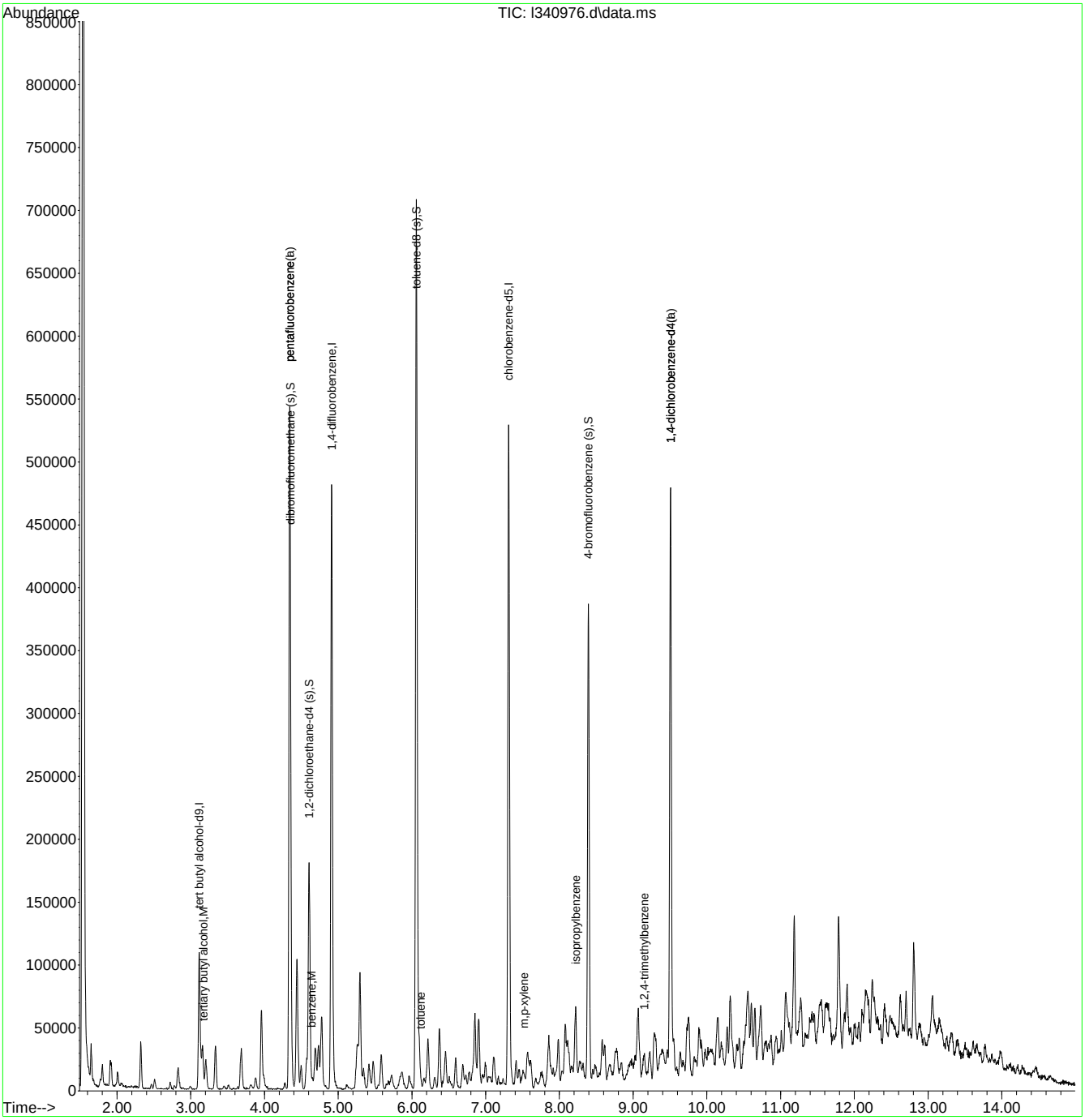
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	104388	500.00	ug/L	0.00
5) pentafluorobenzene	4.343	168	235717	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.914	114	348396	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	301230	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.509	152	130676	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.343	168	234762	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.509	152	130659	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	101640	48.78	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	103563	50.33	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 100.66%			
72) toluene-d8 (s)	6.060	98	406572	49.33	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.66%			
95) 4-bromofluorobenzene (s)	8.393	95	139335	54.96	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.92%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.172	59	2141	8.51	ug/L	# 1
55) benzene	4.635	78	2603	0.31	ug/L	81
73) toluene	6.118	92	1629	0.29	ug/L	86
87) m,p-xylene	7.517	106	1808	0.46	ug/L	# 48
92) isopropylbenzene	8.223	105	35088	3.57	ug/L	93
105) 1,2,4-trimethylbenzene	9.150	105	4741	0.59	ug/L	93

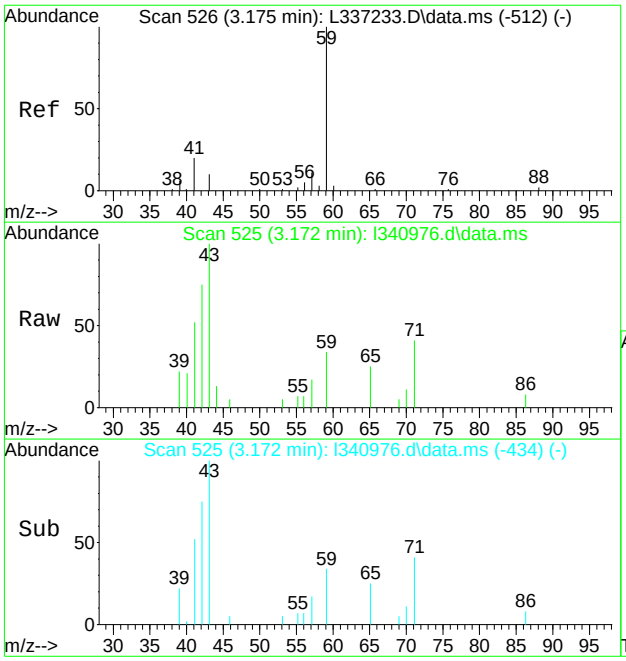
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340976.d
Acq On : 22 Apr 2022 6:35 am
Operator : nicoleh
Sample : JD43215-22 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 74 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:10:05 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

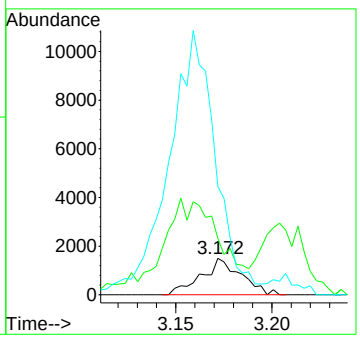


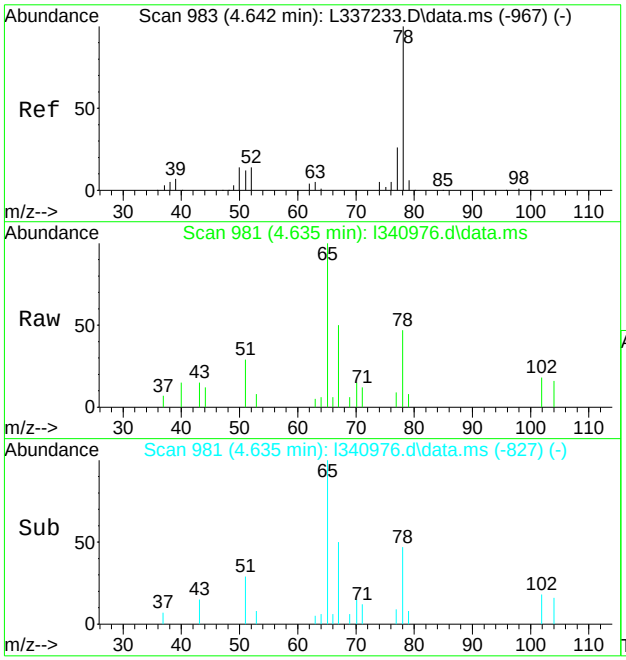


#4
tertiary butyl alcohol
Concen: 8.51 ug/L
RT: 3.172 min Scan# 525
Delta R.T. -0.009 min
Lab File: l340976.d
Acq: 22 Apr 2022 6:35 am

Tgt Ion: 59 Resp: 2141

Ion	Ratio	Lower	Upper
59	100		
41	26.8	0.0	52.7
43	237.8	0.0	41.4#

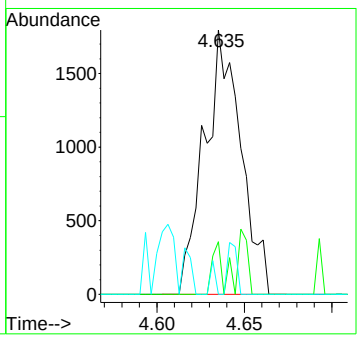


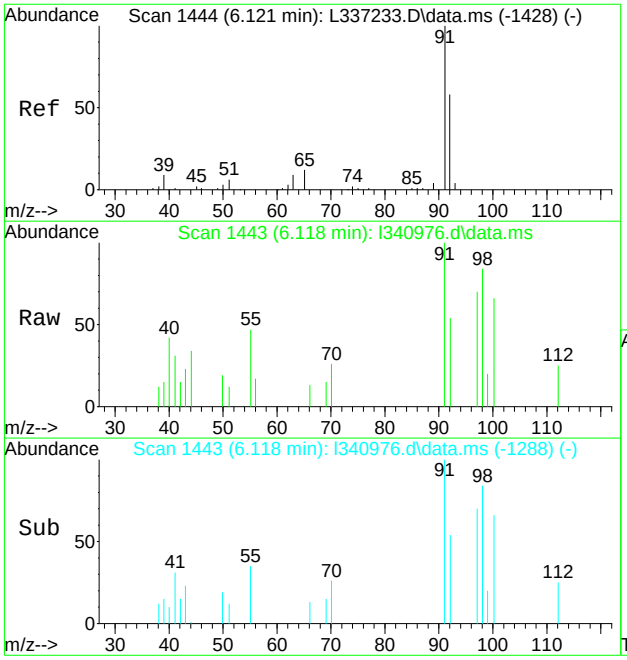


#55
benzene
Concen: 0.31 ug/L
RT: 4.635 min Scan# 981
Delta R.T. -0.007 min
Lab File: l340976.d
Acq: 22 Apr 2022 6:35 am

Tgt Ion: 78 Resp: 2603

Ion	Ratio	Lower	Upper
78	100		
77	20.0	0.0	56.1
52	0.0	0.0	43.6

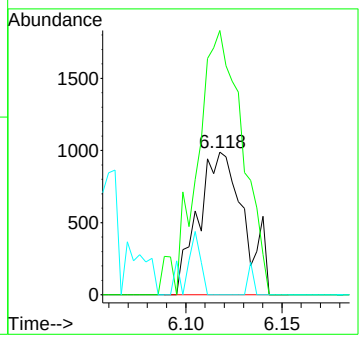


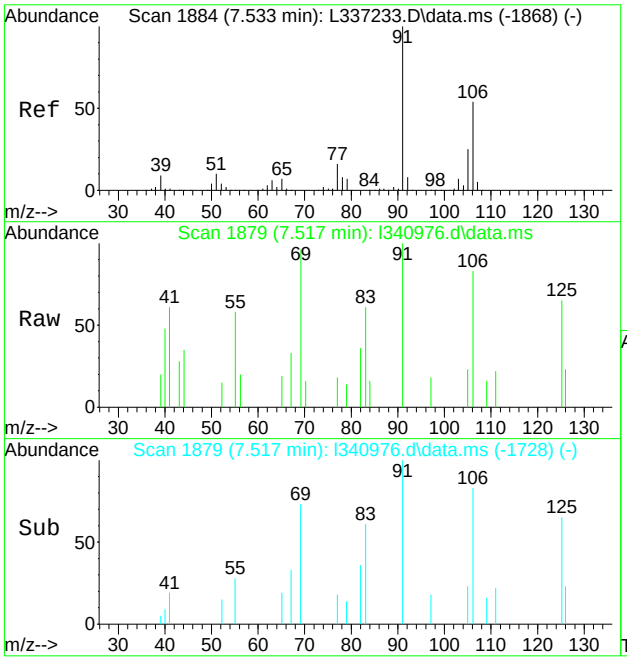


#73
toluene
Concen: 0.29 ug/L
RT: 6.118 min Scan# 1443
Delta R.T. -0.003 min
Lab File: l340976.d
Acq: 22 Apr 2022 6:35 am

Tgt Ion: 92 Resp: 1629

Ion	Ratio	Lower	Upper
92	100		
91	185.4	141.2	201.2
65	0.0	0.0	50.5

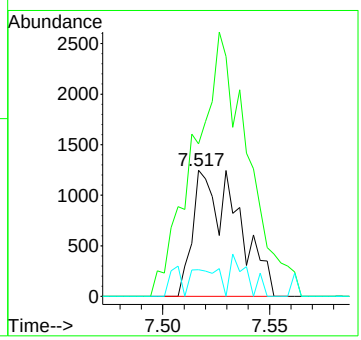


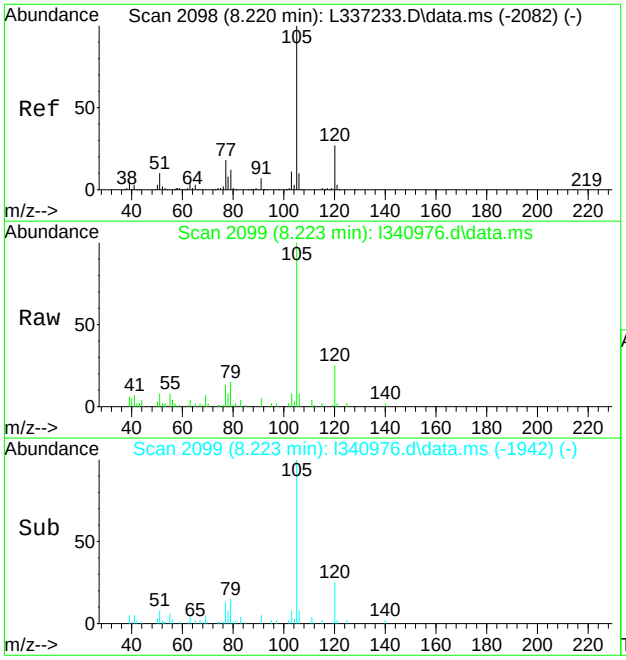


#87
m,p-xylene
Concen: 0.46 ug/L
RT: 7.517 min Scan# 1879
Delta R.T. -0.016 min
Lab File: l340976.d
Acq: 22 Apr 2022 6:35 am

Tgt Ion:106 Resp: 1808

Ion	Ratio	Lower	Upper
106	100		
91	102.2	155.0	215.0#
77	21.2	9.1	49.1

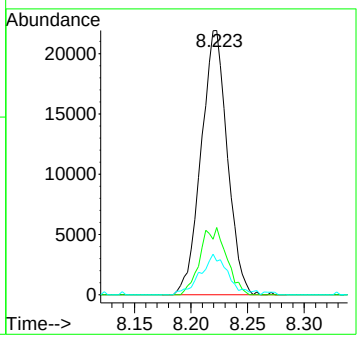


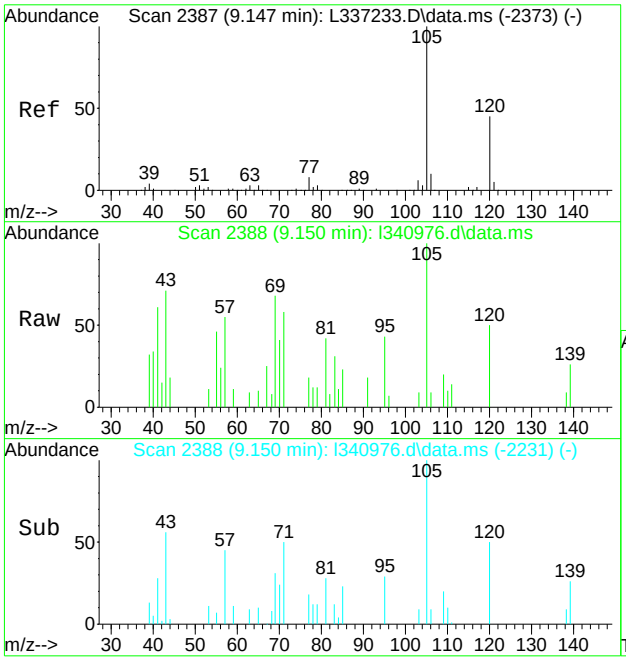


#92
isopropylbenzene
Concen: 3.57 ug/L
RT: 8.223 min Scan# 2099
Delta R.T. 0.003 min
Lab File: l340976.d
Acq: 22 Apr 2022 6:35 am

Tgt Ion:105 Resp: 35088

Ion	Ratio	Lower	Upper
105	100		
120	25.4	7.2	47.2
77	12.8	0.0	38.3

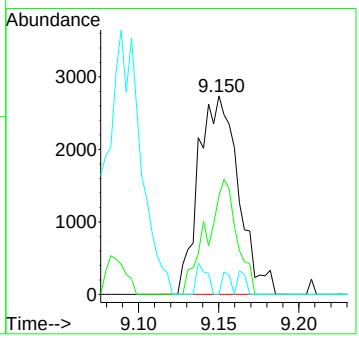




#105
1,2,4-trimethylbenzene
Concen: 0.59 ug/L
RT: 9.150 min Scan# 2388
Delta R.T. 0.003 min
Lab File: l340976.d
Acq: 22 Apr 2022 6:35 am

Tgt Ion:105 Resp: 4741

Ion	Ratio	Lower	Upper
105	100		
120	49.8	19.0	79.0
119	0.0	0.0	42.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340977.d
Acq On : 22 Apr 2022 6:58 am
Operator : nicoleh
Sample : JD43215-23 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 75 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:12:17 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

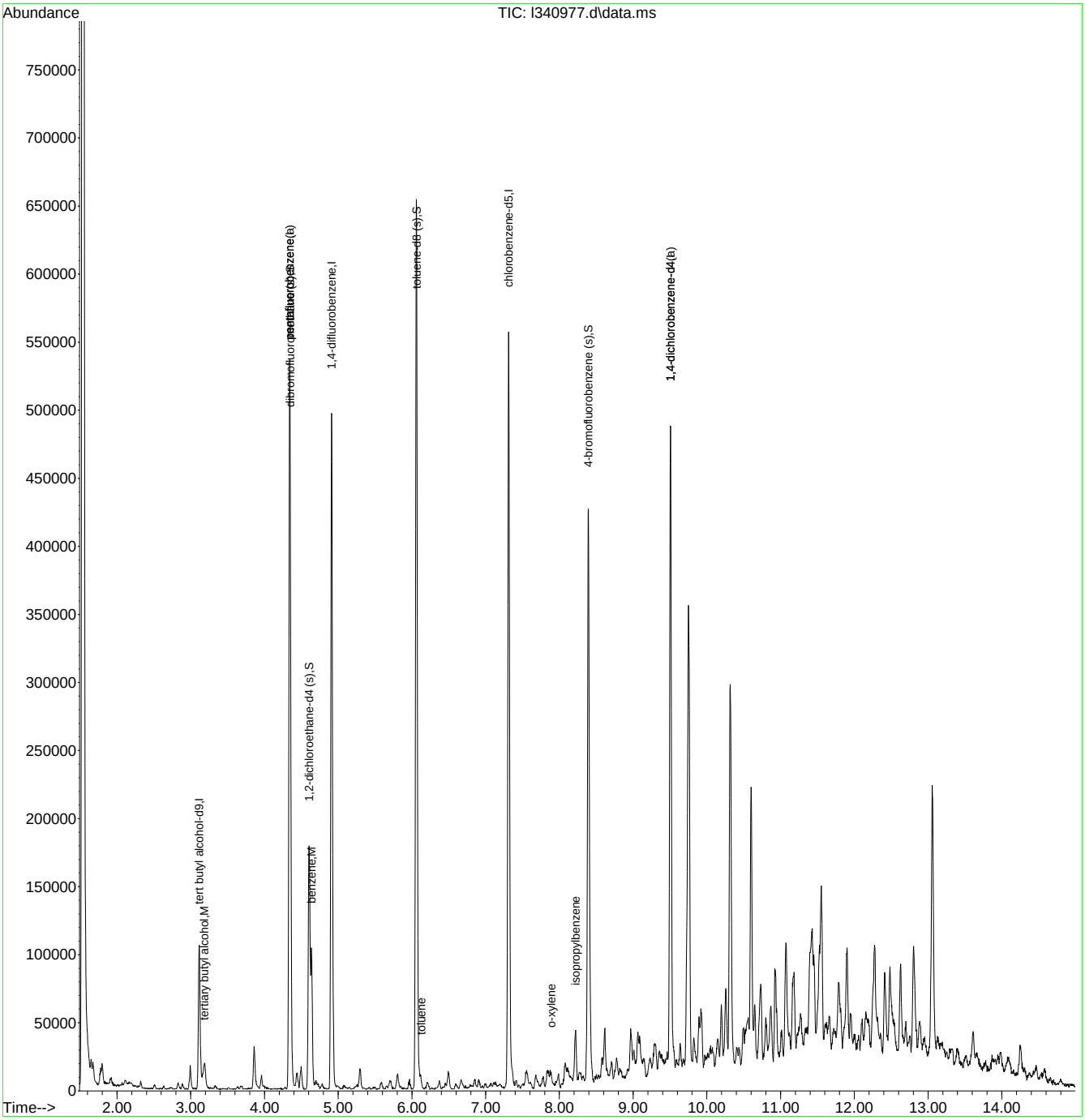
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	102236	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	239121	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	360639	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	318373	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	135176	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	238773	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.506	152	135241	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	104103	49.25	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.50%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	105243	49.41	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 98.82%			
72) toluene-d8 (s)	6.063	98	418574	48.05	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.10%			
95) 4-bromofluorobenzene (s)	8.390	95	147755	56.34	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 112.68%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.181	59	14209	57.68	ug/L	85
55) benzene	4.635	78	76482	8.82	ug/L	93
73) toluene	6.124	92	2499	0.42	ug/L #	63
88) o-xylene	7.889	106	2499	0.58	ug/L #	68
92) isopropylbenzene	8.219	105	22138	2.13	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

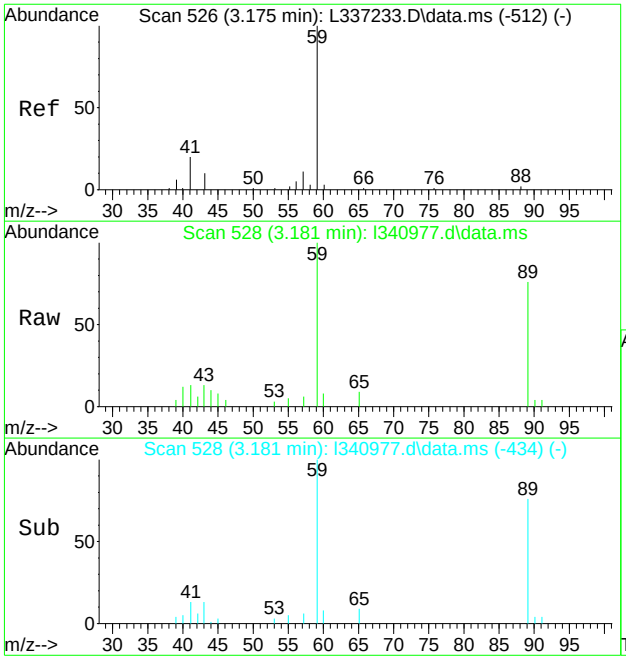
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340977.d
Acq On : 22 Apr 2022 6:58 am
Operator : nicoleh
Sample : JD43215-23 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 75 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:12:17 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration



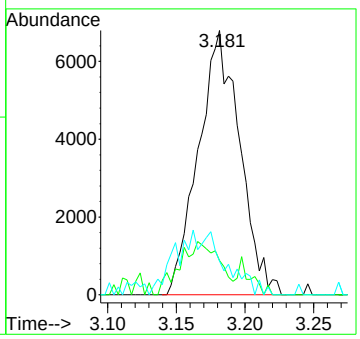
ML10152.M Mon Apr 25 00:29:05 2022 Page: 2

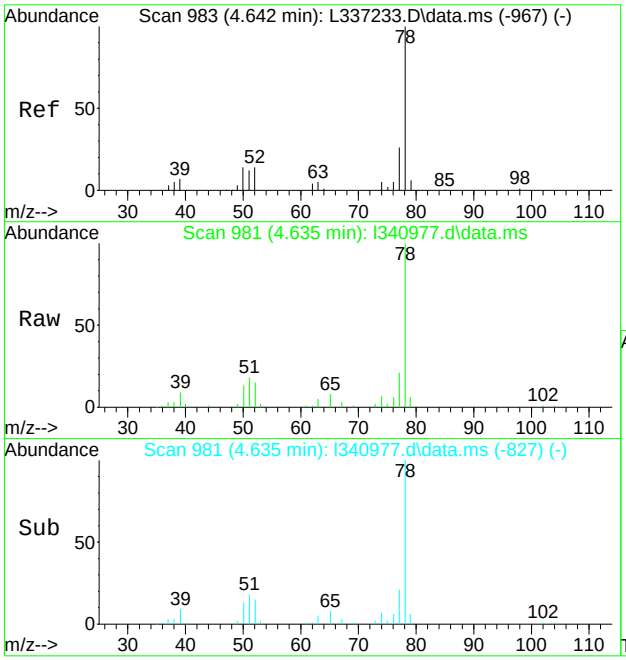


#4
tertiary butyl alcohol
Concen: 57.68 ug/L
RT: 3.181 min Scan# 528
Delta R.T. 0.000 min
Lab File: l340977.d
Acq: 22 Apr 2022 6:58 am

Tgt Ion: 59 Resp: 14209

Ion	Ratio	Lower	Upper
59	100		
41	13.0	0.0	52.7
43	12.7	0.0	41.4

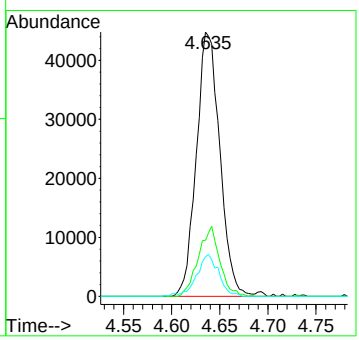


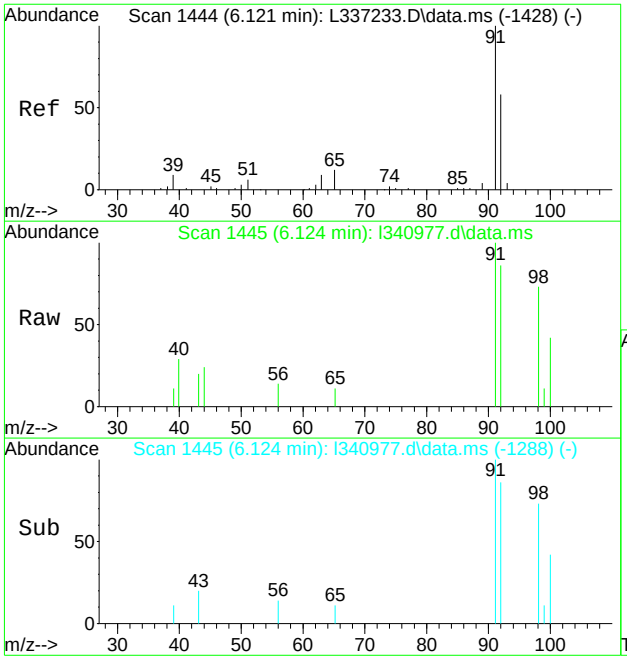


#55
benzene
Concen: 8.82 ug/L
RT: 4.635 min Scan# 981
Delta R.T. -0.007 min
Lab File: l340977.d
Acq: 22 Apr 2022 6:58 am

Tgt Ion: 78 Resp: 76482

Ion	Ratio	Lower	Upper
78	100		
77	21.2	0.0	56.1
52	15.0	0.0	43.6

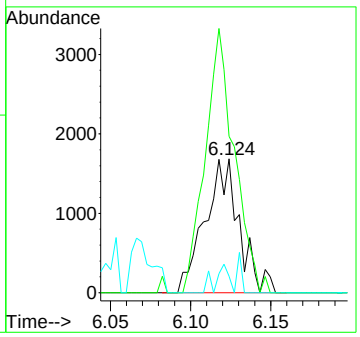


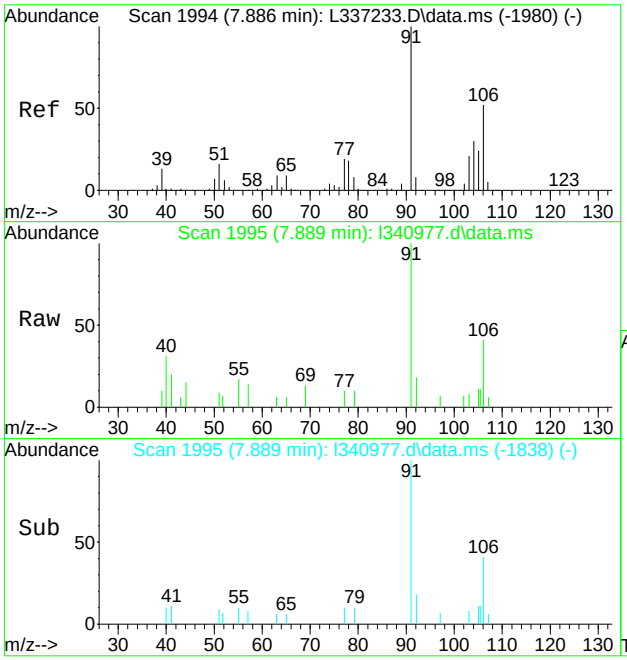


#73
toluene
Concen: 0.42 ug/L
RT: 6.124 min Scan# 1445
Delta R.T. 0.003 min
Lab File: l340977.d
Acq: 22 Apr 2022 6:58 am

Tgt Ion: 92 Resp: 2499

Ion	Ratio	Lower	Upper
92	100		
91	116.6	141.2	201.2#
65	12.4	0.0	50.5

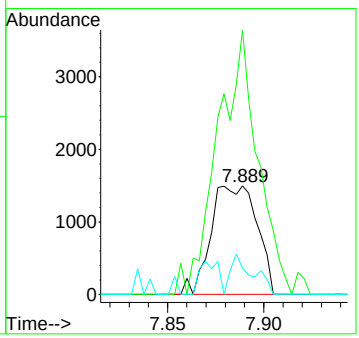


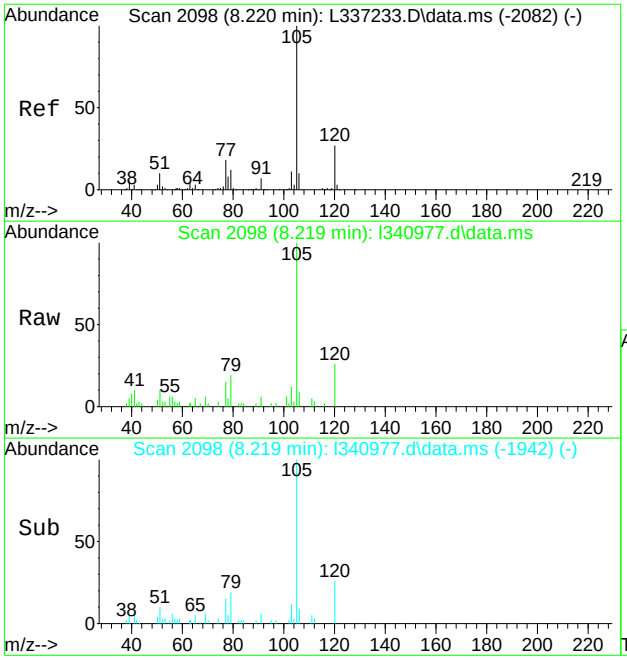


#88
o-xylene
Concen: 0.58 ug/L
RT: 7.889 min Scan# 1995
Delta R.T. 0.003 min
Lab File: l340977.d
Acq: 22 Apr 2022 6:58 am

Tgt Ion:106 Resp: 2499

Ion	Ratio	Lower	Upper
106	100		
91	243.9	163.1	223.1#
77	24.2	17.5	57.5

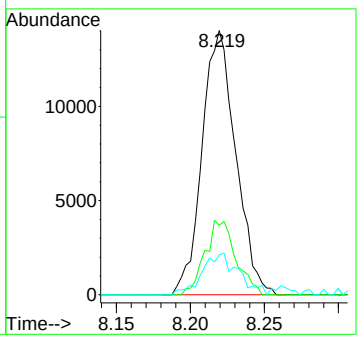




#92
isopropylbenzene
Concen: 2.13 ug/L
RT: 8.219 min Scan# 2098
Delta R.T. -0.001 min
Lab File: l340977.d
Acq: 22 Apr 2022 6:58 am

Tgt Ion:105 Resp: 22138

Ion	Ratio	Lower	Upper
105	100		
120	26.3	7.2	47.2
77	15.0	0.0	38.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340978.d
Acq On : 22 Apr 2022 7:22 am
Operator : nicoleh
Sample : JD43215-24 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 76 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:14:19 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

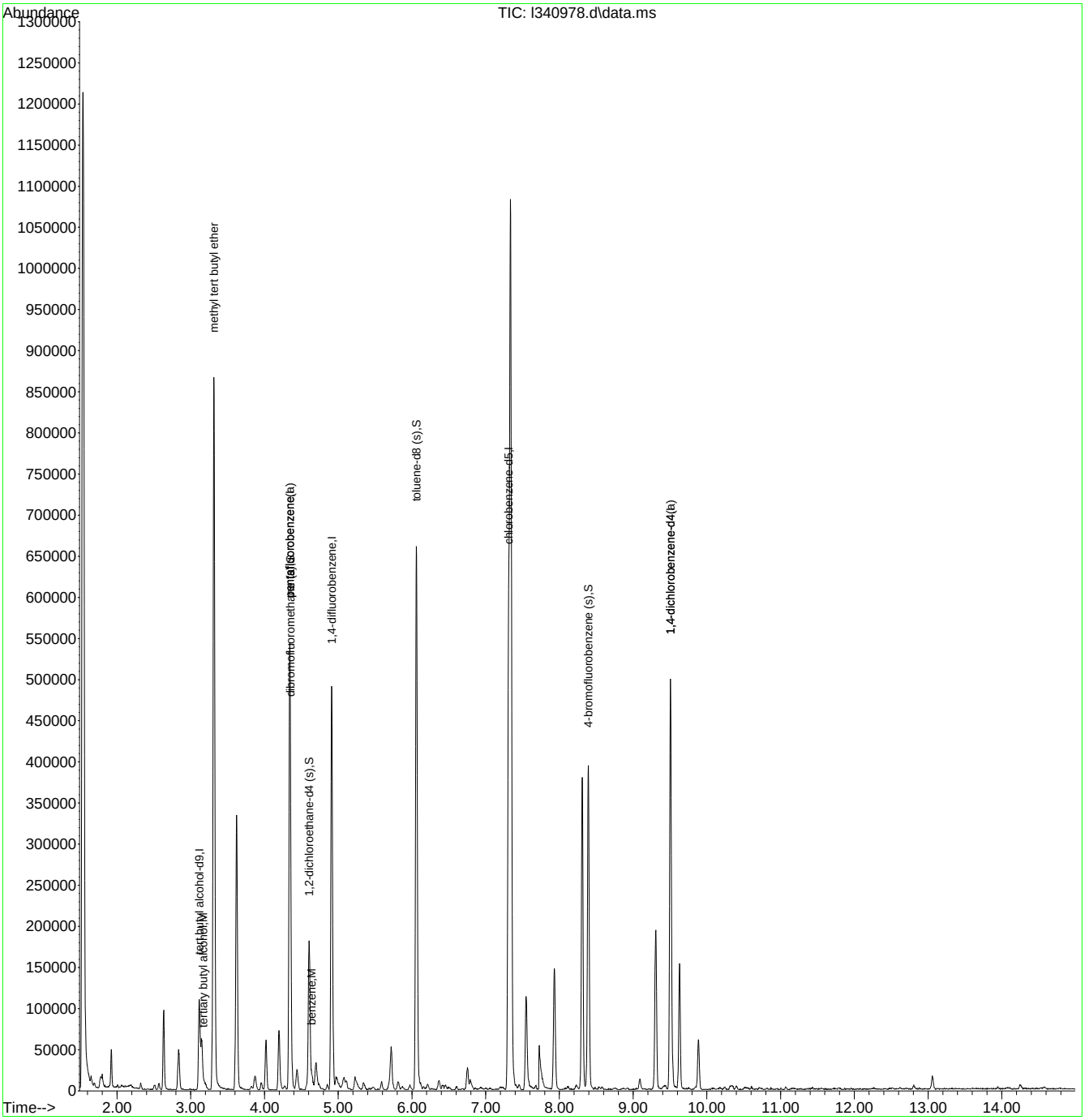
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	105430	500.00	ug/L	0.00
5) pentafluorobenzene	4.343	168	240883	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.914	114	361660	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	323403	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	139043	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.343	168	240883	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	139043	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	102260	48.03	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.06%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	104934	49.12	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 98.24%			
72) toluene-d8 (s)	6.060	98	429796	48.57	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.14%			
95) 4-bromofluorobenzene (s)	8.390	95	144405	53.53	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.06%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.169	59	8512	33.51	ug/L	# 1
24) methyl tert butyl ether	3.313	73	736530	105.21	ug/L	96
55) benzene	4.635	78	7441	0.86	ug/L	97

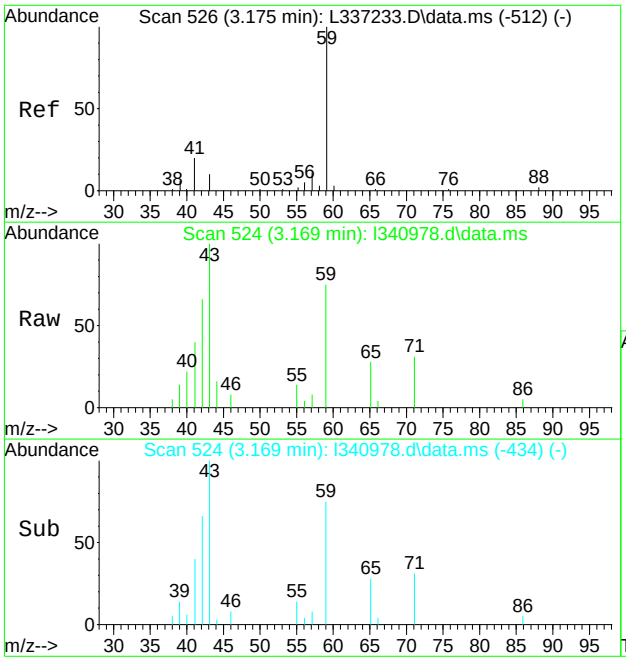
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340978.d
Acq On : 22 Apr 2022 7:22 am
Operator : nicoleh
Sample : JD43215-24 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 76 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:14:19 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

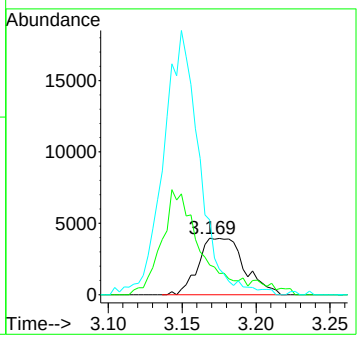


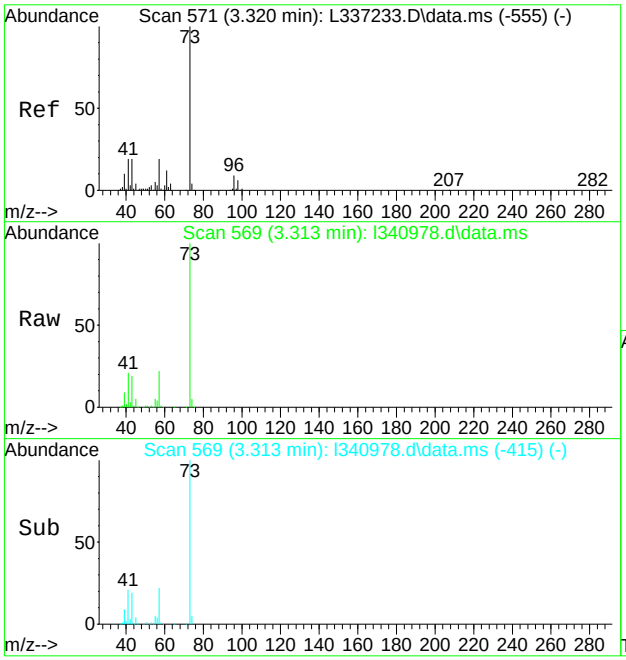


#4
tertiary butyl alcohol
Concen: 33.51 ug/L
RT: 3.169 min Scan# 524
Delta R.T. -0.012 min
Lab File: l340978.d
Acq: 22 Apr 2022 7:22 am

Tgt Ion: 59 Resp: 8512

Ion	Ratio	Lower	Upper
59	100		
41	42.2	0.0	52.7
43	132.5	0.0	41.4#

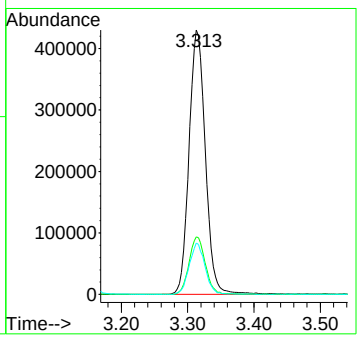


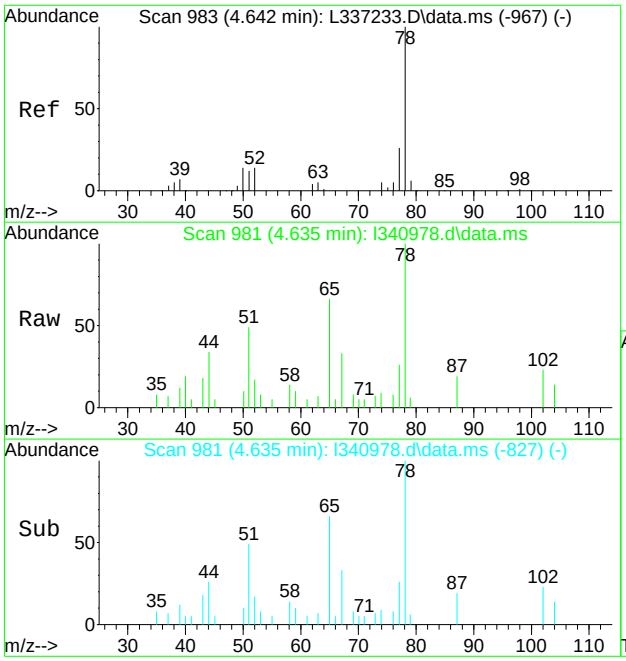


#24
methyl tert butyl ether
Concen: 105.21 ug/L
RT: 3.313 min Scan# 569
Delta R.T. -0.007 min
Lab File: l340978.d
Acq: 22 Apr 2022 7:22 am

Tgt Ion: 73 Resp: 736530

Ion	Ratio	Lower	Upper
73	100		
57	21.8	0.0	48.6
43	19.5	0.0	49.1

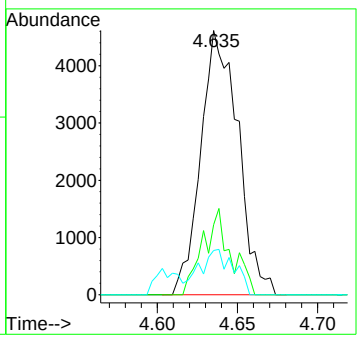




#55
benzene
Concen: 0.86 ug/L
RT: 4.635 min Scan# 981
Delta R.T. -0.007 min
Lab File: l340978.d
Acq: 22 Apr 2022 7:22 am

Tgt Ion: 78 Resp: 7441

Ion	Ratio	Lower	Upper
78	100		
77	26.5	0.0	56.1
52	16.8	0.0	43.6



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340979.d
Acq On : 22 Apr 2022 7:45 am
Operator : nicoleh
Sample : JD43215-25 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 77 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:16:07 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

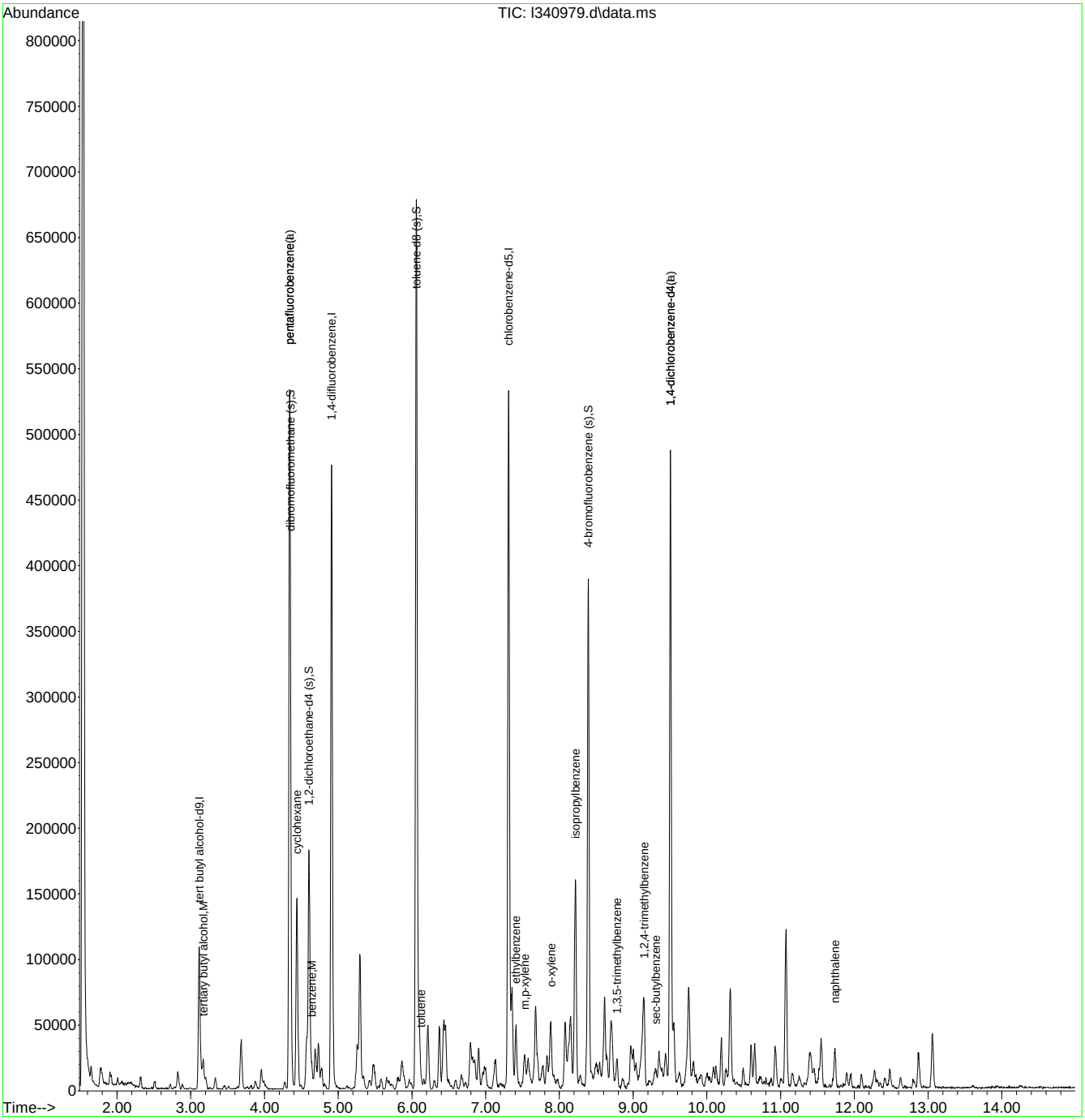
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	105217	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	235179	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	347850	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	303629	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	131771	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	236878	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.506	152	131771	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	102623	49.37	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.74%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	102849	50.06	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 100.12%			
72) toluene-d8 (s)	6.060	98	408693	49.19	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.38%			
95) 4-bromofluorobenzene (s)	8.390	95	138681	54.25	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.50%			
Target Compounds						Qvalue
4) tertiary butyl alcohol	3.172	59	15296	60.34	ug/L	82
45) cyclohexane	4.439	84	45249	12.88	ug/L #	61
55) benzene	4.642	78	10620	1.27	ug/L	92
73) toluene	6.121	92	1389	0.24	ug/L #	49
86) ethylbenzene	7.411	91	11354	1.12	ug/L	97
87) m,p-xylene	7.530	106	8923	2.24	ug/L #	77
88) o-xylene	7.889	106	12229	2.99	ug/L	88
92) isopropylbenzene	8.220	105	95971	9.69	ug/L	95
103) 1,3,5-trimethylbenzene	8.781	105	10631	1.36	ug/L	84
105) 1,2,4-trimethylbenzene	9.150	105	34020	4.23	ug/L	99
106) sec-butylbenzene	9.307	105	4683	0.49	ug/L	79
117) naphthalene	11.737	128	23622	4.35	ug/L	91

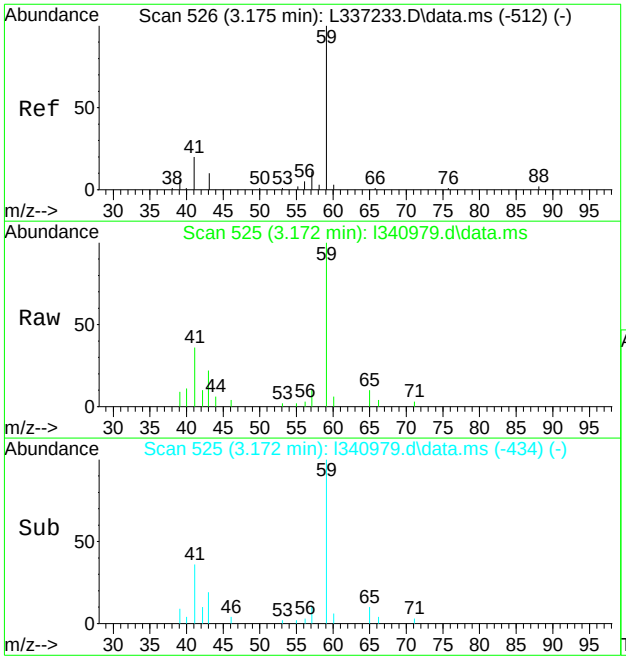
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340979.d
Acq On : 22 Apr 2022 7:45 am
Operator : nicoleh
Sample : JD43215-25 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 77 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:16:07 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

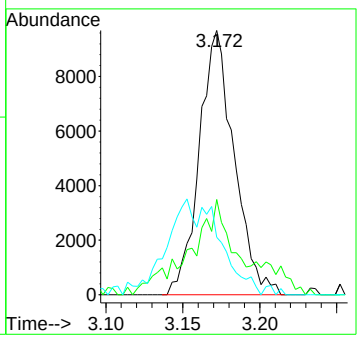


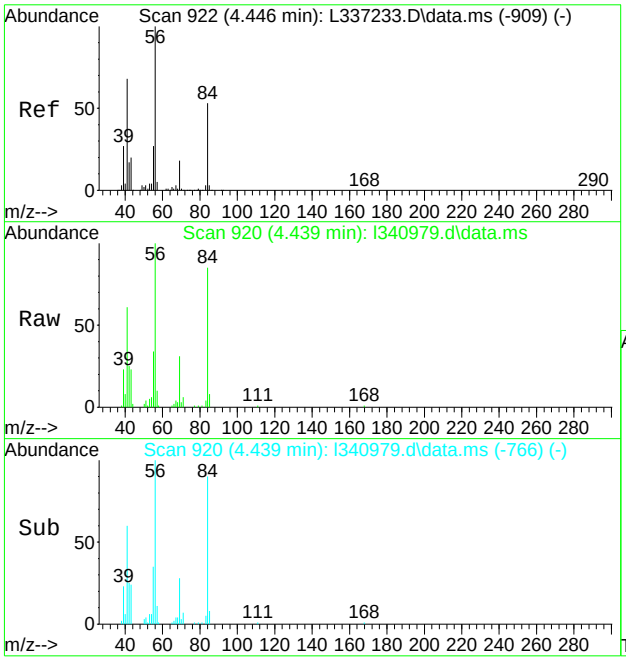


#4
tertiary butyl alcohol
Concen: 60.34 ug/L
RT: 3.172 min Scan# 525
Delta R.T. -0.009 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion: 59 Resp: 15296

Ion	Ratio	Lower	Upper
59	100		
41	29.4	0.0	52.7
43	21.7	0.0	41.4

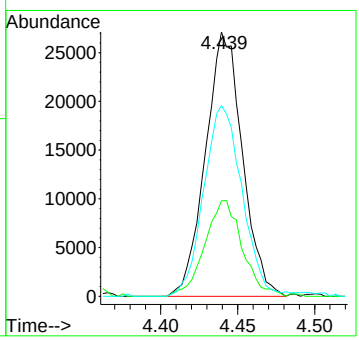


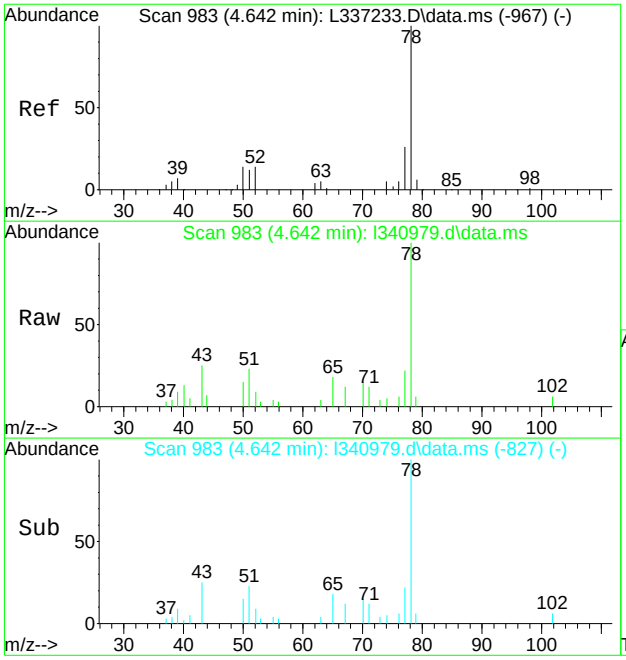


#45
cyclohexane
Concen: 12.88 ug/L
RT: 4.439 min Scan# 920
Delta R.T. -0.007 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion: 84 Resp: 45249

Ion	Ratio	Lower	Upper
84	100		
69	36.1	14.0	54.0
41	72.2	107.6	147.6#

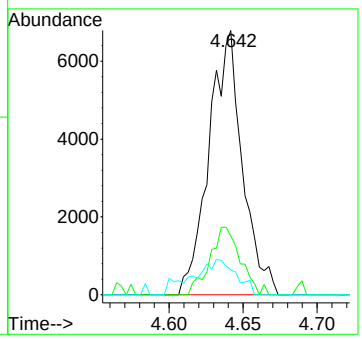


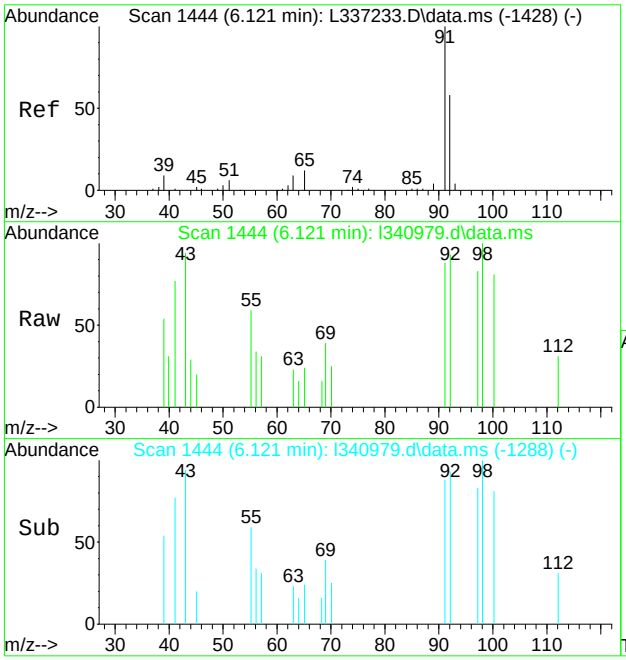


#55
benzene
Concen: 1.27 ug/L
RT: 4.642 min Scan# 983
Delta R.T. -0.000 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion: 78 Resp: 10620

Ion	Ratio	Lower	Upper
78	100		
77	22.3	0.0	56.1
52	9.4	0.0	43.6

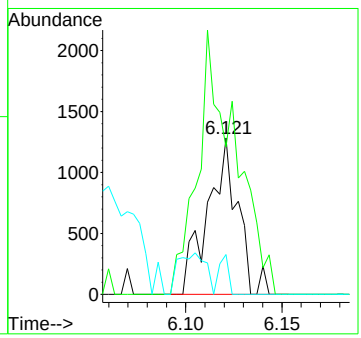


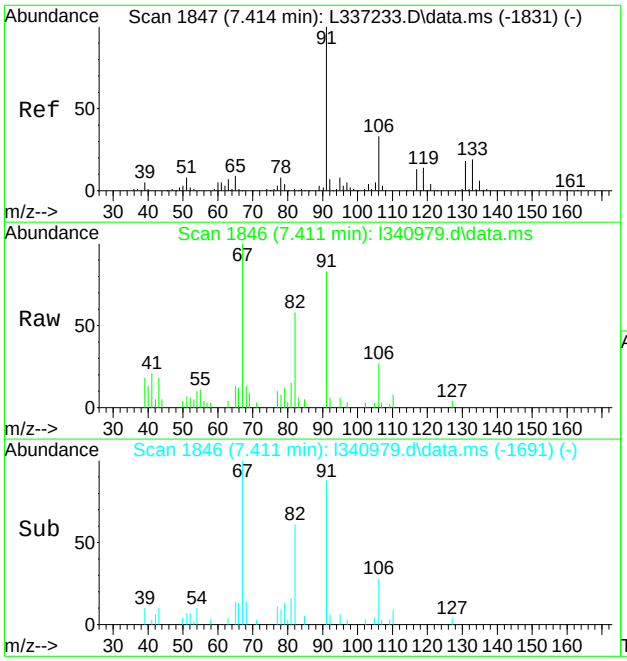


#73
toluene
Concen: 0.24 ug/L
RT: 6.121 min Scan# 1444
Delta R.T. -0.000 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion: 92 Resp: 1389

Ion	Ratio	Lower	Upper
92	100		
91	94.2	141.2	201.2#
65	25.6	0.0	50.5

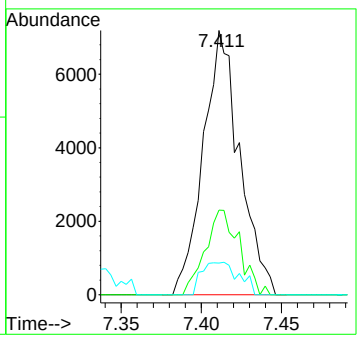


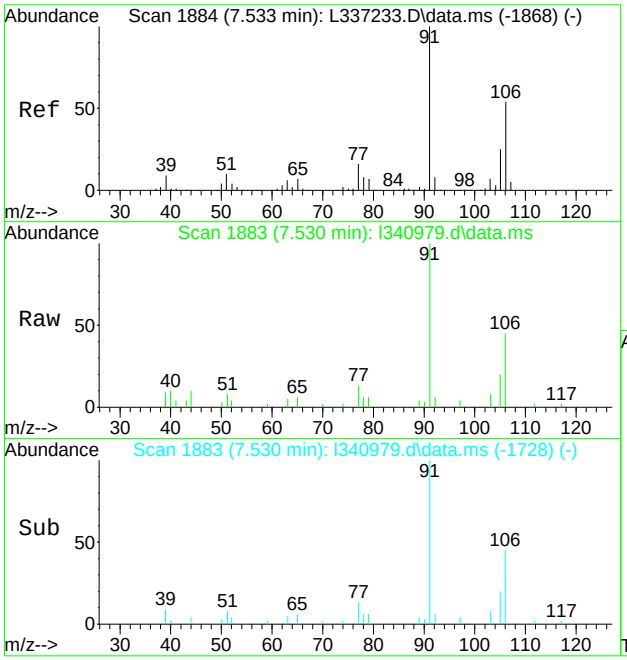


#86
ethylbenzene
Concen: 1.12 ug/L
RT: 7.411 min Scan# 1846
Delta R.T. -0.003 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion: 91 Resp: 11354

Ion	Ratio	Lower	Upper
91	100		
106	32.0	2.7	62.7
77	12.0	0.0	39.1

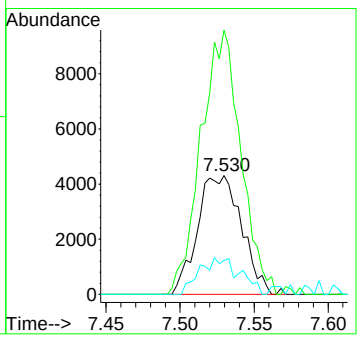


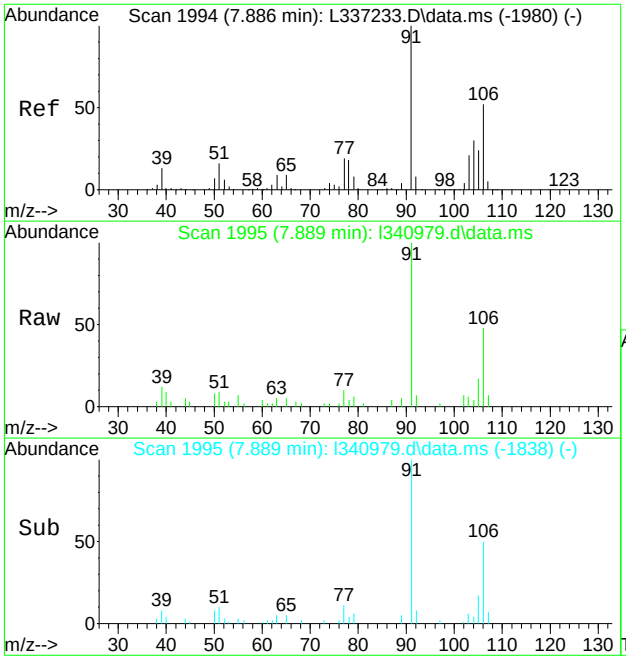


#87
m,p-xylene
Concen: 2.24 ug/L
RT: 7.530 min Scan# 1883
Delta R.T. -0.003 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion:106 Resp: 8923

Ion	Ratio	Lower	Upper
106	100		
91	222.7	155.0	215.0#
77	28.5	9.1	49.1

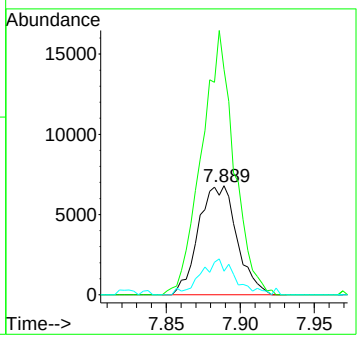


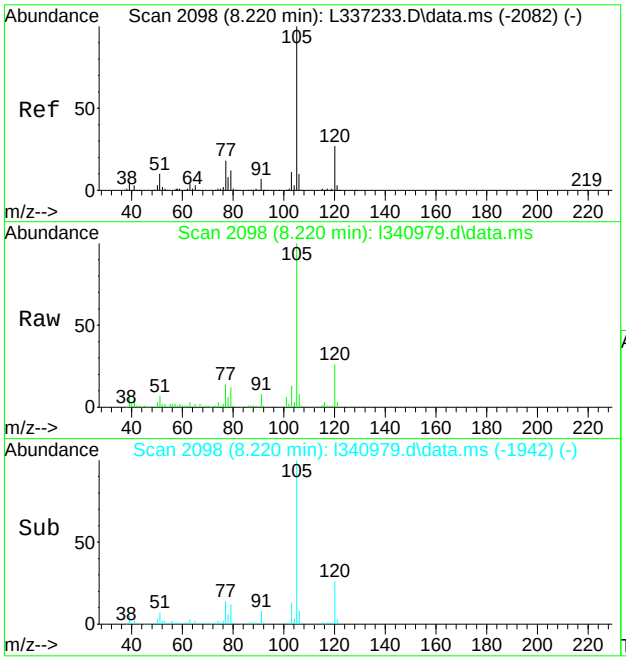


#88
o-xylene
Concen: 2.99 ug/L
RT: 7.889 min Scan# 1995
Delta R.T. 0.003 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion:106 Resp: 12229

Ion	Ratio	Lower	Upper
106	100		
91	206.4	163.1	223.1
77	21.6	17.5	57.5

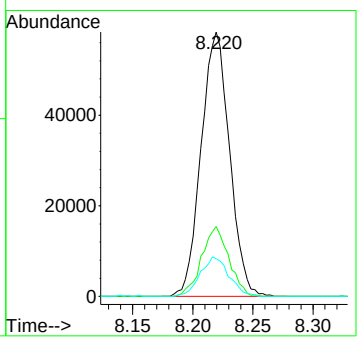


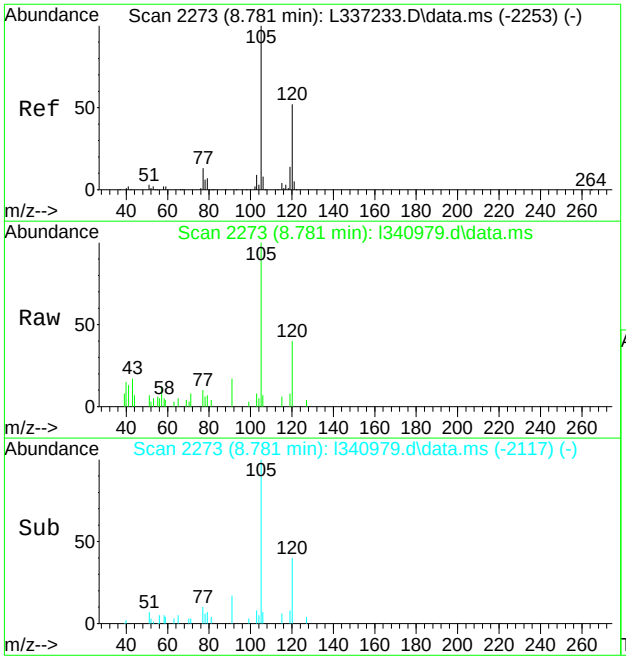


#92
isopropylbenzene
Concen: 9.69 ug/L
RT: 8.220 min Scan# 2098
Delta R.T. -0.000 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion:105 Resp: 95971

Ion	Ratio	Lower	Upper
105	100		
120	26.4	7.2	47.2
77	14.2	0.0	38.3

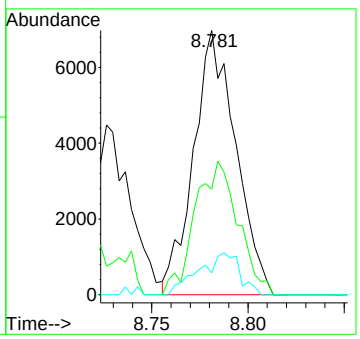


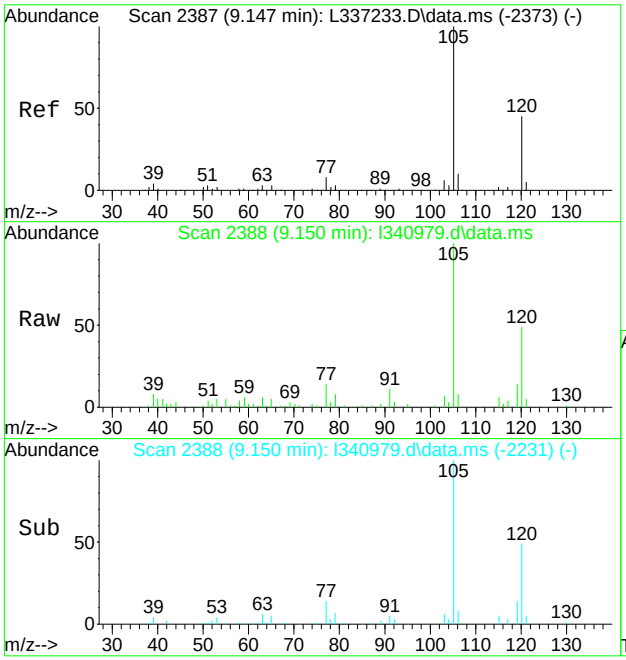


#103
1,3,5-trimethylbenzene
Concen: 1.36 ug/L
RT: 8.781 min Scan# 2273
Delta R.T. 0.000 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion:105 Resp: 10631

Ion	Ratio	Lower	Upper
105	100		
120	40.0	21.9	81.9
119	8.3	0.0	44.3

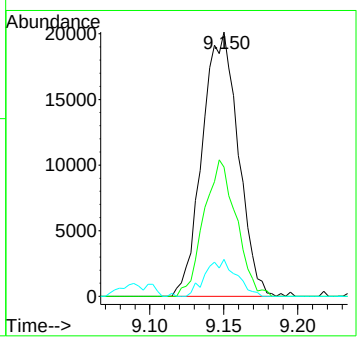


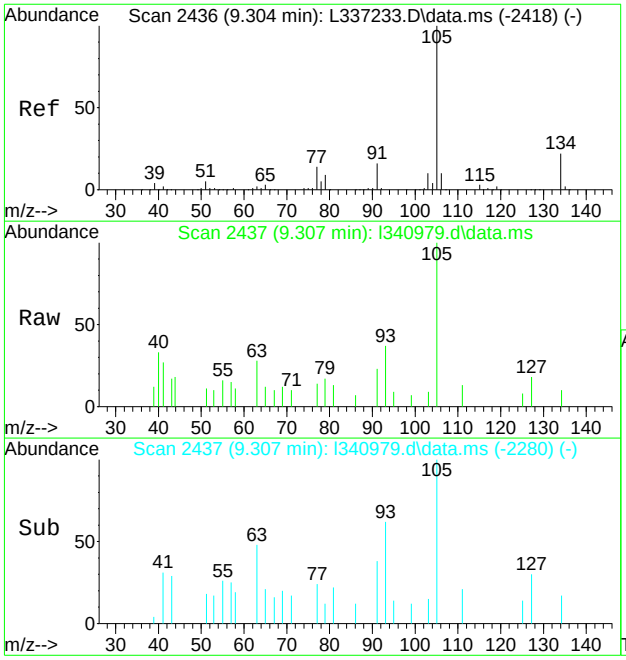


#105
1,2,4-trimethylbenzene
Concen: 4.23 ug/L
RT: 9.150 min Scan# 2388
Delta R.T. 0.003 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion:105 Resp: 34020

Ion	Ratio	Lower	Upper
105	100		
120	48.8	19.0	79.0
119	14.0	0.0	42.4

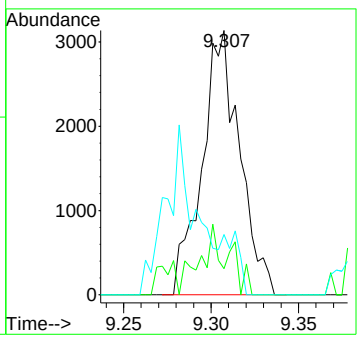


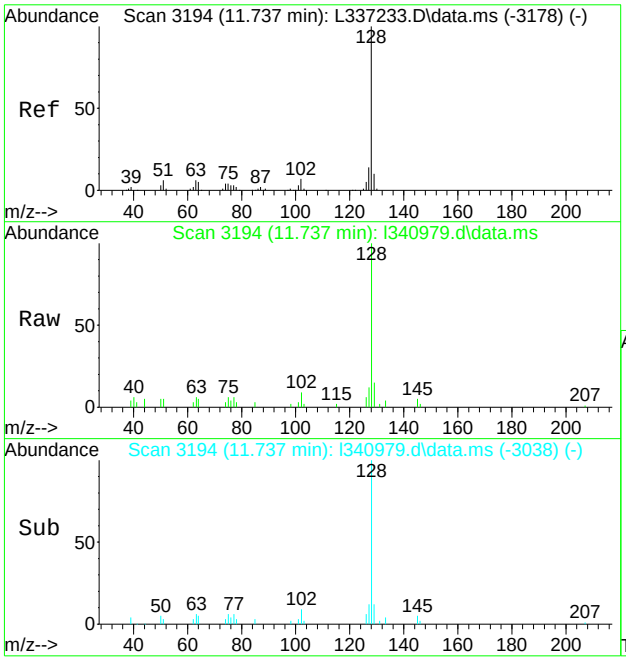


#106
sec-butylbenzene
Concen: 0.49 ug/L
RT: 9.307 min Scan# 2437
Delta R.T. 0.003 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion:105 Resp: 4683

Ion	Ratio	Lower	Upper
105	100		
134	9.9	0.0	51.6
91	22.8	0.0	45.7

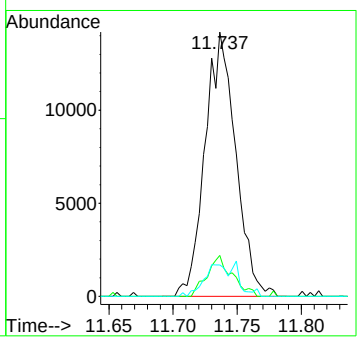




#117
naphthalene
Concen: 4.35 ug/L
RT: 11.737 min Scan# 3194
Delta R.T. -0.000 min
Lab File: l340979.d
Acq: 22 Apr 2022 7:45 am

Tgt Ion:128 Resp: 23622

Ion	Ratio	Lower	Upper
128	100		
129	15.5	0.0	39.5
127	11.9	0.0	43.8



Manual Integrations APPROVED (compounds with "m" flag)
Mei Chen
04/25/22 13:17

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340980.d
Acq On : 22 Apr 2022 8:09 am
Operator : nicoleh
Sample : JD43215-26 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 78 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:19:03 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

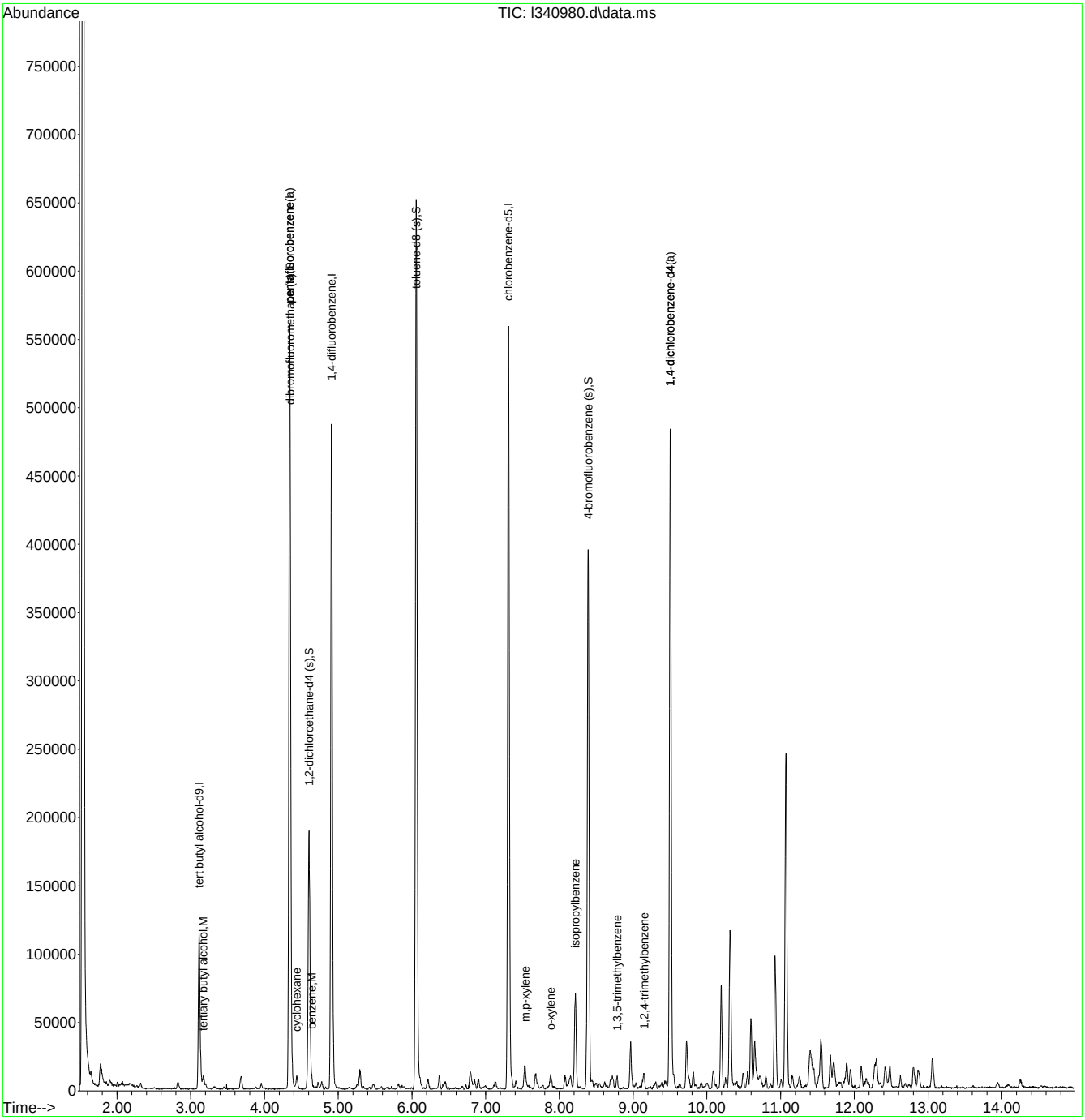
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) tert butyl alcohol-d9	3.114	65	107933	500.00	ug/L		0.00
5) pentafluorobenzene	4.340	168	242417	50.00	ug/L		0.00
50) 1,4-difluorobenzene	4.911	114	360277	50.00	ug/L		0.00
71) chlorobenzene-d5	7.308	117	320904	50.00	ug/L		0.00
94) 1,4-dichlorobenzene-d4	9.503	152	139327	50.00	ug/L		0.00
122) pentafluorobenzene(a)	4.340	168	242133	50.00	ug/L		0.00
125) 1,4-dichlorobenzene-d4(a)	9.503	152	139327	50.00	ug/L		0.00
System Monitoring Compounds							
42) dibromofluoromethane (s)	4.350	113	105907	49.42	ug/L		0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.84%				
51) 1,2-dichloroethane-d4 (s)	4.606	65	107579	50.56	ug/L		0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 101.12%				
72) toluene-d8 (s)	6.057	98	416981	47.49	ug/L		0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.98%				
95) 4-bromofluorobenzene (s)	8.393	95	146753	54.29	ug/L		0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.58%				
Target Compounds							Qvalue
4) tertiary butyl alcohol	3.169	59	7030	27.03	ug/L		73
45) cyclohexane	4.436	84	2349m	0.65	ug/L		
55) benzene	4.642	78	4758	0.55	ug/L		93
87) m,p-xylene	7.536	106	6125	1.46	ug/L		80
88) o-xylene	7.883	106	3265	0.75	ug/L	#	78
92) isopropylbenzene	8.216	105	47242	4.52	ug/L		94
103) 1,3,5-trimethylbenzene	8.784	105	5471	0.66	ug/L		90
105) 1,2,4-trimethylbenzene	9.150	105	6347	0.75	ug/L		98

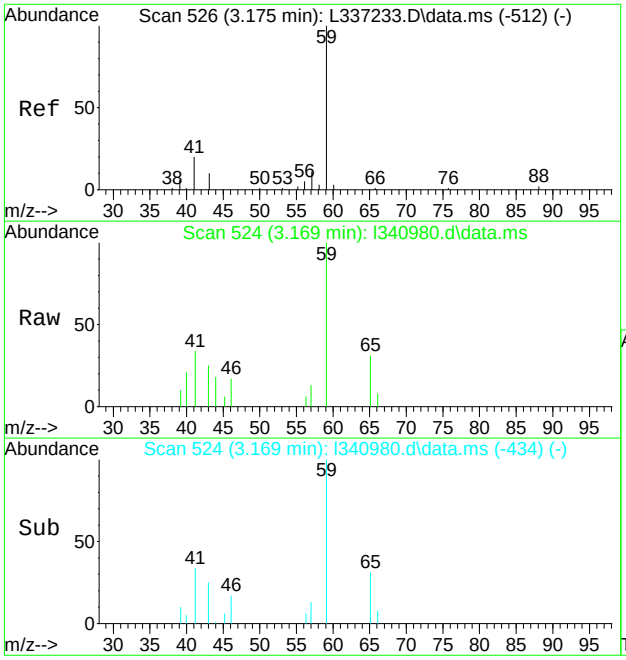
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340980.d
Acq On : 22 Apr 2022 8:09 am
Operator : nicoleh
Sample : JD43215-26 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 78 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 25 00:19:03 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

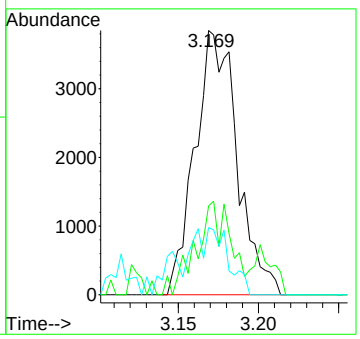


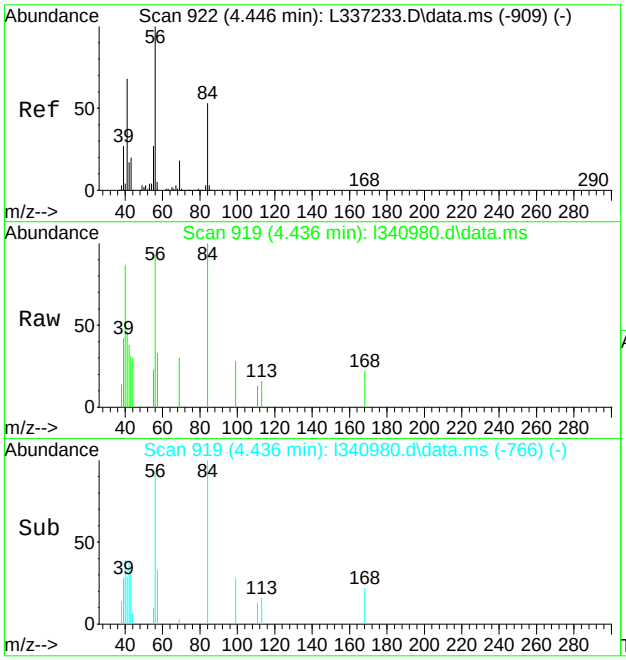


#4
tertiary butyl alcohol
Concen: 27.03 ug/L
RT: 3.169 min Scan# 524
Delta R.T. -0.012 min
Lab File: l340980.d
Acq: 22 Apr 2022 8:09 am

Tgt Ion: 59 Resp: 7030

Ion	Ratio	Lower	Upper
59	100		
41	33.7	0.0	52.7
43	25.4	0.0	41.4

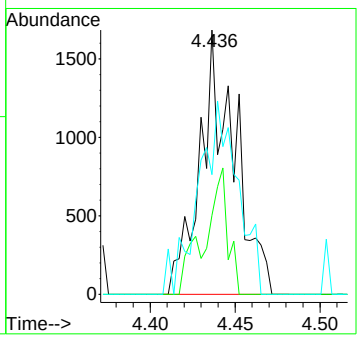


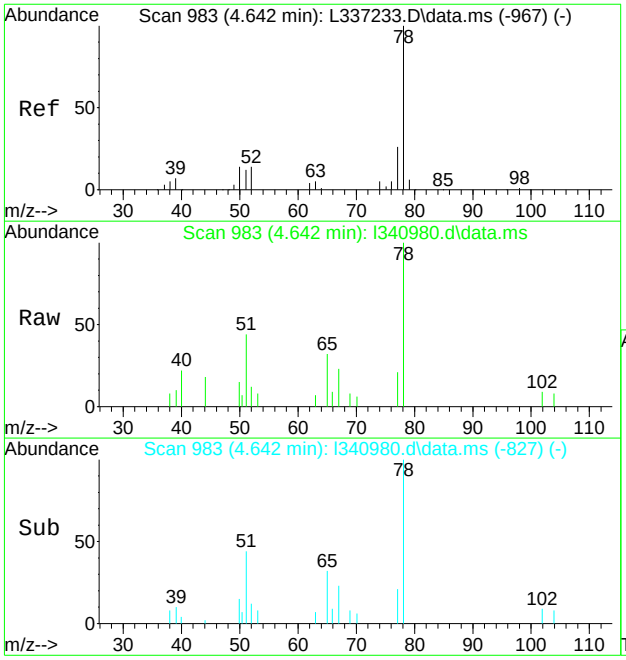


#45
cyclohexane
Concen: 0.65 ug/L m
RT: 4.436 min Scan# 919
Delta R.T. -0.010 min
Lab File: l340980.d
Acq: 22 Apr 2022 8:09 am

Tgt Ion: 84 Resp: 2349

Ion	Ratio	Lower	Upper
84	100		
69	29.9	14.0	54.0
41	45.3	107.6	147.6#

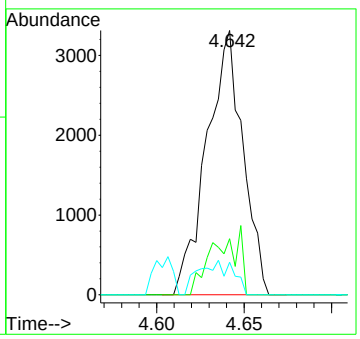


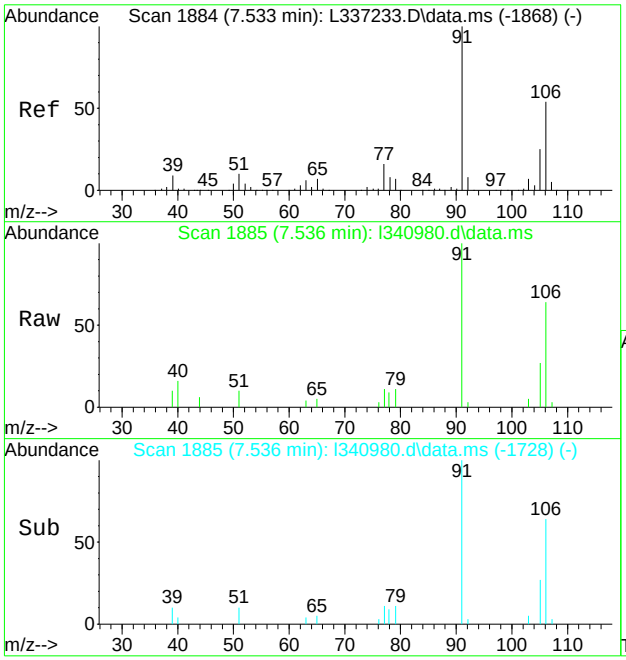


#55
benzene
Concen: 0.55 ug/L
RT: 4.642 min Scan# 983
Delta R.T. -0.000 min
Lab File: l340980.d
Acq: 22 Apr 2022 8:09 am

Tgt Ion: 78 Resp: 4758

Ion	Ratio	Lower	Upper
78	100		
77	21.3	0.0	56.1
52	12.3	0.0	43.6

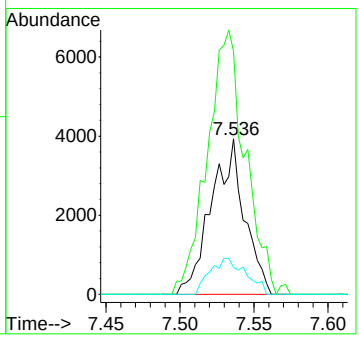


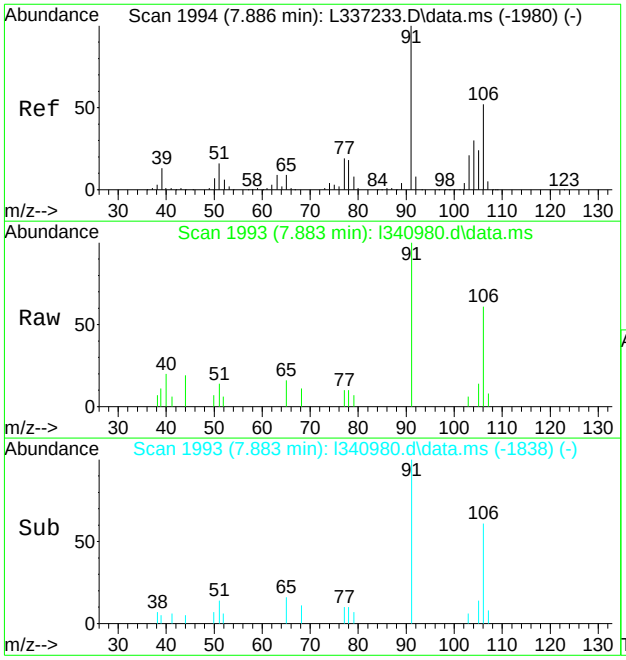


#87
m,p-xylene
Concen: 1.46 ug/L
RT: 7.536 min Scan# 1885
Delta R.T. 0.003 min
Lab File: l340980.d
Acq: 22 Apr 2022 8:09 am

Tgt Ion:106 Resp: 6125

Ion	Ratio	Lower	Upper
106	100		
91	156.4	155.0	215.0
77	17.2	9.1	49.1

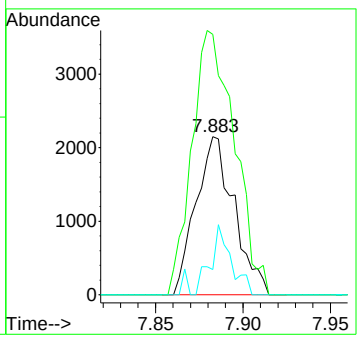


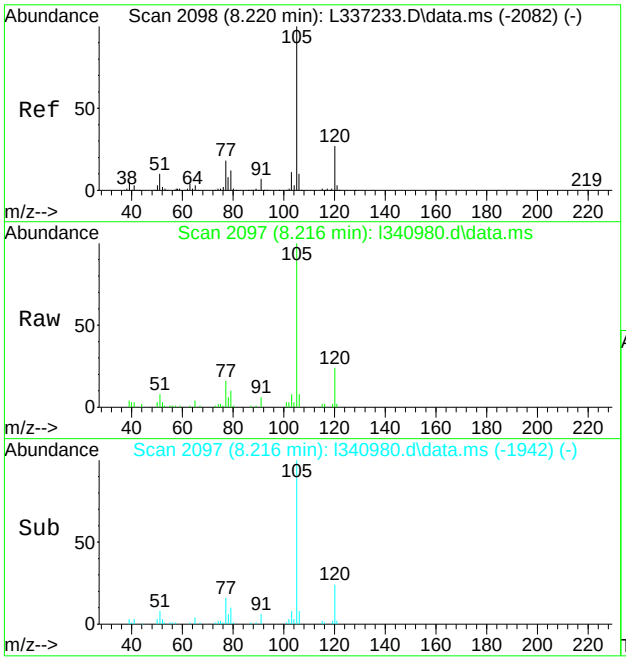


#88
o-xylene
Concen: 0.75 ug/L
RT: 7.883 min Scan# 1993
Delta R.T. -0.003 min
Lab File: l340980.d
Acq: 22 Apr 2022 8:09 am

Tgt Ion:106 Resp: 3265

Ion	Ratio	Lower	Upper
106	100		
91	164.8	163.1	223.1
77	16.0	17.5	57.5#

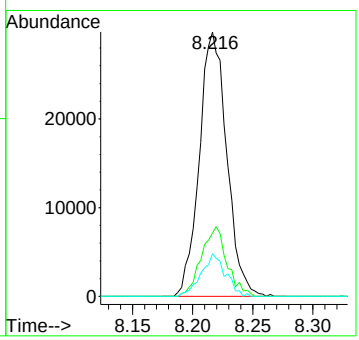


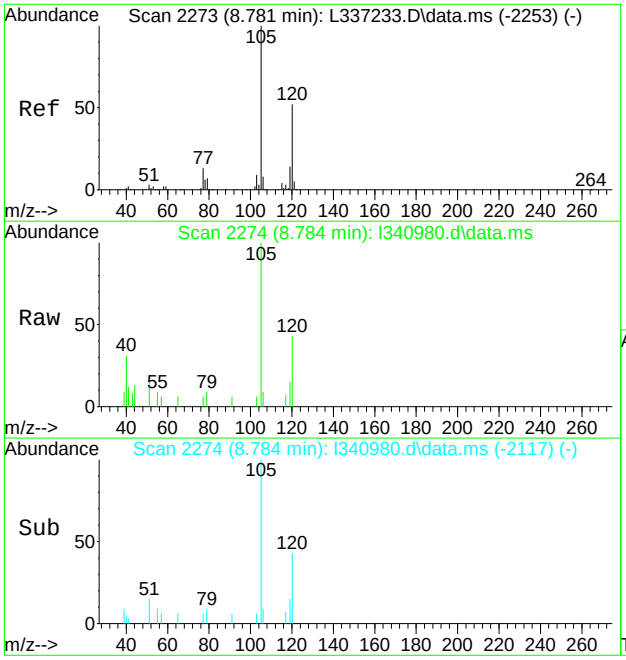


#92
isopropylbenzene
Concen: 4.52 ug/L
RT: 8.216 min Scan# 2097
Delta R.T. -0.004 min
Lab File: l340980.d
Acq: 22 Apr 2022 8:09 am

Tgt Ion:105 Resp: 47242

Ion	Ratio	Lower	Upper
105	100		
120	23.9	7.2	47.2
77	16.1	0.0	38.3

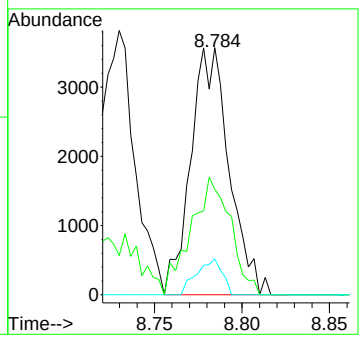


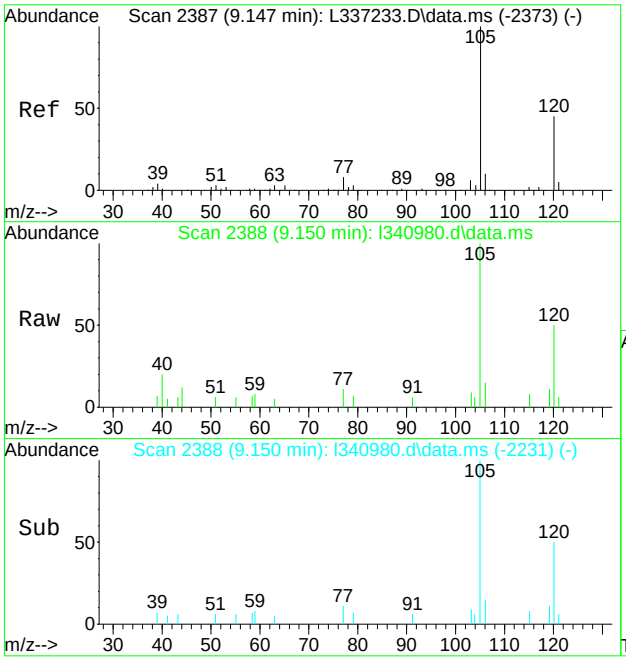


#103
1,3,5-trimethylbenzene
Concen: 0.66 ug/L
RT: 8.784 min Scan# 2274
Delta R.T. 0.003 min
Lab File: l340980.d
Acq: 22 Apr 2022 8:09 am

Tgt Ion:105 Resp: 5471

Ion	Ratio	Lower	Upper
105	100		
120	42.7	21.9	81.9
119	14.5	0.0	44.3

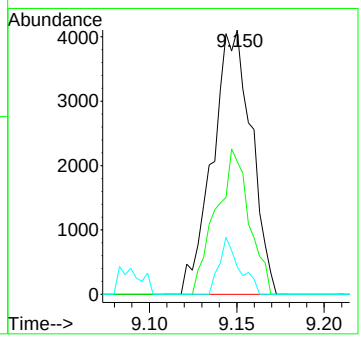




#105
1,2,4-trimethylbenzene
Concen: 0.75 ug/L
RT: 9.150 min Scan# 2388
Delta R.T. 0.003 min
Lab File: l340980.d
Acq: 22 Apr 2022 8:09 am

Tgt Ion:105 Resp: 6347

Ion	Ratio	Lower	Upper
105	100		
120	50.3	19.0	79.0
119	10.5	0.0	42.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340961.d
Acq On : 22 Apr 2022 12:43 am
Operator : nicoleh
Sample : JD43215-27 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 59 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 24 22:17:54 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

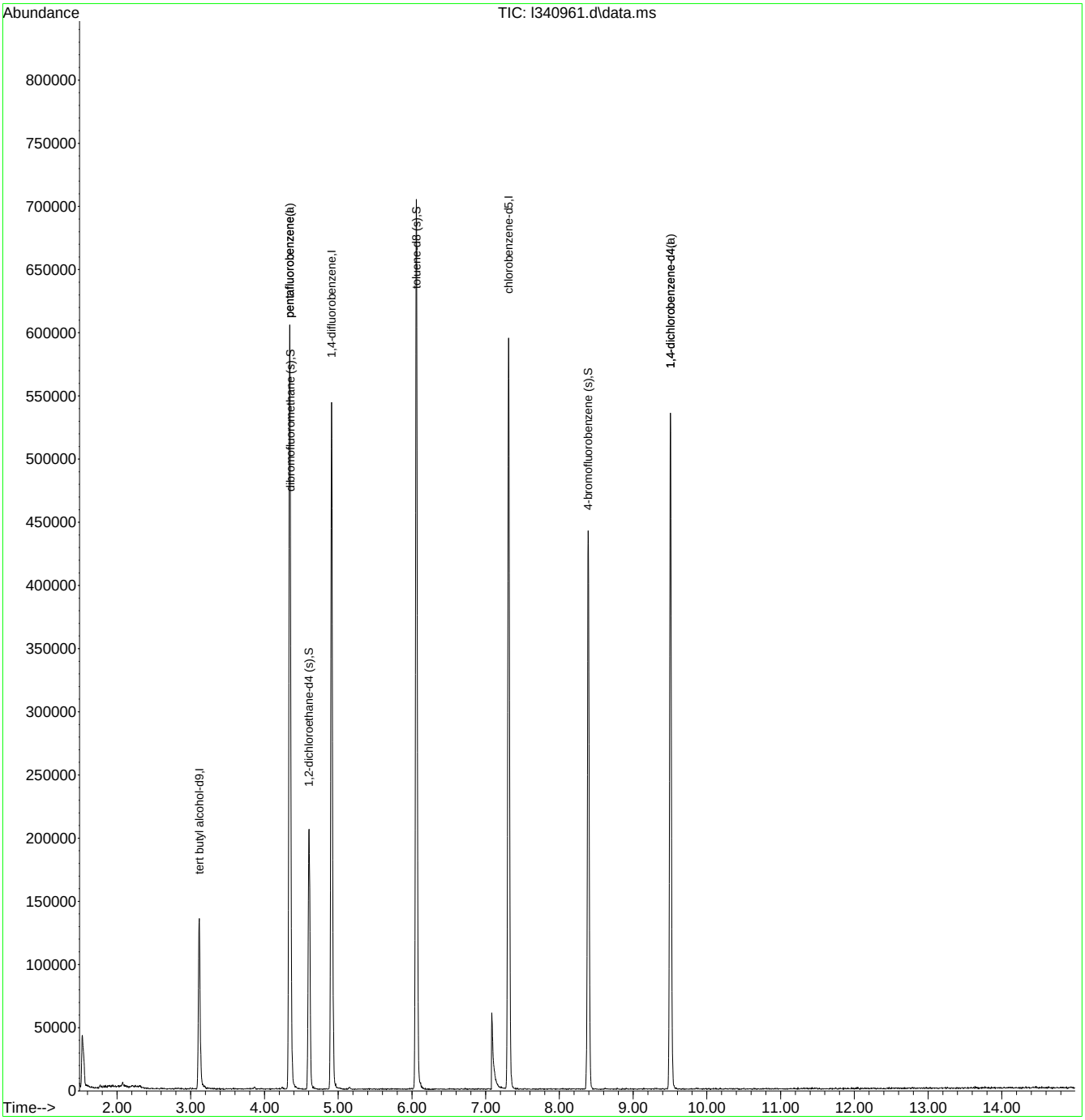
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	129473	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	266018	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	390444	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	340839	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	149553	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	268579	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.506	152	149571	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	115866	49.27	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.54%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	120075	52.07	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 104.14%			
72) toluene-d8 (s)	6.060	98	451701	48.43	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.86%			
95) 4-bromofluorobenzene (s)	8.386	95	158367	54.58	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.16%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340961.d
Acq On : 22 Apr 2022 12:43 am
Operator : nicoleh
Sample : JD43215-27 Inst : GCMSL
Misc : MS58320,VL10283,5,,,,1
ALS Vial : 59 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 24 22:17:54 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340903.d
Acq On : 21 Apr 2022 12:58 am
Operator : nicoleh
Sample : MB Inst : GCMSL
Misc : MS46075,VL10281,5,,,,1
ALS Vial : 57 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:06:41 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

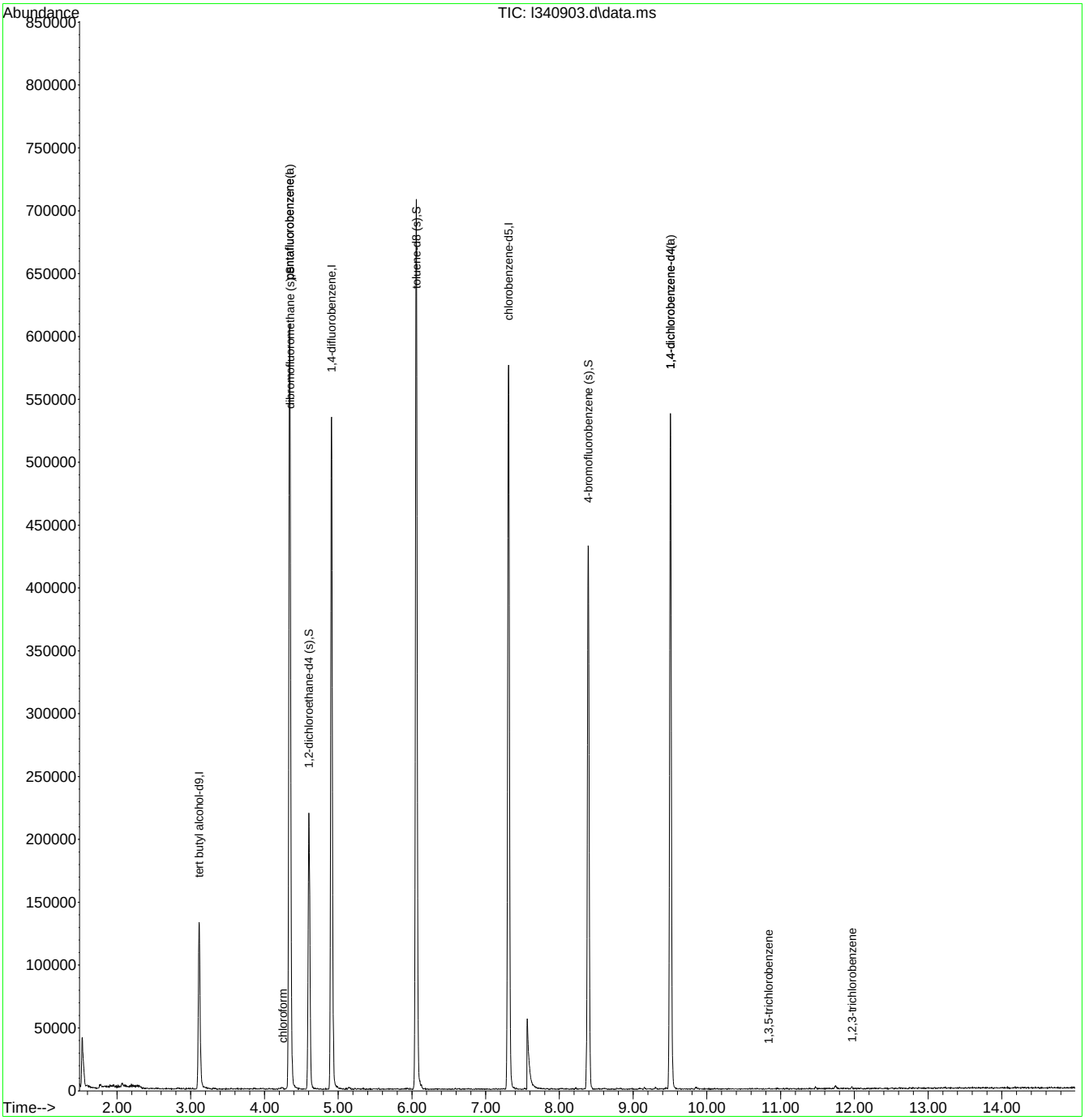
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	129253	500.00	ug/L	0.00
5) pentafluorobenzene	4.340	168	267937	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	390524	50.00	ug/L	0.00
71) chlorobenzene-d5	7.311	117	341205	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.506	152	151790	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.340	168	267929	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.506	152	151664	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	117001	49.40	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.80%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	124231	53.86	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 107.72%			
72) toluene-d8 (s)	6.060	98	457262	48.98	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.96%			
95) 4-bromofluorobenzene (s)	8.393	95	160722	54.58	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.16%			
Target Compounds						Qvalue
41) chloroform	4.247	83	1214	0.25	ug/L	# 50
114) 1,3,5-trichlorobenzene	10.838	180	411	0.13	ug/L	# 52
118) 1,2,3-trichlorobenzene	11.967	180	653	0.31	ug/L	65

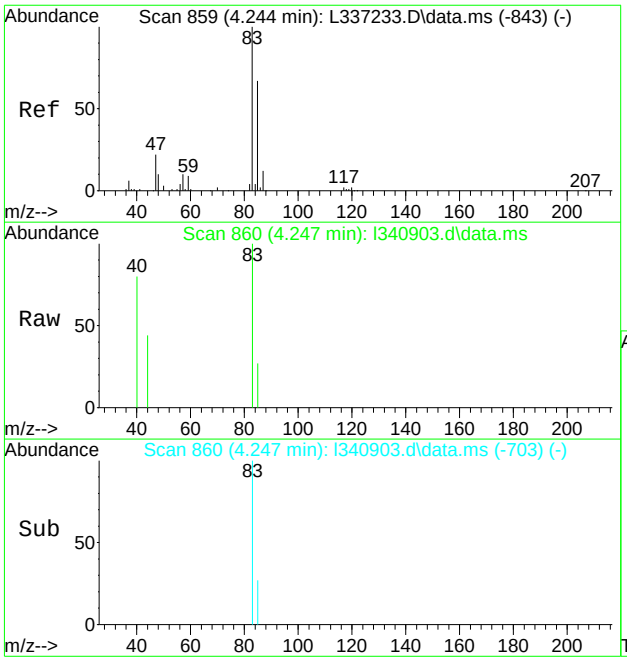
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\data\nelsonf\April\22-04\vl10281\
Data File : l340903.d
Acq On : 21 Apr 2022 12:58 am
Operator : nicoleh
Sample : MB Inst : GCMSL
Misc : MS46075,VL10281,5,,,,1
ALS Vial : 57 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 22 00:06:41 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

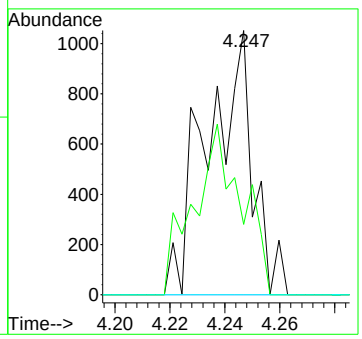


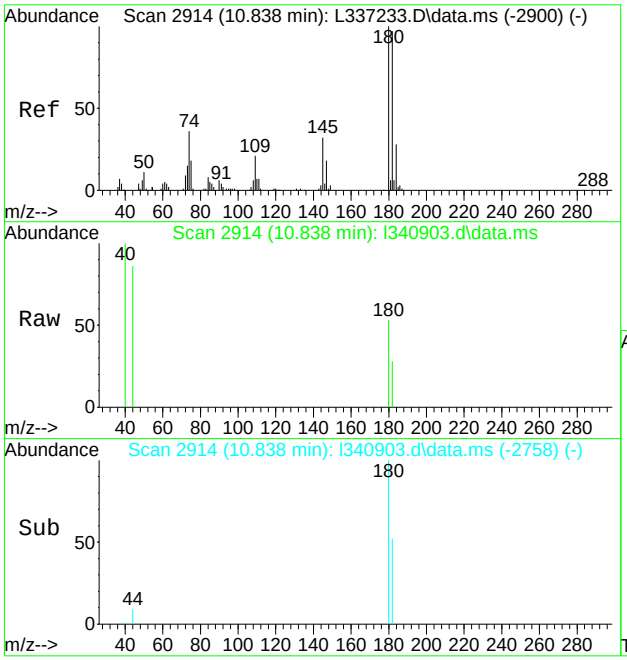


#41
chloroform
Concen: 0.25 ug/L
RT: 4.247 min Scan# 860
Delta R.T. 0.003 min
Lab File: l340903.d
Acq: 21 Apr 2022 12:58 am

Tgt Ion: 83 Resp: 1214

Ion	Ratio	Lower	Upper
83	100		
85	26.6	36.9	96.9#
47	0.0	0.0	55.7

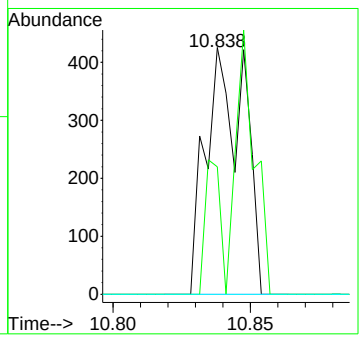


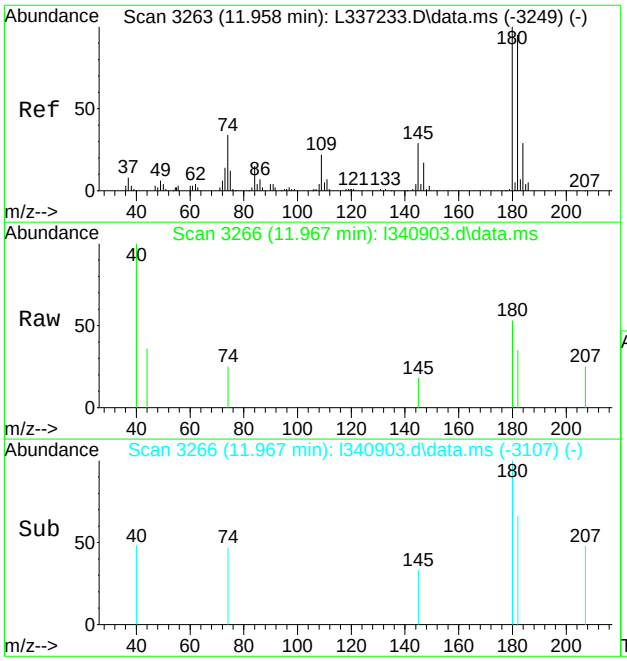


#114
1,3,5-trichlorobenzene
Concen: 0.13 ug/L
RT: 10.838 min Scan# 2914
Delta R.T. -0.000 min
Lab File: l340903.d
Acq: 21 Apr 2022 12:58 am

Tgt Ion:180 Resp: 411

Ion	Ratio	Lower	Upper
180	100		
182	51.6	67.0	127.0#
184	0.0	0.0	58.4

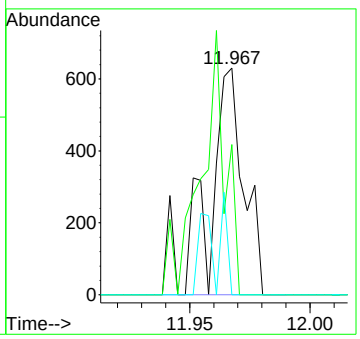




#118
1,2,3-trichlorobenzene
Concen: 0.31 ug/L
RT: 11.967 min Scan# 3266
Delta R.T. 0.009 min
Lab File: l340903.d
Acq: 21 Apr 2022 12:58 am

Tgt Ion:180 Resp: 653

Ion	Ratio	Lower	Upper
180	100		
182	66.3	64.9	124.9
184	0.0	0.0	59.0



7.2.1

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340959.d
Acq On : 21 Apr 2022 11:56 pm
Operator : nicoleh
Sample : mb Inst : GCMSL
Misc : MS46075,VL10283,5,,,,1
ALS Vial : 57 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 24 22:05:04 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

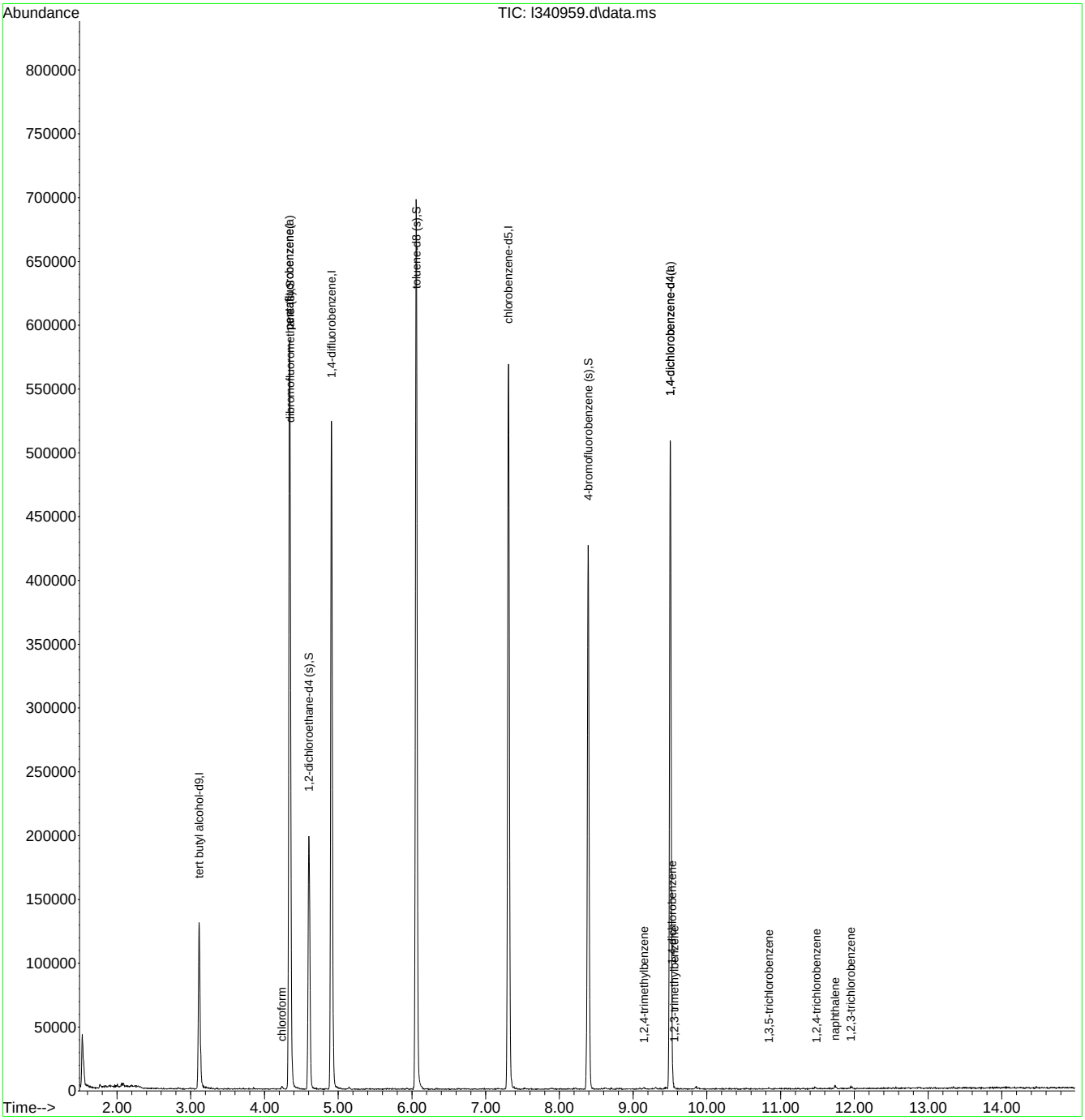
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.114	65	123428	500.00	ug/L	0.00
5) pentafluorobenzene	4.337	168	262392	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.911	114	386669	50.00	ug/L	0.00
71) chlorobenzene-d5	7.308	117	334188	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.503	152	142358	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.337	168	261444	50.00	ug/L	-0.01
125) 1,4-dichlorobenzene-d4(a)	9.503	152	142297	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.350	113	114488	49.36	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.72%			
51) 1,2-dichloroethane-d4 (s)	4.603	65	118279	51.79	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 103.58%			
72) toluene-d8 (s)	6.060	98	449062	49.11	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.22%			
95) 4-bromofluorobenzene (s)	8.390	95	154937	56.10	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 112.20%			
Target Compounds						Qvalue
41) chloroform	4.234	83	1288	0.27	ug/L	92
105) 1,2,4-trimethylbenzene	9.147	105	1039	0.12	ug/L #	36
109) 1,4-dichlorobenzene	9.529	146	500	0.10	ug/L #	66
110) 1,2,3-trimethylbenzene	9.558	105	1053	0.13	ug/L	86
114) 1,3,5-trichlorobenzene	10.841	180	584	0.20	ug/L #	41
115) 1,2,4-trichlorobenzene	11.483	180	607	0.27	ug/L #	69
117) naphthalene	11.740	128	2970	0.51	ug/L	84
118) 1,2,3-trichlorobenzene	11.952	180	623	0.32	ug/L	78

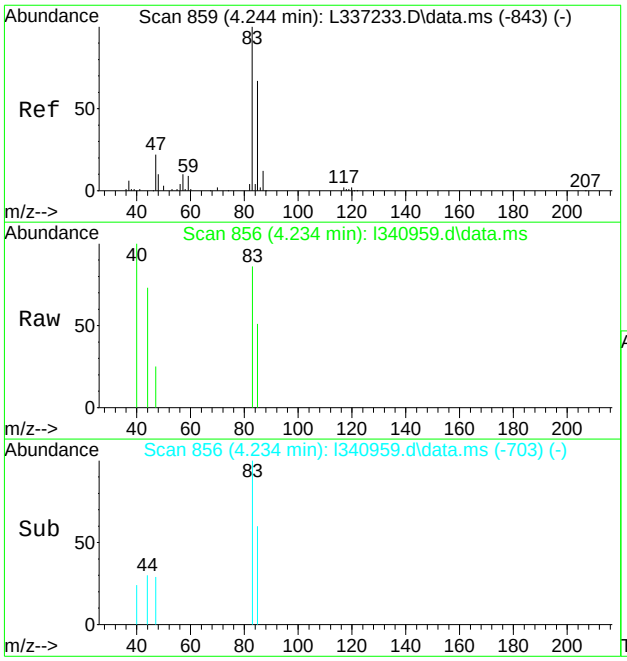
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\davem1\04-25-22\vl10283\
Data File : l340959.d
Acq On : 21 Apr 2022 11:56 pm
Operator : nicoleh
Sample : mb Inst : GCMSL
Misc : MS46075,VL10283,5,,,,1
ALS Vial : 57 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Results File: ML10152.RES
Quant Time: Apr 24 22:05:04 2022
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

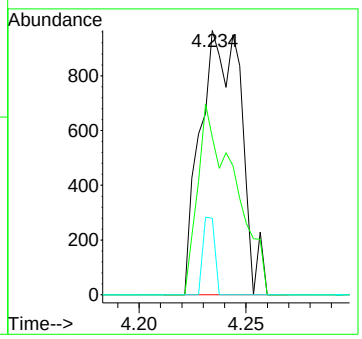


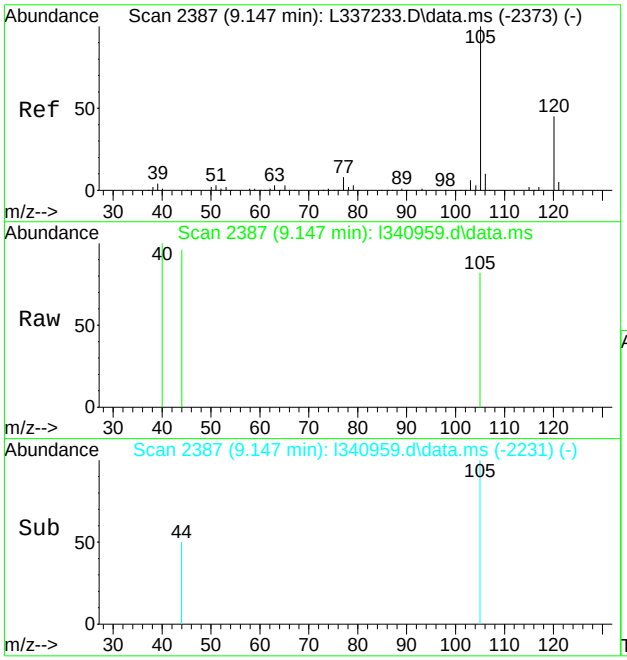


#41
chloroform
Concen: 0.27 ug/L
RT: 4.234 min Scan# 856
Delta R.T. -0.010 min
Lab File: l340959.d
Acq: 21 Apr 2022 11:56 pm

Tgt Ion: 83 Resp: 1288

Ion	Ratio	Lower	Upper
83	100		
85	59.5	36.9	96.9
47	29.0	0.0	55.7

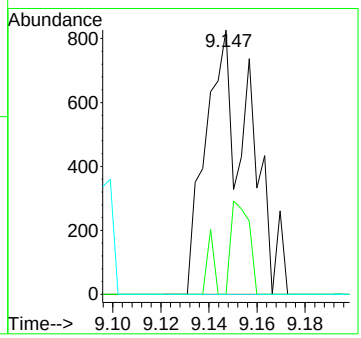


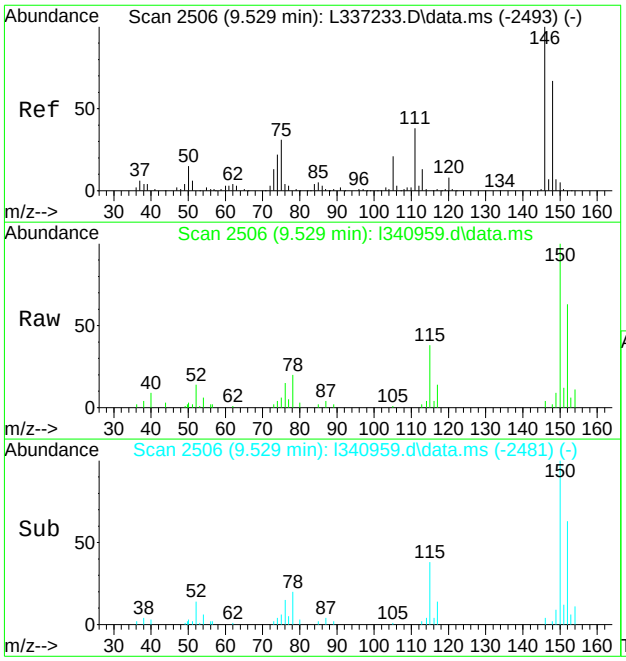


#105
1,2,4-trimethylbenzene
Concen: 0.12 ug/L
RT: 9.147 min Scan# 2387
Delta R.T. 0.000 min
Lab File: l340959.d
Acq: 21 Apr 2022 11:56 pm

Tgt Ion:105 Resp: 1039

Ion	Ratio	Lower	Upper
105	100		
120	0.0	19.0	79.0#
119	0.0	0.0	42.4

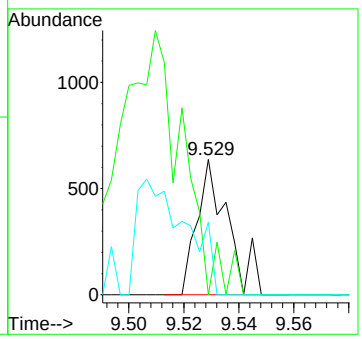


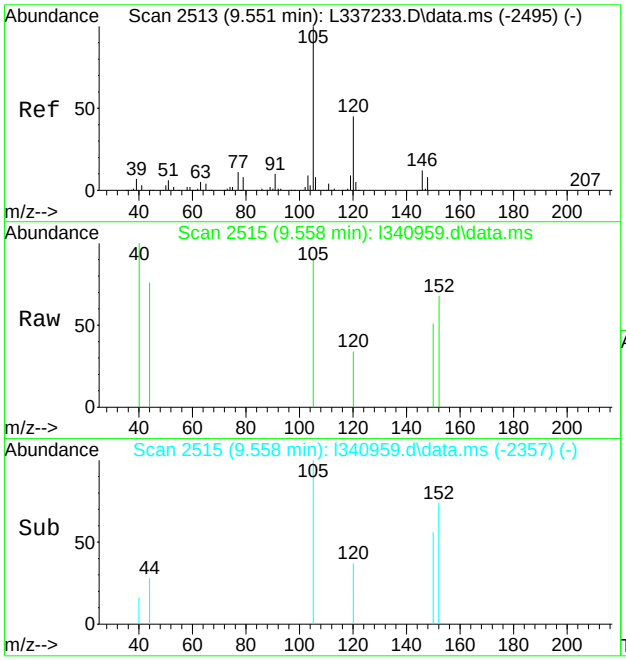


#109
1,4-dichlorobenzene
Concen: 0.10 ug/L
RT: 9.529 min Scan# 2506
Delta R.T. -0.000 min
Lab File: l340959.d
Acq: 21 Apr 2022 11:56 pm

Tgt Ion:146 Resp: 500

Ion	Ratio	Lower	Upper
146	100		
111	0.0	8.3	68.3#
148	53.6	36.9	96.9

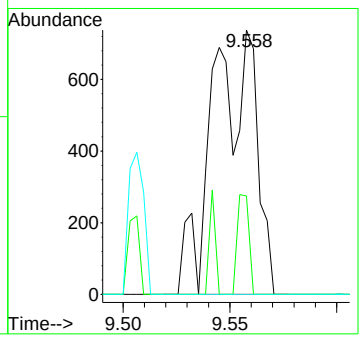


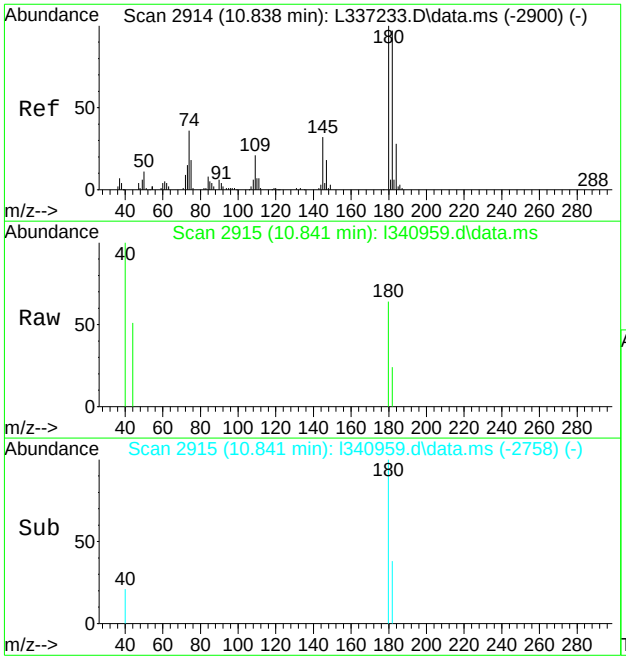


#110
1,2,3-trimethylbenzene
Concen: 0.13 ug/L
RT: 9.558 min Scan# 2515
Delta R.T. 0.007 min
Lab File: l340959.d
Acq: 21 Apr 2022 11:56 pm

Tgt Ion:105 Resp: 1053

Ion	Ratio	Lower	Upper
105	100		
120	37.3	14.8	74.8
91	0.0	0.0	40.0

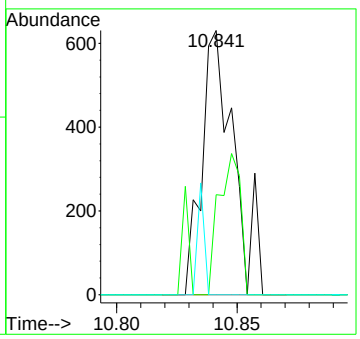


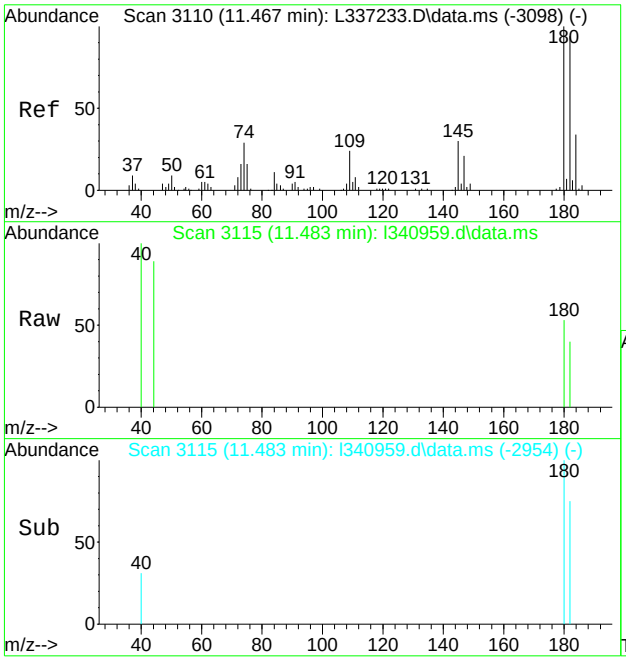


#114
1,3,5-trichlorobenzene
Concen: 0.20 ug/L
RT: 10.841 min Scan# 2915
Delta R.T. 0.003 min
Lab File: l340959.d
Acq: 21 Apr 2022 11:56 pm

Tgt Ion:180 Resp: 584

Ion	Ratio	Lower	Upper
180	100		
182	37.9	67.0	127.0#
184	0.0	0.0	58.4

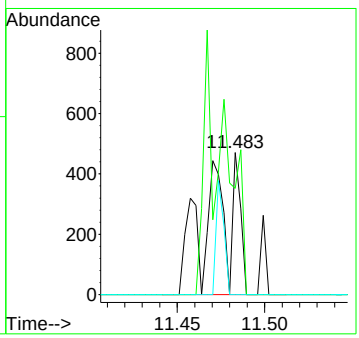


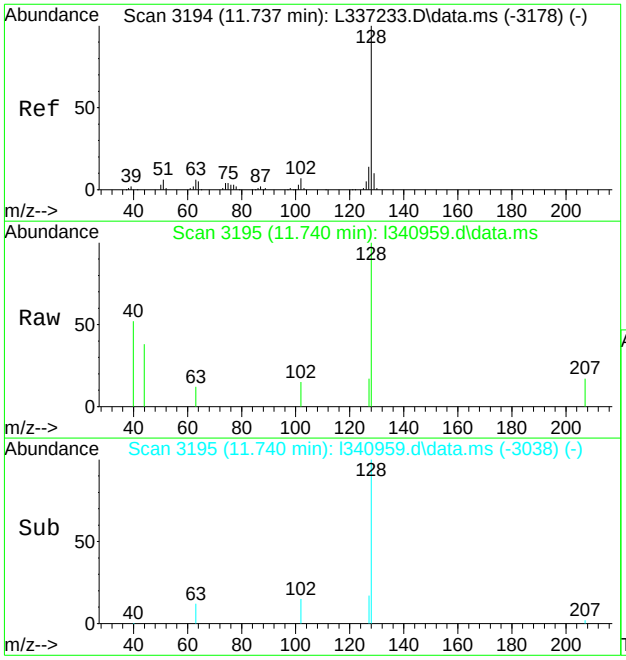


#115
1,2,4-trichlorobenzene
Concen: 0.27 ug/L
RT: 11.483 min Scan# 3115
Delta R.T. 0.016 min
Lab File: l340959.d
Acq: 21 Apr 2022 11:56 pm

Tgt Ion:180 Resp: 607

Ion	Ratio	Lower	Upper
180	100		
182	74.7	64.1	124.1
184	0.0	4.2	64.2#

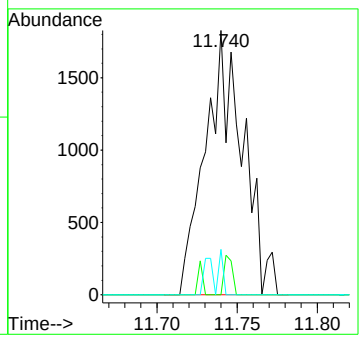


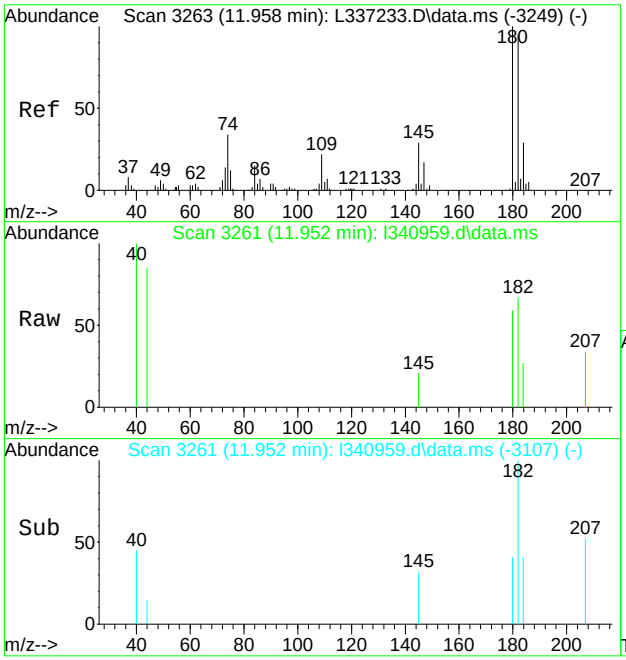


#117
naphthalene
Concen: 0.51 ug/L
RT: 11.740 min Scan# 3195
Delta R.T. 0.003 min
Lab File: l340959.d
Acq: 21 Apr 2022 11:56 pm

Tgt Ion:128 Resp: 2970

Ion	Ratio	Lower	Upper
128	100		
129	0.0	0.0	39.5
127	17.2	0.0	43.8

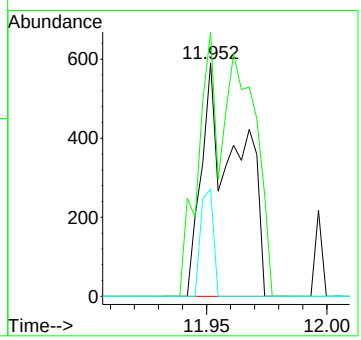




#118
1,2,3-trichlorobenzene
Concen: 0.32 ug/L
RT: 11.952 min Scan# 3261
Delta R.T. -0.006 min
Lab File: l340959.d
Acq: 21 Apr 2022 11:56 pm

Tgt Ion:180 Resp: 623

Ion	Ratio	Lower	Upper
180	100		
182	113.2	64.9	124.9
184	45.9	0.0	59.0



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\kinjal\4-22-22\vl10284-rush\
Data File : l340986.d
Acq On : 22 Apr 2022 11:26 am
Operator : nicoleh
Sample : mb
Misc : MS58322,VL10284,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 22 14:24:08 2022
Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

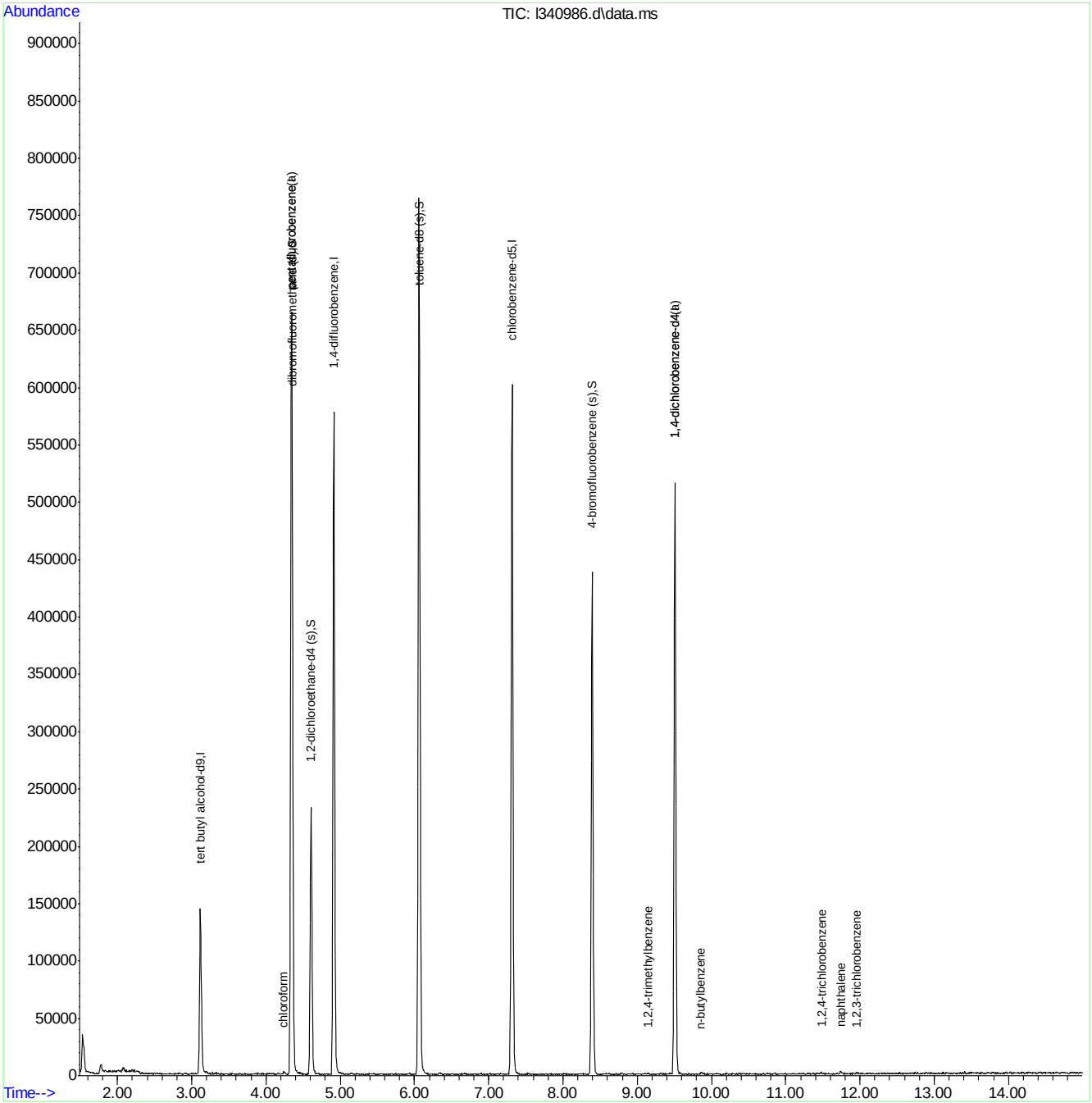
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) tert butyl alcohol-d9	3.117	65	134237	500.00	ug/L	0.00
5) pentafluorobenzene	4.343	168	294815	50.00	ug/L	0.00
50) 1,4-difluorobenzene	4.914	114	421092	50.00	ug/L	0.00
71) chlorobenzene-d5	7.315	117	346865	50.00	ug/L	0.00
94) 1,4-dichlorobenzene-d4	9.510	152	147777	50.00	ug/L	0.00
122) pentafluorobenzene(a)	4.343	168	294813	50.00	ug/L	0.00
125) 1,4-dichlorobenzene-d4(a)	9.510	152	148001	50.00	ug/L	0.00
System Monitoring Compounds						
42) dibromofluoromethane (s)	4.353	113	125099	48.00	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.00%			
51) 1,2-dichloroethane-d4 (s)	4.606	65	133284	53.59	ug/L	0.00
Spiked Amount 50.000	Range 81 - 124		Recovery = 107.18%			
72) toluene-d8 (s)	6.063	98	480053	50.58	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.16%			
95) 4-bromofluorobenzene (s)	8.393	95	158679	55.35	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 110.70%			
Target Compounds						Qvalue
41) chloroform	4.231	83	1399	0.26	ug/L #	45
105) 1,2,4-trimethylbenzene	9.150	105	919	0.10	ug/L #	36
112) n-butylbenzene	9.850	92	515	0.11	ug/L #	57
115) 1,2,4-trichlorobenzene	11.480	180	727	0.31	ug/L #	78
117) naphthalene	11.746	128	2957	0.49	ug/L	69
118) 1,2,3-trichlorobenzene	11.952	180	327	0.16	ug/L	70

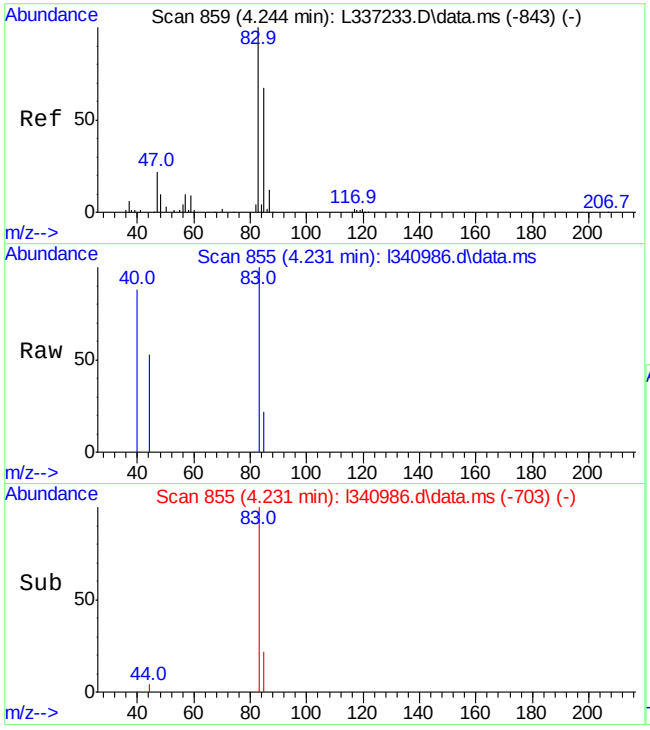
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\kinjal\4-22-22\vl10284-rush\
Data File : l340986.d
Acq On : 22 Apr 2022 11:26 am
Operator : nicoleh
Sample : mb
Misc : MS58322,VL10284,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 22 14:24:08 2022
Quant Method : C:\MSDCHEM\1\METHODS\ML10152.M
Quant Title : SW846 Method V8260C/D, column ZB-624 60m x 0.25mm x 1.4 um
QLast Update : Tue Feb 08 15:29:57 2022
Response via : Initial Calibration

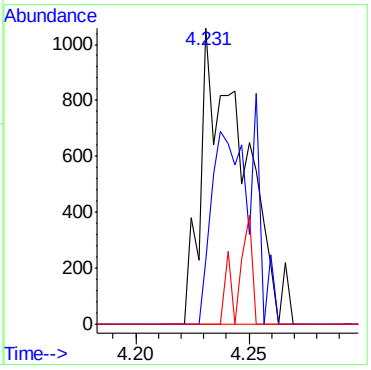


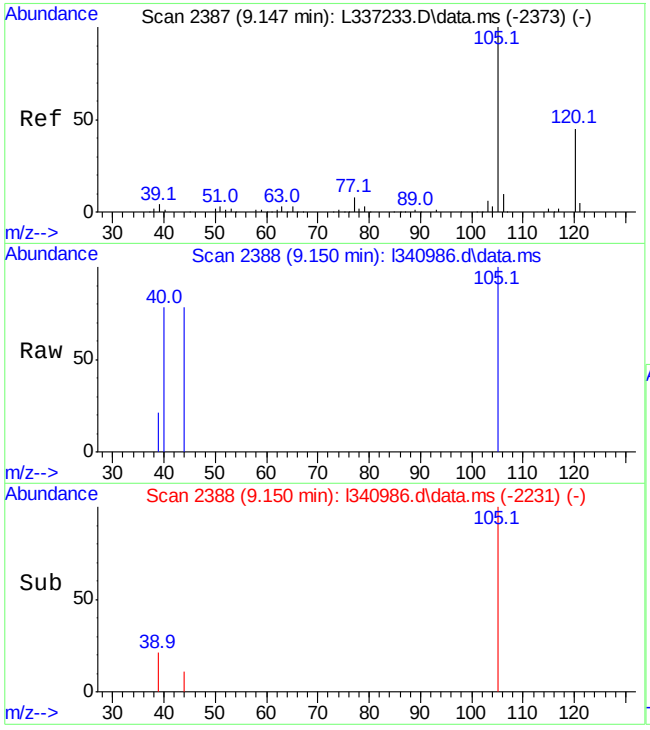


#41
chloroform
Concen: 0.26 ug/L
RT: 4.231 min Scan# 855
Delta R.T. -0.013 min
Lab File: l340986.d
Acq: 22 Apr 2022 11:26 am

Tgt Ion: 83 Resp: 1399

Ion	Ratio	Lower	Upper
83	100		
85	21.6	36.9	96.9#
47	0.0	0.0	55.7

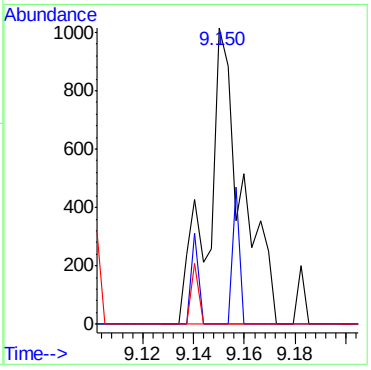


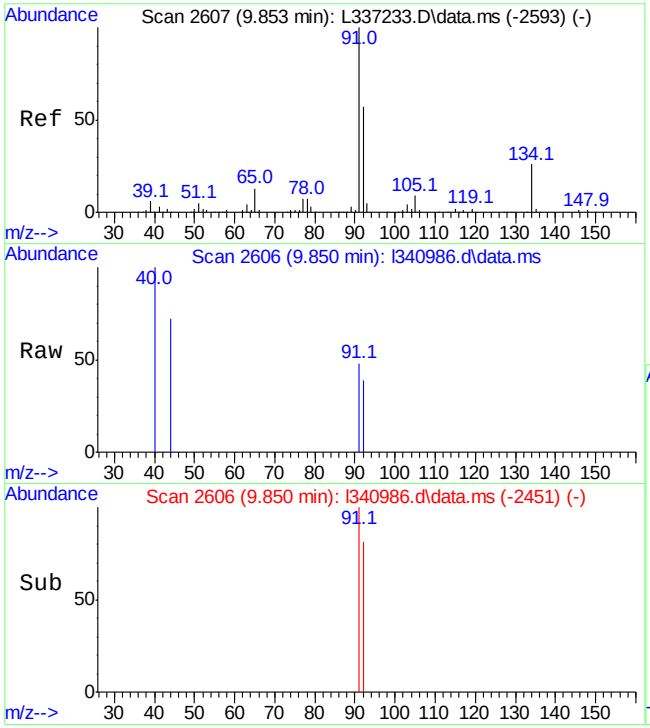


#105
1,2,4-trimethylbenzene
Concen: 0.10 ug/L
RT: 9.150 min Scan# 2388
Delta R.T. 0.003 min
Lab File: l340986.d
Acq: 22 Apr 2022 11:26 am

Tgt Ion:105 Resp: 919

Ion	Ratio	Lower	Upper
105	100		
120	0.0	19.0	79.0#
119	0.0	0.0	42.4

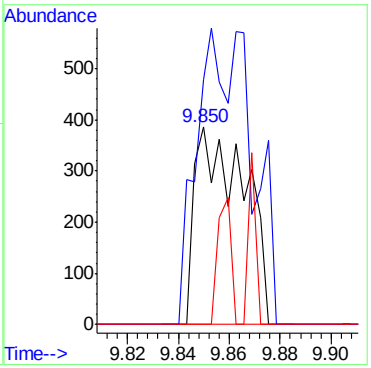


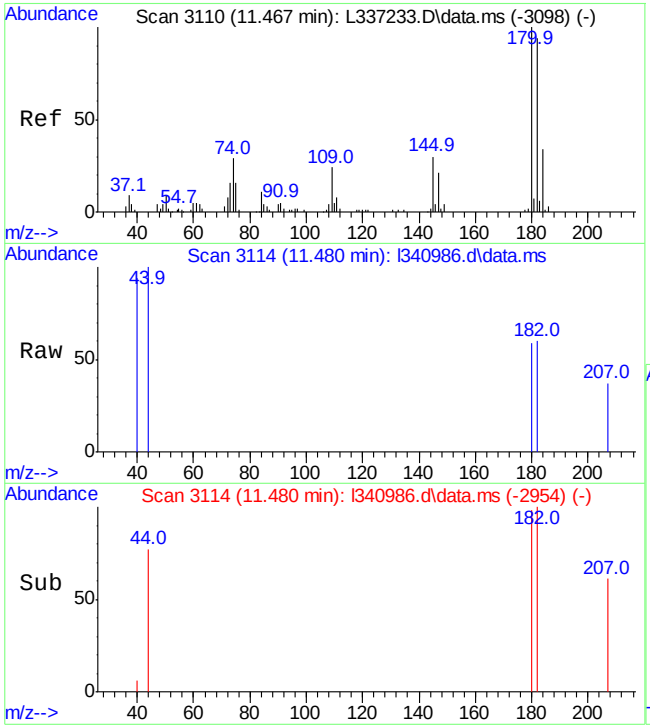


#112
n-butylbenzene
Concen: 0.11 ug/L
RT: 9.850 min Scan# 2606
Delta R.T. -0.003 min
Lab File: l340986.d
Acq: 22 Apr 2022 11:26 am

Tgt Ion: 92 Resp: 515

Ion	Ratio	Lower	Upper
92	100		
91	124.1	144.3	204.3#
134	0.0	15.7	75.7#

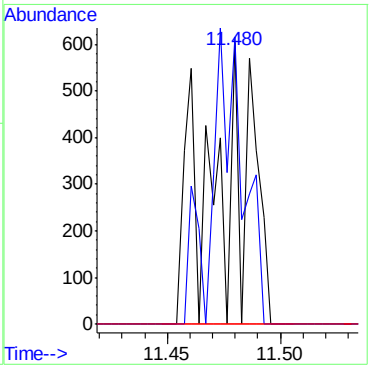


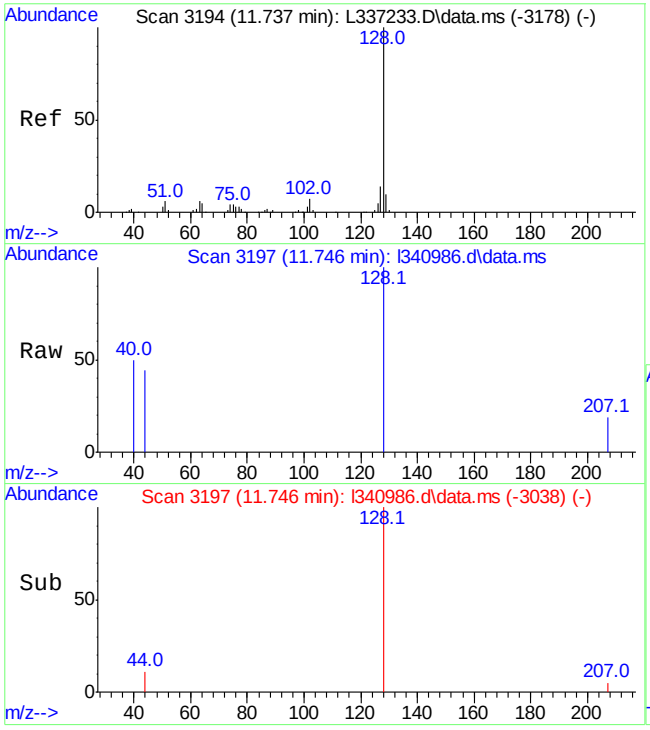


#115
1,2,4-trichlorobenzene
Concen: 0.31 ug/L
RT: 11.480 min Scan# 3114
Delta R.T. 0.013 min
Lab File: l340986.d
Acq: 22 Apr 2022 11:26 am

Tgt Ion:180 Resp: 727

Ion	Ratio	Lower	Upper
180	100		
182	101.8	64.1	124.1
184	0.0	4.2	64.2#

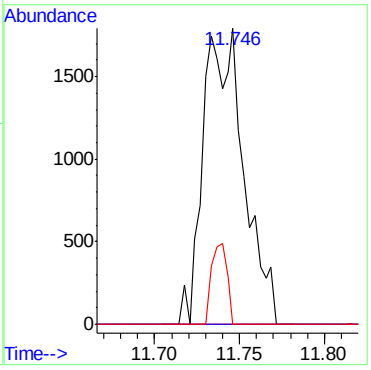


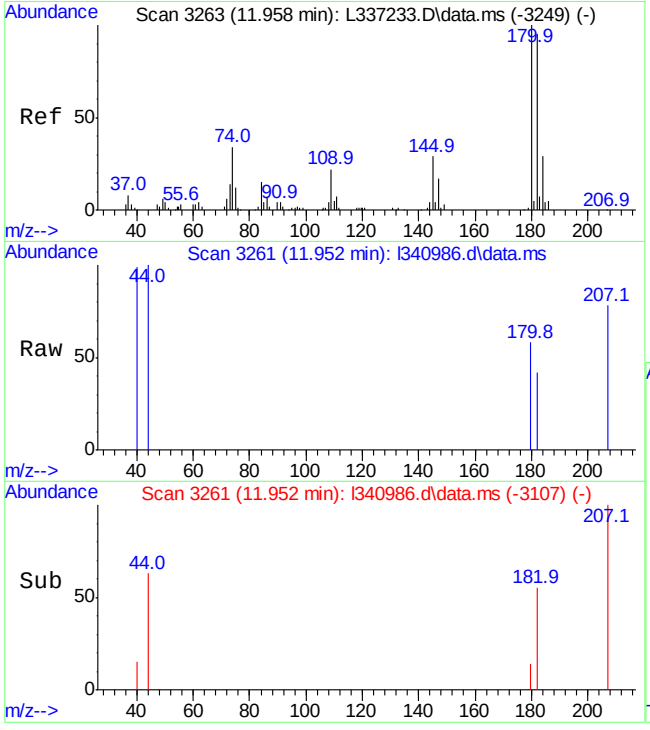


#117
naphthalene
Concen: 0.49 ug/L
RT: 11.746 min Scan# 3197
Delta R.T. 0.009 min
Lab File: l340986.d
Acq: 22 Apr 2022 11:26 am

Tgt Ion:128 Resp: 2957

Ion	Ratio	Lower	Upper
128	100		
129	0.0	0.0	39.5
127	0.0	0.0	43.8

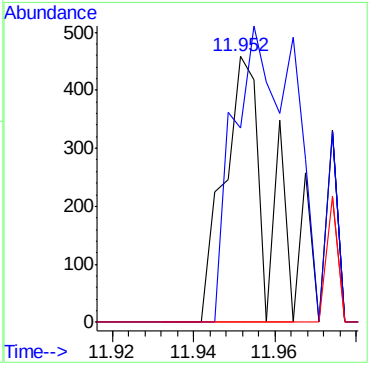




#118
1,2,3-trichlorobenzene
Concen: 0.16 ug/L
RT: 11.952 min Scan# 3261
Delta R.T. -0.006 min
Lab File: l340986.d
Acq: 22 Apr 2022 11:26 am

Tgt Ion:180 Resp: 327

Ion	Ratio	Lower	Upper
180	100		
182	73.0	64.9	124.9
184	0.0	0.0	59.0



MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39191A-MB1	5P82720.D	1	04/25/22	KLS	04/19/22	OP39191A	E5P3929

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD43215-2

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	4.0	0.67	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.0	1.9	ug/l	
95-48-7	2-Methylphenol	ND	2.0	0.47	ug/l	
	3&4-Methylphenol	ND	2.0	1.5	ug/l	
100-02-7	4-Nitrophenol	ND	8.0	0.45	ug/l	
108-95-2	Phenol	ND	2.0	0.26	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.59	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.53	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.58	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	1.3	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.64	ug/l	
110-86-1	Pyridine	ND	2.0	0.31	ug/l	
91-22-5	Quinoline	ND	4.0	0.49	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	30%	10-73%
4165-62-2	Phenol-d5	20%	10-64%
118-79-6	2,4,6-Tribromophenol	64%	31-130%
4165-60-0	Nitrobenzene-d5	56%	28-126%
321-60-8	2-Fluorobiphenyl	61%	26-114%
1718-51-0	Terphenyl-d14	66%	16-122%

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39192-MB1	2M123376.D	1	04/21/22	CS	04/20/22	OP39192	E2M5552

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD43215-25, JD43215-26

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	4.0	0.67	ug/l	
51-28-5	2,4-Dinitrophenol	ND	4.0	1.9	ug/l	
95-48-7	2-Methylphenol	ND	2.0	0.47	ug/l	
	3&4-Methylphenol	ND	2.0	1.5	ug/l	
100-02-7	4-Nitrophenol	ND	8.0	0.45	ug/l	
108-95-2	Phenol	ND	2.0	0.26	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.61	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.59	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.53	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.58	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	1.3	ug/l	
206-44-0	Fluoranthene	ND	1.0	0.58	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.64	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.48	ug/l	
110-86-1	Pyridine	ND	2.0	0.31	ug/l	
91-22-5	Quinoline	ND	4.0	0.49	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	33%	10-73%
4165-62-2	Phenol-d5	22%	10-64%
118-79-6	2,4,6-Tribromophenol	75%	31-130%
4165-60-0	Nitrobenzene-d5	71%	28-126%
321-60-8	2-Fluorobiphenyl	69%	26-114%
1718-51-0	Terphenyl-d14	60%	16-122%

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39191-MB1	3P96472.D	1	04/20/22	CS	04/19/22	OP39191	E3P4582

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43215-1, JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-11, JD43215-12, JD43215-13, JD43215-14, JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.080	0.040	ug/l	
208-96-8	Acenaphthylene	ND	0.080	0.040	ug/l	
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.080	0.040	ug/l	
206-44-0	Fluoranthene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.080	0.040	ug/l	
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	64%	29-124%
321-60-8	2-Fluorobiphenyl	62%	23-122%
1718-51-0	Terphenyl-d14	75%	22-130%

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39191-MB1	2M123363.D	1	04/20/22	KLS	04/19/22	OP39191	E2M5551

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43215-1, JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-11, JD43215-12, JD43215-13, JD43215-14, JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.80	0.040	ug/l	
208-96-8	Acenaphthylene	ND	0.80	0.040	ug/l	
120-12-7	Anthracene	ND	0.80	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.40	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.40	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.40	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.80	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.80	0.040	ug/l	
218-01-9	Chrysene	ND	0.80	0.040	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.80	0.040	ug/l	
206-44-0	Fluoranthene	ND	0.80	0.040	ug/l	
86-73-7	Fluorene	ND	0.80	0.040	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.80	0.040	ug/l	
91-20-3	Naphthalene	ND	0.80	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.80	0.040	ug/l	
129-00-0	Pyrene	ND	0.80	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	34%	29-124%
321-60-8	2-Fluorobiphenyl	31%	23-122%
1718-51-0	Terphenyl-d14	49%	22-130%

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39192A-MB1	4P53066.D	1	04/21/22	CS	04/20/22	OP39192A	E4P2772

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.080	0.040	ug/l	
208-96-8	Acenaphthylene	ND	0.080	0.040	ug/l	
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.080	0.040	ug/l	
206-44-0	Fluoranthene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.080	0.040	ug/l	
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	71%	29-124%
321-60-8	2-Fluorobiphenyl	68%	23-122%
1718-51-0	Terphenyl-d14	62%	22-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39191A-BS1	5P82721.D	1	04/25/22	KLS	04/19/22	OP39191A	E5P3929
OP39191A-BSD	5P82722.D	1	04/25/22	KLS	04/19/22	OP39191A	E5P3929

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD43215-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	40	18.2	46	18.0	45	1	39-124/30
51-28-5	2,4-Dinitrophenol	80	11.5	14* [a]	22.9	29* [a]	66* [b]	30-156/30
95-48-7	2-Methylphenol	40	18.5	46	20.8	52	12	26-101/32
	3&4-Methylphenol	80	33.9	43	40.4	51	17	23-98/32
100-02-7	4-Nitrophenol	40	16.4	41	19.2	48	16	10-91/35
108-95-2	Phenol	40	10.7	27	12.9	32	19	10-77/35
92-52-4	1,1'-Biphenyl	40	22.3	56	25.0	63	11	34-114/29
84-74-2	Di-n-butyl phthalate	40	31.7	79	33.1	83	4	50-122/29
84-66-2	Diethyl phthalate	40	32.4	81	35.1	88	8	49-117/28
117-81-7	bis(2-Ethylhexyl)phthalate	40	37.3	93	39.2	98	5	44-127/29
91-57-6	2-Methylnaphthalene	40	21.2	53	23.6	59	11	30-116/32
110-86-1	Pyridine	40	10.9	27	13.7	34	23	10-78/57
91-22-5	Quinoline	40	22.8	57	28.3	71	22	35-110/33

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	38%	46%	10-73%
4165-62-2	Phenol-d5	25%	31%	10-64%
118-79-6	2,4,6-Tribromophenol	75%	80%	31-130%
4165-60-0	Nitrobenzene-d5	58%	66%	28-126%
321-60-8	2-Fluorobiphenyl	58%	72%	26-114%
1718-51-0	Terphenyl-d14	81%	82%	16-122%

(a) Outside of in house control limits.
(b) Analytical precision exceeds in-house control limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39192-BS1	2M123377.D	1	04/21/22	CS	04/20/22	OP39192	E2M5552
OP39192-BSD	2M123378.D	1	04/21/22	CS	04/20/22	OP39192	E2M5552

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD43215-25, JD43215-26

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
105-67-9	2,4-Dimethylphenol	40	23.9	60	24.8	62	4	39-124/30
51-28-5	2,4-Dinitrophenol	80	49.0	61	33.5	42	38* a	30-156/30
95-48-7	2-Methylphenol	40	21.0	53	22.8	57	8	26-101/32
	3&4-Methylphenol	80	39.5	50	43.0	54	8	23-98/32
100-02-7	4-Nitrophenol	40	17.1	43	16.8	42	2	10-91/35
108-95-2	Phenol	40	11.0	28	12.4	31	12	10-77/35
83-32-9	Acenaphthene	40	24.9	62	25.7	64	3	36-112/27
92-52-4	1,1'-Biphenyl	40	23.8	60	25.2	63	6	34-114/29
84-74-2	Di-n-butyl phthalate	40	29.3	73	30.1	75	3	50-122/29
84-66-2	Diethyl phthalate	40	28.0	70	28.4	71	1	49-117/28
117-81-7	bis(2-Ethylhexyl)phthalate	40	27.0	68	27.4	69	1	44-127/29
206-44-0	Fluoranthene	40	25.0	63	25.7	64	3	54-117/30
91-57-6	2-Methylnaphthalene	40	22.9	57	24.6	62	7	30-116/32
85-01-8	Phenanthrene	40	25.5	64	26.6	67	4	48-111/27
110-86-1	Pyridine	40	3.6	9* b	7.7	19	73* a	10-78/57
91-22-5	Quinoline	40	21.0	53	22.9	57	9	35-110/33

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	40%	45%	10-73%
4165-62-2	Phenol-d5	27%	31%	10-64%
118-79-6	2,4,6-Tribromophenol	71%	75%	31-130%
4165-60-0	Nitrobenzene-d5	62%	67%	28-126%
321-60-8	2-Fluorobiphenyl	62%	67%	26-114%
1718-51-0	Terphenyl-d14	73%	76%	16-122%

(a) Analytical precision exceeds in-house control limits.
(b) Outside of in house control limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39191-BS1	3P96473.D	1	04/20/22	CS	04/19/22	OP39191	E3P4582
OP39191-BSD	3P96474.D	1	04/20/22	CS	04/19/22	OP39191	E3P4582

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43215-1, JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-11, JD43215-12, JD43215-13, JD43215-14, JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	0.8	0.466	58	0.519	65	11	31-135/38
208-96-8	Acenaphthylene	0.8	0.346	43	0.386	48	11	28-130/42
120-12-7	Anthracene	0.8	0.572	72	0.634	79	10	40-125/32
56-55-3	Benzo(a)anthracene	0.8	0.635	79	0.713	89	12	38-132/31
50-32-8	Benzo(a)pyrene	0.8	0.495	62	0.463	58	7	31-110/37
205-99-2	Benzo(b)fluoranthene	0.8	0.575	72	0.658	82	13	31-113/37
191-24-2	Benzo(g,h,i)perylene	0.8	0.461	58	0.478	60	4	18-110/54
207-08-9	Benzo(k)fluoranthene	0.8	0.511	64	0.535	67	5	31-119/43
218-01-9	Chrysene	0.8	0.507	63	0.531	66	5	43-119/33
53-70-3	Dibenzo(a,h)anthracene	0.8	0.523	65	0.527	66	1	20-112/50
206-44-0	Fluoranthene	0.8	0.553	69	0.593	74	7	48-118/27
86-73-7	Fluorene	0.8	0.523	65	0.600	75	14	42-123/34
193-39-5	Indeno(1,2,3-cd)pyrene	0.8	0.497	62	0.518	65	4	18-113/49
91-20-3	Naphthalene	0.8	0.493	62	0.519	65	5	30-114/40
85-01-8	Phenanthrene	0.8	0.558	70	0.617	77	10	45-125/31
129-00-0	Pyrene	0.8	0.544	68	0.583	73	7	48-125/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	69%	71%	29-124%
321-60-8	2-Fluorobiphenyl	66%	68%	23-122%
1718-51-0	Terphenyl-d14	75%	78%	22-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39192A-BS12 [a]	4P53069.D	1	04/21/22	CS	04/20/22	OP39192A	E4P2772
OP39192A-BSD12	4P53070.D	1	04/21/22	CS	04/20/22	OP39192A	E4P2772

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	0.8	ND	0* [b]	0.441	55	200* [c]	31-135/38
208-96-8	Acenaphthylene	0.8	ND	0* [b]	0.321	40	200* [c]	28-130/42
120-12-7	Anthracene	0.8	ND	0* [b]	0.551	69	200* [c]	40-125/32
56-55-3	Benzo(a)anthracene	0.8	ND	0* [b]	0.486	61	200* [c]	38-132/31
50-32-8	Benzo(a)pyrene	0.8	ND	0* [b]	0.430	54	200* [c]	31-110/37
205-99-2	Benzo(b)fluoranthene	0.8	ND	0* [b]	0.439	55	200* [c]	31-113/37
191-24-2	Benzo(g,h,i)perylene	0.8	ND	0* [b]	0.420	53	200* [c]	18-110/54
207-08-9	Benzo(k)fluoranthene	0.8	ND	0* [b]	0.387	48	200* [c]	31-119/43
218-01-9	Chrysene	0.8	ND	0* [b]	0.512	64	200* [c]	43-119/33
53-70-3	Dibenzo(a,h)anthracene	0.8	ND	0* [b]	0.422	53	200* [c]	20-112/50
206-44-0	Fluoranthene	0.8	ND	0* [b]	0.547	68	200* [c]	48-118/27
86-73-7	Fluorene	0.8	ND	0* [b]	0.524	66	200* [c]	42-123/34
193-39-5	Indeno(1,2,3-cd)pyrene	0.8	ND	0* [b]	0.400	50	200* [c]	18-113/49
91-20-3	Naphthalene	0.8	ND	0* [b]	0.505	63	200* [c]	30-114/40
85-01-8	Phenanthrene	0.8	ND	0* [b]	0.532	67	200* [c]	45-125/31
129-00-0	Pyrene	0.8	ND	0* [b]	0.501	63	200* [c]	48-125/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
4165-60-0	Nitrobenzene-d5	1%* [d]	61%	29-124%
321-60-8	2-Fluorobiphenyl	1%* [d]	56%	23-122%
1718-51-0	Terphenyl-d14	1%* [d]	70%	22-130%

(a) Spike omitted out. Since balnk spike duplicate recoveries are within control limits, data are qualified and reported.
(b) The spike standard was not added.
(c) Analytical precision exceeds in-house control limits.
(d) Outside of in house control limits.

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5549-DFTPP
Lab File ID: 2M123312.D
Instrument ID: GCMS2M
Injection Date: 04/19/22
Injection Time: 17:53

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	250511	45.8		Pass
68	Less than 2.0% of mass 69	3794	0.69	(1.94) [a]	Pass
69	Mass 69 relative abundance	195883	35.8		Pass
70	Less than 2.0% of mass 69	788	0.14	(0.40) [a]	Pass
127	40.0 - 60.0% of mass 198	269717	49.3		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	546573	100.0		Pass
199	5.0 - 9.0% of mass 198	36912	6.75		Pass
275	10.0 - 30.0% of mass 198	161362	29.5		Pass
365	1.0 - 100.0% of mass 198	21295	3.90		Pass
441	Present, but less than mass 443	93342	17.1	(86.6) [b]	Pass
442	40.0 - 100.0% of mass 198	530970	97.1		Pass
443	17.0 - 23.0% of mass 442	107741	19.7	(20.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5549-IC5549	2M123313.D	04/19/22	18:10	00:17	Initial cal 20
E2M5549-IC5549	2M123314.D	04/19/22	18:37	00:44	Initial cal 0.4
E2M5549-IC5549	2M123315.D	04/19/22	19:03	01:10	Initial cal 16
E2M5549-IC5549	2M123316.D	04/19/22	19:30	01:37	Initial cal 0.2
E2M5549-ICC5549	2M123317.D	04/19/22	19:57	02:04	Initial cal 10
E2M5549-IC5549	2M123318.D	04/19/22	20:23	02:30	Initial cal 1
E2M5549-IC5549	2M123319.D	04/19/22	20:50	02:57	Initial cal 5
E2M5549-IC5549	2M123320.D	04/19/22	21:17	03:24	Initial cal 2
E2M5549-ICV5549	2M123321.D	04/19/22	21:43	03:50	Initial cal verification 10
E2M5549-ICV5549	2M123322.D	04/19/22	22:10	04:17	Initial cal verification 10
E2M5549-ICV5549	2M123323.D	04/19/22	22:36	04:43	Initial cal verification 10
E2M5549-ICV5549	2M123324.D	04/19/22	23:03	05:10	Initial cal verification 10

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5550-DFTPP
Lab File ID: 2M123326.D
Instrument ID: GCMS2M
Injection Date: 04/20/22
Injection Time: 01:29

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	230762	45.5		Pass
68	Less than 2.0% of mass 69	2381	0.47	(1.33) [a]	Pass
69	Mass 69 relative abundance	178901	35.3		Pass
70	Less than 2.0% of mass 69	546	0.11	(0.31) [a]	Pass
127	40.0 - 60.0% of mass 198	241238	47.6		Pass
197	Less than 1.0% of mass 198	832	0.16		Pass
198	Base peak, 100% relative abundance	507178	100.0		Pass
199	5.0 - 9.0% of mass 198	32984	6.50		Pass
275	10.0 - 30.0% of mass 198	145450	28.7		Pass
365	1.0 - 100.0% of mass 198	21481	4.24		Pass
441	Present, but less than mass 443	80477	15.9	(81.1) [b]	Pass
442	40.0 - 100.0% of mass 198	493440	97.3		Pass
443	17.0 - 23.0% of mass 442	99264	19.6	(20.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5550-IC5550	2M123337.D	04/20/22	02:36	01:07	Initial cal 20
E2M5550-IC5550	2M123338.D	04/20/22	03:02	01:33	Initial cal 16
E2M5550-ICC5550	2M123339.D	04/20/22	03:29	02:00	Initial cal 10
E2M5550-IC5550	2M123340.D	04/20/22	03:55	02:26	Initial cal 5
E2M5550-IC5550	2M123341.D	04/20/22	04:22	02:53	Initial cal 2
E2M5550-IC5550	2M123342.D	04/20/22	04:49	03:20	Initial cal 1
E2M5550-IC5550	2M123343.D	04/20/22	06:03	04:34	Initial cal 0.4
E2M5550-IC5550	2M123344.D	04/20/22	06:30	05:01	Initial cal 0.2
E2M5550-ICV5550	2M123345.D	04/20/22	06:56	05:27	Initial cal verification 10
E2M5550-ICV5549	2M123346.D	04/20/22	07:23	05:54	Initial cal verification 10

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5551-DFTPP
Lab File ID: 2M123347.D
Instrument ID: GCMS2M
Injection Date: 04/20/22
Injection Time: 10:32

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	174258	49.5		Pass
68	Less than 2.0% of mass 69	1912	0.54	(1.43) [a]	Pass
69	Mass 69 relative abundance	133351	37.9		Pass
70	Less than 2.0% of mass 69	719	0.20	(0.54) [a]	Pass
127	40.0 - 60.0% of mass 198	181458	51.5		Pass
197	Less than 1.0% of mass 198	1358	0.39		Pass
198	Base peak, 100% relative abundance	352149	100.0		Pass
199	5.0 - 9.0% of mass 198	23149	6.57		Pass
275	10.0 - 30.0% of mass 198	101418	28.8		Pass
365	1.0 - 100.0% of mass 198	15159	4.30		Pass
441	Present, but less than mass 443	57465	16.3	(91.1) [b]	Pass
442	40.0 - 100.0% of mass 198	345962	98.2		Pass
443	17.0 - 23.0% of mass 442	63051	17.9	(18.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5551-CC5549	2M123348.D	04/20/22	10:46	00:14	Continuing cal 10
E2M5551-CC5550	2M123349.D	04/20/22	11:12	00:40	Continuing cal 10
OP39215-MB1	2M123350.D	04/20/22	11:41	01:09	Method Blank
ZZZZZZ	2M123351.D	04/20/22	12:08	01:36	(unrelated sample)
ZZZZZZ	2M123352.D	04/20/22	12:34	02:02	(unrelated sample)
OP39215-BS1	2M123353.D	04/20/22	13:01	02:29	Blank Spike
ZZZZZZ	2M123354.D	04/20/22	13:28	02:56	(unrelated sample)
ZZZZZZ	2M123355.D	04/20/22	13:54	03:22	(unrelated sample)
ZZZZZZ	2M123361.D	04/20/22	14:21	03:49	(unrelated sample)
ZZZZZZ	2M123362.D	04/20/22	14:47	04:15	(unrelated sample)
ZZZZZZ	2M123356.D	04/20/22	15:14	04:42	(unrelated sample)
JD43222-4	2M123357.D	04/20/22	15:41	05:09	(used for QC only; not part of job JD43215)
ZZZZZZ	2M123358.D	04/20/22	16:07	05:35	(unrelated sample)
OP39215-MS	2M123359.D	04/20/22	16:34	06:02	Matrix Spike
OP39215-MSD	2M123360.D	04/20/22	17:01	06:29	Matrix Spike Duplicate
OP39191-MB1	2M123363.D	04/20/22	17:27	06:55	Method Blank
JD43215-5	2M123365.D	04/20/22	18:21	07:49	S-423_SL_20220413
E2M5551-ECC5549	2M123369.D	04/20/22	20:08	09:36	Ending cal 10
E2M5551-ECC5550	2M123370.D	04/20/22	20:34	10:02	Ending cal 10

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5552-DFTPP
Lab File ID: 2M123373.D
Instrument ID: GCMS2M
Injection Date: 04/21/22
Injection Time: 00:55

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	178274	49.9		Pass
68	Less than 2.0% of mass 69	1961	0.55	(1.46) [a]	Pass
69	Mass 69 relative abundance	134045	37.5		Pass
70	Less than 2.0% of mass 69	693	0.19	(0.52) [a]	Pass
127	40.0 - 60.0% of mass 198	182520	51.1		Pass
197	Less than 1.0% of mass 198	1322	0.37		Pass
198	Base peak, 100% relative abundance	357504	100.0		Pass
199	5.0 - 9.0% of mass 198	23545	6.59		Pass
275	10.0 - 30.0% of mass 198	100197	28.0		Pass
365	1.0 - 100.0% of mass 198	14121	3.95		Pass
441	Present, but less than mass 443	56400	15.8	(86.5) [b]	Pass
442	40.0 - 100.0% of mass 198	335802	93.9		Pass
443	17.0 - 23.0% of mass 442	65205	18.2	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5552-CC5549	2M123374.D	04/21/22	01:15	00:20	Continuing cal 5
E2M5552-CC5550	2M123375.D	04/21/22	01:41	00:46	Continuing cal 5
OP39192-MB1	2M123376.D	04/21/22	02:42	01:47	Method Blank
OP39192-BS1	2M123377.D	04/21/22	03:09	02:14	Blank Spike
OP39192-BSD	2M123378.D	04/21/22	03:35	02:40	Blank Spike Duplicate
JD43215-25	2M123379.D	04/21/22	04:02	03:07	C-175_20220413
JD43215-26	2M123380.D	04/21/22	04:28	03:33	C-176_20220413
JD43215-15	2M123382.D	04/21/22	10:10	09:15	DUP-7_20220414
JD43215-16	2M123383.D	04/21/22	10:36	09:41	URS-5_20220414
JD43215-14	2M123384.D	04/21/22	11:03	10:08	S-480_SL_20220414
JD43215-1	2M123387.D	04/21/22	12:39	11:44	S-355_SL_20220413

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P4567-DFTPP
Lab File ID: 3P96182.D
Instrument ID: GCMS3P
Injection Date: 04/07/22
Injection Time: 13:02

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	33414	42.5		Pass
68	Less than 2.0% of mass 69	475	0.60	(1.05) [a]	Pass
69	Mass 69 relative abundance	45053	57.3		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	45392	57.7		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	78664	100.0		Pass
199	5.0 - 9.0% of mass 198	5405	6.87		Pass
275	10.0 - 30.0% of mass 198	17859	22.7		Pass
365	1.0 - 100.0% of mass 198	2688	3.42		Pass
441	Present, but less than mass 443	11088	14.1	(83.3) [b]	Pass
442	40.0 - 100.0% of mass 198	70008	89.0		Pass
443	17.0 - 23.0% of mass 442	13311	16.9	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P4567-ICC4567	3P96183.D	04/07/22	13:26	00:24	Initial cal 0.2
E3P4567-IC4567	3P96184.D	04/07/22	13:49	00:47	Initial cal 0.02
E3P4567-IC4567	3P96185.D	04/07/22	14:24	01:22	Initial cal 1
E3P4567-IC4567	3P96186.D	04/07/22	14:48	01:46	Initial cal 0.01
E3P4567-IC4567	3P96187.D	04/07/22	15:11	02:09	Initial cal 0.5
E3P4567-IC4567	3P96188.D	04/07/22	15:34	02:32	Initial cal 0.04
E3P4567-IC4567	3P96189.D	04/07/22	15:57	02:55	Initial cal 0.1
E3P4567-IC4567	3P96190.D	04/07/22	16:21	03:19	Initial cal 0.004
E3P4567-IC4567	3P96191.D	04/07/22	16:44	03:42	Initial cal 0.002
E3P4567-ICV4567	3P96192.D	04/07/22	17:10	04:08	Initial cal verification 0.2
E3P4567-ICV4567	3P96193.D	04/07/22	17:33	04:31	Initial cal verification 0.2
OP38957A-MB1	3P96194.D	04/07/22	18:09	05:07	Method Blank
OP38957A-BS12	3P96195.D	04/07/22	18:32	05:30	Blank Spike
ZZZZZZ	3P96196.D	04/07/22	18:55	05:53	(unrelated sample)
ZZZZZZ	3P96197.D	04/07/22	19:19	06:17	(unrelated sample)
ZZZZZZ	3P96198.D	04/07/22	19:42	06:40	(unrelated sample)
ZZZZZZ	3P96199.D	04/07/22	20:06	07:04	(unrelated sample)
ZZZZZZ	3P96200.D	04/07/22	20:29	07:27	(unrelated sample)
ZZZZZZ	3P96201.D	04/07/22	20:52	07:50	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E3P4567-DFTPP	**Injection Date:**	04/07/22
Lab File ID:	3P96182.D	**Injection Time:**	13:02
Instrument ID:	GCMS3P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3P96202.D	04/07/22	21:16	08:14	(unrelated sample)
JD42309-10	3P96203.D	04/07/22	21:39	08:37	(used for QC only; not part of job JD43215)
OP38957A-MSA	3P96204.D	04/07/22	22:03	09:01	Matrix Spike
OP38957A-MSDA	3P96205.D	04/07/22	22:26	09:24	Matrix Spike Duplicate
ZZZZZZ	3P96206.D	04/07/22	22:50	09:48	(unrelated sample)
ZZZZZZ	3P96207.D	04/07/22	23:13	10:11	(unrelated sample)
ZZZZZZ	3P96208.D	04/07/22	23:36	10:34	(unrelated sample)
ZZZZZZ	3P96209.D	04/08/22	00:00	10:58	(unrelated sample)
ZZZZZZ	3P96210.D	04/08/22	00:23	11:21	(unrelated sample)
ZZZZZZ	3P96211.D	04/08/22	00:46	11:44	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P4582-DFTPP
Lab File ID: 3P96469.D
Instrument ID: GCMS3P
Injection Date: 04/20/22
Injection Time: 01:43

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	23219	41.9		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	31085	56.1		Pass
70	Less than 2.0% of mass 69	239	0.43	(0.77) [a]	Pass
127	40.0 - 60.0% of mass 198	31212	56.3		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	55453	100.0		Pass
199	5.0 - 9.0% of mass 198	3546	6.39		Pass
275	10.0 - 30.0% of mass 198	12597	22.7		Pass
365	1.0 - 100.0% of mass 198	1842	3.32		Pass
441	Present, but less than mass 443	8184	14.8	(91.2) [b]	Pass
442	40.0 - 100.0% of mass 198	48368	87.2		Pass
443	17.0 - 23.0% of mass 442	8975	16.2	(18.6) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P4582-CC4567	3P96470.D	04/20/22	01:54	00:11	Continuing cal 0.1
OP39191-MB1	3P96472.D	04/20/22	03:21	01:38	Method Blank
OP39191-BS1	3P96473.D	04/20/22	03:43	02:00	Blank Spike
OP39191-BSD	3P96474.D	04/20/22	04:05	02:22	Blank Spike Duplicate
JD43215-1	3P96475.D	04/20/22	04:27	02:44	S-355_SL_20220413
JD43215-2	3P96476.D	04/20/22	04:50	03:07	C-61_20220413
JD43215-3	3P96477.D	04/20/22	05:12	03:29	C-129D_20220413
JD43215-4	3P96478.D	04/20/22	05:34	03:51	A-4_20220413
JD43215-5	3P96479.D	04/20/22	05:56	04:13	S-423_SL_20220413
JD43215-6	3P96480.D	04/20/22	06:19	04:36	S-150SRTF_20220414
JD43215-7	3P96481.D	04/20/22	06:41	04:58	N-152_20220414
JD43215-8	3P96482.D	04/20/22	07:03	05:20	S-357_SL_20220414
JD43215-9	3P96483.D	04/20/22	07:25	05:42	S-149SRTF_20220414
JD43215-10	3P96484.D	04/20/22	07:48	06:05	S-147SRTF_20220414
JD43215-11	3P96485.D	04/20/22	08:10	06:27	S-337_SL_20220414
JD43215-12	3P96486.D	04/20/22	08:32	06:49	N-85_20220414
JD43215-13	3P96487.D	04/20/22	08:54	07:11	N-163_20220414
JD43215-14	3P96488.D	04/20/22	09:17	07:34	S-480_SL_20220414
JD43215-15	3P96489.D	04/20/22	09:39	07:56	DUP-7_20220414

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E3P4582-DFTPP	**Injection Date:**	04/20/22
Lab File ID:	3P96469.D	**Injection Time:**	01:43
Instrument ID:	GCMS3P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JD43215-16	3P96490.D	04/20/22	10:01	08:18	URS-5_20220414
JD43215-17	3P96491.D	04/20/22	10:23	08:40	W-1_SL_20220415
JD43215-18	3P96492.D	04/20/22	10:46	09:03	S-110DSRTF_20220415
JD43215-19	3P96493.D	04/20/22	11:08	09:25	W-13_20220415
JD43215-20	3P96494.D	04/20/22	11:30	09:47	W-32D_20220415

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2764-DFTPP
Lab File ID: 4P52915.D
Instrument ID: GCMS4P
Injection Date: 04/14/22
Injection Time: 10:05

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	23553	47.2		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	20676	41.4		Pass
70	Less than 2.0% of mass 69	101	0.20	(0.49) [a]	Pass
127	40.0 - 60.0% of mass 198	25487	51.0		Pass
197	Less than 1.0% of mass 198	300	0.60		Pass
198	Base peak, 100% relative abundance	49949	100.0		Pass
199	5.0 - 9.0% of mass 198	3488	6.98		Pass
275	10.0 - 30.0% of mass 198	14445	28.9		Pass
365	1.0 - 100.0% of mass 198	3640	7.29		Pass
441	Present, but less than mass 443	6577	13.2	(86.0) [b]	Pass
442	40.0 - 100.0% of mass 198	41341	82.8		Pass
443	17.0 - 23.0% of mass 442	7646	15.3	(18.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2764-IC2764	4P52916.D	04/14/22	10:20	00:15	Initial cal 0.02
E4P2764-ICC2764	4P52917.D	04/14/22	11:09	01:04	Initial cal 0.1
E4P2764-IC2764	4P52918.D	04/14/22	11:40	01:35	Initial cal 1
E4P2764-IC2764	4P52919.D	04/14/22	12:03	01:58	Initial cal 0.01
E4P2764-IC2764	4P52920.D	04/14/22	12:26	02:21	Initial cal 0.5
E4P2764-IC2764	4P52921.D	04/14/22	12:50	02:45	Initial cal 0.04
E4P2764-IC2764	4P52922.D	04/14/22	13:32	03:27	Initial cal 0.2
E4P2764-IC2764	4P52923.D	04/14/22	13:56	03:51	Initial cal 0.004
E4P2764-IC2764	4P52924.D	04/14/22	14:19	04:14	Initial cal 0.002
E4P2764-ICV2764	4P52925.D	04/14/22	14:48	04:43	Initial cal verification 0.2
E4P2764-ICV2764	4P52926.D	04/14/22	15:11	05:06	Initial cal verification 0.2

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E4P2772-DFTPP
Lab File ID: 4P53064.D
Instrument ID: GCMS4P
Injection Date: 04/20/22
Injection Time: 23:16

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	18685	48.0		Pass
68	Less than 2.0% of mass 69	101	0.26	(0.52) [a]	Pass
69	Mass 69 relative abundance	19347	49.7		Pass
70	Less than 2.0% of mass 69	31	0.08	(0.16) [a]	Pass
127	40.0 - 60.0% of mass 198	21661	55.7		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	38923	100.0		Pass
199	5.0 - 9.0% of mass 198	2774	7.13		Pass
275	10.0 - 30.0% of mass 198	10051	25.8		Pass
365	1.0 - 100.0% of mass 198	3054	7.85		Pass
441	Present, but less than mass 443	3636	9.34	(78.9) [b]	Pass
442	40.0 - 100.0% of mass 198	21033	54.0		Pass
443	17.0 - 23.0% of mass 442	4606	11.8	(21.9) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4P2772-CC2764	4P53065.D	04/20/22	23:36	00:20	Continuing cal 0.1
OP39192A-MB1	4P53066.D	04/21/22	00:32	01:16	Method Blank
ZZZZZZ	4P53067.D	04/21/22	00:55	01:39	(unrelated sample)
ZZZZZZ	4P53068.D	04/21/22	01:18	02:02	(unrelated sample)
OP39192A-BS12	4P53069.D	04/21/22	01:41	02:25	Blank Spike
OP39192A-BSD12	4P53070.D	04/21/22	02:04	02:48	Blank Spike Duplicate
ZZZZZZ	4P53071.D	04/21/22	02:27	03:11	(unrelated sample)
ZZZZZZ	4P53072.D	04/21/22	02:50	03:34	(unrelated sample)
ZZZZZZ	4P53073.D	04/21/22	03:13	03:57	(unrelated sample)
ZZZZZZ	4P53074A.D	04/21/22	03:59	04:43	(unrelated sample)
ZZZZZZ	4P53075.D	04/21/22	04:22	05:06	(unrelated sample)
ZZZZZZ	4P53076.D	04/21/22	04:45	05:29	(unrelated sample)
ZZZZZZ	4P53077.D	04/21/22	05:08	05:52	(unrelated sample)
ZZZZZZ	4P53078.D	04/21/22	05:31	06:15	(unrelated sample)
ZZZZZZ	4P53079.D	04/21/22	05:54	06:38	(unrelated sample)
ZZZZZZ	4P53080.D	04/21/22	06:18	07:02	(unrelated sample)
JD43215-21	4P53081.D	04/21/22	06:41	07:25	S-78SRTF_20220415
JD43215-23	4P53082.D	04/21/22	07:04	07:48	W-32_SL_20220415
JD43215-24	4P53083.D	04/21/22	07:27	08:11	S-118DSRTF_20220415

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E4P2772-DFTPP	**Injection Date:**	04/20/22
Lab File ID:	4P53064.D	**Injection Time:**	23:16
Instrument ID:	GCMS4P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JD43215-25	4P53084.D	04/21/22	07:50	08:34	C-175_20220413
JD43215-26	4P53085.D	04/21/22	08:14	08:58	C-176_20220413
JD43215-22	4P53086.D	04/21/22	08:36	09:20	W-31_SL_20220415
JD43215-22	4P53088.D	04/21/22	11:09	11:53	W-31_SL_20220415

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E5P3865-DFTPP
Lab File ID: 5P81576.D
Instrument ID: GCMS5P
Injection Date: 02/17/22
Injection Time: 23:28

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	18974	30.7		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	30872	50.0		Pass
70	Less than 2.0% of mass 69	76	0.12	(0.25) [a]	Pass
127	40.0 - 60.0% of mass 198	35113	56.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	61754	100.0		Pass
199	5.0 - 9.0% of mass 198	4000	6.48		Pass
275	10.0 - 30.0% of mass 198	12232	19.8		Pass
365	1.0 - 100.0% of mass 198	1611	2.61		Pass
441	Present, but less than mass 443	6313	10.2	(82.6) [b]	Pass
442	40.0 - 100.0% of mass 198	39213	63.5		Pass
443	17.0 - 23.0% of mass 442	7643	12.4	(19.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P3865-IC3865	5P81577.D	02/17/22	23:45	00:17	Initial cal 20
E5P3865-IC3865	5P81578.D	02/18/22	00:15	00:47	Initial cal 16
E5P3865-ICC3865	5P81579.D	02/18/22	00:45	01:17	Initial cal 10
E5P3865-IC3865	5P81580.D	02/18/22	01:15	01:47	Initial cal 5
E5P3865-IC3865	5P81581.D	02/18/22	01:45	02:17	Initial cal 2
E5P3865-IC3865	5P81583.D	02/18/22	03:54	04:26	Initial cal 0.4
E5P3865-IC3865	5P81582C.D	02/18/22	04:25	04:57	Initial cal 1
E5P3865-IC3865	5P81584.D	02/18/22	04:56	05:28	Initial cal 0.2
E5P3865-ICV3865	5P81585.D	02/18/22	05:27	05:59	Initial cal verification 10

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E5P3881-DFTPP
Lab File ID: 5P81748.D
Instrument ID: GCMS5P
Injection Date: 03/09/22
Injection Time: 12:05

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	21377	32.1		Pass
68	Less than 2.0% of mass 69	183	0.27	(0.48) [a]	Pass
69	Mass 69 relative abundance	37912	56.9		Pass
70	Less than 2.0% of mass 69	95	0.14	(0.25) [a]	Pass
127	40.0 - 60.0% of mass 198	38144	57.3		Pass
197	Less than 1.0% of mass 198	341	0.51		Pass
198	Base peak, 100% relative abundance	66602	100.0		Pass
199	5.0 - 9.0% of mass 198	4261	6.40		Pass
275	10.0 - 30.0% of mass 198	12903	19.4		Pass
365	1.0 - 100.0% of mass 198	1700	2.55		Pass
441	Present, but less than mass 443	5733	8.61	(78.4) [b]	Pass
442	40.0 - 100.0% of mass 198	39474	59.3		Pass
443	17.0 - 23.0% of mass 442	7313	11.0	(18.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P3881-IC3881	5P81749.D	03/09/22	12:33	00:28	Initial cal 20
E5P3881-IC3881	5P81750.D	03/09/22	13:00	00:55	Initial cal 0.2
E5P3881-IC3881	5P81751.D	03/09/22	13:27	01:22	Initial cal 16
E5P3881-IC3881	5P81752.D	03/09/22	13:54	01:49	Initial cal 0.4
E5P3881-IC3881	5P81753.D	03/09/22	14:21	02:16	Initial cal 10
E5P3881-IC3881	5P81754.D	03/09/22	14:48	02:43	Initial cal 1
E5P3881-ICC3881	5P81755.D	03/09/22	15:15	03:10	Initial cal 5
E5P3881-IC3881	5P81756.D	03/09/22	15:42	03:37	Initial cal 2
E5P3881-ICV3881	5P81757.D	03/09/22	16:10	04:05	Initial cal verification 10
E5P3881-ICV3881	5P81758.D	03/09/22	16:37	04:32	Initial cal verification 10
E5P3881-ICV3881	5P81759.D	03/09/22	17:04	04:59	Initial cal verification 10
E5P3881-ICV3881	5P81761.D	03/09/22	17:57	05:52	Initial cal verification 10
E5P3881-ICV3881	5P81762.D	03/09/22	18:37	06:32	Initial cal verification 10

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E5P3929-DFTPP
Lab File ID: 5P82711.D
Instrument ID: GCMS5P
Injection Date: 04/25/22
Injection Time: 10:55

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	17654	30.3		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	27511	47.3		Pass
70	Less than 2.0% of mass 69	125	0.21	(0.45) [a]	Pass
127	40.0 - 60.0% of mass 198	33297	57.2		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	58198	100.0		Pass
199	5.0 - 9.0% of mass 198	3473	5.97		Pass
275	10.0 - 30.0% of mass 198	9820	16.9		Pass
365	1.0 - 100.0% of mass 198	1102	1.89		Pass
441	Present, but less than mass 443	3576	6.14	(67.8) [b]	Pass
442	40.0 - 100.0% of mass 198	27722	47.6		Pass
443	17.0 - 23.0% of mass 442	5271	9.06	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P3929-CC3881	5P82712.D	04/25/22	11:09	00:14	Continuing cal 5
E5P3929-CC3865	5P82713.D	04/25/22	11:36	00:41	Continuing cal 5
OP39229-MB1	5P82716.D	04/25/22	13:03	02:08	Method Blank
OP39250-MB1	5P82717.D	04/25/22	13:30	02:35	Method Blank
OP39250-BS1	5P82718.D	04/25/22	13:56	03:01	Blank Spike
OP39250-BSD	5P82719.D	04/25/22	14:29	03:34	Blank Spike Duplicate
ZZZZZZ	5P82726.D	04/25/22	14:55	04:00	(unrelated sample)
OP39191A-MB1	5P82720.D	04/25/22	15:21	04:26	Method Blank
OP39191A-BS1	5P82721.D	04/25/22	15:47	04:52	Blank Spike
OP39191A-BSD	5P82722.D	04/25/22	16:14	05:19	Blank Spike Duplicate
JD43215-2	5P82723.D	04/25/22	16:40	05:45	C-61_20220413
ZZZZZZ	5P82724.D	04/25/22	17:06	06:11	(unrelated sample)
ZZZZZZ	5P82725.D	04/25/22	17:32	06:37	(unrelated sample)
ZZZZZZ	5P82727.D	04/25/22	17:58	07:03	(unrelated sample)
ZZZZZZ	5P82728.D	04/25/22	18:24	07:29	(unrelated sample)
ZZZZZZ	5P82729.D	04/25/22	18:50	07:55	(unrelated sample)
ZZZZZZ	5P82730.D	04/25/22	19:16	08:21	(unrelated sample)
ZZZZZZ	5P82731.D	04/25/22	21:01	10:06	(unrelated sample)
E5P3929-ECC3881	5P82732.D	04/25/22	21:27	10:32	Ending cal 5

Instrument Performance Check (DFTPP)

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E5P3929-DFTPP	**Injection Date:**	04/25/22
Lab File ID:	5P82711.D	**Injection Time:**	10:55
Instrument ID:	GCMS5P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P3929-ECC3865	5P82733.D	04/25/22	21:53	10:58	Ending cal 5

Internal Standard Area Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E2M5551-CC5549	**Injection Date:**	04/20/22
Lab File ID:	2M123348.D	**Injection Time:**	10:46
Instrument ID:	GCMS2M	**Method:**	SW846 8270E

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	502112	4.82	2215006	5.94	1192169	8.07	2020444	10.28	1554041	14.50	2136324	16.63
Upper Limit [a]	1004224	5.32	4430012	6.44	2384338	8.57	4040888	10.78	3108082	15.00	4272648	17.13
Lower Limit [b]	251056	4.32	1107503	5.44	596085	7.57	1010222	9.78	777021	14.00	1068162	16.13

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP39215-MB1	393953	4.81	1701738	5.94	967722	8.07	1713123	10.28	1338281	14.50	1338372	16.63
ZZZZZZ	497968	4.81	2158834	5.94	1199149	8.07	2060141	10.28	1558373	14.50	1608977	16.63
ZZZZZZ	487290	4.81	2065412	5.94	1152577	8.07	1992624	10.28	1523175	14.50	1552482	16.63
OP39215-BS1	458574	4.81	1915933	5.94	1019261	8.07	1732706	10.28	1352492	14.50	1648659	16.63
ZZZZZZ	496478	4.81	2107343	5.94	1169538	8.07	2011618	10.28	1541398	14.50	1539153	16.63
ZZZZZZ	525159	4.81	2261874	5.94	1268788	8.07	2242364	10.28	1687435	14.50	1692056	16.63
ZZZZZZ	541223	4.82	2283868	5.94	1162336	8.07	1962985	10.28	1766073	14.50	2477237	16.63
ZZZZZZ	555437	4.82	2358037	5.94	1280692	8.07	2163484	10.28	1673392	14.50	2210664	16.63
ZZZZZZ	536602	4.81	2315197	5.94	1266831	8.07	2092555	10.28	1667399	14.50	1717553	16.63
JD43222-4	487530	4.81	2138791	5.94	1192591	8.07	2021195	10.28	1543900	14.50	1562752	16.62
ZZZZZZ	519096	4.81	2267323	5.94	1195093	8.07	1992976	10.28	1518073	14.50	1587877	16.63
OP39215-MS	458222	4.81	1935794	5.94	1050788	8.07	1757373	10.28	1357716	14.50	1683526	16.63
OP39215-MSD	437568	4.81	1818101	5.94	984548	8.07	1636400	10.28	1258987	14.50	1616235	16.63
OP39191-MB1	521890	4.81	2255967	5.94	1263902	8.07	2148723	10.28	1644658	14.50	1678206	16.63
JD43215-5	513569	4.82	2108596	5.94	1165700	8.07	1847603	10.28	1885943	14.50	2454003	16.64
E2M5551-ECC5549	435160	4.82	1875750	5.94	1019367	8.07	1655118	10.28	1288984	14.51	1880535	16.64
E2M5551-ECC5550	430348	4.81	1815072	5.94	979836	8.07	1660472	10.28	1247638	14.50	1409551	16.63

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-d10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E2M5552-CC5549	**Injection Date:**	04/21/22
Lab File ID:	2M123374.D	**Injection Time:**	01:15
Instrument ID:	GCMS2M	**Method:**	SW846 8270E

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	472945	4.80	2066555	5.93	1174465	8.06	2091461	10.27	1599577	14.49	1977790	16.61
Upper Limit [a]	945890	5.30	4133110	6.43	2348930	8.56	4182922	10.77	3199154	14.99	3955580	17.11
Lower Limit [b]	236473	4.30	1033278	5.43	587233	7.56	1045731	9.77	799789	13.99	988895	16.11

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP39192-MB1	419044	4.80	1817887	5.93	1059958	8.06	1929078	10.27	1517081	14.49	1428629	16.62
OP39192-BS1	437811	4.80	1899921	5.93	1079725	8.06	1929126	10.27	1411030	14.49	1701771	16.62
OP39192-BSD	444221	4.80	1976026	5.93	1125987	8.06	1939463	10.27	1421195	14.49	1752745	16.61
JD43215-25	459982	4.80	1870647	5.93	951327	8.06	1467405	10.27	1708528	14.50	2003769	16.63
JD43215-26	477462	4.80	2007994	5.93	1053307	8.06	1625508	10.27	1731405	14.50	1985241	16.63
JD43215-15	483268	4.80	2119756	5.93	1202073	8.06	2080550	10.27	1489601	14.49	1873092	16.63
JD43215-16	481958	4.80	2140361	5.93	1191649	8.06	2052058	10.27	1463902	14.49	1947743	16.63
JD43215-14	484192	4.80	2043456	5.93	1112500	8.06	1795803	10.27	1509217	14.49	2082888	16.62
JD43215-1	332553	4.80	1391099	5.93	856336	8.07	1226182	10.29	1354294	14.51	1528636	16.64

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-d10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E3P4582-CC4567	**Injection Date:**	04/20/22
Lab File ID:	3P96470.D	**Injection Time:**	01:54
Instrument ID:	GCMS3P	**Method:**	SW846 8270E BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	29455	6.77	41281	8.24	71770	10.34	55885	13.00
Upper Limit [a]	58910	7.27	82562	8.74	143540	10.84	111770	13.50
Lower Limit [b]	14728	6.27	20641	7.74	35885	9.84	27943	12.50

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP39191-MB1	26749	6.77	34574	8.24	57560	10.34	47611	13.00
OP39191-BS1	26418	6.77	33412	8.23	56040	10.34	45012	12.99
OP39191-BSD	26012	6.77	34341	8.23	58135	10.34	46386	12.99
JD43215-1	28325	6.77	59265	8.24	51918	10.34	49015	12.99
JD43215-2	27477	6.77	36627	8.23	55576	10.34	45545	12.99
JD43215-3	25808	6.77	36770	8.23	58138	10.34	44018	12.99
JD43215-4	35305	6.77	43472	8.23	70230	10.34	54794	12.99
JD43215-5	32123	6.77	41355	8.24	58505	10.34	45353	13.00
JD43215-6	31854	6.77	41265	8.23	65736	10.34	51057	12.99
JD43215-7	34092	6.77	43569	8.23	70248	10.34	56090	12.99
JD43215-8	29697	6.77	41292	8.23	59844	10.34	46379	12.99
JD43215-9	31580	6.77	41474	8.23	66942	10.34	53751	12.99
JD43215-10	29469	6.77	39586	8.23	64371	10.34	48985	12.99
JD43215-11	30777	6.77	63014	8.23	67658	10.34	52506	12.99
JD43215-12	32784	6.77	41217	8.23	65973	10.34	53741	12.99
JD43215-13	30788	6.77	40489	8.23	66047	10.34	52640	12.99
JD43215-14	40345	6.77	72599	8.23	60012	10.34	50490	12.99
JD43215-15	49495	6.77	63578	8.24	70520	10.38	44995	13.00
JD43215-16	44006	6.77	41081	8.24	65053	10.38	44579	13.00
JD43215-17	29409	6.77	40448	8.23	59354	10.34	45176	12.99
JD43215-18	31855	6.77	41834	8.23	67220	10.34	53937	12.99
JD43215-19	30832	6.77	41282	8.23	66192	10.34	50806	12.99
JD43215-20	35900	6.77	47844	8.23	74137	10.34	58779	12.99

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E4P2772-CC2764	**Injection Date:**	04/20/22
Lab File ID:	4P53065.D	**Injection Time:**	23:36
Instrument ID:	GCMS4P	**Method:**	SW846 8270E BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	6494	5.81	10664	7.25	20189	9.32	13181	11.94
Upper Limit [a]	12988	6.31	21328	7.75	40378	9.82	26362	12.44
Lower Limit [b]	3247	5.31	5332	6.75	10095	8.82	6591	11.44

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP39192A-MB1	4133	5.81	6735	7.25	12579	9.33	8624	11.94
ZZZZZZ	3833	5.81	6217	7.25	11836	9.32	8028	11.94
ZZZZZZ	3898	5.81	6658	7.25	13216	9.32	9347	11.94
OP39192A-BS12 [c]	4078	5.81	6952	7.25	13867	9.32	10100	11.93
OP39192A-BSD12	4116	5.81	7244	7.25	13463	9.32	9281	11.94
ZZZZZZ	3729	5.80	6220	7.25	12188	9.32	8640	11.93
ZZZZZZ	4221	5.81	6878	7.25	11822	9.32	8697	11.94
ZZZZZZ	4715	5.81	7818	7.25	15047	9.32	10278	11.94
ZZZZZZ	4414	5.81	6893	7.25	11547	9.33	8516	11.94
ZZZZZZ	4274	5.81	7109	7.25	11841	9.32	8758	11.94
ZZZZZZ	4208	5.81	6924	7.25	11176	9.32	8589	11.93
ZZZZZZ	4237	5.81	6757	7.25	11143	9.32	8333	11.93
ZZZZZZ	4389	5.81	7227	7.25	12390	9.32	9018	11.93
ZZZZZZ	4483	5.81	7145	7.25	11868	9.32	8821	11.93
ZZZZZZ	4248	5.81	6718	7.25	11498	9.32	8329	11.93
JD43215-21	5529	5.81	7769	7.25	11894	9.32	9095	11.94
JD43215-23	5512	5.81	9177	7.26	15490	9.37	12350	11.95
JD43215-24	4453	5.81	6797	7.25	11407	9.33	8648	11.94
JD43215-25	5576	5.81	7711	7.26	14070	9.34	12812	11.96
JD43215-26	5019	5.81	10538	7.26	13662	9.34	12522	11.96
JD43215-22	4984	5.81	8450	7.26	14022	9.34	10945	11.96
JD43215-22	5966	5.81	8640	7.26	13318	9.34	10823	11.95

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Spike omitted out. Since balnk spike duplicate recoveries are within control limits, data are qualified and reported.

Internal Standard Area Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	E5P3929-CC3881	**Injection Date:**	04/25/22
Lab File ID:	5P82712.D	**Injection Time:**	11:09
Instrument ID:	GCMS5P	**Method:**	SW846 8270E

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	115196	4.31	428019	5.32	231854	7.28	376609	9.41	241174	13.54	200833	15.62
Upper Limit [a]	230392	4.81	856038	5.82	463708	7.78	753218	9.91	482348	14.04	401666	16.12
Lower Limit [b]	57598	3.81	214010	4.82	115927	6.78	188305	8.91	120587	13.04	100417	15.12

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP39229-MB1	127861	4.31	481502	5.32	212806	7.28	400290	9.40	230904	13.54	211591	15.62
OP39250-MB1	162353	4.32	597773	5.32	325318	7.28	506742	9.40	316121	13.54	275132	15.62
OP39250-BS1	114850	4.31	425696	5.32	223610	7.28	354989	9.41	230610	13.54	203149	15.62
OP39250-BSD	117099	4.31	423539	5.32	225805	7.28	372746	9.41	232907	13.54	203157	15.63
ZZZZZZ	113603	4.31	482559	5.32	210556	7.28	308486	9.40	185878	13.54	152068	15.63
OP39191A-MB1	154332	4.32	589486	5.32	301923	7.28	430244	9.40	272035	13.54	217663	15.62
OP39191A-BS1	127731	4.31	458129	5.32	237936	7.28	369784	9.41	231505	13.54	198172	15.62
OP39191A-BSD	131949	4.32	468597	5.32	236485	7.28	386150	9.41	232295	13.54	204392	15.63
JD43215-2	121476	4.31	422749	5.32	203488	7.28	293061	9.40	184476	13.54	170182	15.63
ZZZZZZ	88541	4.31	382609	5.32	211588	7.28	359473	9.40	224558	13.54	189370	15.62
ZZZZZZ	128123	4.31	482486	5.32	245369	7.28	376177	9.40	231757	13.54	204286	15.62
ZZZZZZ	141325	4.31	539770	5.32	277268	7.28	424168	9.40	258727	13.54	220276	15.62
ZZZZZZ	135906	4.31	543177	5.32	263296	7.28	398136	9.40	241468	13.54	210311	15.62
ZZZZZZ	133667	4.31	518429	5.32	253567	7.28	378617	9.40	238481	13.54	207473	15.62
ZZZZZZ	139024	4.31	505984	5.32	256599	7.28	378198	9.40	234092	13.54	205781	15.62
ZZZZZZ	152737	4.31	553965	5.32	257811	7.28	379919	9.40	241383	13.54	211546	15.63
E5P3929-ECC3881	120354	4.32	455208	5.32	239112	7.28	380810	9.41	237276	13.54	213772	15.62
E5P3929-ECC3865	135809	4.32	501223	5.32	264135	7.28	386271	9.40	248590	13.54	213920	15.62

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-d10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270E **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JD43215-2	5P82723.D	38	27	77	73	75	72
JD43215-25	2M123379.D	37	27	82	67	59	22
JD43215-26	2M123380.D	56	39	92	81	79	53
OP39191A-BS1	5P82721.D	38	25	75	58	58	81
OP39191A-BSD	5P82722.D	46	31	80	66	72	82
OP39191A-MB1	5P82720.D	30	20	64	56	61	66
OP39192-BS1	2M123377.D	40	27	71	62	62	73
OP39192-BSD	2M123378.D	45	31	75	67	67	76
OP39192-MB1	2M123376.D	33	22	75	71	69	60

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	10-73%
S2 = Phenol-d5	10-64%
S3 = 2,4,6-Tribromophenol	31-130%
S4 = Nitrobenzene-d5	28-126%
S5 = 2-Fluorobiphenyl	26-114%
S6 = Terphenyl-d14	16-122%

Surrogate Recovery Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270E BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD43215-1	2M123387.D	72	56	38
JD43215-1	3P96475.D	79	39	53
JD43215-2	3P96476.D	75	71	73
JD43215-3	3P96477.D	70	64	71
JD43215-4	3P96478.D	65	65	67
JD43215-5	2M123365.D	43	36	34
JD43215-5	3P96479.D	75	62	66
JD43215-6	3P96480.D	59	53	55
JD43215-7	3P96481.D	53	51	61
JD43215-8	3P96482.D	78	71	61
JD43215-9	3P96483.D	54	52	51
JD43215-10	3P96484.D	65	63	66
JD43215-11	3P96485.D	62	36	62
JD43215-12	3P96486.D	57	59	73
JD43215-13	3P96487.D	59	57	73
JD43215-14	2M123384.D	64	63	66
JD43215-14	3P96488.D	48	32	65
JD43215-15	2M123382.D	92	83	96
JD43215-15	3P96489.D	44	37	53
JD43215-16	2M123383.D	102	99	121
JD43215-16	3P96490.D	55	63	63
JD43215-17	3P96491.D	69	64	68
JD43215-18	3P96492.D	75	72	74
JD43215-19	3P96493.D	56	53	67
JD43215-20	3P96494.D	53	48	43
JD43215-21	4P53081.D	60	66	53
JD43215-22	4P53088.D	66	64	28
JD43215-22	4P53086.D	67	58	26
JD43215-23	4P53082.D	59	44	19* [a]
JD43215-24	4P53083.D	73	77	40
JD43215-25	4P53084.D	51	58	26
JD43215-26	4P53085.D	72	55	66
OP39191-BS1	3P96473.D	69	66	75
OP39191-BSD	3P96474.D	71	68	78
OP39191-MB1	3P96472.D	64	62	75
OP39191-MB1	2M123363.D	34	31	49
OP39192A-BS12	4P53069.D	1* [a]	1* [a]	1* [a]
OP39192A-BSD12	4P53070.D	61	56	70
OP39192A-MB1	4P53066.D	71	68	62

Surrogate Recovery Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270E BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Surrogate Compounds	Recovery Limits

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	29-124%
S2 = 2-Fluorobiphenyl	23-122%
S3 = Terphenyl-d14	22-130%

(a) Outside of in house control limits.

Initial Calibration Summary

Job Number: JD43215 **Sample:** E2M5549-ICC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123317.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS2M

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 09:29:42 2022
Response via : Initial Calibration

Calibration Files
10 =2m123317.D 20 =2m123313.D 16 =2m123315.D 5 =2m123319.D
2 =2m123320.D 1 =2m123318.D 0.4 =2m123314.D 0.2 =2m123316.D

Compound	10	20	16	5	2	1	0.4	0.2	Avg	%RSD
1) I 1,4-Dichlorobenzene-d	ISTD									
2) 1,4-Dioxane	0.550	0.506	0.501	0.551	0.523	0.531	0.570	0.752	0.560	14.40
3) Pyridine	1.457	1.356	1.321	1.411	1.298	1.252	1.213	1.187	1.312	7.19
4) N-Nitrosodim	0.809	0.743	0.728	0.780	0.734	0.754	0.718	0.713	0.747	4.37
5) 2-Fluorophen	1.340	1.187	1.212	1.298	1.212	1.300	1.270	1.336	1.269	4.67
6) Indene	2.544	2.129	2.325	2.478	2.418	2.485	2.460	2.743	2.448	7.18
7) Cumene	3.357	2.949	3.128	3.346	3.132	3.250	3.273	3.500	3.242	5.25
8) Phenol-d5	1.836	1.598	1.672	1.811	1.669	1.723	1.641	1.833	1.723	5.39
9) Phenol	1.867	1.649	1.654	1.836	1.690	1.664	1.745	1.846	1.744	5.33
10) Aniline	2.403	2.119	2.147	2.301	2.147	2.195	2.036	1.968	2.164	6.40
11) bis(2-Chloro	1.487	1.282	1.342	1.471	1.396	1.396	1.425	1.598	1.425	6.77
12) 2-Chlorophen	1.499	1.313	1.368	1.440	1.429	1.383	1.411	1.478	1.415	4.28
13) Decane	2.188	1.909	1.937	2.148	2.046	2.103	2.229	2.329	2.111	6.80
14) 1,3-Dichloro	1.622	1.405	1.462	1.580	1.530	1.544	1.643	1.562	1.543	5.12
15) 1,4-Dichloro	1.633	1.388	1.479	1.579	1.515	1.564	1.590	1.849	1.575	8.54
16) Benzyl alcoh	0.999	0.880	0.926	0.984	0.923	0.966	0.963	1.111	0.969	7.11
17) 1,2-Dichloro	1.564	1.354	1.420	1.557	1.475	1.538	1.506	1.701	1.514	6.89
18) Acetophenone	2.112	1.679	1.868	2.141	2.064	2.166	2.165	2.452	2.081	10.95
19) 2-Methylphen	1.321	1.136	1.205	1.325	1.265	1.298	1.262	1.381	1.274	5.98
20) 2,2'-oxybis(	2.758	2.404	2.489	2.727	2.602	2.727	2.814	3.079	2.700	7.71
21) 3&4-Methylph	1.347	1.097	1.191	1.325	1.275	1.327	1.323	1.348	1.279	7.04
22) n-Nitroso-di	1.021	0.840	0.894	1.033	0.985	1.013	1.058	1.225	1.009	11.37
23) Hexachloroet	0.645	0.542	0.581	0.625	0.591	0.594	0.626	0.645	0.606	5.87
24) I Naphthalene-d8	ISTD									
25) Nitrobenzene	0.379	0.333	0.343	0.370	0.346	0.349	0.352	0.414	0.361	7.28
26) Nitrobenzene	0.376	0.346	0.349	0.368	0.358	0.351	0.345	0.403	0.362	5.51
27) Quinoline	0.692	0.585	0.603	0.667	0.641	0.647	0.627	0.708	0.646	6.49
28) Isophorone	0.718	0.614	0.635	0.705	0.677	0.692	0.680	0.777	0.687	7.30
29) 2-Nitropheno	0.187	0.161	0.167	0.179	0.175	0.175	0.171	0.202	0.177	7.13
30) 2,4-Dimethyl	0.366	0.310	0.327	0.356	0.336	0.342	0.360	0.376	0.347	6.35
31) Benzoic acid	0.204	0.187	0.188	0.166	0.131	0.138	0.136	0.175	0.166	16.91
32) bis(2-Chloro	0.437	0.379	0.394	0.434	0.408	0.409	0.432	0.474	0.421	7.06
33) 2,4-Dichloro	0.304	0.260	0.272	0.290	0.267	0.287	0.273	0.294	0.281	5.34
34) 2,6-Dichloro	0.296	0.245	0.259	0.283	0.276	0.286	0.283	0.336	0.283	9.48
35) 1,3,5-Trichl	0.334	0.281	0.297	0.324	0.320	0.315	0.329	0.368	0.321	8.01
36) 1,2,4-Trichl	0.325	0.279	0.296	0.313	0.302	0.314	0.313	0.381	0.315	9.50
37) 1,2,3-Trichl	0.318	0.272	0.282	0.308	0.294	0.298	0.308	0.333	0.301	10.79
38) Naphthalene	1.070	0.911	0.962	1.047	0.992	1.013	1.027	1.157	1.022	7.21
39) 4-Chloroanil	0.434	0.365	0.382	0.425	0.394	0.401	0.415	0.447	0.408	6.72
40) 2,3-Dichloro	0.363	0.297	0.316	0.361	0.345	0.355	0.364	0.398	0.350	8.94
41) Hydroquinone	0.271	0.254	0.255	0.235	0.181	0.171			0.228	18.31
42) Hexachlorobu	0.208	0.176	0.189	0.201	0.196	0.195	0.209	0.205	0.197	5.64
43) 4-Chloro-3-m	0.309	0.262	0.274	0.294	0.275	0.273	0.276	0.282	0.280	5.20
44) 2-Methylnaph	0.636	0.538	0.564	0.616	0.590	0.624	0.620	0.694	0.610	7.76
45) 1-Methylnaph	0.605	0.516	0.537	0.598	0.581	0.589	0.638	0.661	0.591	8.10

Initial Calibration Summary

Job Number: JD43215 **Sample:** E2M5549-ICC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123317.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

46) I	Acenaphthene-d10	----------ISTD----------								
47) Hexachlorocy	0.401	0.354	0.374	0.384	0.360	0.336	0.348	0.360	0.365	5.73
48) 1,2,4,5-Tetr	0.572	0.498	0.520	0.558	0.549	0.526	0.561	0.583	0.546	5.27
49) 2,4,6-Trichl	0.395	0.334	0.350	0.381	0.378	0.358	0.356	0.409	0.370	6.71
50) 2,4,5-Trichl	0.441	0.382	0.392	0.418	0.395	0.366	0.358	0.357	0.389	7.63
51) 2-Fluorobiph	1.417	1.232	1.292	1.375	1.359	1.338	1.377	1.535	1.366	6.53
52) 2-Chloronaph	1.259	1.099	1.144	1.237	1.187	1.166	1.263	1.243	1.200	5.03
53) Biphenyl	1.544	1.327	1.393	1.493	1.471	1.451	1.460	1.552	1.461	5.11
54) 2-Nitroanili	0.395	0.353	0.361	0.379	0.357	0.353	0.343	0.306	0.356	7.33
55) Dimethylphth	1.463	1.259	1.298	1.397	1.330	1.347	1.380	1.541	1.377	6.60
56) Acenaphthyle	1.733	1.491	1.560	1.638	1.593	1.590	1.605	1.727	1.617	5.04
57) 2,6-Dinitrot	0.306	0.257	0.277	0.294	0.263	0.257	0.273	0.275	0.275	6.38
58) 3-Nitroanili	0.322	0.280	0.296	0.310	0.278	0.272	0.282	0.269	0.289	6.64
59) Acenaphthene	1.210	1.039	1.095	1.157	1.151	1.134	1.165	1.304	1.157	6.75
60) 2,4-Dinitrop	0.146		0.142	0.117	0.075	0.058	0.047		0.098	44.19
---- Quadratic regression ---- Coefficient = 0.9925										
Response Ratio = -0.01049 + 0.11634 *A + 0.00832 *A^2										
61) 4-Nitropheno	0.144	0.124	0.128	0.120	0.096	0.109	0.137		0.122	13.41
62) Dibenzofuran	1.767	1.479	1.555	1.730	1.693	1.672	1.782	1.963	1.705	8.63
63) 2,4-Dinitrot	0.399	0.334	0.352	0.376	0.355	0.337	0.316	0.340	0.351	7.46
64) 2,3,4,6-Tetr	0.338	0.298	0.309	0.322	0.303	0.283	0.263	0.295	0.302	7.61
65) Diethylphtha	1.395	1.190	1.249	1.363	1.260	1.276	1.279	1.475	1.311	7.07
66) Fluorene	1.408	1.196	1.262	1.356	1.341	1.273	1.327	1.417	1.323	5.70
67) 4-Chlorophen	0.679	0.570	0.604	0.654	0.661	0.630	0.654	0.709	0.645	6.71
68) 4-Nitroanili	0.304	0.264	0.260	0.285	0.254	0.250	0.252	0.284	0.269	7.33
69) I	Phenanthrene-d10	----------ISTD----------								
70) 4,6-Dinitro-	0.117	0.111	0.111	0.099	0.071	0.057			0.095	25.82
---- Quadratic regression ---- Coefficient = 0.9981										
Response Ratio = -0.00940 + 0.12111 *A + -0.00226 *A^2										
71) n-Nitrosodip	0.675	0.584	0.612	0.643	0.627	0.599	0.600	0.686	0.628	5.93
72) Pentachloron	0.055	0.048	0.052	0.052	0.048	0.049	0.052	0.043	0.050#	6.73
73) 1,2-Diphenyl	0.785	0.685	0.707	0.746	0.735	0.690	0.656	0.778	0.723	6.35
74) 2,4,6-Tribro	0.157	0.139	0.143	0.141	0.133	0.129	0.114	0.132	0.136	9.28
75) 4-Bromopheny	0.257	0.218	0.231	0.247	0.241	0.241	0.248	0.253	0.242	5.17
76) Hexachlorobe	0.293	0.256	0.268	0.286	0.281	0.277	0.303	0.332	0.287	8.10
77) Pentachlorop	0.157	0.141	0.145	0.150	0.126	0.103	0.097		0.131	17.91
78) Phenanthrene	1.138	0.985	1.015	1.103	1.081	1.068	1.133	1.323	1.106	9.30
79) Anthracene	1.148	1.006	1.049	1.115	1.069	1.045	1.122	1.210	1.095	6.01
80) Carbazole	1.031	0.911	0.944	0.975	0.945	0.955	0.958	1.070	0.974	5.32
81) Di-n-butylph	1.291	1.108	1.158	1.196	1.085	1.034	1.017	1.115	1.126	7.90
82) Fluoranthene	1.213	1.028	1.088	1.167	1.129	1.121	1.315	1.606	1.208	15.08
83) Octadecane	0.704	0.626	0.642	0.672	0.641	0.593	0.602	0.597	0.634	6.12
84) I	Chrysene-d12	----------ISTD----------								
85) Benzidine	0.668	0.573	0.660	0.617	0.377	0.286			0.530	30.26
---- Quadratic regression ---- Coefficient = 0.9955										
Response Ratio = -0.07701 + 0.80777 *A + -0.07209 *A^2										
86) Pyrene	1.634	1.421	1.492	1.533	1.497	1.559	2.089	2.480	1.713	21.75
---- Quadratic regression ---- Coefficient = 0.9979										
Response Ratio = 0.01830 + 1.59221 *A + -0.06023 *A^2										
87) Terphenyl-d1	1.267	1.103	1.173	1.176	1.129	1.170	1.303	1.471	1.224	9.80
88) Butylbenzylp	0.656	0.562	0.599	0.599	0.541	0.542	0.626	0.649	0.597	7.62
89) Benzo[a]anth	1.323	1.156	1.198	1.274	1.231	1.257	1.526	1.833	1.350	16.67
90) 3,3'-Dichlor	0.500	0.481	0.465	0.474	0.469	0.449	0.503	0.492	0.479	3.91

8.6.1

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Initial Calibration Summary

Job Number: JD43215 **Sample:** E2M5549-ICC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123317.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

91)	Chrysene	1.322	1.184	1.227	1.265	1.217	1.269	1.463	1.804	1.344	15.23
92)	bis(2-Ethylh	0.908	0.772	0.820	0.839	0.776	0.789	0.828	0.873	0.826	5.80
93)	I Perylene-d12	----------ISTD----------									
94)	Di-n-octylph	1.190	0.992	1.039	1.322	1.376	1.423	1.405		1.250	14.22
95)	Benzo[b]fluo	1.227	1.062	1.119	1.222	1.228	1.348	1.389	1.675	1.284	14.87
96)	Benzo[k]fluo	1.148	1.023	1.014	1.123	1.174	1.174	1.335	1.439	1.179	12.33
97)	Benzo[a]pyre	1.226	1.065	1.117	1.184	1.161	1.179	1.299	1.438	1.209	9.58
98)	Indeno[1,2,3	1.341	1.147	1.208	1.334	1.259	1.160	1.330	1.484	1.283	8.76
99)	Dibenz(a,h)a	1.214	1.036	1.088	1.218	1.144	1.084	1.231	1.474	1.186	11.52
100)	Dibenz[a,h]a	1.445	1.230	1.299	1.413	1.346	1.303	1.489	1.516	1.380	7.35
101)	7,12-Dimethy	0.462	0.431	0.441	0.501	0.505	0.530	0.616		0.498	12.74
102)	Benzo[g,h,i]	1.483	1.231	1.308	1.508	1.441	1.348	1.402	1.677	1.425	9.63

(#) = Out of Range ### Number of calibration levels exceeded format ###

M2M5549LVI.M Wed Apr 20 09:49:32 2022

8.6.1

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E2M5549-ICV5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123321.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5549\2m123321.D Vial: 10
Acq On : 19 Apr 2022 9:43 pm Operator: kristis
Sample : icv5549-10 Inst : MS2M
Misc : op39061,e2m5549,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 09:29:42 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	113	0.00	4.82
2	t	1,4-Dioxane	0.560	0.487	13.0	100	0.00	2.45
6	t	Indene	2.448	2.040	16.7	90	0.00	5.02
7	t	Cumene	3.242	2.930	9.6	98	0.00	4.22
11	t	bis(2-Chloroethyl)ether	1.425	1.296	9.1	98	0.00	4.61
13	t	Decane	2.111	1.884	10.8	97	0.00	4.68
14	t	1,3-Dichlorobenzene	1.543	1.401	9.2	97	0.00	4.77
15	t	1,4-Dichlorobenzene	1.575	1.408	10.6	97	0.00	4.83
16	t	Benzyl alcohol	0.969	0.834	13.9	94	0.00	4.92
17	t	1,2-Dichlorobenzene	1.514	1.351	10.8	97	0.00	4.95
18	t	Acetophenone	2.081	1.943	6.6	104	0.00	5.14
20	t	2,2'-oxybis(1-Chloropropa	2.700	2.365	12.4	96	0.00	5.03
23	t	Hexachloroethane	0.606	0.538	11.2	94	0.00	5.23
24	I	Naphthalene-d8	1.000	1.000	0.0	112	0.00	5.94
26	t	Nitrobenzene	0.362	0.326	9.9	97	0.00	5.28
27	t	Quinoline	0.646	0.566	12.4	92	-0.01	6.31
28	t	Isophorone	0.687	0.623	9.3	98	0.00	5.49
32	t	bis(2-Chloroethoxy)methan	0.421	0.374	11.2	96	0.00	5.69
35		1,3,5-Trichlorobenzene	0.321	0.286	10.9	96	0.00	5.58
36	t	1,2,4-Trichlorobenzene	0.315	0.276	12.4	95	0.00	5.88
37		1,2,3-Trichlorobenzene	0.301	0.264	12.3	94	0.00	6.11
38	t	Naphthalene	1.022	0.924	9.6	97	0.00	5.97
40	t	2,3-Dichloroaniline	0.350	0.303	13.4	94	0.00	7.06
42	t	Hexachlorobutadiene	0.197	0.176	10.7	95	0.00	6.09
44	t	2-Methylnaphthalene	0.610	0.535	12.3	94	0.00	6.72
45	t	1-Methylnaphthalene	0.591	0.510	13.7	95	0.00	6.84
46	I	Acenaphthene-d10	1.000	1.000	0.0	109	0.00	8.07
48	t	1,2,4,5-Tetrachlorobenzen	0.546	0.497	9.0	95	0.00	6.92
52	t	2-Chloronaphthalene	1.200	1.105	7.9	96	0.00	7.32
53	t	Biphenyl	1.461	1.294	11.4	91	0.00	7.31
55	t	Dimethylphthalate	1.377	1.230	10.7	92	0.00	7.72
57	t	2,6-Dinitrotoluene	0.275	0.246	10.5	88	0.00	7.79
59	t	Acenaphthene	1.157	1.023	11.6	92	0.00	8.12
62	t	Dibenzofuran	1.705	1.479	13.3	91	0.00	8.37
63	t	2,4-Dinitrotoluene	0.351	0.311	11.4	85	-0.01	8.36
65	t	Diethylphthalate	1.311	1.180	10.0	92	-0.01	8.74
66	t	Fluorene	1.323	1.183	10.6	92	0.00	8.86
67	t	4-Chlorophenyl-phenylethe	0.645	0.564	12.6	91	0.00	8.89

Initial Calibration Verification

Job Number: JD43215 **Sample:** E2M5549-ICV5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123321.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

69	I	Phenanthrene-d10	1.000	1.000	0.0	107	0.00	10.29
72	t	Pentachloronitrobenzene	0.050	0.046#	8.0	90	-0.01	10.01
73	t	1,2-Diphenylhydrazine	0.723	0.667	7.7	91	0.00	9.12
75	t	4-Bromophenyl-phenylether	0.242	0.211	12.8	88	0.00	9.62
76	t	Hexachlorobenzene	0.287	0.248	13.6	90	0.00	9.68
78	t	Phenanthrene	1.106	0.976	11.8	91	0.00	10.32
79	t	Anthracene	1.095	0.968	11.6	90	0.00	10.40
80	t	Carbazole	0.974	0.872	10.5	90	0.00	10.67
81	t	Di-n-butylphthalate	1.126	1.075	4.5	89	0.00	11.32
82	t	Fluoranthene	1.208	1.042	13.7	92	0.00	12.20
83	t	Octadecane	0.634	0.590	6.9	89	0.00	10.24
84	I	Chrysene-d12	1.000	1.000	0.0	110	-0.01	14.51
		----------	True	Calc.	% Drift	----------		
86	t	Pyrene	10.000	8.535	14.6	89	0.00	12.55
		----------	AvgRF	CCRF	% Dev	----------		
88	t	Butylbenzylphthalate	0.597	0.535	10.4	90	0.00	13.72
89	t	Benzo[a]anthracene	1.350	1.132	16.1	94	0.00	14.50
91	t	Chrysene	1.344	1.113	17.2	93	0.00	14.55
92	t	bis(2-Ethylhexyl)phthalat	0.826	0.740	10.4	90	0.00	14.70
93	I	Perylene-d12	1.000	1.000	0.0	105	-0.01	16.64
94	t	Di-n-octylphthalate	1.250	1.058	15.4	94	0.00	15.70
95	t	Benzo[b]fluoranthene	1.284	1.056	17.8	91	-0.01	16.11
96	t	Benzo[k]fluoranthene	1.179	0.988	16.2	91	-0.01	16.15
97	t	Benzo[a]pyrene	1.209	1.050	13.2	90	-0.01	16.56
98	t	Indeno[1,2,3-cd]pyrene	1.283	1.169	8.9	92	-0.01	18.36
99	t	Dibenz(a,h)acridine	1.186	1.060	10.6	92	-0.02	17.97
100	t	Dibenz[a,h]anthracene	1.380	1.263	8.5	92	-0.02	18.41
101	t	7,12-Dimethylbenz(a)anthr	0.498	0.277	44.4#	63	-0.01	16.12
102	t	Benzo[g,h,i]perylene	1.425	1.288	9.6	91	-0.02	18.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123317.D M2M5549LVI.M Wed Apr 20 09:49:14 2022

8.6.2

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Initial Calibration Verification

Job Number: JD43215 **Sample:** E2M5549-ICV5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123322.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5549\2m123322.D Vial: 11
Acq On : 19 Apr 2022 10:10 pm Operator: kristis
Sample : icv5549-10 Inst : MS2M
Misc : op39061,e2m5549,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 09:29:42 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	118	0.00	4.82
9	t	Phenol	1.744	1.610	7.7	102	0.00	4.53
12	t	2-Chlorophenol	1.415	1.276	9.8	100	0.00	4.64
19	t	2-Methylphenol	1.274	1.159	9.0	104	0.00	5.00
21	t	3&4-Methylphenol	1.279	1.187	7.2	104	0.00	5.13
24	I	Naphthalene-d8	1.000	1.000	0.0	119	0.00	5.94
29	t	2-Nitrophenol	0.177	0.164	7.3	104	0.00	5.57
30	t	2,4-Dimethylphenol	0.347	0.310	10.7	101	0.00	5.60
31	t	Benzoic acid	0.166	0.164	1.2	96	-0.02	5.67
33	t	2,4-Dichlorophenol	0.281	0.254	9.6	100	-0.01	5.79
34	t	2,6-Dichlorophenol	0.283	0.254	10.2	102	0.00	6.02
41	t	Hydroquinone	0.228	0.230	-0.9	101	-0.01	6.34
43	t	4-Chloro-3-methylphenol	0.280	0.267	4.6	103	0.00	6.53
46	I	Acenaphthene-d10	1.000	1.000	0.0	121	0.00	8.07
49	t	2,4,6-Trichlorophenol	0.370	0.346	6.5	106	0.00	7.06
50	t	2,4,5-Trichlorophenol	0.389	0.369	5.1	101	0.00	7.10
		----------	True	Calc.	% Drift	----------		
60	t	2,4-Dinitrophenol	20.000	17.683	11.6	95	0.00	8.17
		----------	AvgRF	CCRF	% Dev	----------		
61	t	4-Nitrophenol	0.122	0.110	9.8	93	-0.01	8.25
64		2,3,4,6-Tetrachlorophenol	0.302	0.288	4.6	103	-0.01	8.54
69	I	Phenanthrene-d10	1.000	1.000	0.0	124	-0.01	10.28
		----------	True	Calc.	% Drift	----------		
70	t	4,6-Dinitro-2-methylpheno	10.000	8.559	14.4	100	-0.02	8.94
77	t	Pentachlorophenol	0.131	0.131	0.0	104	-0.01	9.99

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123317.D M2M5549LVI.M Wed Apr 20 09:49:16 2022

8.6.3

Initial Calibration Verification

Job Number: JD43215 **Sample:** E2M5549-ICV5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123323.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5549\2m123323.D Vial: 12
Acq On : 19 Apr 2022 10:36 pm Operator: kristis
Sample : icv5549-10 Inst : MS2M
Misc : op39061,e2m5549,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 09:29:42 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109	0.00	4.81
3	t	Pyridine	1.312	1.406	-7.2	105	0.00	2.75
4	t	N-Nitrosodimethylamine	0.747	0.793	-6.2	107	0.00	2.71
10		Aniline	2.164	2.197	-1.5	99	0.00	4.55
22	t	n-Nitroso-di-n-propylamin	1.009	1.011	-0.2	108	-0.01	5.13
24	I	Naphthalene-d8	1.000	1.000	0.0	108	0.00	5.94
39	t	4-Chloroaniline	0.408	0.413	-1.2	102	0.00	6.01
46	I	Acenaphthene-d10	1.000	1.000	0.0	108	0.00	8.07
54	t	2-Nitroaniline	0.356	0.363	-2.0	99	0.00	7.45
58	t	3-Nitroaniline	0.289	0.302	-4.5	101	-0.01	8.01
68	t	4-Nitroaniline	0.269	0.253	5.9	90	-0.01	8.89
69	I	Phenanthrene-d10	1.000	1.000	0.0	110	-0.01	10.28
71	t	n-Nitrosodiphenylamine	0.628	0.619	1.4	101	0.00	9.06
84	I	Chrysene-d12	1.000	1.000	0.0	107	-0.02	14.50
			True	Calc.	% Drift			
85	t	Benzidine	10.000	8.841	11.6	93	-0.01	12.46
90	t	3,3'-Dichlorobenzidine	0.479	0.490	-2.3	105	-0.01	14.50

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123317.D M2M5549LVI.M Wed Apr 20 09:49:18 2022

8.6.4

Initial Calibration Verification

Job Number: JD43215 **Sample:** E2M5549-ICV5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123324.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5549\2m123324.D Vial: 13
Acq On : 19 Apr 2022 11:03 pm Operator: kristis
Sample : icv5549-10 Inst : MS2M
Misc : op39061,e2m5549,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 09:29:42 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
46	I	Acenaphthene-d10	1.000	1.000	0.0	140	0.00	8.07
47	t	Hexachlorocyclopentadiene	0.365	0.354	3.0	124	0.00	6.91
56	t	Acenaphthylene	1.617	1.458	9.8	118	0.00	7.87

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123317.D M2M5549LVI.M Wed Apr 20 09:49:20 2022

8.6.5

Initial Calibration Summary

Job Number: JD43215 **Sample:** E2M5550-ICC5550
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123339.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS2M

Method : C:\MSDCHEM\1\METHODS\M2M5550LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 10:19:21 2022
Response via : Initial Calibration

Calibration Files
10 =2m123339.D 20 =2m123337.D 16 =2m123338.D 5 =2m123340.D
2 =2m123341.D 1 =2m123342.D 0.4 =2m123343.D 0.2 =2m123344.D

Compound	10	20	16	5	2	1	0.4	0.2	Avg	%RSD
103) 1,4-Dichlorobenzene-d	----------ISTD----------									
104) Benzaldehyde	1.210	1.149	1.109	1.224	1.283	1.267	1.208	1.376	1.228	6.70
105) Phenanthrene-d10a	----------ISTD----------									
106) Atrazine	0.093	0.092	0.086	0.091	0.092	0.096	0.083	0.079	0.089	6.44
107) Naphthalene-d8a	----------ISTD----------									
108) Caprolactam	0.172	0.184	0.175	0.170	0.170	0.165	0.165	0.193	0.174	5.53
111) Phenanthrene-d10b	----------ISTD----------									
112) 1-chloroocta	0.422	0.425	0.407	0.416	0.394	0.371	0.324	0.296	0.382	12.57
113) o-terphenyl	0.607	0.586	0.557	0.619	0.656	0.659	0.626	0.651	0.620	5.83

(#) = Out of Range ### Number of calibration levels exceeded format ###

M2M5549LVI.M Wed Apr 20 10:22:13 2022

8.6.6

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E2M5550-ICV5550
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123345.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5550\2m123345.D Vial: 10
Acq On : 20 Apr 2022 6:56 am Operator: chriss2
Sample : icv5550-10 Inst : MS2M
Misc : op39061,e2m5550,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 10:19:21 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
103	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	92	0.00	4.81
104	Benzaldehyde	1.228	1.141	7.1	87	0.00	4.48
105	Phenanthrene-d10a	1.000	1.000	0.0	99	0.00	10.28
106	Atrazine	0.089	0.088	1.1	94	0.00	9.91
107	Naphthalene-d8a	1.000	1.000	0.0	93	0.00	5.94
108 t	Caprolactam	0.174	0.176	-1.1	95	0.02	6.36

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123339a.D M2M5549LVI.M Wed Apr 20 10:22:26 2022

8.6.7

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E2M5550-ICV5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123346.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5550\2m123346.D Vial: 11
Acq On : 20 Apr 2022 7:23 am Operator: chriss2
Sample : icv5549-10 Inst : MS2M
Misc : op39061,e2m5550,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 10:19:21 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	103	0.00	4.81
5	S	2-Fluorophenol	1.269	1.261	0.6	97	0.00	3.83
8	S	Phenol-d5	1.723	1.624	5.7	91	0.00	4.52
24	I	Naphthalene-d8	1.000	1.000	0.0	100	0.00	5.94
25	S	Nitrobenzene-d5	0.361	0.344	4.7	90	-0.01	5.26
46	I	Acenaphthene-d10	1.000	1.000	0.0	106	-0.01	8.07
51	S	2-Fluorobiphenyl	1.366	1.222	10.5	91	0.00	7.17
69	I	Phenanthrene-d10	1.000	1.000	0.0	110	-0.02	10.28
74	S	2,4,6-Tribromophenol	0.136	0.127	6.6	90	-0.01	9.21
84	I	Chrysene-d12	1.000	1.000	0.0	107	-0.02	14.50
		----------	AvgRF	CCRF	% Dev		----------	
87	S	Terphenyl-d14	1.224	1.174	4.1	99	-0.02	12.87

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123339a.D M2M5549LVI.M Wed Apr 20 10:22:28 2022

8.6.8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5551-CC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123348.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5551\2m123348.D Vial: 2
Acq On : 20 Apr 2022 10:46 am Operator: kristis
Sample : cc5549-10 Inst : MS2M
Misc : op39061,e2m5551,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 10:19:21 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	99	0.00	4.82
2	t	1,4-Dioxane	0.560	0.596	-6.4	107	0.00	2.45
3	t	Pyridine	1.312	1.583	-20.7#	107	0.00	2.75
4	t	N-Nitrosodimethylamine	0.747	0.891	-19.3	109	0.00	2.71
5	S	2-Fluorophenol	1.269	1.417	-11.7	104	0.00	3.82
6	t	Indene	2.448	2.596	-6.0	101	0.00	5.02
7	t	Cumene	3.242	3.553	-9.6	104	0.00	4.22
8	S	Phenol-d5	1.723	1.874	-8.8	101	0.00	4.52
9	t	Phenol	1.744	1.925	-10.4	102	0.00	4.53
10		Aniline	2.164	2.532	-17.0	104	0.00	4.56
11	t	bis(2-Chloroethyl)ether	1.425	1.560	-9.5	103	0.00	4.61
12	t	2-Chlorophenol	1.415	1.550	-9.5	102	0.00	4.65
13	t	Decane	2.111	2.296	-8.8	104	0.00	4.68
14	t	1,3-Dichlorobenzene	1.543	1.650	-6.9	100	0.00	4.77
15	t	1,4-Dichlorobenzene	1.575	1.628	-3.4	98	0.00	4.83
16	t	Benzyl alcohol	0.969	1.012	-4.4	100	0.00	4.92
17	t	1,2-Dichlorobenzene	1.514	1.592	-5.2	100	0.00	4.95
18	t	Acetophenone	2.081	2.149	-3.3	100	0.00	5.14
19	t	2-Methylphenol	1.274	1.395	-9.5	104	0.00	5.00
20	t	2,2'-oxybis(1-Chloropropa	2.700	2.854	-5.7	102	0.00	5.03
21	t	3&4-Methylphenol	1.279	1.347	-5.3	99	0.00	5.13
22	t	n-Nitroso-di-n-propylamin	1.009	1.027	-1.8	99	0.00	5.14
23	t	Hexachloroethane	0.606	0.633	-4.5	97	0.00	5.23
24	I	Naphthalene-d8	1.000	1.000	0.0	99	0.00	5.94
25	S	Nitrobenzene-d5	0.361	0.382	-5.8	100	0.00	5.26
26	t	Nitrobenzene	0.362	0.393	-8.6	104	0.00	5.29
27	t	Quinoline	0.646	0.680	-5.3	98	0.00	6.32
28	t	Isophorone	0.687	0.723	-5.2	100	0.00	5.49
29	t	2-Nitrophenol	0.177	0.186	-5.1	99	0.00	5.57
30	t	2,4-Dimethylphenol	0.347	0.363	-4.6	99	0.00	5.60
31	t	Benzoic acid	0.166	0.157	5.4	76	-0.02	5.67
32	t	bis(2-Chloroethoxy)methan	0.421	0.447	-6.2	102	0.00	5.69
33	t	2,4-Dichlorophenol	0.281	0.294	-4.6	96	0.00	5.79
34	t	2,6-Dichlorophenol	0.283	0.286	-1.1	96	0.00	6.02
35		1,3,5-Trichlorobenzene	0.321	0.329	-2.5	98	0.00	5.58
36	t	1,2,4-Trichlorobenzene	0.315	0.322	-2.2	99	0.00	5.88
37		1,2,3-Trichlorobenzene	0.301	0.307	2.0	96	0.00	6.11
38	t	Naphthalene	1.022	1.050	-2.7	98	0.00	5.97
39	t	4-Chloroaniline	0.408	0.432	-5.9	99	0.00	6.01
40	t	2,3-Dichloroaniline	0.350	0.347	0.9	95	0.00	7.06
41	t	Hydroquinone	0.228	0.234	-2.6	86	0.00	6.34

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5551-CC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123348.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	t	Hexachlorobutadiene	0.197	0.205	-4.1	98	0.00	6.09
43	t	4-Chloro-3-methylphenol	0.280	0.298	-6.4	96	0.00	6.53
44	t	2-Methylnaphthalene	0.610	0.624	-2.3	98	0.00	6.72
45	t	1-Methylnaphthalene	0.591	0.590	0.2	97	0.00	6.84
46	I	Acenaphthene-d10	1.000	1.000	0.0	95	0.00	8.07
47	t	Hexachlorocyclopentadiene	0.365	0.400	-9.6	95	0.00	6.91
48	t	1,2,4,5-Tetrachlorobenzen	0.546	0.554	-1.5	92	0.00	6.92
49	t	2,4,6-Trichlorophenol	0.370	0.390	-5.4	94	0.00	7.06
50	t	2,4,5-Trichlorophenol	0.389	0.443	-13.9	96	0.00	7.10
51	S	2-Fluorobiphenyl	1.366	1.429	-4.6	96	0.00	7.18
52	t	2-Chloronaphthalene	1.200	1.274	-6.2	96	0.00	7.32
53	t	Biphenyl	1.461	1.561	-6.8	96	0.00	7.31
54	t	2-Nitroaniline	0.356	0.407	-14.3	98	0.00	7.46
55	t	Dimethylphthalate	1.377	1.477	-7.3	96	0.00	7.72
56	t	Acenaphthylene	1.617	1.725	-6.7	95	0.00	7.87
57	t	2,6-Dinitrotoluene	0.275	0.304	-10.5	95	0.00	7.79
58	t	3-Nitroaniline	0.289	0.329	-13.8	97	-0.01	8.01
59	t	Acenaphthene	1.157	1.202	-3.9	95	0.00	8.12
		----------	True	Calc.	% Drift		----------	
60	t	2,4-Dinitrophenol	20.000	19.408	3.0	84	-0.01	8.16
		----------	AvgRF	CCRF	% Dev		----------	
61	t	4-Nitrophenol	0.122	0.113	7.4	75	-0.01	8.25
62	t	Dibenzofuran	1.705	1.772	-3.9	96	0.00	8.37
63	t	2,4-Dinitrotoluene	0.351	0.395	-12.5	94	-0.01	8.36
64		2,3,4,6-Tetrachlorophenol	0.302	0.342	-13.2	96	-0.01	8.54
65	t	Diethylphthalate	1.311	1.388	-5.9	95	0.00	8.75
66	t	Fluorene	1.323	1.415	-7.0	96	0.00	8.86
67	t	4-Chlorophenyl-phenylethe	0.645	0.670	-3.9	94	0.00	8.89
68	t	4-Nitroaniline	0.269	0.295	-9.7	92	0.00	8.90
69	I	Phenanthrene-d10	1.000	1.000	0.0	93	-0.01	10.28
		----------	True	Calc.	% Drift		----------	
70	t	4,6-Dinitro-2-methylpheno	10.000	10.328	-3.3	91	-0.01	8.95
		----------	AvgRF	CCRF	% Dev		----------	
71	t	n-Nitrosodiphenylamine	0.628	0.684	-8.9	94	0.00	9.06
72	t	Pentachloronitrobenzene	0.050	0.058	-16.0	99	-0.01	10.01
73	t	1,2-Diphenylhydrazine	0.723	0.816	-12.9	97	0.00	9.12
74	S	2,4,6-Tribromophenol	0.136	0.160	-17.6	95	0.00	9.22
75	t	4-Bromophenyl-phenylether	0.242	0.253	-4.5	92	0.00	9.62
76	t	Hexachlorobenzene	0.287	0.297	-3.5	94	0.00	9.68
77	t	Pentachlorophenol	0.131	0.156	-19.1	93	-0.01	9.99
78	t	Phenanthrene	1.106	1.157	-4.6	95	-0.01	10.32
79	t	Anthracene	1.095	1.165	-6.4	95	0.00	10.40
80	t	Carbazole	0.974	1.048	-7.6	95	-0.01	10.67
81	t	Di-n-butylphthalate	1.126	1.289	-14.5	93	0.00	11.31
82	t	Fluoranthene	1.208	1.207	0.1	93	-0.01	12.20
83	t	Octadecane	0.634	0.746	-17.7	99	0.00	10.24
84	I	Chrysene-d12	1.000	1.000	0.0	95	-0.02	14.50
		----------	True	Calc.	% Drift		----------	
85	t	Benzidine	10.000	11.103	-11.0	103	-0.01	12.46
86	t	Pyrene	10.000	10.523	-5.2	93	-0.01	12.55
		----------	AvgRF	CCRF	% Dev		----------	

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5551-CC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123348.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

87	S	Terphenyl-d14	1.224	1.219	0.4	91	-0.01	12.87
88	t	Butylbenzylphthalate	0.597	0.647	-8.4	93	0.00	13.72
89	t	Benzo[a]anthracene	1.350	1.332	1.3	95	-0.01	14.49
90	t	3,3'-Dichlorobenzidine	0.479	0.489	-2.1	93	-0.02	14.49
91	t	Chrysene	1.344	1.344	0.0	96	-0.01	14.54
92	t	bis(2-Ethylhexyl)phthalat	0.826	0.889	-7.6	93	0.00	14.69
93	I	Perylene-d12	1.000	1.000	0.0	103	-0.02	16.63
94	t	Di-n-octylphthalate	1.250	1.112	11.0	96	-0.01	15.69
95	t	Benzo[b]fluoranthene	1.284	1.195	6.9	100	-0.02	16.11
96	t	Benzo[k]fluoranthene	1.179	1.160	1.6	104	-0.02	16.15
97	t	Benzo[a]pyrene	1.209	1.228	-1.6	103	-0.02	16.56
98	t	Indeno[1,2,3-cd]pyrene	1.283	1.315	-2.5	101	-0.03	18.34
99	t	Dibenz(a,h)acridine	1.186	1.214	-2.4	103	-0.03	17.96
100	t	Dibenz[a,h]anthracene	1.380	1.429	-3.6	102	-0.03	18.40
101	t	7,12-Dimethylbenz(a)anthr	0.498	0.455	8.6	101	-0.02	16.11
102	t	Benzo[g,h,i]perylene	1.425	1.459	-2.4	101	-0.03	18.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123339a.D M2M5549LVI.M Wed Apr 20 15:10:18 2022

8.6.9

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5551-CC5550
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123349.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5551\2m123349.D Vial: 3
Acq On : 20 Apr 2022 11:12 am Operator: kristis
Sample : cc5550-10 Inst : MS2M
Misc : op39061,e2m5551,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 10:19:21 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
103	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	94	0.00	4.81
104	Benzaldehyde	1.228	1.219	0.7	95	0.00	4.48
105	Phenanthrene-d10a	1.000	1.000	0.0	94	0.00	10.28
106	Atrazine	0.089	0.092	-3.4	92	0.00	9.91
107	Naphthalene-d8a	1.000	1.000	0.0	94	0.00	5.94
108 t	Caprolactam	0.174	0.176	-1.1	96	0.02	6.36
111	Phenanthrene-d10b	1.000	1.000	0.0	94	0.00	10.28
112 s	1-chlorooctadecane	0.382	0.424	-11.0	94	0.00	12.16
113 s	o-terphenyl	0.620	0.602	2.9	93	0.00	10.93

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123339a.D M2M5549LVI.M Wed Apr 20 15:10:20 2022

8.6.10

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5551-ECC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123369.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\jo...22\e2m5551\2m123369.d Vial: 2
Acq On : 20 Apr 2022 8:08 pm Operator: kristis
Sample : ecc5549-10 Inst : MS2M
Misc : op39191,e2m5551,260,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5msplus 30m x .25mm x .25MWed Apr 20 11:00:32 2022
Last Update : Thu Apr 21 01:00:50 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	211#	0.00	4.82
2	t	1,4-Dioxane	0.557	0.570	-2.3	198	0.00	2.45
3	t	Pyridine	1.418	1.481	-4.4	202#	0.00	2.75
4	t	N-Nitrosodimethylamine	0.778	0.827	-6.3	203#	0.01	2.72
5	S	2-Fluorophenol	1.265	1.357	-7.3	210#	0.01	3.83
6	t	Indene	2.417	2.517	-4.1	202#	0.00	5.02
7	t	Cumene	3.154	3.434	-8.9	212#	0.00	4.22
8	S	Phenol-d5	1.571	1.804	-14.8	223#	0.01	4.53
9	t	Phenol	1.621	1.861	-14.8	224#	0.01	4.54
10		Aniline	1.974	2.394	-21.3	230#	0.00	4.56
11	t	bis(2-Chloroethyl)ether	1.277	1.507	-18.0	233#	0.00	4.61
12	t	2-Chlorophenol	1.395	1.496	-7.2	207#	0.00	4.65
13	t	Decane	1.195	2.178	-82.3#	369#	0.00	4.68
14	t	1,3-Dichlorobenzene	1.601	1.592	0.6	193	0.00	4.77
15	t	1,4-Dichlorobenzene	1.641	1.643	-0.1	195	0.00	4.83
16	t	Benzyl alcohol	0.868	1.009	-16.2	219#	0.00	4.92
17	t	1,2-Dichlorobenzene	1.520	1.567	-3.1	203#	0.00	4.95
18	t	Acetophenone	1.824	2.058	-12.8	219#	0.00	5.14
19	t	2-Methylphenol	1.159	1.326	-14.4	223#	0.00	5.01
20	t	2,2'-oxybis(1-Chloropropa	0.460	0.437	5.0	189	0.00	5.03
21	t	3&4-Methylphenol	1.263	1.291	-2.2	195	0.00	5.14
22	t	n-Nitroso-di-n-propylamin	0.851	0.992	-16.6	222#	0.00	5.14
23	t	Hexachloroethane	0.493	0.629	-27.6	251#	0.00	5.23
24	I	Naphthalene-d8	1.000	1.000	0.0	244#	0.00	5.94
25	S	Nitrobenzene-d5	0.328	0.387	-18.0	269#	0.00	5.27
26	t	Nitrobenzene	0.346	0.393	-13.6	259#	0.00	5.29
27	t	Quinoline	0.659	0.690	-4.7	244#	0.00	6.32
28	t	Isophorone	0.622	0.730	-17.4	270#	0.00	5.50
29	t	2-Nitrophenol	0.185	0.186	-0.5	218#	0.00	5.57
30	t	2,4-Dimethylphenol	0.339	0.370	-9.1	251#	0.00	5.60
31	t	Benzoic acid	0.182	0.106	41.8	123	0.02	5.69
32	t	bis(2-Chloroethoxy)methan	0.392	0.439	-12.0	255#	0.00	5.70
33	t	2,4-Dichlorophenol	0.280	0.297	-6.1	236#	0.00	5.80
34	t	2,6-Dichlorophenol	0.284	0.289	-1.8	225#	0.00	6.02
35		1,3,5-Trichlorobenzene	0.345	0.327	5.2	218#	0.00	5.58
36	t	1,2,4-Trichlorobenzene	0.324	0.327	-0.9	234#	0.00	5.89
37		1,2,3-Trichlorobenzene	0.298	0.311	-4.4	242#	0.00	6.11
38	t	Naphthalene	1.088	1.084	0.4	226#	0.00	5.97
39	t	4-Chloroaniline	0.441	0.428	2.9	217#	0.00	6.02
40	t	2,3-Dichloroaniline	0.347	0.349	-0.6	234#	0.00	7.07
41	t	Hydroquinone	0.290	0.278	4.1	217#	0.02	6.36

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5551-ECC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123369.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	t	Hexachlorobutadiene	0.162	0.210	-29.6	292#	0.00	6.09
43	t	4-Chloro-3-methylphenol	0.267	0.304	-13.9	255#	0.00	6.54
44	t	2-Methylnaphthalene	0.631	0.628	0.5	227#	0.00	6.72
45	t	1-Methylnaphthalene	0.603	0.594	1.5	229#	0.00	6.84
46	I	Acenaphthene-d10	1.000	1.000	0.0	257#	0.00	8.07
47	t	Hexachlorocyclopentadiene	0.354	0.350	1.1	221#	0.00	6.91
48		1,2,4,5-tetrachlorobenzen	0.583	0.576	1.2	234#	0.00	6.92
49	t	2,4,6-Trichlorophenol	0.373	0.377	-1.1	234#	0.00	7.07
50	t	2,4,5-Trichlorophenol	0.379	0.411	-8.4	255#	0.00	7.10
51	S	2-Fluorobiphenyl	1.353	1.431	-5.8	259#	0.00	7.18
52	t	2-Chloronaphthalene	1.208	1.282	-6.1	258#	0.00	7.32
53	t	Biphenyl	1.601	1.535	4.1	232#	0.00	7.30
54	t	2-Nitroaniline	0.298	0.398	-33.6	315#	0.00	7.46
55	t	Dimethylphthalate	1.271	1.445	-13.7	275#	0.00	7.73
56	t	Acenaphthylene	1.680	1.718	-2.3	234#	0.00	7.87
57	t	2,6-Dinitrotoluene	0.278	0.303	-9.0	250#	0.00	7.80
58	t	3-Nitroaniline	0.318	0.320	-0.6	224#	0.01	8.02
59	t	Acenaphthene	1.235	1.212	1.9	229#	0.00	8.12

			True	Calc.	% Drift			
60	t	2,4-Dinitrophenol	100.000	51.718	48.3	111	0.00	8.17

			AvgRF	CCRF	% Dev			
61	t	4-Nitrophenol	0.156	0.145	7.1	209#	0.02	8.28
62	t	Dibenzofuran	1.730	1.744	-0.8	234#	0.00	8.37
63	t	2,4-Dinitrotoluene	0.360	0.393	-9.2	226#	0.00	8.36
64		2,3,4,6-Tetrachlorophenol	0.293	0.287	2.0	223#	0.00	8.54
65	t	Diethylphthalate	1.236	1.365	-10.4	253#	0.00	8.75
66	t	Fluorene	1.353	1.373	-1.5	231#	0.00	8.86
67	t	4-Chlorophenyl-phenylethe	0.628	0.663	-5.6	250#	0.00	8.89
68	t	4-Nitroaniline	0.317	0.278	12.3	193	0.01	8.91
69	I	Phenanthrene-d10	1.000	1.000	0.0	241#	0.00	10.28
70	t	4,6-Dinitro-2-methylpheno	0.109	0.092	15.6	177	0.00	8.95
71	t	n-Nitrosodiphenylamine	0.667	0.699	-4.8	232#	0.00	9.07
72		Pentachloronitrobenzene	0.041	0.055	-34.1	270#	0.00	10.01
73	t	1,2-Diphenylhydrazine	0.707	0.823	-16.4	243#	0.00	9.12
74	S	2,4,6-Tribromophenol	0.110	0.139	-26.4	250#	0.00	9.22
75	t	4-Bromophenyl-phenylether	0.211	0.254	-20.4	266#	0.00	9.62
76	t	Hexachlorobenzene	0.247	0.290	-17.4	259#	0.00	9.68
77	t	Pentachlorophenol	0.154	0.111	27.9	147	0.00	10.00
78	t	Phenanthrene	1.145	1.160	-1.3	232#	0.00	10.32
79	t	Anthracene	1.108	1.164	-5.1	233#	0.00	10.40
80	t	Carbazole	1.023	1.043	-2.0	223#	0.00	10.67
81	t	Di-n-butylphthalate	1.191	1.341	-12.6	234#	0.00	11.31
82	t	Fluoranthene	1.118	1.187	-6.2	223#	0.00	12.20

			True	Calc.	% Drift			
83	t	Octadecane	50.000	69.526	-39.1	333	0.00	10.24

			AvgRF	CCRF	% Dev			
84	I	Chrysene-d12	1.000	1.000	0.0	215#	0.00	14.51
85		Benzidine	0.607	0.616	-1.5	181	0.00	12.46
86	t	Pyrene	1.290	1.574	-22.0	224#	0.00	12.55
87	S	Terphenyl-d14	0.976	1.191	-22.0	222#	0.00	12.87
88	t	Butylbenzylphthalate	0.518	0.676	-30.5	231#	0.00	13.72
89	t	Benzo[a]anthracene	1.168	1.323	-13.3	227#	0.00	14.49
90	t	3,3'-Dichlorobenzidine	0.416	0.550	-32.2	234#	0.01	14.50

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5551-ECC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123369.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

91	t	Chrysene	1.139	1.360	-19.4	248#	0.00	14.55
92	t	bis(2-Ethylhexyl)phthalat	0.671	0.955	-42.3	255#	0.00	14.69
93	I	Perylene-d12	1.000	1.000	0.0	343#	0.01	16.64
		----------	True	Calc.	% Drift	----------		
94	t	Di-n-octylphthalate	50.000	40.696	18.6	256	0.00	15.70
		----------	AvgRF	CCRF	% Dev	----------		
95	t	Benzo[b]fluoranthene	1.283	1.174	8.5	269#	0.00	16.11
96	t	Benzo[k]fluoranthene	1.160	1.178	-1.6	302#	0.01	16.16
97	t	Benzo[a]pyrene	1.108	1.222	-10.3	325#	0.00	16.56
		----------	True	Calc.	% Drift	----------		
98	t	Indeno[1,2,3-cd]pyrene	50.000	56.381	-12.8	363	0.02	18.36
99	t	Dibenz(a,h)acridine	50.000	56.796	-13.6	376	0.01	17.97
100	t	Dibenz[a,h]anthracene	50.000	56.337	-12.7	355	0.01	18.41
101	t	7,12-Dimethylbenz(a)anthr	50.000	36.141	27.7	217	0.00	16.12
		----------	AvgRF	CCRF	% Dev	----------		
102	t	Benzo[g,h,i]perylene	1.096	1.436	-31.0	372#	0.00	18.84

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3e117370.d M2M5549LVI.M Thu Apr 21 01:18:23 2022

8.6.11

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5551-ECC5550
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123370.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\jo...22\e2m5551\2m123370.d Vial: 3
Acq On : 20 Apr 2022 8:34 pm Operator: kristis
Sample : ecc5550-10 Inst : MS2M
Misc : op39191,e2m5551,260,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5msplus 30m x .25mm x .25MWed Apr 20 11:00:32 2022
Last Update : Thu Apr 21 01:00:50 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
103	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	150	0.00	4.81
104	Benzaldehyde	0.977	1.206	-23.4	175	0.00	4.48
105	Phenanthrene-d10a	1.000	1.000	0.0	178	0.00	10.28
106	Atrazine	0.089	0.093	-4.5	163	0.01	9.92
107 I	Naphthalene-d8a	1.000	1.000	0.0	173	0.00	5.94
108 T	Caprolactam	0.099	0.149	-50.5#	226#	0.01	6.37
109	Phenanthrene-d10b	1.000	1.000	0.0	178	0.00	10.28
110 S	1-chlorooctadecane	0.043	0.073	-69.8#	258#	0.00	12.15
111 S	o-terphenyl	0.483	0.608	-25.9	207#	0.00	10.93

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3e117370.d M2M5549LVI.M Thu Apr 21 01:14:08 2022

8.6.12

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5552-CC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123374.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5552\2m123374.D Vial: 2
Acq On : 21 Apr 2022 1:15 am Operator: chriss2
Sample : cc5549-5 Inst : MS2M
Misc : op39061,e2m5552,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 17:02:01 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	88	-0.02	4.80
2	t	1,4-Dioxane	0.560	0.551	1.6	88	-0.03	2.42
3	t	Pyridine	1.312	1.415	-7.9	88	-0.02	2.73
4	t	N-Nitrosodimethylamine	0.747	0.800	-7.1	90	-0.02	2.69
5	S	2-Fluorophenol	1.269	1.316	-3.7	89	-0.02	3.81
6	t	Indene	2.448	2.478	-1.2	88	-0.02	5.01
7	t	Cumene	3.242	3.275	-1.0	86	-0.02	4.20
8	S	Phenol-d5	1.723	1.791	-3.9	87	-0.01	4.51
9	t	Phenol	1.744	1.821	-4.4	87	-0.01	4.52
10		Aniline	2.164	2.386	-10.3	91	-0.02	4.54
11	t	bis(2-Chloroethyl)ether	1.425	1.467	-2.9	88	-0.02	4.59
12	t	2-Chlorophenol	1.415	1.459	-3.1	89	-0.02	4.63
13	t	Decane	2.111	2.132	-1.0	87	-0.02	4.67
14	t	1,3-Dichlorobenzene	1.543	1.564	-1.4	87	-0.02	4.76
15	t	1,4-Dichlorobenzene	1.575	1.567	0.5	87	-0.02	4.82
16	t	Benzyl alcohol	0.969	1.031	-6.4	92	-0.02	4.91
17	t	1,2-Dichlorobenzene	1.514	1.513	0.1	85	-0.02	4.93
18	t	Acetophenone	2.081	2.140	-2.8	88	-0.02	5.13
19	t	2-Methylphenol	1.274	1.304	-2.4	86	-0.01	4.99
20	t	2,2'-oxybis(1-Chloropropa	2.700	2.771	-2.6	89	-0.02	5.01
21	t	3&4-Methylphenol	1.279	1.320	-3.2	88	-0.01	5.12
22	t	n-Nitroso-di-n-propylamin	1.009	1.047	-3.8	89	-0.02	5.12
23	t	Hexachloroethane	0.606	0.599	1.2	84	-0.02	5.22
24	I	Naphthalene-d8	1.000	1.000	0.0	87	-0.02	5.93
25	S	Nitrobenzene-d5	0.361	0.372	-3.0	87	-0.02	5.25
26	t	Nitrobenzene	0.362	0.384	-6.1	91	-0.02	5.27
27	t	Quinoline	0.646	0.690	-6.8	90	-0.02	6.30
28	t	Isophorone	0.687	0.740	-7.7	91	-0.02	5.48
29	t	2-Nitrophenol	0.177	0.180	-1.7	87	-0.02	5.55
30	t	2,4-Dimethylphenol	0.347	0.364	-4.9	89	-0.02	5.59
31	t	Benzoic acid	0.166	0.135	18.7	71	-0.03	5.66
32	t	bis(2-Chloroethoxy)methan	0.421	0.442	-5.0	88	-0.02	5.68
33	t	2,4-Dichlorophenol	0.281	0.292	-3.9	88	-0.02	5.78
34	t	2,6-Dichlorophenol	0.283	0.293	-3.5	90	-0.02	6.01
35		1,3,5-Trichlorobenzene	0.321	0.319	0.6	86	-0.02	5.56
36	t	1,2,4-Trichlorobenzene	0.315	0.313	0.6	87	-0.02	5.87
37		1,2,3-Trichlorobenzene	0.301	0.303	-0.7	86	-0.02	6.09
38	t	Naphthalene	1.022	1.042	-2.0	86	-0.02	5.95
39	t	4-Chloroaniline	0.408	0.427	-4.7	87	-0.02	6.00
40	t	2,3-Dichloroaniline	0.350	0.361	-3.1	87	-0.02	7.05
41	t	Hydroquinone	0.228	0.291	-27.6#	108	-0.02	6.33

8.6.13
8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5552-CC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123374.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	t	Hexachlorobutadiene	0.197	0.203	-3.0	88	-0.02	6.07
43	t	4-Chloro-3-methylphenol	0.280	0.314	-12.1	93	-0.01	6.52
44	t	2-Methylnaphthalene	0.610	0.626	-2.6	88	-0.02	6.71
45	t	1-Methylnaphthalene	0.591	0.592	-0.2	86	-0.02	6.83
46	I	Acenaphthene-d10	1.000	1.000	0.0	87	-0.02	8.06
47	t	Hexachlorocyclopentadiene	0.365	0.352	3.6	80	-0.02	6.90
48	t	1,2,4,5-Tetrachlorobenzen	0.546	0.549	-0.5	86	-0.02	6.91
49	t	2,4,6-Trichlorophenol	0.370	0.383	-3.5	88	-0.02	7.05
50	t	2,4,5-Trichlorophenol	0.389	0.410	-5.4	85	-0.02	7.09
51	S	2-Fluorobiphenyl	1.366	1.385	-1.4	88	-0.02	7.16
52	t	2-Chloronaphthalene	1.200	1.217	-1.4	86	-0.02	7.31
53	t	Biphenyl	1.461	1.497	-2.5	87	-0.02	7.29
54	t	2-Nitroaniline	0.356	0.408	-14.6	94	-0.02	7.44
55	t	Dimethylphthalate	1.377	1.457	-5.8	91	-0.02	7.71
56	t	Acenaphthylene	1.617	1.667	-3.1	89	-0.02	7.86
57	t	2,6-Dinitrotoluene	0.275	0.316	-14.9	94	-0.02	7.78
58	t	3-Nitroaniline	0.289	0.330	-14.2	93	-0.02	8.00
59	t	Acenaphthene	1.157	1.173	-1.4	88	-0.02	8.10
		----------	True	Calc.	% Drift		----------	
60	t	2,4-Dinitrophenol	10.000	11.552	-15.5	104	-0.02	8.15
		----------	AvgRF	CCRF	% Dev		----------	
61	t	4-Nitrophenol	0.122	0.151	-23.8#	110	-0.01	8.25
62	t	Dibenzofuran	1.705	1.737	-1.9	87	-0.03	8.35
63	t	2,4-Dinitrotoluene	0.351	0.404	-15.1	94	-0.03	8.34
64		2,3,4,6-Tetrachlorophenol	0.302	0.315	-4.3	85	-0.02	8.53
65	t	Diethylphthalate	1.311	1.398	-6.6	89	-0.02	8.73
66	t	Fluorene	1.323	1.376	-4.0	88	-0.02	8.85
67	t	4-Chlorophenyl-phenylethe	0.645	0.665	-3.1	89	-0.02	8.87
68	t	4-Nitroaniline	0.269	0.290	-7.8	89	-0.02	8.88
69	I	Phenanthrene-d10	1.000	1.000	0.0	89	-0.03	10.27
		----------	True	Calc.	% Drift		----------	
70	t	4,6-Dinitro-2-methylpheno	5.000	5.123	-2.5	97	-0.03	8.93
		----------	AvgRF	CCRF	% Dev		----------	
71	t	n-Nitrosodiphenylamine	0.628	0.654	-4.1	91	-0.02	9.05
72	t	Pentachloronitrobenzene	0.050	0.055	-10.0	95	-0.03	10.00
73	t	1,2-Diphenylhydrazine	0.723	0.764	-5.7	91	-0.02	9.11
74	S	2,4,6-Tribromophenol	0.136	0.142	-4.4	90	-0.02	9.20
75	t	4-Bromophenyl-phenylether	0.242	0.242	0.0	88	-0.02	9.61
76	t	Hexachlorobenzene	0.287	0.288	-0.3	90	-0.03	9.66
77	t	Pentachlorophenol	0.131	0.127	3.1	76	-0.03	9.98
78	t	Phenanthrene	1.106	1.121	-1.4	91	-0.03	10.30
79	t	Anthracene	1.095	1.116	-1.9	89	-0.02	10.38
80	t	Carbazole	0.974	1.028	-5.5	94	-0.02	10.66
81	t	Di-n-butylphthalate	1.126	1.259	-11.8	94	-0.02	11.30
82	t	Fluoranthene	1.208	1.188	1.7	91	-0.03	12.18
83	t	Octadecane	0.634	0.687	-8.4	91	-0.03	10.22
84	I	Chrysene-d12	1.000	1.000	0.0	88	-0.03	14.49
		----------	True	Calc.	% Drift		----------	
85	t	Benzidine	5.000	4.609	7.8	83	-0.03	12.44
86	t	Pyrene	5.000	4.975	0.5	91	-0.03	12.53
		----------	AvgRF	CCRF	% Dev		----------	

8.6.13

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5552-CC5549
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123374.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

87	S	Terphenyl-d14	1.224	1.210	1.1	91	-0.03	12.85
88	t	Butylbenzylphthalate	0.597	0.632	-5.9	93	-0.03	13.70
89	t	Benzo[a]anthracene	1.350	1.232	8.7	85	-0.03	14.47
90	t	3,3'-Dichlorobenzidine	0.479	0.468	2.3	87	-0.03	14.48
91	t	Chrysene	1.344	1.274	5.2	89	-0.03	14.52
92	t	bis(2-Ethylhexyl)phthalat	0.826	0.833	-0.8	88	-0.02	14.68
93	I	Perylene-d12	1.000	1.000	0.0	104	-0.04	16.61
94	t	Di-n-octylphthalate	1.250	1.046	16.3	83	-0.03	15.68
95	t	Benzo[b]fluoranthene	1.284	1.117	13.0	96	-0.04	16.09
96	t	Benzo[k]fluoranthene	1.179	1.151	2.4	107	-0.04	16.13
97	t	Benzo[a]pyrene	1.209	1.140	5.7	101	-0.04	16.53
98	t	Indeno[1,2,3-cd]pyrene	1.283	1.116	13.0	87	-0.06	18.31
99	t	Dibenz(a,h)acridine	1.186	1.086	8.4	93	-0.05	17.93
100	t	Dibenz[a,h]anthracene	1.380	1.251	9.3	92	-0.06	18.37
101	t	7,12-Dimethylbenz(a)anthr	0.498	0.442	11.2	92	-0.04	16.09
102	t	Benzo[g,h,i]perylene	1.425	1.350	5.3	93	-0.07	18.80

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123340a.D M2M5549LVI.M Thu Apr 21 10:05:29 2022

8.9.13

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E2M5552-CC5550
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 2M123375.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E2M5552\2m123375.D Vial: 3
Acq On : 21 Apr 2022 1:41 am Operator: chriss2
Sample : cc5550-5 Inst : MS2M
Misc : op39061,e2m5552,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Apr 20 17:02:01 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
103		1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	86	-0.01	4.80
104		Benzaldehyde	1.228	1.242	-1.1	87	-0.01	4.47
105		Phenanthrene-d10a	1.000	1.000	0.0	93	-0.01	10.27
106		Atrazine	0.089	0.097	-9.0	100	0.00	9.90
107		Naphthalene-d8a	1.000	1.000	0.0	87	-0.01	5.93
108	t	Caprolactam	0.174	0.193	-10.9	99	0.00	6.35
111		Phenanthrene-d10b	1.000	1.000	0.0	93	-0.01	10.27
112	s	1-chlorooctadecane	0.382	0.447	-17.0	100	-0.02	12.14
113	s	o-terphenyl	0.620	0.614	1.0	92	-0.01	10.92

(#) = Out of Range SPCC's out = 0 CCC's out = 0
2m123340a.D M2M5549LVI.M Thu Apr 21 10:05:31 2022

8.6.14

8

Initial Calibration Summary

Job Number: JD43215 **Sample:** E3P4567-ICC4567
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 3P96183.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MSGC3P

Method : C:\MSDCHEM\1\MET...\M3P4567SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Apr 08 09:32:59 2022
Response via : Initial Calibration

Calibration Files
1.0 =3p96185.D 0.5 =3p96187.D 0.2 =3p96183.D 0.1 =3p96189.D
0.04=3p96188.D 0.02=3p96184.D 0.01=3p96186.D .004=3p96190.D
.002=3p96191.D =

Compound	1.0	0.5	0.2	0.1	0.04	0.02	0.01	.004	.002	Avg	%RSD
1) I 1-Methylnaphthalene-d	ISTD										
2) 1,4-dioxane	0.283	0.264	0.283	0.249	0.239	0.321				0.273	10.77
3) 2-Fluorophenol	0.496	0.521	0.595	0.566	0.593	0.757	0.802	0.576	0.516	0.603	17.71
4) Phenol-d5	0.741	0.754	0.832	0.764	0.782	1.014	0.927	0.759	0.791	0.818	11.35
5) Phenol	0.735	0.769	0.867	0.830	0.866	1.194	0.855			0.874	17.19
6) bis(2-Chloroethyl)ether										0.000#	-1.00
7) Nitrobenzene-d5	0.534	0.552	0.635	0.596	0.633	0.786	0.740	0.678	0.588	0.638	13.15
8) Naphthalene	2.202	2.170	2.273	2.176	2.285	2.779	2.827	2.676	2.579	2.441	11.14
9) Hexachlorobutadiene	0.283	0.300	0.299	0.317	0.406	0.466	0.422	0.418		0.364	19.60
10) 2-Methylnaphthalene	1.216	1.206	1.211	1.220	1.267	1.533	1.460	1.404	1.221	1.304	9.70
11) 1-Methylnaphthalene	1.214	1.219	1.256	1.285	1.337	1.585	1.761	1.496	1.617	1.419	14.16
12) I Fluorene-d10	ISTD										
13) 2-Fluorobiphenyl	0.938	1.057	1.071	1.106	1.239	1.447	1.662	1.425	1.355	1.256	18.63
14) Acenaphthylene	1.640	1.752	1.651	1.768	1.831	2.105	2.555	1.964	1.839	1.900	15.03
15) Acenaphthene	1.083	1.136	1.119	1.218	1.258	1.440	1.586	1.398	1.359	1.289	13.11
16) 4,6-dinitro-2-methylphenol	0.112	0.096	0.094	0.080	0.075	0.095	0.059			0.087	19.95
17) Fluorene	1.190	1.260	1.206	1.281	1.351	1.531	1.462	1.556	1.314	1.350	10.07
18) 2,4,6-Tribromophenol	0.146	0.150	0.146	0.140	0.144	0.170	0.159	0.156	0.145	0.151	6.25
19) I Fluoranthene-d10	ISTD										
20) Hexachlorobenzene	0.210	0.225	0.219	0.226	0.252	0.287	0.324	0.304	0.293	0.260	16.34
21) Pentachlorophenol	0.127	0.122	0.129	0.109	0.107	0.161	0.149	0.111	0.141	0.129	14.58
22) Phenanthrene	1.020	1.083	1.071	1.077	1.143	1.331	1.440	1.228	1.367	1.196	12.70
23) Anthracene											

8.6.15

8

Initial Calibration Summary

Job Number: JD43215 **Sample:** E3P4567-ICC4567
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 3P96183.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
           1.018 1.076 1.074 1.055 1.212 1.326 1.328 1.237 1.085   1.157   10.40
24)  Fluoranthene
           1.153 1.213 1.192 1.256 1.350 1.563 1.692 1.788 1.566   1.419   16.68
25)  Pyrene
           1.205 1.279 1.252 1.289 1.386 1.599 1.883 1.652 1.721   1.474   16.57
26)  Terphenyl-d14
           0.539 0.612 0.657 0.687 0.735 0.878 0.893 0.857 0.851   0.745   17.39
27)  Benzo[a]anthracene
           1.067 1.088 1.075 1.070 1.036 1.346 1.037 0.918 0.979   1.069   10.98
28)  Chrysene
           1.116 1.153 1.192 1.188 1.315 1.565 1.665 1.702 1.599   1.389   17.35

29) I   Benzo(a)pyrene-d12    ----------------ISTD--------------------
30)  Benzo[b]fluoranthene
           1.360 1.525 1.344 1.681 1.501 1.763 1.457 1.365 1.075   1.452   13.92
31)  Benzo[k]fluoranthene
           1.504 1.512 1.560 1.437 1.654 1.779 2.190 2.059 1.930   1.736   15.53
32)  Benzo[a]pyrene
           1.314 1.508 1.385 1.526 1.565 1.837 2.415 1.427 1.453   1.603   21.09
            ---- Quadratic regression ----  Coefficient =  0.9961
              Response Ratio = 0.00103 + 1.56807 *A + -0.19640 *A^2

33)  Indeno[1,2,3-cd]pyrene
           1.556 1.619 1.529 1.595 1.529 1.694 1.525 1.601 1.249   1.544    8.00
34)  Dibenz[a,h]anthracene
           1.225 1.284 1.245 1.287 1.240 1.402 1.261 1.232 1.098   1.253    6.31
35)  Benzo[g,h,i]perylene
           1.334 1.400 1.360 1.448 1.446 1.624 1.496 1.489 1.514   1.457    6.04
-------------------------------------------------------------------------------
(#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          M3P4567SIMLVI.M        Fri Apr 08 09:52:43 2022
```

8.6.15

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E3P4567-ICV4567
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 3P96192.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P4567\3p96192.D Vial: 11
Acq On : 7 Apr 2022 5:10 pm Operator: kristis
Sample : icv4567-0.2 Inst : MSGC3P
Misc : op38703a,e3p4567,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M3P4567SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Apr 08 09:32:59 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	116	0.00	6.85
2	t	1,4-dioxane	0.273	0.284	-4.0	116	0.01	1.91
5		Phenol	0.874	0.808	7.6	108	0.00	4.55
12	I	Fluorene-d10	1.000	1.000	0.0	105	0.00	8.31
16	t	4,6-dinitro-2-methylpheno	0.087	0.078	10.3	87	0.00	8.41
19	I	Fluoranthene-d10	1.000	1.000	0.0	99	0.00	10.42
21	t	Pentachlorophenol	0.129	0.116	10.1	88	0.00	9.07

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p96183.D M3P4567SIMLVI.M Fri Apr 08 09:53:00 2022

8.6.16

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E3P4567-ICV4567
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 3P96193.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P4567\3p96193.D Vial: 12
Acq On : 7 Apr 2022 5:33 pm Operator: kristis
Sample : icv4567-0.2 Inst : MSGC3P
Misc : op38703a,e3p4567,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M3P4567SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Apr 08 09:32:59 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	122	0.00	6.85
8	t	Naphthalene	2.441	2.355	3.5	126	0.00	6.11
9	t	Hexachlorobutadiene	0.364	0.291	20.1	118	0.00	6.24
10	t	2-Methylnaphthalene	1.304	1.194	8.4	120	0.00	6.79
11	t	1-Methylnaphthalene	1.419	1.241	12.5	120	-0.12	6.88
12	I	Fluorene-d10	1.000	1.000	0.0	116	0.00	8.31
14	t	Acenaphthylene	1.900	1.719	9.5	121	0.00	7.67
15	t	Acenaphthene	1.289	1.066	17.3	110	0.00	7.84
17	t	Fluorene	1.350	1.186	12.1	114	0.00	8.34
19	I	Fluoranthene-d10	1.000	1.000	0.0	115	0.00	10.42
20	t	Hexachlorobenzene	0.260	0.219	15.8	116	0.00	8.88
22	t	Phenanthrene	1.196	1.083	9.4	117	0.00	9.28
23	t	Anthracene	1.157	1.046	9.6	113	0.00	9.33
24	t	Fluoranthene	1.419	1.139	19.7	110	0.00	10.44
25	t	Pyrene	1.474	1.174	20.4	108	0.00	10.66
27	t	Benzo[a]anthracene	1.069	1.035	3.2	111	0.00	11.83
28	t	Chrysene	1.389	1.119	19.4	108	0.00	11.87
29	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	107	0.00	13.08
30	t	Benzo[b]fluoranthene	1.452	1.345	7.4	107	0.00	12.83
31	t	Benzo[k]fluoranthene	1.736	1.661	4.3	114	0.00	12.85
			True	Calc.	% Drift			
32	t	Benzo[a]pyrene	200.000	177.252	11.4	105	0.00	13.10
			AvgRF	CCRF	% Dev			
33	t	Indeno[1,2,3-cd]pyrene	1.544	1.434	7.1	101	0.00	14.15
34	t	Dibenz[a,h]anthracene	1.253	1.191	4.9	103	0.00	14.17
35	t	Benzo[g,h,i]perylene	1.457	1.366	6.2	108	0.00	14.43

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p96183.D M3P4567SIMLVI.M Fri Apr 08 09:53:11 2022

8.6.17

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E3P4582-CC4567
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 3P96470.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P4582\3p96470.D Vial: 2
Acq On : 20 Apr 2022 1:54 am Operator: chriss2
Sample : cc4567-0.1 Inst : MSGC3P
Misc : op39136a,e3p4582,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M3P4567SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Apr 08 10:09:34 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	88	0.00	6.77
2	t	1,4-dioxane	0.273	0.374	-37.0#	131	-0.05	1.80
3	S	2-Fluorophenol	0.603	0.543	10.0	84	-0.03	3.51
4	S	Phenol-d5	0.818	0.758	7.3	87	-0.02	4.46
5		Phenol	0.874	0.821	6.1	87	-0.02	4.47
7	S	Nitrobenzene-d5	0.638	0.678	-6.3	100	0.00	5.33
8	t	Naphthalene	2.441	2.327	4.7	94	0.00	6.04
9	t	Hexachlorobutadiene	0.364	0.359	1.4	105	0.00	6.17
10	t	2-Methylnaphthalene	1.304	1.294	0.8	93	0.00	6.72
11	t	1-Methylnaphthalene	1.419	1.399	1.4	95	-0.13	6.80
12	I	Fluorene-d10	1.000	1.000	0.0	94	0.00	8.24
13	S	2-Fluorobiphenyl	1.256	1.123	10.6	96	0.00	7.09
14	t	Acenaphthylene	1.900	1.759	7.4	94	0.00	7.59
15	t	Acenaphthene	1.289	1.180	8.5	91	0.00	7.76
16	t	4,6-dinitro-2-methylpheno	0.087	0.178	-104.6#	210#	0.00	8.34
17	t	Fluorene	1.350	1.305	3.3	96	0.00	8.26
18	S	2,4,6-Tribromophenol	0.151	0.200	-32.5#	134	0.00	8.50
19	I	Fluoranthene-d10	1.000	1.000	0.0	95	0.00	10.34
20	t	Hexachlorobenzene	0.260	0.261	-0.4	109	-0.01	8.80
21	t	Pentachlorophenol	0.129	0.169	-31.0#	147	0.00	9.00
22	t	Phenanthrene	1.196	1.099	8.1	97	0.00	9.20
23	t	Anthracene	1.157	1.087	6.1	98	0.00	9.25
24	t	Fluoranthene	1.419	1.269	10.6	96	0.00	10.36
25	t	Pyrene	1.474	1.314	10.9	97	0.00	10.57
26	S	Terphenyl-d14	0.745	0.672	9.8	93	0.00	10.76
27	t	Benzo[a]anthracene	1.069	1.121	-4.9	99	0.00	11.75
28	t	Chrysene	1.389	1.230	11.4	98	0.00	11.78
29	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	107	0.00	13.00
30	t	Benzo[b]fluoranthene	1.452	1.649	-13.6	104	0.00	12.74
31	t	Benzo[k]fluoranthene	1.736	1.495	13.9	111	0.00	12.76
			True	Calc.	% Drift			
32	t	Benzo[a]pyrene	100.000	95.083	4.9	103	0.00	13.02
			AvgRF	CCRF	% Dev			
33	t	Indeno[1,2,3-cd]pyrene	1.544	1.778	-15.2	119	-0.03	14.03
34	t	Dibenz[a,h]anthracene	1.253	1.466	-17.0	121	-0.03	14.05
35	t	Benzo[g,h,i]perylene	1.457	1.550	-6.4	114	-0.03	14.30

8.6.18

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E3P4582-CC4567
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 3P96470.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p96189.D M3P4567SIMLVI.M Wed Apr 20 15:45:05 2022

8.6.18

8

Initial Calibration Summary

Job Number: JD43215 **Sample:** E4P2764-ICC2764
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P52917.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS4P

Method : C:\MSDCHEM\1\MET...\M4P2764SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Thu Apr 14 14:56:49 2022
Response via : Initial Calibration

Calibration Files
1.0 =4p52918.D 0.5 =4p52920.D 0.2 =4p52922.D 0.1 =4p52917.D
0.04=4p52921.D 0.02=4p52916.D 0.01=4p52919.D .004=4p52923.D
.002=4p52924.D = = =

Compound	1.0	0.5	0.2	0.1	0.04	0.02	0.01	.004	.002	Avg	%RSD
1) I 1-Methylnaphthalene-d ----------ISTD----------											
2) 1,4-Dioxane	0.130	0.178	0.181	0.197	0.208	0.113				0.168	22.66
---- Quadratic regression ---- Coefficient = 0.9974											
Response Ratio = -0.00085 + 0.21343 *A + -0.13213 *A^2											
3) 2-Fluorophenol	0.421	0.407	0.448	0.462	0.440	0.520	0.496	0.488	0.429	0.457	8.28
4) Phenol-d5	0.701	0.681	0.701	0.726	0.686	0.779	0.834	0.759	0.663	0.726	7.61
5) Phenol	0.727	0.711	0.746	0.786	0.767	0.926	0.867	0.773		0.788	9.29
6) bis(2-Chloroethyl)ether										0.000#	-1.00
7) Nitrobenzene-d5	0.743	0.741	0.751	0.769	0.787	0.863	0.901	0.835	0.820	0.801	7.13
8) Naphthalene	2.138	2.154	2.143	2.220	2.326	2.594	2.638	2.820	2.914	2.439	12.60
9) Hexachlorobutadiene	0.826	0.845	0.846	0.862	0.950	1.039	1.033			0.914	10.06
10) 2-Methylnaphthalene	1.205	1.250	1.212	1.299	1.266	1.593	1.342			1.310	10.20
11) 1-Methylnaphthalene	1.247	1.270	1.262	1.333	1.330	1.507	1.530	1.648	1.717	1.427	12.46
12) Hexachlorocyclopentadiene										0.000#	-1.00
13) I Fluorene-d10 ----------ISTD----------											
14) 2-Fluorobiphenyl	1.358	1.280	1.162	1.204	1.297	1.432	1.526	1.403	1.440	1.345	8.83
15) Acenaphthylene	1.489	1.494	1.407	1.524	1.558	1.853	2.042	2.015	2.123	1.723	16.39
16) Acenaphthene	1.074	1.087	1.035	1.091	1.151	1.339	1.451	1.252	1.512	1.221	14.42
17) Fluorene	1.175	1.185	1.118	1.160	1.243	1.434	1.566	1.487	1.383	1.306	12.57
18) 4,6-dinitro-2-methylphenol	0.245	0.235	0.191	0.195	0.152	0.178				0.200	17.63
19) 2,4,6-Tribromophenol	0.461	0.454	0.410	0.433	0.459	0.500	0.513	0.422	0.444	0.455	7.46
20) Fluoranthene-d10 ----------ISTD----------											
21) Hexachlorobenzene	0.439	0.448	0.424	0.426	0.453	0.537	0.528	0.674	0.636	0.507	18.52

8.6.19

8

Initial Calibration Summary

Job Number: JD43215 **Sample:** E4P2764-ICC2764
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P52917.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
22)  Pentachlorophenol
          0.220 0.196 0.212 0.195 0.155 0.215 0.179 0.170              0.193   12.06
23)  Phenanthrene
          1.044 1.060 1.025 1.041 1.121 1.349 1.498 1.371 1.377        1.209   15.38
24)  Anthracene
          1.050 1.034 1.026 1.040 1.085 1.335 1.167 1.512 1.130        1.153   14.41
25)  Fluoranthene
          1.218 1.258 1.230 1.265 1.390 1.616 1.738                    1.388   15.00
26)  Pyrene
          1.262 1.275 1.258 1.305 1.396 1.560 1.666 1.675 1.907        1.478   15.83
27)  Terphenyl-d14
          0.747 0.770 0.731 0.737 0.783 0.919 0.924 0.926 0.897        0.826   10.59
28)  Benzo[a]anthracene
          1.176 1.190 1.131 1.172 1.206 1.513 1.550 1.534 1.448        1.324   13.62
29)  Chrysene
          1.057 1.065 1.083 1.097 1.197 1.320 1.365 1.436 1.625        1.249   15.97

30) I   Benzo(a)pyrene-d12    ----------------ISTD---------------------
31)  Benzo[b]fluoranthene
          1.641 1.763 1.727 1.844 1.894 2.247 2.281 2.215 2.622        2.026   16.21
32)  Benzo[k]fluoranthene
          1.563 1.577 1.519 1.504 1.728 2.032 2.021 2.076 2.594        1.846   19.79
33)  Benzo[a]pyrene
          1.469 1.561 1.509 1.548 1.702 2.082 2.368                    1.748   19.65
34)  Indeno[1,2,3-cd]pyrene
          1.801 1.923 1.820 1.768 2.031 2.219 2.548 2.721 2.765        2.177   18.53
35)  Dibenz[a,h]anthracene
          1.519 1.600 1.549 1.498 1.798 1.913 2.102 2.442              1.802   18.63
36)  Benzo[g,h,i]perylene
          1.484 1.573 1.548 1.489 1.764 1.916 2.032 2.337 2.451        1.844   19.88
------------------------------------------------------------------------------
(#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          M4P2764SIMLVI.M        Thu Apr 14 16:12:01 2022   YING
```

8.6.19

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E4P2764-ICV2764
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P52925.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
Data File : C:\msdchem\1\DATA\E4P2764\4p52925.D          Vial: 11
Acq On    : 14 Apr 2022   2:48 pm                    Operator: kristis
Sample    : icv2764-0.2                              Inst    : MS4P
Misc      : op38957a,e4p2764,250,,,1,1               Multiplr: 1.00
MS Integration Params: lscint.p

Method       : C:\MSDCHEM\1\MET...\M4P2764SIMLVI.M (RTE Integrator)
Title        : Semi Volatile Extractables by GC/MS
Last Update  : Thu Apr 14 14:56:49 2022
Response via : Multiple Level Calibration

Min. RRF     :   0.050  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  30%     Max. Rel. Area : 200%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1 I	1-Methylnaphthalene-d10	1.000	1.000	0.0	87	-0.03	5.87
	----------	True	Calc.	% Drift	----------		
2 t	1,4-Dioxane	200.000	140.514	29.7	63	0.04	1.13
	----------	AvgRF	CCRF	% Dev	----------		
5	Phenol	0.788	0.704	10.7	82	-0.04	3.64
9 t	Hexachlorobutadiene	0.914	0.815	10.8	83	-0.03	5.27
13 I	Fluorene-d10	1.000	1.000	0.0	92	-0.02	7.33
18	4,6-dinitro-2-methylpheno	0.200	0.185	7.5	89	-0.02	7.47
20	Fluoranthene-d10	1.000	1.000	0.0	91	-0.03	9.40
21 t	Hexachlorobenzene	0.507	0.395	22.1	85	-0.04	7.87
22 t	Pentachlorophenol	0.193	0.196	-1.6	84	-0.04	8.10

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 4p52922.D  M4P2764SIMLVI.M      Thu Apr 14 16:12:19 2022   YING
```

8.6.20

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E4P2764-ICV2764
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P52926.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4P2764\4p52926.D Vial: 12
Acq On : 14 Apr 2022 3:11 pm Operator: kristis
Sample : icv2764-0.2 Inst : MS4P
Misc : op38957a,e4p2764,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M4P2764SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Thu Apr 14 14:56:49 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	86	-0.03	5.88
8	t	Naphthalene	2.439	2.275	6.7	92	-0.03	5.13
10	t	2-Methylnaphthalene	1.310	1.297	1.0	92	-0.03	5.82
11	t	1-Methylnaphthalene	1.427	1.268	11.1	87	-0.03	5.91
13	I	Fluorene-d10	1.000	1.000	0.0	90	-0.02	7.33
15	t	Acenaphthylene	1.723	1.388	19.4	89	-0.03	6.68
16	t	Acenaphthene	1.221	0.934	23.5	81	-0.03	6.85
17	t	Fluorene	1.306	1.066	18.4	86	-0.02	7.35
20		Fluoranthene-d10	1.000	1.000	0.0	89	-0.03	9.40
23	t	Phenanthrene	1.209	1.041	13.9	90	-0.04	8.27
24	t	Anthracene	1.153	1.026	11.0	89	-0.02	8.32
25	t	Fluoranthene	1.388	1.175	15.3	85	-0.03	9.41
26	t	Pyrene	1.478	1.190	19.5	84	-0.03	9.62
28	t	Benzo[a]anthracene	1.324	1.133	14.4	89	-0.03	10.80
29	t	Chrysene	1.249	1.017	18.6	83	-0.03	10.83
30	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	93	-0.03	12.01
31	t	Benzo[b]fluoranthene	2.026	1.664	17.9	90	-0.03	11.77
32	t	Benzo[k]fluoranthene	1.846	1.463	20.7	90	-0.03	11.79
33	t	Benzo[a]pyrene	1.748	1.457	16.6	90	-0.04	12.03
34	t	Indeno[1,2,3-cd]pyrene	2.177	1.708	21.5	87	-0.03	12.88
35	t	Dibenz[a,h]anthracene	1.802	1.476	18.1	89	-0.03	12.90
36	t	Benzo[g,h,i]perylene	1.844	1.478	19.8	89	-0.03	13.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p52922.D M4P2764SIMLVI.M Thu Apr 14 16:12:21 2022 YING

8.6.21
8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E4P2772-CC2764
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P53065.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\altheam\e4p2772\4p53065.d Vial: 2
Acq On : 20 Apr 2022 11:36 pm Operator: chriss2
Sample : cc2764-0.1 Inst : MS4P
Misc : op39135,e4p2772,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\MET...\M4P2764SIMLVI.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Thu Apr 21 04:27:22 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	73	0.00	5.81
			True	Calc.	% Drift			
2	t	1,4-Dioxane	100.000	119.254	-19.3	90	0.00	0.99
			AvgRF	CCRF	% Dev			
3	S	2-Fluorophenol	0.457	0.504	-10.3	79	0.00	2.44
4	S	Phenol-d5	0.726	0.754	-3.9	76	0.00	3.54
5		Phenol	0.788	0.816	-3.6	75	0.00	3.56
7	S	Nitrobenzene-d5	0.801	0.812	-1.4	77	0.00	4.36
8	t	Naphthalene	2.439	2.216	9.1	73	0.00	5.06
9	t	Hexachlorobutadiene	0.914	0.887	3.0	75	0.00	5.21
10	t	2-Methylnaphthalene	1.310	1.312	-0.2	73	0.00	5.75
11	t	1-Methylnaphthalene	1.427	1.280	10.3	70	0.00	5.84
13	I	Fluorene-d10	1.000	1.000	0.0	73	0.00	7.25
14	S	2-Fluorobiphenyl	1.345	1.205	10.4	74	0.00	6.14
15	t	Acenaphthylene	1.723	1.452	15.7	70	0.00	6.60
16	t	Acenaphthene	1.221	1.060	13.2	71	0.00	6.78
17	t	Fluorene	1.306	1.140	12.7	72	0.00	7.28
18		4,6-dinitro-2-methylpheno	0.200	0.218	-9.0	82	0.00	7.41
19	S	2,4,6-Tribromophenol	0.455	0.459	-0.9	78	0.00	7.52
20		Fluoranthene-d10	1.000	1.000	0.0	75	0.00	9.32
21	t	Hexachlorobenzene	0.507	0.441	13.0	78	0.00	7.80
22	t	Pentachlorophenol	0.193	0.212	-9.8	82	0.00	8.03
23	t	Phenanthrene	1.209	1.017	15.9	73	0.00	8.19
24	t	Anthracene	1.153	1.010	12.4	73	0.00	8.24
25	t	Fluoranthene	1.388	1.248	10.1	74	0.00	9.34
26	t	Pyrene	1.478	1.253	15.2	72	0.00	9.55
27	S	Terphenyl-d14	0.826	0.759	8.1	77	0.00	9.77
28	t	Benzo[a]anthracene	1.324	1.177	11.1	75	0.00	10.72
29	t	Chrysene	1.249	1.144	8.4	78	0.00	10.75
30	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	84	0.00	11.94
31	t	Benzo[b]fluoranthene	2.026	1.743	14.0	80	0.00	11.69
32	t	Benzo[k]fluoranthene	1.846	1.541	16.5	86	0.00	11.72
33	t	Benzo[a]pyrene	1.748	1.560	10.8	85	0.00	11.95
34	t	Indeno[1,2,3-cd]pyrene	2.177	2.280	-4.7	109	0.00	12.80
35	t	Dibenz[a,h]anthracene	1.802	1.979	-9.8	111	0.00	12.82
36	t	Benzo[g,h,i]perylene	1.844	1.956	-6.1	111	0.00	12.97

8.6.22

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E4P2772-CC2764
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 4P53065.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4p53065.d M4P2764SIMLVI.M Thu Apr 21 04:27:37 2022

8.6.22

8

Initial Calibration Summary

Job Number: JD43215 **Sample:** E5P3865-ICC3865
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81579.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS5P

Method : C:\MSDCHEM\1\METHODS\M5P3865LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Fri Feb 18 10:29:40 2022
Response via : Initial Calibration

Calibration Files
10 =5p81579.D 20 =5p81577.D 16 =5p81578.D 5 =5p81580.D
2 =5p81581.D 1 =5p81582C.D 0.4 =5p81583.D 0.2 =5p81584.D

Compound	10	20	16	5	2	1	0.4	0.2	Avg	%RSD
103) 1,4-Dichlorobenzene-d	ISTD									
104) Benzaldehyde	1.100	1.069	1.025	1.177	1.188	1.217	1.176	1.244	1.150	6.65
105) Phenanthrene-d10a	ISTD									
106) Atrazine	0.094	0.092	0.090	0.101	0.107	0.101	0.100	0.108	0.099	6.73
107) Naphthalene-d8a	ISTD									
108) Caprolactam	0.132	0.104	0.123	0.128	0.123	0.118	0.178	0.166	0.134	18.73
111) Phenanthrene-d10b	ISTD									
112) 1-chloroocta	0.312	0.289	0.299	0.334	0.362	0.330	0.361	0.435	0.340	13.67
113) o-terphenyl	0.478	0.457	0.431	0.494	0.542	0.547	0.512	0.617	0.510	11.57

(#) = Out of Range ### Number of calibration levels exceeded format ###

M5P3864LVI.M Fri Feb 18 10:31:14 2022 RPT1

8.6.23

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E5P3865-ICV3865
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81585.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E5P3865\5p81585.D Vial: 23
Acq On : 18 Feb 2022 5:27 am Operator: kristis
Sample : icv3865-10 Inst : MS5P
Misc : op35622,e5p3865,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M5P3864LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Fri Feb 18 10:29:40 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
103	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	122	0.00	4.64
104	Benzaldehyde	1.150	0.985	14.3	110	0.00	4.32
105	Phenanthrene-d10a	1.000	1.000	0.0	113	0.00	9.96
106	Atrazine	0.099	0.091	8.1	110	0.01	9.62
107	Naphthalene-d8a	1.000	1.000	0.0	113	0.00	5.72
108 t	Caprolactam	0.134	0.132	1.5	113	0.03	6.13

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p81579a.D M5P3864LVI.M Fri Feb 18 10:31:25 2022 RPT1

8.6.24
8

Initial Calibration Summary

Job Number: JD43215 **Sample:** E5P3881-ICC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81755.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report MS5P

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Mar 09 17:43:58 2022
Response via : Initial Calibration

Calibration Files
10 =5p81753.D 20 =5p81749.D 16 =5p81751.D 5 =5p81755.D
2 =5p81756.D 1 =5p81754.D 0.4 =5p81752.D 0.2 =5p81750.D

Compound	10	20	16	5	2	1	0.4	0.2	Avg	%RSD
1) 1,4-dichlorobenzene-d	ISTD									
2) 1,4-Dioxane	0.591	0.650	0.659	0.569	0.615	0.597	0.530	0.557	0.596	7.45
3) Pyridine	1.630	1.577	1.658	1.533	1.628	1.502	1.456	1.654	1.580	4.80
4) N-Nitrosodim	0.953	0.993	1.015	0.868	0.997	0.848	0.702	0.783	0.895	12.70
5) 2-Fluorophen	1.582	1.585	1.654	1.480	1.640	1.509	1.452	1.443	1.543	5.39
6) Indene	2.200	2.097	2.206	2.191	2.625	2.552	2.448	2.480	2.350	8.44
7) Cumene	3.296	3.004	3.173	3.137	3.609	3.462	3.152	3.007	3.230	6.62
8) Phenol-d5	1.916	1.856	1.989	1.866	2.174	1.992	1.784	1.974	1.944	6.11
9) Phenol	1.949	1.802	1.936	1.985	2.286	2.240	2.034	2.083	2.039	7.90
10) Aniline	2.064	1.815	1.984	2.101	2.402	2.436	2.234	2.371	2.176	10.20
11) bis(2-Chloro	1.296	1.152	1.253	1.247	1.492	1.479	1.327	1.312	1.320	8.75
12) 2-Chlorophen	1.467	1.341	1.423	1.421	1.696	1.681	1.539	1.661	1.528	8.93
13) Decane	1.010	0.926	0.988	1.054	1.149	1.138	1.140	1.109	1.064	7.81
14) 1,3-Dichloro	1.563	1.444	1.573	1.638	1.802	1.819	1.803	1.777	1.677	8.47
15) 1,4-Dichloro	1.497	1.422	1.501	1.482	1.690	1.577	1.585	1.611	1.546	5.54
16) Benzyl alcoh	0.934	0.898	0.891	0.905	1.050	1.015	1.019	0.959	0.959	6.48
17) 1,2-Dichloro	1.481	1.333	1.406	1.459	1.720	1.603	1.568	1.593	1.521	8.16
18) Acetophenone	1.599	1.567	1.627	1.690	1.868	1.894	1.793	2.022	1.757	9.26
19) 2-Methylphen	1.213	1.105	1.173	1.190	1.431	1.375	1.317	1.386	1.274	9.34
20) 2,2'-oxybis(	1.265	1.124	1.211	1.301	1.445	1.543	1.408	1.592	1.361	12.01
21) 3&4-Methylph	1.208	1.120	1.197	1.243	1.453	1.438	1.353	1.468	1.310	10.29
22) n-Nitroso-di	0.746	0.692	0.732	0.790	0.890	0.983	0.883	0.977	0.837	13.44
23) Hexachloroet	0.475	0.451	0.485	0.478	0.560	0.524	0.521	0.502	0.499	6.89
24) I Naphthalene-d8	ISTD									
25) Nitrobenzene	0.339	0.338	0.335	0.355	0.395	0.378	0.370	0.403	0.364	7.30
26) Nitrobenzene	0.326	0.316	0.325	0.334	0.395	0.368	0.392	0.391	0.356	9.58
27) Quinoline	0.707	0.701	0.708	0.734	0.836	0.791	0.778	0.811	0.758	6.92
28) Isophorone	0.669	0.657	0.686	0.711	0.791	0.735	0.695	0.660	0.701	6.44
29) 2-Nitropheno	0.204	0.205	0.203	0.212	0.231	0.224	0.203	0.196	0.210	5.64
30) 2,4-Dimethyl	0.323	0.311	0.307	0.345	0.388	0.363	0.355	0.419	0.351	10.97
31) Benzoic acid	0.205	0.245	0.238	0.148	0.192				0.205	19.02
32) bis(2-Chloro	0.387	0.380	0.376	0.395	0.479	0.433	0.440	0.442	0.416	8.90
33) 2,4-Dichloro	0.299	0.286	0.288	0.312	0.345	0.317	0.315	0.360	0.315	8.34
34) 2,6-Dichloro	0.265	0.261	0.259	0.284	0.321	0.292	0.282	0.296	0.283	7.42
35) 1,3,5-Trichl	0.306	0.307	0.300	0.333	0.385	0.372	0.371	0.379	0.344	10.61
36) 1,2,4-Trichl	0.307	0.297	0.309	0.326	0.378	0.340	0.352	0.357	0.333	8.47
37) 1,2,3-Trichl	0.245	0.253	0.260	0.291	0.339	0.321	0.312	0.324	0.293	12.35
38) Naphthalene	0.982	0.943	0.955	1.006	1.136	1.012	1.026	1.089	1.019	6.45
39) 4-Chloroanil	0.421	0.416	0.411	0.438	0.500	0.459	0.452	0.461	0.445	6.64
40) 2,3-Dichloro	0.332	0.310	0.326	0.363	0.410	0.395	0.402	0.381	0.365	10.42
41) Hydroquinone	0.314	0.272	0.269	0.320	0.300	0.255	0.283	0.287	0.287	7.86
42) Hexachlorobu	0.142	0.141	0.141	0.151	0.165	0.154	0.148	0.146	0.148	5.60
43) 4-Chloro-3-m	0.284	0.285	0.261	0.297	0.326	0.290	0.309	0.290	0.293	6.50
44) 2-Methylnaph	0.645	0.594	0.572	0.678	0.766	0.713	0.688	0.646	0.663	9.50
45) 1-Methylnaph	0.588	0.566	0.548	0.636	0.724	0.677	0.614	0.644	0.625	9.36

Initial Calibration Summary

Job Number: JD43215 **Sample:** E5P3881-ICC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81755.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

46)	I Acenaphthene-d10	ISTD									
47)	Hexachlorocy	0.306	0.295	0.304	0.301	0.353	0.300	0.308	0.300	0.309	5.97
48)	1,2,4,5-Tetr	0.476	0.438	0.462	0.484	0.595	0.547	0.558	0.553	0.514	10.87
49)	2,4,6-Trichl	0.349	0.322	0.351	0.344	0.424	0.383	0.383	0.385	0.368	8.73
50)	2,4,5-Trichl	0.355	0.338	0.369	0.361	0.437	0.400	0.398	0.441	0.388	9.84
51)	2-Fluorobiph	1.268	1.193	1.279	1.316	1.540	1.408	1.410	1.338	1.344	7.98
52)	2-Chloronaph	1.058	0.977	1.019	1.087	1.331	1.249	1.306	1.341	1.171	12.89
53)	Biphenyl	1.415	1.396	1.491	1.520	1.738	1.618	1.709	1.670	1.570	8.45
54)	2-Nitroanili	0.316	0.310	0.322	0.302	0.333	0.317	0.337	0.313	0.319	3.63
55)	Dimethylphth	1.319	1.263	1.352	1.292	1.489	1.387	1.431	1.438	1.371	5.73
56)	Acenaphthyle	1.670	1.593	1.672	1.714	2.043	1.888	1.874	1.894	1.794	8.55
57)	2,6-Dinitrot	0.298	0.288	0.304	0.292	0.314	0.280	0.280	0.259	0.289	5.87
58)	3-Nitroanili	0.362	0.367	0.388	0.347	0.414	0.364	0.351	0.354	0.368	6.06
59)	Acenaphthene	1.057	1.086	1.107	1.108	1.322	1.206	1.226	1.236	1.169	7.89
60)	2,4-Dinitrop	0.148	0.168	0.170	0.127	0.147	0.114	0.092		0.138	20.69
	----- Quadratic regression ----- Coefficient = 0.9978										
	Response Ratio = -0.00342 + 0.13065 *A + 0.00828 *A^2										
61)	4-Nitropheno	0.141	0.152	0.155	0.132	0.144	0.136	0.136	0.147	0.143	5.75
62)	Dibenzofuran	1.488	1.472	1.552	1.578	1.893	1.731	1.780	1.775	1.659	9.40
63)	2,4-Dinitrot	0.339	0.322	0.336	0.357	0.400	0.364	0.364	0.325	0.351	7.37
64)	2,3,4,6-Tetr	0.281	0.275	0.287	0.273	0.322	0.282	0.288	0.295	0.288	5.42
65)	Diethylphtha	1.278	1.260	1.306	1.316	1.404	1.389	1.361	1.392	1.338	4.16
66)	Fluorene	1.258	1.215	1.259	1.287	1.519	1.388	1.372	1.281	1.322	7.47
67)	4-Chlorophen	0.490	0.464	0.477	0.494	0.614	0.580	0.612	0.598	0.541	12.12
68)	4-Nitroanili	0.301	0.294	0.306	0.311	0.374	0.327	0.317	0.357	0.323	8.71
69)	I Phenanthrene-d10	ISTD									
70)	4,6-Dinitro-	0.120	0.125	0.128	0.118	0.126	0.102	0.094	0.081	0.112	15.54
71)	n-Nitrosodip	0.685	0.655	0.685	0.697	0.772	0.728	0.695	0.737	0.707	5.20
72)	Pentachloron	0.037	0.036	0.037	0.038	0.042	0.037	0.034	0.041	0.038#	7.13
73)	1,2-Diphenyl	0.831	0.795	0.830	0.836	0.981	0.906	0.874	0.915	0.871	6.94
74)	2,4,6-Tribro	0.113	0.112	0.117	0.110	0.125	0.113	0.111	0.122	0.115	4.58
75)	4-Bromopheny	0.227	0.218	0.224	0.221	0.244	0.226	0.198	0.236	0.224	6.04
76)	Hexachlorobe	0.237	0.226	0.228	0.229	0.267	0.257	0.253	0.250	0.243	6.32
77)	Pentachlorop	0.158	0.158	0.164	0.152	0.168	0.144	0.129	0.141	0.152	8.68
78)	Phenanthrene	1.028	1.013	0.990	1.045	1.207	1.115	1.161	1.110	1.084	7.09
79)	Anthracene	1.118	1.029	1.098	1.133	1.267	1.186	1.188	1.195	1.152	6.32
80)	Carbazole	1.122	1.063	1.069	1.126	1.285	1.147	1.127	1.177	1.140	6.13
81)	Di-n-butylph	1.489	1.497	1.564	1.501	1.697	1.461	1.495	1.443	1.518	5.29
82)	Fluoranthene	1.161	1.152	1.156	1.176	1.312	1.105	1.145	1.155	1.170	5.19
83)	Octadecane	0.459	0.450	0.467	0.444	0.482	0.409	0.444	0.411	0.446	5.70
84)	I Chrysene-d12	ISTD									
85)	Benzidine	0.963	1.006	0.966	0.860	0.936	0.859	1.043		0.948	7.32
86)	Pyrene	1.646	1.524	1.617	1.629	1.814	1.795	1.672	1.753	1.681	5.88
87)	Terphenyl-d1	1.145	1.128	1.168	1.095	1.290	1.182	1.173	1.212	1.174	4.99
88)	Butylbenzylp	0.892	0.955	0.955	0.868	0.968	0.857	0.783	0.816	0.887	7.75
89)	Benzo[a]anth	1.298	1.393	1.365	1.256	1.435	1.300	1.305	1.454	1.351	5.31
90)	3,3'-Dichlor	0.463	0.469	0.487	0.459	0.500	0.424	0.445	0.432	0.460	5.63
91)	Chrysene	1.158	1.134	1.177	1.139	1.312	1.195	1.279	1.284	1.210	5.88
92)	bis(2-Ethylh	1.209	1.216	1.235	1.115	1.284	1.060	0.959	1.037	1.139	9.98
93)	I Perylene-d12	ISTD									
94)	Di-n-octylph	2.138	2.232	2.208	2.086	2.277	1.890	1.698	1.660	2.024	12.03
95)	Benzo[b]fluo	1.299	1.311	1.303	1.282	1.435	1.237	1.199	1.241	1.289	5.52
96)	Benzo[k]fluo	1.136	1.048	1.059	1.203	1.342	1.334	1.279	1.346	1.218	10.27
97)	Benzo[a]pyre	1.211	1.215	1.193	1.216	1.357	1.226	1.098	1.063	1.197	7.42
98)	Indeno[1,2,3	0.935	1.121	1.015	0.887	0.992	0.856	0.762	0.648	0.902	16.56

Initial Calibration Summary

Job Number: JD43215 **Sample:** E5P3881-ICC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81755.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

```
 99) Dibenz(a,h)a 0.916 1.025 0.965 0.896 0.932 0.796 0.677 0.721 0.866  14.12
100) Dibenz[a,h]a 0.986 1.100 1.013 0.930 1.073 0.907 0.806 0.902 0.965  10.10
101) 7,12-Dimethy 0.568 0.506 0.499 0.567 0.519 0.490 0.544 0.503 0.524   5.89
102) Benzo[g,h,i] 1.079 1.275 1.130 1.091 1.212 1.053 0.964 0.974 1.097   9.81

 ------------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M5P3881LVI.M        Wed Mar 09 17:58:56 2022   RPT1
```

8.6.25

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E5P3881-ICV3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81757.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E5P3881\5p81757.D Vial: 10
Acq On : 9 Mar 2022 4:10 pm Operator: kristis
Sample : icv3881-10 Inst : MS5P
Misc : op35622,e5p3881,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Mar 09 18:01:09 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
46 I	Acenaphthene-d10	1.000	1.000	0.0	137	0.00	7.70
56 t	Acenaphthylene	1.794	1.525	15.0	125	0.00	7.51

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p81579a.D M5P3881LVI.M Wed Mar 09 18:39:22 2022 RPT1

8.6.26

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E5P3881-ICV3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81758.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E5P3881\5p81758.D Vial: 11
Acq On : 9 Mar 2022 4:37 pm Operator: kristis
Sample : icv3881-10 Inst : MS5P
Misc : op35622,e5p3881,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Mar 09 18:01:09 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		1,4-dichlorobenzene-d4	1.000	1.000	0.0	118	0.00	4.59
2	t	1,4-Dioxane	0.596	0.495	16.9	99	0.00	2.15
6	t	Indene	2.350	1.910	18.7	102	0.00	4.78
7	t	Cumene	3.230	2.832	12.3	101	0.00	3.99
11	t	bis(2-Chloroethyl)ether	1.320	1.305	1.1	119	0.00	4.39
13	t	Decane	1.064	0.948	10.9	111	0.00	4.48
14	t	1,3-Dichlorobenzene	1.677	1.459	13.0	110	0.00	4.54
15	t	1,4-Dichlorobenzene	1.546	1.353	12.5	107	0.00	4.60
16	t	Benzyl alcohol	0.959	0.780	18.7	98	0.00	4.69
17	t	1,2-Dichlorobenzene	1.521	1.261	17.1	100	0.00	4.72
18	t	Acetophenone	1.757	1.552	11.7	114	0.00	4.90
20	t	2,2'-oxybis(1-Chloropropa	1.361	1.115	18.1	104	0.00	4.80
23	t	Hexachloroethane	0.499	0.445	10.8	110	0.00	4.98
24	I	Naphthalene-d8	1.000	1.000	0.0	118	0.00	5.66
26	t	Nitrobenzene	0.356	0.309	13.2	111	0.00	5.04
27	t	Quinoline	0.758	0.659	13.1	110	0.00	6.01
28	t	Isophorone	0.701	0.603	14.0	106	0.00	5.23
32	t	bis(2-Chloroethoxy)methan	0.416	0.370	11.1	112	0.00	5.43
35		1,3,5-Trichlorobenzene	0.344	0.297	13.7	114	0.00	5.31
36	t	1,2,4-Trichlorobenzene	0.333	0.292	12.3	112	0.00	5.60
37		1,2,3-Trichlorobenzene	0.293	0.253	13.7	122	0.00	5.82
38	t	Naphthalene	1.019	0.868	14.8	104	0.00	5.68
40	t	2,3-Dichloroaniline	0.365	0.312	14.5	110	0.00	6.73
42	t	Hexachlorobutadiene	0.148	0.135	8.8	112	0.00	5.80
44	t	2-Methylnaphthalene	0.663	0.600	9.5	109	0.00	6.40
45	t	1-Methylnaphthalene	0.625	0.536	14.2	107	0.00	6.52
46	I	Acenaphthene-d10	1.000	1.000	0.0	121	0.00	7.70
47	t	Hexachlorocyclopentadiene	0.309	0.332	-7.4	127	0.00	6.59
48	t	1,2,4,5-Tetrachlorobenzen	0.514	0.423	17.7	107	0.00	6.59
52	t	2-Chloronaphthalene	1.171	0.974	16.8	111	0.00	6.98
53	t	Biphenyl	1.570	1.390	11.5	119	0.00	6.96
55	t	Dimethylphthalate	1.371	1.195	12.8	109	0.00	7.38
57	t	2,6-Dinitrotoluene	0.289	0.248	14.2	101	0.00	7.45
59	t	Acenaphthene	1.169	1.005	14.0	115	0.00	7.74
62	t	Dibenzofuran	1.659	1.369	17.5	111	0.00	7.98
63	t	2,4-Dinitrotoluene	0.351	0.290	17.4	103	0.00	7.98
65	t	Diethylphthalate	1.338	1.180	11.8	112	0.00	8.37
66	t	Fluorene	1.322	1.135	14.1	109	0.00	8.47
67	t	4-Chlorophenyl-phenylethe	0.541	0.418	22.7	103	0.00	8.50

8.6.27
8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E5P3881-ICV3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81758.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

69	I	Phenanthrene-d10	1.000	1.000	0.0	128	0.00	9.87
72	t	Pentachloronitrobenzene	0.038	0.036#	5.3	125	0.00	9.60
73	t	1,2-Diphenylhydrazine	0.871	0.749	14.0	115	0.00	8.73
75	t	4-Bromophenyl-phenylether	0.224	0.186	17.0	105	0.00	9.23
76	t	Hexachlorobenzene	0.243	0.195	19.8	105	0.00	9.27
78	t	Phenanthrene	1.084	0.886	18.3	110	0.00	9.90
79	t	Anthracene	1.152	0.899	22.0	103	0.00	9.98
80	t	Carbazole	1.140	0.920	19.3	105	0.00	10.26
81	t	Di-n-butylphthalate	1.518	1.263	16.8	108	0.00	10.92
82	t	Fluoranthene	1.170	0.978	16.4	108	0.00	11.76
83	t	Octadecane	0.446	0.377	15.5	105	0.00	9.86
84	I	Chrysene-d12	1.000	1.000	0.0	124	0.00	14.04
86	t	Pyrene	1.681	1.435	14.6	108	0.00	12.10
88	t	Butylbenzylphthalate	0.887	0.787	11.3	109	0.00	13.29
89	t	Benzo[a]anthracene	1.351	1.133	16.1	108	0.00	14.02
91	t	Chrysene	1.210	0.999	17.4	107	0.00	14.08
92	t	bis(2-Ethylhexyl)phthalat	1.139	1.014	11.0	104	0.00	14.27
93	I	Perylene-d12	1.000	1.000	0.0	117	0.00	16.14
94	t	Di-n-octylphthalate	2.024	1.909	5.7	104	0.00	15.27
95	t	Benzo[b]fluoranthene	1.289	1.153	10.6	103	0.00	15.62
96	t	Benzo[k]fluoranthene	1.218	0.989	18.8	101	0.00	15.67
97	t	Benzo[a]pyrene	1.197	1.042	12.9	100	0.00	16.06
98	t	Indeno[1,2,3-cd]pyrene	0.902	0.817	9.4	102	0.00	17.60
99	t	Dibenz(a,h)acridine	0.866	0.790	8.8	100	0.00	17.28
100	t	Dibenz[a,h]anthracene	0.965	0.902	6.5	107	0.01	17.65
101	t	7,12-Dimethylbenz(a)anthr	0.524	0.388	26.0	80	0.00	15.64
102	t	Benzo[g,h,i]perylene	1.097	0.978	10.8	106	0.01	18.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p81579a.D M5P3881LVI.M Wed Mar 09 18:02:27 2022 RPT1

8.6.27

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E5P3881-ICV3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81759.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E5P3881\5p81759.D Vial: 12
Acq On : 9 Mar 2022 5:04 pm Operator: kristis
Sample : icv3881-10 Inst : MS5P
Misc : op35622,e5p3881,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Mar 09 18:01:09 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		1,4-dichlorobenzene-d4	1.000	1.000	0.0	130	0.00	4.59
9	t	Phenol	2.039	1.615	20.8	108	0.00	4.33
12	t	2-Chlorophenol	1.528	1.272	16.8	113	0.00	4.43
19	t	2-Methylphenol	1.274	1.092	14.3	117	0.00	4.77
21	t	3&4-Methylphenol	1.310	1.077	17.8	116	0.00	4.90
24	I	Naphthalene-d8	1.000	1.000	0.0	118	0.00	5.66
29	t	2-Nitrophenol	0.210	0.201	4.3	116	0.00	5.30
30	t	2,4-Dimethylphenol	0.351	0.312	11.1	114	0.00	5.34
31	t	Benzoic acid	0.205	0.191	6.8	110	0.03	5.43
33	t	2,4-Dichlorophenol	0.315	0.272	13.7	108	0.00	5.52
34	t	2,6-Dichlorophenol	0.283	0.267	5.7	119	0.00	5.74
43	t	4-Chloro-3-methylphenol	0.293	0.275	6.1	115	0.00	6.23
46	I	Acenaphthene-d10	1.000	1.000	0.0	141	0.00	7.70
49	t	2,4,6-Trichlorophenol	0.368	0.303	17.7	122	0.00	6.73
50	t	2,4,5-Trichlorophenol	0.388	0.309	20.4	122	0.00	6.77
		----------	True	Calc.	% Drift	----------		
60	t	2,4-Dinitrophenol	20.000	17.050	14.7	119	0.00	7.80
		----------	AvgRF	CCRF	% Dev	----------		
61	t	4-Nitrophenol	0.143	0.118	17.5	117	0.00	7.90
64		2,3,4,6-Tetrachlorophenol	0.288	0.231	19.8	116	0.00	8.16
69	I	Phenanthrene-d10	1.000	1.000	0.0	145	0.00	9.87
70	t	4,6-Dinitro-2-methylpheno	0.112	0.108	3.6	130	0.00	8.56
77	t	Pentachlorophenol	0.152	0.123	19.1	113	0.00	9.58

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p81579a.D M5P3881LVI.M Wed Mar 09 18:02:29 2022 RPT1

Initial Calibration Verification

Job Number: JD43215 **Sample:** E5P3881-ICV3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81761.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E5P3881\5p81761.D Vial: 14
Acq On : 9 Mar 2022 5:57 pm Operator: kristis
Sample : icv3881-10 Inst : MS5P
Misc : op35622,e5p3881,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Mar 09 18:01:09 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		1,4-dichlorobenzene-d4	1.000	1.000	0.0	133	0.00	4.59
3	t	Pyridine	1.580	1.298	17.8	106	0.00	2.46
4	t	N-Nitrosodimethylamine	0.895	0.756	15.5	105	0.00	2.43
10		Aniline	2.176	1.864	14.3	120	0.00	4.34
24	I	Naphthalene-d8	1.000	1.000	0.0	133	0.00	5.66
39	t	4-Chloroaniline	0.445	0.390	12.4	123	0.00	5.73
46	I	Acenaphthene-d10	1.000	1.000	0.0	125	0.00	7.70
54	t	2-Nitroaniline	0.319	0.308	3.4	122	0.00	7.11
58	t	3-Nitroaniline	0.368	0.364	1.1	126	0.00	7.65
68	t	4-Nitroaniline	0.323	0.339	-5.0	140	0.00	8.51
69	I	Phenanthrene-d10	1.000	1.000	0.0	137	0.00	9.87
71	t	n-Nitrosodiphenylamine	0.707	0.637	9.9	127	0.00	8.68
84	I	Chrysene-d12	1.000	1.000	0.0	130	0.00	14.03
85	t	Benzidine	0.948	0.746	21.3	100	0.00	12.03
90	t	3,3'-Dichlorobenzidine	0.460	0.416	9.6	116	0.00	14.04

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p81579a.D M5P3881LVI.M Wed Mar 09 18:39:24 2022 RPT1

8.6.29

8

Initial Calibration Verification

Job Number: JD43215 **Sample:** E5P3881-ICV3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P81762.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E5P3881\5p81762.D Vial: 13
Acq On : 9 Mar 2022 6:37 pm Operator: kristis
Sample : icv3881-10 Inst : MS5P
Misc : op35622,e5p3881,250,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Wed Mar 09 18:01:09 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		1,4-dichlorobenzene-d4	1.000	1.000	0.0	136	0.00	4.59
5	S	2-Fluorophenol	1.543	1.252	18.9	108	0.01	3.61
8	S	Phenol-d5	1.944	1.542	20.7	110	0.00	4.31
24	I	Naphthalene-d8	1.000	1.000	0.0	135	0.00	5.65
25	S	Nitrobenzene-d5	0.364	0.335	8.0	133	0.00	5.01
46	I	Acenaphthene-d10	1.000	1.000	0.0	140	0.00	7.70
51	S	2-Fluorobiphenyl	1.344	1.290	4.0	142	0.00	6.84
69	I	Phenanthrene-d10	1.000	1.000	0.0	156	0.00	9.87
74	S	2,4,6-Tribromophenol	0.115	0.099	13.9	137	0.00	8.82
84	I	Chrysene-d12	1.000	1.000	0.0	154	0.00	14.04
87	S	Terphenyl-d14	1.174	1.032	12.1	139	0.00	12.44

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p81579a.D M5P3881LVI.M Thu Mar 10 09:17:24 2022 RPT1

8.6.30

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E5P3929-CC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P82712.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E5P3929\5p82712.D Vial: 2
Acq On : 25 Apr 2022 11:09 am Operator: kristis
Sample : cc3881-5 Inst : MS5P
Misc : op35622,e5p3929,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Tue Apr 19 13:04:12 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		1,4-dichlorobenzene-d4	1.000	1.000	0.0	84	-0.02	4.31
2	t	1,4-Dioxane	0.596	0.621	-4.2	92	-0.03	1.81
3	t	Pyridine	1.580	1.579	0.1	86	-0.04	2.13
4	t	N-Nitrosodimethylamine	0.895	0.876	2.1	84	-0.03	2.09
5	S	2-Fluorophenol	1.543	1.534	0.6	87	-0.01	3.34
6	t	Indene	2.350	2.351	-0.0	90	-0.02	4.50
7	t	Cumene	3.230	3.113	3.6	83	-0.02	3.72
8	S	Phenol-d5	1.944	1.689	13.1	76	-0.01	4.07
9	t	Phenol	2.039	1.866	8.5	79	-0.01	4.09
10		Aniline	2.176	1.992	8.5	79	-0.02	4.07
11	t	bis(2-Chloroethyl)ether	1.320	1.330	-0.8	89	-0.02	4.13
12	t	2-Chlorophenol	1.528	1.435	6.1	85	-0.02	4.17
13	t	Decane	1.064	0.994	6.6	79	-0.02	4.21
14	t	1,3-Dichlorobenzene	1.677	1.653	1.4	85	-0.02	4.27
15	t	1,4-Dichlorobenzene	1.546	1.553	-0.5	88	-0.02	4.33
16	t	Benzyl alcohol	0.959	0.880	8.2	81	-0.02	4.43
17	t	1,2-Dichlorobenzene	1.521	1.502	1.2	86	-0.02	4.44
18	t	Acetophenone	1.757	1.743	0.8	86	-0.02	4.61
19	t	2-Methylphenol	1.274	1.194	6.3	84	-0.01	4.52
20	t	2,2'-oxybis(1-Chloropropa	1.361	1.271	6.6	82	-0.02	4.52
21	t	3&4-Methylphenol	1.310	1.166	11.0	79	-0.01	4.64
22	t	n-Nitroso-di-n-propylamin	0.837	0.825	1.4	87	-0.02	4.62
23	t	Hexachloroethane	0.499	0.438	12.2	77	-0.03	4.68
24	I	Naphthalene-d8	1.000	1.000	0.0	86	-0.03	5.32
25	S	Nitrobenzene-d5	0.364	0.313	14.0	76	-0.02	4.73
26	t	Nitrobenzene	0.356	0.327	8.1	85	-0.02	4.74
27	t	Quinoline	0.758	0.681	10.2	80	-0.03	5.67
28	t	Isophorone	0.701	0.670	4.4	81	-0.02	4.94
29	t	2-Nitrophenol	0.210	0.207	1.4	84	-0.02	5.00
30	t	2,4-Dimethylphenol	0.351	0.344	2.0	86	-0.02	5.05
31	t	Benzoic acid	0.205	0.207	-1.0	121	-0.01	5.15
32	t	bis(2-Chloroethoxy)methan	0.416	0.407	2.2	89	-0.02	5.13
33	t	2,4-Dichlorophenol	0.315	0.297	5.7	82	-0.02	5.21
34	t	2,6-Dichlorophenol	0.283	0.279	1.4	85	-0.02	5.41
35		1,3,5-Trichlorobenzene	0.344	0.304	11.6	79	-0.03	5.00
36	t	1,2,4-Trichlorobenzene	0.333	0.306	8.1	81	-0.02	5.28
37		1,2,3-Trichlorobenzene	0.293	0.282	3.8	84	-0.03	5.47
38	t	Naphthalene	1.019	1.010	0.9	87	-0.03	5.34
39	t	4-Chloroaniline	0.445	0.421	5.4	83	-0.02	5.40
40	t	2,3-Dichloroaniline	0.365	0.360	1.4	86	-0.03	6.35
41	t	Hydroquinone	0.287	0.312	-8.7	84	-0.02	5.76

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E5P3929-CC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P82712.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	t	Hexachlorobutadiene	0.148	0.129	12.8	74	-0.03	5.46
43	t	4-Chloro-3-methylphenol	0.293	0.265	9.6	77	-0.02	5.90
44	t	2-Methylnaphthalene	0.663	0.630	5.0	80	-0.03	6.03
45	t	1-Methylnaphthalene	0.625	0.573	8.3	78	-0.03	6.14
46	I	Acenaphthene-d10	1.000	1.000	0.0	86	-0.04	7.28
47	t	Hexachlorocyclopentadiene	0.309	0.241	22.0#	69	-0.03	6.21
48	t	1,2,4,5-Tetrachlorobenzen	0.514	0.426	17.1	76	-0.03	6.22
49	t	2,4,6-Trichlorophenol	0.368	0.349	5.2	88	-0.03	6.36
50	t	2,4,5-Trichlorophenol	0.388	0.366	5.7	87	-0.03	6.40
51	S	2-Fluorobiphenyl	1.344	1.234	8.2	81	-0.03	6.46
52	t	2-Chloronaphthalene	1.171	1.083	7.5	86	-0.03	6.58
53	t	Biphenyl	1.570	1.475	6.1	84	-0.04	6.57
54	t	2-Nitroaniline	0.319	0.295	7.5	84	-0.03	6.72
55	t	Dimethylphthalate	1.371	1.343	2.0	90	-0.04	6.98
56	t	Acenaphthylene	1.794	1.775	1.1	89	-0.03	7.09
57	t	2,6-Dinitrotoluene	0.289	0.300	-3.8	89	-0.03	7.04
58	t	3-Nitroaniline	0.368	0.338	8.2	84	-0.03	7.26
59	t	Acenaphthene	1.169	1.175	-0.5	92	-0.04	7.32
			True	Calc.	% Drift			
60	t	2,4-Dinitrophenol	10.000	10.441	-4.4	99	-0.03	7.40
			AvgRF	CCRF	% Dev			
61	t	4-Nitrophenol	0.143	0.147	-2.8	96	-0.02	7.55
62	t	Dibenzofuran	1.659	1.538	7.3	84	-0.04	7.56
63	t	2,4-Dinitrotoluene	0.351	0.371	-5.7	90	-0.03	7.58
64		2,3,4,6-Tetrachlorophenol	0.288	0.234	18.7	74	-0.03	7.74
65	t	Diethylphthalate	1.338	1.332	0.4	87	-0.04	7.96
66	t	Fluorene	1.322	1.265	4.3	85	-0.04	8.03
67	t	4-Chlorophenyl-phenylethe	0.541	0.431	20.3#	75	-0.04	8.07
68	t	4-Nitroaniline	0.323	0.296	8.4	82	-0.03	8.10
69	I	Phenanthrene-d10	1.000	1.000	0.0	95	-0.04	9.41
70	t	4,6-Dinitro-2-methylpheno	0.112	0.112	0.0	90	-0.03	8.15
71	t	n-Nitrosodiphenylamine	0.707	0.584	17.4	79	-0.03	8.25
72	t	Pentachloronitrobenzene	0.038	0.033#	13.2	82	-0.04	9.15
73	t	1,2-Diphenylhydrazine	0.871	0.748	14.1	85	-0.04	8.29
74	S	2,4,6-Tribromophenol	0.115	0.083	27.8#	71	-0.04	8.38
75	t	4-Bromophenyl-phenylether	0.224	0.176	21.4#	76	-0.04	8.78
76	t	Hexachlorobenzene	0.243	0.179	26.3#	74	-0.04	8.82
77	t	Pentachlorophenol	0.152	0.116	23.7#	72	-0.04	9.14
78	t	Phenanthrene	1.084	1.040	4.1	94	-0.04	9.44
79	t	Anthracene	1.152	1.022	11.3	85	-0.04	9.51
80	t	Carbazole	1.140	1.057	7.3	89	-0.04	9.80
81	t	Di-n-butylphthalate	1.518	1.502	1.1	95	-0.04	10.47
82	t	Fluoranthene	1.170	1.071	8.5	86	-0.04	11.27
83	t	Octadecane	0.446	0.390	12.6	83	-0.04	9.43
84	I	Chrysene-d12	1.000	1.000	0.0	86	-0.04	13.54
85	t	Benzidine	0.948	0.547	42.3#	55	-0.05	11.57
86	t	Pyrene	1.681	1.662	1.1	88	-0.04	11.61
87	S	Terphenyl-d14	1.174	0.902	23.2#	71	-0.04	11.96
88	t	Butylbenzylphthalate	0.887	0.890	-0.3	88	-0.04	12.83
89	t	Benzo[a]anthracene	1.351	1.243	8.0	85	-0.05	13.52
90	t	3,3'-Dichlorobenzidine	0.460	0.395	14.1	74	-0.04	13.56
91	t	Chrysene	1.210	1.082	10.6	82	-0.04	13.58
92	t	bis(2-Ethylhexyl)phthalat	1.139	1.168	-2.5	90	-0.04	13.81
93	I	Perylene-d12	1.000	1.000	0.0	78	-0.05	15.62

8.6.31

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E5P3929-CC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P82712.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

94	t	Di-n-octylphthalate	2.024	2.504	-23.7#	94	-0.04	14.79
95	t	Benzo[b]fluoranthene	1.289	1.368	-6.1	84	-0.04	15.12
96	t	Benzo[k]fluoranthene	1.218	1.166	4.3	76	-0.04	15.15
97	t	Benzo[a]pyrene	1.197	1.196	0.1	77	-0.05	15.54
98	t	Indeno[1,2,3-cd]pyrene	0.902	0.969	-7.4	86	-0.05	16.97
99	t	Dibenz(a,h)acridine	0.866	0.893	-3.1	78	-0.05	16.69
100	t	Dibenz[a,h]anthracene	0.965	0.953	1.2	80	-0.05	17.01
101	t	7,12-Dimethylbenz(a)anthr	0.524	0.525	-0.2	73	-0.05	15.12
102	t	Benzo[g,h,i]perylene	1.097	1.101	-0.4	79	-0.06	17.31

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p82575.D M5P3881LVI.M Mon Apr 25 14:09:14 2022 RPT1

8.6.31

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E5P3929-CC3865
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P82713.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E5P3929\5p82713.D Vial: 3
Acq On : 25 Apr 2022 11:36 am Operator: kristis
Sample : cc3865-5 Inst : MS5P
Misc : op35622,e5p3929,250,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Tue Apr 19 13:04:12 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
103		1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	113	-0.02	4.31
104		Benzaldehyde	1.150	1.078	6.3	104	-0.03	3.99
105		Phenanthrene-d10a	1.000	1.000	0.0	92	-0.04	9.40
106		Atrazine	0.099	0.090	9.1	82	-0.04	9.10
107		Naphthalene-d8a	1.000	1.000	0.0	104	-0.03	5.32
108	t	Caprolactam	0.134	0.107	20.1#	87	-0.03	5.72
111		Phenanthrene-d10b	1.000	1.000	0.0	92	-0.04	9.40
112	s	1-chlorooctadecane	0.340	0.308	9.4	85	-0.04	11.31
113	s	o-terphenyl	0.510	0.453	11.2	84	-0.04	10.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p82575.D M5P3881LVI.M Mon Apr 25 14:09:16 2022 RPT1

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E5P3929-ECC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P82732.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\jo...622\e5p3929\5p82732.d Vial: 2
Acq On : 25 Apr 2022 9:27 pm Operator: kristis
Sample : ecc3881-5 Inst : MS5P
Misc : op39250,e5p3929,265,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Mon Apr 25 23:29:16 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1		1,4-dichlorobenzene-d4	1.000	1.000	0.0	87	0.00	4.32
2	t	1,4-Dioxane	0.596	0.594	0.3	91	0.00	1.80
3	t	Pyridine	1.580	1.581	-0.1	90	0.00	2.13
4	t	N-Nitrosodimethylamine	0.895	0.850	5.0	86	0.00	2.09
5	S	2-Fluorophenol	1.543	1.506	2.4	89	0.00	3.34
6	t	Indene	2.350	2.366	-0.7	94	0.00	4.50
7	t	Cumene	3.230	2.880	10.8	80	0.00	3.72
8	S	Phenol-d5	1.944	1.791	7.9	84	0.00	4.08
9	t	Phenol	2.039	1.915	6.1	84	0.00	4.09
10		Aniline	2.176	2.192	-0.7	91	0.00	4.07
11	t	bis(2-Chloroethyl)ether	1.320	1.246	5.6	87	0.00	4.13
12	t	2-Chlorophenol	1.528	1.456	4.7	90	0.00	4.17
13	t	Decane	1.064	0.951	10.6	79	0.00	4.21
14	t	1,3-Dichlorobenzene	1.677	1.531	8.7	82	0.00	4.27
15	t	1,4-Dichlorobenzene	1.546	1.542	0.3	91	0.00	4.33
16	t	Benzyl alcohol	0.959	0.895	6.7	86	0.00	4.43
17	t	1,2-Dichlorobenzene	1.521	1.535	-0.9	92	0.00	4.44
18	t	Acetophenone	1.757	1.768	-0.6	92	0.00	4.61
19	t	2-Methylphenol	1.274	1.129	11.4	83	0.00	4.52
20	t	2,2'-oxybis(1-Chloropropa	1.361	1.230	9.6	83	0.00	4.53
21	t	3&4-Methylphenol	1.310	1.215	7.3	86	0.00	4.64
22	t	n-Nitroso-di-n-propylamin	0.837	0.851	-1.7	94	0.00	4.62
23	t	Hexachloroethane	0.499	0.462	7.4	85	0.00	4.68
24	I	Naphthalene-d8	1.000	1.000	0.0	92	0.00	5.32
25	S	Nitrobenzene-d5	0.364	0.325	10.7	84	0.00	4.73
26	t	Nitrobenzene	0.356	0.310	12.9	85	0.00	4.74
27	t	Quinoline	0.758	0.703	7.3	88	0.00	5.66
28	t	Isophorone	0.701	0.626	10.7	81	0.00	4.93
29	t	2-Nitrophenol	0.210	0.210	0.0	91	0.00	5.00
30	t	2,4-Dimethylphenol	0.351	0.338	3.7	90	0.00	5.05
31	t	Benzoic acid	0.205	0.196	4.4	122	0.00	5.15
32	t	bis(2-Chloroethoxy)methan	0.416	0.401	3.6	93	0.00	5.13
33	t	2,4-Dichlorophenol	0.315	0.298	5.4	88	0.00	5.21
34	t	2,6-Dichlorophenol	0.283	0.288	-1.8	93	0.00	5.41
35		1,3,5-Trichlorobenzene	0.344	0.321	6.7	89	0.00	5.00
36	t	1,2,4-Trichlorobenzene	0.333	0.302	9.3	85	0.00	5.28
37		1,2,3-Trichlorobenzene	0.293	0.281	4.1	89	0.00	5.47
38	t	Naphthalene	1.019	0.978	4.0	89	0.00	5.34
39	t	4-Chloroaniline	0.445	0.423	4.9	89	0.00	5.40
40	t	2,3-Dichloroaniline	0.365	0.342	6.3	87	0.00	6.35
41	t	Hydroquinone	0.287	0.228	20.6	65	0.00	5.76

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E5P3929-ECC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P82732.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

42	t	Hexachlorobutadiene	0.148	0.139	6.1	85	0.00	5.46
43	t	4-Chloro-3-methylphenol	0.293	0.282	3.8	87	0.00	5.90
44	t	2-Methylnaphthalene	0.663	0.654	1.4	89	0.00	6.03
45	t	1-Methylnaphthalene	0.625	0.604	3.4	87	0.00	6.14
46	I	Acenaphthene-d10	1.000	1.000	0.0	89	0.00	7.28
47	t	Hexachlorocyclopentadiene	0.309	0.247	20.1	73	0.00	6.21
48	t	1,2,4,5-Tetrachlorobenzen	0.514	0.482	6.2	89	0.00	6.22
49	t	2,4,6-Trichlorophenol	0.368	0.327	11.1	84	0.00	6.36
50	t	2,4,5-Trichlorophenol	0.388	0.365	5.9	90	0.00	6.40
51	S	2-Fluorobiphenyl	1.344	1.266	5.8	86	0.00	6.46
52	t	2-Chloronaphthalene	1.171	1.116	4.7	91	0.00	6.59
53	t	Biphenyl	1.570	1.481	5.7	87	0.00	6.57
54	t	2-Nitroaniline	0.319	0.293	8.2	86	0.00	6.72
55	t	Dimethylphthalate	1.371	1.323	3.5	91	0.00	6.98
56	t	Acenaphthylene	1.794	1.811	-0.9	94	0.00	7.09
57	t	2,6-Dinitrotoluene	0.289	0.313	-8.3	95	0.00	7.04
58	t	3-Nitroaniline	0.368	0.354	3.8	91	0.00	7.26
59	t	Acenaphthene	1.169	1.175	-0.5	94	0.00	7.32
			True	Calc.	% Drift			
60	t	2,4-Dinitrophenol	10.000	3.128	68.7#	27	0.00	7.40
			AvgRF	CCRF	% Dev			
61	t	4-Nitrophenol	0.143	0.126	11.9	85	0.00	7.55
62	t	Dibenzofuran	1.659	1.589	4.2	90	0.00	7.56
63	t	2,4-Dinitrotoluene	0.351	0.378	-7.7	94	0.00	7.58
64		2,3,4,6-Tetrachlorophenol	0.288	0.251	12.8	82	0.00	7.74
65	t	Diethylphthalate	1.338	1.398	-4.5	95	0.00	7.96
66	t	Fluorene	1.322	1.297	1.9	90	0.00	8.03
67	t	4-Chlorophenyl-phenylethe	0.541	0.501	7.4	90	0.00	8.07
68	t	4-Nitroaniline	0.323	0.302	6.5	87	0.00	8.10
69	I	Phenanthrene-d10	1.000	1.000	0.0	96	0.00	9.41
70	t	4,6-Dinitro-2-methylpheno	0.112	0.061	45.5	49#	0.00	8.15
71	t	n-Nitrosodiphenylamine	0.707	0.656	7.2	90	0.00	8.25
72	t	Pentachloronitrobenzene	0.038	0.036#	5.3	91	0.00	9.16
73	t	1,2-Diphenylhydrazine	0.871	0.800	8.2	92	0.00	8.29
74	S	2,4,6-Tribromophenol	0.115	0.096	16.5	84	0.00	8.38
75	t	4-Bromophenyl-phenylether	0.224	0.188	16.1	82	0.00	8.78
76	t	Hexachlorobenzene	0.243	0.201	17.3	84	0.00	8.82
77	t	Pentachlorophenol	0.152	0.103	32.2	65	0.00	9.14
78	t	Phenanthrene	1.084	1.051	3.0	96	0.00	9.44
79	t	Anthracene	1.152	1.005	12.8	85	0.00	9.51
80	t	Carbazole	1.140	1.025	10.1	87	0.00	9.80
81	t	Di-n-butylphthalate	1.518	1.489	1.9	95	0.00	10.47
82	t	Fluoranthene	1.170	1.047	10.5	85	0.00	11.27
83	t	Octadecane	0.446	0.412	7.6	89	0.00	9.43
84	I	Chrysene-d12	1.000	1.000	0.0	85	0.00	13.54
85	t	Benzidine	0.948	0.641	32.4	63	0.00	11.57
86	t	Pyrene	1.681	1.679	0.1	87	0.00	11.61
87	S	Terphenyl-d14	1.174	1.041	11.3	81	0.00	11.96
88	t	Butylbenzylphthalate	0.887	0.944	-6.4	92	0.00	12.83
89	t	Benzo[a]anthracene	1.351	1.255	7.1	85	0.00	13.53
90	t	3,3'-Dichlorobenzidine	0.460	0.408	11.3	75	0.00	13.56
91	t	Chrysene	1.210	1.072	11.4	80	0.00	13.58
92	t	bis(2-Ethylhexyl)phthalat	1.139	1.247	-9.5	95	0.00	13.80
93	I	Perylene-d12	1.000	1.000	0.0	83	0.00	15.62

8.6.33

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E5P3929-ECC3881
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P82732.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

94	t	Di-n-octylphthalate	2.024	2.381	-17.6	95	0.00	14.79
95	t	Benzo[b]fluoranthene	1.289	1.269	1.6	83	0.00	15.11
96	t	Benzo[k]fluoranthene	1.218	1.145	6.0	79	0.00	15.15
97	t	Benzo[a]pyrene	1.197	1.154	3.6	79	0.00	15.54
98	t	Indeno[1,2,3-cd]pyrene	0.902	0.836	7.3	79	0.00	16.97
99	t	Dibenz(a,h)acridine	0.866	0.902	-4.2	84	0.00	16.70
100	t	Dibenz[a,h]anthracene	0.965	0.902	6.5	81	0.00	17.01
101	t	7,12-Dimethylbenz(a)anthr	0.524	0.512	2.3	75	0.00	15.12
102	t	Benzo[g,h,i]perylene	1.097	1.126	-2.6	86	0.00	17.31

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p82713.d M5P3881LVI.M Tue Apr 26 00:05:26 2022

8.6.33

8

Continuing Calibration Summary

Job Number: JD43215 **Sample:** E5P3929-ECC3865
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 5P82733.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\jo...622\e5p3929\5p82733.d Vial: 3
Acq On : 25 Apr 2022 9:53 pm Operator: kristis
Sample : ecc3865-5 Inst : MS5P
Misc : op39250,e5p3929,265,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M (RTE Integrator)
Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
Last Update : Mon Apr 25 23:29:16 2022
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
103	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	118	0.00	4.32
104	Benzaldehyde	1.150	1.120	2.6	112	0.00	3.99
105	Phenanthrene-d10a	1.000	1.000	0.0	94	0.00	9.40
106	Atrazine	0.099	0.089	10.1	83	0.00	9.10
107	Naphthalene-d8a	1.000	1.000	0.0	107	0.00	5.32
108 t	Caprolactam	0.134	0.112	16.4	93	0.00	5.72
111	Phenanthrene-d10b	1.000	1.000	0.0	94	0.00	9.40
112 s	1-chlorooctadecane	0.340	0.296	12.9	83	0.00	11.30
113 s	o-terphenyl	0.510	0.478	6.3	91	0.00	10.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0
5p82713.d M5P3881LVI.M Tue Apr 26 00:05:50 2022

8.6.34

8

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E2M5549	**Method:** SW846 8270E	**Instrument ID:** GCMS2M

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E2M5549-DFTPP	2M123312.D	04/19/22 17:53	n/a	DFTPP Tune
E2M5549-IC5549	2M123313.D	04/19/22 18:10	n/a	Initial cal 20
E2M5549-IC5549	2M123314.D	04/19/22 18:37	n/a	Initial cal 0.4
E2M5549-IC5549	2M123315.D	04/19/22 19:03	n/a	Initial cal 16
E2M5549-IC5549	2M123316.D	04/19/22 19:30	n/a	Initial cal 0.2
E2M5549-ICC5549	2M123317.D	04/19/22 19:57	n/a	Initial cal 10
E2M5549-IC5549	2M123318.D	04/19/22 20:23	n/a	Initial cal 1
E2M5549-IC5549	2M123319.D	04/19/22 20:50	n/a	Initial cal 5
E2M5549-IC5549	2M123320.D	04/19/22 21:17	n/a	Initial cal 2
E2M5549-ICV5549	2M123321.D	04/19/22 21:43	n/a	Initial cal verification 10
E2M5549-ICV5549	2M123322.D	04/19/22 22:10	n/a	Initial cal verification 10
E2M5549-ICV5549	2M123323.D	04/19/22 22:36	n/a	Initial cal verification 10
E2M5549-ICV5549	2M123324.D	04/19/22 23:03	n/a	Initial cal verification 10

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E2M5550	**Method:** SW846 8270E	**Instrument ID:** GCMS2M

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E2M5550-DFTPP	2M123326.D	04/20/22 01:29	n/a	DFTPP Tune
E2M5550-IC5550	2M123337.D	04/20/22 02:36	n/a	Initial cal 20
E2M5550-IC5550	2M123338.D	04/20/22 03:02	n/a	Initial cal 16
E2M5550-ICC5550	2M123339.D	04/20/22 03:29	n/a	Initial cal 10
E2M5550-IC5550	2M123340.D	04/20/22 03:55	n/a	Initial cal 5
E2M5550-IC5550	2M123341.D	04/20/22 04:22	n/a	Initial cal 2
E2M5550-IC5550	2M123342.D	04/20/22 04:49	n/a	Initial cal 1
E2M5550-IC5550	2M123343.D	04/20/22 06:03	n/a	Initial cal 0.4
E2M5550-IC5550	2M123344.D	04/20/22 06:30	n/a	Initial cal 0.2
E2M5550-ICV5550	2M123345.D	04/20/22 06:56	n/a	Initial cal verification 10
E2M5550-ICV5549	2M123346.D	04/20/22 07:23	n/a	Initial cal verification 10

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E2M5551 **Method:** SW846 8270E **Instrument ID:** GCMS2M

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E2M5551-DFTPP	2M123347.D	04/20/22 10:32	n/a	DFTPP Tune
E2M5551-CC5549	2M123348.D	04/20/22 10:46	n/a	Continuing cal 10
E2M5551-CC5550	2M123349.D	04/20/22 11:12	n/a	Continuing cal 10
OP39215-MB1	2M123350.D	04/20/22 11:41	OP39215	Method Blank
ZZZZZZ	2M123351.D	04/20/22 12:08	OP39215	(unrelated sample)
ZZZZZZ	2M123352.D	04/20/22 12:34	OP39215	(unrelated sample)
OP39215-BS1	2M123353.D	04/20/22 13:01	OP39215	Blank Spike
ZZZZZZ	2M123354.D	04/20/22 13:28	OP39215	(unrelated sample)
ZZZZZZ	2M123355.D	04/20/22 13:54	OP39215	(unrelated sample)
ZZZZZZ	2M123361.D	04/20/22 14:21	OP39135	(unrelated sample)
ZZZZZZ	2M123362.D	04/20/22 14:47	OP39135	(unrelated sample)
ZZZZZZ	2M123356.D	04/20/22 15:14	OP39215	(unrelated sample)
JD43222-4	2M123357.D	04/20/22 15:41	OP39215	(used for QC only; not part of job JD43215)
ZZZZZZ	2M123358.D	04/20/22 16:07	OP39215	(unrelated sample)
OP39215-MS	2M123359.D	04/20/22 16:34	OP39215	Matrix Spike
OP39215-MSD	2M123360.D	04/20/22 17:01	OP39215	Matrix Spike Duplicate
OP39191-MB1	2M123363.D	04/20/22 17:27	OP39191	Method Blank
JD43215-5	2M123365.D	04/20/22 18:21	OP39191	S-423_SL_20220413
E2M5551-ECC5549	2M123369.D	04/20/22 20:08	n/a	Ending cal 10
E2M5551-ECC5550	2M123370.D	04/20/22 20:34	n/a	Ending cal 10

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E2M5552	**Method:** SW846 8270E	**Instrument ID:** GCMS2M

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E2M5552-DFTPP	2M123373.D	04/21/22 00:55	n/a	DFTPP Tune
E2M5552-CC5549	2M123374.D	04/21/22 01:15	n/a	Continuing cal 5
E2M5552-CC5550	2M123375.D	04/21/22 01:41	n/a	Continuing cal 5
OP39192-MB1	2M123376.D	04/21/22 02:42	OP39192	Method Blank
OP39192-BS1	2M123377.D	04/21/22 03:09	OP39192	Blank Spike
OP39192-BSD	2M123378.D	04/21/22 03:35	OP39192	Blank Spike Duplicate
JD43215-25	2M123379.D	04/21/22 04:02	OP39192	C-175_20220413
JD43215-26	2M123380.D	04/21/22 04:28	OP39192	C-176_20220413
JD43215-15	2M123382.D	04/21/22 10:10	OP39191	DUP-7_20220414
JD43215-16	2M123383.D	04/21/22 10:36	OP39191	URS-5_20220414
JD43215-14	2M123384.D	04/21/22 11:03	OP39191	S-480_SL_20220414
JD43215-1	2M123387.D	04/21/22 12:39	OP39191	S-355_SL_20220413

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E3P4567 **Method:** SW846 8270E BY SIM **Instrument ID:** GCMS3P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E3P4567-DFTPP	3P96182.D	04/07/22 13:02	n/a	DFTPP Tune
E3P4567-ICC4567	3P96183.D	04/07/22 13:26	n/a	Initial cal 0.2
E3P4567-IC4567	3P96184.D	04/07/22 13:49	n/a	Initial cal 0.02
E3P4567-IC4567	3P96185.D	04/07/22 14:24	n/a	Initial cal 1
E3P4567-IC4567	3P96186.D	04/07/22 14:48	n/a	Initial cal 0.01
E3P4567-IC4567	3P96187.D	04/07/22 15:11	n/a	Initial cal 0.5
E3P4567-IC4567	3P96188.D	04/07/22 15:34	n/a	Initial cal 0.04
E3P4567-IC4567	3P96189.D	04/07/22 15:57	n/a	Initial cal 0.1
E3P4567-IC4567	3P96190.D	04/07/22 16:21	n/a	Initial cal 0.004
E3P4567-IC4567	3P96191.D	04/07/22 16:44	n/a	Initial cal 0.002
E3P4567-ICV4567	3P96192.D	04/07/22 17:10	n/a	Initial cal verification 0.2
E3P4567-ICV4567	3P96193.D	04/07/22 17:33	n/a	Initial cal verification 0.2
OP38957A-MB1	3P96194.D	04/07/22 18:09	OP38957A	Method Blank
OP38957A-BS12	3P96195.D	04/07/22 18:32	OP38957A	Blank Spike
ZZZZZZ	3P96196.D	04/07/22 18:55	OP38957A	(unrelated sample)
ZZZZZZ	3P96197.D	04/07/22 19:19	OP38957A	(unrelated sample)
ZZZZZZ	3P96198.D	04/07/22 19:42	OP38957A	(unrelated sample)
ZZZZZZ	3P96199.D	04/07/22 20:06	OP38957A	(unrelated sample)
ZZZZZZ	3P96200.D	04/07/22 20:29	OP38957A	(unrelated sample)
ZZZZZZ	3P96201.D	04/07/22 20:52	OP38957A	(unrelated sample)
ZZZZZZ	3P96202.D	04/07/22 21:16	OP38957A	(unrelated sample)
JD42309-10	3P96203.D	04/07/22 21:39	OP38957A	(used for QC only; not part of job JD43215)
OP38957A-MSA	3P96204.D	04/07/22 22:03	OP38957A	Matrix Spike
OP38957A-MSDA	3P96205.D	04/07/22 22:26	OP38957A	Matrix Spike Duplicate
ZZZZZZ	3P96206.D	04/07/22 22:50	OP38957A	(unrelated sample)
ZZZZZZ	3P96207.D	04/07/22 23:13	OP38957A	(unrelated sample)
ZZZZZZ	3P96208.D	04/07/22 23:36	OP38957A	(unrelated sample)
ZZZZZZ	3P96209.D	04/08/22 00:00	OP38957A	(unrelated sample)
ZZZZZZ	3P96210.D	04/08/22 00:23	OP38957A	(unrelated sample)
ZZZZZZ	3P96211.D	04/08/22 00:46	OP38957A	(unrelated sample)

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E3P4582 **Method:** SW846 8270E BY SIM **Instrument ID:** GCMS3P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E3P4582-DFTPP	3P96469.D	04/20/22 01:43	n/a	DFTPP Tune
E3P4582-CC4567	3P96470.D	04/20/22 01:54	n/a	Continuing cal 0.1
OP39191-MB1	3P96472.D	04/20/22 03:21	OP39191	Method Blank
OP39191-BS1	3P96473.D	04/20/22 03:43	OP39191	Blank Spike
OP39191-BSD	3P96474.D	04/20/22 04:05	OP39191	Blank Spike Duplicate
JD43215-1	3P96475.D	04/20/22 04:27	OP39191	S-355_SL_20220413
JD43215-2	3P96476.D	04/20/22 04:50	OP39191	C-61_20220413
JD43215-3	3P96477.D	04/20/22 05:12	OP39191	C-129D_20220413
JD43215-4	3P96478.D	04/20/22 05:34	OP39191	A-4_20220413
JD43215-5	3P96479.D	04/20/22 05:56	OP39191	S-423_SL_20220413
JD43215-6	3P96480.D	04/20/22 06:19	OP39191	S-150SRTF_20220414
JD43215-7	3P96481.D	04/20/22 06:41	OP39191	N-152_20220414
JD43215-8	3P96482.D	04/20/22 07:03	OP39191	S-357_SL_20220414
JD43215-9	3P96483.D	04/20/22 07:25	OP39191	S-149SRTF_20220414
JD43215-10	3P96484.D	04/20/22 07:48	OP39191	S-147SRTF_20220414
JD43215-11	3P96485.D	04/20/22 08:10	OP39191	S-337_SL_20220414
JD43215-12	3P96486.D	04/20/22 08:32	OP39191	N-85_20220414
JD43215-13	3P96487.D	04/20/22 08:54	OP39191	N-163_20220414
JD43215-14	3P96488.D	04/20/22 09:17	OP39191	S-480_SL_20220414
JD43215-15	3P96489.D	04/20/22 09:39	OP39191	DUP-7_20220414
JD43215-16	3P96490.D	04/20/22 10:01	OP39191	URS-5_20220414
JD43215-17	3P96491.D	04/20/22 10:23	OP39191	W-1_SL_20220415
JD43215-18	3P96492.D	04/20/22 10:46	OP39191	S-110DSRTF_20220415
JD43215-19	3P96493.D	04/20/22 11:08	OP39191	W-13_20220415
JD43215-20	3P96494.D	04/20/22 11:30	OP39191	W-32D_20220415

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E4P2764 **Method:** SW846 8270E BY SIM **Instrument ID:** GCMS4P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E4P2764-DFTPP	4P52915.D	04/14/22 10:05	n/a	DFTPP Tune
E4P2764-IC2764	4P52916.D	04/14/22 10:20	n/a	Initial cal 0.02
E4P2764-ICC2764	4P52917.D	04/14/22 11:09	n/a	Initial cal 0.1
E4P2764-IC2764	4P52918.D	04/14/22 11:40	n/a	Initial cal 1
E4P2764-IC2764	4P52919.D	04/14/22 12:03	n/a	Initial cal 0.01
E4P2764-IC2764	4P52920.D	04/14/22 12:26	n/a	Initial cal 0.5
E4P2764-IC2764	4P52921.D	04/14/22 12:50	n/a	Initial cal 0.04
E4P2764-IC2764	4P52922.D	04/14/22 13:32	n/a	Initial cal 0.2
E4P2764-IC2764	4P52923.D	04/14/22 13:56	n/a	Initial cal 0.004
E4P2764-IC2764	4P52924.D	04/14/22 14:19	n/a	Initial cal 0.002
E4P2764-ICV2764	4P52925.D	04/14/22 14:48	n/a	Initial cal verification 0.2
E4P2764-ICV2764	4P52926.D	04/14/22 15:11	n/a	Initial cal verification 0.2

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E4P2772 **Method:** SW846 8270E BY SIM **Instrument ID:** GCMS4P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E4P2772-DFTPP	4P53064.D	04/20/22 23:16	n/a	DFTPP Tune
E4P2772-CC2764	4P53065.D	04/20/22 23:36	n/a	Continuing cal 0.1
OP39192A-MB1	4P53066.D	04/21/22 00:32	OP39192A	Method Blank
ZZZZZZ	4P53067.D	04/21/22 00:55	OP39192A	(unrelated sample)
ZZZZZZ	4P53068.D	04/21/22 01:18	OP39192A	(unrelated sample)
OP39192A-BS12	4P53069.D	04/21/22 01:41	OP39192A	Blank Spike
OP39192A-BSD12	4P53070.D	04/21/22 02:04	OP39192A	Blank Spike Duplicate
ZZZZZZ	4P53071.D	04/21/22 02:27	OP39192A	(unrelated sample)
ZZZZZZ	4P53072.D	04/21/22 02:50	OP39192A	(unrelated sample)
ZZZZZZ	4P53073.D	04/21/22 03:13	OP39192A	(unrelated sample)
ZZZZZZ	4P53074A.D	04/21/22 03:59	OP39192A	(unrelated sample)
ZZZZZZ	4P53075.D	04/21/22 04:22	OP39192A	(unrelated sample)
ZZZZZZ	4P53076.D	04/21/22 04:45	OP39192A	(unrelated sample)
ZZZZZZ	4P53077.D	04/21/22 05:08	OP39192A	(unrelated sample)
ZZZZZZ	4P53078.D	04/21/22 05:31	OP39192A	(unrelated sample)
ZZZZZZ	4P53079.D	04/21/22 05:54	OP39192A	(unrelated sample)
ZZZZZZ	4P53080.D	04/21/22 06:18	OP39192A	(unrelated sample)
JD43215-21	4P53081.D	04/21/22 06:41	OP39192A	S-78SRTF_20220415
JD43215-23	4P53082.D	04/21/22 07:04	OP39192A	W-32_SL_20220415
JD43215-24	4P53083.D	04/21/22 07:27	OP39192A	S-118DSRTF_20220415
JD43215-25	4P53084.D	04/21/22 07:50	OP39192A	C-175_20220413
JD43215-26	4P53085.D	04/21/22 08:14	OP39192A	C-176_20220413
JD43215-22	4P53086.D	04/21/22 08:36	OP39192A	W-31_SL_20220415
JD43215-22	4P53088.D	04/21/22 11:09	OP39192A	W-31_SL_20220415

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E5P3865	**Method:** SW846 8270E	**Instrument ID:** GCMS5P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E5P3865-DFTPP	5P81576.D	02/17/22 23:28	n/a	DFTPP Tune
E5P3865-IC3865	5P81577.D	02/17/22 23:45	n/a	Initial cal 20
E5P3865-IC3865	5P81578.D	02/18/22 00:15	n/a	Initial cal 16
E5P3865-ICC3865	5P81579.D	02/18/22 00:45	n/a	Initial cal 10
E5P3865-IC3865	5P81580.D	02/18/22 01:15	n/a	Initial cal 5
E5P3865-IC3865	5P81581.D	02/18/22 01:45	n/a	Initial cal 2
E5P3865-IC3865	5P81583.D	02/18/22 03:54	n/a	Initial cal 0.4
E5P3865-IC3865	5P81582C.D	02/18/22 04:25	n/a	Initial cal 1
E5P3865-IC3865	5P81584.D	02/18/22 04:56	n/a	Initial cal 0.2
E5P3865-ICV3865	5P81585.D	02/18/22 05:27	n/a	Initial cal verification 10

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E5P3881	**Method:** SW846 8270E	**Instrument ID:** GCMS5P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E5P3881-DFTPP	5P81748.D	03/09/22 12:05	n/a	DFTPP Tune
E5P3881-IC3881	5P81749.D	03/09/22 12:33	n/a	Initial cal 20
E5P3881-IC3881	5P81750.D	03/09/22 13:00	n/a	Initial cal 0.2
E5P3881-IC3881	5P81751.D	03/09/22 13:27	n/a	Initial cal 16
E5P3881-IC3881	5P81752.D	03/09/22 13:54	n/a	Initial cal 0.4
E5P3881-IC3881	5P81753.D	03/09/22 14:21	n/a	Initial cal 10
E5P3881-IC3881	5P81754.D	03/09/22 14:48	n/a	Initial cal 1
E5P3881-ICC3881	5P81755.D	03/09/22 15:15	n/a	Initial cal 5
E5P3881-IC3881	5P81756.D	03/09/22 15:42	n/a	Initial cal 2
E5P3881-ICV3881	5P81757.D	03/09/22 16:10	n/a	Initial cal verification 10
E5P3881-ICV3881	5P81758.D	03/09/22 16:37	n/a	Initial cal verification 10
E5P3881-ICV3881	5P81759.D	03/09/22 17:04	n/a	Initial cal verification 10
E5P3881-ICV3881	5P81761.D	03/09/22 17:57	n/a	Initial cal verification 10
E5P3881-ICV3881	5P81762.D	03/09/22 18:37	n/a	Initial cal verification 10

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: E5P3929	**Method:** SW846 8270E	**Instrument ID:** GCMS5P

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
E5P3929-DFTPP	5P82711.D	04/25/22 10:55	n/a	DFTPP Tune
E5P3929-CC3881	5P82712.D	04/25/22 11:09	n/a	Continuing cal 5
E5P3929-CC3865	5P82713.D	04/25/22 11:36	n/a	Continuing cal 5
OP39229-MB1	5P82716.D	04/25/22 13:03	OP39229	Method Blank
OP39250-MB1	5P82717.D	04/25/22 13:30	OP39250	Method Blank
OP39250-BS1	5P82718.D	04/25/22 13:56	OP39250	Blank Spike
OP39250-BSD	5P82719.D	04/25/22 14:29	OP39250	Blank Spike Duplicate
ZZZZZZ	5P82726.D	04/25/22 14:55	OP39229	(unrelated sample)
OP39191A-MB1	5P82720.D	04/25/22 15:21	OP39191A	Method Blank
OP39191A-BS1	5P82721.D	04/25/22 15:47	OP39191A	Blank Spike
OP39191A-BSD	5P82722.D	04/25/22 16:14	OP39191A	Blank Spike Duplicate
JD43215-2	5P82723.D	04/25/22 16:40	OP39191A	C-61_20220413
ZZZZZZ	5P82724.D	04/25/22 17:06	OP39231	(unrelated sample)
ZZZZZZ	5P82725.D	04/25/22 17:32	OP39231	(unrelated sample)
ZZZZZZ	5P82727.D	04/25/22 17:58	OP39229	(unrelated sample)
ZZZZZZ	5P82728.D	04/25/22 18:24	OP39229	(unrelated sample)
ZZZZZZ	5P82729.D	04/25/22 18:50	OP39250	(unrelated sample)
ZZZZZZ	5P82730.D	04/25/22 19:16	OP39250	(unrelated sample)
ZZZZZZ	5P82731.D	04/25/22 21:01	OP39250	(unrelated sample)
E5P3929-ECC3881	5P82732.D	04/25/22 21:27	n/a	Ending cal 5
E5P3929-ECC3865	5P82733.D	04/25/22 21:53	n/a	Ending cal 5

MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\jonkm\042622\e5p3929\
Data File : 5p82723.d
Acq On : 25 Apr 2022 4:40 pm
Operator : kristis
Sample : jd43215-2 Inst : MS5P
Misc : op39191a,e5p3929,250,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M
Quant Results File: M5P3881LVI.RES
Quant Time: Apr 26 00:21:34 2022
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Mon Apr 25 23:29:16 2022
Response via : Initial Calibration

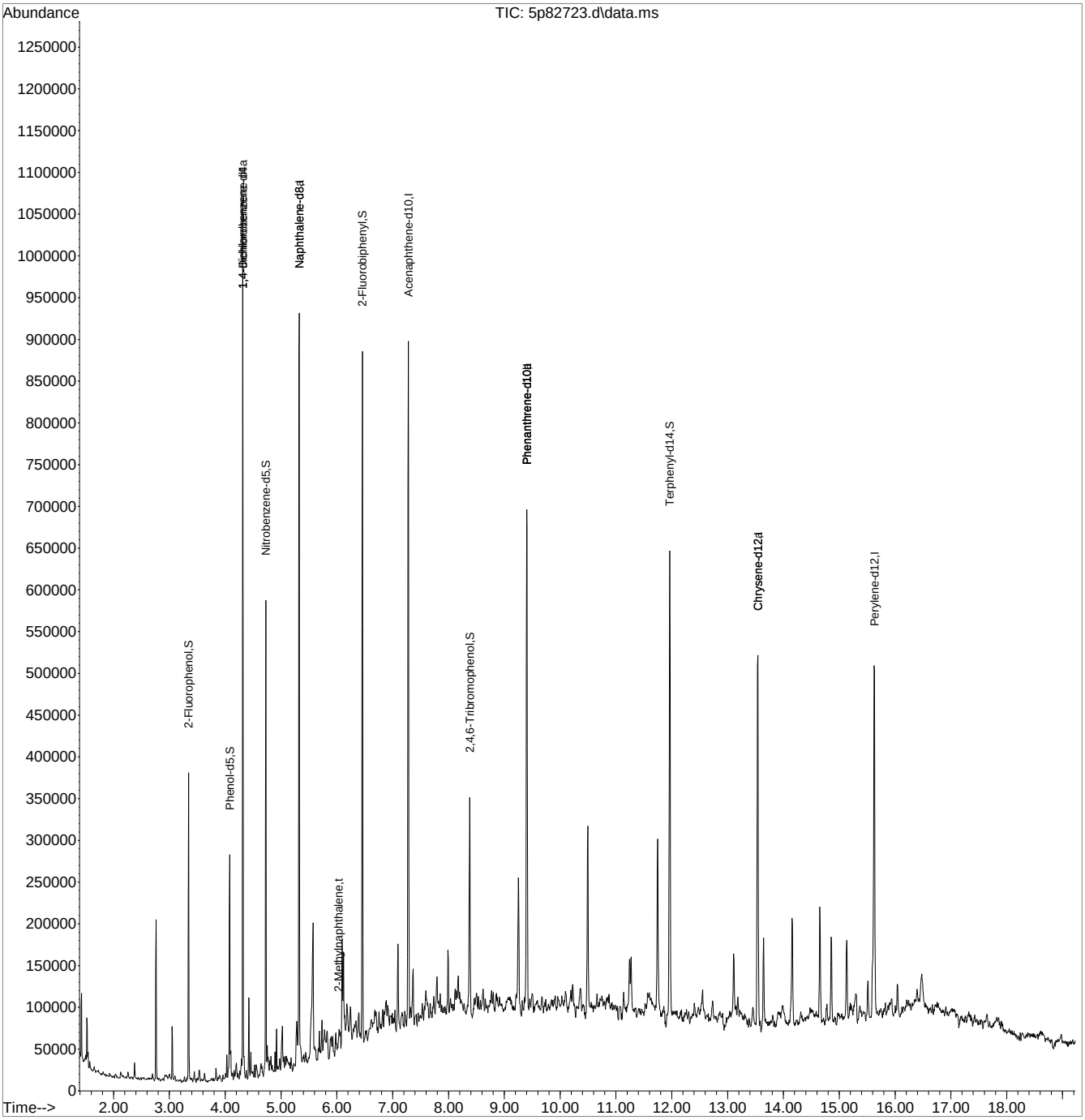
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-dichlorobenzene-d4	4.315	152	121476	8.00	ppm	0.00
24) Naphthalene-d8	5.325	136	422749	8.00	ppm	0.00
46) Acenaphthene-d10	7.280	164	203488	8.00	ppm	0.00
69) Phenanthrene-d10	9.401	188	293061	8.00	ppm	0.00
84) Chrysene-d12	13.541	240	184476	8.00	ppm	0.00
93) Perylene-d12	15.630	264	170182	8.00	ppm	0.00
103) 1,4-Dichlorobenzene-d4a	4.315	152	121476	8.00	ppm	0.00
105) Phenanthrene-d10a	9.401	188	293061	8.00	ppm	0.00
107) Naphthalene-d8a	5.325	136	422749	8.00	ppm	0.00
109) Chrysene-d12a	13.541	240	184476	8.00	ppm	0.00
111) Phenanthrene-d10b	9.401	188	293061	8.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.343	112	88319	3.77	ppm	0.00
Spiked Amount 10.000			Recovery = 37.70%			
8) Phenol-d5	4.080	99	78940	2.67	ppm	0.00
Spiked Amount 10.000			Recovery = 26.70%			
25) Nitrobenzene-d5	4.726	82	140843	7.32	ppm	0.00
Spiked Amount 10.000			Recovery = 73.20%			
51) 2-Fluorobiphenyl	6.457	172	257185	7.52	ppm	0.00
Spiked Amount 10.000			Recovery = 75.20%			
74) 2,4,6-Tribromophenol	8.380	330	32577	7.71	ppm	0.00
Spiked Amount 10.000			Recovery = 77.10%			
87) Terphenyl-d14	11.965	244	196014	7.24	ppm	0.00
Spiked Amount 10.000			Recovery = 72.40%			
112) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
113) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
Target Compounds						Qvalue
44) 2-Methylnaphthalene	6.030	141	3179	0.09	ppm	96

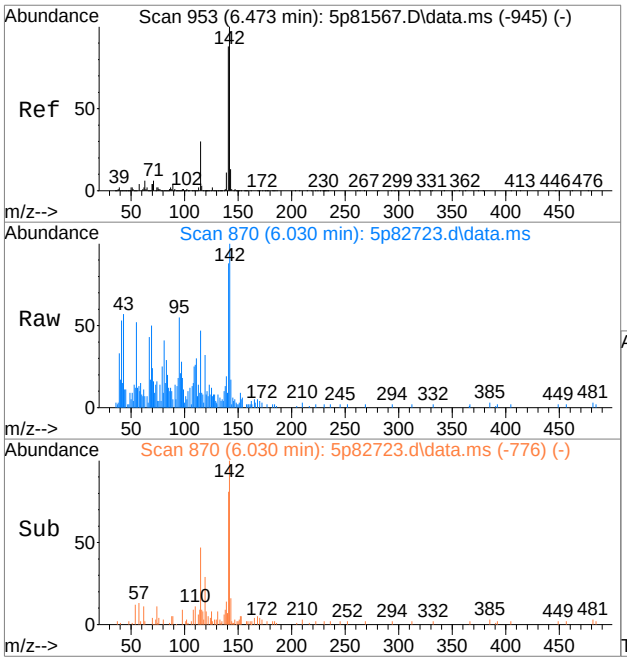
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\jonkm\042622\e5p3929\
Data File : 5p82723.d
Acq On : 25 Apr 2022 4:40 pm
Operator : kristis
Sample : jd43215-2 Inst : MS5P
Misc : op39191a,e5p3929,250,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M
Quant Results File: M5P3881LVI.RES
Quant Time: Apr 26 00:21:34 2022
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Mon Apr 25 23:29:16 2022
Response via : Initial Calibration

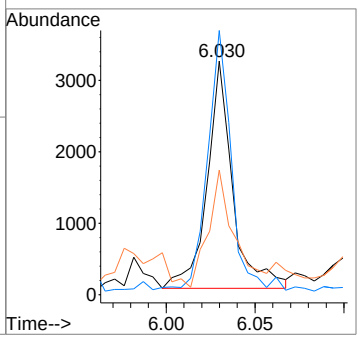




#44
2-Methylnaphthalene
Concen: 0.09 ppm
RT: 6.030 min Scan# 870
Delta R.T. 0.000 min
Lab File: 5p82723.d
Acq: 25 Apr 2022 4:40 pm

Tgt Ion:141 Resp: 3179

Ion	Ratio	Lower	Upper
141	100		
142	116.0	87.5	147.5
115	41.1	3.9	63.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123379.D
Acq On : 21 Apr 2022 4:02 am
Operator : chriss2
Sample : jd43215-25
Misc : op39192,e2m5552,230,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 21 10:00:55 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

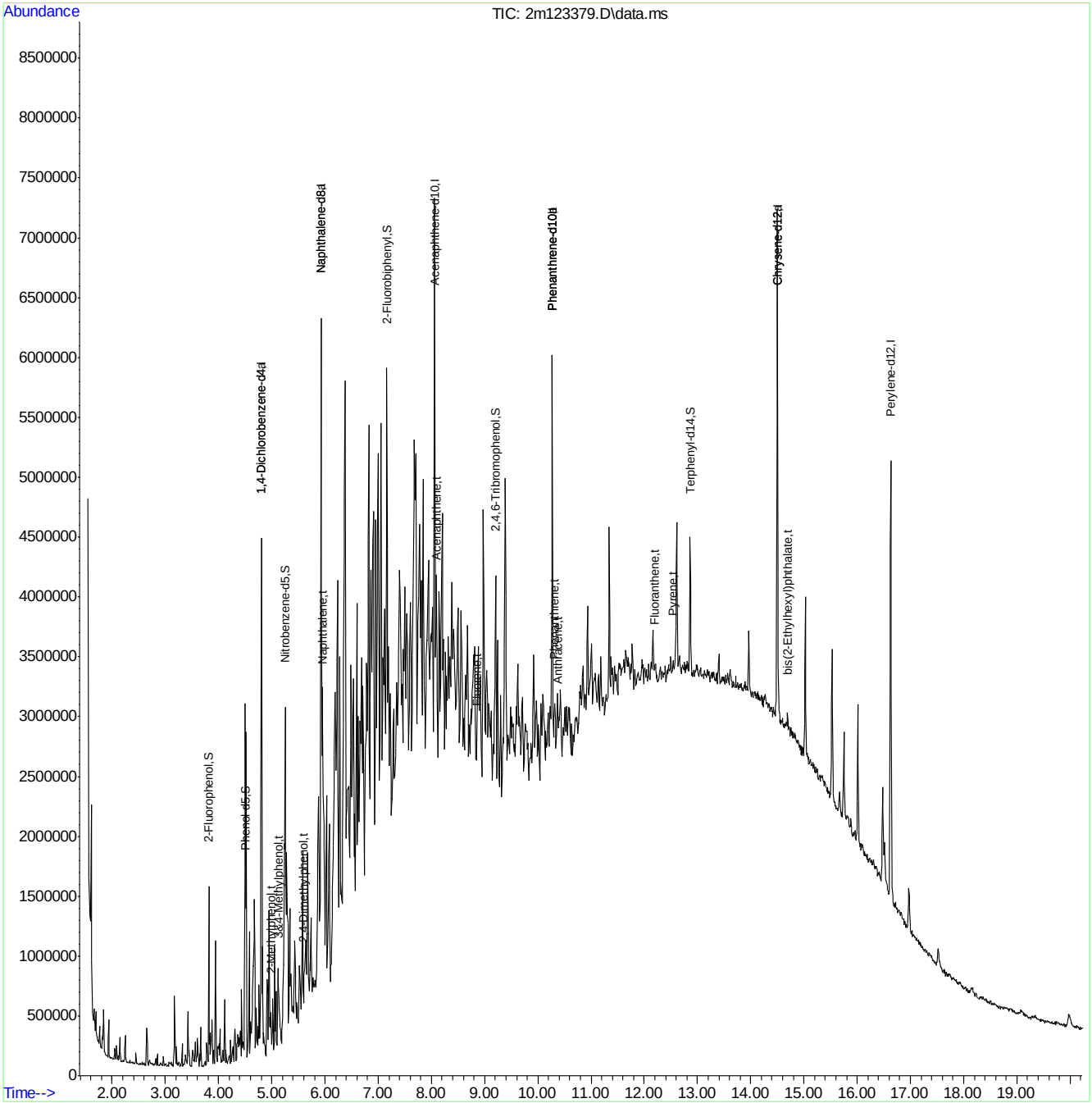
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.799	152	459982	8.00	ppm	-0.02
24) Naphthalene-d8	5.928	136	1870647	8.00	ppm	-0.02
46) Acenaphthene-d10	8.057	164	951327	8.00	ppm	-0.02
69) Phenanthrene-d10	10.271	188	1467405	8.00	ppm	-0.02
84) Chrysene-d12	14.502	240	1708528	8.00	ppm	-0.02
93) Perylene-d12	16.630	264	2003769	8.00	ppm	-0.02
103) 1,4-Dichlorobenzene-d4a	4.799	152	459982	8.00	ppm	-0.01
105) Phenanthrene-d10a	10.271	188	1467363	8.00	ppm	0.00
107) Naphthalene-d8a	5.928	136	1870647	8.00	ppm	-0.01
109) Chrysene-d12a	14.502	240	1708528	8.00	ppm	0.00
111) Phenanthrene-d10b	10.271	188	1467435	8.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.815	112	267361	3.66	ppm	-0.01
Spiked Amount 10.000			Recovery = 36.60%			
8) Phenol-d5	4.510	99	270447	2.73	ppm	-0.01
Spiked Amount 10.000			Recovery = 27.30%			
25) Nitrobenzene-d5	5.254	82	561126	6.65	ppm	-0.02
Spiked Amount 10.000			Recovery = 66.50%			
51) 2-Fluorobiphenyl	7.163	172	957473	5.90	ppm	-0.02
Spiked Amount 10.000			Recovery = 59.00%			
74) 2,4,6-Tribromophenol	9.207	330	203393	8.16	ppm	-0.02
Spiked Amount 10.000			Recovery = 81.60%			
87) Terphenyl-d14	12.865	244	574063	2.20	ppm	-0.02
Spiked Amount 10.000			Recovery = 22.00%			
112) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
113) o-terphenyl	0.000	230	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
Target Compounds						Qvalue
19) 2-Methylphenol	4.992	108	6670	0.09	ppm	81
21) 3&4-Methylphenol	5.120	108	4012	0.05	ppm	87
30) 2,4-Dimethylphenol	5.586	107	21891	0.27	ppm	98
38) Naphthalene	5.949	128	32735	0.14	ppm	94
59) Acenaphthene	8.099	153	73801	0.54	ppm	91
66) Fluorene	8.848	166	26390	0.17	ppm	94
78) Phenanthrene	10.308	178	18138	0.09	ppm	65
79) Anthracene	10.383	178	17630	0.09	ppm	61
82) Fluoranthene	12.191	202	35812	0.16	ppm	97
86) Pyrene	12.544	202	59084	0.08	ppm	89
92) bis(2-Ethylhexyl)phtha...	14.689	149	51523	0.29	ppm	90

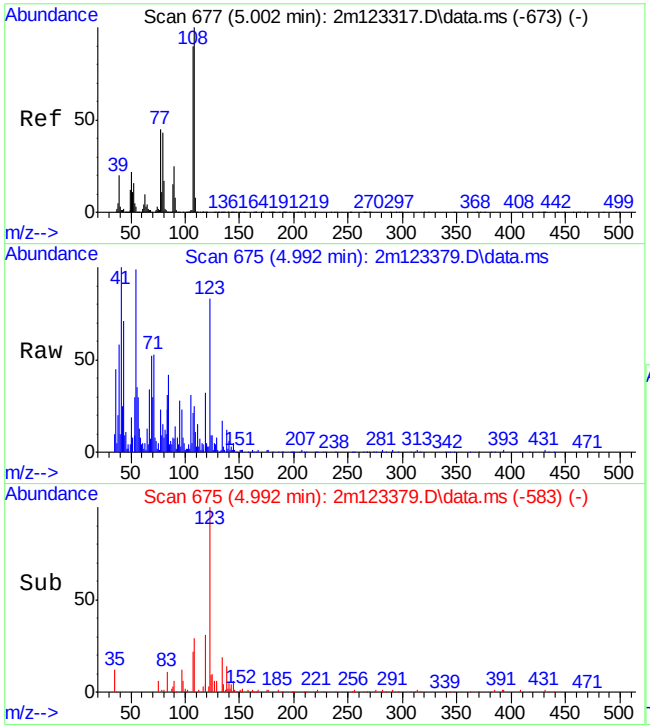
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123379.D
Acq On : 21 Apr 2022 4:02 am
Operator : chriss2
Sample : jd43215-25
Misc : op39192,e2m5552,230,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 21 10:00:55 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

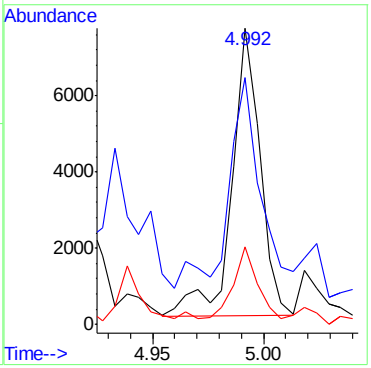


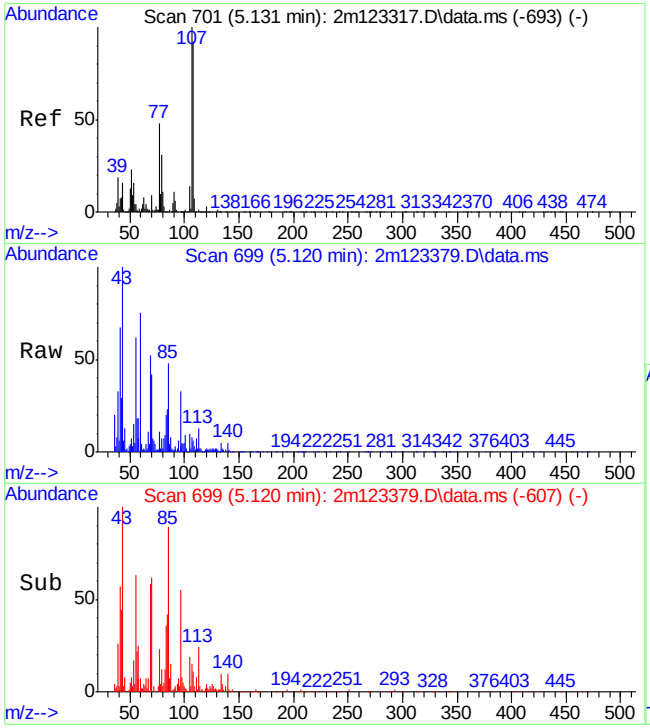


#19
2-Methylphenol
Concen: 0.09 ppm
RT: 4.992 min Scan# 675
Delta R.T. -0.011 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:108 Resp: 6670

Ion	Ratio	Lower	Upper
108	100		
107	67.9	59.5	119.5
90	23.8	0.0	55.1

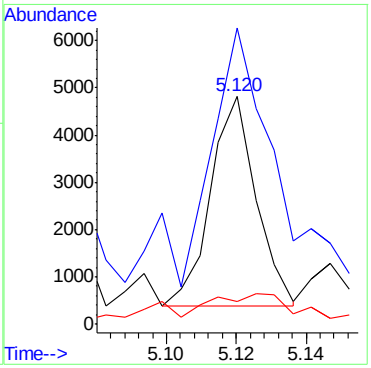


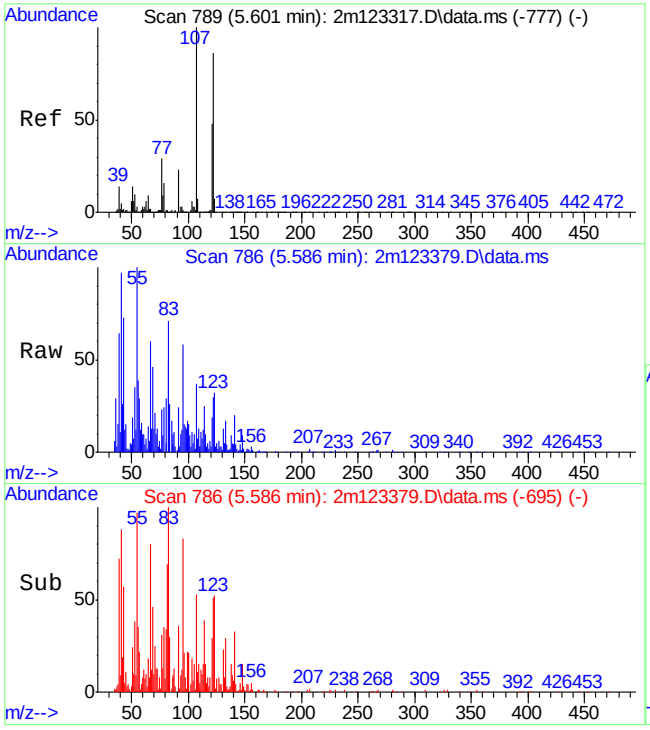


#21
3&4-Methylphenol
Concen: 0.05 ppm
RT: 5.120 min Scan# 699
Delta R.T. -0.011 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:108 Resp: 4012

Ion	Ratio	Lower	Upper
108	100		
107	96.0	78.2	138.2
90	2.7	0.0	41.7

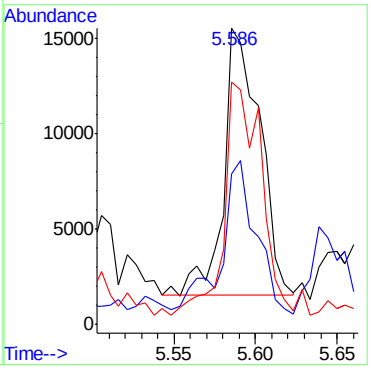


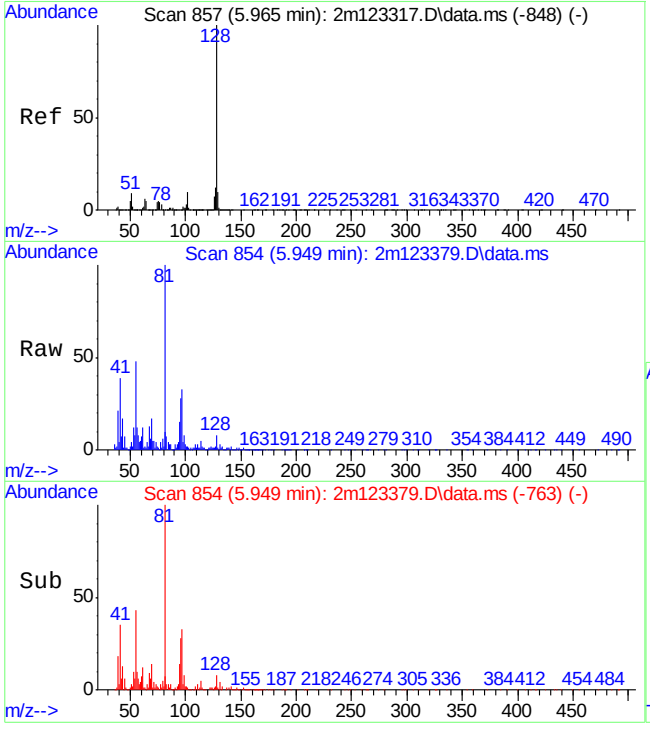


#30
2,4-Dimethylphenol
Concen: 0.27 ppm
RT: 5.586 min Scan# 786
Delta R.T. -0.016 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:107 Resp: 21891

Ion	Ratio	Lower	Upper
107	100		
121	51.1	17.6	77.6
122	85.6	55.0	115.0

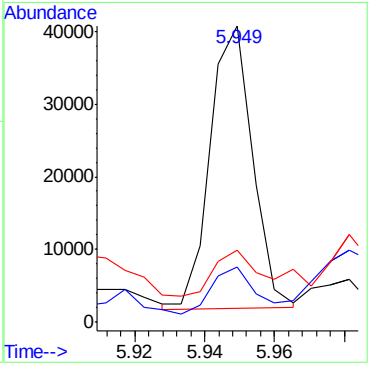


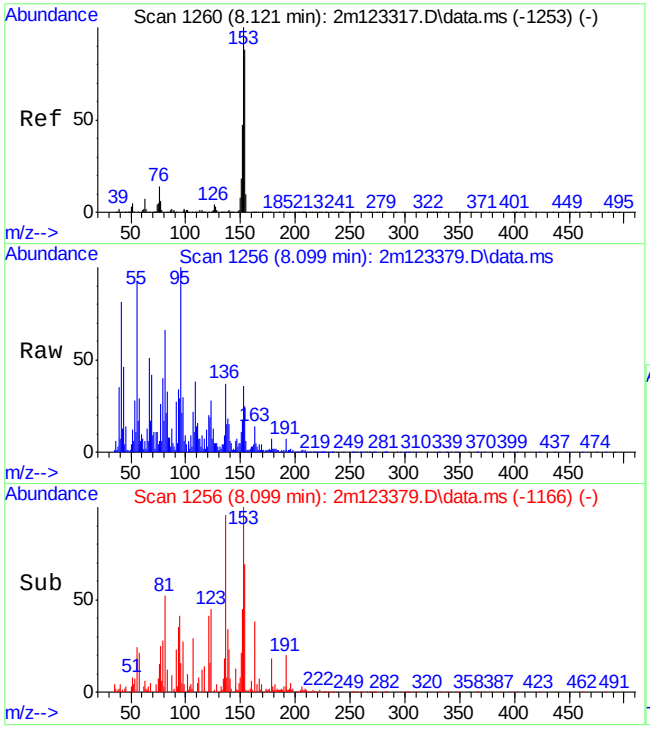


#38
Naphthalene
Concen: 0.14 ppm
RT: 5.949 min Scan# 854
Delta R.T. -0.016 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:128 Resp: 32735

Ion	Ratio	Lower	Upper
128	100		
129	13.9	0.0	40.3
127	11.3	0.0	42.3

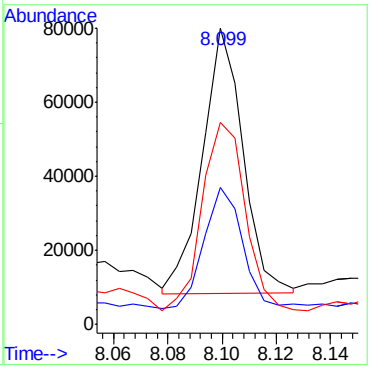


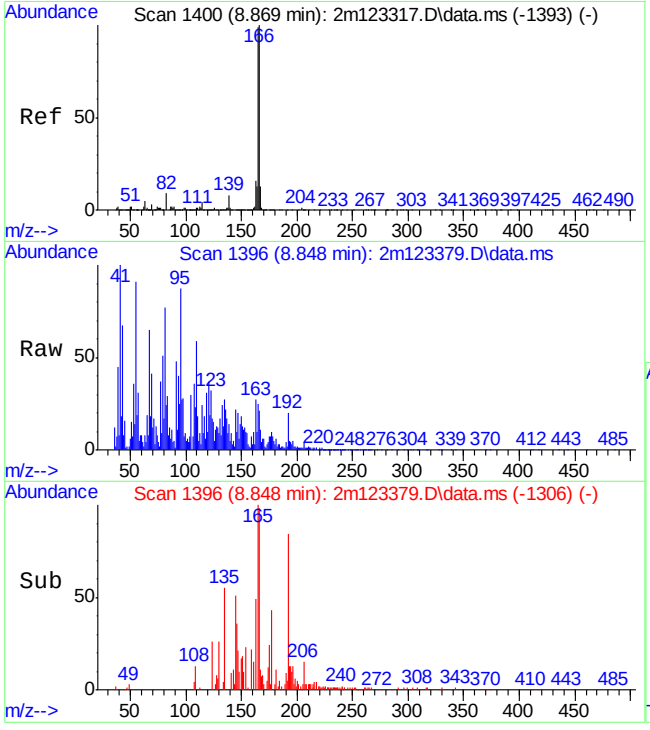


#59
Acenaphthene
Concen: 0.54 ppm
RT: 8.099 min Scan# 1256
Delta R.T. -0.021 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:153 Resp: 73801

Ion	Ratio	Lower	Upper
153	100		
152	45.7	17.1	77.1
154	72.0	53.7	113.7

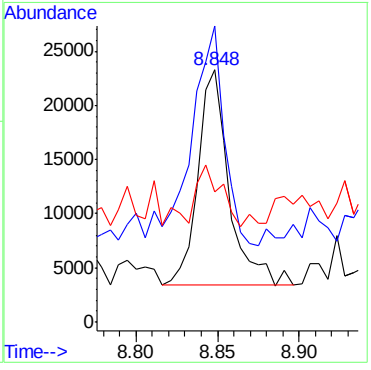


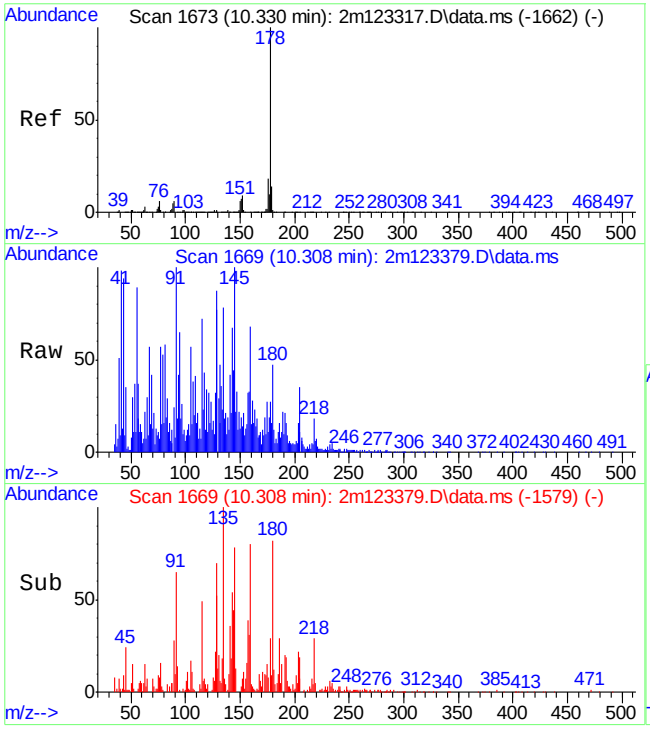


#66
Fluorene
Concen: 0.17 ppm
RT: 8.848 min Scan# 1396
Delta R.T. -0.021 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:166 Resp: 26390

Ion	Ratio	Lower	Upper
166	100		
165	92.8	68.9	128.9
167	10.6	0.0	42.7

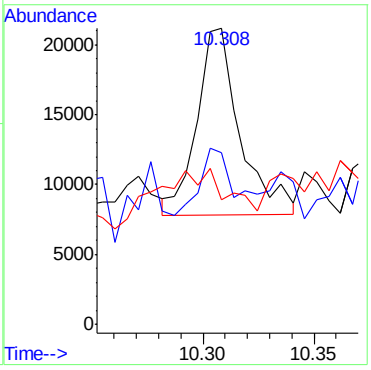


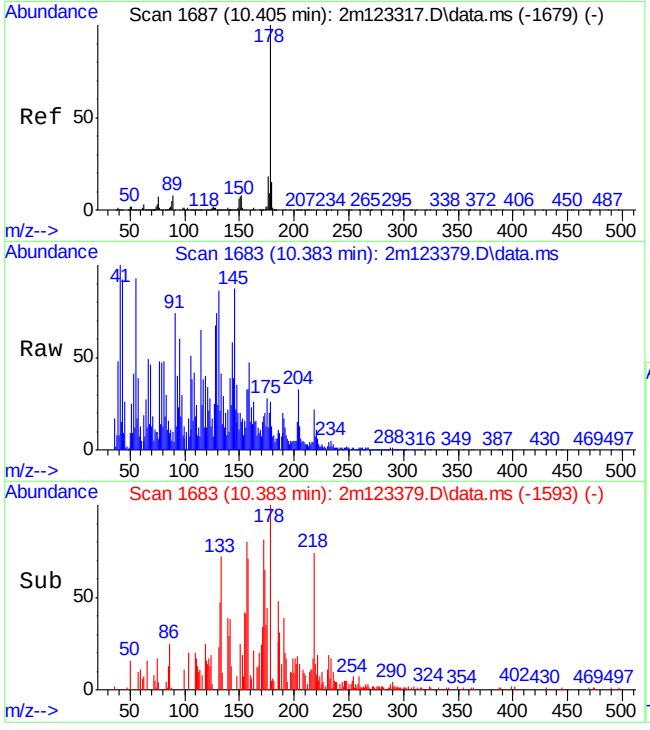


#78
Phenanthrene
Concen: 0.09 ppm
RT: 10.308 min Scan# 1669
Delta R.T. -0.021 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:178 Resp: 18138

Ion	Ratio	Lower	Upper
178	100		
179	25.4	0.0	44.0
176	0.0	0.0	48.3

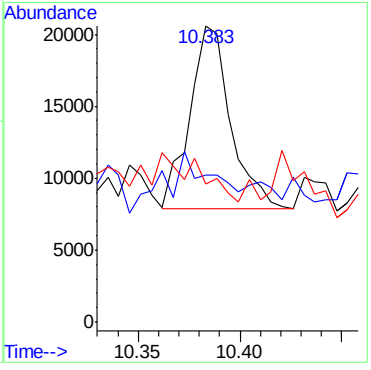


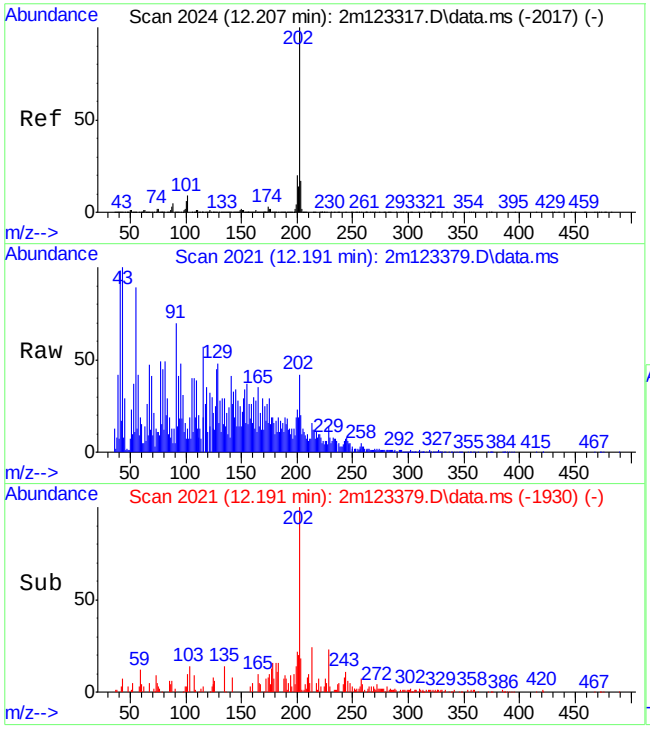


#79
Anthracene
Concen: 0.09 ppm
RT: 10.383 min Scan# 1683
Delta R.T. -0.021 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:178 Resp: 17630

Ion	Ratio	Lower	Upper
178	100		
179	0.0	0.0	45.3
176	0.0	0.0	48.0

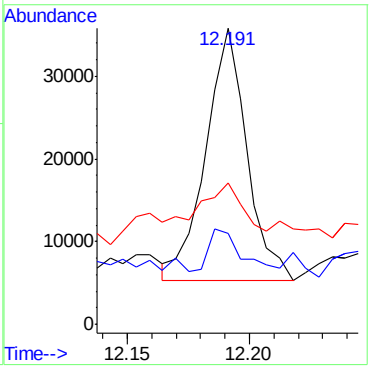


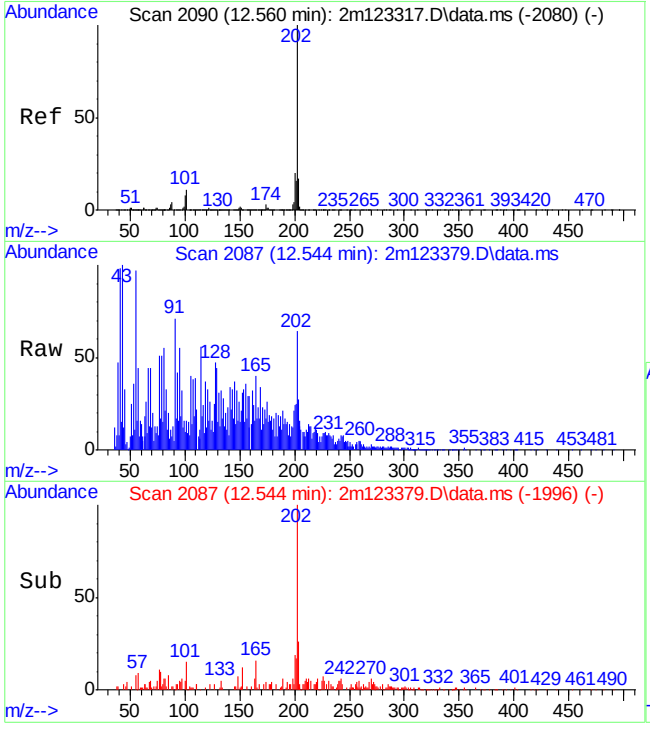


#82
Fluoranthene
Concen: 0.16 ppm
RT: 12.191 min Scan# 2021
Delta R.T. -0.016 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:202 Resp: 35812

Ion	Ratio	Lower	Upper
202	100		
101	11.2	0.0	39.0
203	17.5	0.0	46.8

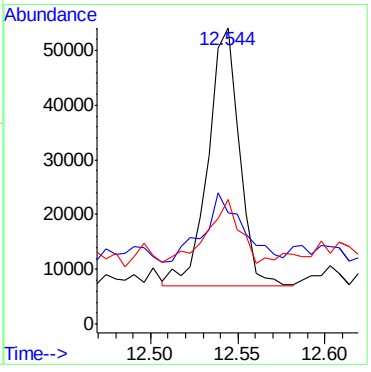


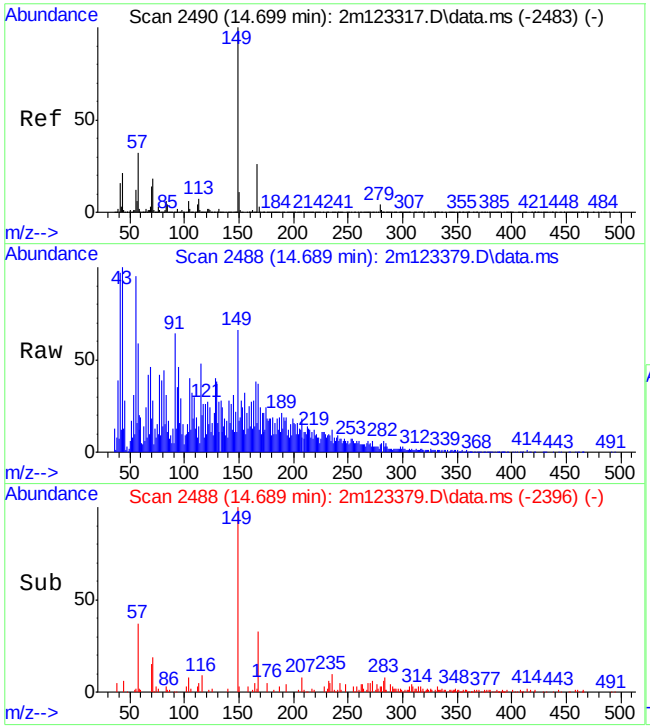


#86
Pyrene
Concen: 0.08 ppm
RT: 12.544 min Scan# 2087
Delta R.T. -0.016 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:202 Resp: 59084

Ion	Ratio	Lower	Upper
202	100		
200	16.4	0.0	50.4
203	23.0	0.0	46.7

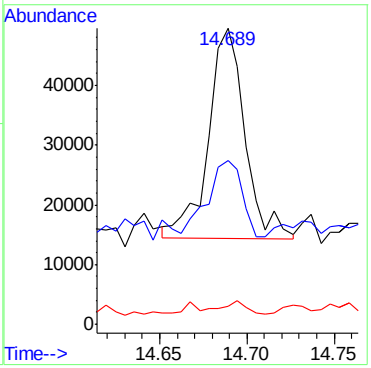




#92
bis(2-Ethylhexyl)phthalate
Concen: 0.29 ppm
RT: 14.689 min Scan# 2488
Delta R.T. -0.011 min
Lab File: 2m123379.D
Acq: 21 Apr 2022 4:02 am

Tgt Ion:149 Resp: 51523

Ion	Ratio	Lower	Upper
149	100		
167	31.2	0.0	56.0
279	1.5	0.0	33.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123380.D
Acq On : 21 Apr 2022 4:28 am
Operator : chriss2
Sample : jd43215-26
Misc : op39192,e2m5552,230,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 21 10:04:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.799	152	477462	8.00	ppm	-0.02
24) Naphthalene-d8	5.928	136	2007994	8.00	ppm	-0.02
46) Acenaphthene-d10	8.057	164	1053307	8.00	ppm	-0.02
69) Phenanthrene-d10	10.271	188	1625508	8.00	ppm	-0.02
84) Chrysene-d12	14.502	240	1731405	8.00	ppm	-0.02
93) Perylene-d12	16.630	264	1985241	8.00	ppm	-0.02
103) 1,4-Dichlorobenzene-d4a	4.799	152	477462	8.00	ppm	-0.01
105) Phenanthrene-d10a	10.271	188	1625508	8.00	ppm	0.00
107) Naphthalene-d8a	5.928	136	2007994	8.00	ppm	-0.01
109) Chrysene-d12a	14.502	240	1731405	8.00	ppm	0.00
111) Phenanthrene-d10b	10.271	188	1625508	8.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.815	112	425666	5.62	ppm	-0.01
Spiked Amount 10.000			Recovery = 56.20%			
8) Phenol-d5	4.510	99	401216	3.90	ppm	-0.01
Spiked Amount 10.000			Recovery = 39.00%			
25) Nitrobenzene-d5	5.254	82	735174	8.12	ppm	-0.02
Spiked Amount 10.000			Recovery = 81.20%			
51) 2-Fluorobiphenyl	7.163	172	1420313	7.90	ppm	-0.02
Spiked Amount 10.000			Recovery = 79.00%			
74) 2,4,6-Tribromophenol	9.206	330	253410	9.18	ppm	-0.02
Spiked Amount 10.000			Recovery = 91.80%			
87) Terphenyl-d14	12.865	244	1414613	5.34	ppm	-0.02
Spiked Amount 10.000			Recovery = 53.40%			
112) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
113) o-terphenyl	0.000	230	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
Target Compounds						Qvalue
19) 2-Methylphenol	4.992	108	3726	0.05	ppm	71
21) 3&4-Methylphenol	5.115	108	10058	0.13	ppm	93
30) 2,4-Dimethylphenol	5.585	107	5108m	0.06	ppm	
38) Naphthalene	5.949	128	36034	0.14	ppm	92
44) 2-Methylnaphthalene	6.709	141	33339	0.22	ppm	97
53) Biphenyl	7.286	154	7448	0.04	ppm	50
56) Acenaphthylene	7.859	152	45526	0.21	ppm	75
59) Acenaphthene	8.105	153	2069452	13.58	ppm	95
62) Dibenzofuran	8.351	168	818468	3.65	ppm	98
66) Fluorene	8.848	166	1110223	6.38	ppm	98
78) Phenanthrene	10.308	178	797879	3.55	ppm	98
79) Anthracene	10.383	178	198957	0.89	ppm	98
82) Fluoranthene	12.191	202	216434	0.88	ppm	98
86) Pyrene	12.544	202	185297	0.45	ppm	94
89) Benzo[a]anthracene	14.486	228	72294	0.25	ppm	97
91) Chrysene	14.539	228	71759	0.25	ppm	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123380.D
Acq On : 21 Apr 2022 4:28 am
Operator : chriss2
Sample : jd43215-26
Misc : op39192,e2m5552,230,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 21 10:04:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

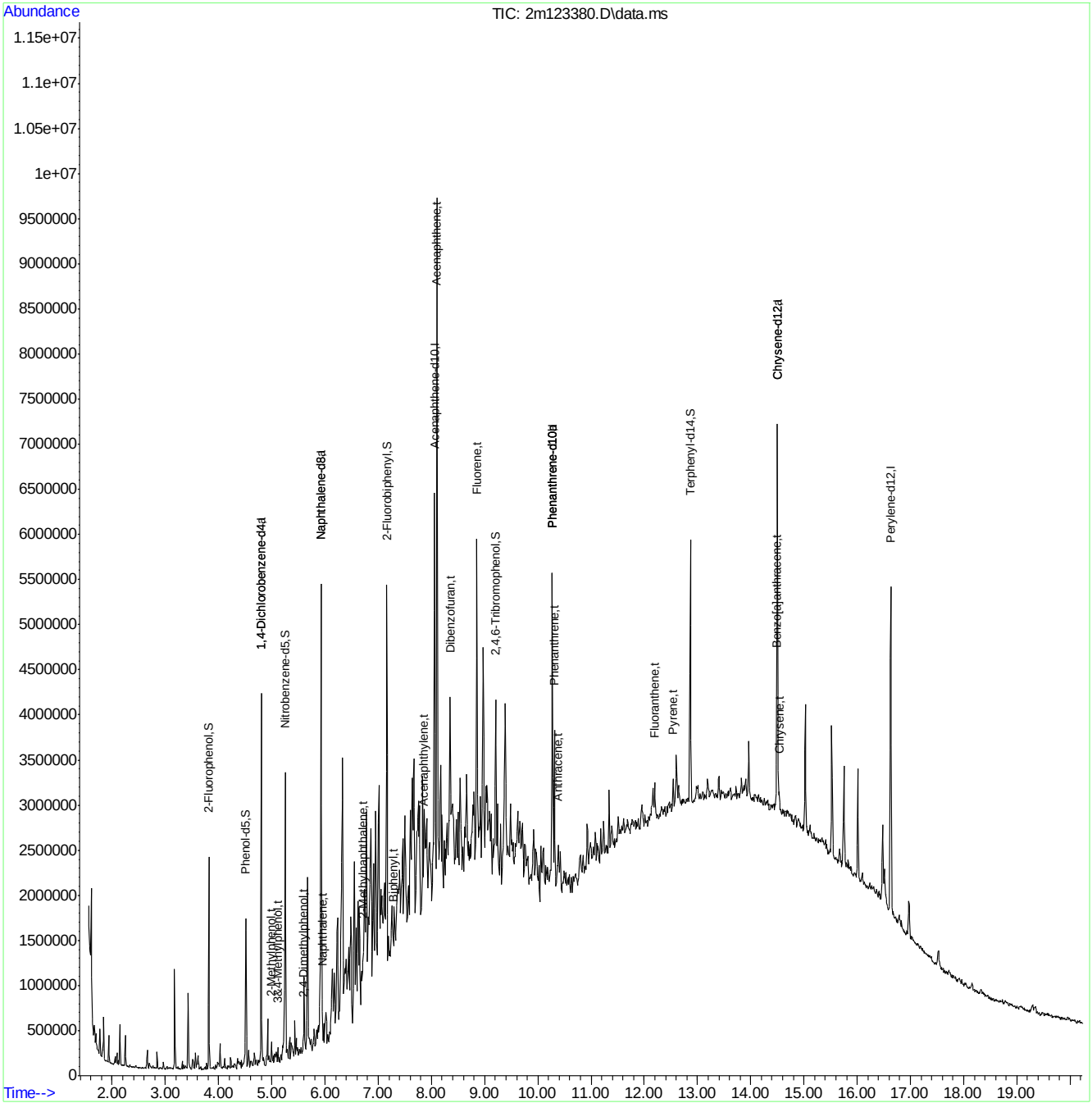
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

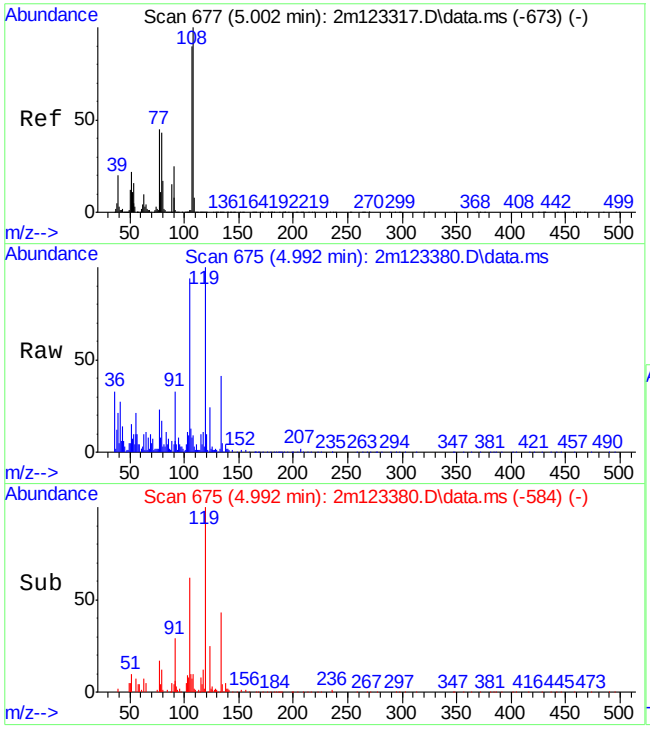
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123380.D
Acq On : 21 Apr 2022 4:28 am
Operator : chriss2
Sample : jd43215-26
Misc : op39192,e2m5552,230,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 21 10:04:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

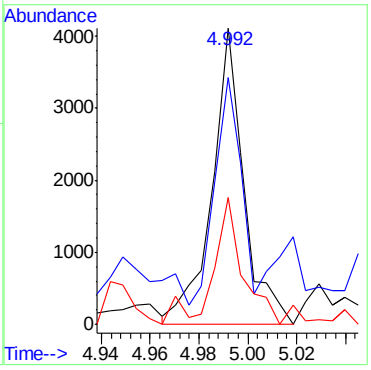


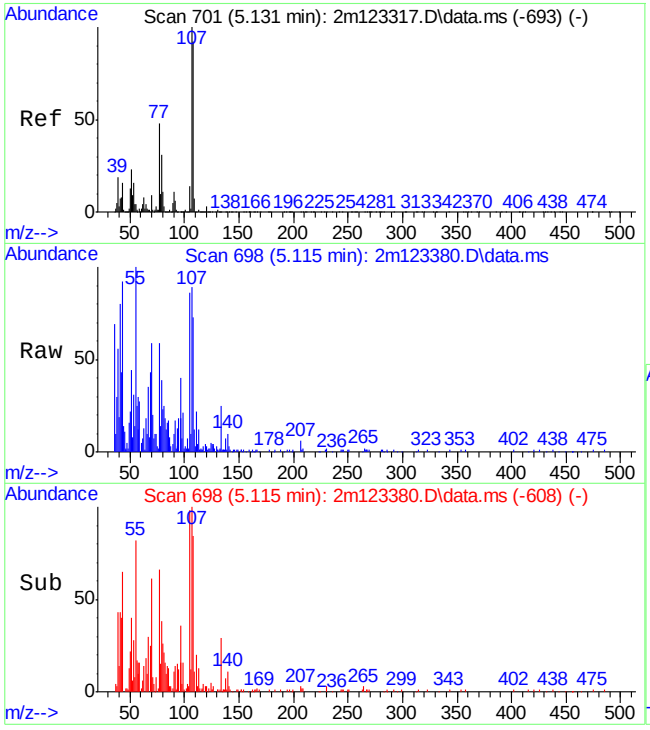


#19
2-Methylphenol
Concen: 0.05 ppm
RT: 4.992 min Scan# 675
Delta R.T. -0.011 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:108 Resp: 3726

Ion	Ratio	Lower	Upper
108	100		
107	62.0	59.5	119.5
90	40.0	0.0	55.1

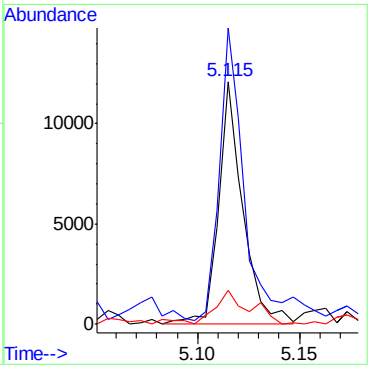


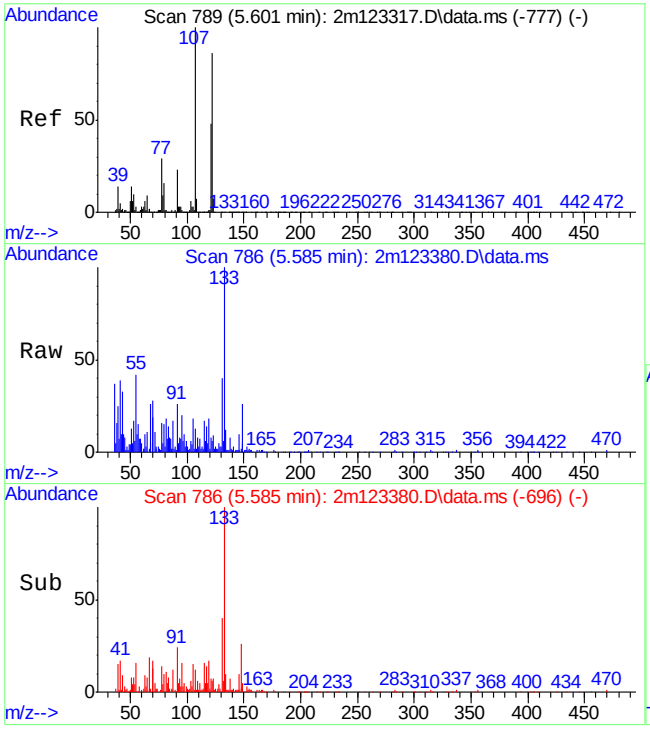


#21
3&4-Methylphenol
Concen: 0.13 ppm
RT: 5.115 min Scan# 698
Delta R.T. -0.016 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:108 Resp: 10058

Ion	Ratio	Lower	Upper
108	100		
107	115.5	78.2	138.2
90	12.5	0.0	41.7

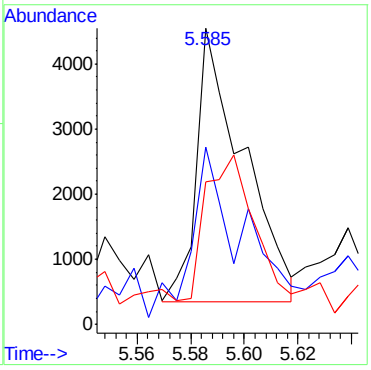


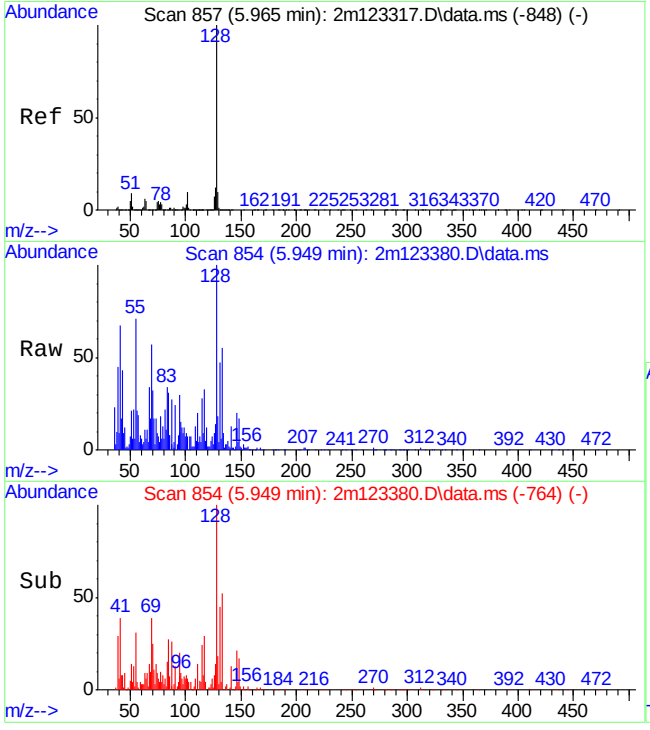


#30
2,4-Dimethylphenol
Concen: 0.06 ppm m
RT: 5.585 min Scan# 786
Delta R.T. -0.016 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:107 Resp: 5108

Ion	Ratio	Lower	Upper
107	100		
121	60.0	17.6	77.6
122	48.1	55.0	115.0#

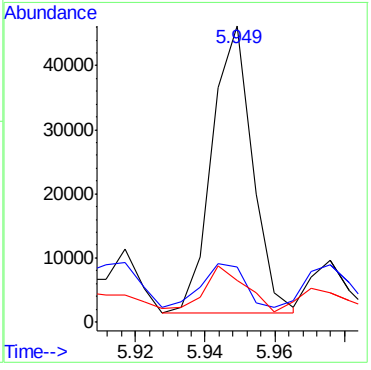


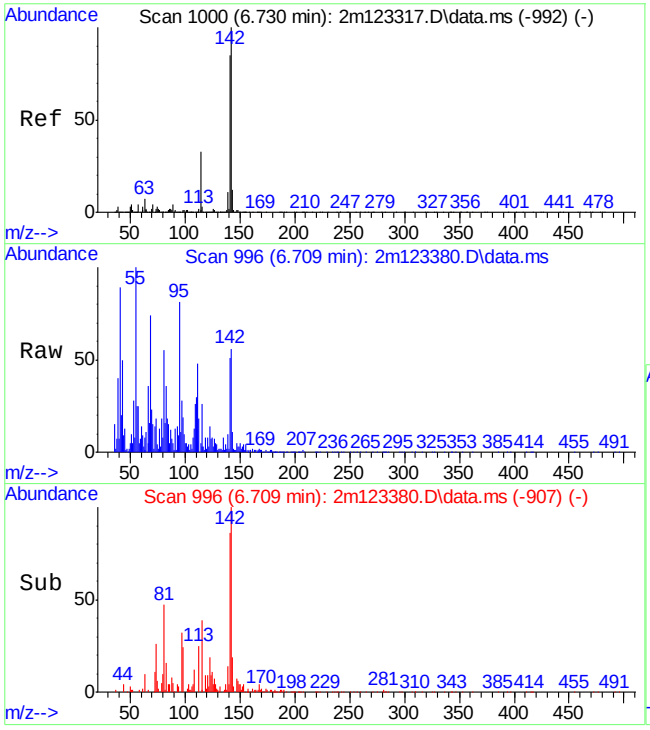


#38
Naphthalene
Concen: 0.14 ppm
RT: 5.949 min Scan# 854
Delta R.T. -0.016 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:128 Resp: 36034

Ion	Ratio	Lower	Upper
128	100		
129	12.8	0.0	40.3
127	8.7	0.0	42.3

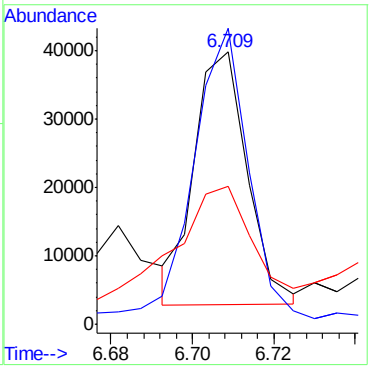


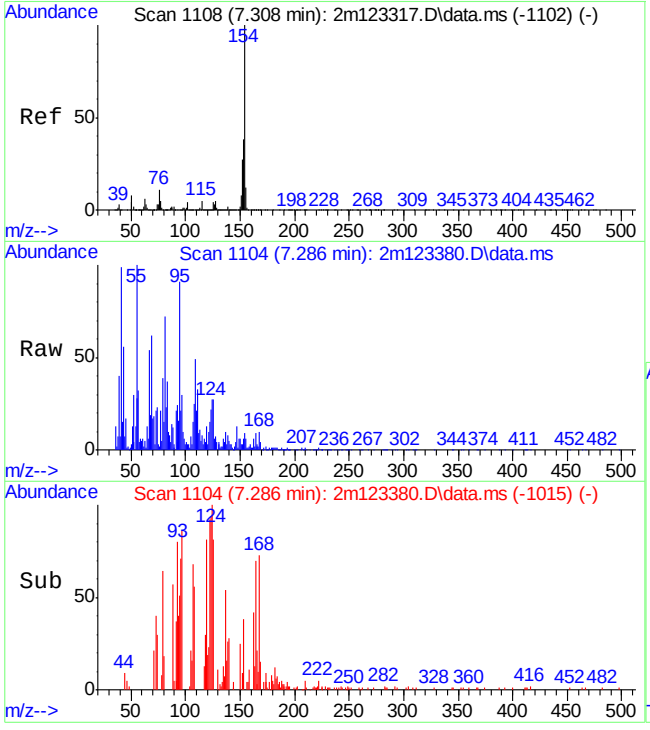


#44
2-Methylnaphthalene
Concen: 0.22 ppm
RT: 6.709 min Scan# 996
Delta R.T. -0.021 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:141 Resp: 33339

Ion	Ratio	Lower	Upper
141	100		
142	120.9	87.3	147.3
115	37.9	8.9	68.9

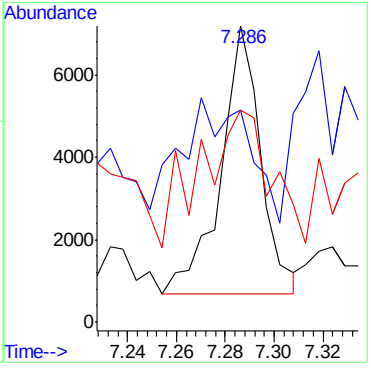


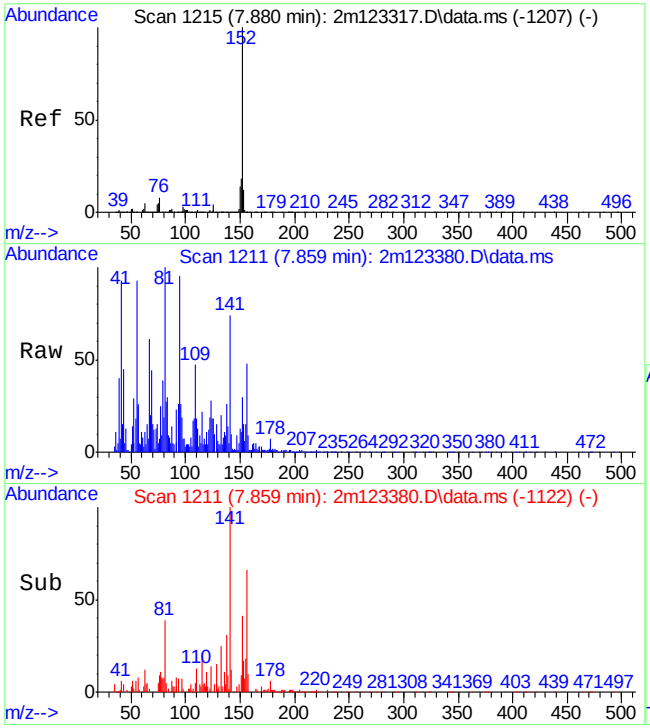


#53
Biphenyl
Concen: 0.04 ppm
RT: 7.286 min Scan# 1104
Delta R.T. -0.021 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:154 Resp: 7448

Ion	Ratio	Lower	Upper
154	100		
153	11.2	8.1	68.1
155	38.3	0.0	42.1

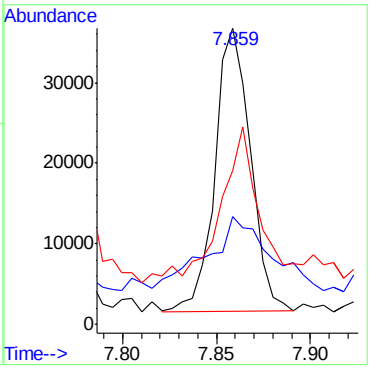


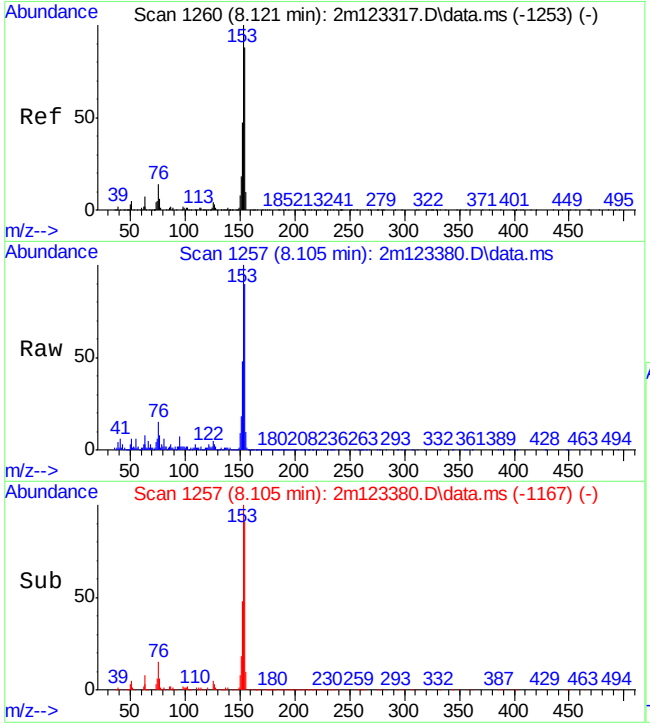


#56
Acenaphthylene
Concen: 0.21 ppm
RT: 7.859 min Scan# 1211
Delta R.T. -0.021 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:152 Resp: 45526

Ion	Ratio	Lower	Upper
152	100		
151	19.3	0.0	48.0
153	35.1	0.0	42.5

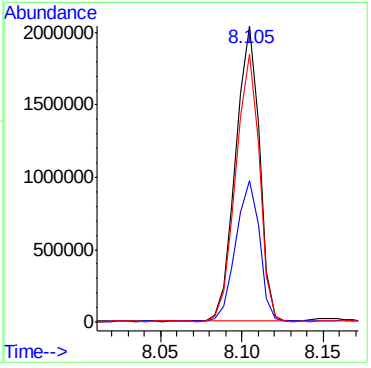


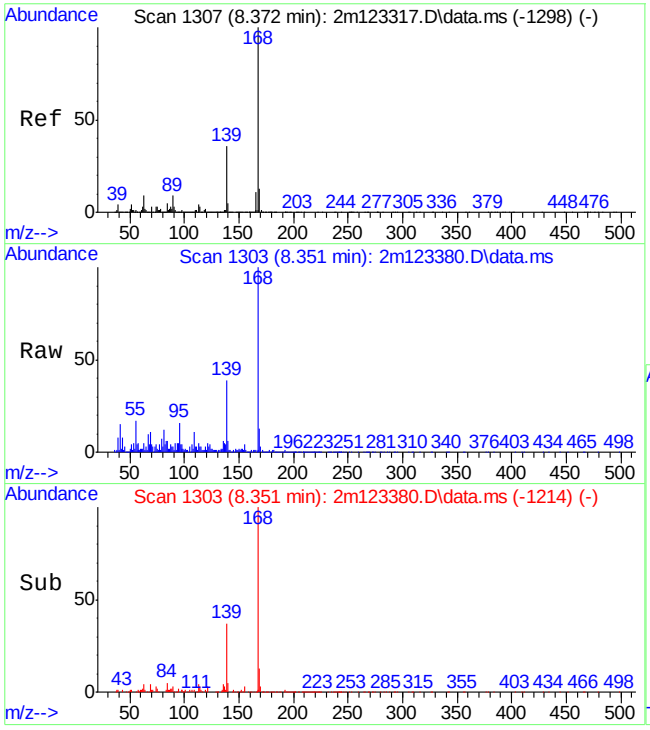


#59
Acenaphthene
Concen: 13.58 ppm
RT: 8.105 min Scan# 1257
Delta R.T. -0.016 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:153 Resp: 2069452

Ion	Ratio	Lower	Upper
153	100		
152	47.8	17.1	77.1
154	90.5	53.7	113.7

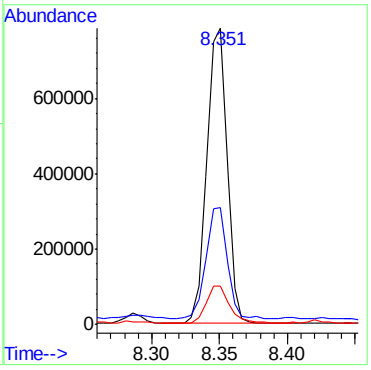


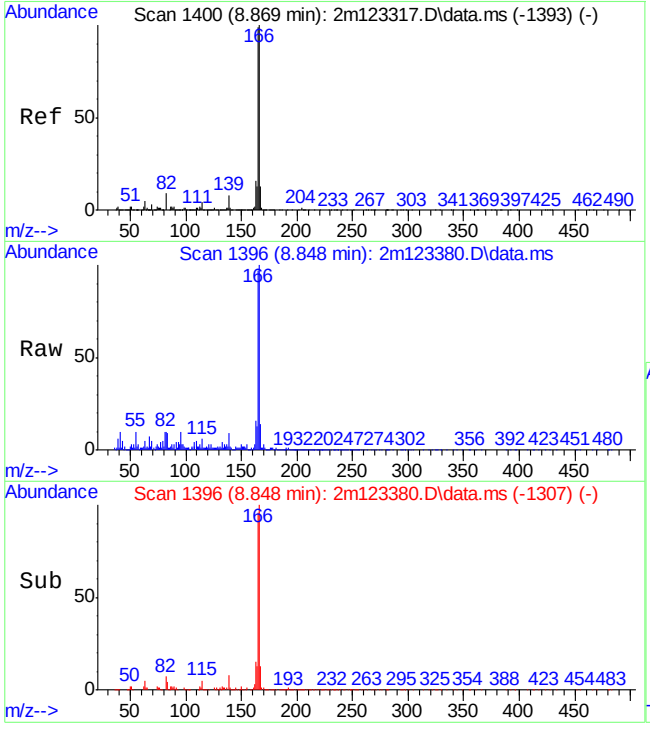


#62
Dibenzofuran
Concen: 3.65 ppm
RT: 8.351 min Scan# 1303
Delta R.T. -0.021 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:168 Resp: 818468

Ion	Ratio	Lower	Upper
168	100		
139	37.1	6.0	66.0
169	12.3	0.0	42.9

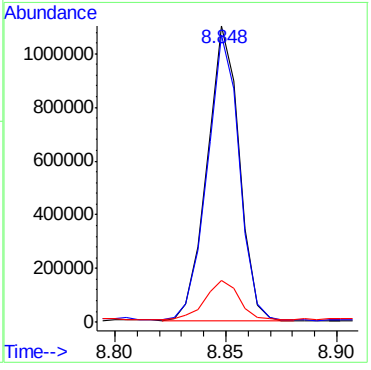


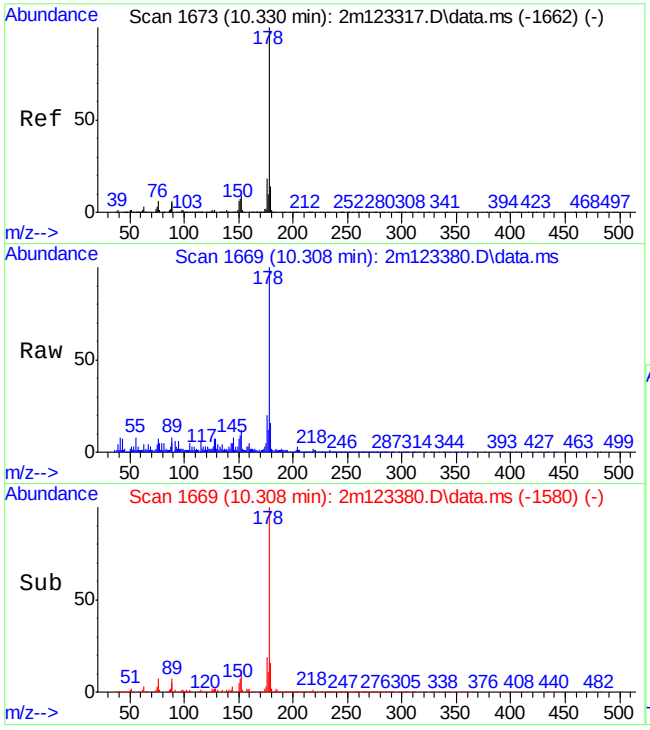


#66
Fluorene
Concen: 6.38 ppm
RT: 8.848 min Scan# 1396
Delta R.T. -0.021 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:166 Resp: 1110223

Ion	Ratio	Lower	Upper
166	100		
165	96.4	68.9	128.9
167	13.1	0.0	42.7

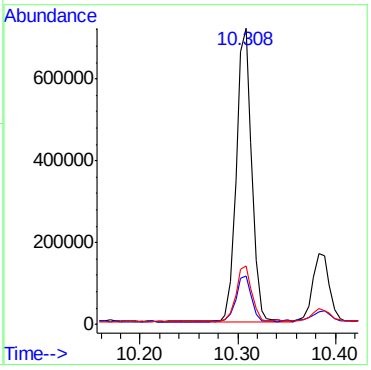


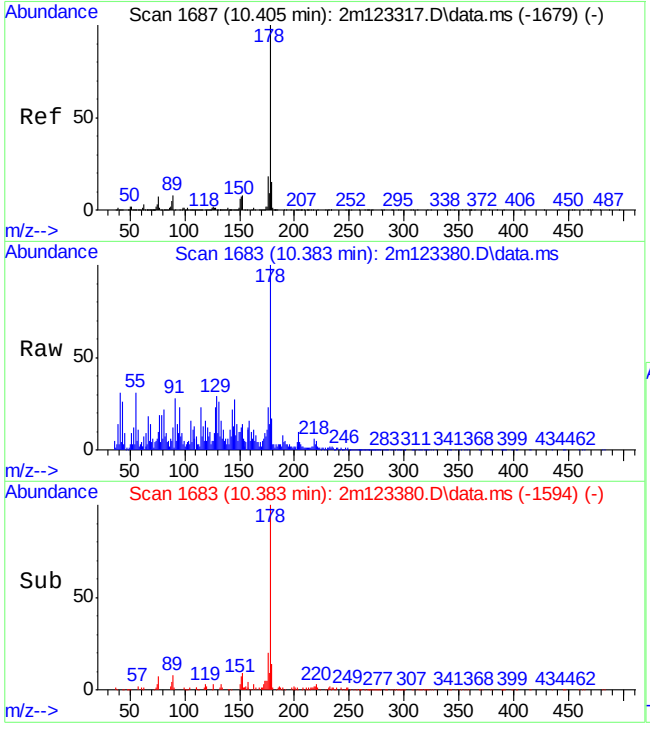


#78
Phenanthrene
Concen: 3.55 ppm
RT: 10.308 min Scan# 1669
Delta R.T. -0.021 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:178 Resp: 797879

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	44.0
176	18.7	0.0	48.3

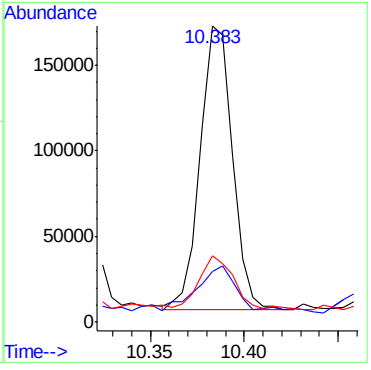


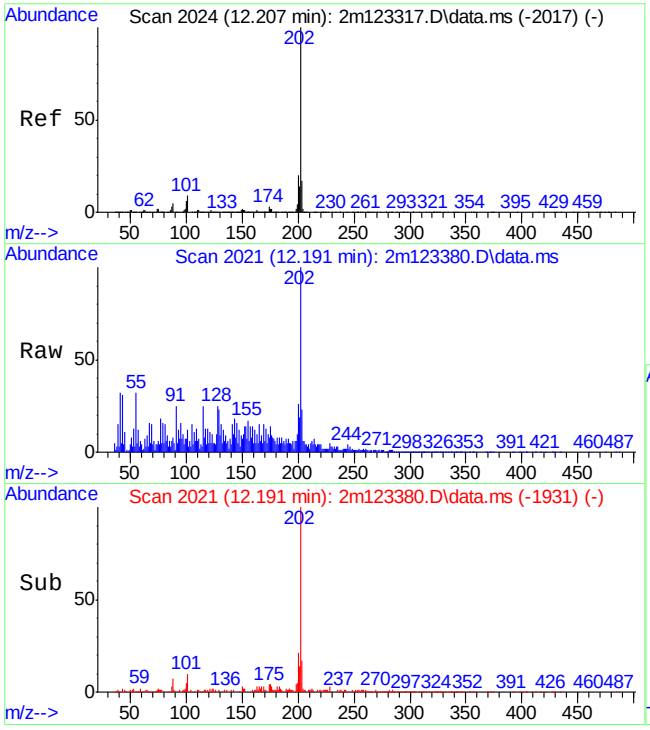


#79
Anthracene
Concen: 0.89 ppm
RT: 10.383 min Scan# 1683
Delta R.T. -0.021 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:178 Resp: 198957

Ion	Ratio	Lower	Upper
178	100		
179	13.7	0.0	45.3
176	18.3	0.0	48.0

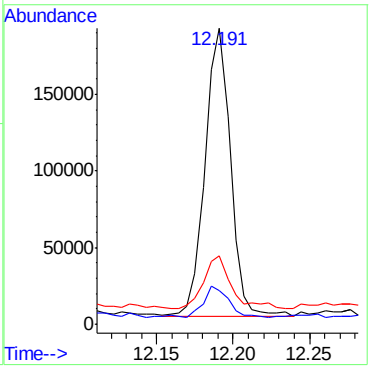


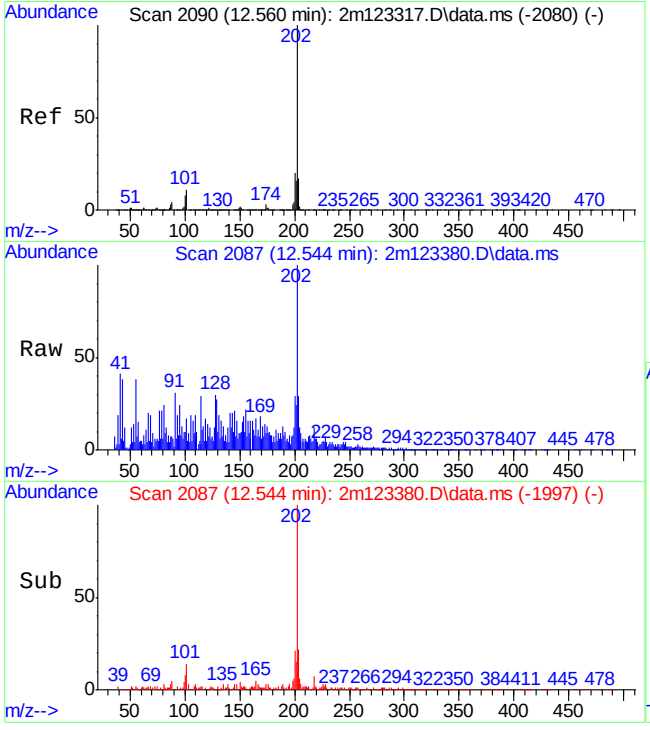


#82
Fluoranthene
Concen: 0.88 ppm
RT: 12.191 min Scan# 2021
Delta R.T. -0.016 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:202 Resp: 216434

Ion	Ratio	Lower	Upper
202	100		
101	9.0	0.0	39.0
203	18.3	0.0	46.8

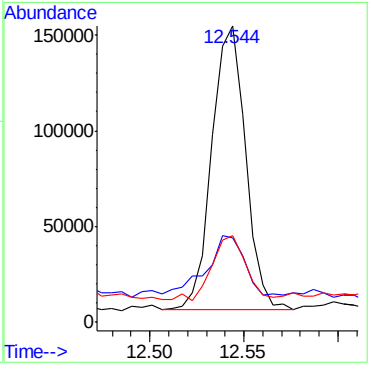


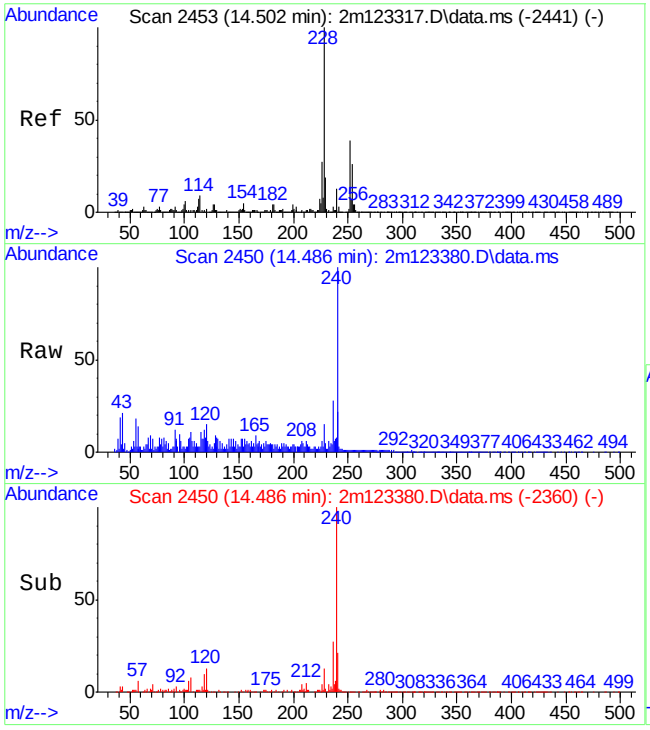


#86
Pyrene
Concen: 0.45 ppm
RT: 12.544 min Scan# 2087
Delta R.T. -0.016 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:202 Resp: 185297

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	50.4
203	21.4	0.0	46.7

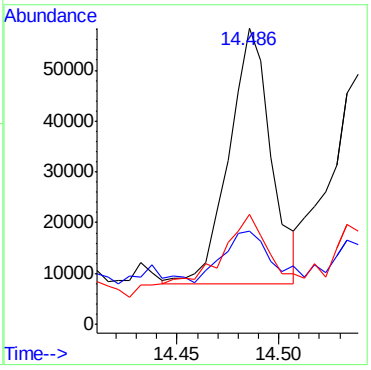


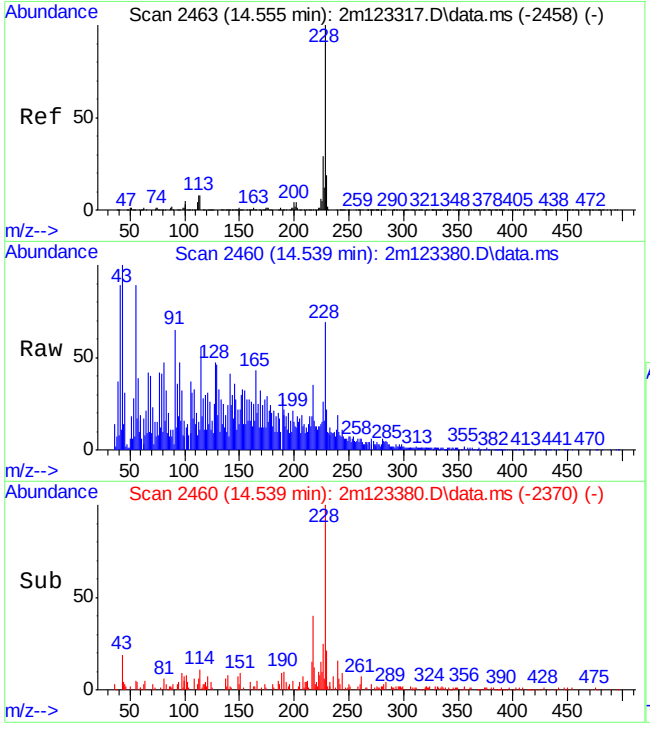


#89
Benzo[a]anthracene
Concen: 0.25 ppm
RT: 14.486 min Scan# 2450
Delta R.T. -0.016 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:228 Resp: 72294

Ion	Ratio	Lower	Upper
228	100		
229	18.3	0.0	49.5
226	28.2	0.0	56.8

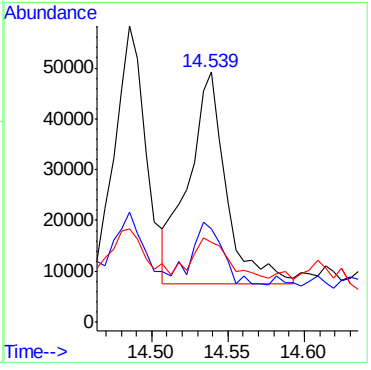




#91
Chrysene
Concen: 0.25 ppm
RT: 14.539 min Scan# 2460
Delta R.T. -0.016 min
Lab File: 2m123380.D
Acq: 21 Apr 2022 4:28 am

Tgt Ion:228 Resp: 71759

Ion	Ratio	Lower	Upper
228	100		
226	26.9	0.0	58.8
229	16.0	0.0	49.2



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123387.D
Acq On : 21 Apr 2022 12:39 pm
Operator : chriss2
Sample : jd43215-1
Misc : op39191,e2m5552,270,,,1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 21 13:06:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

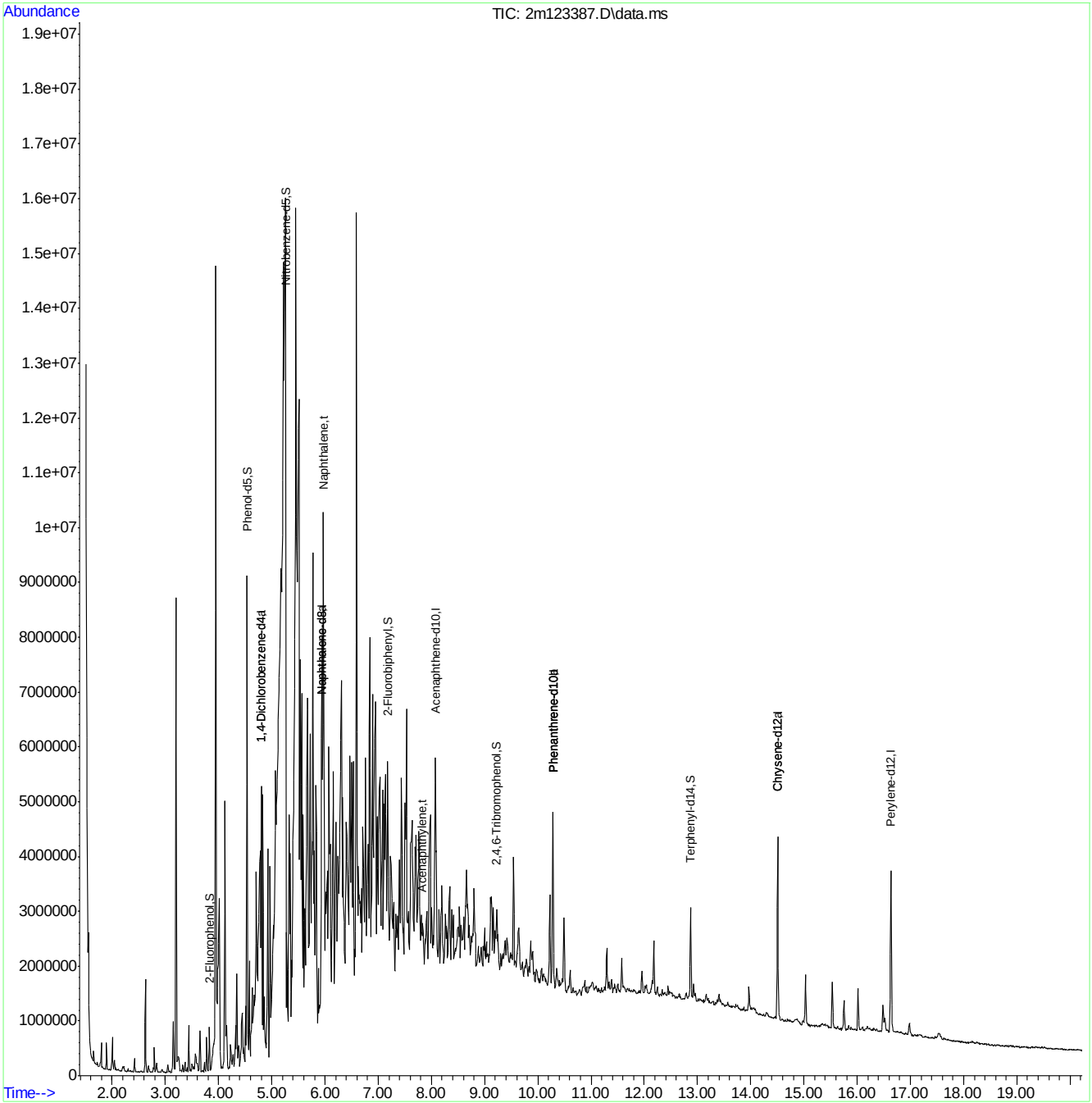
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.805	152	332553	8.00	ppm	-0.01
24) Naphthalene-d8	5.933	136	1391099	8.00	ppm	-0.01
46) Acenaphthene-d10	8.073	164	856336	8.00	ppm	0.00
69) Phenanthrene-d10	10.287	188	1226182	8.00	ppm	0.00
84) Chrysene-d12	14.507	240	1354294	8.00	ppm	-0.01
93) Perylene-d12	16.636	264	1528636	8.00	ppm	-0.02
103) 1,4-Dichlorobenzene-d4a	4.805	152	332553	8.00	ppm	0.00
105) Phenanthrene-d10a	10.287	188	1224076	8.00	ppm	0.01
107) Naphthalene-d8a	5.933	136	1390600	8.00	ppm	0.00
109) Chrysene-d12a	14.507	240	1354236	8.00	ppm	0.00
111) Phenanthrene-d10b	10.287	188	1226182	8.00	ppm	0.01
System Monitoring Compounds						
5) 2-Fluorophenol	3.826	112	160001	3.03	ppm	0.00
Spiked Amount 10.000			Recovery = 30.30%			
8) Phenol-d5	4.532	99	173041	2.42	ppm	0.01
Spiked Amount 10.000			Recovery = 24.20%			
25) Nitrobenzene-d5	5.259	82	454633	7.25	ppm	-0.01
Spiked Amount 10.000			Recovery = 72.50%			
51) 2-Fluorobiphenyl	7.174	172	813736	5.57	ppm	0.00
Spiked Amount 10.000			Recovery = 55.70%			
74) 2,4,6-Tribromophenol	9.223	330	161483	7.75	ppm	0.00
Spiked Amount 10.000			Recovery = 77.50%			
87) Terphenyl-d14	12.870	244	795612	3.84	ppm	-0.01
Spiked Amount 10.000			Recovery = 38.40%			
112) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
113) o-terphenyl	0.000	230	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
Target Compounds						Qvalue
38) Naphthalene	5.976	128	768667	4.32	ppm	83
56) Acenaphthylene	7.821	152	23408	0.14	ppm	67

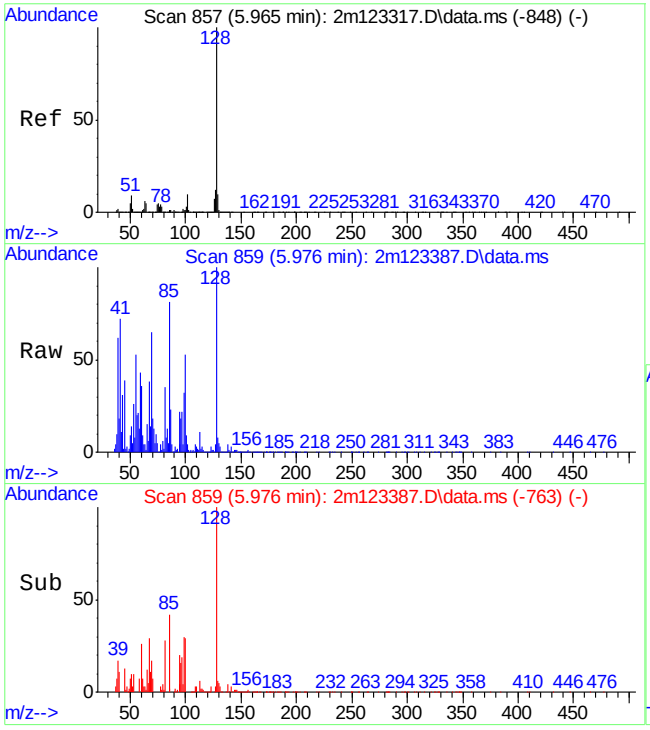
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123387.D
Acq On : 21 Apr 2022 12:39 pm
Operator : chriss2
Sample : jd43215-1
Misc : op39191,e2m5552,270,,,1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 21 13:06:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

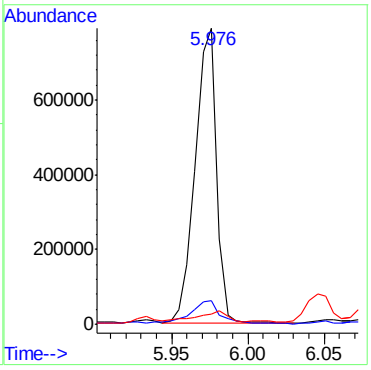


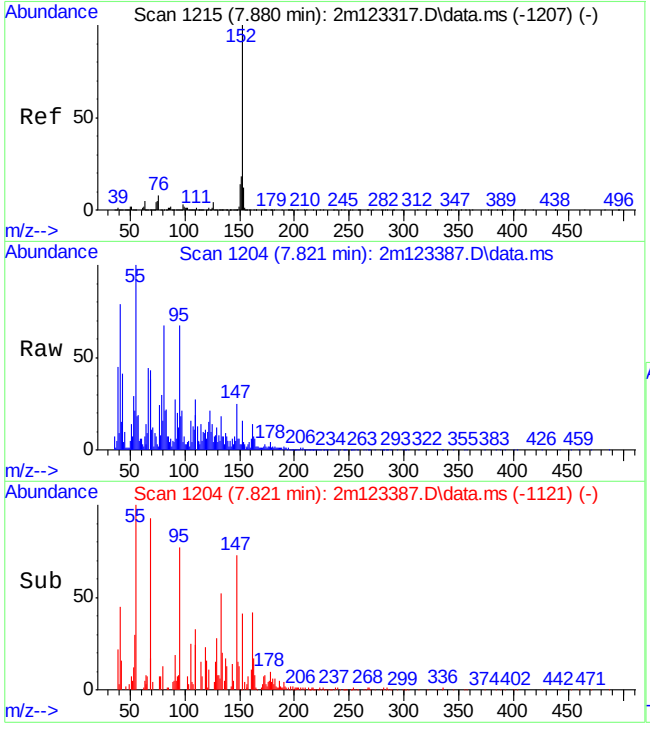


#38
Naphthalene
Concen: 4.32 ppm
RT: 5.976 min Scan# 859
Delta R.T. 0.011 min
Lab File: 2m123387.D
Acq: 21 Apr 2022 12:39 pm

Tgt Ion:128 Resp: 768667

Ion	Ratio	Lower	Upper
128	100		
129	7.4	0.0	40.3
127	2.5	0.0	42.3

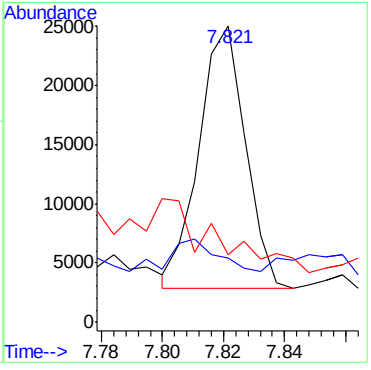




#56
Acenaphthylene
Concen: 0.14 ppm
RT: 7.821 min Scan# 1204
Delta R.T. -0.059 min
Lab File: 2m123387.D
Acq: 21 Apr 2022 12:39 pm

Tgt Ion:152 Resp: 23408

Ion	Ratio	Lower	Upper
152	100		
151	2.7	0.0	48.0
153	0.0	0.0	42.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/22/22 09:48

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96475.D
Acq On : 20 Apr 2022 4:27 am
Operator : chriss2
Sample : jd43215-1
Misc : op39191,e3p4582,270,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 20 11:31:30 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

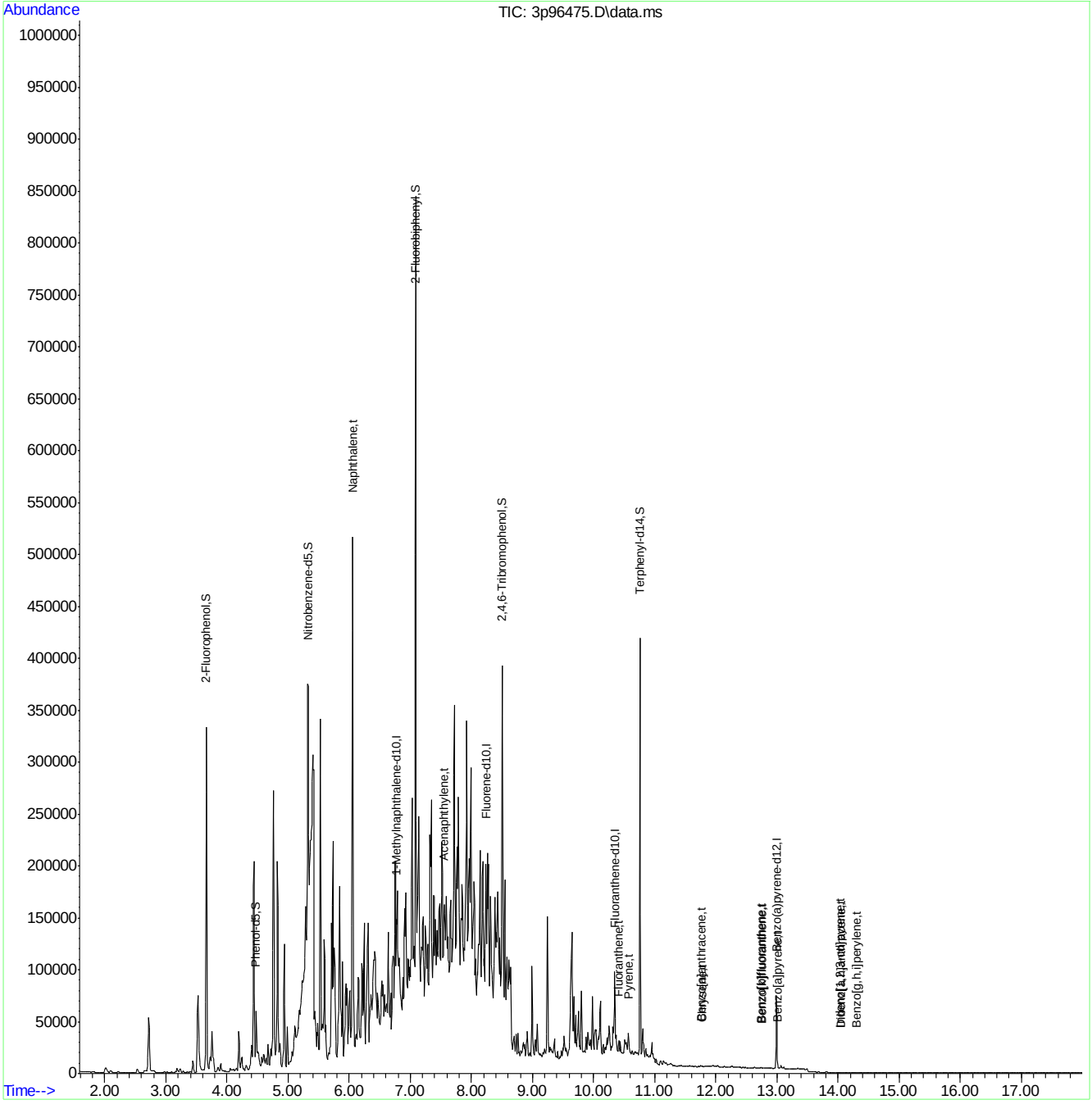
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	28325	800.00 ppb	0.00
12) Fluorene-d10	8.236	176	59265m	800.00 ppb	0.00
19) Fluoranthene-d10	10.342	212	51918	800.00 ppb	# 0.00
29) Benzo(a)pyrene-d12	12.993	264	49015	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.663	112	344453	16144.09 ppb	0.12
Spiked Amount 50.000				Recovery = 32288.18%	
4) Phenol-d5	4.475	99	67377	2325.70 ppb	0.00
Spiked Amount 50.000				Recovery = 4651.40%	
7) Nitrobenzene-d5	5.320	82	177530	7859.77 ppb	0.00
Spiked Amount 50.000				Recovery = 15719.54%	
13) 2-Fluorobiphenyl	7.087	172	367131	3947.10 ppb	0.00
Spiked Amount 50.000				Recovery = 7894.20%	
18) 2,4,6-Tribromophenol	8.505	330	70843	6341.59 ppb	0.01
Spiked Amount 50.000				Recovery = 12683.18%	
26) Terphenyl-d14	10.758	244	256835	5308.92 ppb	0.00
Spiked Amount 50.000				Recovery = 10617.84%	
Target Compounds					Qvalue
8) Naphthalene	6.061	128	479505	5548.80 ppb	81
14) Acenaphthylene	7.556	152	21845m	155.17 ppb	
24) Fluoranthene	10.411	202	1432m	15.55 ppb	
25) Pyrene	10.579	202	2473m	25.85 ppb	
27) Benzo[a]anthracene	11.760	228	1041	15.01 ppb	57
28) Chrysene	11.784	228	457	5.07 ppb	98
30) Benzo[b]fluoranthene	12.738	252	372	4.18 ppb	91
31) Benzo[k]fluoranthene	12.762	252	164	1.54 ppb	82
32) Benzo[a]pyrene	13.016	252	217	1.73 ppb	85
33) Indeno[1,2,3-cd]pyrene	14.029	276	189	2.00 ppb	93
34) Dibenz[a,h]anthracene	14.047	278	192	2.50 ppb	85
35) Benzo[g,h,i]perylene	14.298	276	228	2.55 ppb	98

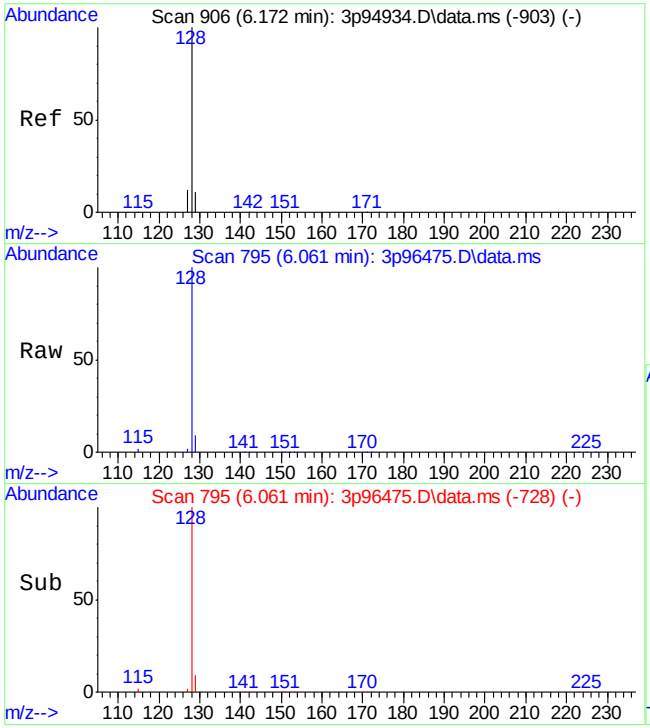
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96475.D
Acq On : 20 Apr 2022 4:27 am
Operator : chriss2
Sample : jd43215-1
Misc : op39191,e3p4582,270,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 20 11:31:30 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

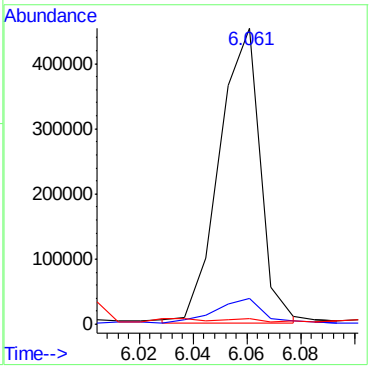


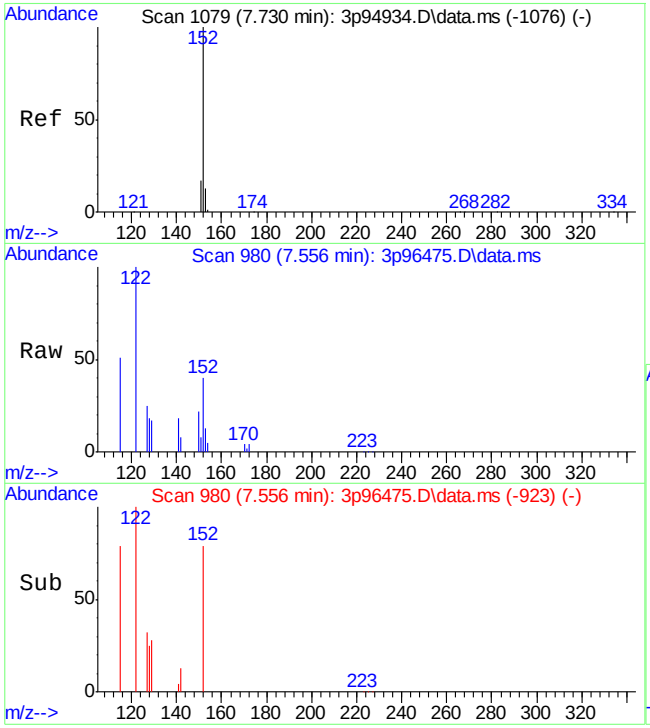


#8
Naphthalene
Concen: 5548.80 ppb
RT: 6.061 min Scan# 795
Delta R.T. 0.027 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:128 Resp: 479505

Ion	Ratio	Lower	Upper
128	100		
129	7.9	0.0	41.2
127	0.2	0.0	41.7

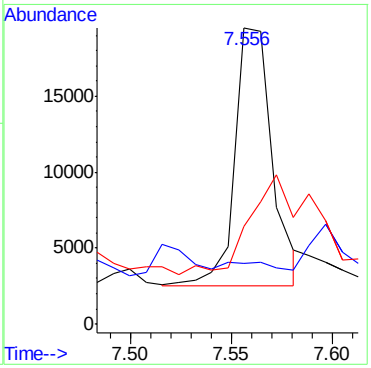


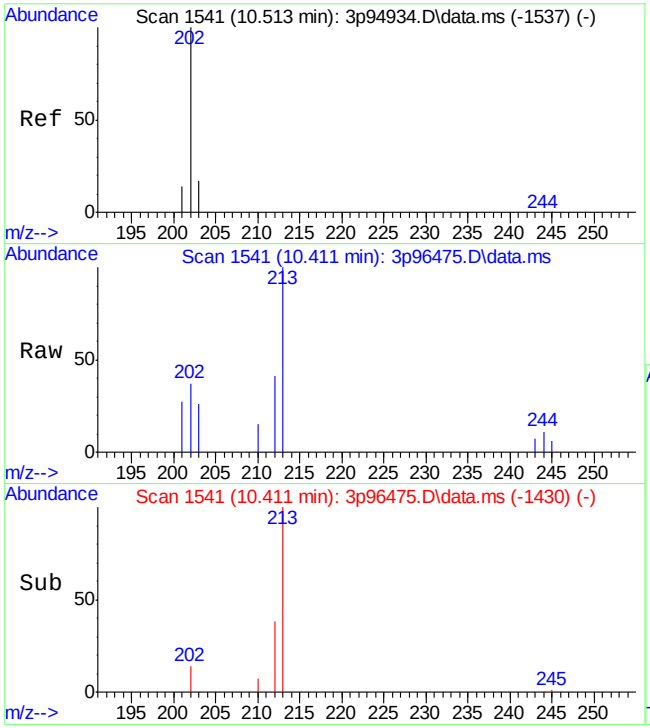


#14
Acenaphthylene
Concen: 155.17 ppb m
RT: 7.556 min Scan# 980
Delta R.T. -0.041 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:152 Resp: 21845

Ion	Ratio	Lower	Upper
152	100		
151	20.7	0.0	47.3
153	33.0	0.0	43.3

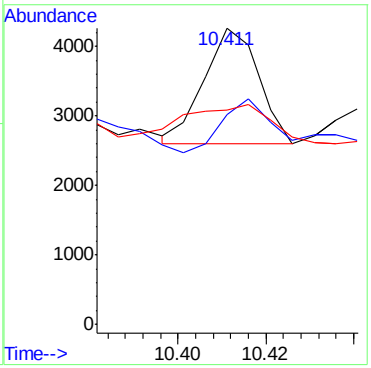


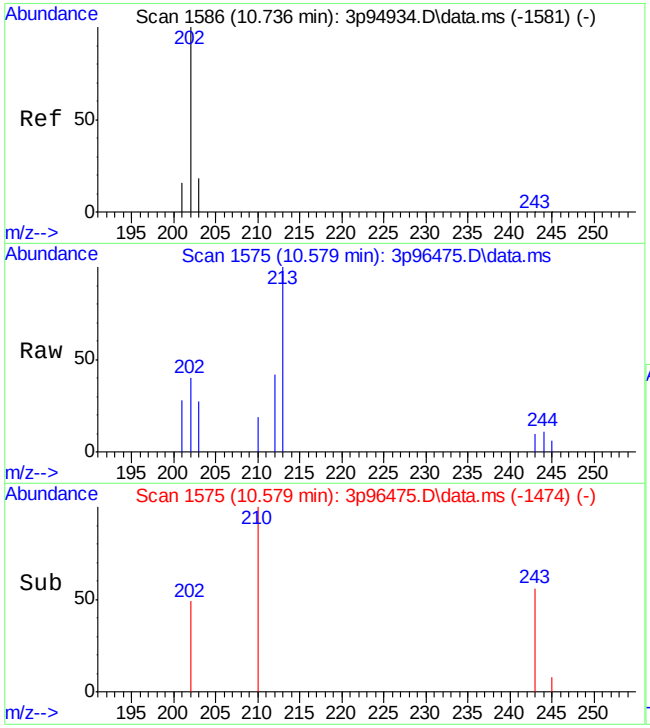


#24
Fluoranthene
Concen: 15.55 ppb m
RT: 10.411 min Scan# 1541
Delta R.T. 0.050 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:202 Resp: 1432

Ion	Ratio	Lower	Upper
202	100		
203	70.7	0.0	50.0#
201	72.5	0.0	45.9#

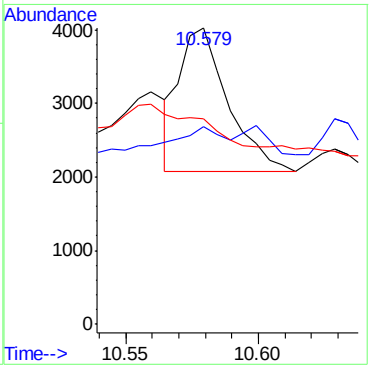


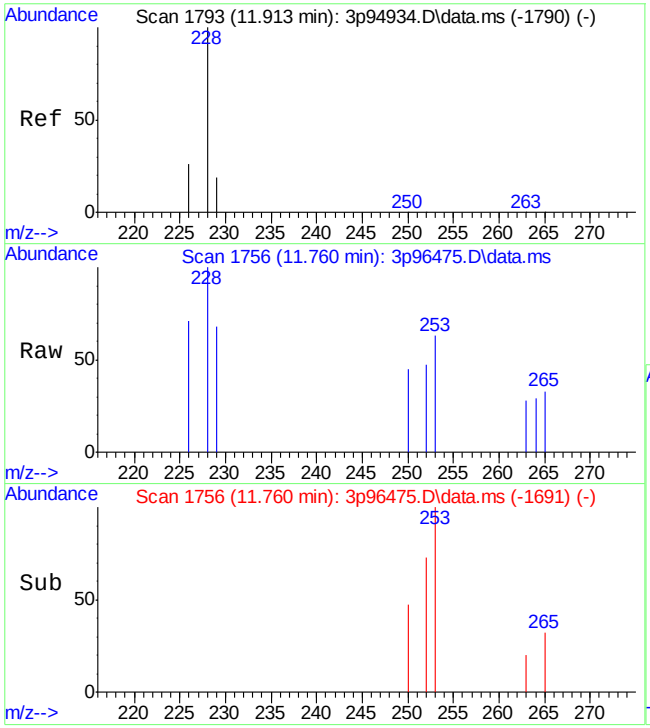


#25
Pyrene
Concen: 25.85 ppb m
RT: 10.579 min Scan# 1575
Delta R.T. 0.002 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:202 Resp: 2473

Ion	Ratio	Lower	Upper
202	100		
203	66.7	0.0	48.7#
201	69.4	0.0	46.9#

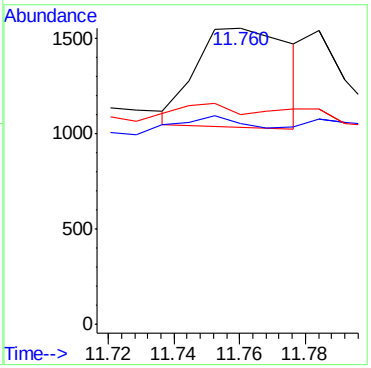


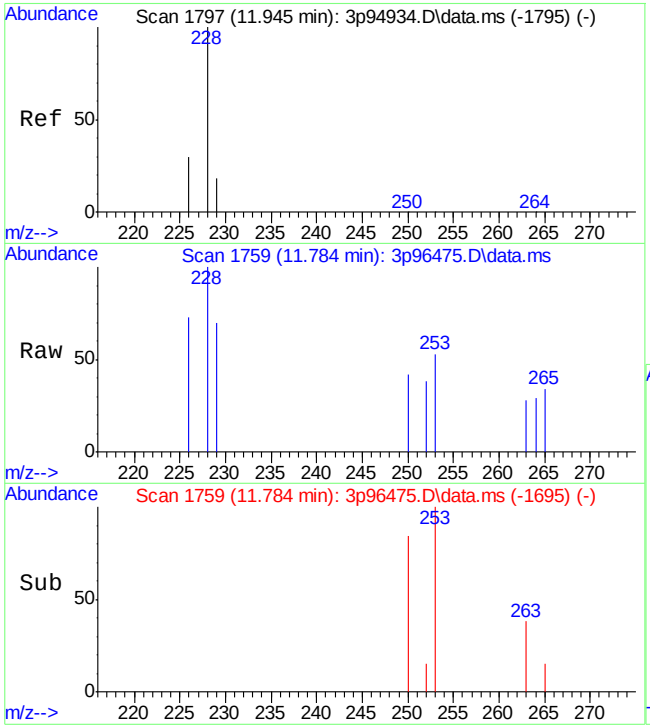


#27
Benzo[a]anthracene
Concen: 15.01 ppb
RT: 11.760 min Scan# 1756
Delta R.T. 0.014 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:228 Resp: 1041

Ion	Ratio	Lower	Upper
228	100		
229	4.2	0.0	49.3
226	0.0	0.0	55.2

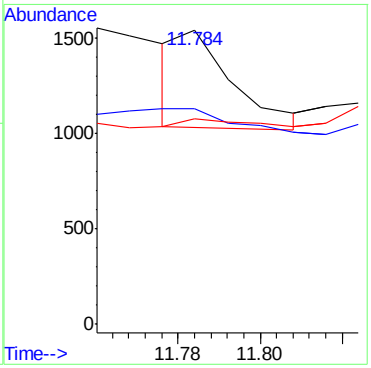


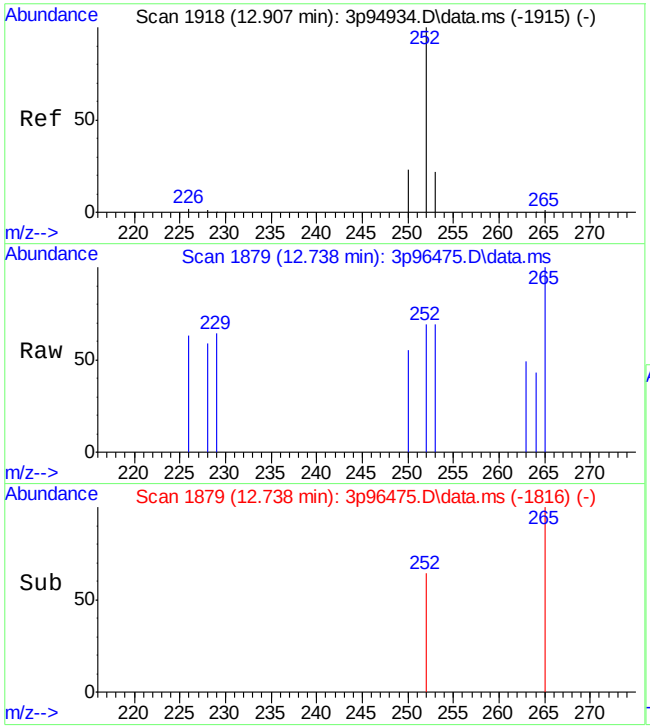


#28
Chrysene
Concen: 5.07 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:228 Resp: 457

Ion	Ratio	Lower	Upper
228	100		
226	24.6	0.0	55.6
229	16.7	0.0	47.4

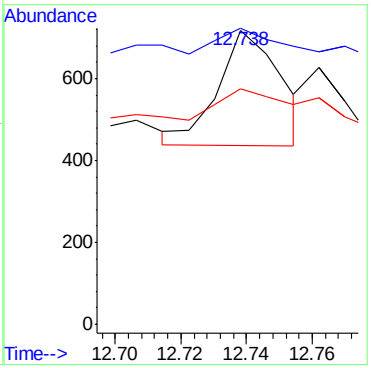


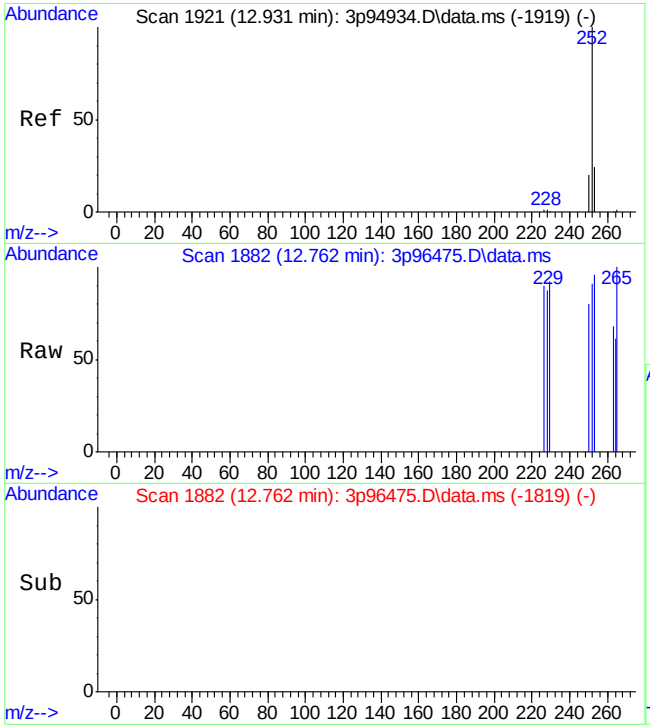


#30
Benzo[b]fluoranthene
Concen: 4.18 ppb
RT: 12.738 min Scan# 1879
Delta R.T. -0.003 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:252 Resp: 372

Ion	Ratio	Lower	Upper
252	100		
253	21.1	0.0	51.7
250	26.1	0.0	48.4

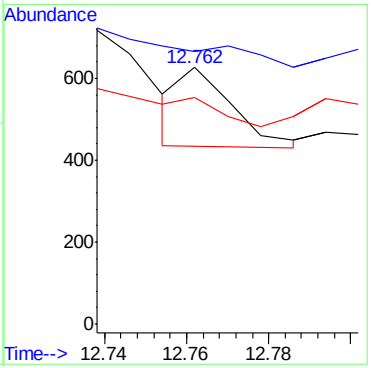


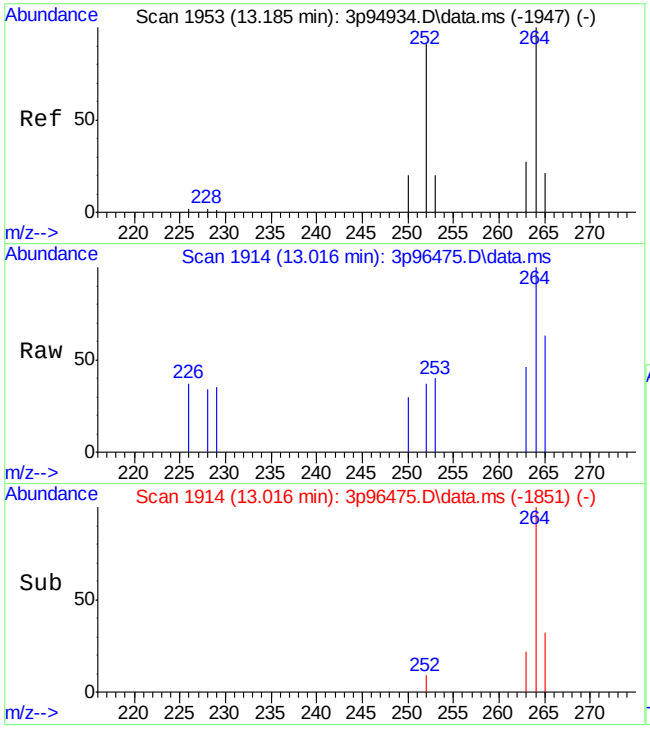


#31
Benzo[k]fluoranthene
Concen: 1.54 ppb
RT: 12.762 min Scan# 1882
Delta R.T. -0.003 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:252 Resp: 164

Ion	Ratio	Lower	Upper
252	100		
253	9.4	0.0	51.5
250	26.2	0.0	51.3

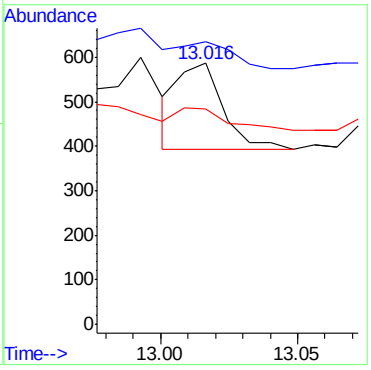


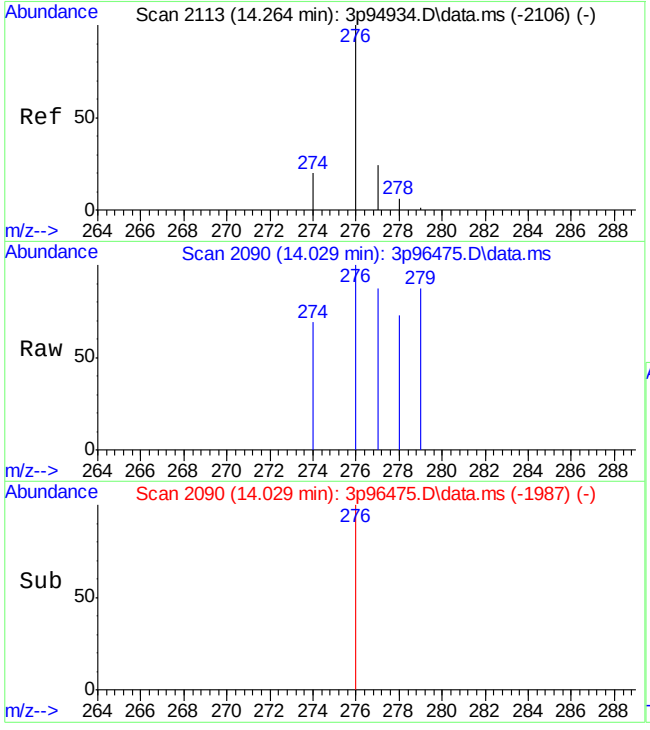


#32
Benzo[a]pyrene
Concen: 1.73 ppb
RT: 13.016 min Scan# 1914
Delta R.T. -0.001 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:252 Resp: 217

Ion	Ratio	Lower	Upper
252	100		
253	28.9	0.0	52.3
250	27.1	0.0	49.9

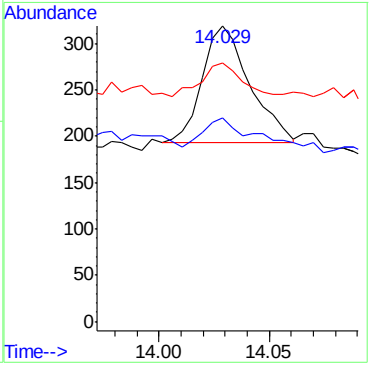


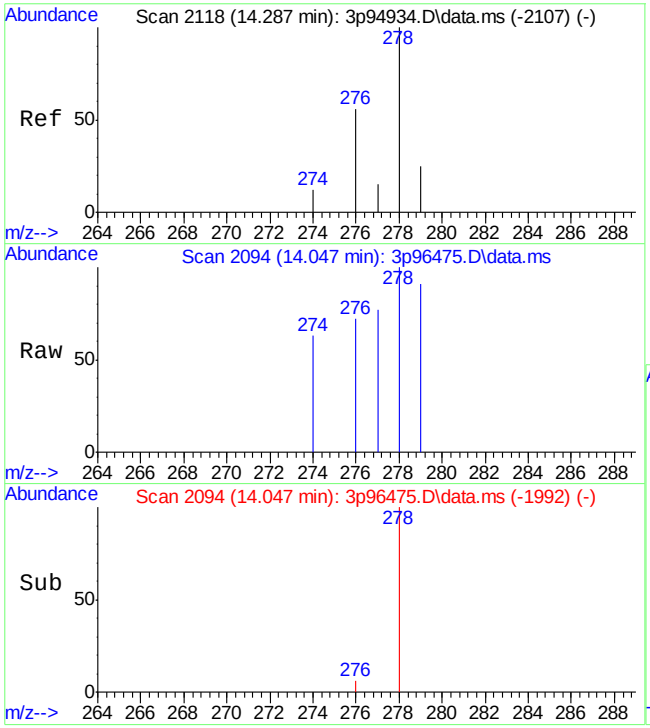


#33
Indeno[1,2,3-cd]pyrene
Concen: 2.00 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:276 Resp: 189

Ion	Ratio	Lower	Upper
276	100		
274	18.5	0.0	45.2
277	25.8	0.0	52.4

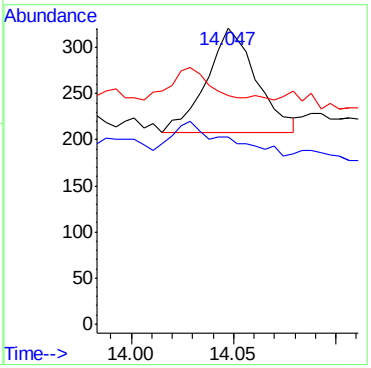


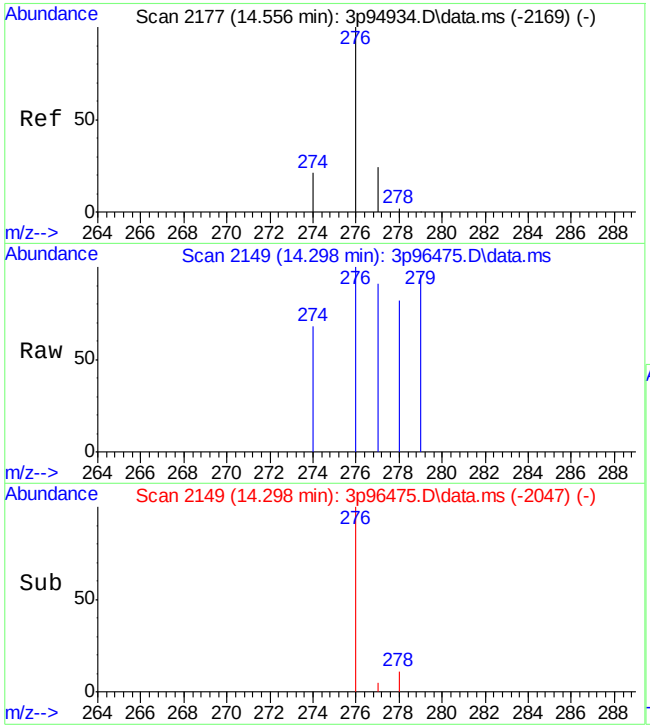


#34
Dibenz[a,h]anthracene
Concen: 2.50 ppb
RT: 14.047 min Scan# 2094
Delta R.T. -0.033 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:278 Resp: 192

Ion	Ratio	Lower	Upper
278	100		
274	11.9	0.0	40.3
277	0.0	0.0	40.0

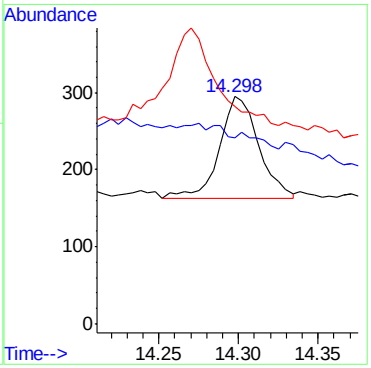




#35
Benzo[g,h,i]perylene
Concen: 2.55 ppb
RT: 14.298 min Scan# 2149
Delta R.T. -0.036 min
Lab File: 3p96475.D
Acq: 20 Apr 2022 4:27 am

Tgt Ion:276 Resp: 228

Ion	Ratio	Lower	Upper
276	100		
278	0.0	0.0	31.3
279	0.8	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/22/22 18:26

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96476.D
Acq On : 20 Apr 2022 4:50 am
Operator : chriss2
Sample : jd43215-2
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 20 11:33:38 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

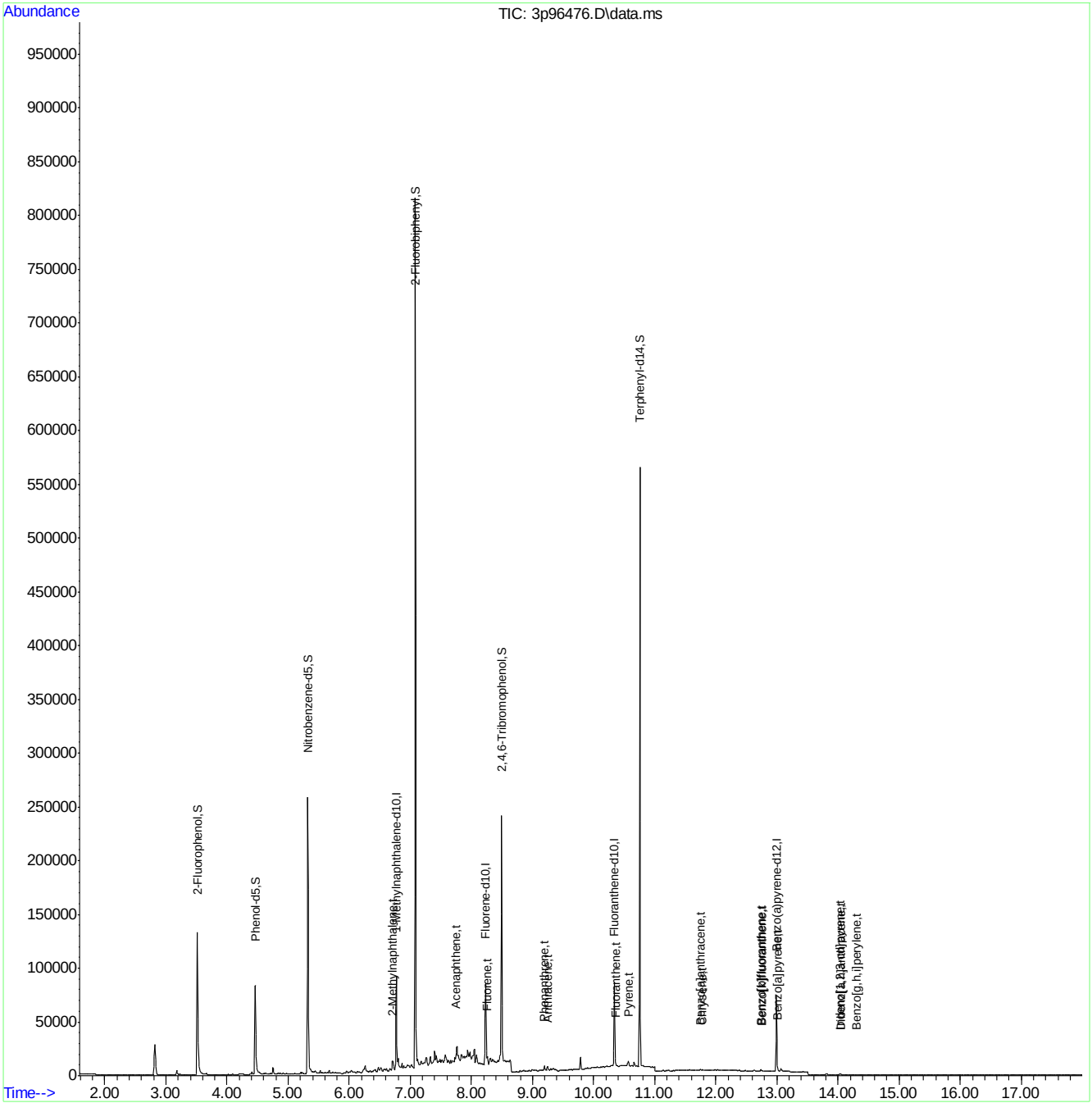
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	27477	800.00 ppb	# 0.00
12) Fluorene-d10	8.230	176	36627	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	55576	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	45545	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.516	112	99542	4809.40 ppb	-0.03
Spiked Amount 50.000			Recovery	= 9618.80%	
4) Phenol-d5	4.462	99	101585	3614.71 ppb	0.00
Spiked Amount 50.000			Recovery	= 7229.42%	
7) Nitrobenzene-d5	5.320	82	165162	7537.88 ppb	0.00
Spiked Amount 50.000			Recovery	= 15075.76%	
13) 2-Fluorobiphenyl	7.079	172	405977	7062.45 ppb	-0.01
Spiked Amount 50.000			Recovery	= 14124.90%	
18) 2,4,6-Tribromophenol	8.495	330	80242	11622.50 ppb	0.00
Spiked Amount 50.000			Recovery	= 23245.00%	
26) Terphenyl-d14	10.758	244	378690	7312.51 ppb	0.00
Spiked Amount 50.000			Recovery	= 14625.02%	
Target Compounds					Qvalue
10) 2-Methylnaphthalene	6.716	141	3945	88.06 ppb	96
15) Acenaphthene	7.750	153	1748m	29.62 ppb	
17) Fluorene	8.261	166	2321m	37.55 ppb	
22) Phenanthrene	9.192	178	3095m	37.27 ppb	
23) Anthracene	9.246	178	1922	23.92 ppb	78
24) Fluoranthene	10.357	202	1816m	18.42 ppb	
25) Pyrene	10.574	202	2936	28.67 ppb	95
27) Benzo[a]anthracene	11.744	228	684	9.21 ppb	85
28) Chrysene	11.784	228	590	6.12 ppb	89
30) Benzo[b]fluoranthene	12.738	252	638	7.72 ppb	85
31) Benzo[k]fluoranthene	12.762	252	344	3.48 ppb	93
32) Benzo[a]pyrene	13.009	252	351m	3.41 ppb	
33) Indeno[1,2,3-cd]pyrene	14.029	276	404	4.60 ppb	93
34) Dibenz[a,h]anthracene	14.047	278	276	3.87 ppb	97
35) Benzo[g,h,i]perylene	14.298	276	349	4.21 ppb	97

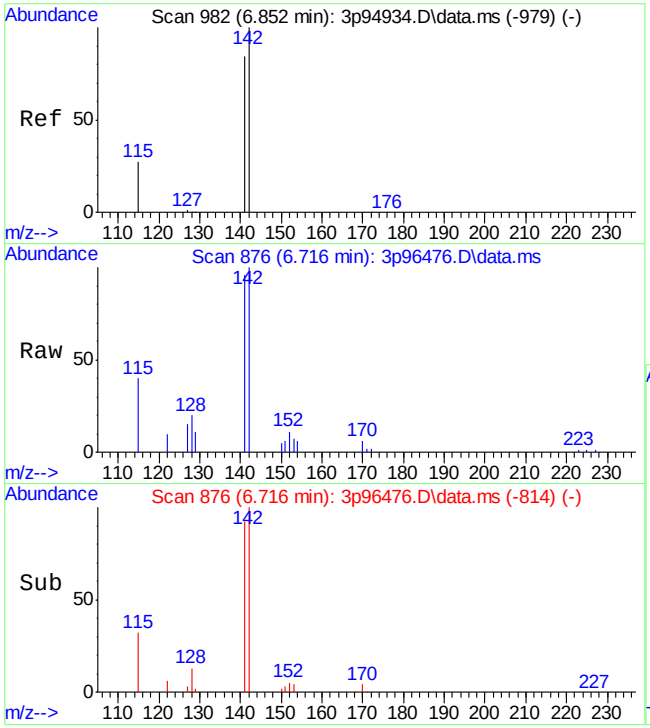
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96476.D
Acq On : 20 Apr 2022 4:50 am
Operator : chriss2
Sample : jd43215-2
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 20 11:33:38 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

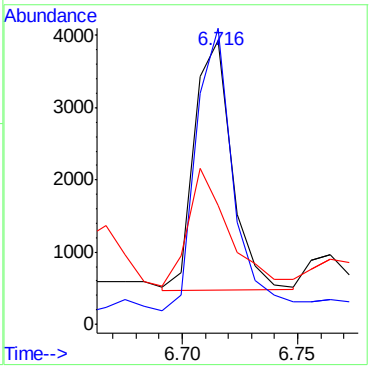


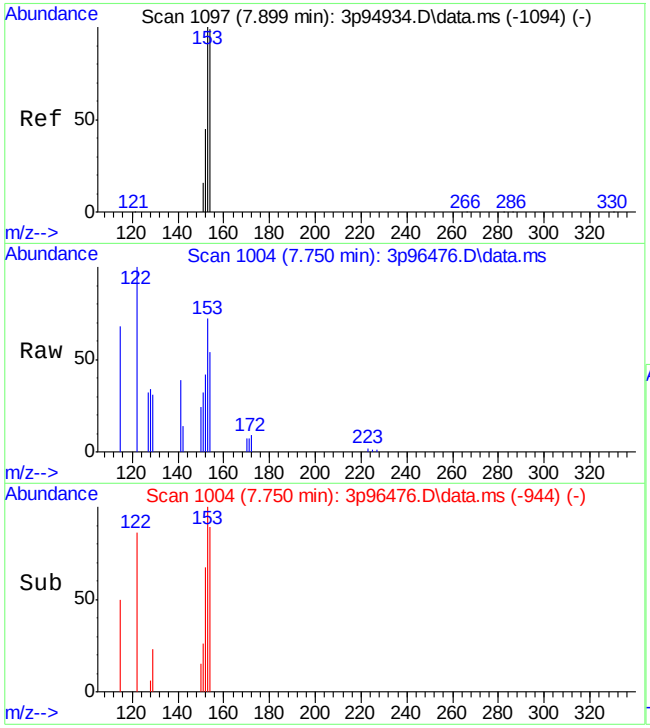


#10
2-Methylnaphthalene
Concen: 88.06 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:141 Resp: 3945

Ion	Ratio	Lower	Upper
141	100		
142	112.8	88.8	148.8
115	31.4	1.9	61.9

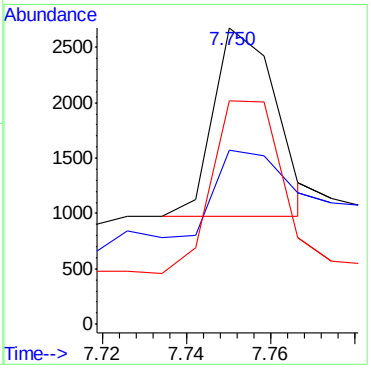


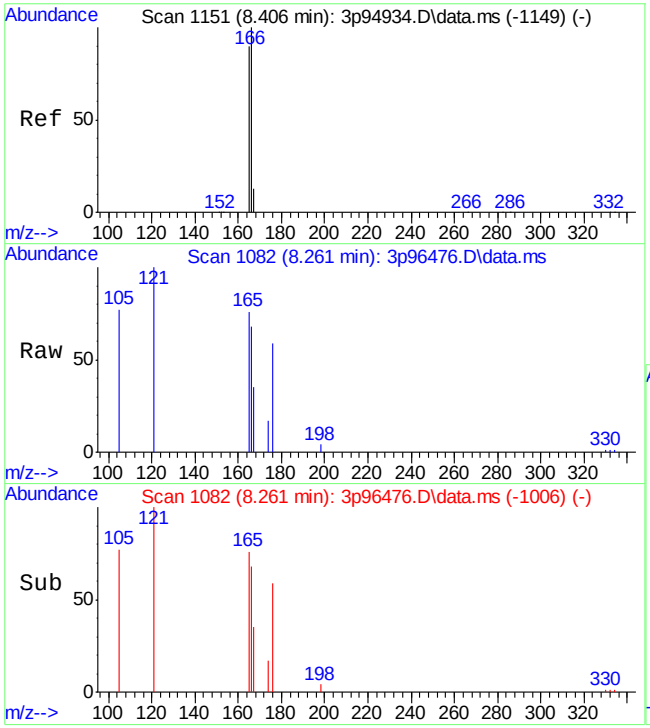


#15
Acenaphthene
Concen: 29.62 ppb m
RT: 7.750 min Scan# 1004
Delta R.T. -0.016 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:153 Resp: 1748

Ion	Ratio	Lower	Upper
153	100		
152	58.7	16.5	76.5
154	75.4	73.6	133.6

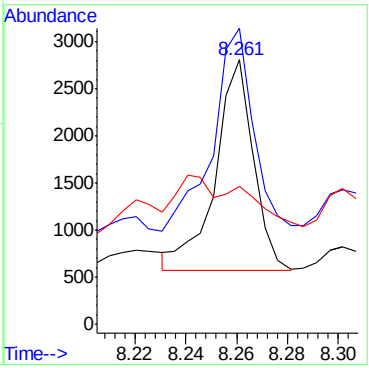


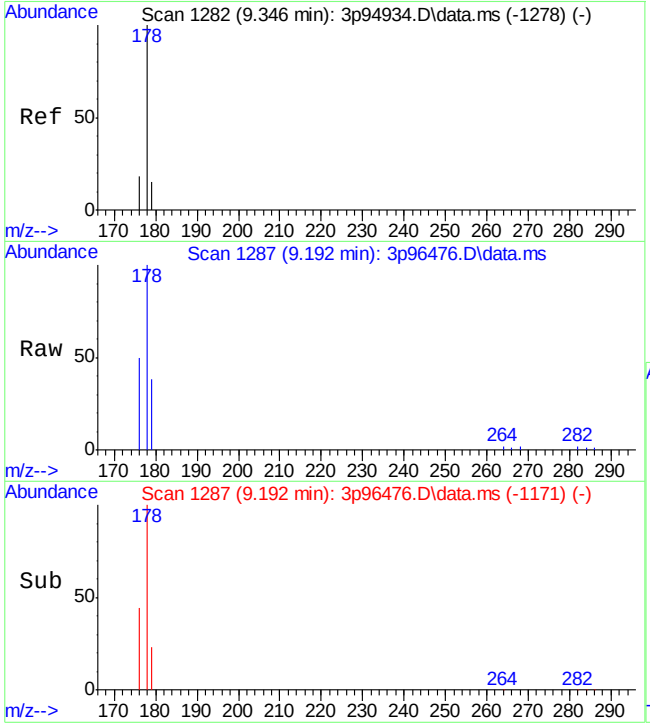


#17
Fluorene
Concen: 37.55 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:166 Resp: 2321

Ion	Ratio	Lower	Upper
166	100		
165	111.9	57.3	117.3
167	52.2	0.0	46.0#

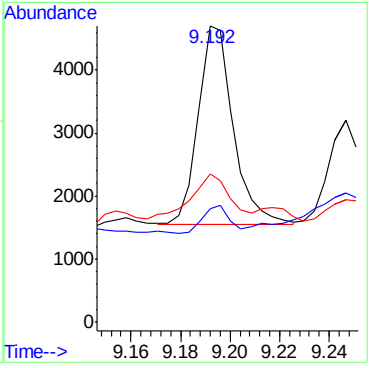


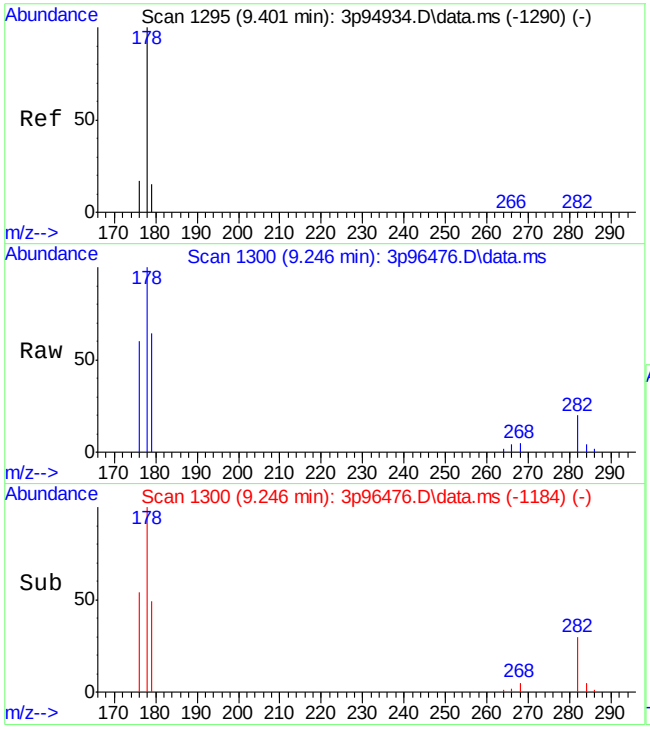


#22
Phenanthrene
Concen: 37.27 ppb m
RT: 9.192 min Scan# 1287
Delta R.T. -0.012 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:178 Resp: 3095

Ion	Ratio	Lower	Upper
178	100		
179	38.3	0.0	45.1
176	49.9	0.0	47.5#

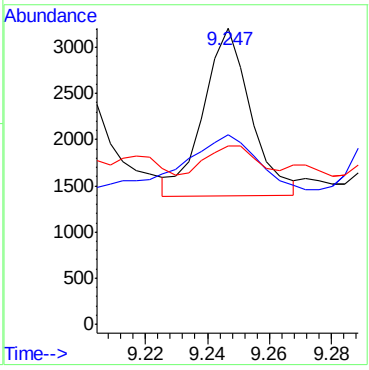


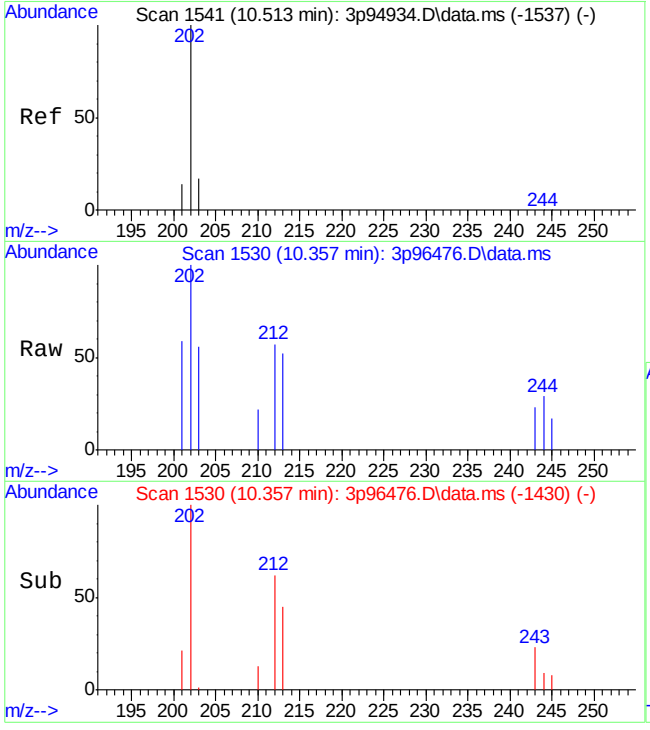


#23
Anthracene
Concen: 23.92 ppb
RT: 9.246 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:178 Resp: 1922

Ion	Ratio	Lower	Upper
178	100		
179	29.9	0.0	43.0
176	14.4	0.0	47.0

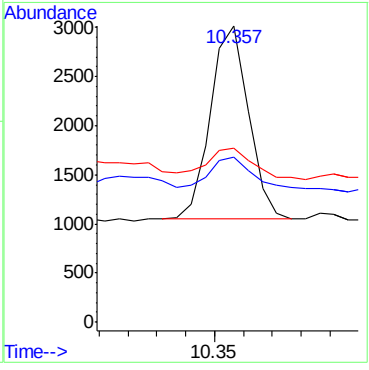


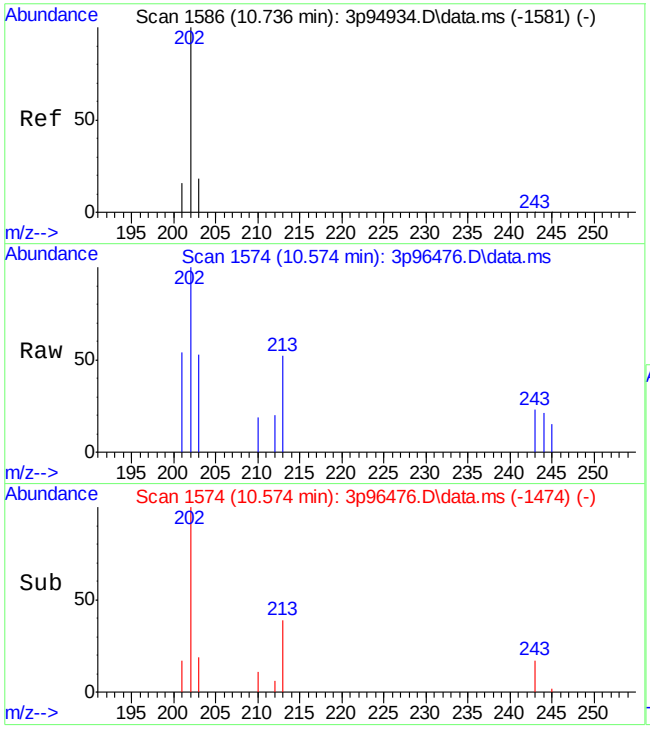


#24
Fluoranthene
Concen: 18.42 ppb m
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:202 Resp: 1816

Ion	Ratio	Lower	Upper
202	100		
203	55.9	0.0	50.0#
201	58.8	0.0	45.9#

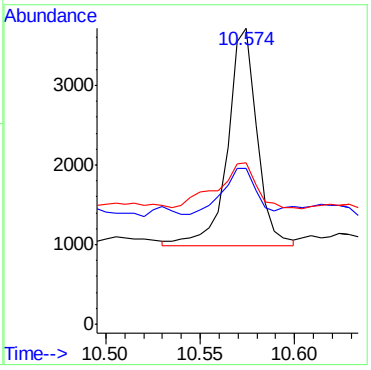


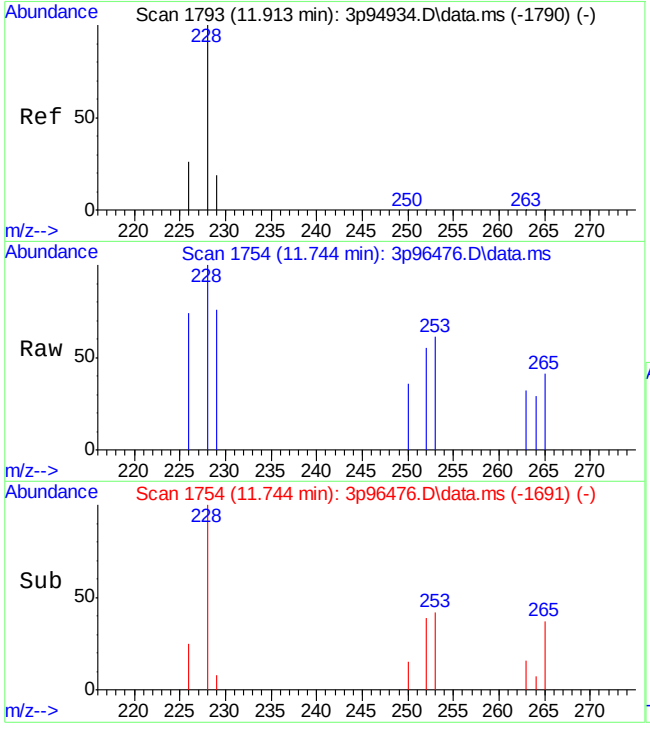


#25
Pyrene
Concen: 28.67 ppb
RT: 10.574 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:202 Resp: 2936

Ion	Ratio	Lower	Upper
202	100		
203	17.8	0.0	48.7
201	20.5	0.0	46.9

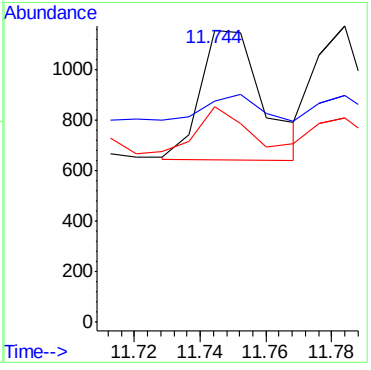


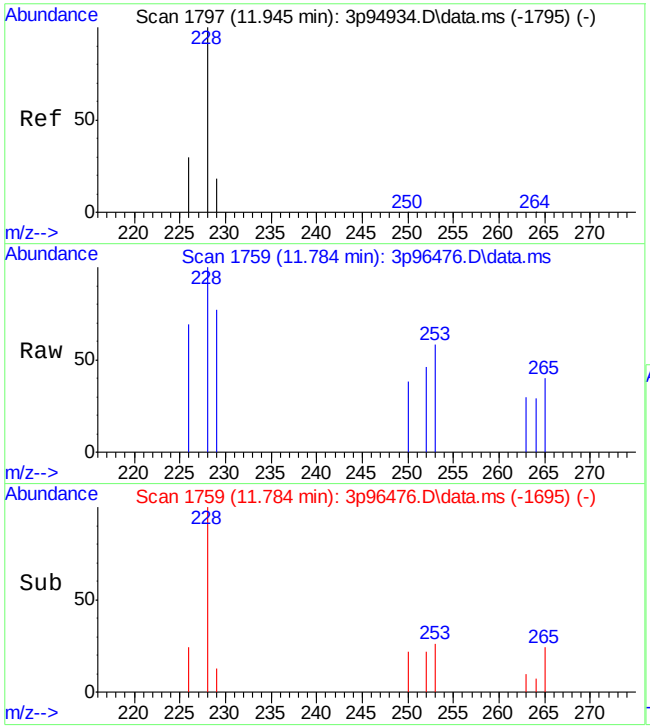


#27
Benzo[a]anthracene
Concen: 9.21 ppb
RT: 11.744 min Scan# 1754
Delta R.T. -0.002 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:228 Resp: 684

Ion	Ratio	Lower	Upper
228	100		
229	18.0	0.0	49.3
226	37.3	0.0	55.2

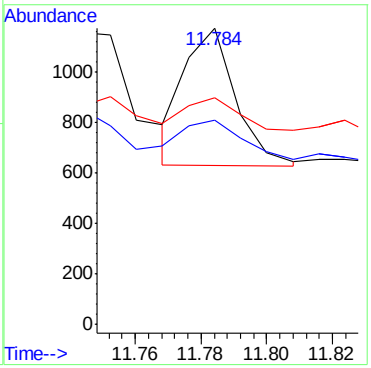


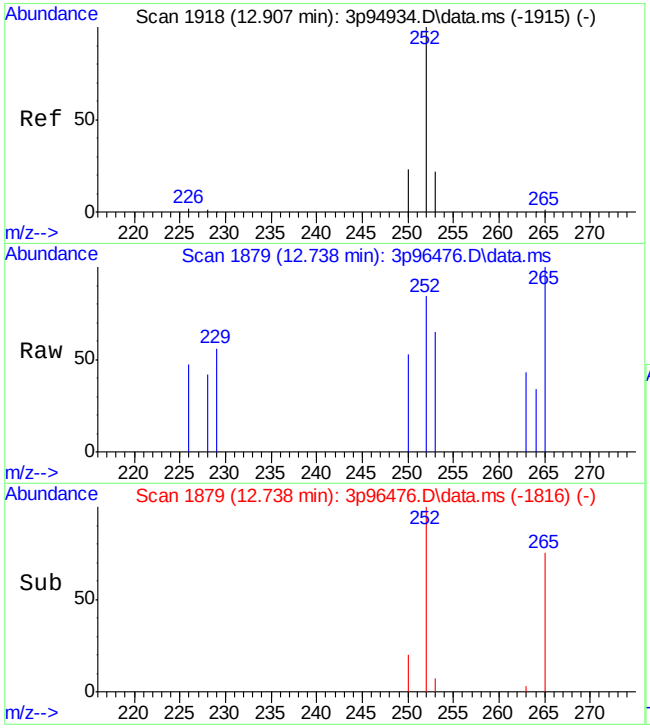


#28
Chrysene
Concen: 6.12 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:228 Resp: 590

Ion	Ratio	Lower	Upper
228	100		
226	28.1	0.0	55.6
229	25.8	0.0	47.4

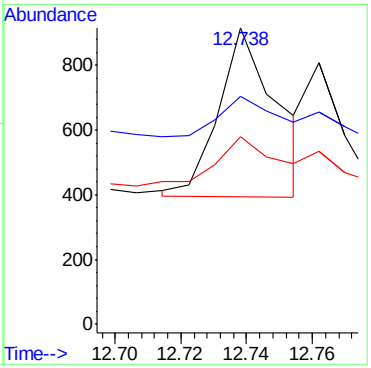


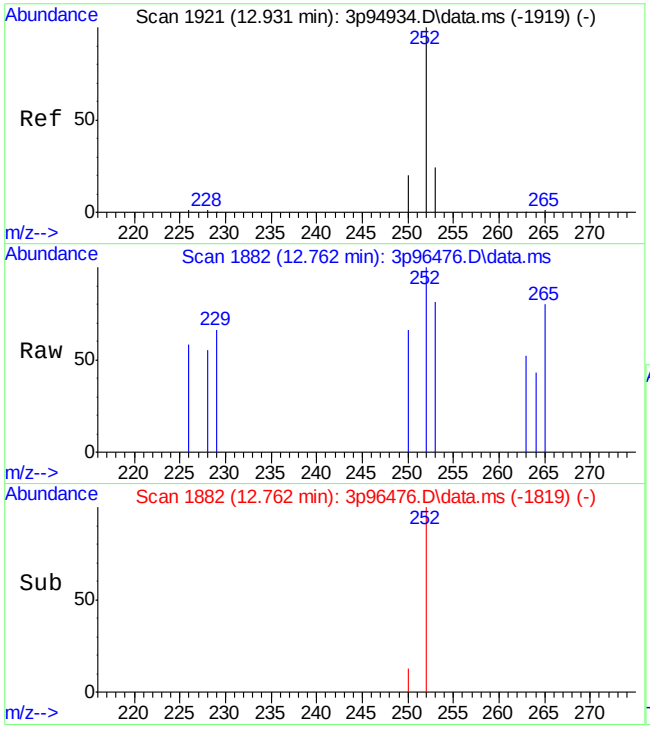


#30
Benzo[b]fluoranthene
Concen: 7.72 ppb
RT: 12.738 min Scan# 1879
Delta R.T. -0.003 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:252 Resp: 638

Ion	Ratio	Lower	Upper
252	100		
253	25.8	0.0	51.7
250	28.8	0.0	48.4

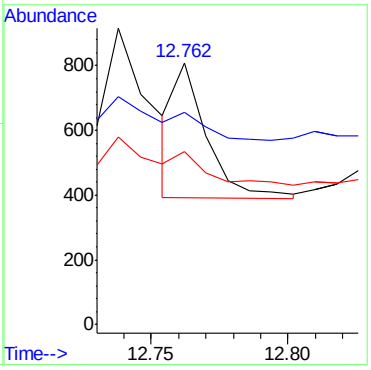


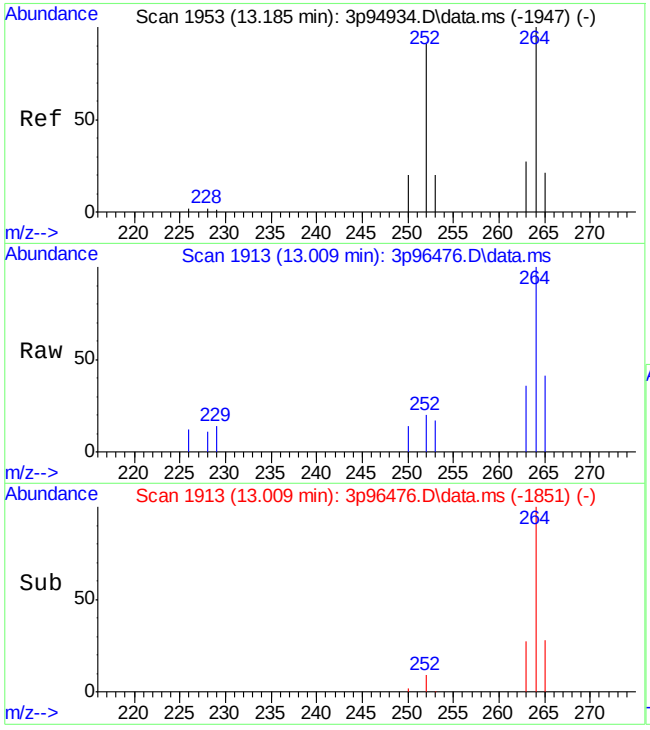


#31
Benzo[k]fluoranthene
Concen: 3.48 ppb
RT: 12.762 min Scan# 1882
Delta R.T. -0.003 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:252 Resp: 344

Ion	Ratio	Lower	Upper
252	100		
253	19.6	0.0	51.5
250	25.5	0.0	51.3

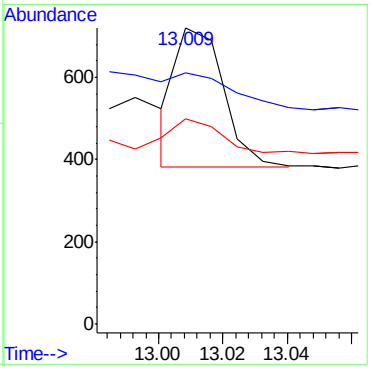


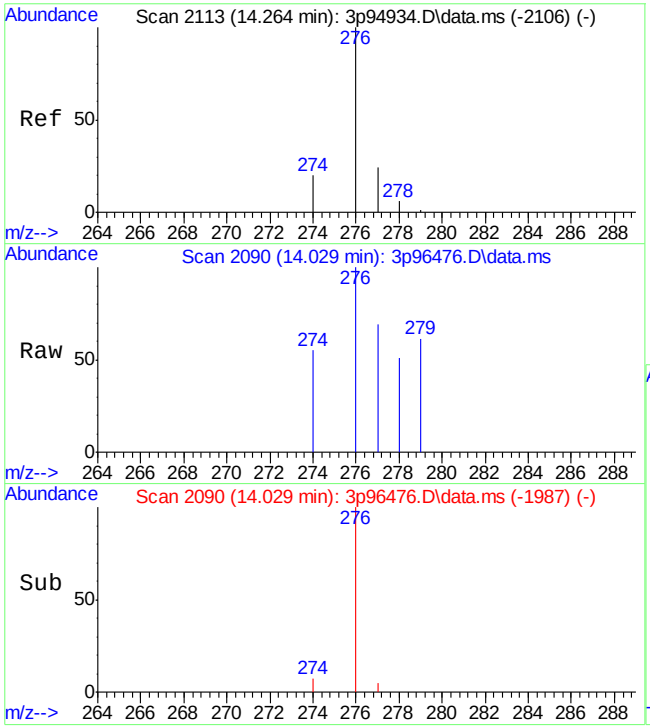


#32
Benzo[a]pyrene
Concen: 3.41 ppb m
RT: 13.009 min Scan# 1913
Delta R.T. -0.009 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:252 Resp: 351

Ion	Ratio	Lower	Upper
252	100		
253	84.9	0.0	52.3#
250	69.4	0.0	49.9#

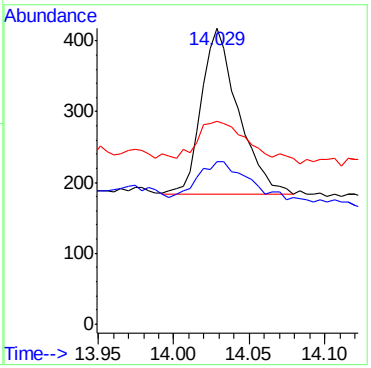


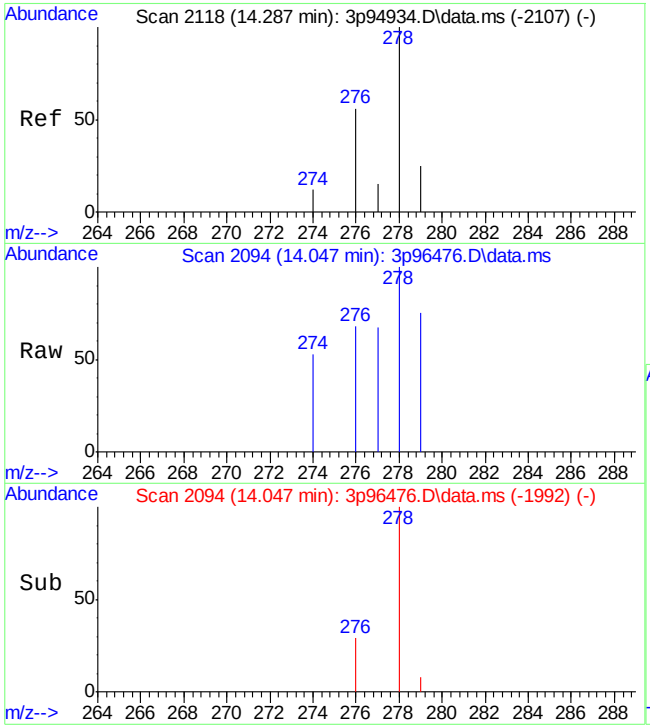


#33
Indeno[1,2,3-cd]pyrene
Concen: 4.60 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:276 Resp: 404

Ion	Ratio	Lower	Upper
276	100		
274	20.5	0.0	45.2
277	20.9	0.0	52.4

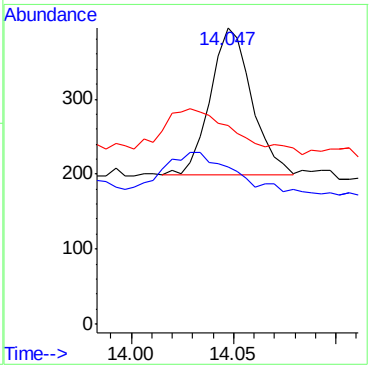


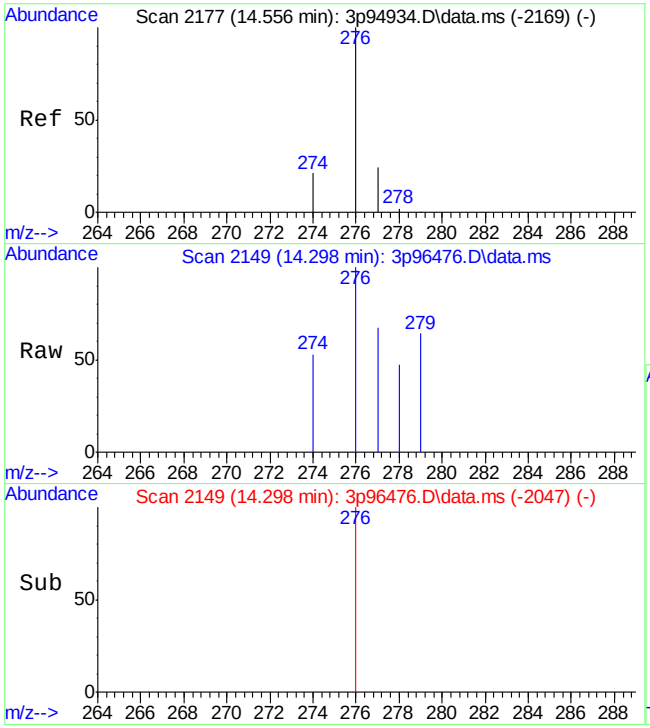


#34
Dibenz[a,h]anthracene
Concen: 3.87 ppb
RT: 14.047 min Scan# 2094
Delta R.T. -0.033 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:278 Resp: 276

Ion	Ratio	Lower	Upper
278	100		
274	8.2	0.0	40.3
277	9.7	0.0	40.0

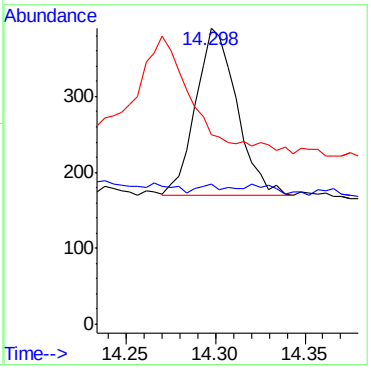




#35
Benzo[g,h,i]perylene
Concen: 4.21 ppb
RT: 14.298 min Scan# 2149
Delta R.T. -0.036 min
Lab File: 3p96476.D
Acq: 20 Apr 2022 4:50 am

Tgt Ion:276 Resp: 349

Ion	Ratio	Lower	Upper
276	100		
278	3.0	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96477.D
Acq On : 20 Apr 2022 5:12 am
Operator : chriss2
Sample : jd43215-3
Misc : op39191,e3p4582,280,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 20 11:34:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

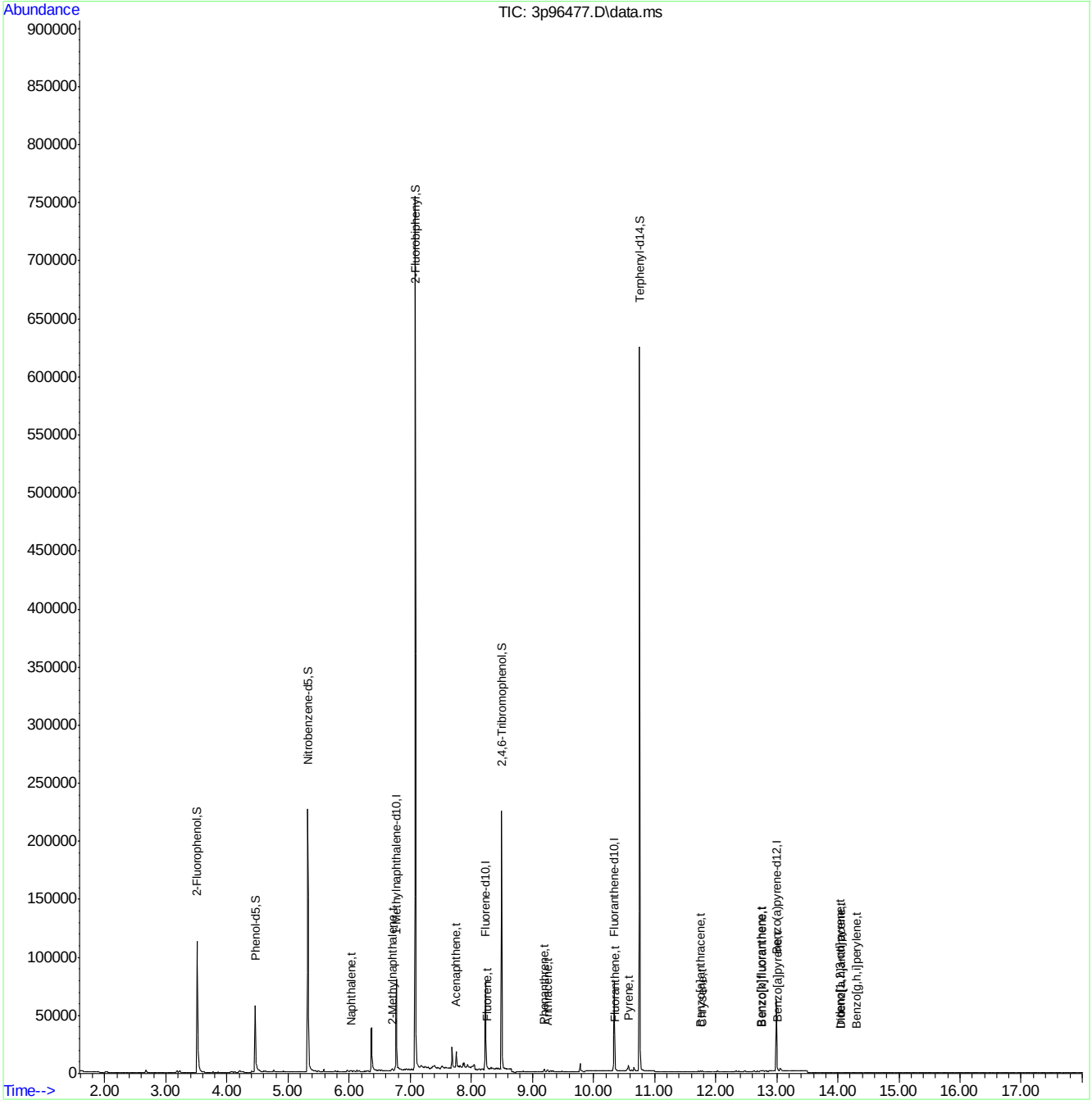
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	25808	800.00 ppb	# 0.00
12) Fluorene-d10	8.230	176	36770	800.00 ppb	0.00
19) Fluoranthene-d10	10.338	212	58138	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.994	264	44018	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.512	112	79571	4093.12 ppb	-0.03
Spiked Amount 50.000			Recovery	= 8186.24%	
4) Phenol-d5	4.462	99	72564	2749.03 ppb	0.00
Spiked Amount 50.000			Recovery	= 5498.06%	
7) Nitrobenzene-d5	5.320	82	143974	6995.81 ppb	0.00
Spiked Amount 50.000			Recovery	= 13991.62%	
13) 2-Fluorobiphenyl	7.079	172	368387	6383.60 ppb	-0.01
Spiked Amount 50.000			Recovery	= 12767.20%	
18) 2,4,6-Tribromophenol	8.495	330	76937	11100.46 ppb	0.00
Spiked Amount 50.000			Recovery	= 22200.92%	
26) Terphenyl-d14	10.754	244	383082	7071.34 ppb	0.00
Spiked Amount 50.000			Recovery	= 14142.68%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	624	7.93 ppb	82
10) 2-Methylnaphthalene	6.716	141	476	11.31 ppb	92
15) Acenaphthene	7.750	153	5242m	88.49 ppb	
17) Fluorene	8.261	166	1003m	16.16 ppb	
22) Phenanthrene	9.193	178	1677	19.30 ppb	96
23) Anthracene	9.247	178	778	9.25 ppb	87
24) Fluoranthene	10.353	202	523m	5.07 ppb	
25) Pyrene	10.571	202	3344	31.22 ppb	97
27) Benzo[a]anthracene	11.746	228	255	3.28 ppb	95
28) Chrysene	11.786	228	270	2.68 ppb	90
30) Benzo[b]fluoranthene	12.740	252	233	2.92 ppb	79
31) Benzo[k]fluoranthene	12.764	252	136	1.42 ppb	94
32) Benzo[a]pyrene	13.010	252	114	0.79 ppb	79
33) Indeno[1,2,3-cd]pyrene	14.032	276	157	1.85 ppb	98
34) Dibenz[a,h]anthracene	14.050	278	111	1.61 ppb	81
35) Benzo[g,h,i]perylene	14.300	276	147	1.83 ppb	99

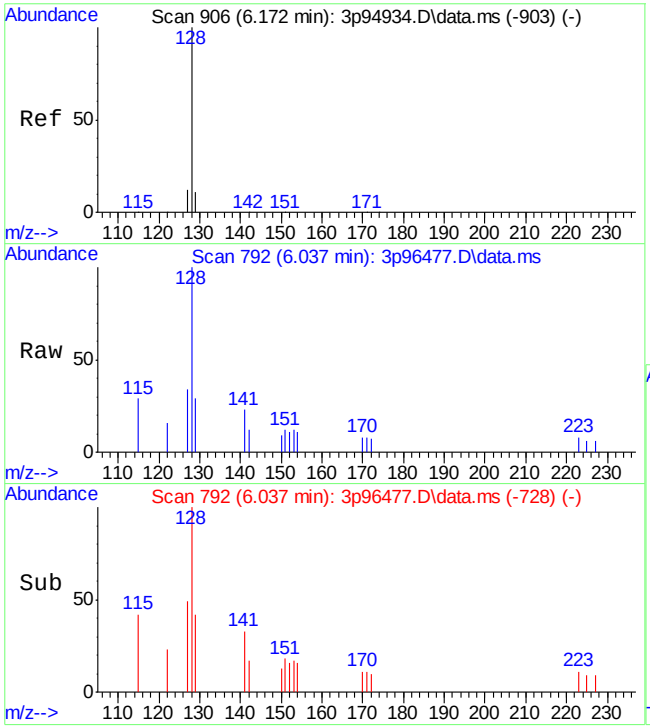
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96477.D
Acq On : 20 Apr 2022 5:12 am
Operator : chriss2
Sample : jd43215-3
Misc : op39191,e3p4582,280,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 20 11:34:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

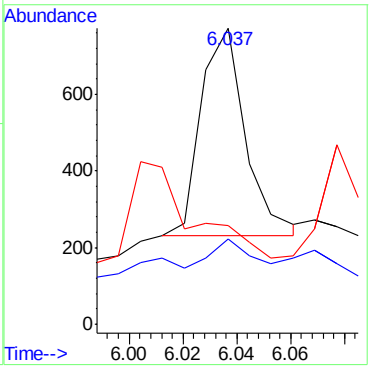


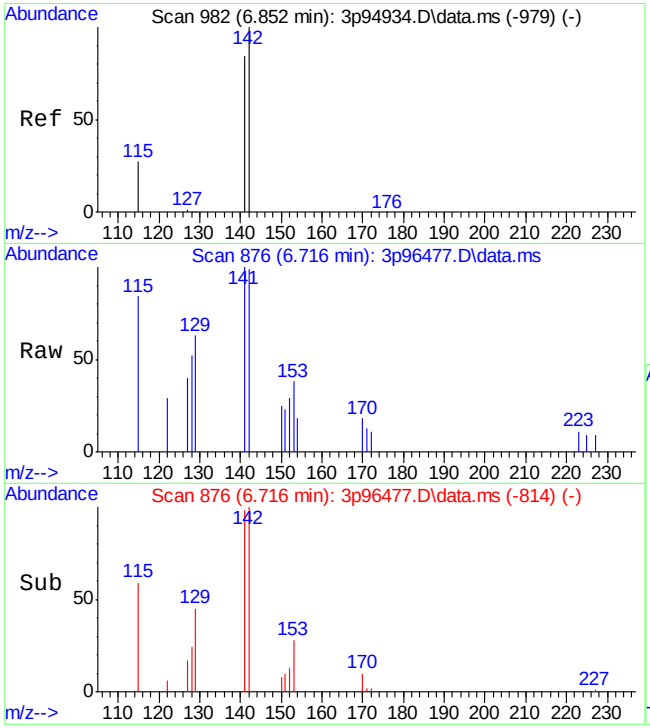


#8
Naphthalene
Concen: 7.93 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:128 Resp: 624

Ion	Ratio	Lower	Upper
128	100		
129	9.5	0.0	41.2
127	0.0	0.0	41.7

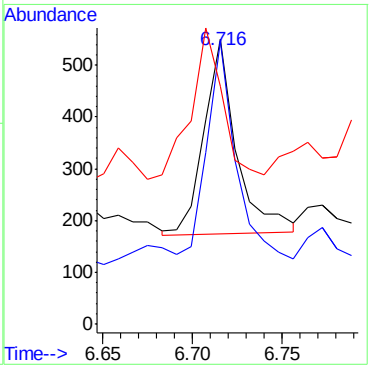


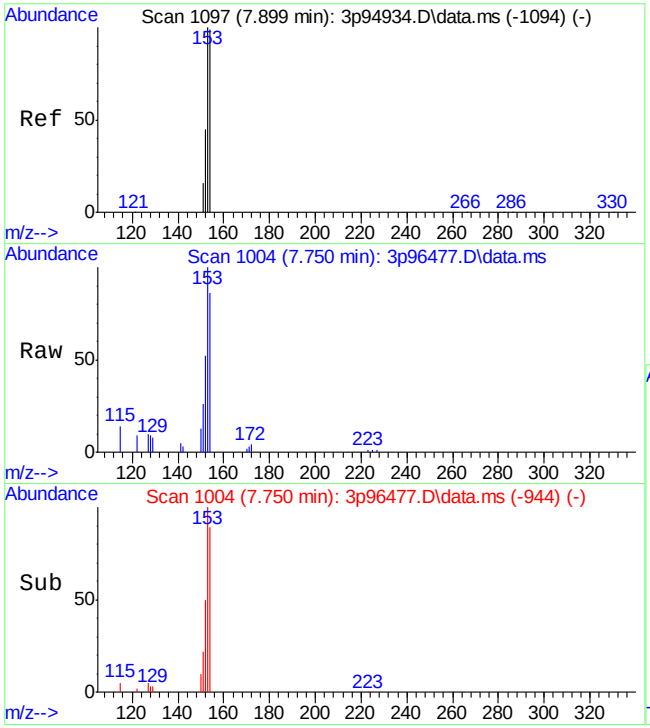


#10
2-Methylnaphthalene
Concen: 11.31 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:141 Resp: 476

Ion	Ratio	Lower	Upper
141	100		
142	112.7	88.8	148.8
115	41.2	1.9	61.9

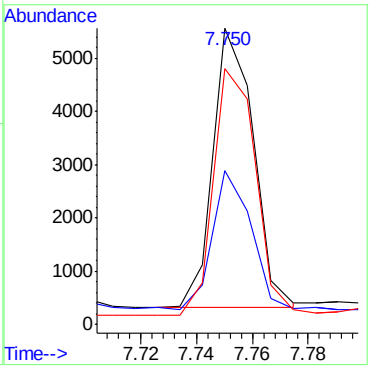


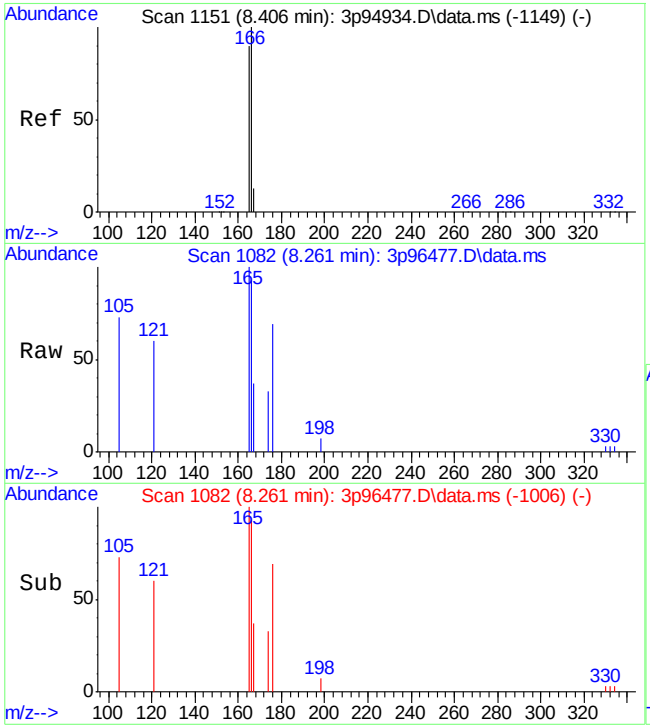


#15
Acenaphthene
Concen: 88.49 ppb m
RT: 7.750 min Scan# 1004
Delta R.T. -0.016 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:153 Resp: 5242

Ion	Ratio	Lower	Upper
153	100		
152	51.7	16.5	76.5
154	86.3	73.6	133.6

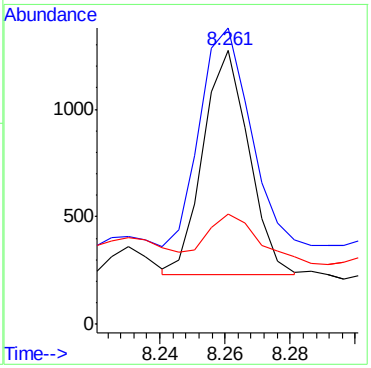


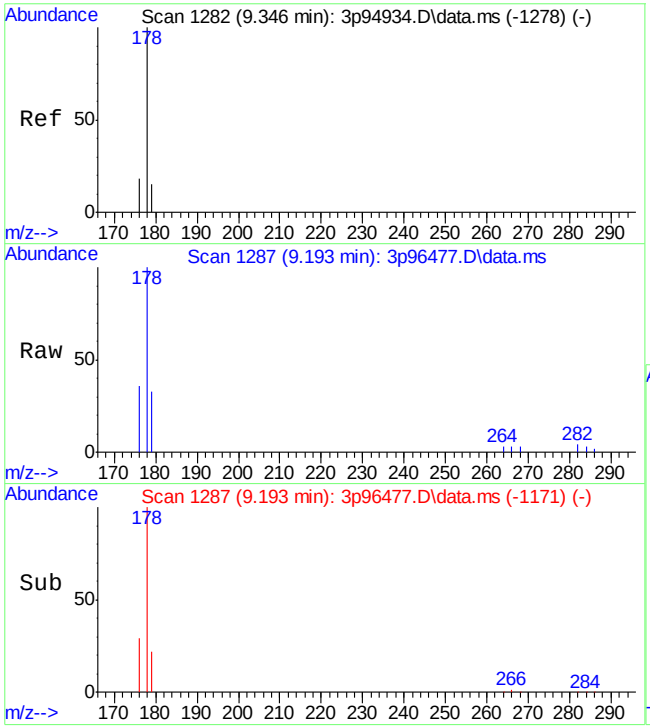


#17
Fluorene
Concen: 16.16 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:166 Resp: 1003

Ion	Ratio	Lower	Upper
166	100		
165	108.1	57.3	117.3
167	40.2	0.0	46.0

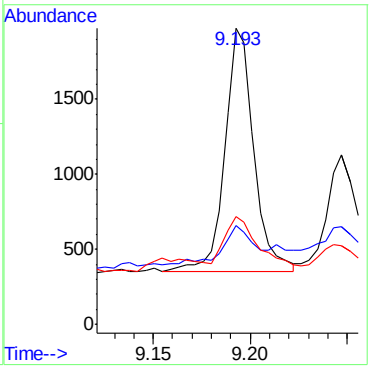


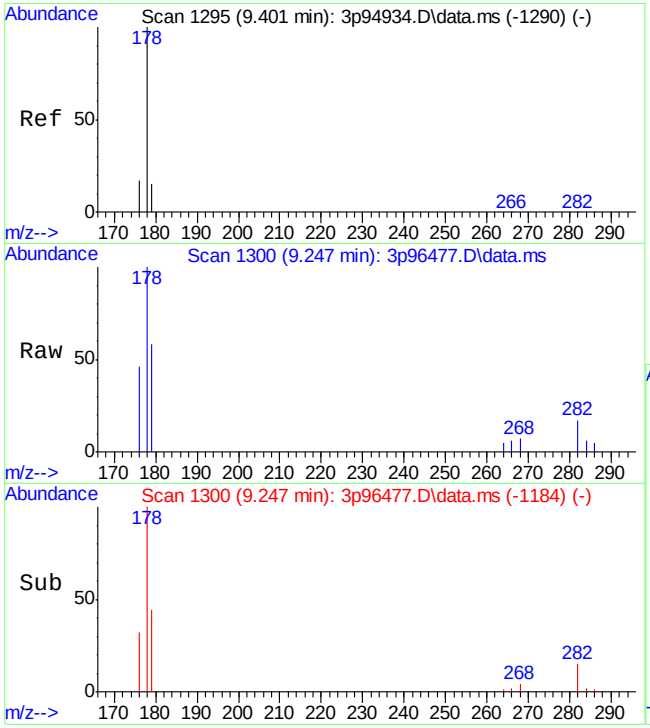


#22
Phenanthrene
Concen: 19.30 ppb
RT: 9.193 min Scan# 1287
Delta R.T. -0.011 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:178 Resp: 1677

Ion	Ratio	Lower	Upper
178	100		
179	13.1	0.0	45.1
176	18.8	0.0	47.5

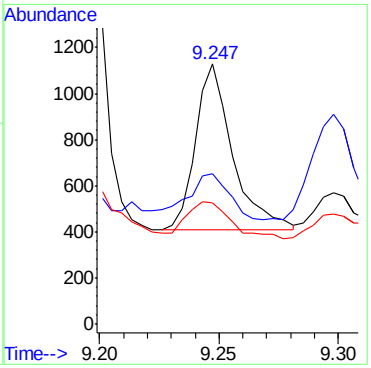


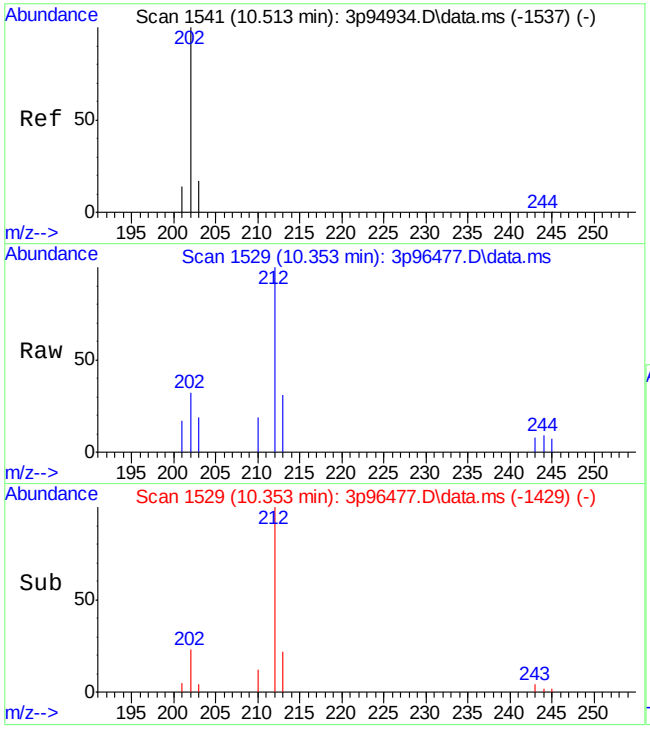


#23
Anthracene
Concen: 9.25 ppb
RT: 9.247 min Scan# 1300
Delta R.T. -0.011 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:178 Resp: 778

Ion	Ratio	Lower	Upper
178	100		
179	21.5	0.0	43.0
176	19.9	0.0	47.0

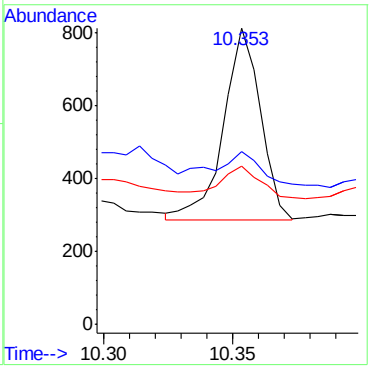


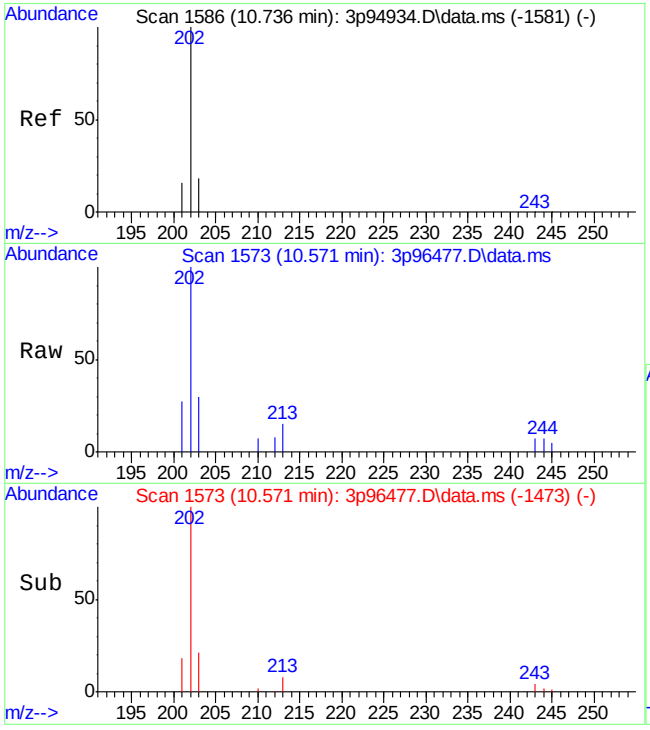


#24
Fluoranthene
Concen: 5.07 ppb m
RT: 10.353 min Scan# 1529
Delta R.T. -0.008 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:202 Resp: 523

Ion	Ratio	Lower	Upper
202	100		
203	58.4	0.0	50.0#
201	53.4	0.0	45.9#

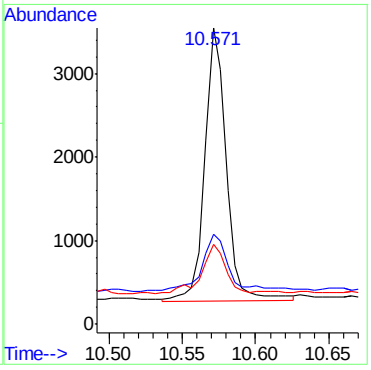


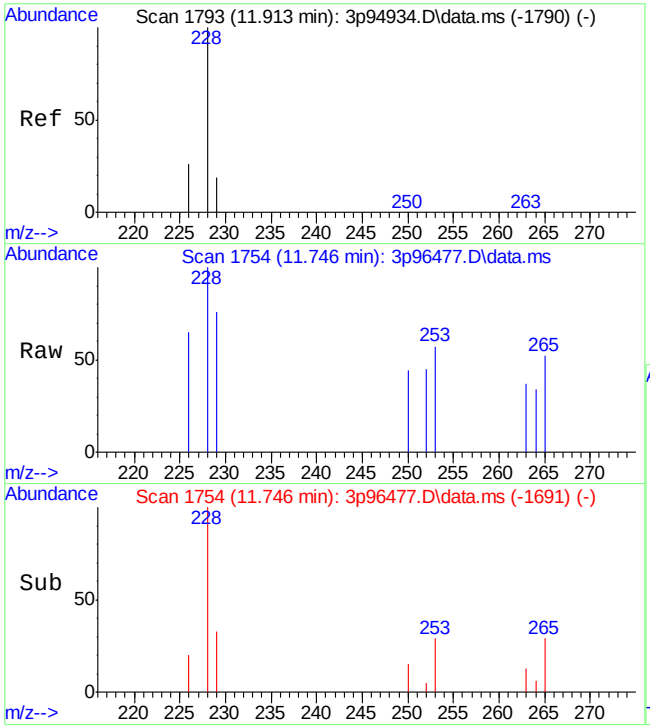


#25
Pyrene
Concen: 31.22 ppb
RT: 10.571 min Scan# 1573
Delta R.T. -0.006 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:202 Resp: 3344

Ion	Ratio	Lower	Upper
202	100		
203	20.7	0.0	48.7
201	17.8	0.0	46.9

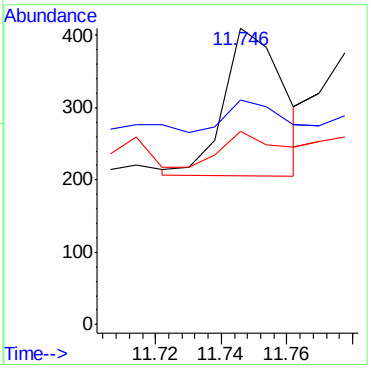


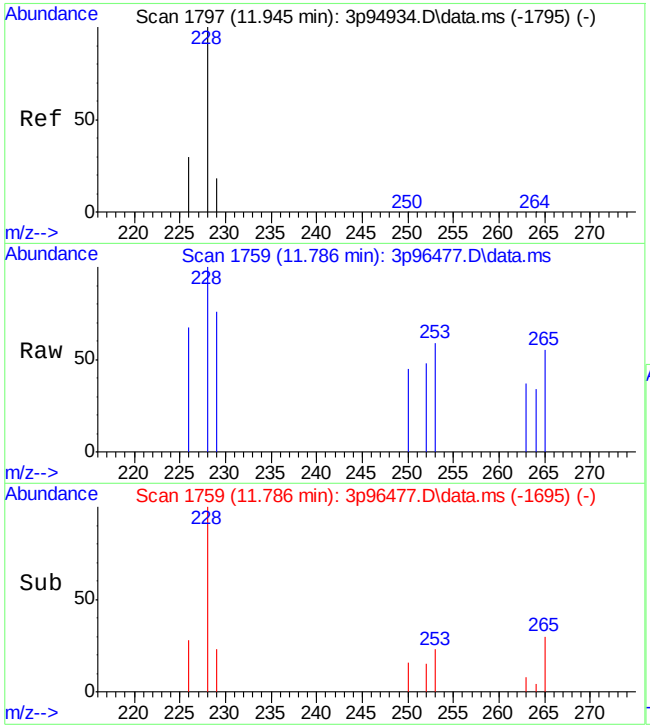


#27
Benzo[a]anthracene
Concen: 3.28 ppb
RT: 11.746 min Scan# 1754
Delta R.T. -0.001 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:228 Resp: 255

Ion	Ratio	Lower	Upper
228	100		
229	22.0	0.0	49.3
226	23.3	0.0	55.2

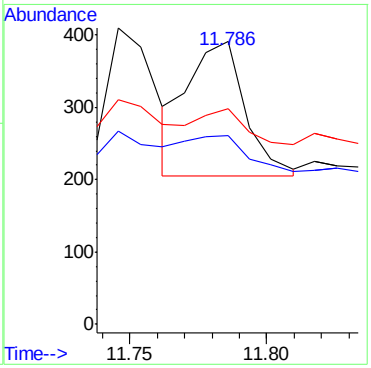


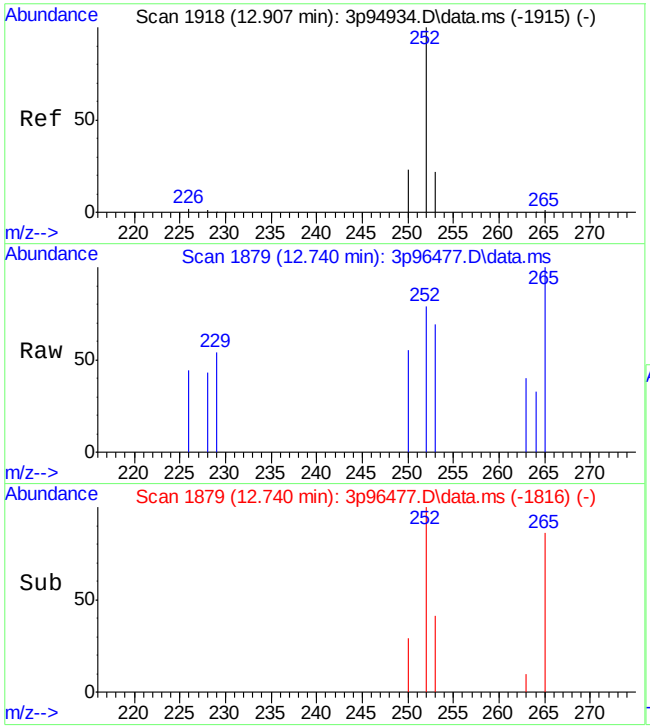


#28
Chrysene
Concen: 2.68 ppb
RT: 11.786 min Scan# 1759
Delta R.T. 0.008 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:228 Resp: 270

Ion	Ratio	Lower	Upper
228	100		
226	24.2	0.0	55.6
229	26.4	0.0	47.4

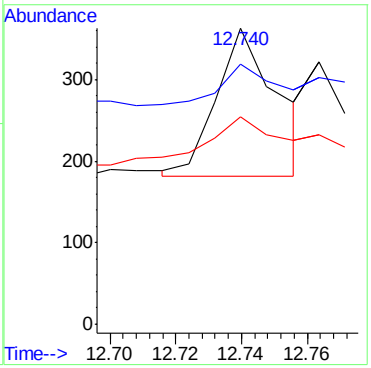


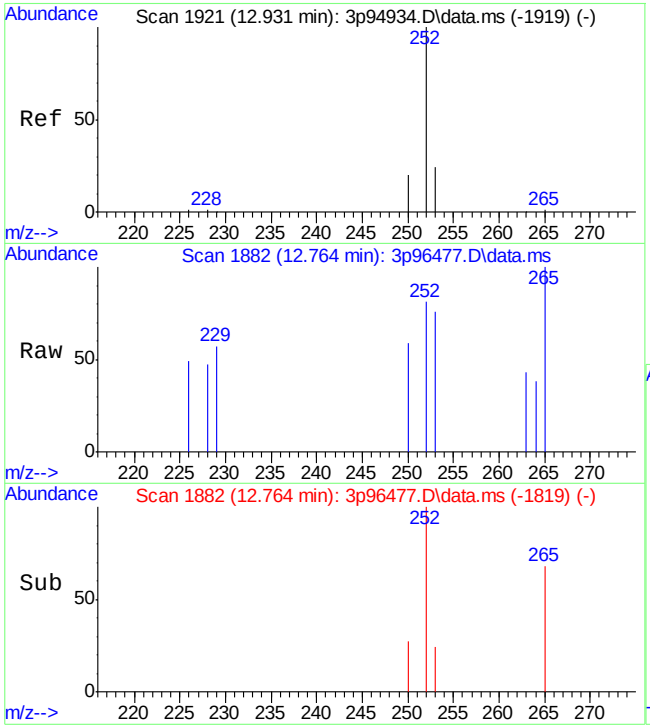


#30
Benzo[b]fluoranthene
Concen: 2.92 ppb
RT: 12.740 min Scan# 1879
Delta R.T. -0.001 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:252 Resp: 233

Ion	Ratio	Lower	Upper
252	100		
253	30.5	0.0	51.7
250	29.3	0.0	48.4

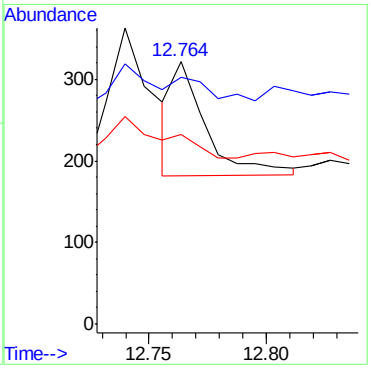


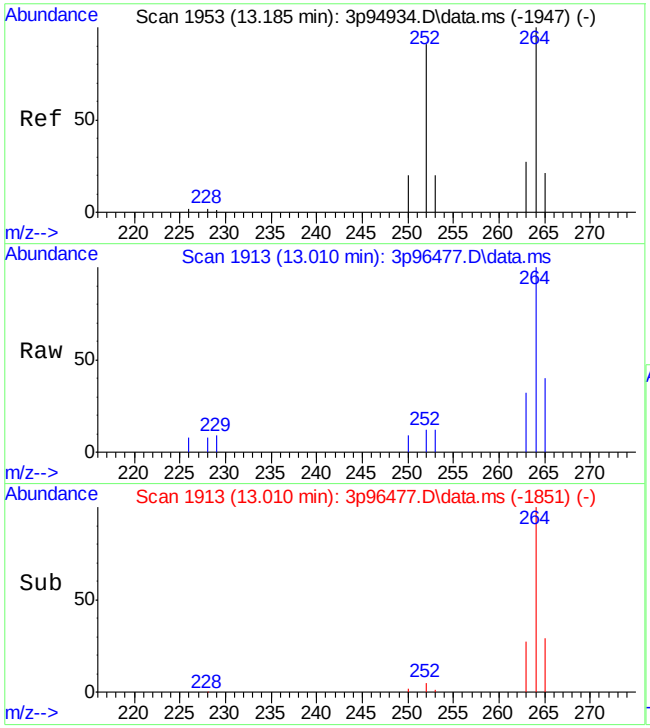


#31
Benzo[k]fluoranthene
Concen: 1.42 ppb
RT: 12.764 min Scan# 1882
Delta R.T. -0.001 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:252 Resp: 136

Ion	Ratio	Lower	Upper
252	100		
253	17.7	0.0	51.5
250	19.9	0.0	51.3

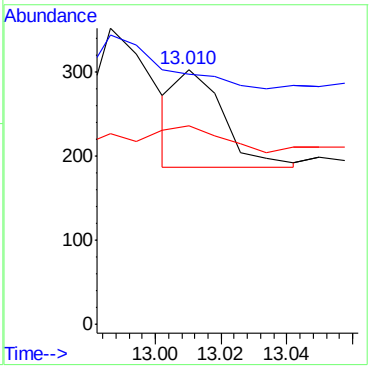


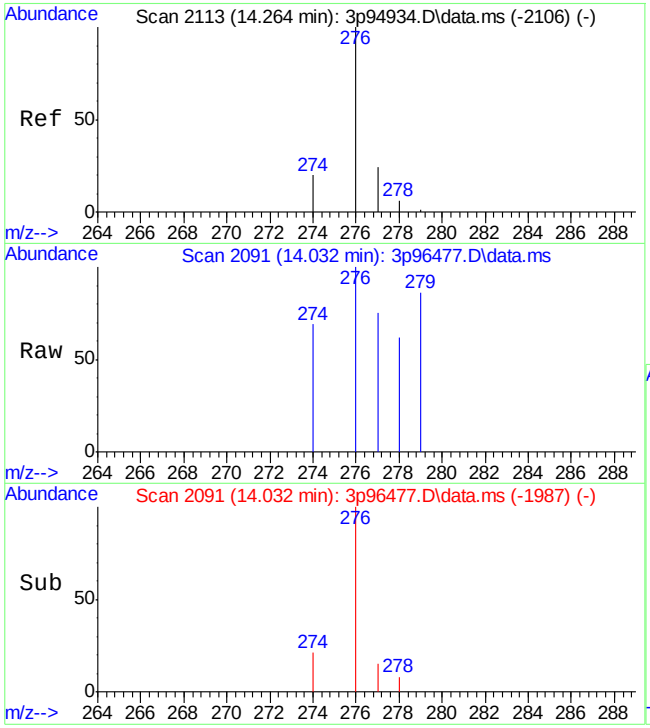


#32
Benzo[a]pyrene
Concen: 0.79 ppb
RT: 13.010 min Scan# 1913
Delta R.T. -0.008 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:252 Resp: 114

Ion	Ratio	Lower	Upper
252	100		
253	4.9	0.0	52.3
250	21.8	0.0	49.9

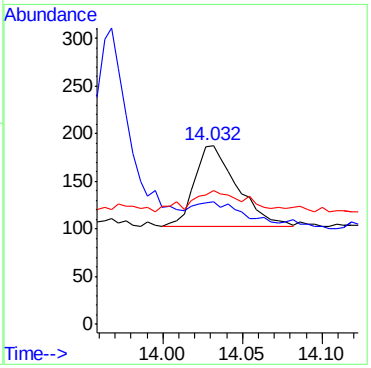


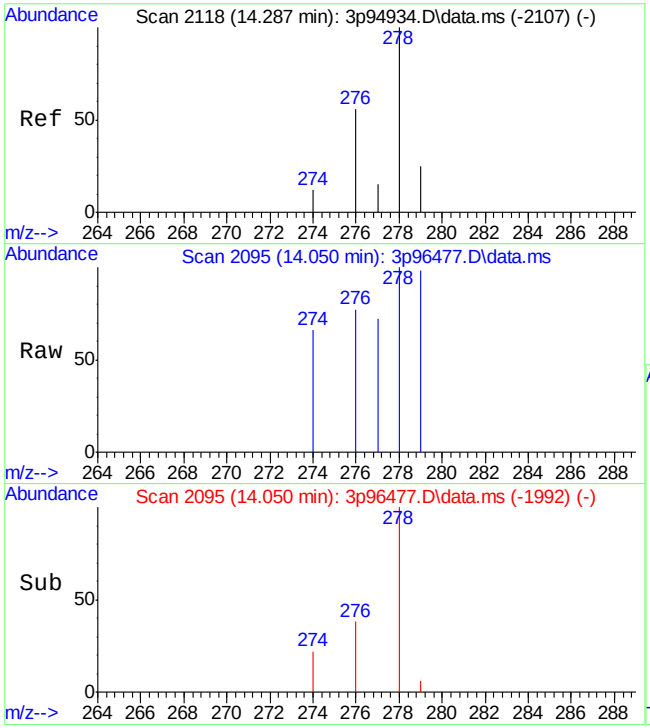


#33
Indeno[1,2,3-cd]pyrene
Concen: 1.85 ppb
RT: 14.032 min Scan# 2091
Delta R.T. -0.026 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:276 Resp: 157

Ion	Ratio	Lower	Upper
276	100		
274	14.8	0.0	45.2
277	20.7	0.0	52.4

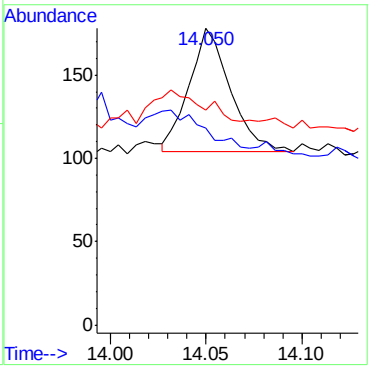


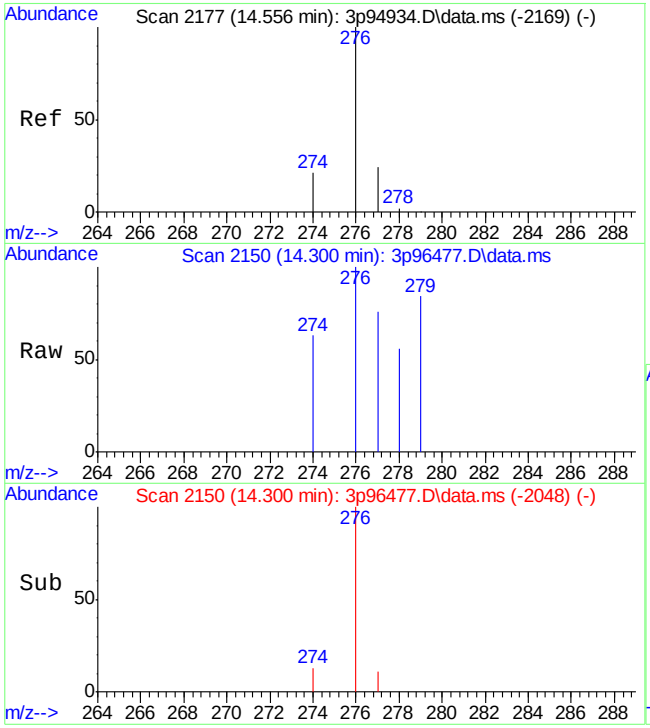


#34
Dibenz[a,h]anthracene
Concen: 1.61 ppb
RT: 14.050 min Scan# 2095
Delta R.T. -0.030 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:278 Resp: 111

Ion	Ratio	Lower	Upper
278	100		
274	3.5	0.0	40.3
277	2.8	0.0	40.0

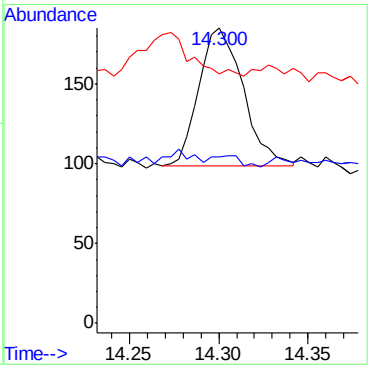




#35
Benzo[g,h,i]perylene
Concen: 1.83 ppb
RT: 14.300 min Scan# 2150
Delta R.T. -0.034 min
Lab File: 3p96477.D
Acq: 20 Apr 2022 5:12 am

Tgt Ion:276 Resp: 147

Ion	Ratio	Lower	Upper
276	100		
278	1.8	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96478.D
Acq On : 20 Apr 2022 5:34 am
Operator : chriss2
Sample : jd43215-4
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 20 11:36:32 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

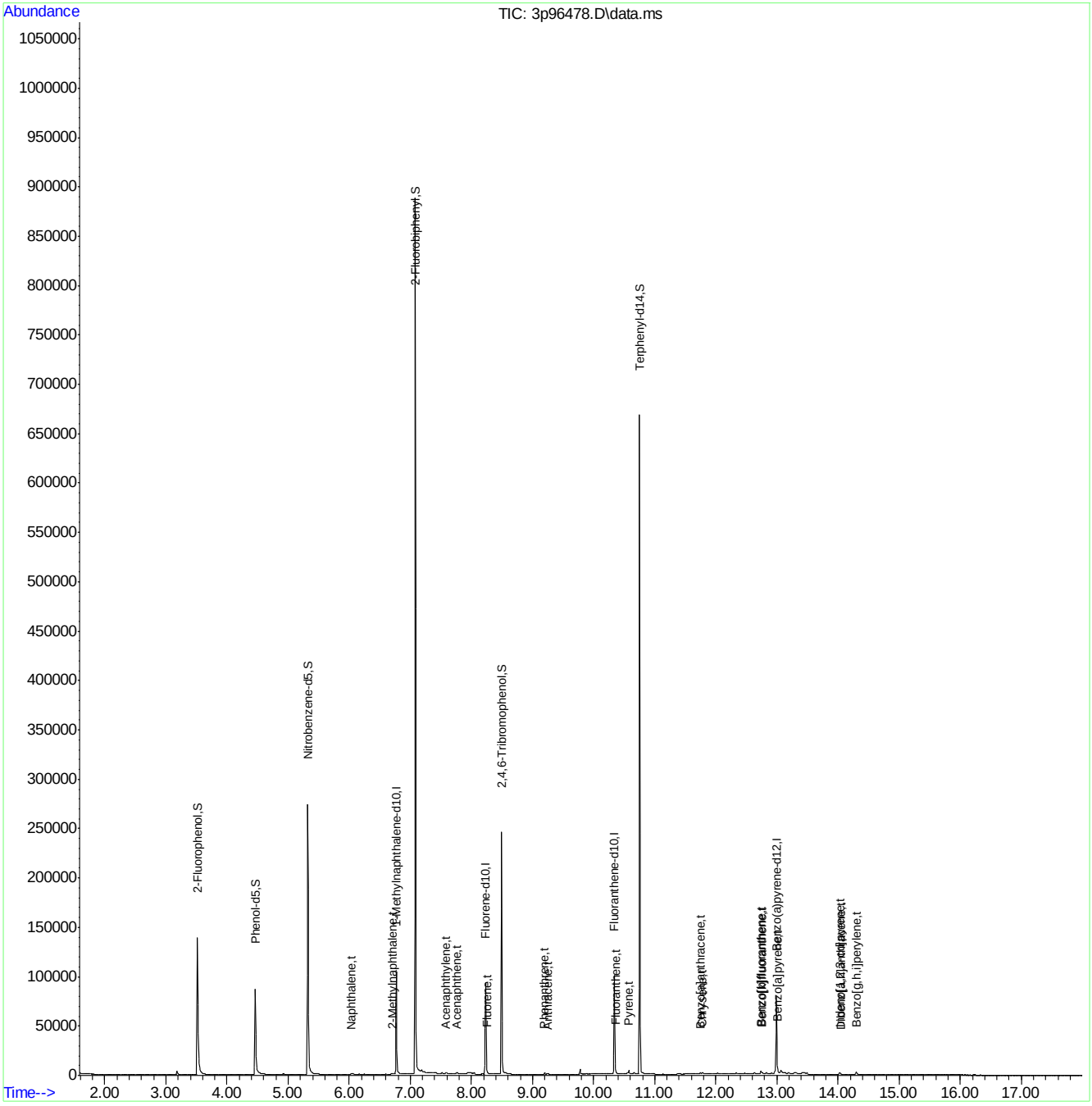
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	35305	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	43472	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	70230	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	54794	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.516	112	106844	4017.61 ppb	-0.03
Spiked Amount 50.000			Recovery	= 8035.22%	
4) Phenol-d5	4.462	99	106978	2962.59 ppb	0.00
Spiked Amount 50.000			Recovery	= 5925.18%	
7) Nitrobenzene-d5	5.320	82	183531	6519.01 ppb	0.00
Spiked Amount 50.000			Recovery	= 13038.02%	
13) 2-Fluorobiphenyl	7.079	172	445274	6526.39 ppb	-0.01
Spiked Amount 50.000			Recovery	= 13052.78%	
18) 2,4,6-Tribromophenol	8.495	330	87882	10724.81 ppb	0.00
Spiked Amount 50.000			Recovery	= 21449.62%	
26) Terphenyl-d14	10.753	244	441410	6745.12 ppb	0.00
Spiked Amount 50.000			Recovery	= 13490.24%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	623	5.78 ppb	97
10) 2-Methylnaphthalene	6.716	141	404	7.02 ppb	96
14) Acenaphthylene	7.589	152	381m	3.69 ppb	
15) Acenaphthene	7.758	153	149m	2.13 ppb	
17) Fluorene	8.261	166	291	3.97 ppb	94
22) Phenanthrene	9.196	178	1438	13.70 ppb	99
23) Anthracene	9.251	178	589	5.80 ppb	92
24) Fluoranthene	10.357	202	2268	18.20 ppb	95
25) Pyrene	10.574	202	2477	19.14 ppb	99
27) Benzo[a]anthracene	11.752	228	864	9.21 ppb	95
28) Chrysene	11.784	228	1437	11.79 ppb	91
30) Benzo[b]fluoranthene	12.738	252	2064m	20.75 ppb	
31) Benzo[k]fluoranthene	12.762	252	790m	6.64 ppb	
32) Benzo[a]pyrene	13.009	252	1417	12.69 ppb	90
33) Indeno[1,2,3-cd]pyrene	14.029	276	2366	22.37 ppb	93
34) Dibenz[a,h]anthracene	14.047	278	380m	4.43 ppb	
35) Benzo[g,h,i]perylene	14.298	276	3022	30.29 ppb	98

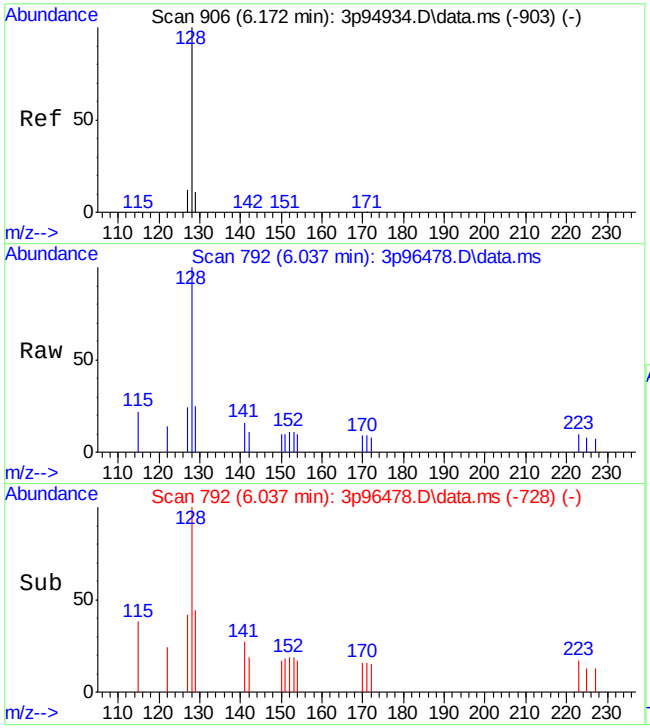
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96478.D
Acq On : 20 Apr 2022 5:34 am
Operator : chriss2
Sample : jd43215-4
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 20 11:36:32 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

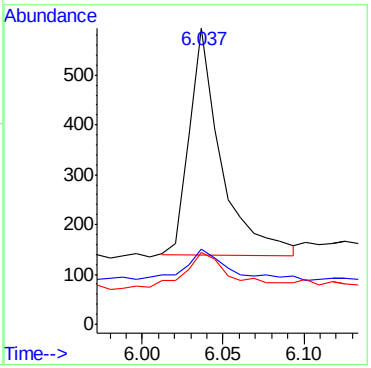


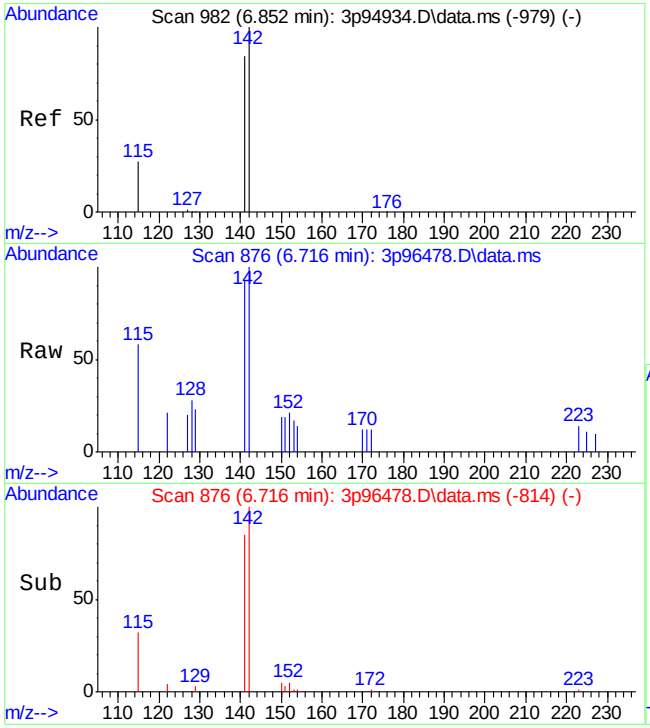


#8
Naphthalene
Concen: 5.78 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:128 Resp: 623

Ion	Ratio	Lower	Upper
128	100		
129	12.0	0.0	41.2
127	13.1	0.0	41.7

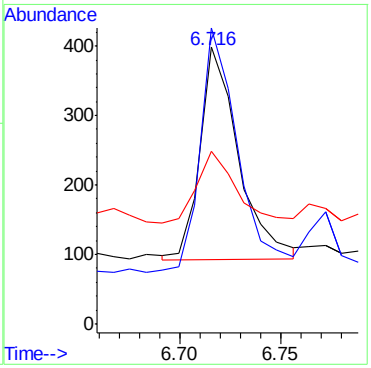


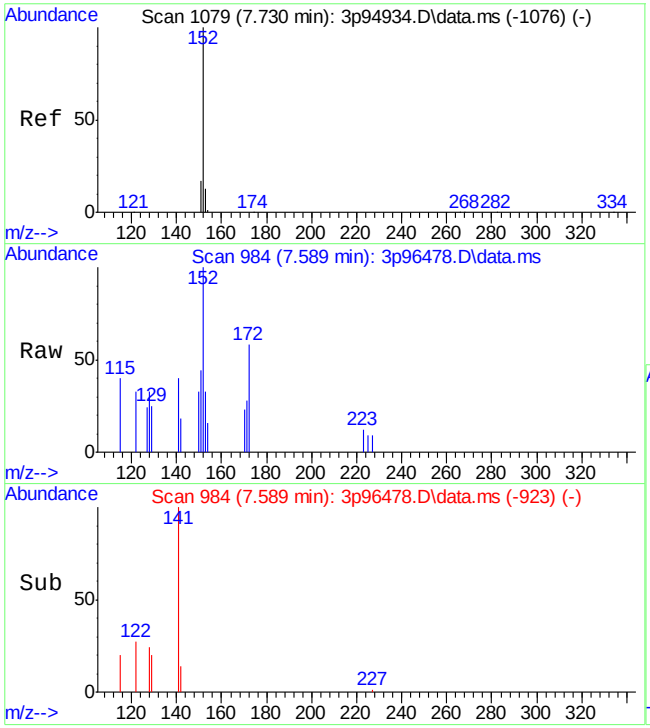


#10
2-Methylnaphthalene
Concen: 7.02 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:141 Resp: 404

Ion	Ratio	Lower	Upper
141	100		
142	114.9	88.8	148.8
115	34.0	1.9	61.9

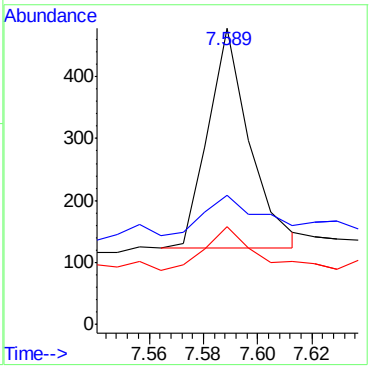


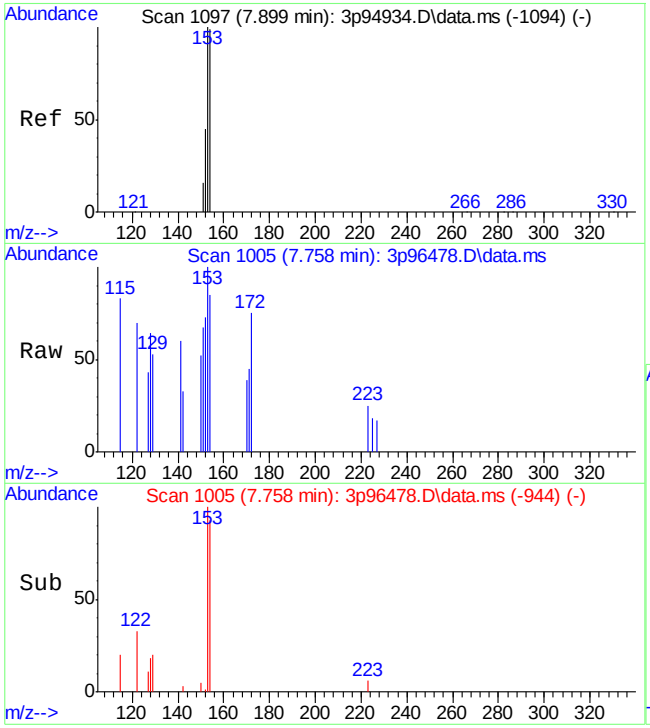


#14
Acenaphthylene
Concen: 3.69 ppb m
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:152 Resp: 381

Ion	Ratio	Lower	Upper
152	100		
151	43.5	0.0	47.3
153	33.1	0.0	43.3

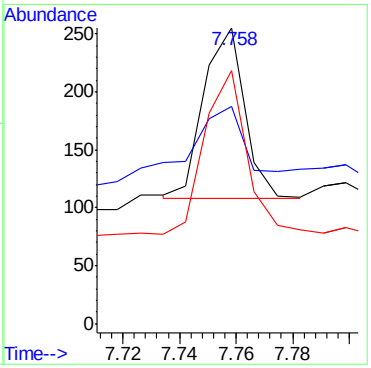


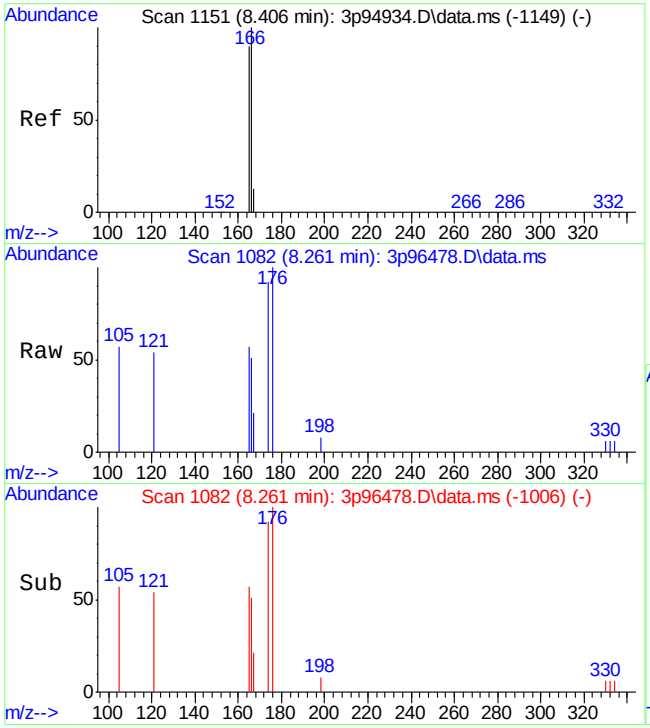


#15
Acenaphthene
Concen: 2.13 ppb m
RT: 7.758 min Scan# 1005
Delta R.T. -0.008 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:153 Resp: 149

Ion	Ratio	Lower	Upper
153	100		
152	73.3	16.5	76.5
154	85.5	73.6	133.6

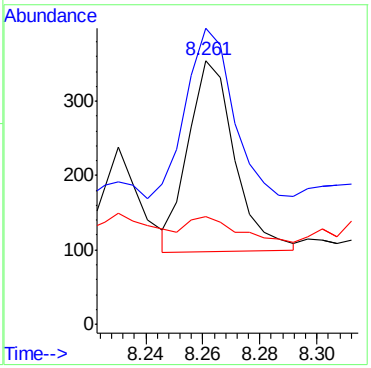


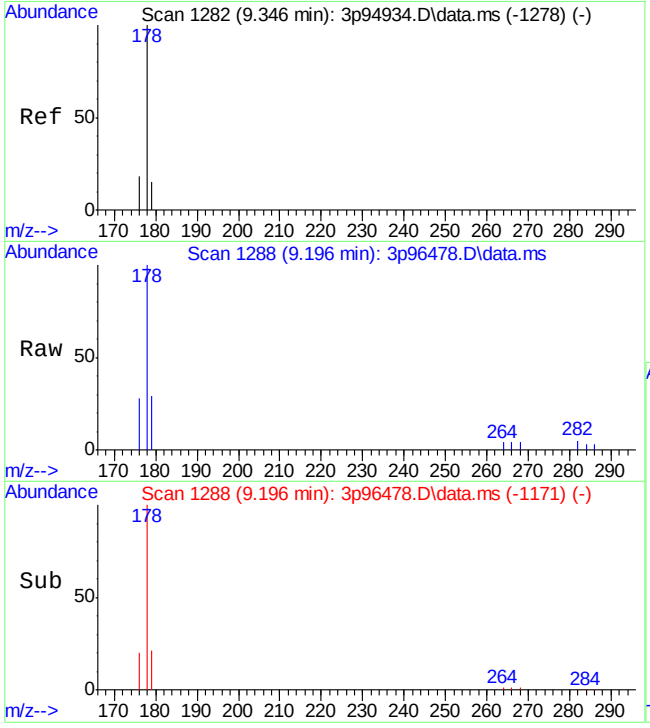


#17
Fluorene
Concen: 3.97 ppb
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:166 Resp: 291

Ion	Ratio	Lower	Upper
166	100		
165	91.6	57.3	117.3
167	10.9	0.0	46.0

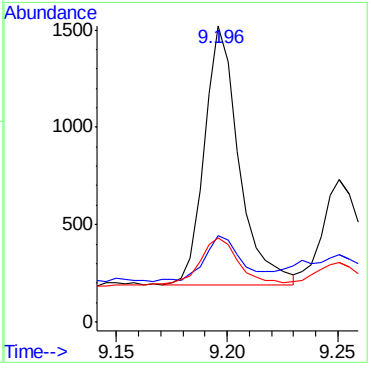


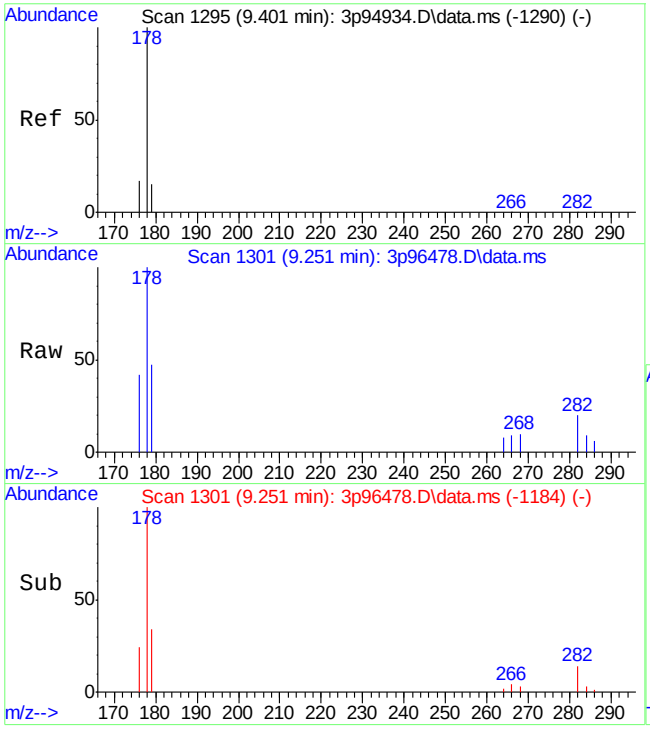


#22
Phenanthrene
Concen: 13.70 ppb
RT: 9.196 min Scan# 1288
Delta R.T. -0.008 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:178 Resp: 1438

Ion	Ratio	Lower	Upper
178	100		
179	14.4	0.0	45.1
176	17.7	0.0	47.5

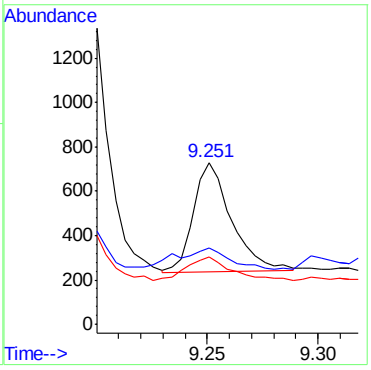


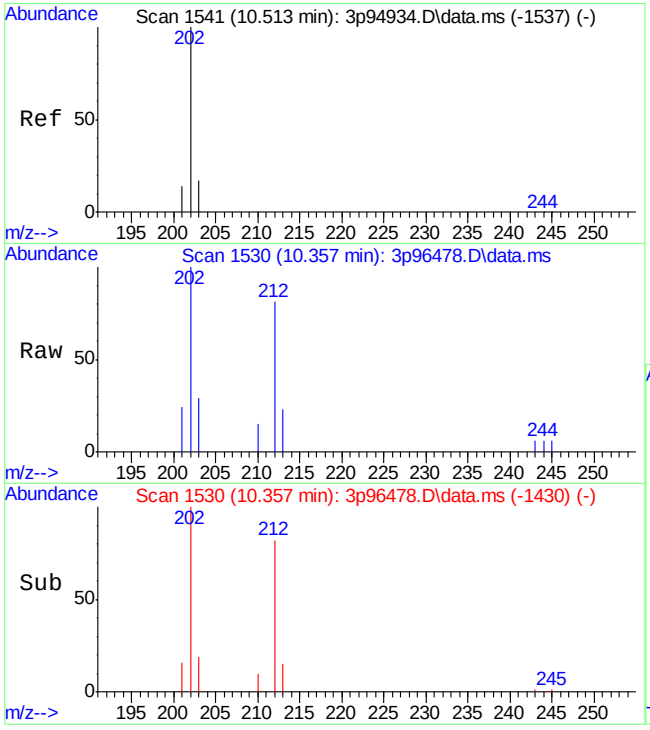


#23
Anthracene
Concen: 5.80 ppb
RT: 9.251 min Scan# 1301
Delta R.T. -0.008 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:178 Resp: 589

Ion	Ratio	Lower	Upper
178	100		
179	15.7	0.0	43.0
176	21.0	0.0	47.0

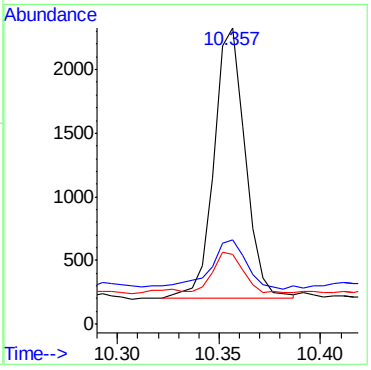


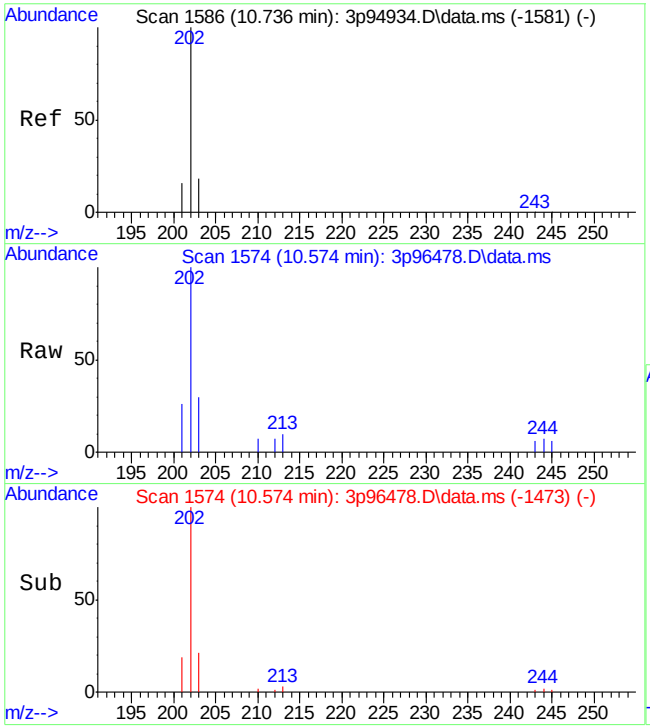


#24
Fluoranthene
Concen: 18.20 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:202 Resp: 2268

Ion	Ratio	Lower	Upper
202	100		
203	17.4	0.0	50.0
201	13.9	0.0	45.9

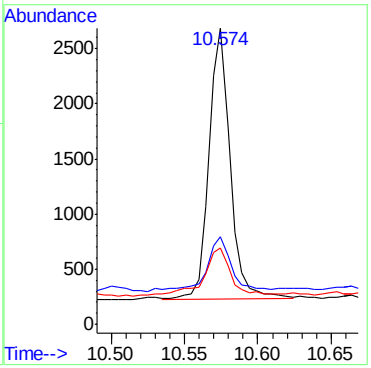


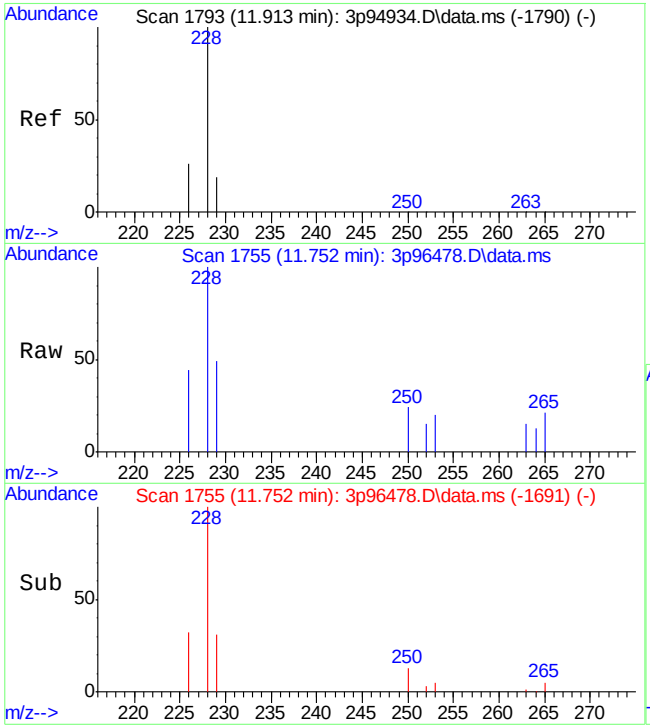


#25
Pyrene
Concen: 19.14 ppb
RT: 10.574 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:202 Resp: 2477

Ion	Ratio	Lower	Upper
202	100		
203	19.3	0.0	48.7
201	17.0	0.0	46.9

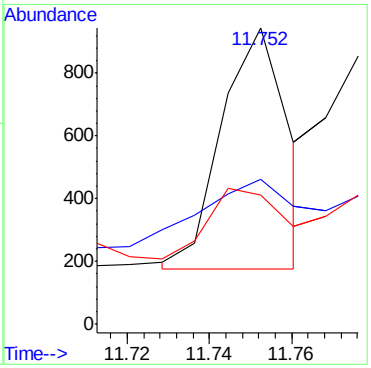


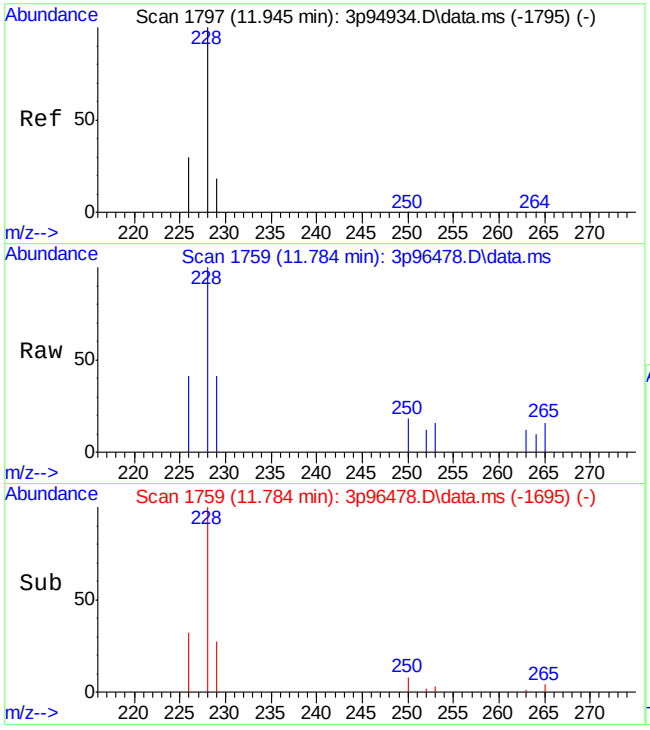


#27
Benzo[a]anthracene
Concen: 9.21 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:228 Resp: 864

Ion	Ratio	Lower	Upper
228	100		
229	22.5	0.0	49.3
226	27.4	0.0	55.2

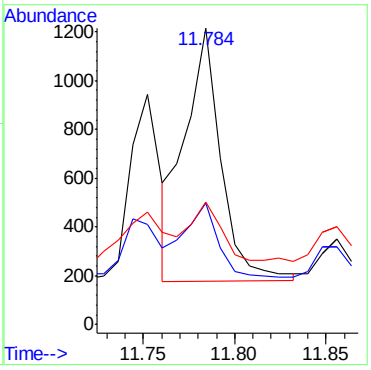


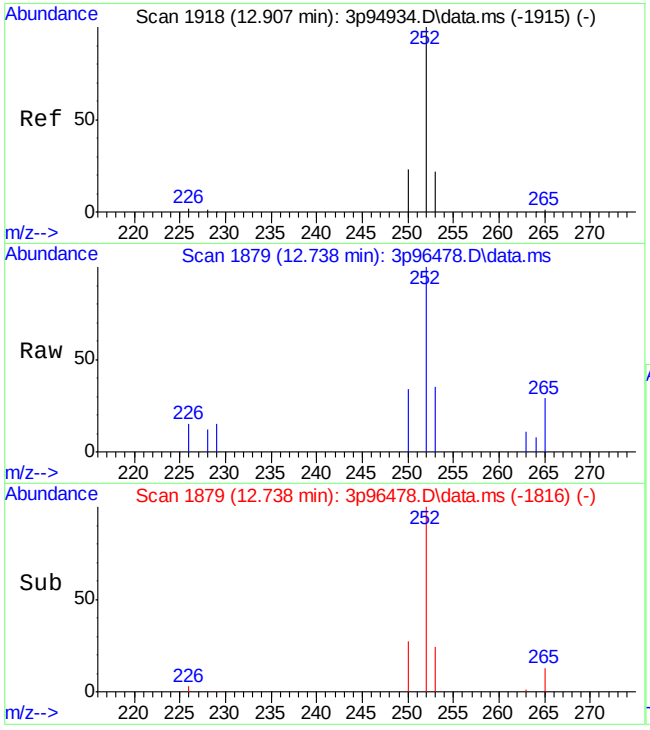


#28
Chrysene
Concen: 11.79 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:228 Resp: 1437

Ion	Ratio	Lower	Upper
228	100		
226	29.4	0.0	55.6
229	22.5	0.0	47.4

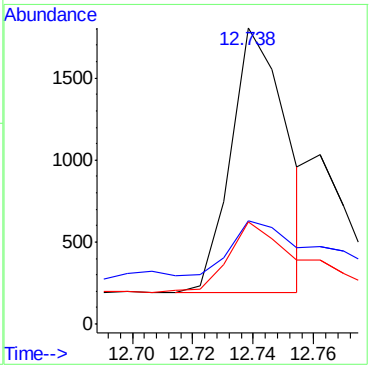


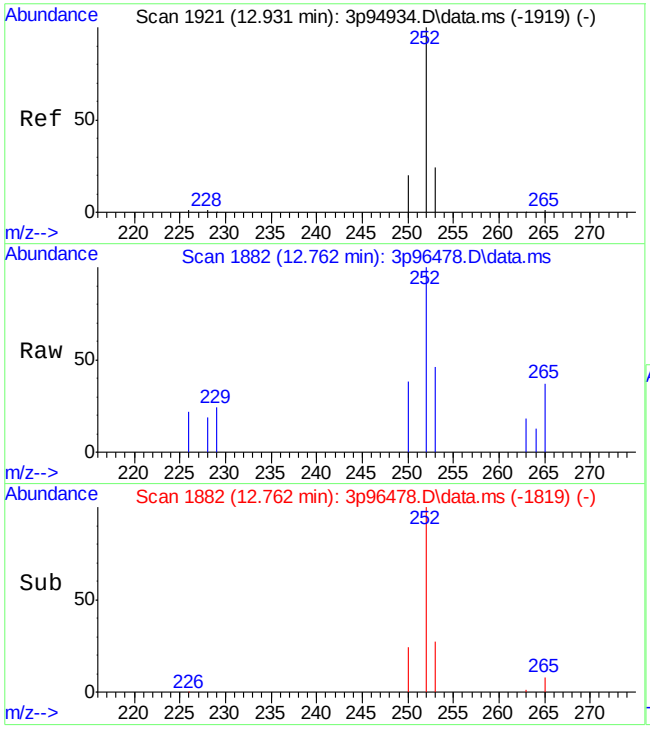


#30
Benzo[b]fluoranthene
Concen: 20.75 ppb m
RT: 12.738 min Scan# 1879
Delta R.T. -0.003 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:252 Resp: 2064

Ion	Ratio	Lower	Upper
252	100		
253	35.0	0.0	51.7
250	34.4	0.0	48.4

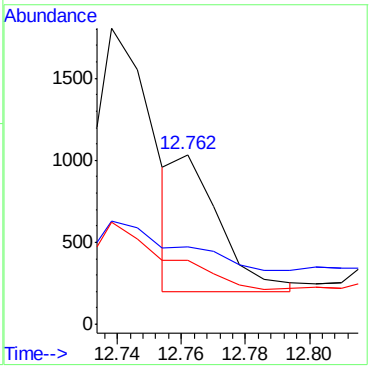


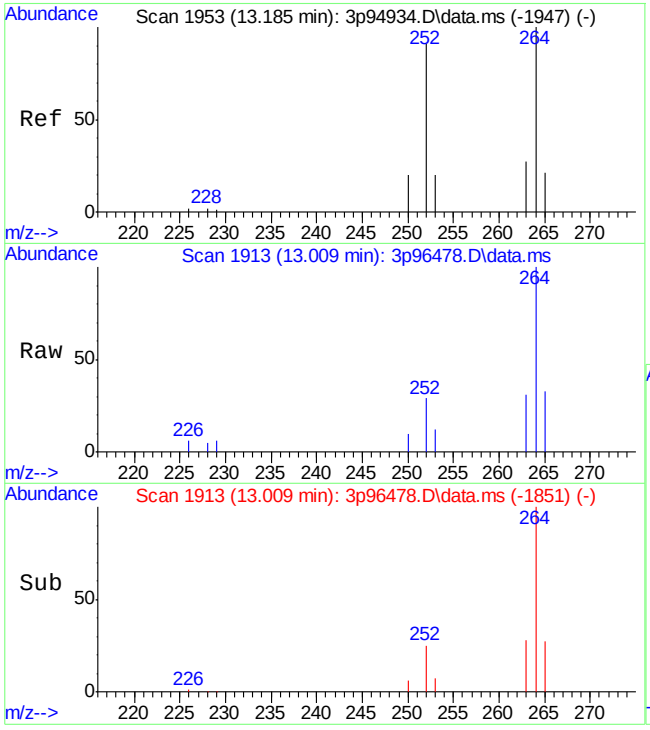


#31
Benzo[k]fluoranthene
Concen: 6.64 ppb m
RT: 12.762 min Scan# 1882
Delta R.T. -0.003 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:252 Resp: 790

Ion	Ratio	Lower	Upper
252	100		
253	45.7	0.0	51.5
250	38.0	0.0	51.3

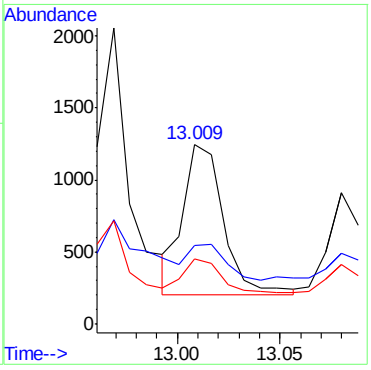


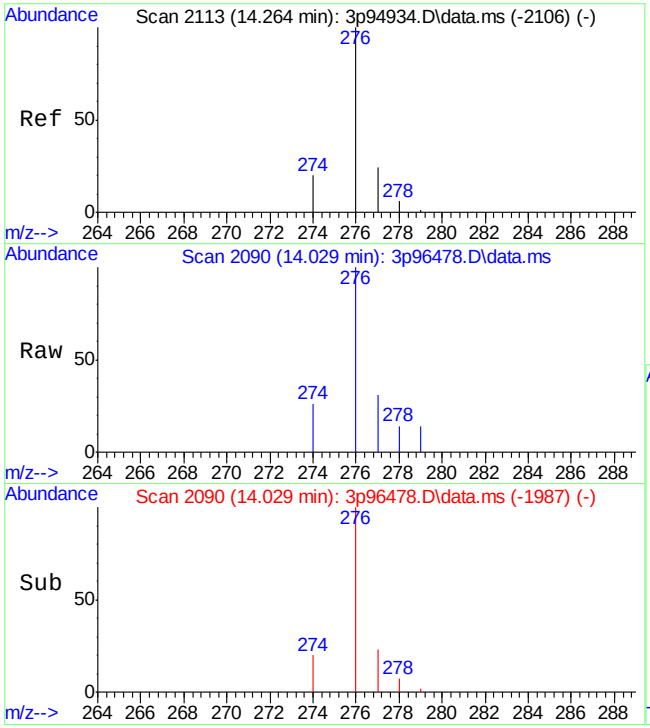


#32
Benzo[a]pyrene
Concen: 12.69 ppb
RT: 13.009 min Scan# 1913
Delta R.T. -0.009 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:252 Resp: 1417

Ion	Ratio	Lower	Upper
252	100		
253	17.7	0.0	52.3
250	24.4	0.0	49.9

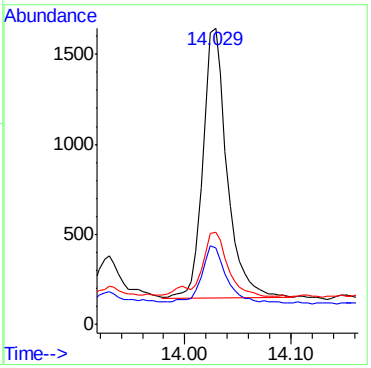


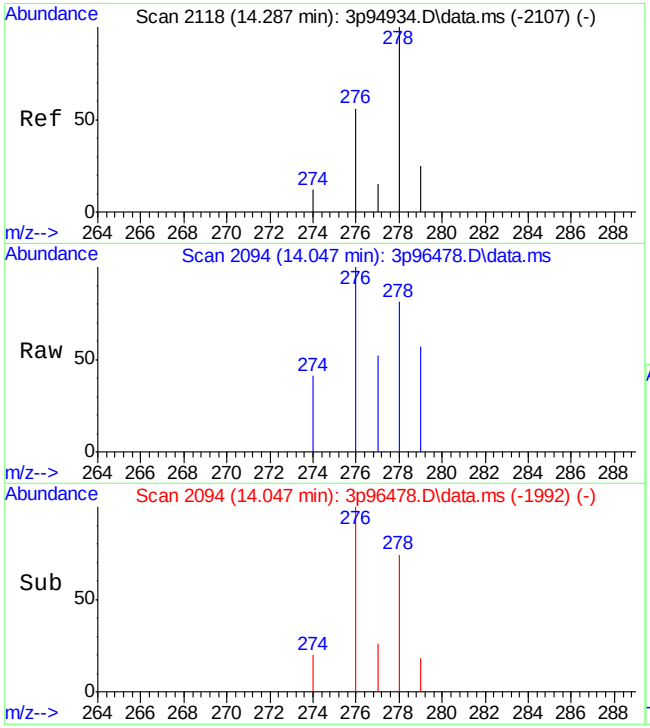


#33
Indeno[1,2,3-cd]pyrene
Concen: 22.37 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:276 Resp: 2366

Ion	Ratio	Lower	Upper
276	100		
274	20.4	0.0	45.2
277	23.7	0.0	52.4

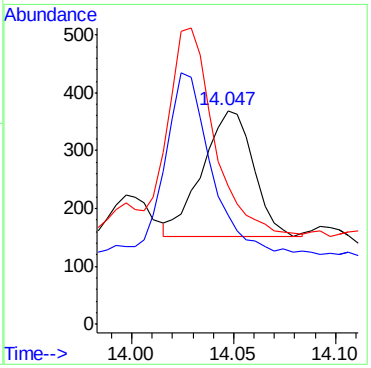


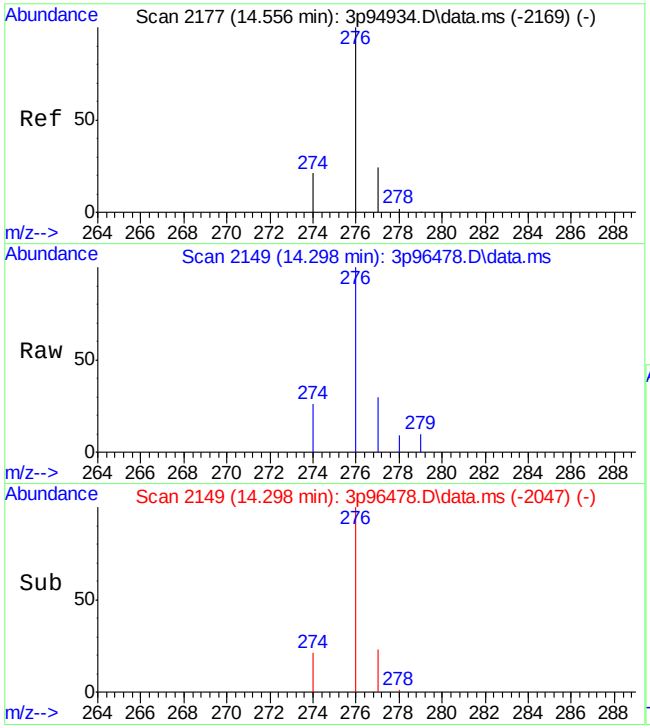


#34
Dibenz[a,h]anthracene
Concen: 4.43 ppb m
RT: 14.047 min Scan# 2094
Delta R.T. -0.033 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:278 Resp: 380

Ion	Ratio	Lower	Upper
278	100		
274	50.9	0.0	40.3#
277	64.5	0.0	40.0#

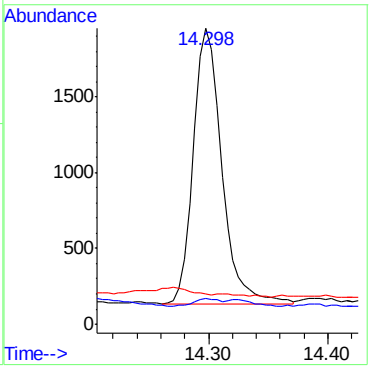




#35
Benzo[g,h,i]perylene
Concen: 30.29 ppb
RT: 14.298 min Scan# 2149
Delta R.T. -0.036 min
Lab File: 3p96478.D
Acq: 20 Apr 2022 5:34 am

Tgt Ion:276 Resp: 3022

Ion	Ratio	Lower	Upper
276	100		
278	2.5	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/22/22 10:08

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\jonkm\042122\e2m5551\
Data File : 2m123365.d
Acq On : 20 Apr 2022 6:21 pm
Operator : kristis
Sample : jd43215-5 Inst : MS2M
Misc : op39191,e2m5551,290,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Results File: M2M5549LVI.RES
Quant Time: Apr 21 01:39:06 2022
Quant Title : Semi Volatile GC/MS,zb-5msplus 30m x .25mm x .25MWed Apr 20 11:00:32 2022
QLast Update : Thu Apr 21 01:00:50 2022
Response via : Initial Calibration

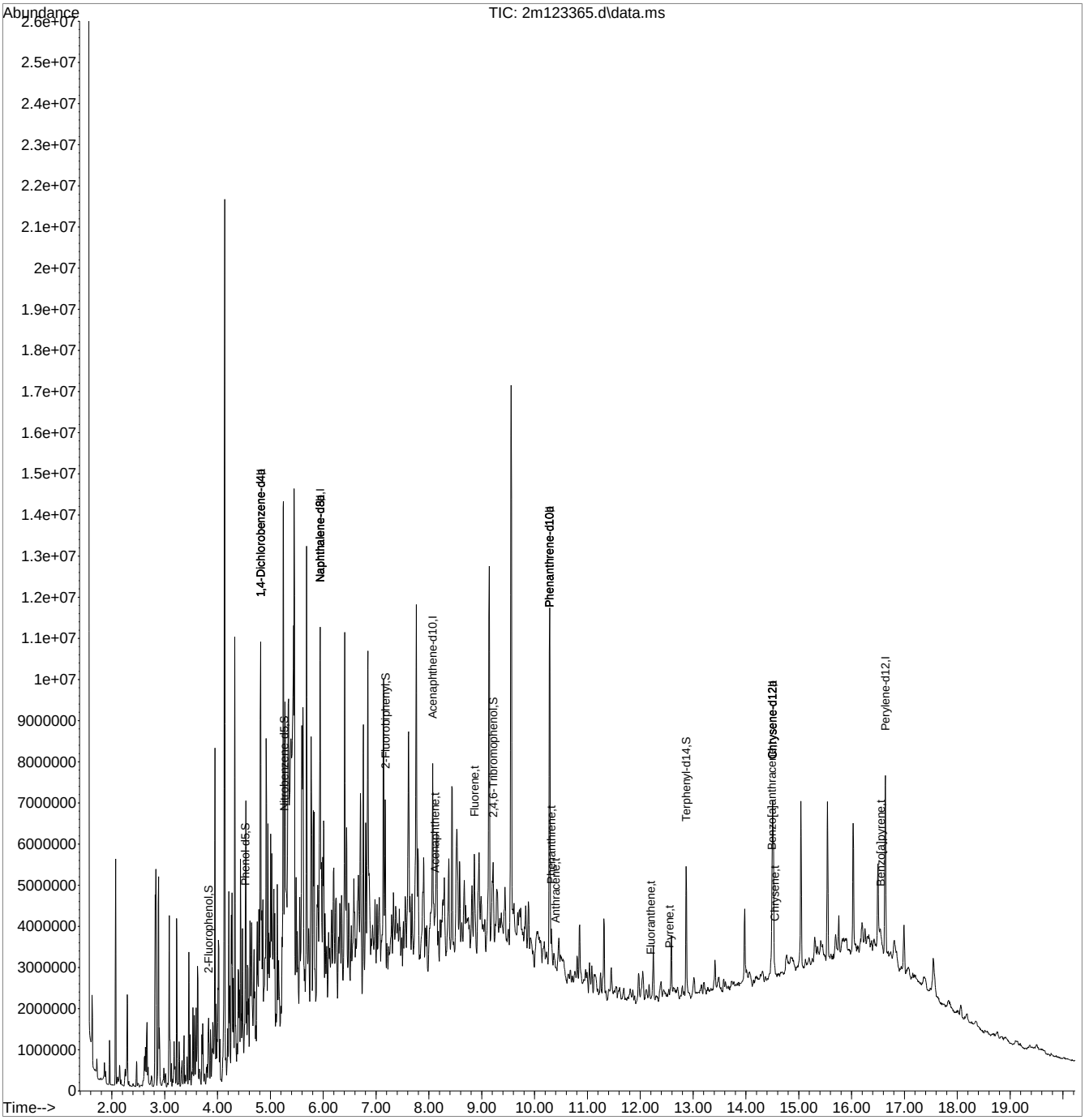
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1,4-Dichlorobenzene-d4	4.815	152	513569	40.00	ppm		0.00
24) Naphthalene-d8	5.944	136	2108596	40.00	ppm		0.00
46) Acenaphthene-d10	8.072	164	1165700	40.00	ppm		0.00
69) Phenanthrene-d10	10.281	188	1847603	40.00	ppm		0.00
84) Chrysene-d12	14.502	240	1885943	40.00	ppm		0.00
93) Perylene-d12	16.641	264	2454003	40.00	ppm		0.01
103) 1,4-Dichlorobenzene-d4a	4.815	152	513569	40.00	ppm		0.00
105) Phenanthrene-d10a	10.281	188	1847603	40.00	ppm		0.00
107) Naphthalene-d8a	5.944	136	2108596	40.00	ppm		0.00
109) Phenanthrene-d10b	10.281	188	1847603	40.00	ppm		0.00
112) Chrysene-d12a	14.502	240	1885943	40.00	ppm		0.00
114) Naphthalene-d8b	5.944	136	2108575	40.00	ppm		0.00
117) Naphthalene-d8c	5.944	136	2108575	40.00	ppm	#	0.00
119) Chrysene-d12b	14.502	240	1885943	40.00	ppm		0.00
121) 1,4-Dichlorobenzene-d4b	4.815	152	513569	40.00	ppm		0.00
System Monitoring Compounds							
5) 2-Fluorophenol	3.831	112	251857	15.51	ppm		0.01
Spiked Amount 50.000			Recovery =	31.02%			
8) Phenol-d5	4.526	99	262893	13.03	ppm		0.01
Spiked Amount 50.000			Recovery =	26.06%			
25) Nitrobenzene-d5	5.264	82	742364	42.88	ppm		0.00
Spiked Amount 50.000			Recovery =	85.76%			
51) 2-Fluorobiphenyl	7.179	172	1404323	35.62	ppm		0.00
Spiked Amount 50.000			Recovery =	71.24%			
74) 2,4,6-Tribromophenol	9.217	330	261077	51.54	ppm		0.00
Spiked Amount 50.000			Recovery =	103.08%			
87) Terphenyl-d14	12.870	244	1552224	33.74	ppm		0.00
Spiked Amount 50.000			Recovery =	67.48%			
110) 1-chlorooctadecane	0.000	56	0d	0.00	ppm		
Spiked Amount 50.000			Recovery =	0.00%			
111) o-terphenyl	0.000	230	0d	0.00	ppm		
Spiked Amount 50.000			Recovery =	0.00%			
Target Compounds							Qvalue
59) Acenaphthene	8.115	153	47678	1.32	ppm		95
66) Fluorene	8.864	166	227033	5.76	ppm		95
78) Phenanthrene	10.319	178	417447	7.89	ppm		96
79) Anthracene	10.399	178	32952m	0.64	ppm		
82) Fluoranthene	12.196	202	35683	0.69	ppm		88
86) Pyrene	12.549	202	52390	0.86	ppm		88
89) Benzo[a]anthracene	14.491	228	38480	0.70	ppm		92
91) Chrysene	14.544	228	68207m	1.27	ppm		
97) Benzo[a]pyrene	16.550	252	23245	0.34	ppm		91

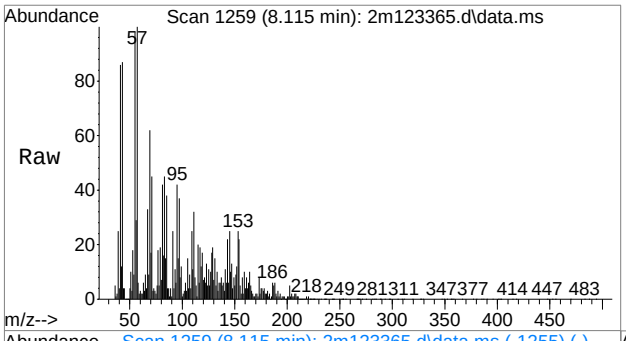
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\jonkm\042122\e2m5551\
Data File : 2m123365.d
Acq On : 20 Apr 2022 6:21 pm
Operator : kristis
Sample : jd43215-5 Inst : MS2M
Misc : op39191,e2m5551,290,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Results File: M2M5549LVI.RES
Quant Time: Apr 21 01:39:06 2022
Quant Title : Semi Volatile GC/MS,zb-5msplus 30m x .25mm x .25MWed Apr 20 11:00:32 2022
QLast Update : Thu Apr 21 01:00:50 2022
Response via : Initial Calibration

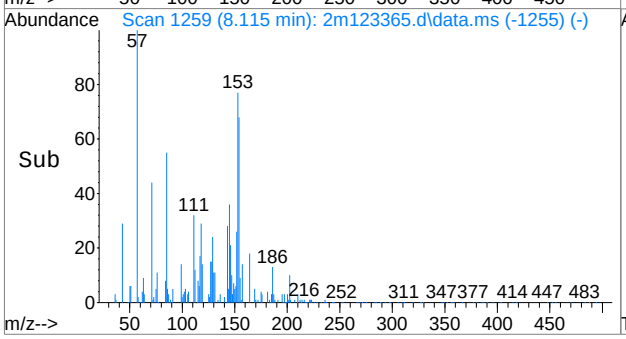


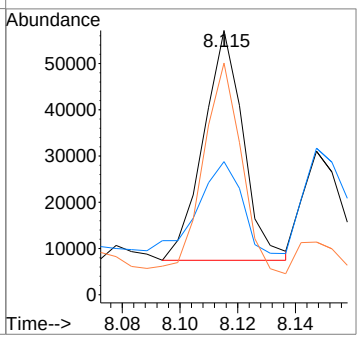


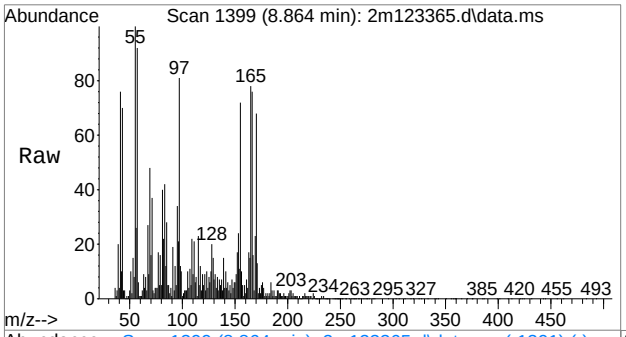
#59
Acenaphthene
Concen: 1.32 ppm
RT: 8.115 min Scan# 1259
Delta R.T. 0.000 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:153 Resp: 47678

Ion	Ratio	Lower	Upper
153	100		
152	37.9	17.3	77.3
154	91.8	61.5	121.5



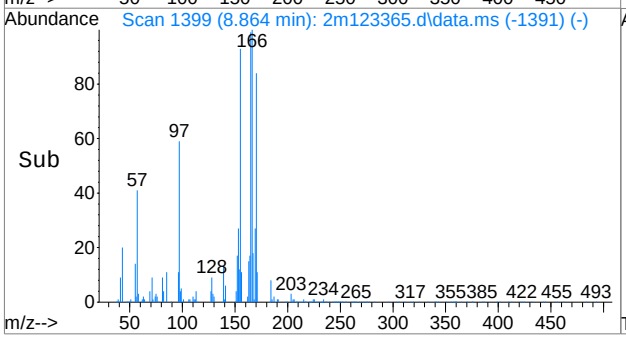


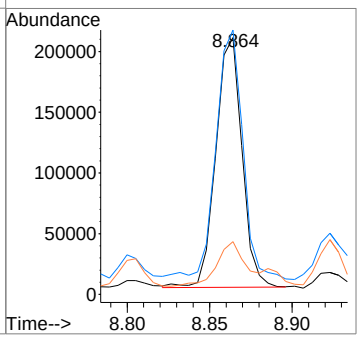


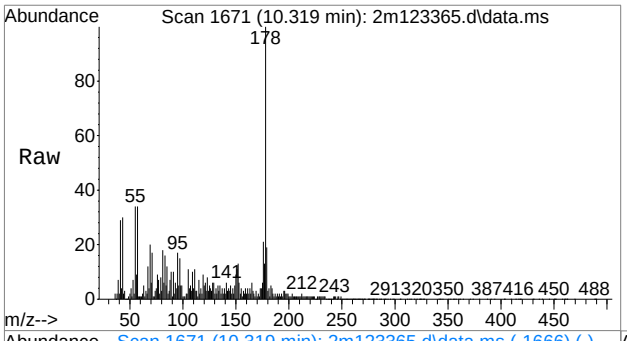
#66
Fluorene
Concen: 5.76 ppm
RT: 8.864 min Scan# 1399
Delta R.T. 0.000 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:166 Resp: 227033

Ion	Ratio	Lower	Upper
166	100		
165	99.7	65.6	125.6
167	16.9	0.0	42.6



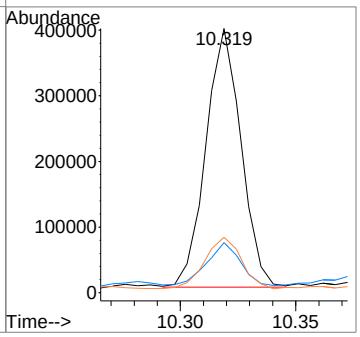


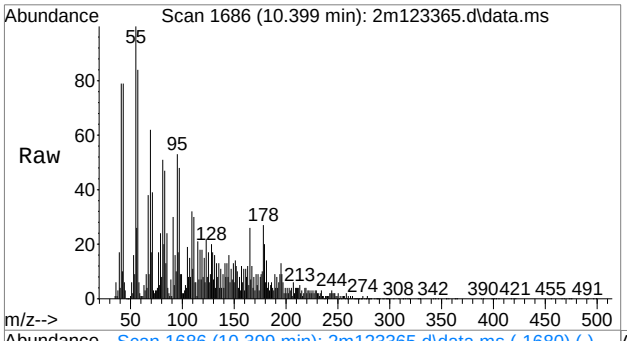


#78
Phenanthrene
Concen: 7.89 ppm
RT: 10.319 min Scan# 1671
Delta R.T. 0.000 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:178 Resp: 417447

Ion	Ratio	Lower	Upper
178	100		
179	16.4	0.0	44.2
176	19.6	0.0	48.5

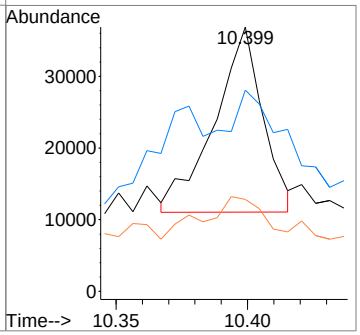


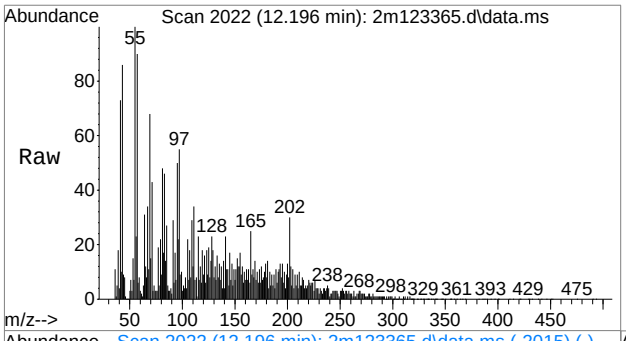


#79
Anthracene
Concen: 0.64 ppm m
RT: 10.399 min Scan# 1686
Delta R.T. 0.000 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:178 Resp: 32952

Ion	Ratio	Lower	Upper
178	100		
179	76.1	0.0	44.9#
176	34.8	0.0	47.8

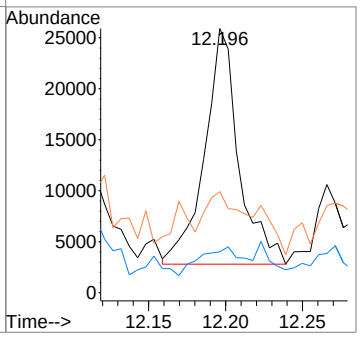


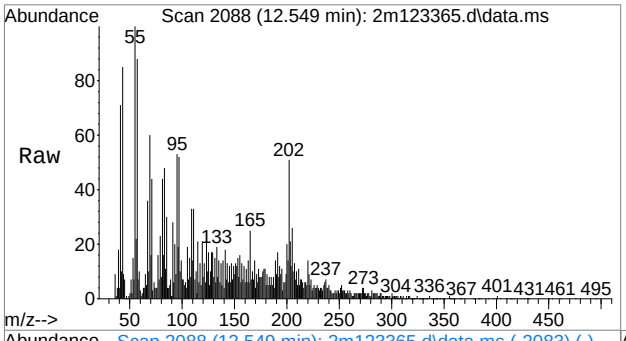


#82
Fluoranthene
Concen: 0.69 ppm
RT: 12.196 min Scan# 2022
Delta R.T. 0.000 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:202 Resp: 35683

Ion	Ratio	Lower	Upper
202	100		
101	7.5	0.0	39.9
203	23.2	0.0	46.9

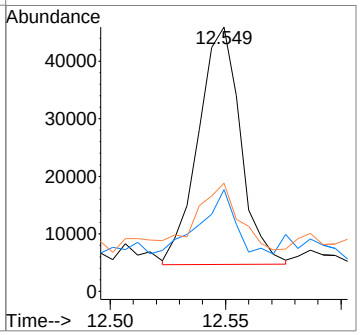


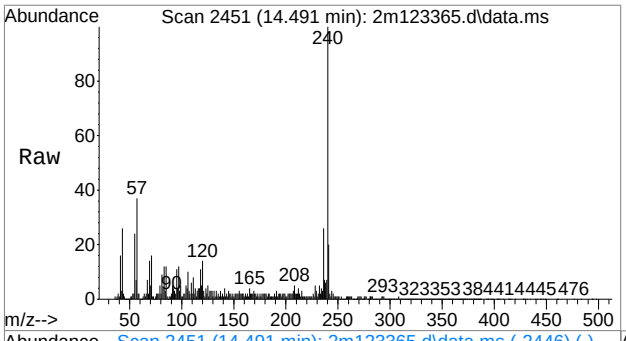


#86
Pyrene
Concen: 0.86 ppm
RT: 12.549 min Scan# 2088
Delta R.T. 0.000 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:202 Resp: 52390

Ion	Ratio	Lower	Upper
202	100		
200	22.6	0.0	50.7
203	26.4	0.0	47.2

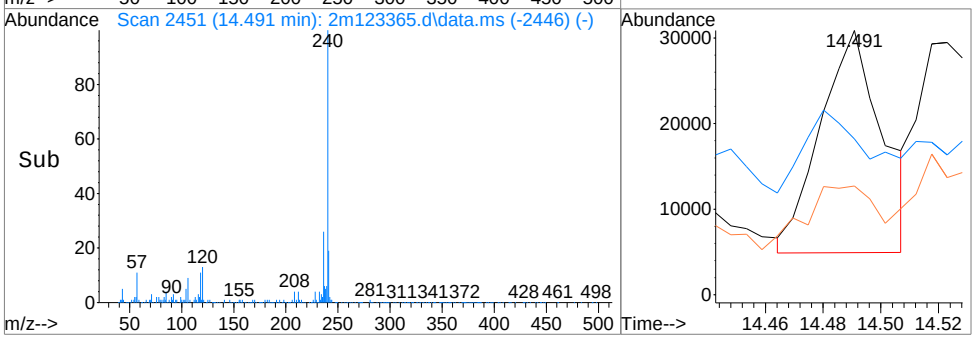


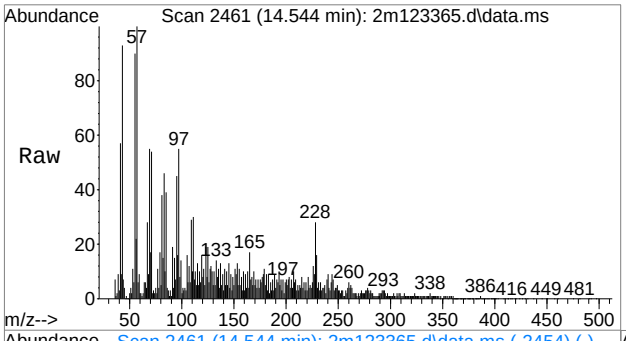


#89
Benzo[a]anthracene
Concen: 0.70 ppm
RT: 14.491 min Scan# 2451
Delta R.T. 0.000 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:228 Resp: 38480

Ion	Ratio	Lower	Upper
228	100		
229	22.4	0.0	48.8
226	22.1	0.0	56.0

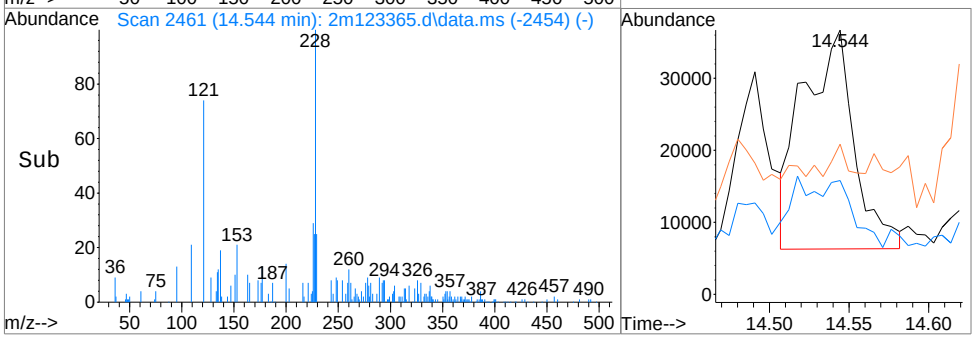


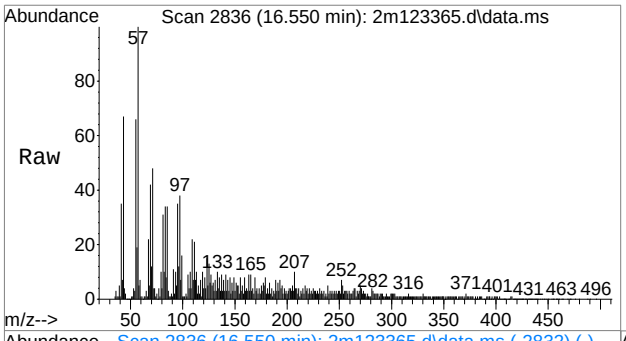


#91
Chrysene
Concen: 1.27 ppm m
RT: 14.544 min Scan# 2461
Delta R.T. 0.000 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:228 Resp: 68207

Ion	Ratio	Lower	Upper
228	100		
226	43.0	0.0	59.2
229	56.8	0.0	48.4#

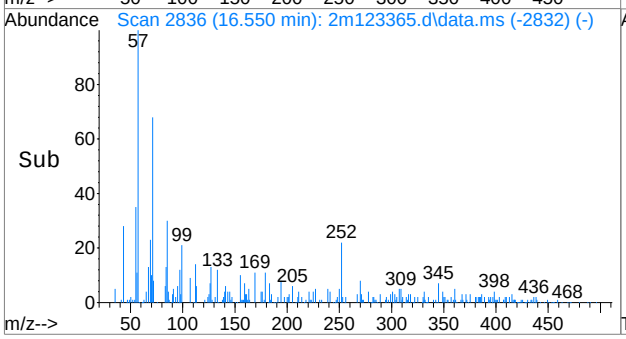


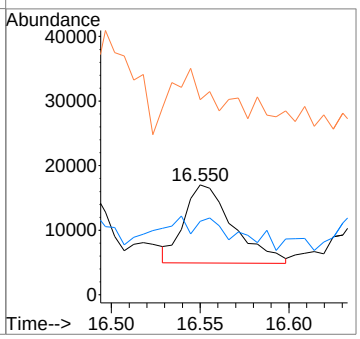


#97
Benzo[a]pyrene
Concen: 0.34 ppm
RT: 16.550 min Scan# 2836
Delta R.T. -0.005 min
Lab File: 2m123365.d
Acq: 20 Apr 2022 6:21 pm

Tgt Ion:252 Resp: 23245

Ion	Ratio	Lower	Upper
252	100		
253	18.2	0.0	50.7
125	14.4	0.0	38.0





9.1.9

6

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/22/22 10:08

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96479.D
Acq On : 20 Apr 2022 5:56 am
Operator : chriss2
Sample : jd43215-5
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 22 09:31:31 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

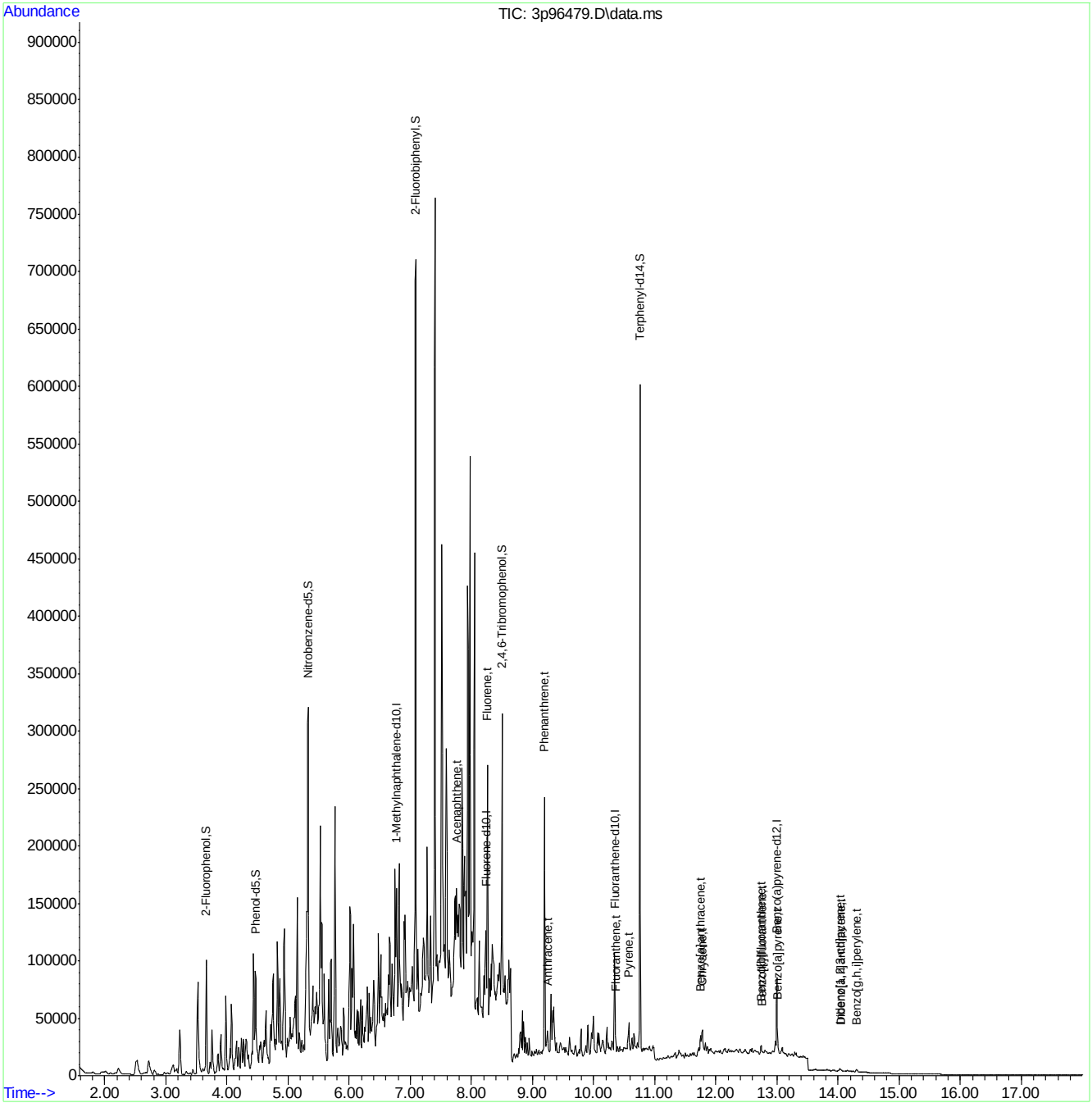
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	32123	800.00 ppb	# 0.00
12) Fluorene-d10	8.236	176	41355m	800.00 ppb	0.00
19) Fluoranthene-d10	10.342	212	58505m	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	13.001	264	45353m	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.658	112	101712	4203.49 ppb	0.11
Spiked Amount 50.000			Recovery	= 8406.98%	
4) Phenol-d5	4.469	99	62567	1904.33 ppb	0.00
Spiked Amount 50.000			Recovery	= 3808.66%	
7) Nitrobenzene-d5	5.320	82	190915	7453.02 ppb	0.00
Spiked Amount 50.000			Recovery	= 14906.04%	
13) 2-Fluorobiphenyl	7.088	172	403735	6220.47 ppb	0.00
Spiked Amount 50.000			Recovery	= 12440.94%	
18) 2,4,6-Tribromophenol	8.500	330	73318	9405.50 ppb	0.00
Spiked Amount 50.000			Recovery	= 18811.00%	
26) Terphenyl-d14	10.758	244	357432m	6556.48 ppb	0.00
Spiked Amount 50.000			Recovery	= 13112.96%	
Target Compounds					Qvalue
15) Acenaphthene	7.758	153	14276m	214.28 ppb	
17) Fluorene	8.261	166	72174m	1034.14 ppb	
22) Phenanthrene	9.196	178	145524m	1664.45 ppb	
23) Anthracene	9.247	178	8964m	105.96 ppb	
24) Fluoranthene	10.357	202	7622m	73.43 ppb	
25) Pyrene	10.574	202	16424m	152.36 ppb	
27) Benzo[a]anthracene	11.752	228	8719m	111.57 ppb	
28) Chrysene	11.784	228	18424m	181.43 ppb	
30) Benzo[b]fluoranthene	12.746	252	5455m	66.25 ppb	
31) Benzo[k]fluoranthene	12.754	252	953m	9.68 ppb	
32) Benzo[a]pyrene	13.016	252	4007m	44.86 ppb	
33) Indeno[1,2,3-cd]pyrene	14.033	276	1454m	16.61 ppb	
34) Dibenz[a,h]anthracene	14.047	278	1247m	17.56 ppb	
35) Benzo[g,h,i]perylene	14.302	276	2675m	32.39 ppb	

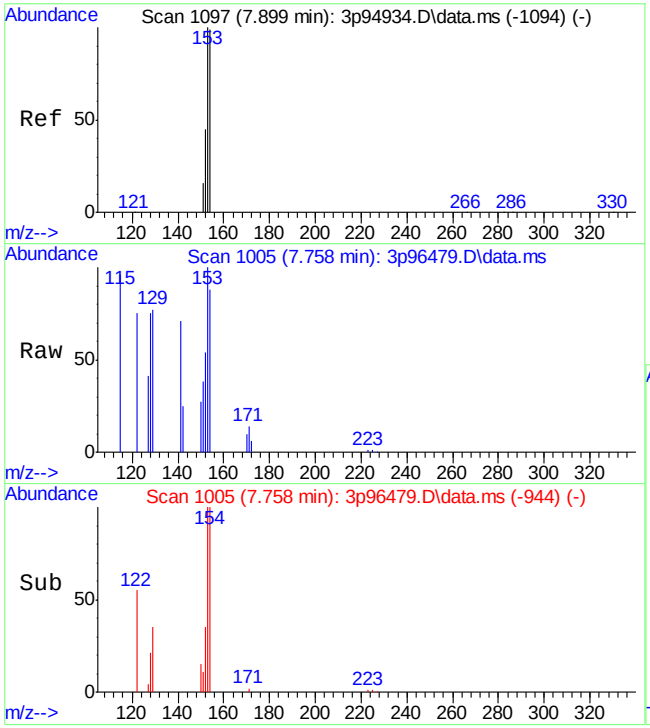
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96479.D
Acq On : 20 Apr 2022 5:56 am
Operator : chriss2
Sample : jd43215-5
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 22 09:31:31 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

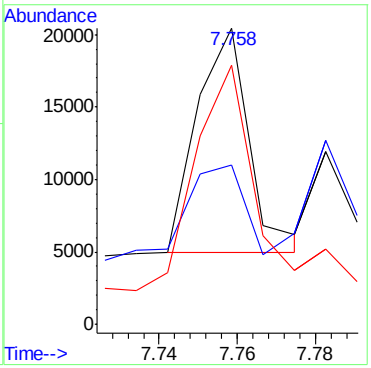


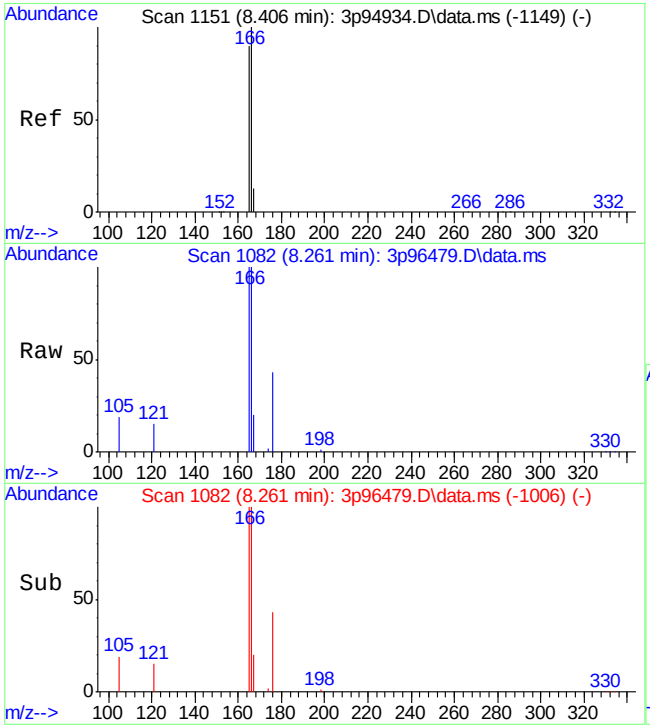


#15
Acenaphthene
Concen: 214.28 ppb m
RT: 7.758 min Scan# 1005
Delta R.T. -0.008 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:153 Resp: 14276

Ion	Ratio	Lower	Upper
153	100		
152	53.7	16.5	76.5
154	87.5	73.6	133.6

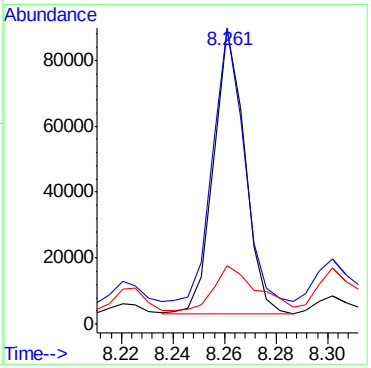


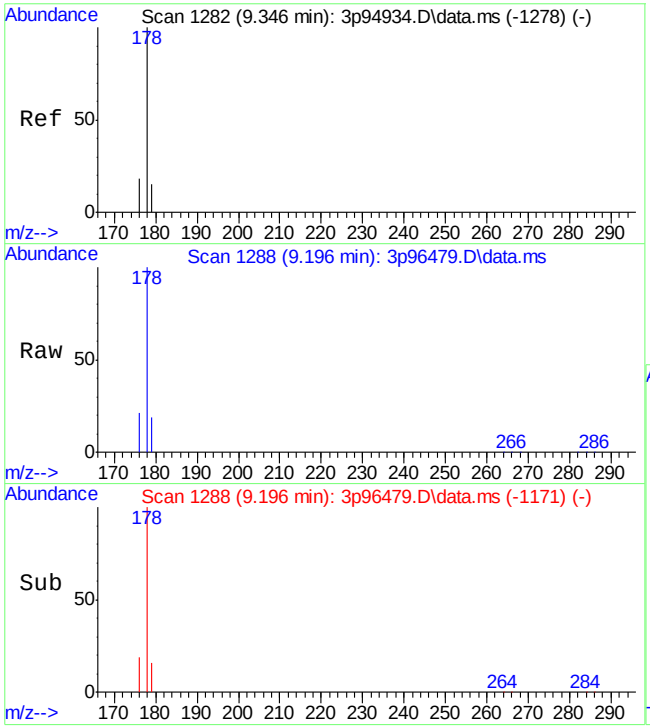


#17
Fluorene
Concen: 1034.14 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:166 Resp: 72174

Ion	Ratio	Lower	Upper
166	100		
165	100.2	57.3	117.3
167	19.9	0.0	46.0

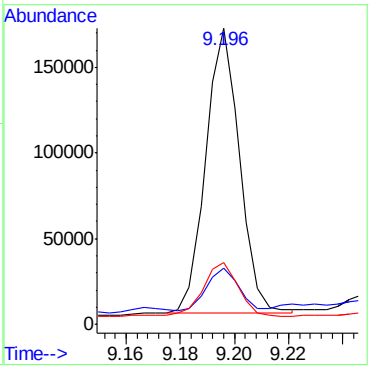


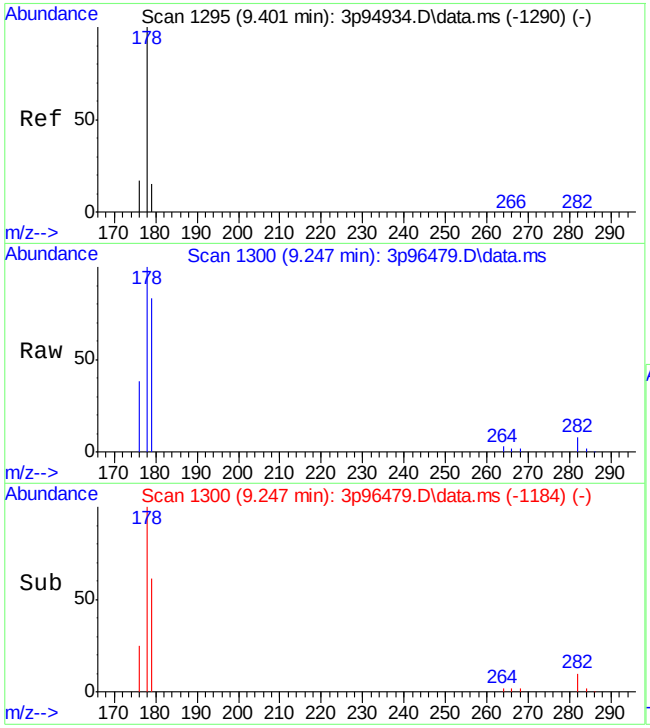


#22
Phenanthrene
Concen: 1664.45 ppb m
RT: 9.196 min Scan# 1288
Delta R.T. -0.008 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:178 Resp: 145524

Ion	Ratio	Lower	Upper
178	100		
179	19.1	0.0	45.1
176	20.8	0.0	47.5

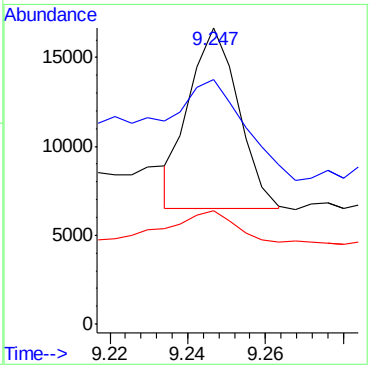


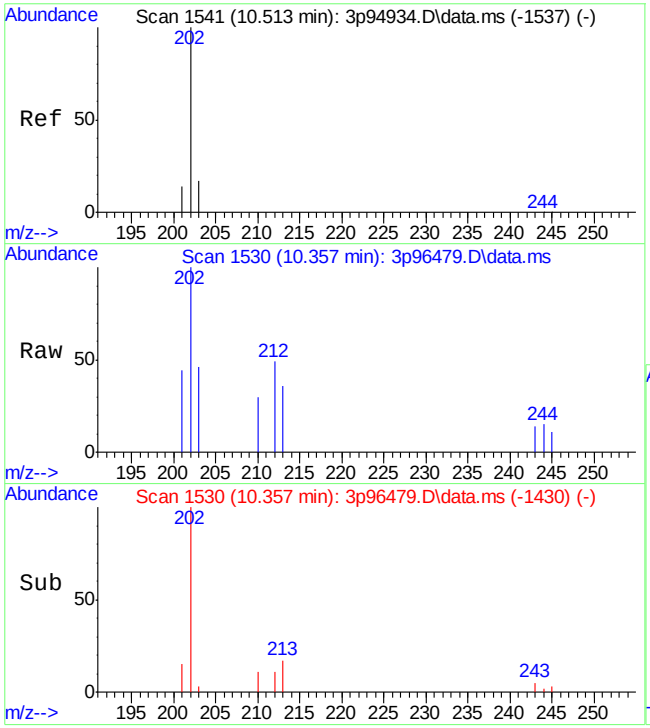


#23
Anthracene
Concen: 105.96 ppb m
RT: 9.247 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:178 Resp: 8964

Ion	Ratio	Lower	Upper
178	100		
179	82.6	0.0	43.0#
176	38.4	0.0	47.0

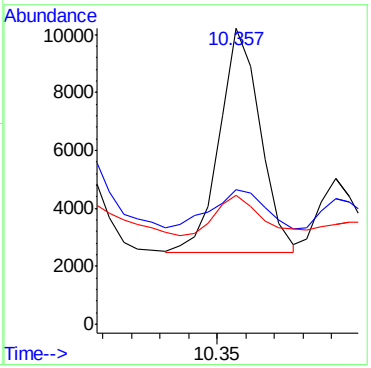


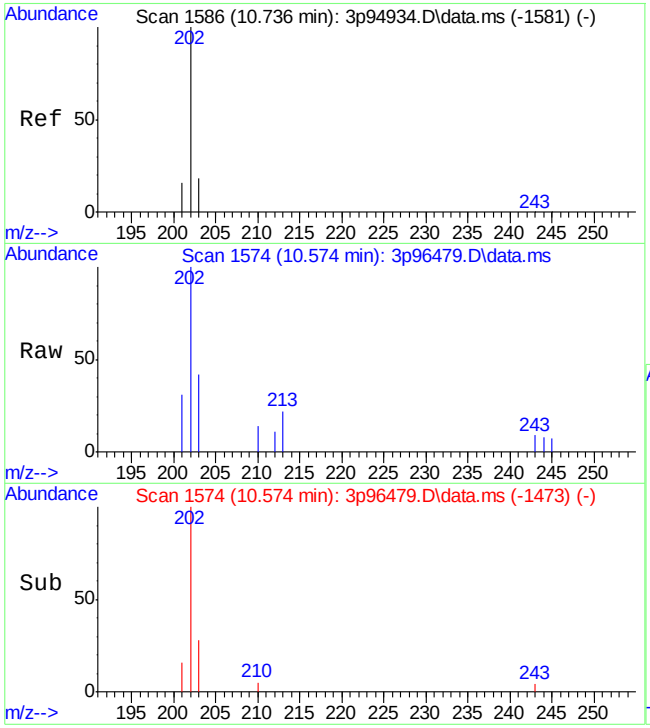


#24
Fluoranthene
Concen: 73.43 ppb m
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:202 Resp: 7622

Ion	Ratio	Lower	Upper
202	100		
203	45.6	0.0	50.0
201	43.5	0.0	45.9

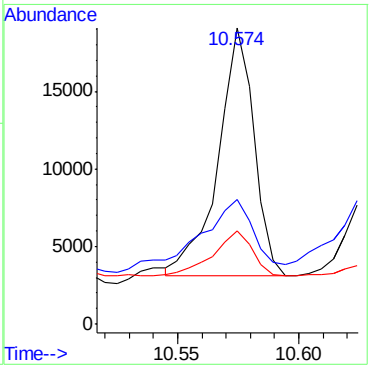


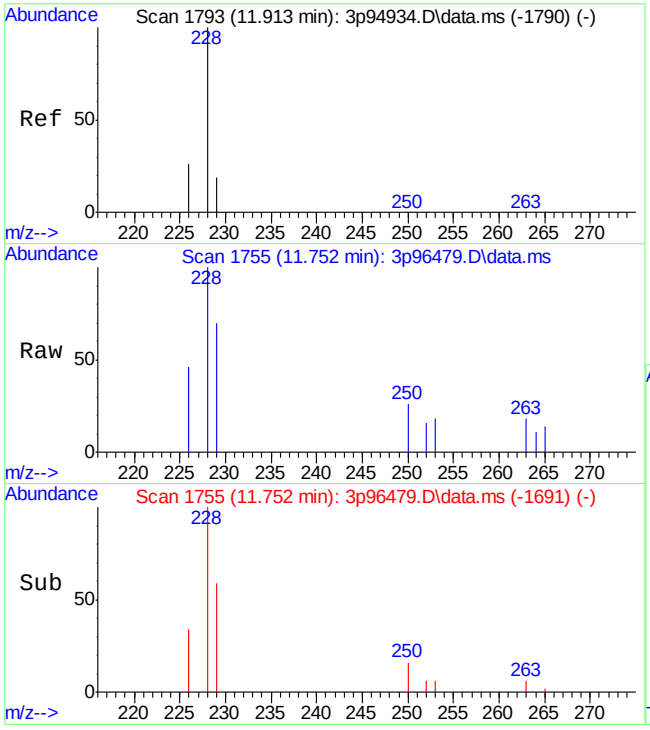


#25
Pyrene
Concen: 152.36 ppb m
RT: 10.574 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:202 Resp: 16424

Ion	Ratio	Lower	Upper
202	100		
203	42.3	0.0	48.7
201	31.4	0.0	46.9

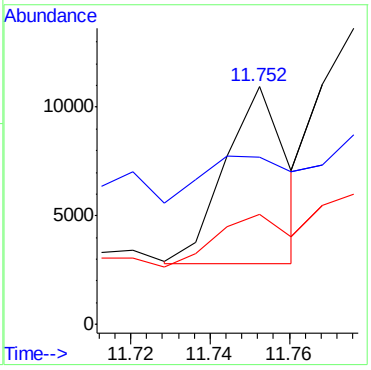


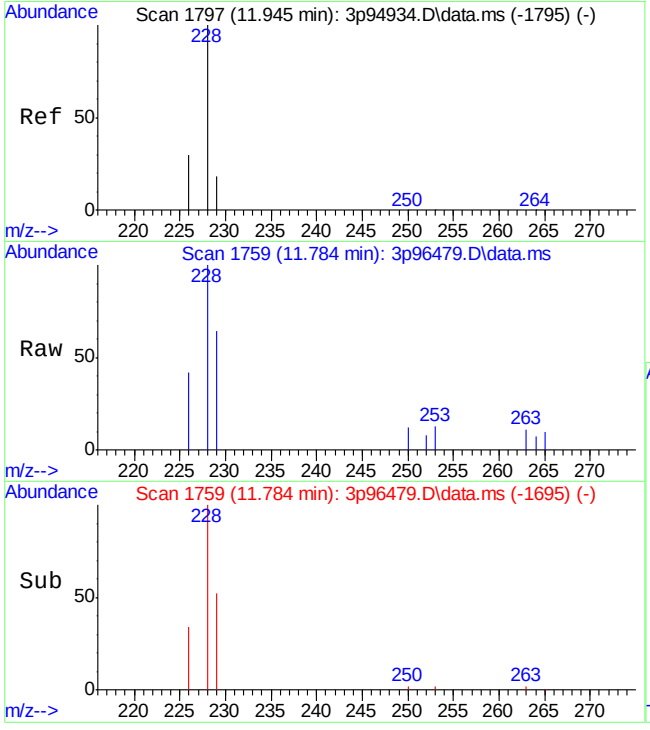


#27
Benzo[a]anthracene
Concen: 111.57 ppb m
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:228 Resp: 8719

Ion	Ratio	Lower	Upper
228	100		
229	70.3	0.0	49.3#
226	46.5	0.0	55.2

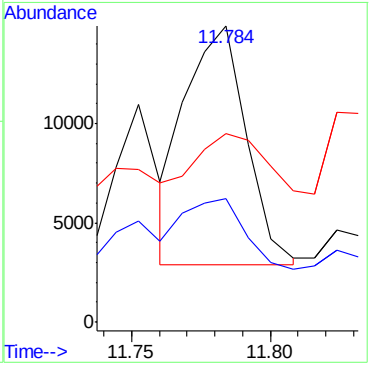


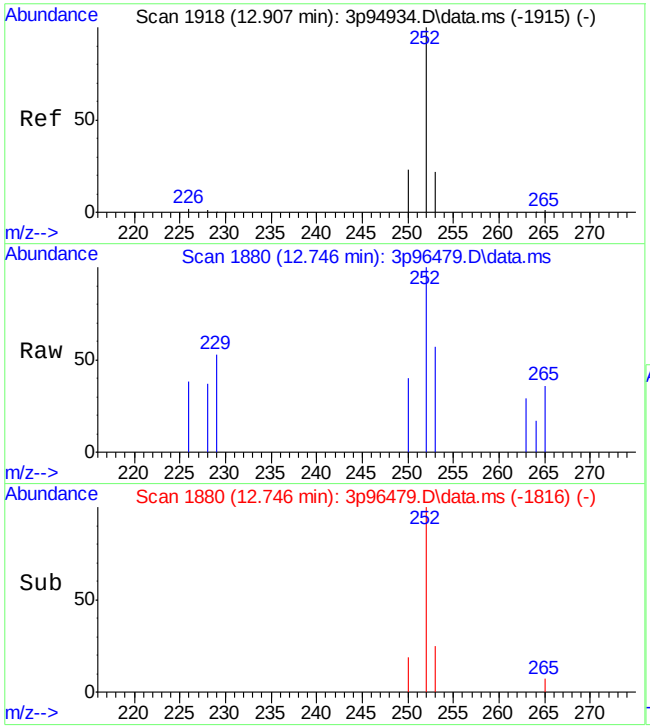


#28
Chrysene
Concen: 181.43 ppb m
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:228 Resp: 18424

Ion	Ratio	Lower	Upper
228	100		
226	41.7	0.0	55.6
229	63.7	0.0	47.4#

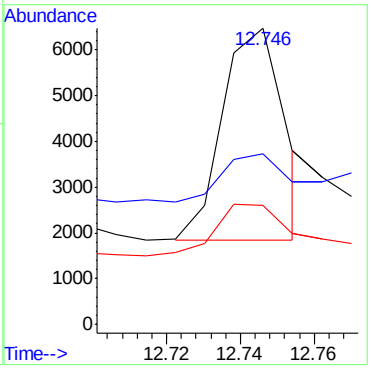


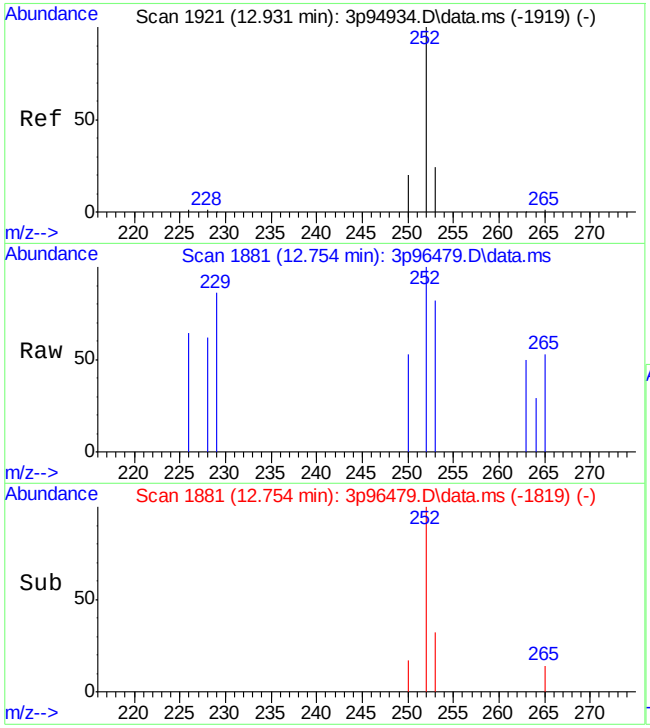


#30
Benzo[b]fluoranthene
Concen: 66.25 ppb m
RT: 12.746 min Scan# 1880
Delta R.T. 0.005 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:252 Resp: 5455

Ion	Ratio	Lower	Upper
252	100		
253	57.4	0.0	51.7#
250	40.1	0.0	48.4

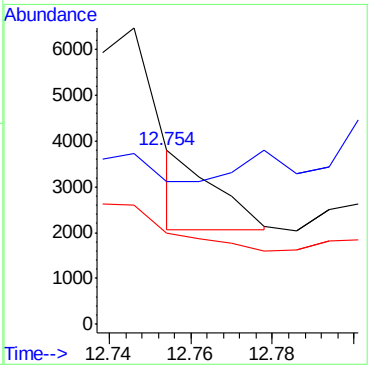


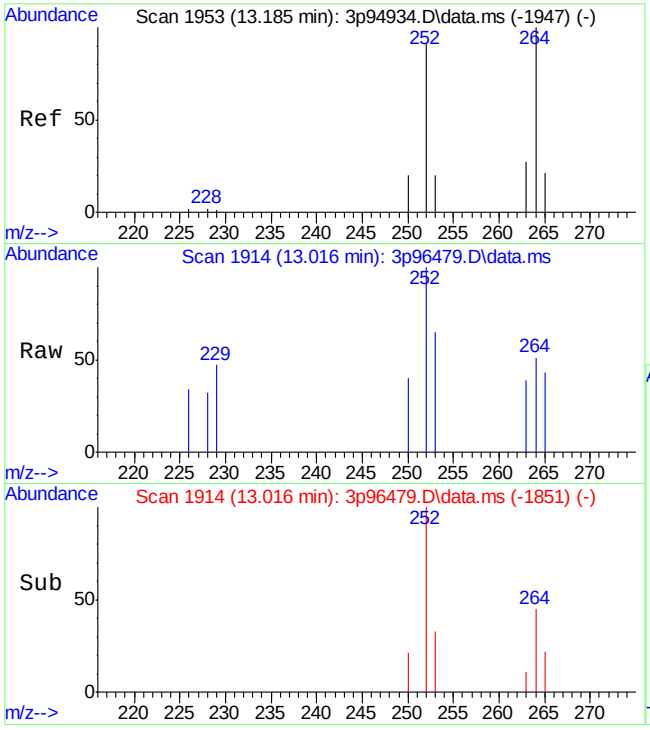


#31
Benzo[k]fluoranthene
Concen: 9.68 ppb m
RT: 12.754 min Scan# 1881
Delta R.T. -0.011 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:252 Resp: 953

Ion	Ratio	Lower	Upper
252	100		
253	81.9	0.0	51.5#
250	52.6	0.0	51.3#

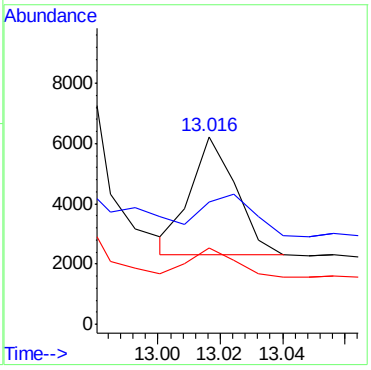


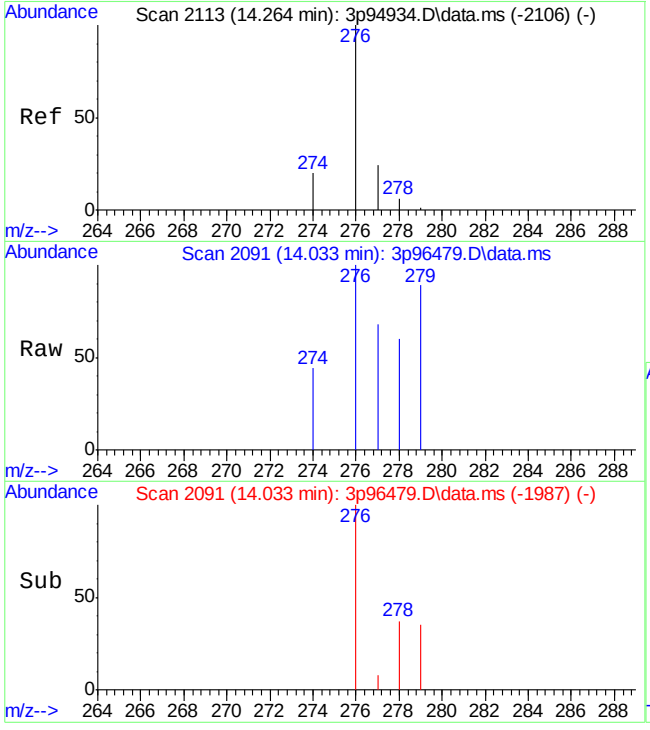


#32
Benzo[a]pyrene
Concen: 44.86 ppb m
RT: 13.016 min Scan# 1914
Delta R.T. -0.001 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:252 Resp: 4007

Ion	Ratio	Lower	Upper
252	100		
253	64.8	0.0	52.3#
250	40.4	0.0	49.9

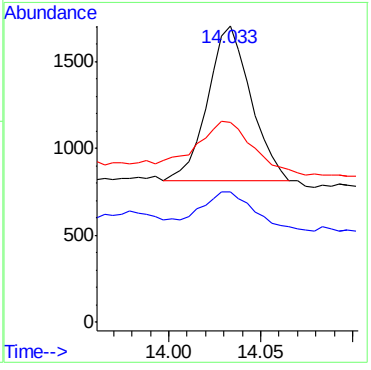


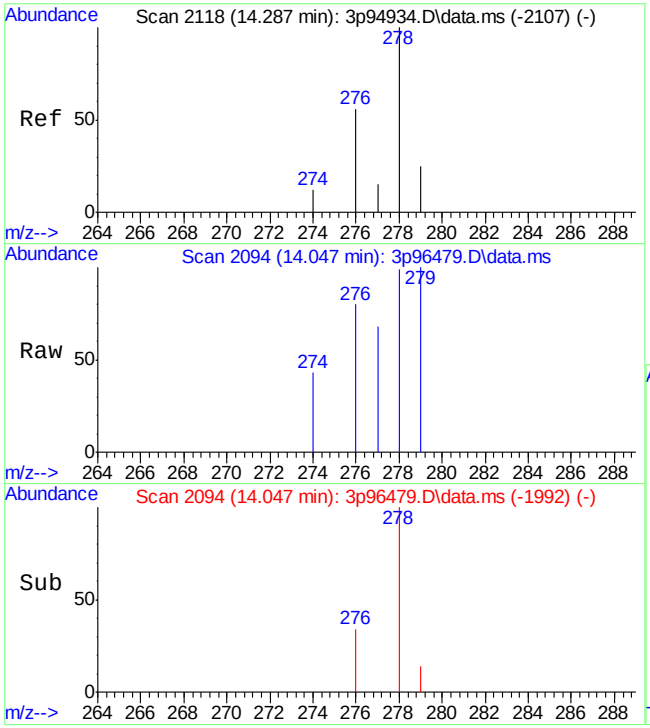


#33
Indeno[1,2,3-cd]pyrene
Concen: 16.61 ppb m
RT: 14.033 min Scan# 2091
Delta R.T. -0.024 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:276 Resp: 1454

Ion	Ratio	Lower	Upper
276	100		
274	43.8	0.0	45.2
277	67.6	0.0	52.4#

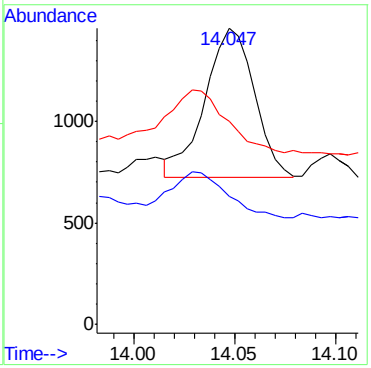


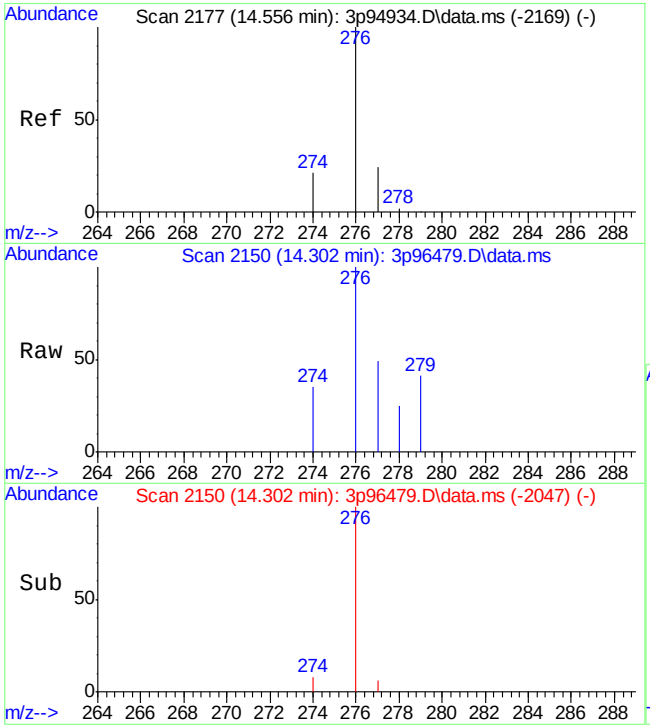


#34
Dibenz[a,h]anthracene
Concen: 17.56 ppb m
RT: 14.047 min Scan# 2094
Delta R.T. -0.033 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:278 Resp: 1247

Ion	Ratio	Lower	Upper
278	100		
274	43.4	0.0	40.3#
277	68.4	0.0	40.0#

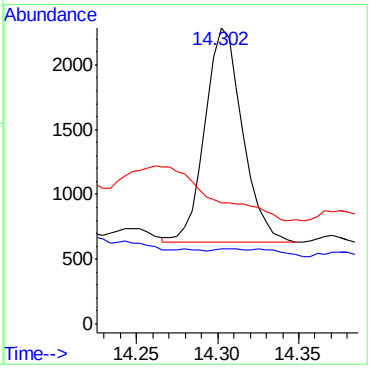




#35
Benzo[g,h,i]perylene
Concen: 32.39 ppb m
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96479.D
Acq: 20 Apr 2022 5:56 am

Tgt Ion:276 Resp: 2675

Ion	Ratio	Lower	Upper
276	100		
278	25.4	0.0	31.3
279	40.9	0.0	30.5#



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96480.D
Acq On : 20 Apr 2022 6:19 am
Operator : chriss2
Sample : jd43215-6
Misc : op39191,e3p4582,280,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 20 14:45:35 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

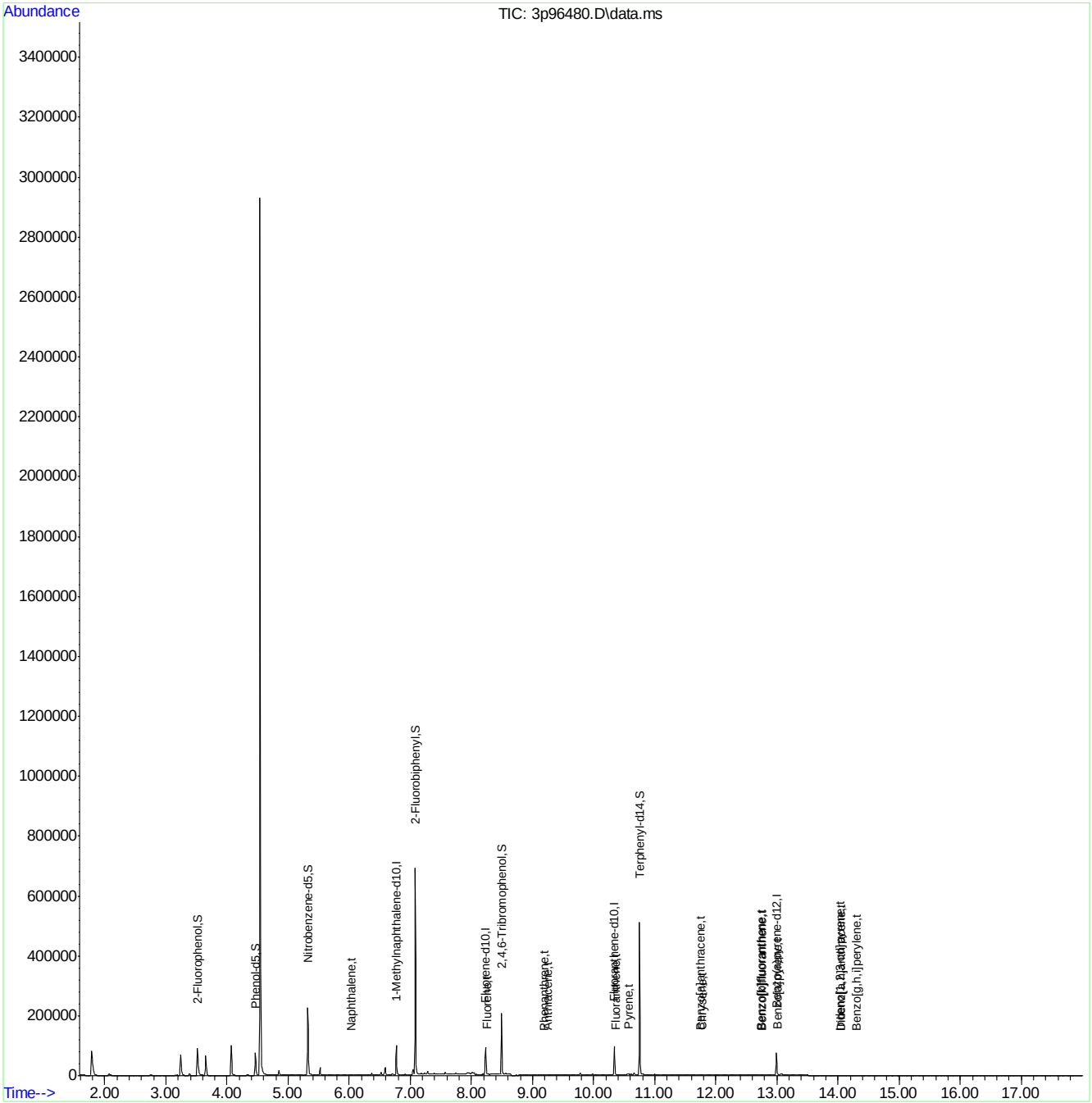
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	31854	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	41265	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	65736	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	51057	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.516	112	74409	3101.09 ppb	-0.03
Spiked Amount 50.000			Recovery	= 6202.18%	
4) Phenol-d5	4.462	99	78046	2395.52 ppb	0.00
Spiked Amount 50.000			Recovery	= 4791.04%	
7) Nitrobenzene-d5	5.320	82	149606	5889.70 ppb	0.00
Spiked Amount 50.000			Recovery	= 11779.40%	
13) 2-Fluorobiphenyl	7.079	172	344705	5322.56 ppb	-0.01
Spiked Amount 50.000			Recovery	= 10645.12%	
18) 2,4,6-Tribromophenol	8.495	330	73776	9484.89 ppb	0.00
Spiked Amount 50.000			Recovery	= 18969.78%	
26) Terphenyl-d14	10.753	244	334602	5462.55 ppb	0.00
Spiked Amount 50.000			Recovery	= 10925.10%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	842	8.66 ppb	68
17) Fluorene	8.261	166	516m	7.41 ppb	
22) Phenanthrene	9.196	178	970	9.87 ppb	95
23) Anthracene	9.247	178	1704	17.93 ppb	92
24) Fluoranthene	10.357	202	1272	10.91 ppb	88
25) Pyrene	10.574	202	2055m	16.97 ppb	
27) Benzo[a]anthracene	11.752	228	672	7.65 ppb	87
28) Chrysene	11.784	228	587	5.14 ppb	89
30) Benzo[b]fluoranthene	12.738	252	584m	6.30 ppb	
31) Benzo[k]fluoranthene	12.762	252	218m	1.97 ppb	
32) Benzo[a]pyrene	13.009	252	408	3.55 ppb	89
33) Indeno[1,2,3-cd]pyrene	14.029	276	359	3.64 ppb	97
34) Dibenz[a,h]anthracene	14.052	278	140	1.75 ppb	73
35) Benzo[g,h,i]perylene	14.302	276	485	5.22 ppb	99

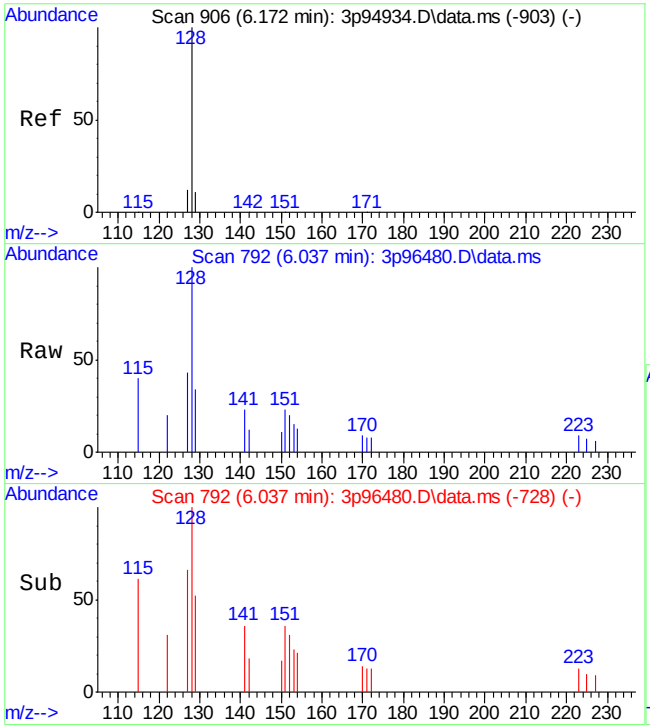
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96480.D
Acq On : 20 Apr 2022 6:19 am
Operator : chriss2
Sample : jd43215-6
Misc : op39191,e3p4582,280,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 20 14:45:35 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

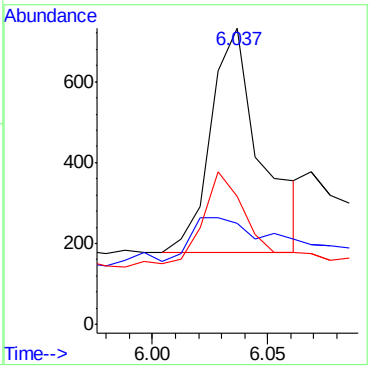


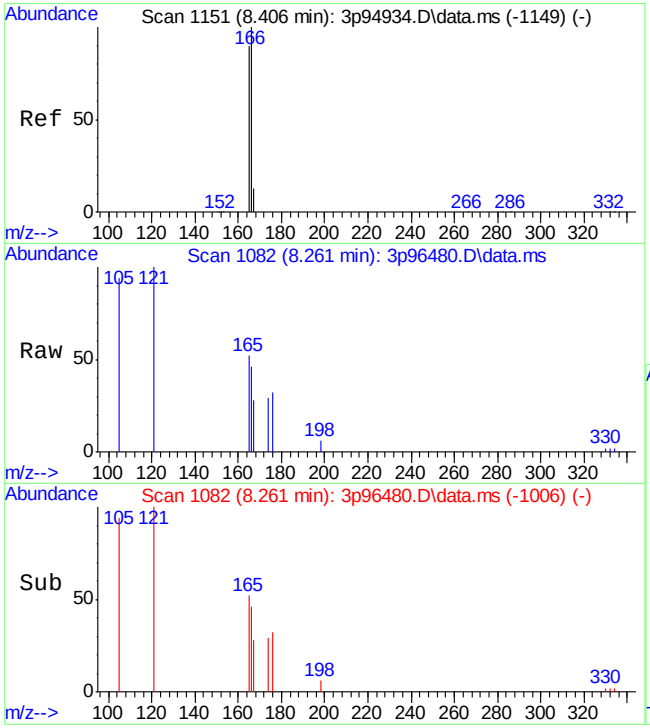


#8
Naphthalene
Concen: 8.66 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:128 Resp: 842

Ion	Ratio	Lower	Upper
128	100		
129	14.4	0.0	41.2
127	32.7	0.0	41.7

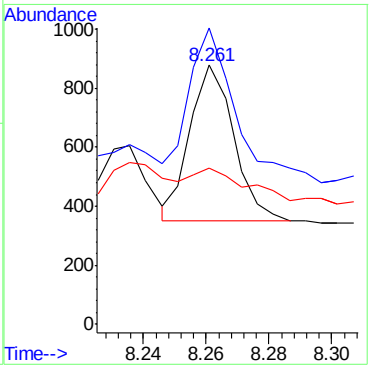


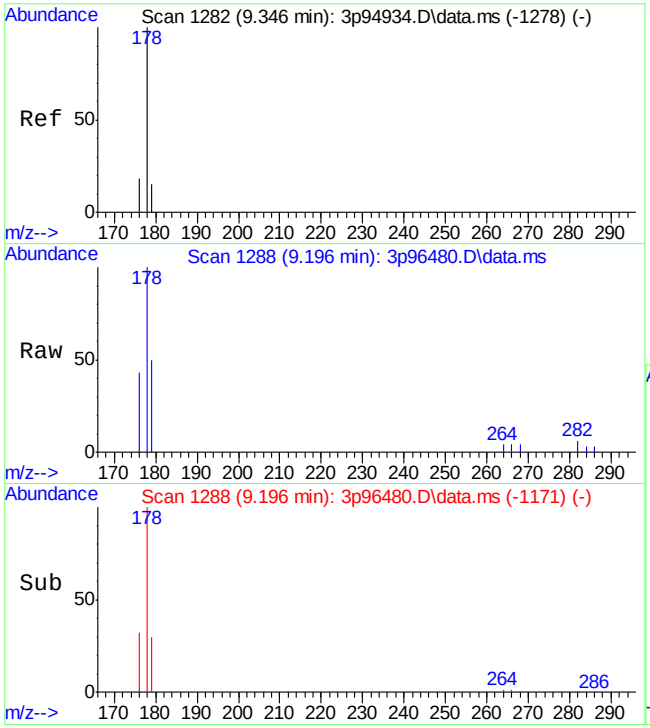


#17
Fluorene
Concen: 7.41 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:166 Resp: 516

Ion	Ratio	Lower	Upper
166	100		
165	114.5	57.3	117.3
167	60.4	0.0	46.0#

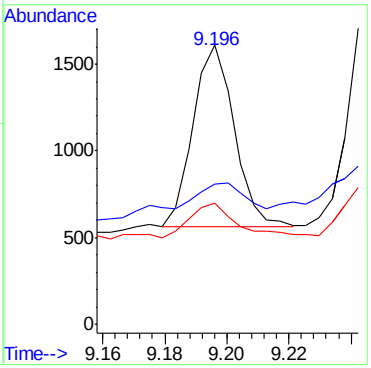


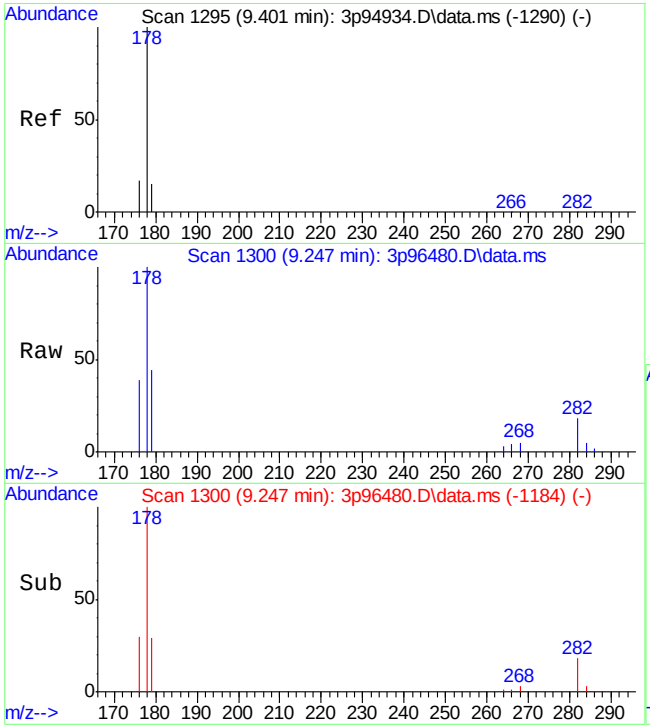


#22
Phenanthrene
Concen: 9.87 ppb
RT: 9.196 min Scan# 1288
Delta R.T. -0.008 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:178 Resp: 970

Ion	Ratio	Lower	Upper
178	100		
179	11.2	0.0	45.1
176	18.1	0.0	47.5

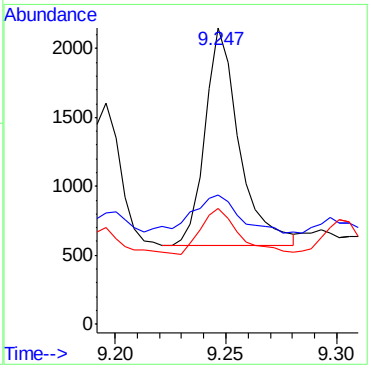


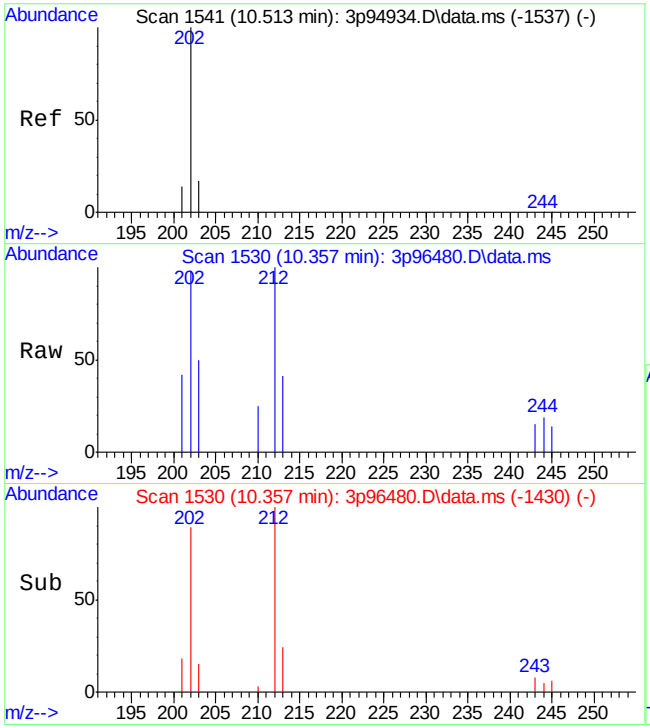


#23
Anthracene
Concen: 17.93 ppb
RT: 9.247 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:178 Resp: 1704

Ion	Ratio	Lower	Upper
178	100		
179	16.2	0.0	43.0
176	20.6	0.0	47.0

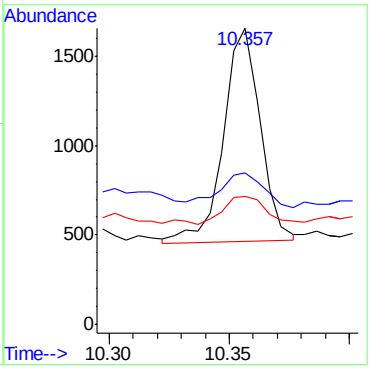


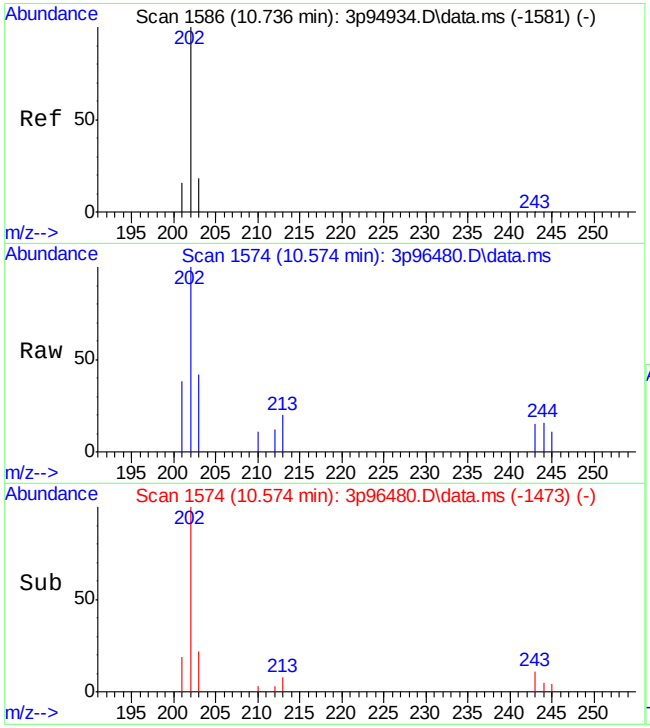


#24
Fluoranthene
Concen: 10.91 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:202 Resp: 1272

Ion	Ratio	Lower	Upper
202	100		
203	13.5	0.0	50.0
201	12.3	0.0	45.9

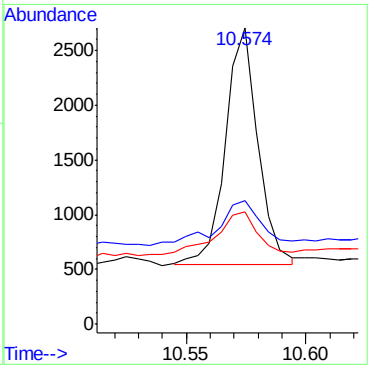


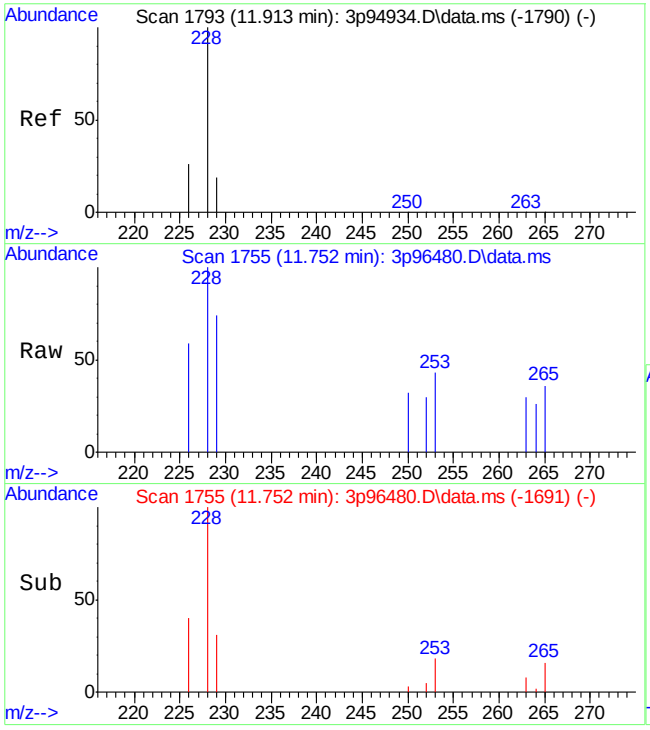


#25
Pyrene
Concen: 16.97 ppb m
RT: 10.574 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:202 Resp: 2055

Ion	Ratio	Lower	Upper
202	100		
203	41.6	0.0	48.7
201	37.9	0.0	46.9

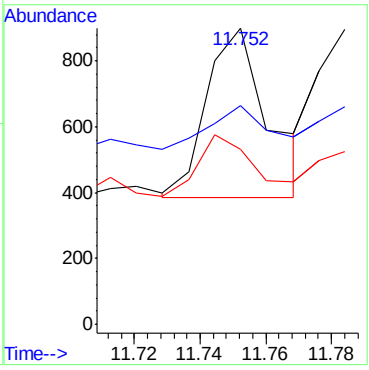


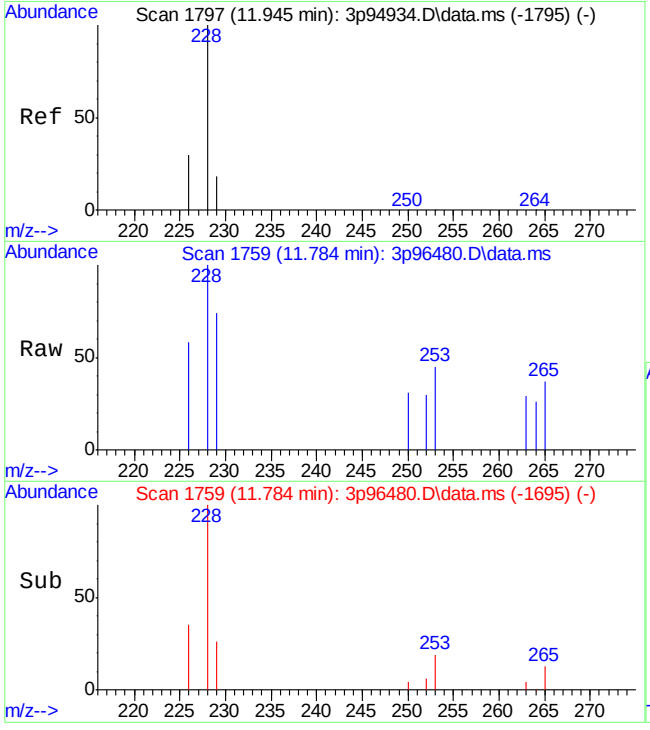


#27
Benzo[a]anthracene
Concen: 7.65 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:228 Resp: 672

Ion	Ratio	Lower	Upper
228	100		
229	27.5	0.0	49.3
226	29.8	0.0	55.2

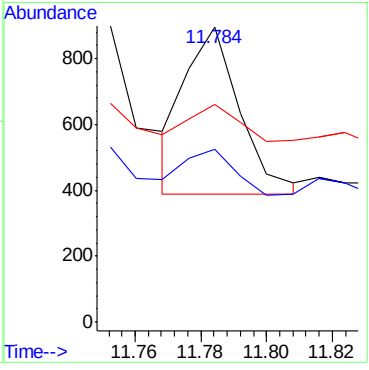


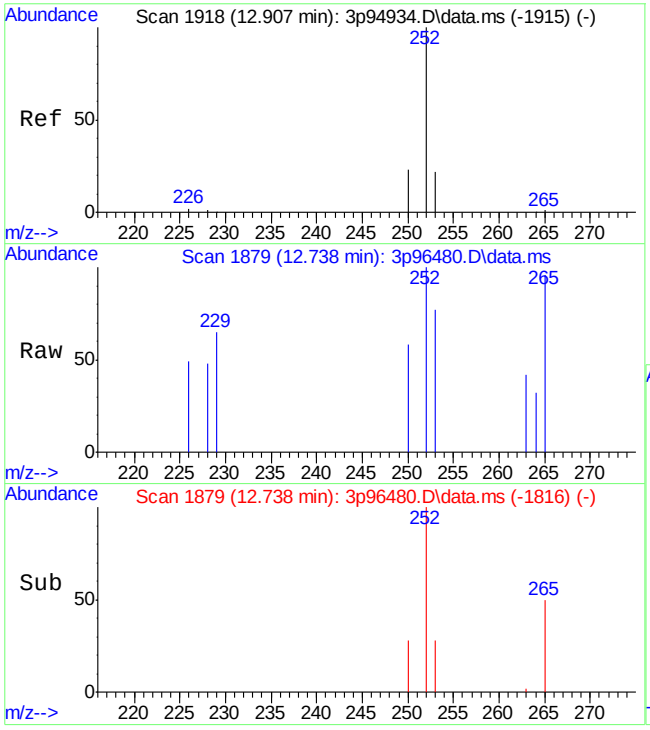


#28
Chrysene
Concen: 5.14 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:228 Resp: 587

Ion	Ratio	Lower	Upper
228	100		
226	28.7	0.0	55.6
229	25.2	0.0	47.4

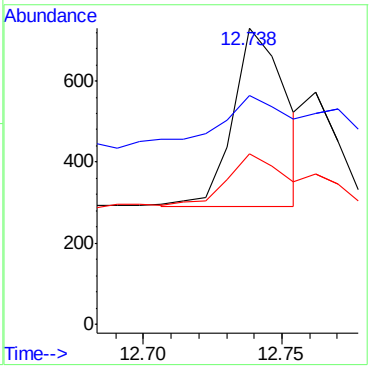


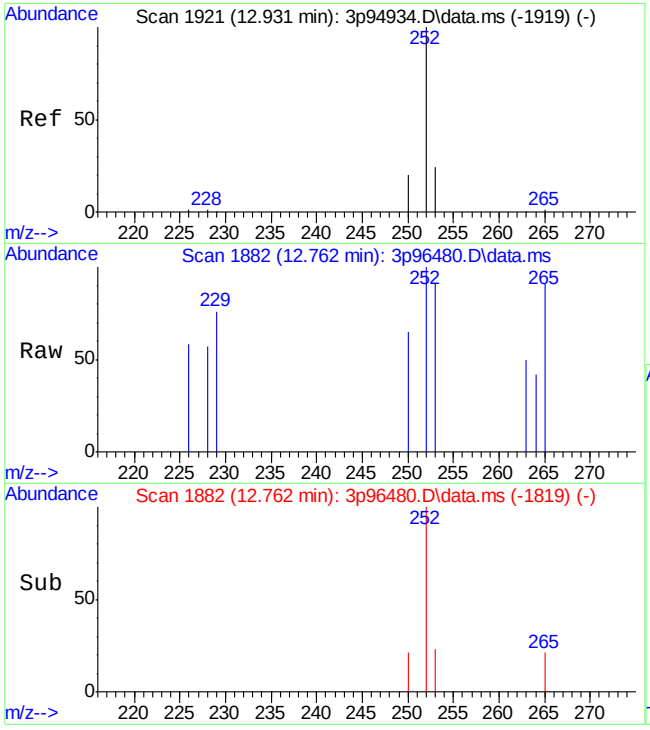


#30
Benzo[b]fluoranthene
Concen: 6.30 ppb m
RT: 12.738 min Scan# 1879
Delta R.T. -0.003 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:252 Resp: 584

Ion	Ratio	Lower	Upper
252	100		
253	77.4	0.0	51.7#
250	57.7	0.0	48.4#

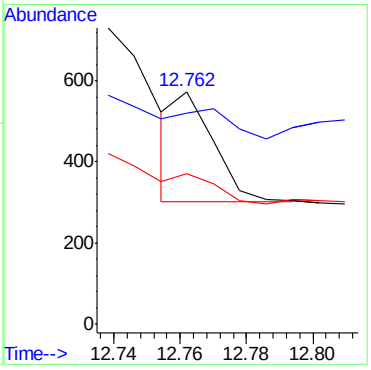


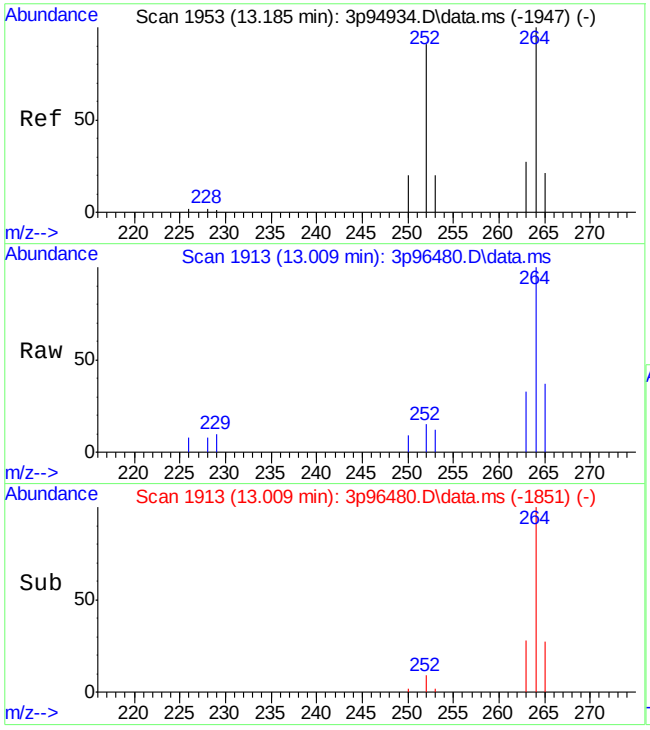


#31
Benzo[k]fluoranthene
Concen: 1.97 ppb m
RT: 12.762 min Scan# 1882
Delta R.T. -0.003 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:252 Resp: 218

Ion	Ratio	Lower	Upper
252	100		
253	90.6	0.0	51.5#
250	64.6	0.0	51.3#

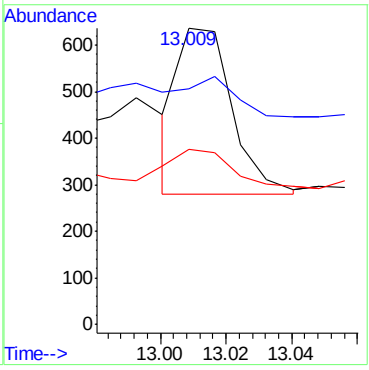


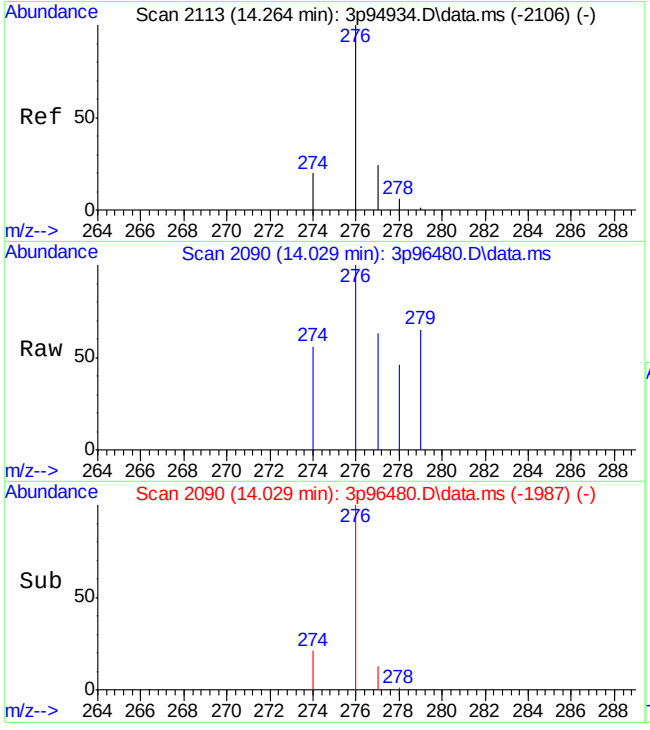


#32
Benzo[a]pyrene
Concen: 3.55 ppb
RT: 13.009 min Scan# 1913
Delta R.T. -0.009 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:252 Resp: 408

Ion	Ratio	Lower	Upper
252	100		
253	13.3	0.0	52.3
250	21.4	0.0	49.9

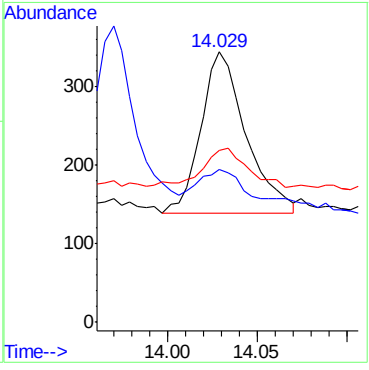


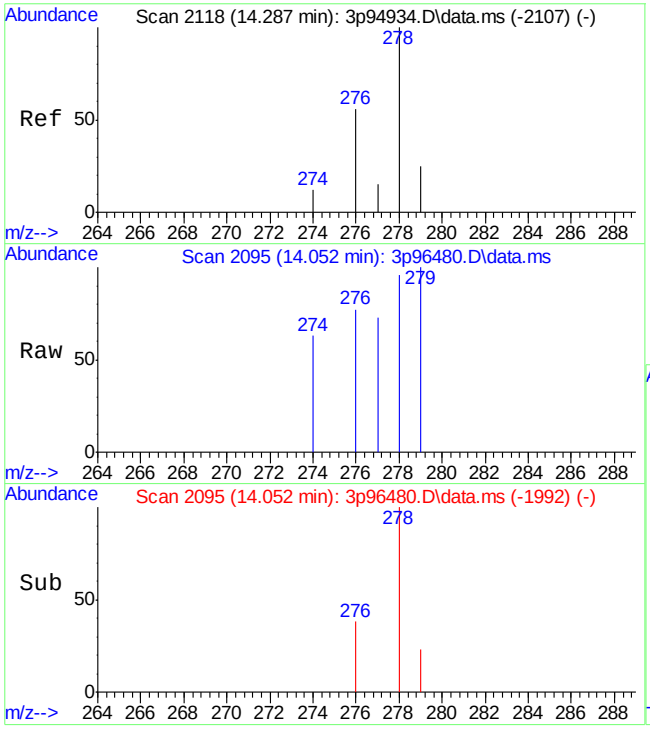


#33
Indeno[1,2,3-cd]pyrene
Concen: 3.64 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:276 Resp: 359

Ion	Ratio	Lower	Upper
276	100		
274	13.9	0.0	45.2
277	21.2	0.0	52.4

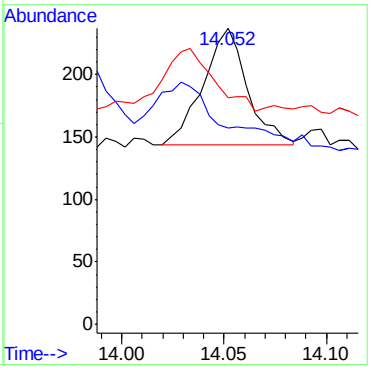


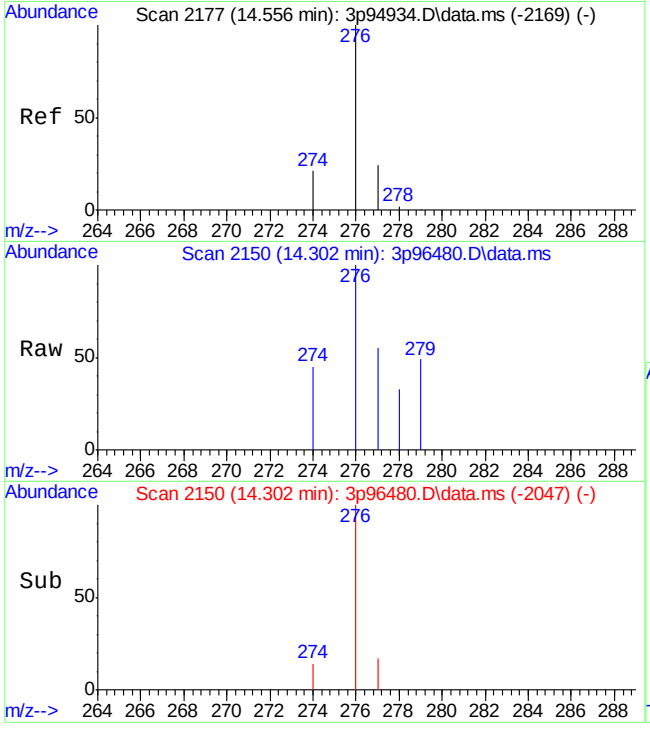


#34
Dibenz[a,h]anthracene
Concen: 1.75 ppb
RT: 14.052 min Scan# 2095
Delta R.T. -0.029 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:278 Resp: 140

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	40.3
277	0.0	0.0	40.0

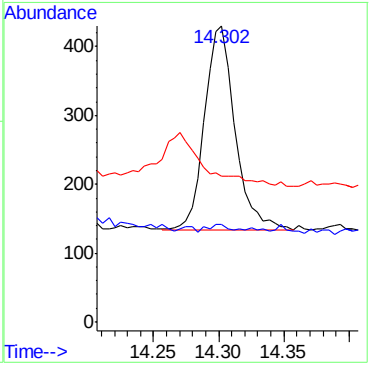




#35
Benzo[g,h,i]perylene
Concen: 5.22 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96480.D
Acq: 20 Apr 2022 6:19 am

Tgt Ion:276 Resp: 485

Ion	Ratio	Lower	Upper
276	100		
278	1.5	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96481.D
Acq On : 20 Apr 2022 6:41 am
Operator : chriss2
Sample : jd43215-7
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 20 14:46:35 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

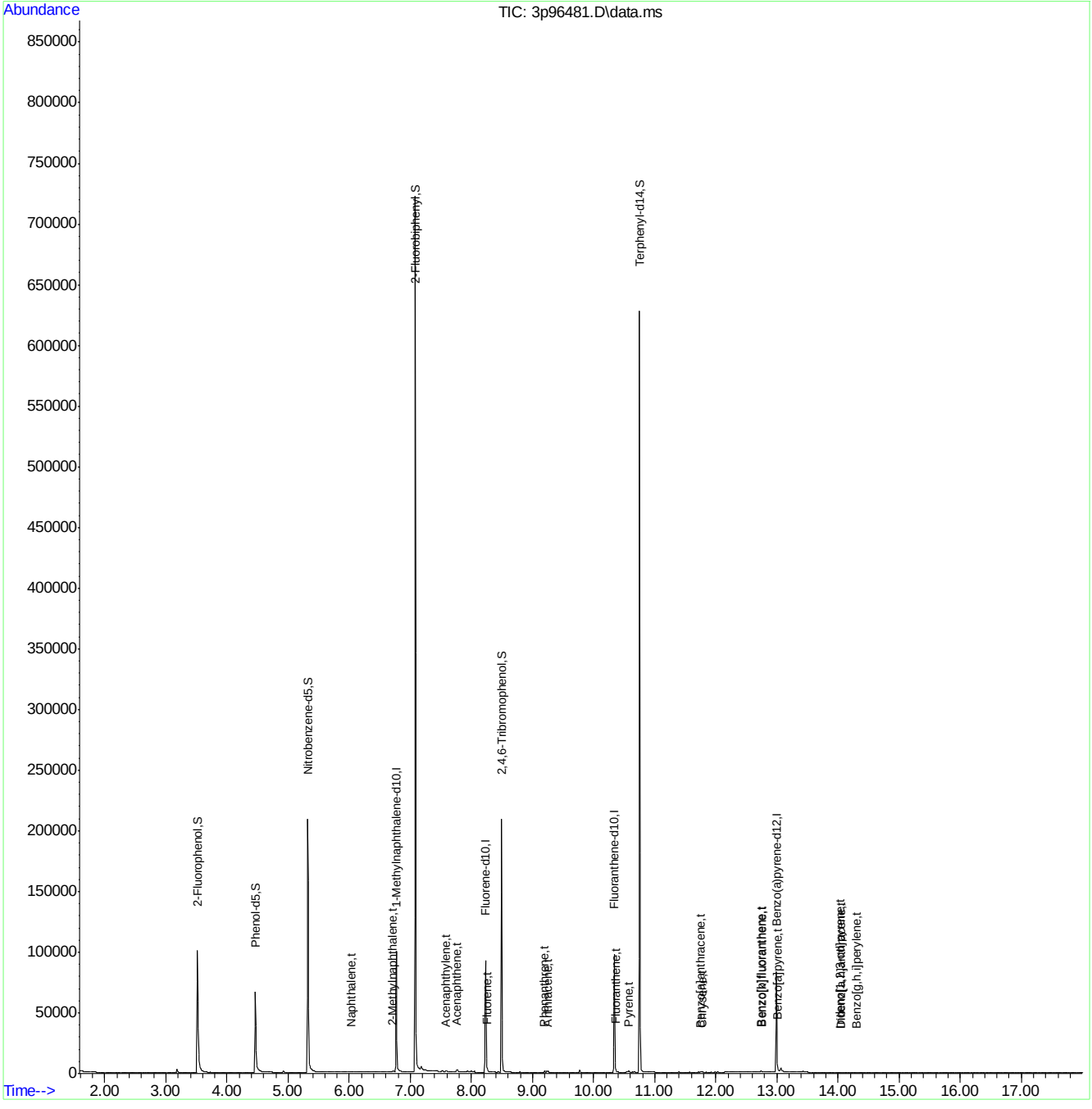
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	34092	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	43569	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	70248	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	56090	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.517	112	81843	3187.00 ppb	-0.03
Spiked Amount 50.000			Recovery	= 6374.00%	
4) Phenol-d5	4.462	99	80205	2300.18 ppb	0.00
Spiked Amount 50.000			Recovery	= 4600.36%	
7) Nitrobenzene-d5	5.320	82	144028	5297.89 ppb	0.00
Spiked Amount 50.000			Recovery	= 10595.78%	
13) 2-Fluorobiphenyl	7.080	172	349205	5106.91 ppb	-0.01
Spiked Amount 50.000			Recovery	= 10213.82%	
18) 2,4,6-Tribromophenol	8.495	330	74973	9129.07 ppb	0.00
Spiked Amount 50.000			Recovery	= 18258.14%	
26) Terphenyl-d14	10.753	244	400293	6115.25 ppb	0.00
Spiked Amount 50.000			Recovery	= 12230.50%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	572m	5.50 ppb	
10) 2-Methylnaphthalene	6.716	141	671	12.07 ppb	92
14) Acenaphthylene	7.589	152	345	3.33 ppb	93
15) Acenaphthene	7.759	153	392m	5.58 ppb	
17) Fluorene	8.261	166	866	11.78 ppb	93
22) Phenanthrene	9.196	178	1471	14.01 ppb	97
23) Anthracene	9.251	178	1154	11.36 ppb	95
24) Fluoranthene	10.357	202	969	7.77 ppb	95
25) Pyrene	10.575	202	833	6.44 ppb	96
27) Benzo[a]anthracene	11.752	228	399	4.25 ppb	97
28) Chrysene	11.784	228	392	3.21 ppb	96
30) Benzo[b]fluoranthene	12.746	252	451	4.43 ppb	96
31) Benzo[k]fluoranthene	12.762	252	259	2.13 ppb	92
32) Benzo[a]pyrene	13.009	252	293	2.14 ppb	86
33) Indeno[1,2,3-cd]pyrene	14.029	276	273	2.52 ppb	93
34) Dibenz[a,h]anthracene	14.052	278	141	1.61 ppb	88
35) Benzo[g,h,i]perylene	14.302	276	289	2.83 ppb	99

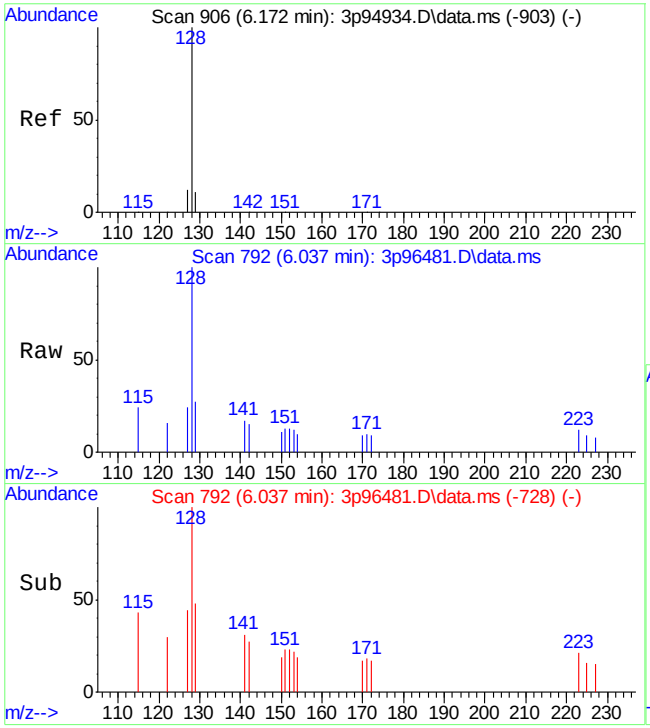
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96481.D
Acq On : 20 Apr 2022 6:41 am
Operator : chriss2
Sample : jd43215-7
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 20 14:46:35 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

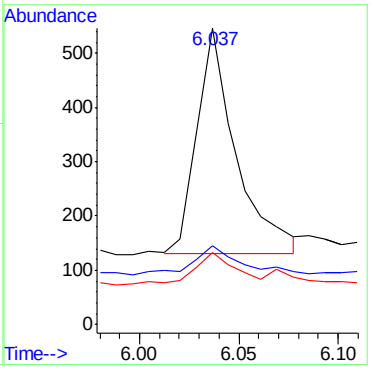


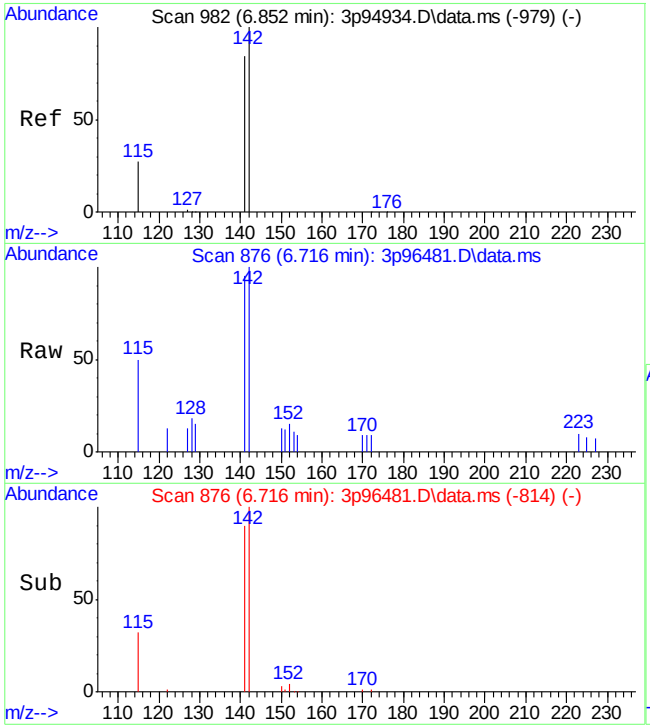


#8
Naphthalene
Concen: 5.50 ppb m
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:128 Resp: 572

Ion	Ratio	Lower	Upper
128	100		
129	26.7	0.0	41.2
127	24.2	0.0	41.7

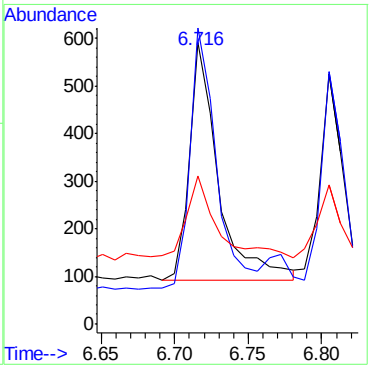


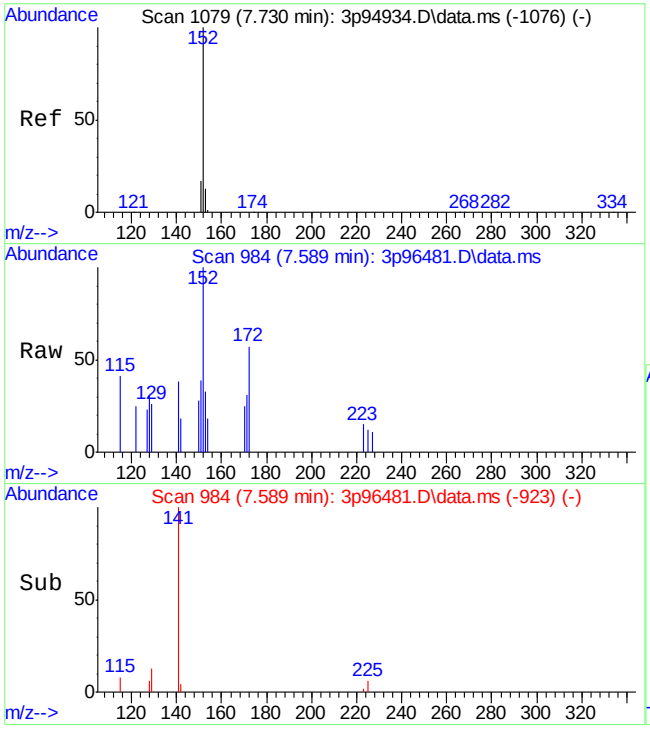


#10
2-Methylnaphthalene
Concen: 12.07 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:141 Resp: 671

Ion	Ratio	Lower	Upper
141	100		
142	109.2	88.8	148.8
115	34.6	1.9	61.9

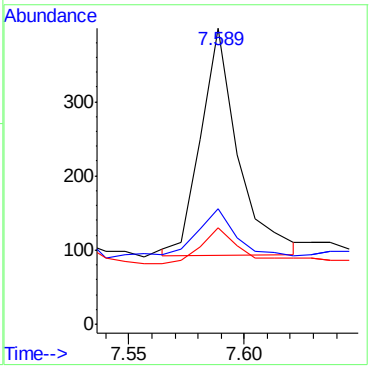


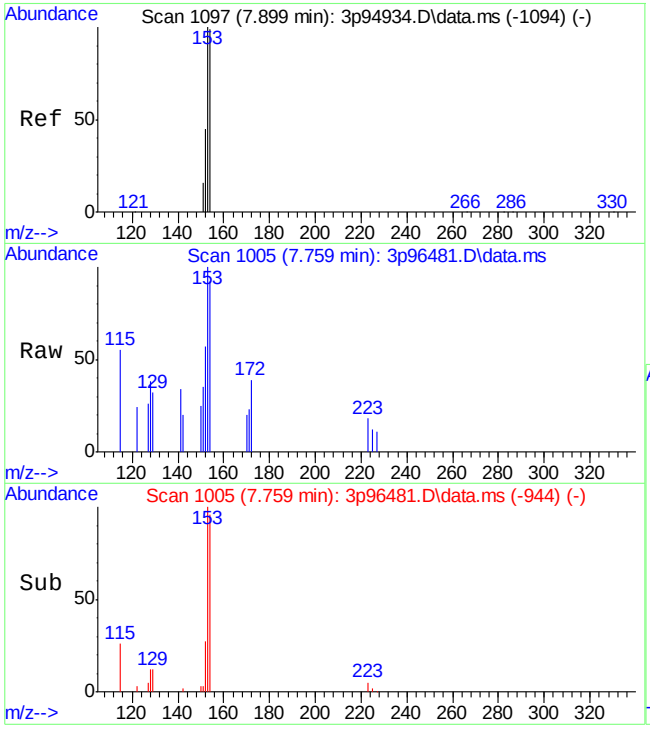


#14
Acenaphthylene
Concen: 3.33 ppb
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:152 Resp: 345

Ion	Ratio	Lower	Upper
152	100		
151	21.5	0.0	47.3
153	15.0	0.0	43.3

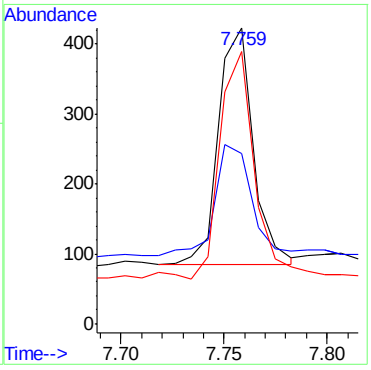


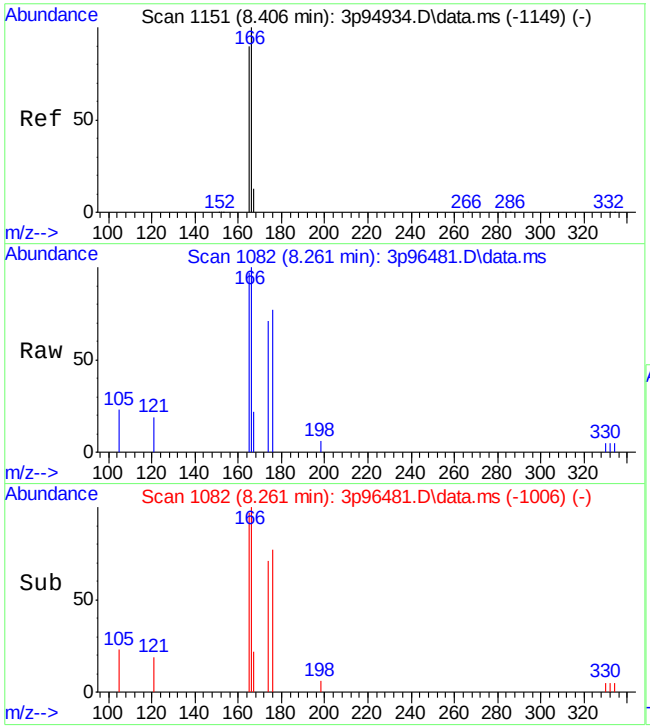


#15
Acenaphthene
Concen: 5.58 ppb m
RT: 7.759 min Scan# 1005
Delta R.T. -0.007 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:153 Resp: 392

Ion	Ratio	Lower	Upper
153	100		
152	57.4	16.5	76.5
154	92.2	73.6	133.6

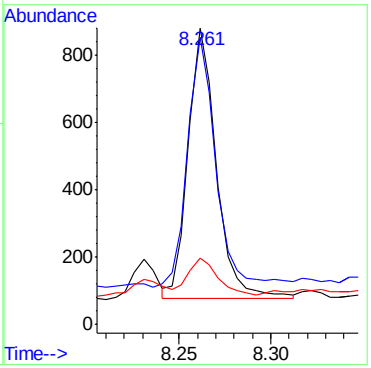


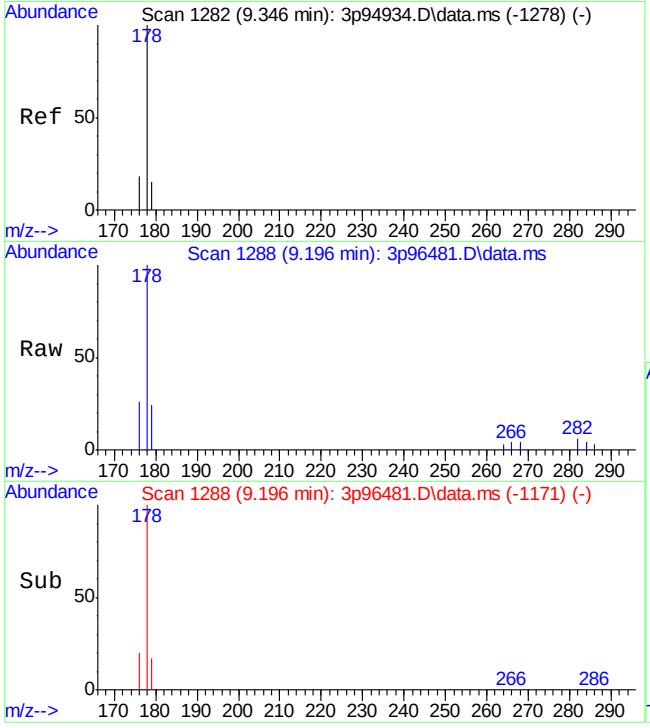


#17
Fluorene
Concen: 11.78 ppb
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:166 Resp: 866

Ion	Ratio	Lower	Upper
166	100		
165	93.4	57.3	117.3
167	11.7	0.0	46.0

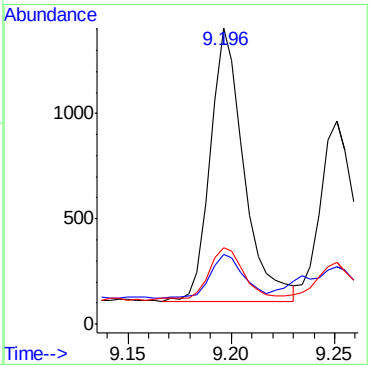


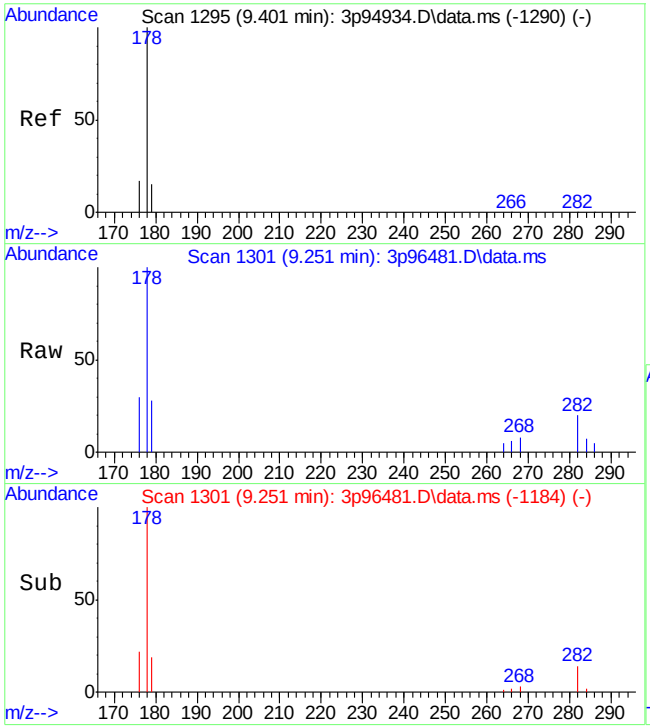


#22
Phenanthrene
Concen: 14.01 ppb
RT: 9.196 min Scan# 1288
Delta R.T. -0.008 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:178 Resp: 1471

Ion	Ratio	Lower	Upper
178	100		
179	13.5	0.0	45.1
176	18.4	0.0	47.5

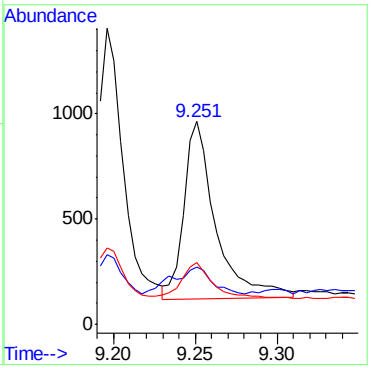


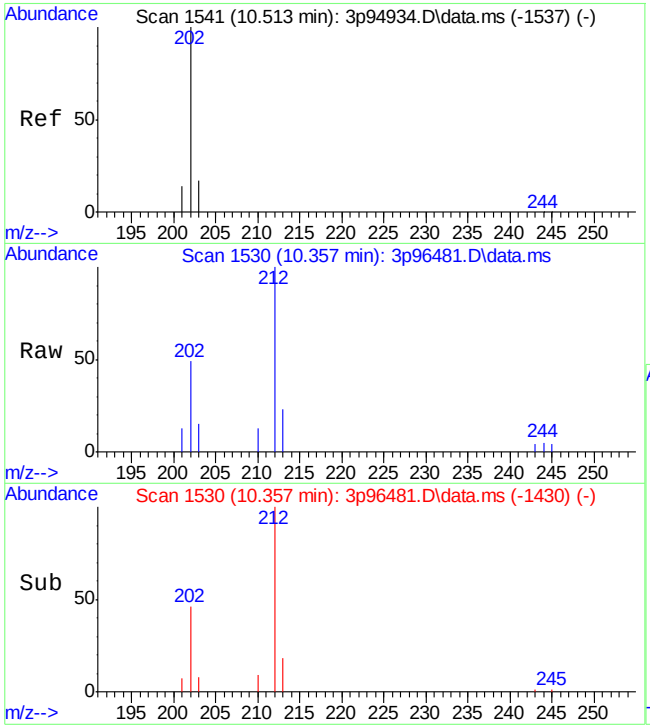


#23
Anthracene
Concen: 11.36 ppb
RT: 9.251 min Scan# 1301
Delta R.T. -0.007 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:178 Resp: 1154

Ion	Ratio	Lower	Upper
178	100		
179	12.0	0.0	43.0
176	20.4	0.0	47.0

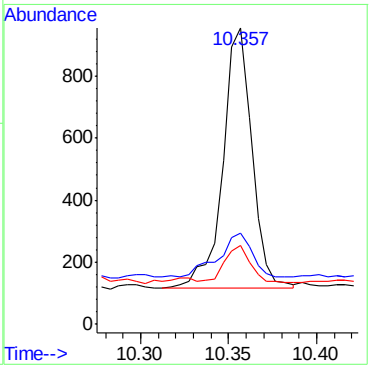


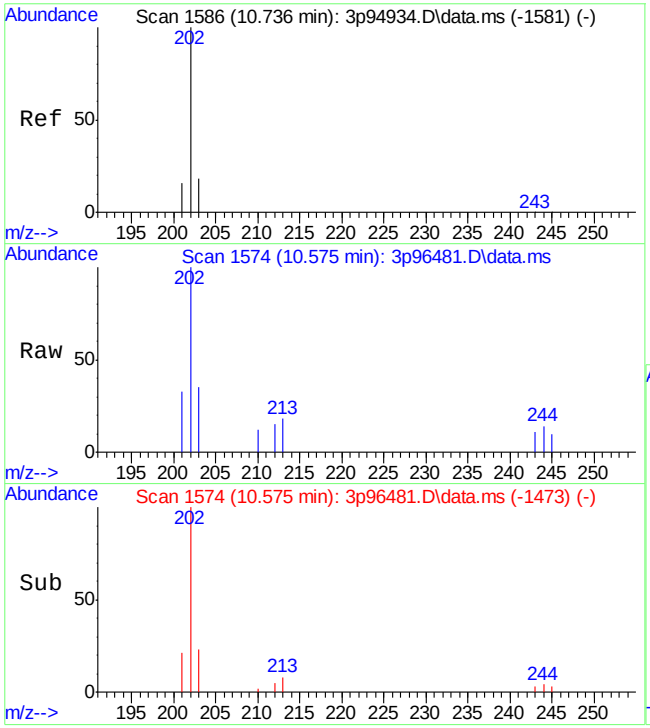


#24
Fluoranthene
Concen: 7.77 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:202 Resp: 969

Ion	Ratio	Lower	Upper
202	100		
203	17.1	0.0	50.0
201	14.1	0.0	45.9

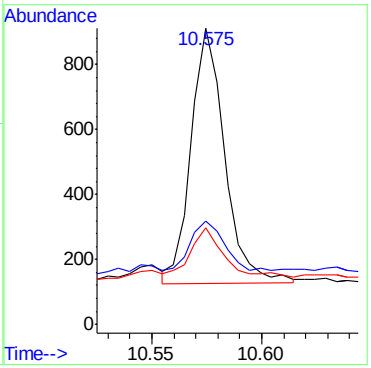


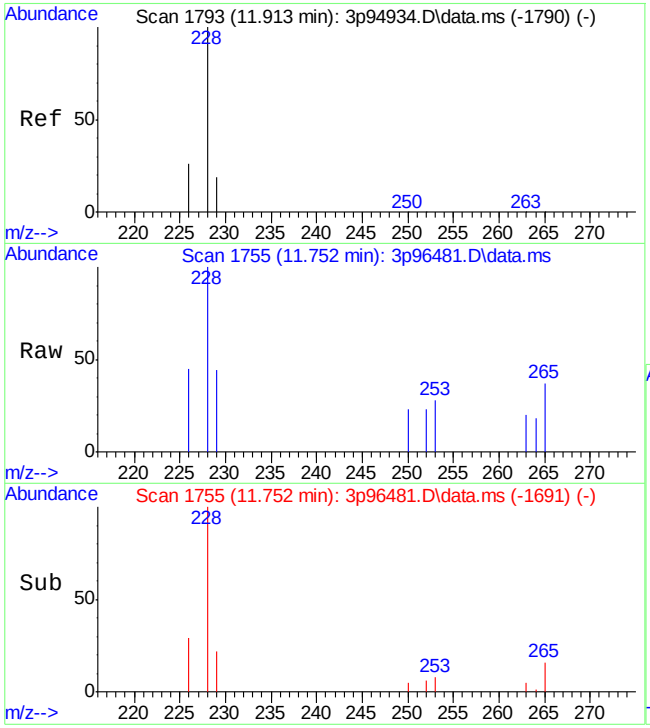


#25
Pyrene
Concen: 6.44 ppb
RT: 10.575 min Scan# 1574
Delta R.T. -0.002 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:202 Resp: 833

Ion	Ratio	Lower	Upper
202	100		
203	19.8	0.0	48.7
201	19.0	0.0	46.9

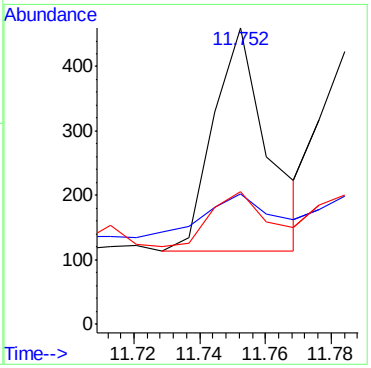


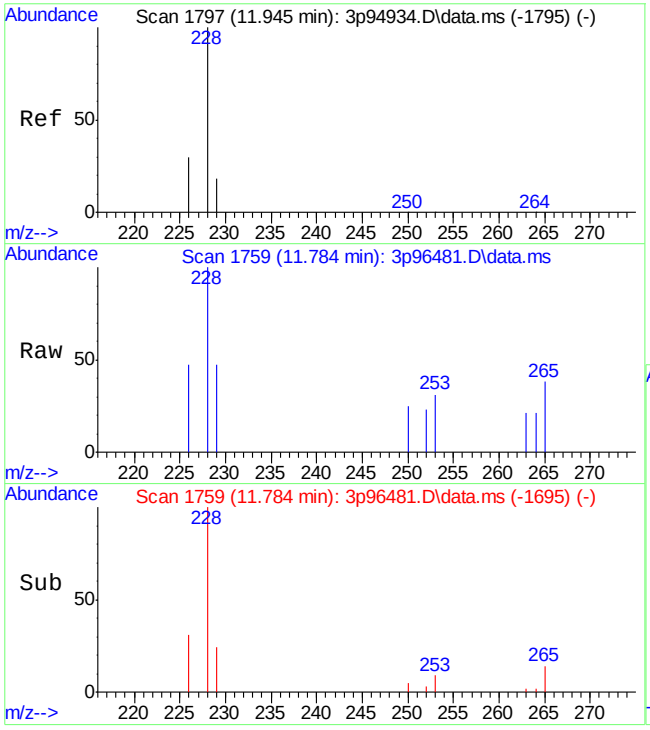


#27
Benzo[a]anthracene
Concen: 4.25 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:228 Resp: 399

Ion	Ratio	Lower	Upper
228	100		
229	17.0	0.0	49.3
226	24.2	0.0	55.2

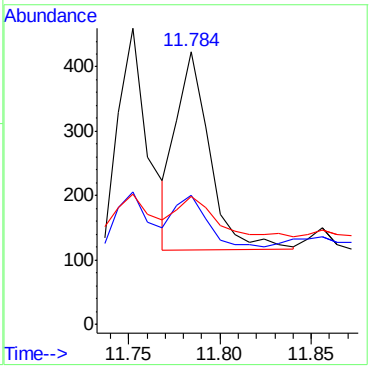


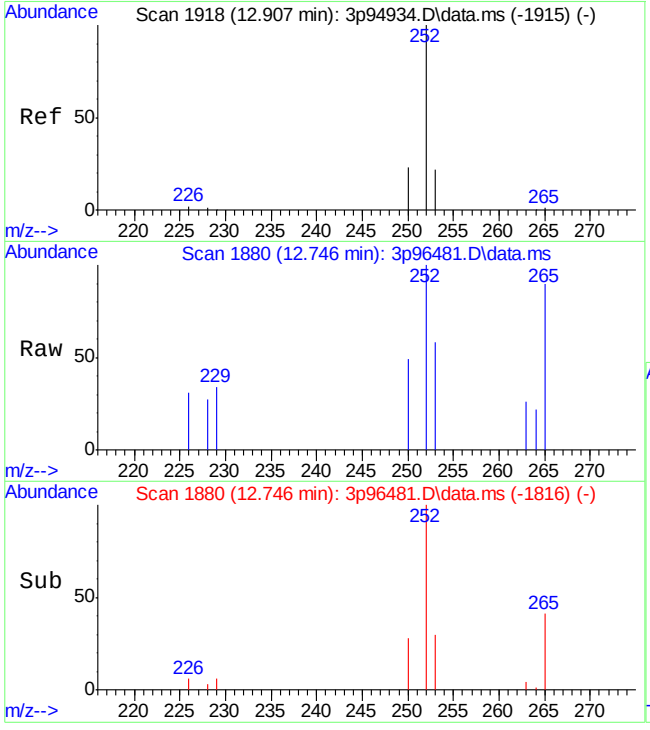


#28
Chrysene
Concen: 3.21 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:228 Resp: 392

Ion	Ratio	Lower	Upper
228	100		
226	23.8	0.0	55.6
229	19.8	0.0	47.4

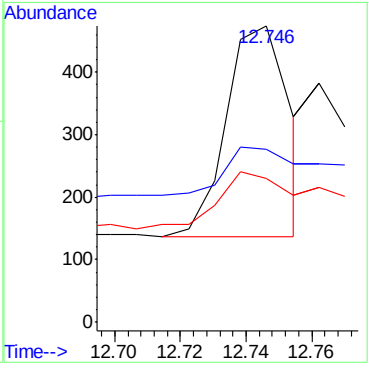


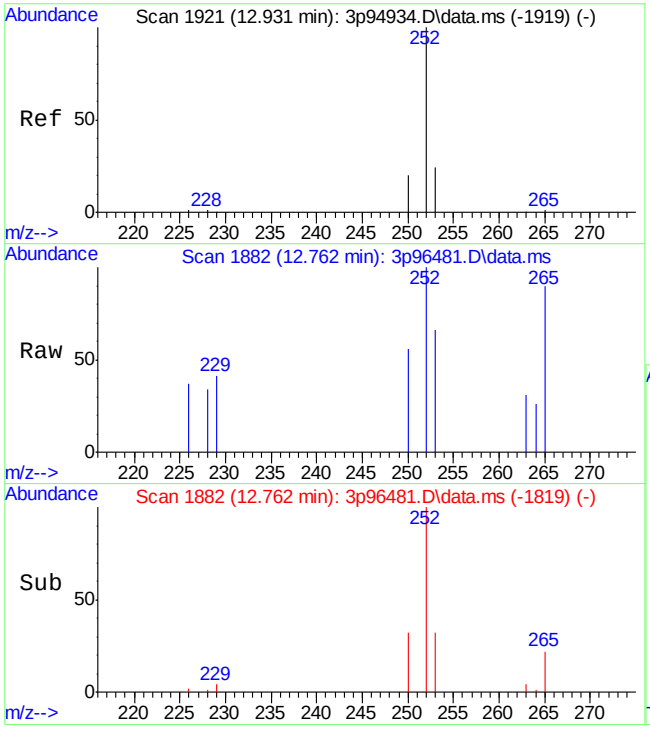


#30
Benzo[b]fluoranthene
Concen: 4.43 ppb
RT: 12.746 min Scan# 1880
Delta R.T. 0.005 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:252 Resp: 451

Ion	Ratio	Lower	Upper
252	100		
253	20.3	0.0	51.7
250	20.5	0.0	48.4

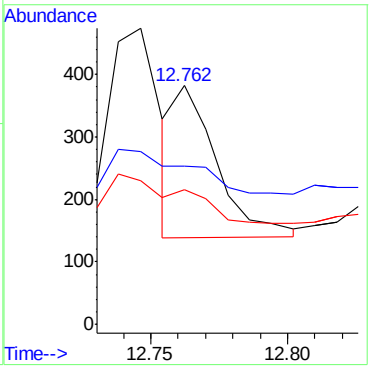


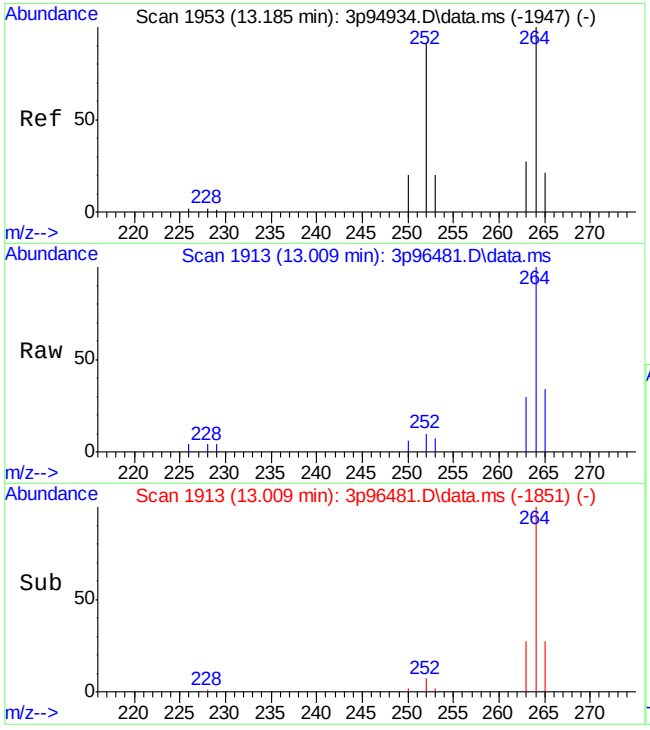


#31
Benzo[k]fluoranthene
Concen: 2.13 ppb
RT: 12.762 min Scan# 1882
Delta R.T. -0.002 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:252 Resp: 259

Ion	Ratio	Lower	Upper
252	100		
253	15.5	0.0	51.5
250	23.0	0.0	51.3

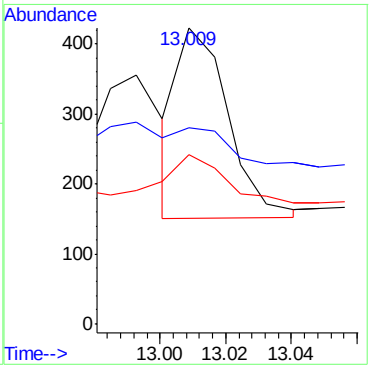


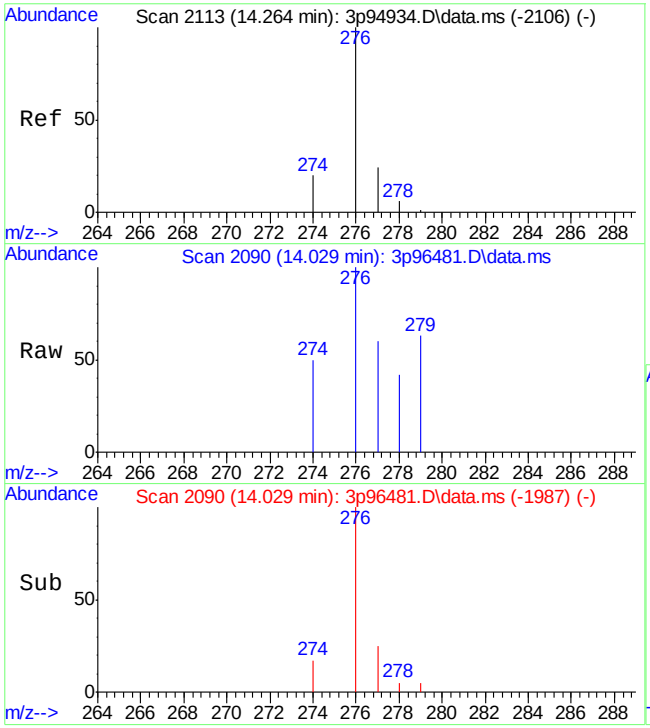


#32
Benzo[a]pyrene
Concen: 2.14 ppb
RT: 13.009 min Scan# 1913
Delta R.T. -0.009 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:252 Resp: 293

Ion	Ratio	Lower	Upper
252	100		
253	16.8	0.0	52.3
250	27.6	0.0	49.9

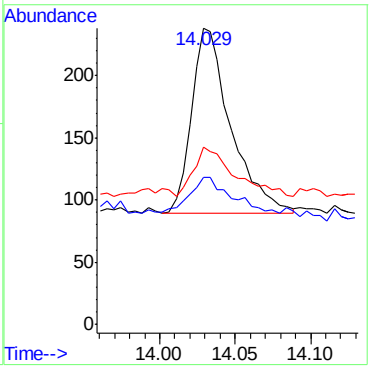


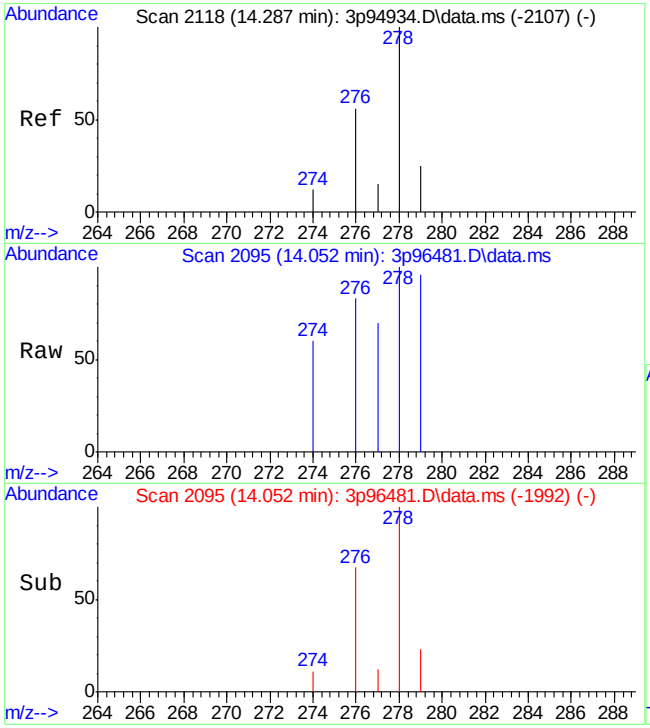


#33
Indeno[1,2,3-cd]pyrene
Concen: 2.52 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:276 Resp: 273

Ion	Ratio	Lower	Upper
276	100		
274	18.7	0.0	45.2
277	25.2	0.0	52.4

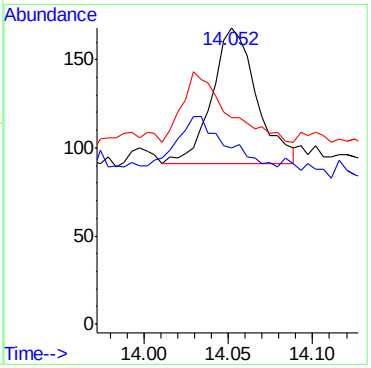


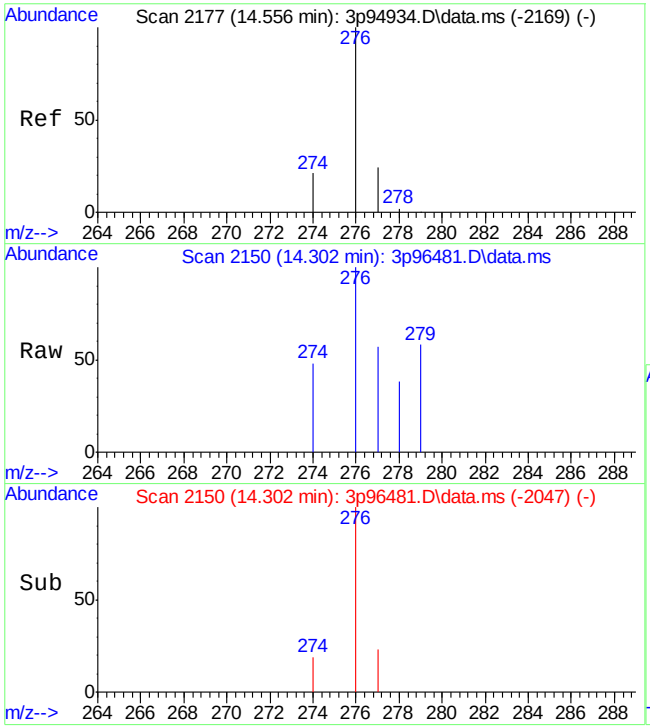


#34
Dibenz[a,h]anthracene
Concen: 1.61 ppb
RT: 14.052 min Scan# 2095
Delta R.T. -0.028 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:278 Resp: 141

Ion	Ratio	Lower	Upper
278	100		
274	10.3	0.0	40.3
277	19.3	0.0	40.0

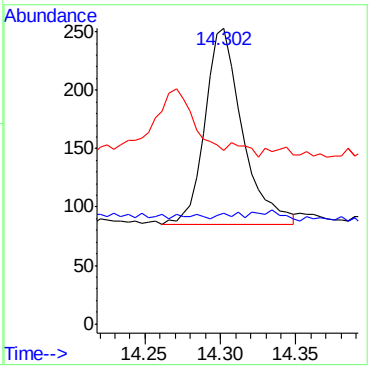




#35
Benzo[g,h,i]perylene
Concen: 2.83 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96481.D
Acq: 20 Apr 2022 6:41 am

Tgt Ion:276 Resp: 289

Ion	Ratio	Lower	Upper
276	100		
278	1.8	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96482.D
Acq On : 20 Apr 2022 7:03 am
Operator : chriss2
Sample : jd43215-8
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 14:48:50 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

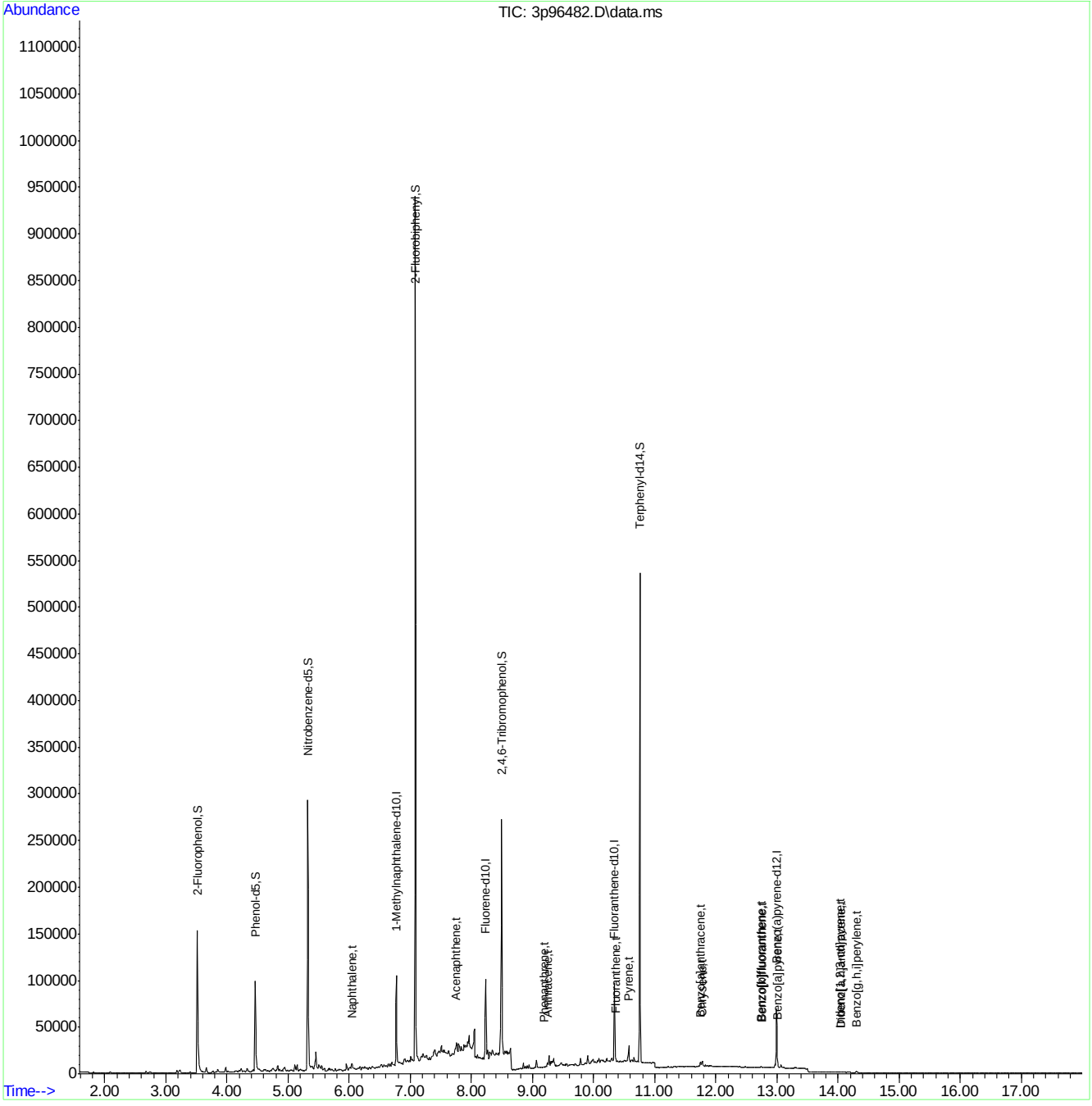
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	29697	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	41292	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	59844	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	46379	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.516	112	109666	4902.45 ppb	-0.03
Spiked Amount 50.000				Recovery = 9804.90%	
4) Phenol-d5	4.462	99	112296	3697.13 ppb	0.00
Spiked Amount 50.000				Recovery = 7394.26%	
7) Nitrobenzene-d5	5.320	82	184602	7795.29 ppb	0.00
Spiked Amount 50.000				Recovery = 15590.58%	
13) 2-Fluorobiphenyl	7.079	172	460331	7103.29 ppb	-0.01
Spiked Amount 50.000				Recovery = 14206.58%	
18) 2,4,6-Tribromophenol	8.495	330	90021	11565.84 ppb	0.00
Spiked Amount 50.000				Recovery = 23131.68%	
26) Terphenyl-d14	10.758	244	338613	6072.30 ppb	0.00
Spiked Amount 50.000				Recovery = 12144.60%	
Target Compounds					Qvalue
8) Naphthalene	6.045	128	3013m	33.26 ppb	
15) Acenaphthene	7.750	153	2743m	41.24 ppb	
22) Phenanthrene	9.192	178	529m	5.92 ppb	
23) Anthracene	9.247	178	2814m	32.52 ppb	
24) Fluoranthene	10.357	202	2361	22.24 ppb	92
25) Pyrene	10.574	202	11952	108.40 ppb	98
27) Benzo[a]anthracene	11.752	228	3296	41.23 ppb	95
28) Chrysene	11.784	228	5248	50.52 ppb	92
30) Benzo[b]fluoranthene	12.738	252	1353m	16.07 ppb	
31) Benzo[k]fluoranthene	12.754	252	368m	3.66 ppb	
32) Benzo[a]pyrene	13.017	252	1696	18.18 ppb	94
33) Indeno[1,2,3-cd]pyrene	14.029	276	594	6.64 ppb	95
34) Dibenz[a,h]anthracene	14.047	278	419m	5.77 ppb	
35) Benzo[g,h,i]perylene	14.298	276	1283	15.19 ppb	98

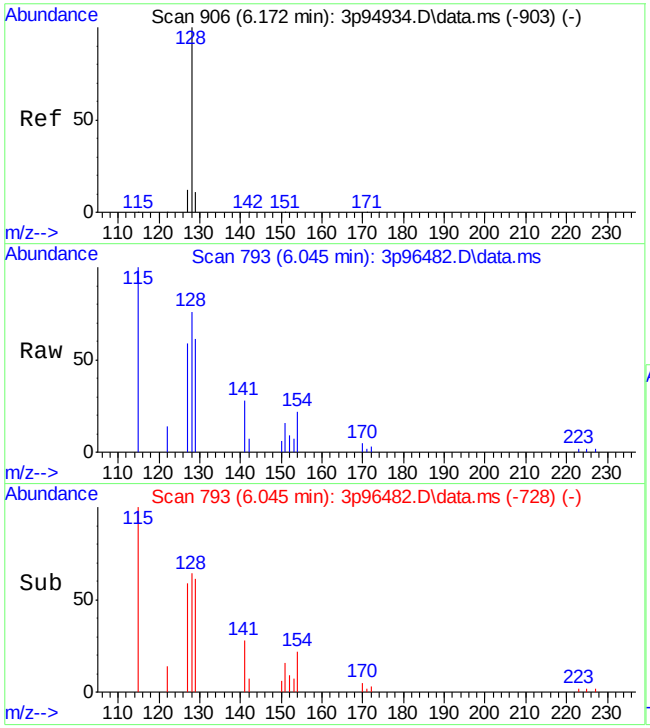
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96482.D
Acq On : 20 Apr 2022 7:03 am
Operator : chriss2
Sample : jd43215-8
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 20 14:48:50 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

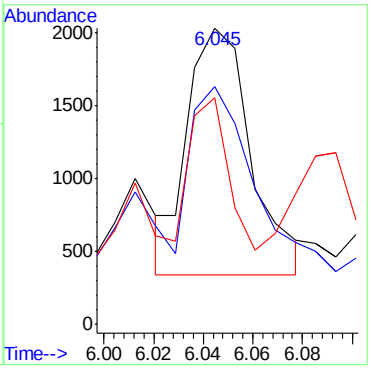


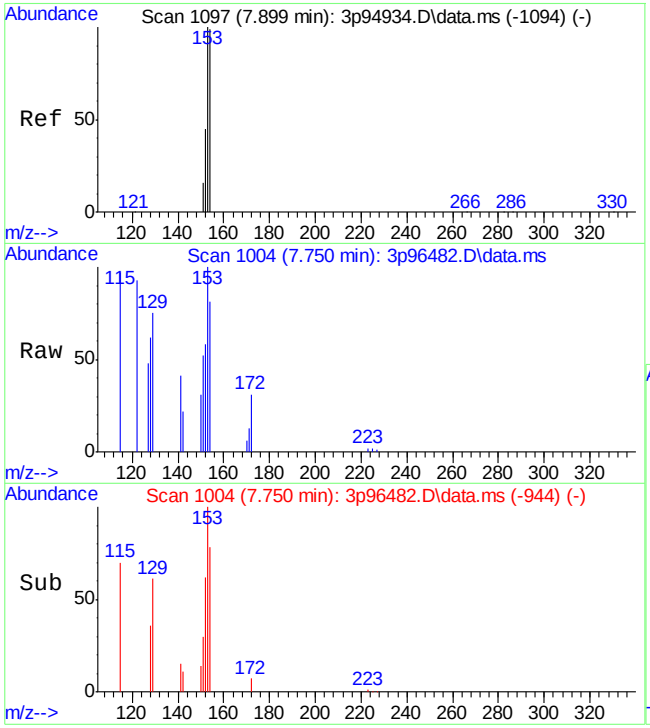


#8
Naphthalene
Concen: 33.26 ppb m
RT: 6.045 min Scan# 793
Delta R.T. 0.011 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:128 Resp: 3013

Ion	Ratio	Lower	Upper
128	100		
129	80.2	0.0	41.2#
127	76.6	0.0	41.7#

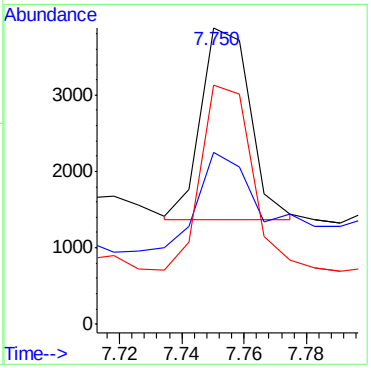


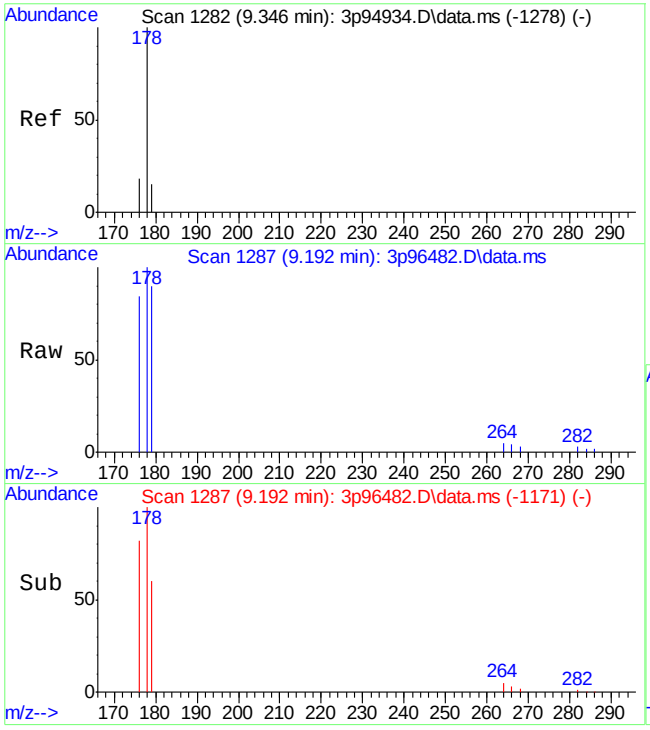


#15
Acenaphthene
Concen: 41.24 ppb m
RT: 7.750 min Scan# 1004
Delta R.T. -0.016 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:153 Resp: 2743

Ion	Ratio	Lower	Upper
153	100		
152	57.8	16.5	76.5
154	80.6	73.6	133.6

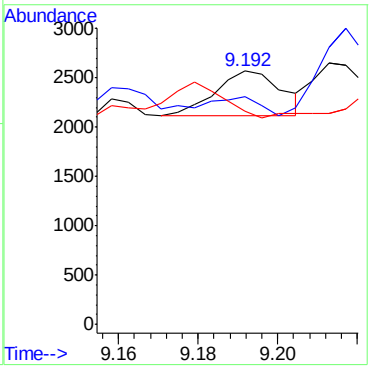


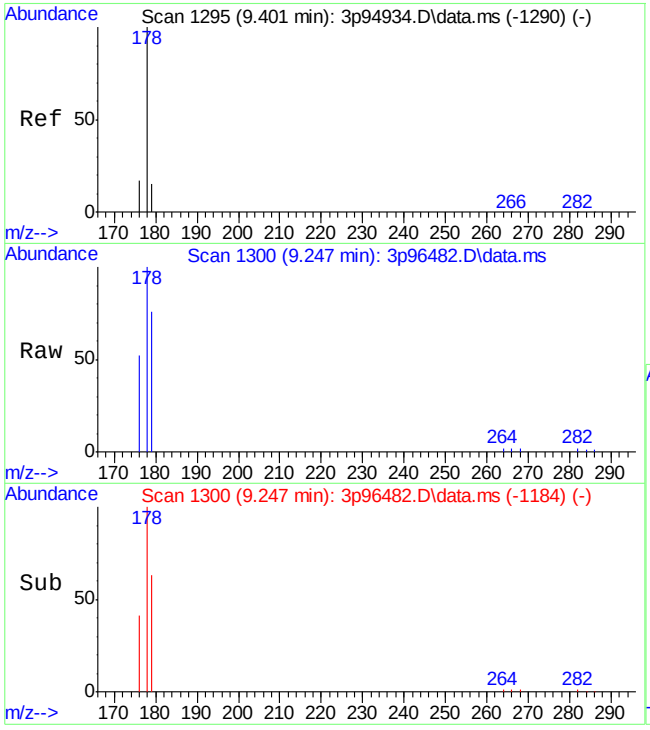


#22
Phenanthrene
Concen: 5.92 ppb m
RT: 9.192 min Scan# 1287
Delta R.T. -0.012 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:178 Resp: 529

Ion	Ratio	Lower	Upper
178	100		
179	89.9	0.0	45.1#
176	84.5	0.0	47.5#

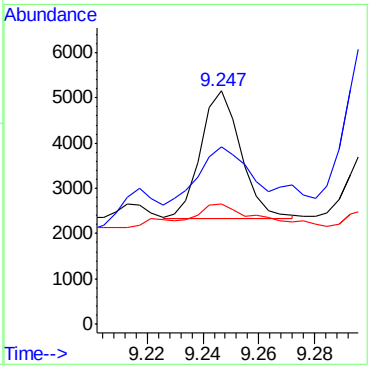


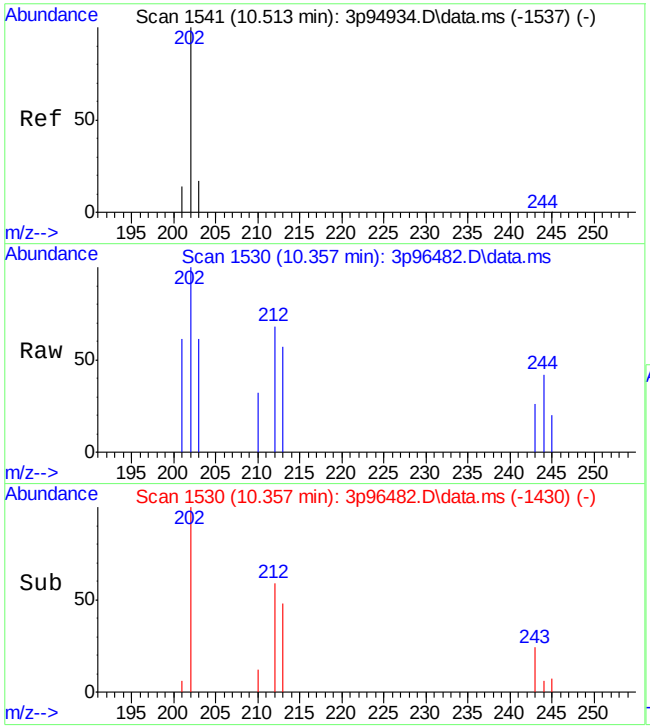


#23
Anthracene
Concen: 32.52 ppb m
RT: 9.247 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:178 Resp: 2814

Ion	Ratio	Lower	Upper
178	100		
179	76.0	0.0	43.0#
176	51.6	0.0	47.0#

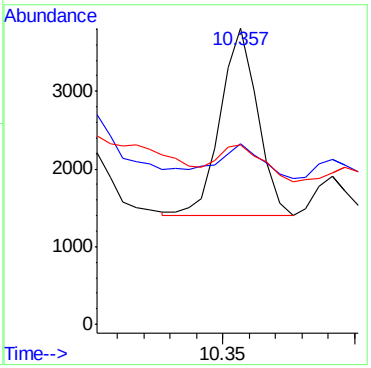


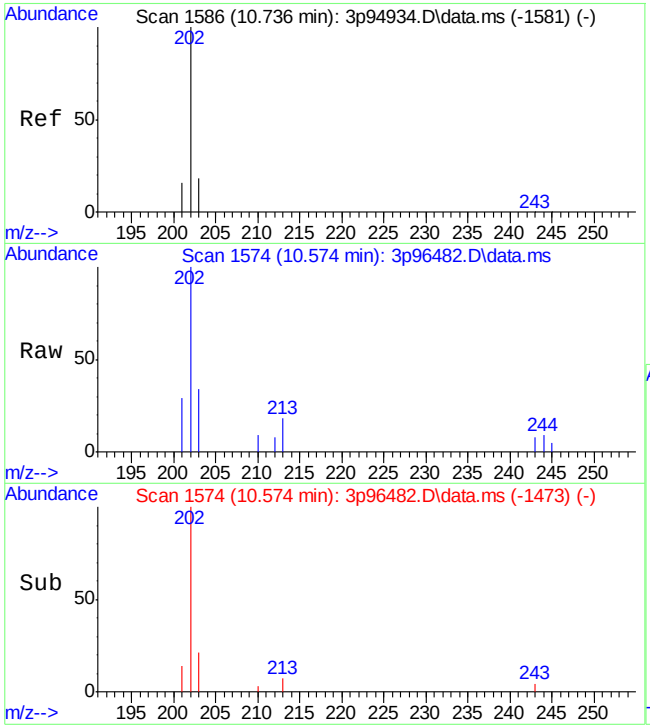


#24
Fluoranthene
Concen: 22.24 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:202 Resp: 2361

Ion	Ratio	Lower	Upper
202	100		
203	16.0	0.0	50.0
201	12.8	0.0	45.9

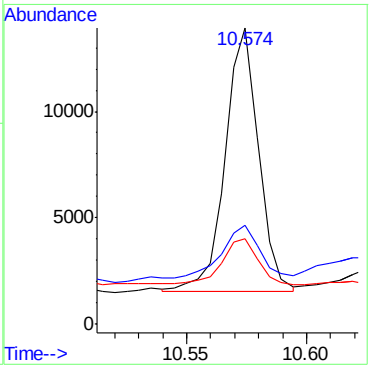


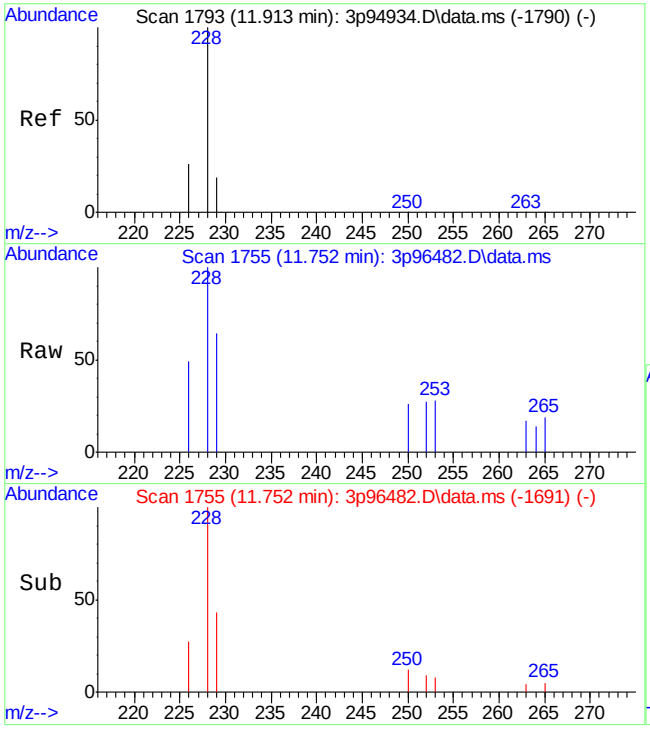


#25
Pyrene
Concen: 108.40 ppb
RT: 10.574 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:202 Resp: 11952

Ion	Ratio	Lower	Upper
202	100		
203	20.0	0.0	48.7
201	17.8	0.0	46.9

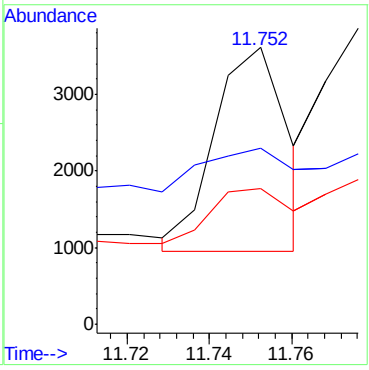


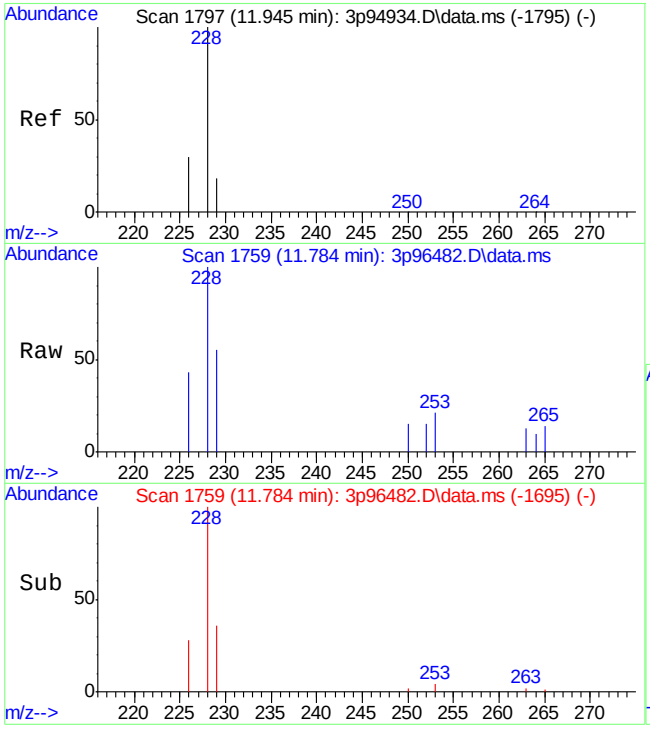


#27
Benzo[a]anthracene
Concen: 41.23 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:228 Resp: 3296

Ion	Ratio	Lower	Upper
228	100		
229	22.4	0.0	49.3
226	27.2	0.0	55.2

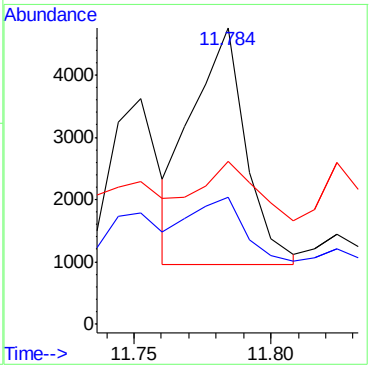


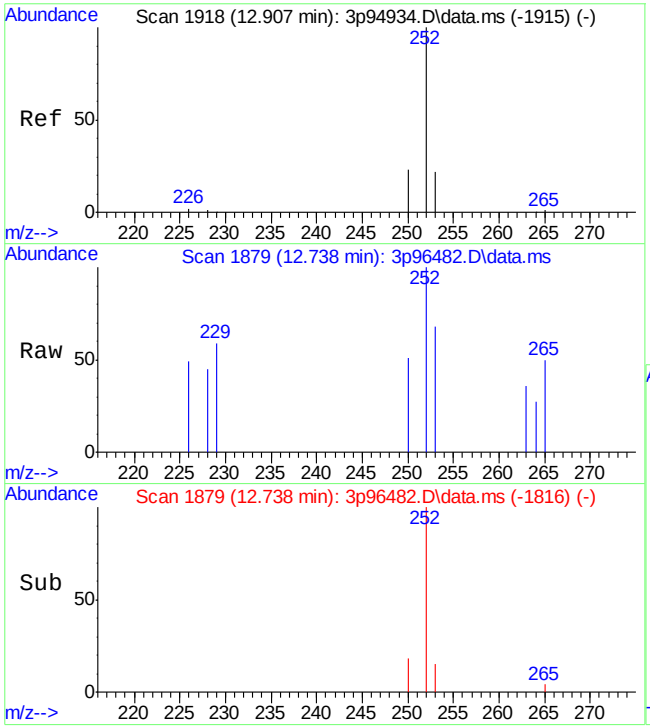


#28
Chrysene
Concen: 50.52 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:228 Resp: 5248

Ion	Ratio	Lower	Upper
228	100		
226	26.2	0.0	55.6
229	25.8	0.0	47.4

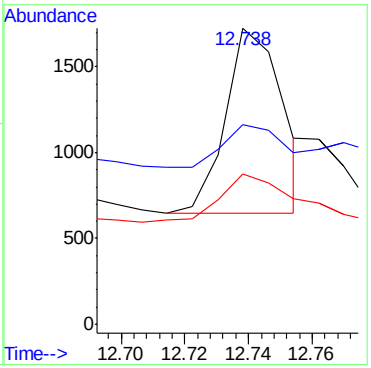


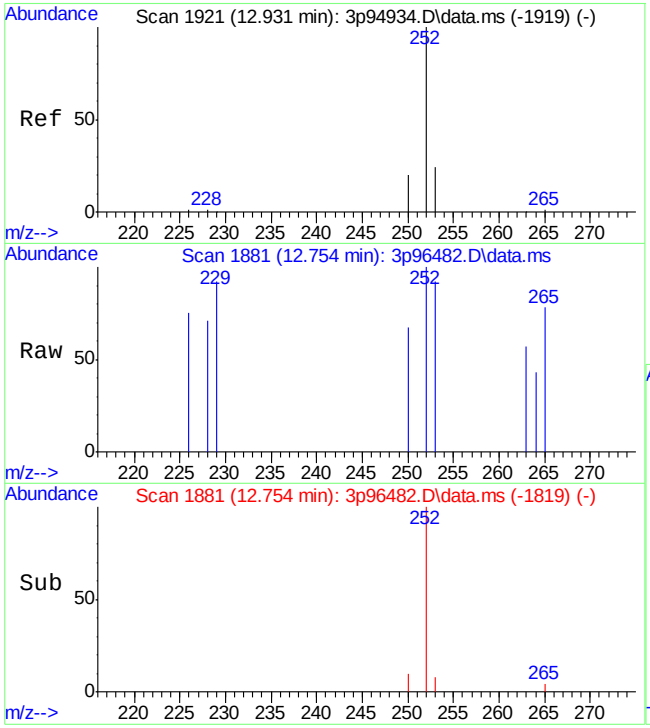


#30
Benzo[b]fluoranthene
Concen: 16.07 ppb m
RT: 12.738 min Scan# 1879
Delta R.T. -0.003 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:252 Resp: 1353

Ion	Ratio	Lower	Upper
252	100		
253	67.6	0.0	51.7#
250	50.6	0.0	48.4#

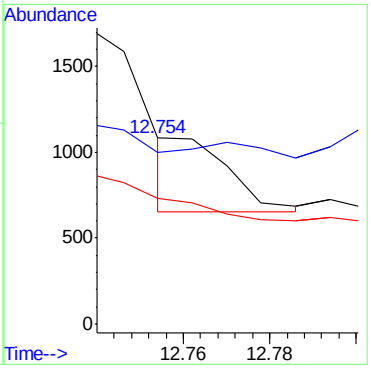


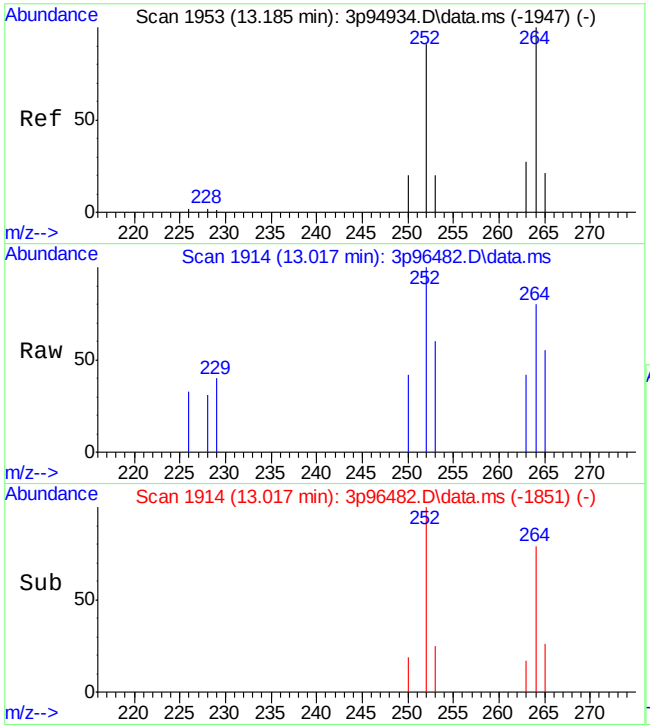


#31
Benzo[k]fluoranthene
Concen: 3.66 ppb m
RT: 12.754 min Scan# 1881
Delta R.T. -0.011 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:252 Resp: 368

Ion	Ratio	Lower	Upper
252	100		
253	92.1	0.0	51.5#
250	67.3	0.0	51.3#

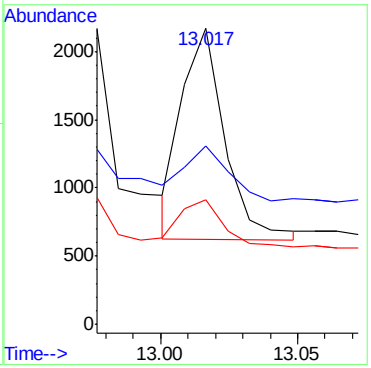


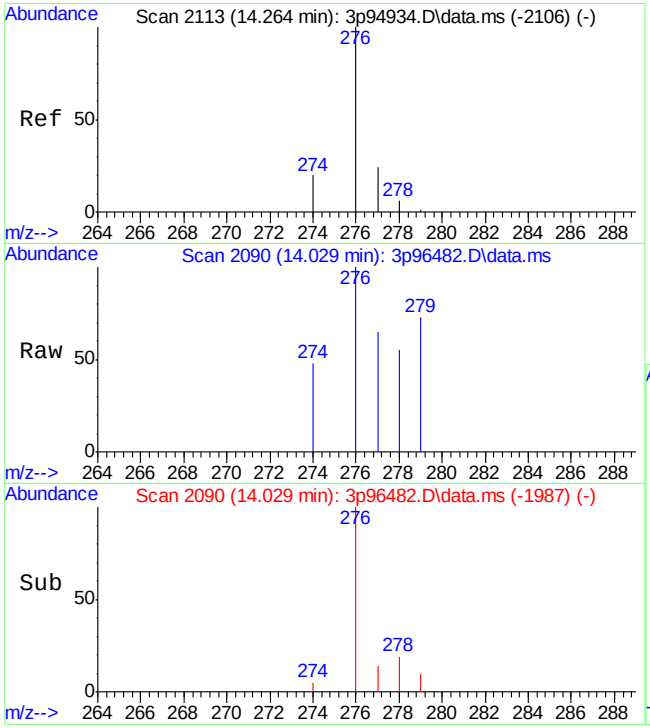


#32
Benzo[a]pyrene
Concen: 18.18 ppb
RT: 13.017 min Scan# 1914
Delta R.T. -0.001 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:252 Resp: 1696

Ion	Ratio	Lower	Upper
252	100		
253	25.0	0.0	52.3
250	23.0	0.0	49.9

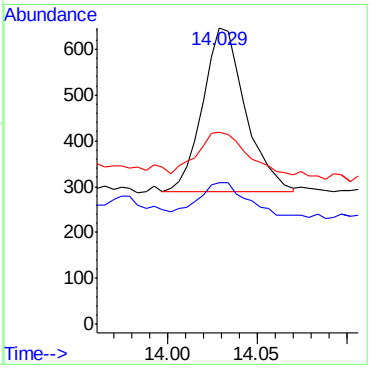


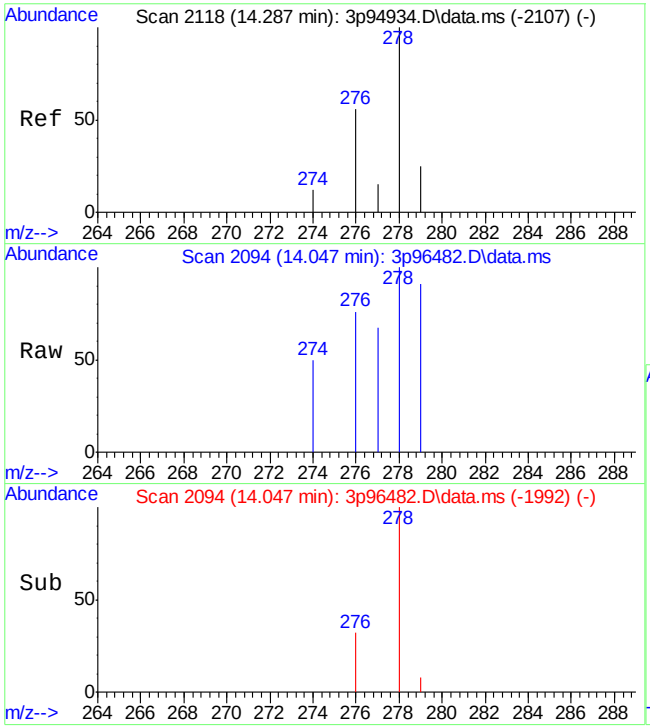


#33
Indeno[1,2,3-cd]pyrene
Concen: 6.64 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:276 Resp: 594

Ion	Ratio	Lower	Upper
276	100		
274	18.4	0.0	45.2
277	23.8	0.0	52.4

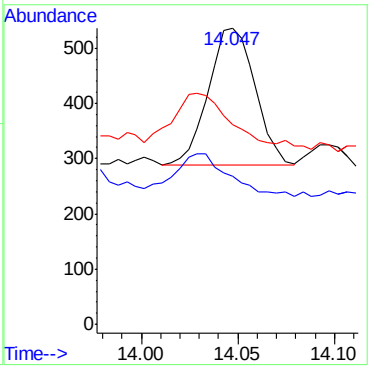


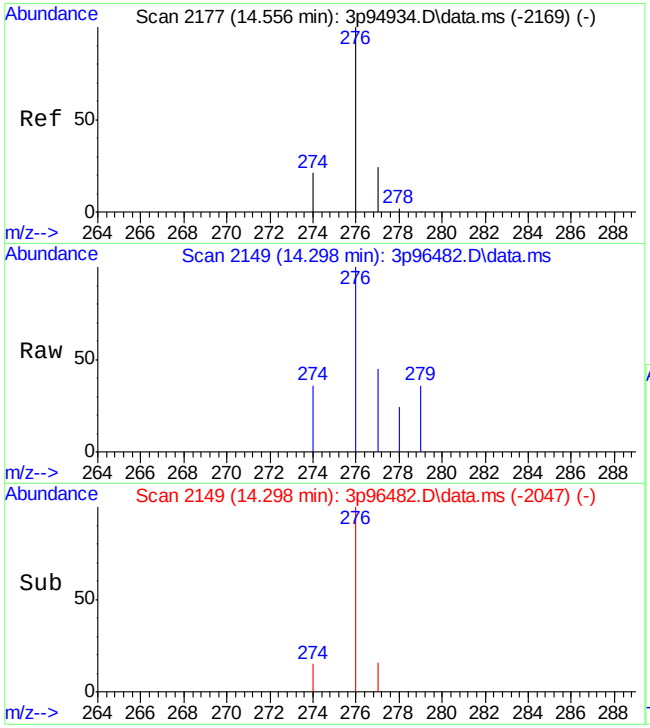


#34
Dibenz[a,h]anthracene
Concen: 5.77 ppb m
RT: 14.047 min Scan# 2094
Delta R.T. -0.033 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:278 Resp: 419

Ion	Ratio	Lower	Upper
278	100		
274	50.2	0.0	40.3#
277	67.4	0.0	40.0#

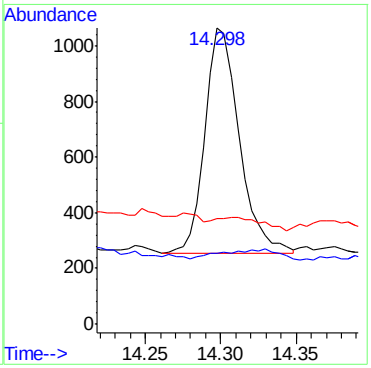




#35
Benzo[g,h,i]perylene
Concen: 15.19 ppb
RT: 14.298 min Scan# 2149
Delta R.T. -0.036 min
Lab File: 3p96482.D
Acq: 20 Apr 2022 7:03 am

Tgt Ion:276 Resp: 1283

Ion	Ratio	Lower	Upper
276	100		
278	2.1	0.0	31.3
279	1.5	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96483.D
Acq On : 20 Apr 2022 7:25 am
Operator : chriss2
Sample : jd43215-9
Misc : op39191,e3p4582,270,,,1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 20 14:50:33 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	31580	800.00 ppb	# 0.00
12) Fluorene-d10	8.230	176	41474	800.00 ppb	0.00
19) Fluoranthene-d10	10.338	212	66942	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.994	264	53751	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.516	112	78717	3309.10 ppb	-0.03
Spiked Amount 50.000			Recovery	= 6618.20%	
4) Phenol-d5	4.462	99	78442	2428.56 ppb	0.00
Spiked Amount 50.000			Recovery	= 4857.12%	
7) Nitrobenzene-d5	5.320	82	136023	5401.43 ppb	0.00
Spiked Amount 50.000			Recovery	= 10802.86%	
13) 2-Fluorobiphenyl	7.079	172	339500	5215.78 ppb	-0.01
Spiked Amount 50.000			Recovery	= 10431.56%	
18) 2,4,6-Tribromophenol	8.495	330	79153	10124.90 ppb	0.00
Spiked Amount 50.000			Recovery	= 20249.80%	
26) Terphenyl-d14	10.754	244	317008	5082.08 ppb	0.00
Spiked Amount 50.000			Recovery	= 10164.16%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	516m	5.36 ppb	
10) 2-Methylnaphthalene	6.716	141	454	8.82 ppb	91
14) Acenaphthylene	7.589	152	270m	2.74 ppb	
15) Acenaphthene	7.758	153	258m	3.86 ppb	
17) Fluorene	8.261	166	430m	6.14 ppb	
22) Phenanthrene	9.197	178	1798	17.97 ppb	98
23) Anthracene	9.247	178	1261	13.03 ppb	83
24) Fluoranthene	10.353	202	2867	24.14 ppb	93
25) Pyrene	10.576	202	3377m	27.38 ppb	
27) Benzo[a]anthracene	11.754	228	1360	15.21 ppb	95
28) Chrysene	11.786	228	1563	13.45 ppb	93
30) Benzo[b]fluoranthene	12.740	252	2135m	21.88 ppb	
31) Benzo[k]fluoranthene	12.764	252	795m	6.82 ppb	
32) Benzo[a]pyrene	13.010	252	1542	14.14 ppb	89
33) Indeno[1,2,3-cd]pyrene	14.032	276	1109	10.69 ppb	94
34) Dibenz[a,h]anthracene	14.050	278	262m	3.11 ppb	
35) Benzo[g,h,i]perylene	14.301	276	1144	11.69 ppb	97

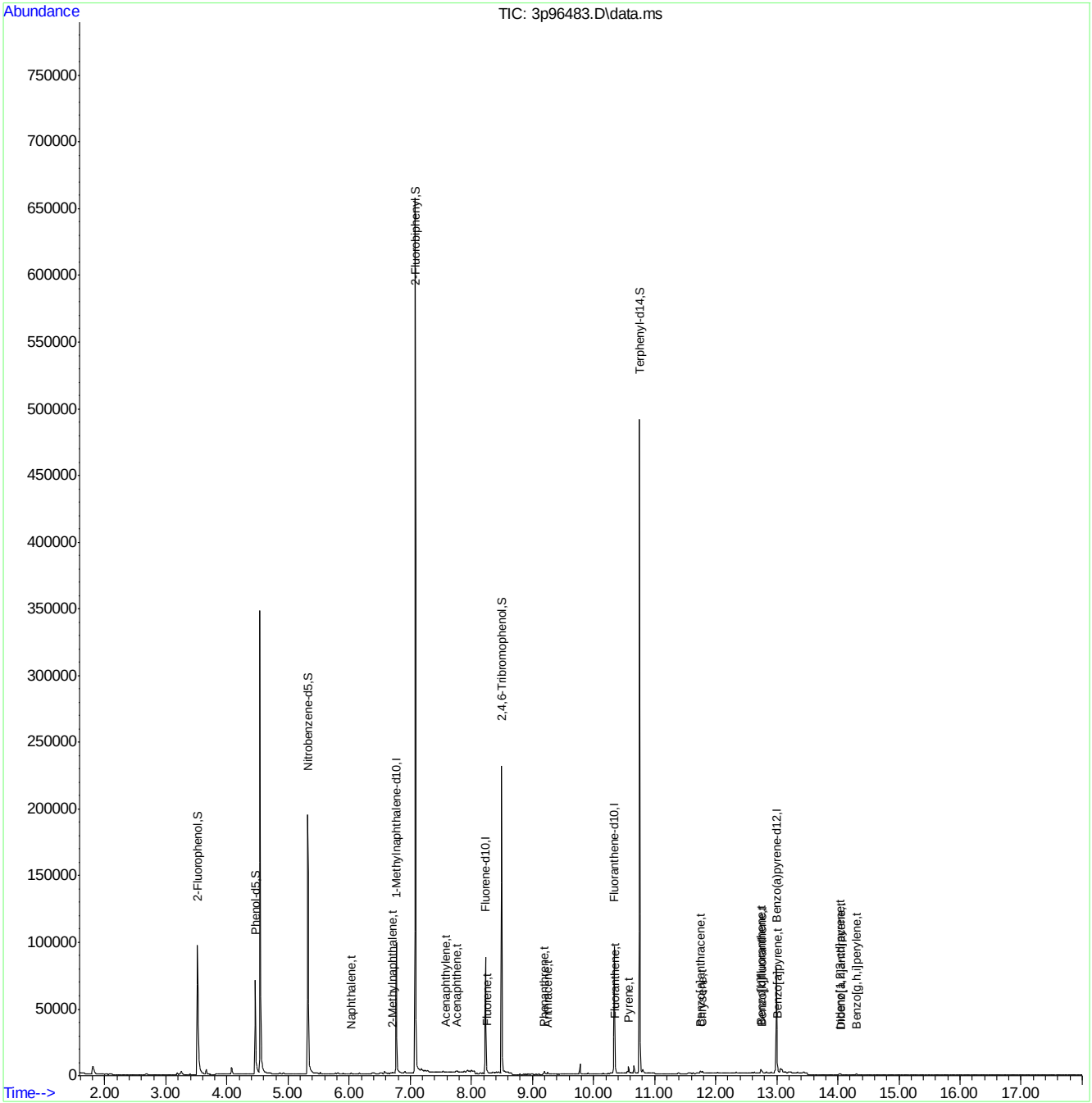
(#) = qualifier out of range (m) = manual integration (+) = signals summed

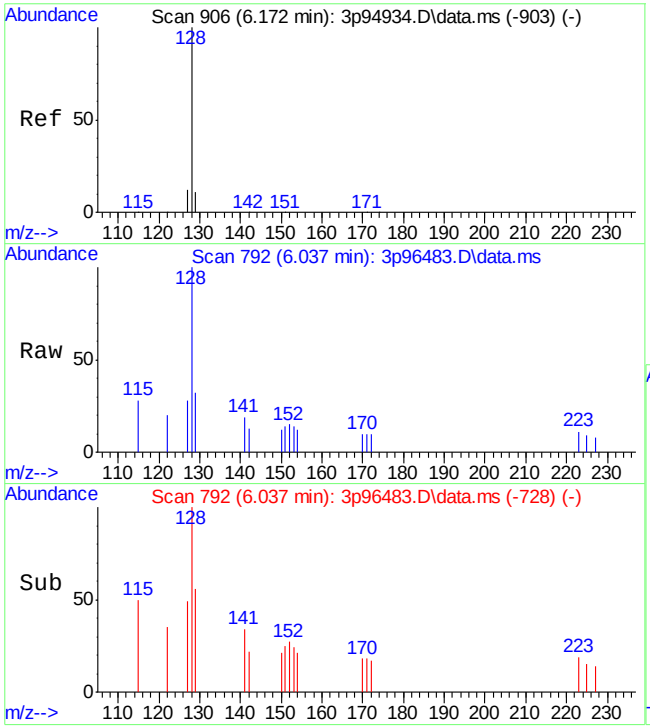
9.1.14

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96483.D
Acq On : 20 Apr 2022 7:25 am
Operator : chriss2
Sample : jd43215-9
Misc : op39191,e3p4582,270,,,1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 20 14:50:33 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

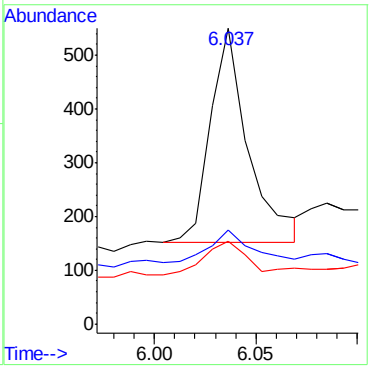


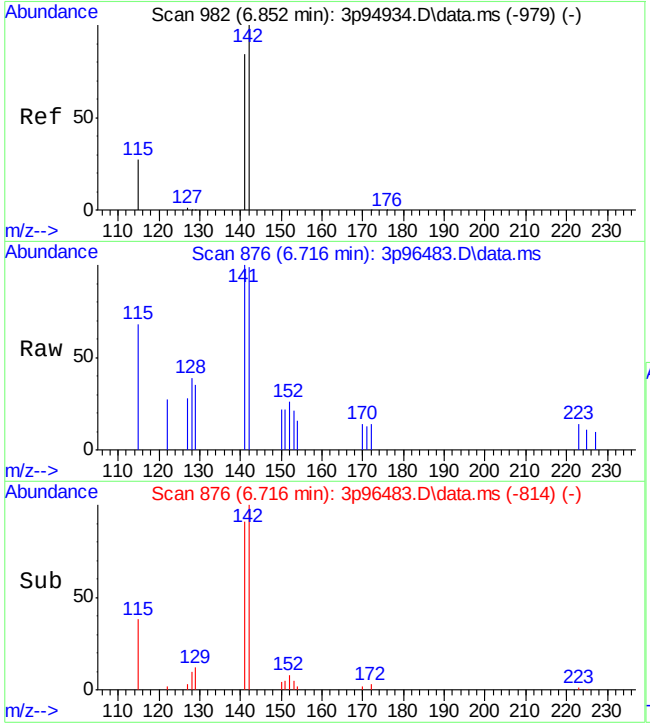


#8
Naphthalene
Concen: 5.36 ppb m
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:128 Resp: 516

Ion	Ratio	Lower	Upper
128	100		
129	31.6	0.0	41.2
127	27.8	0.0	41.7

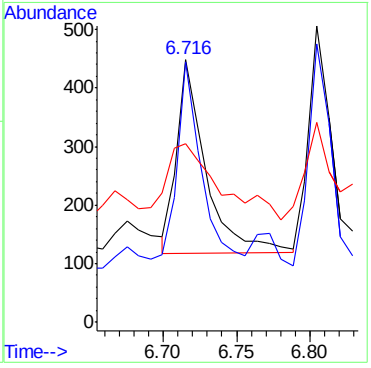


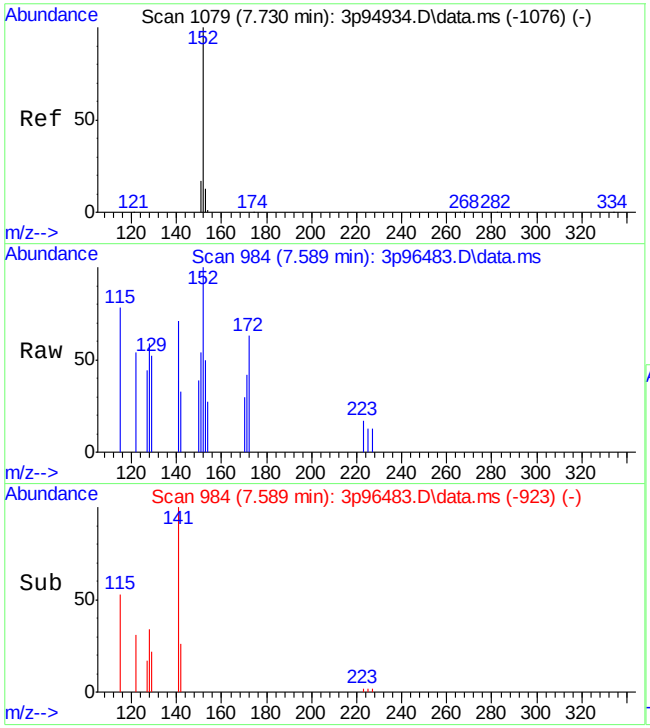


#10
2-Methylnaphthalene
Concen: 8.82 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:141 Resp: 454

Ion	Ratio	Lower	Upper
141	100		
142	107.6	88.8	148.8
115	30.3	1.9	61.9

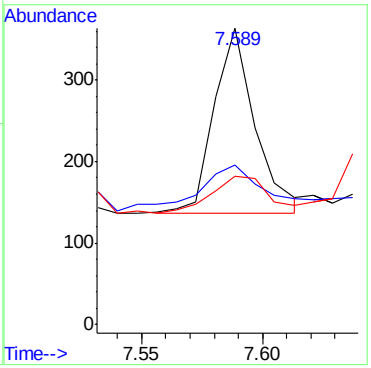


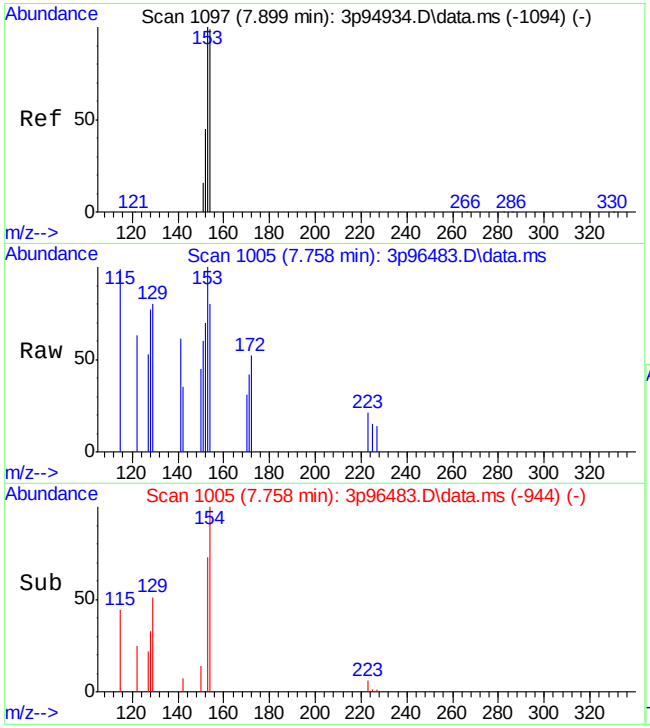


#14
Acenaphthylene
Concen: 2.74 ppb m
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:152 Resp: 270

Ion	Ratio	Lower	Upper
152	100		
151	53.8	0.0	47.3#
153	50.0	0.0	43.3#

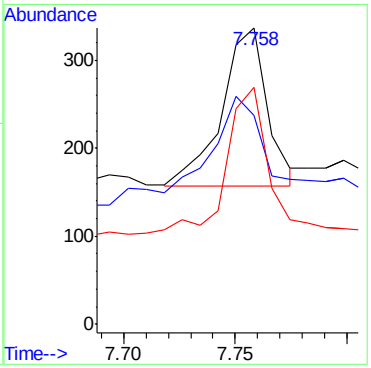


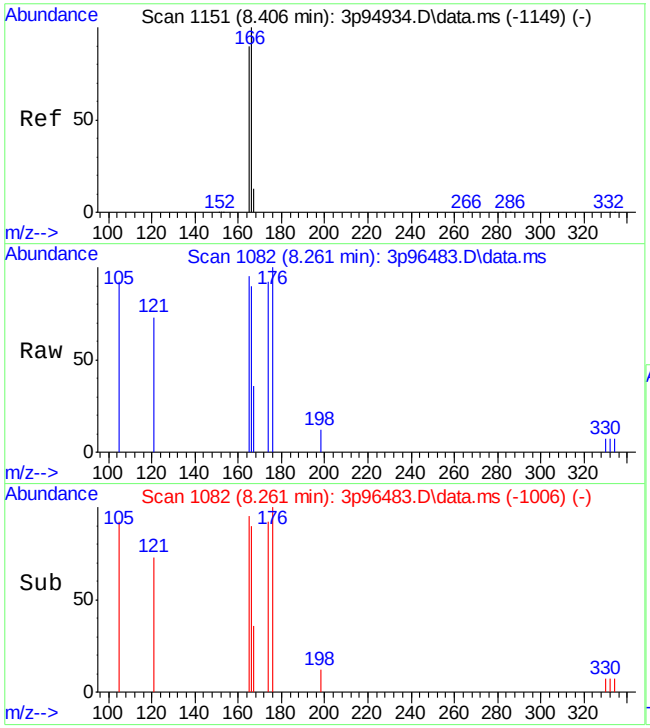


#15
Acenaphthene
Concen: 3.86 ppb m
RT: 7.758 min Scan# 1005
Delta R.T. -0.008 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:153 Resp: 258

Ion	Ratio	Lower	Upper
153	100		
152	70.3	16.5	76.5
154	79.8	73.6	133.6

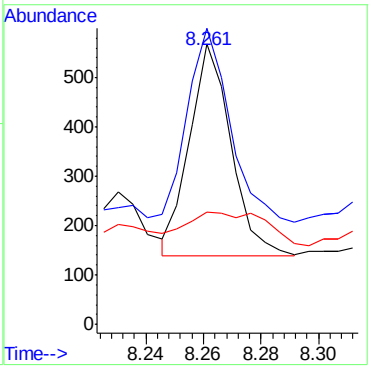


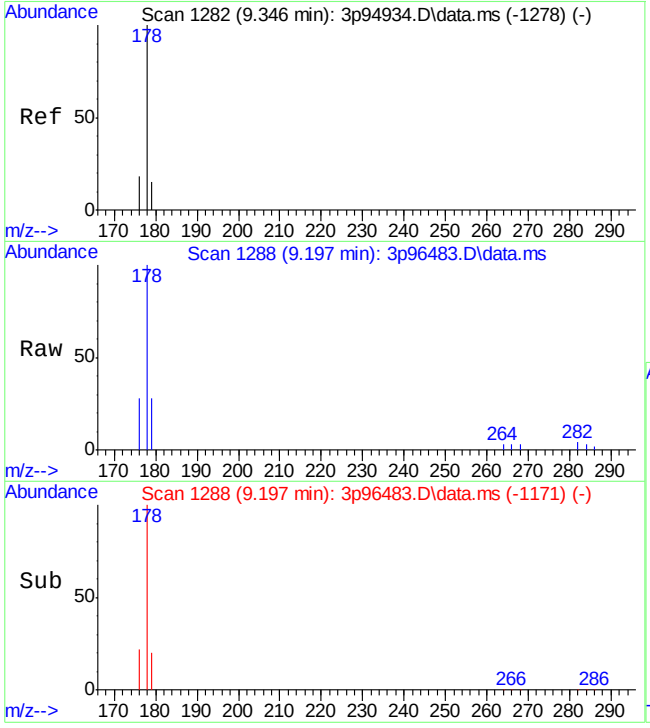


#17
Fluorene
Concen: 6.14 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:166 Resp: 430

Ion	Ratio	Lower	Upper
166	100		
165	105.6	57.3	117.3
167	40.1	0.0	46.0

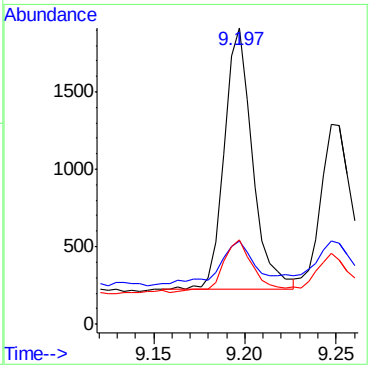


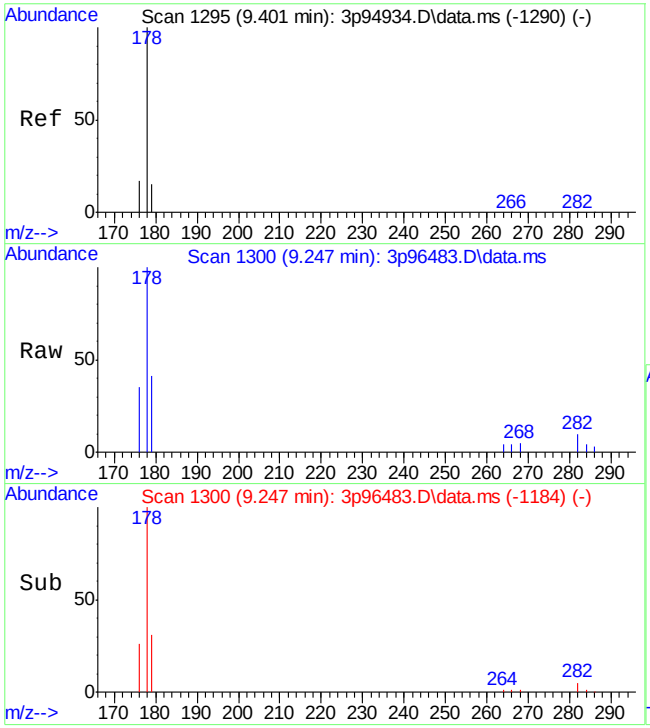


#22
Phenanthrene
Concen: 17.97 ppb
RT: 9.197 min Scan# 1288
Delta R.T. -0.007 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:178 Resp: 1798

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	45.1
176	19.0	0.0	47.5

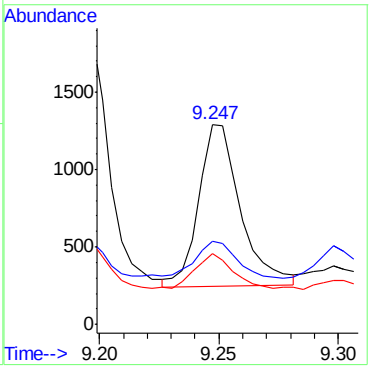


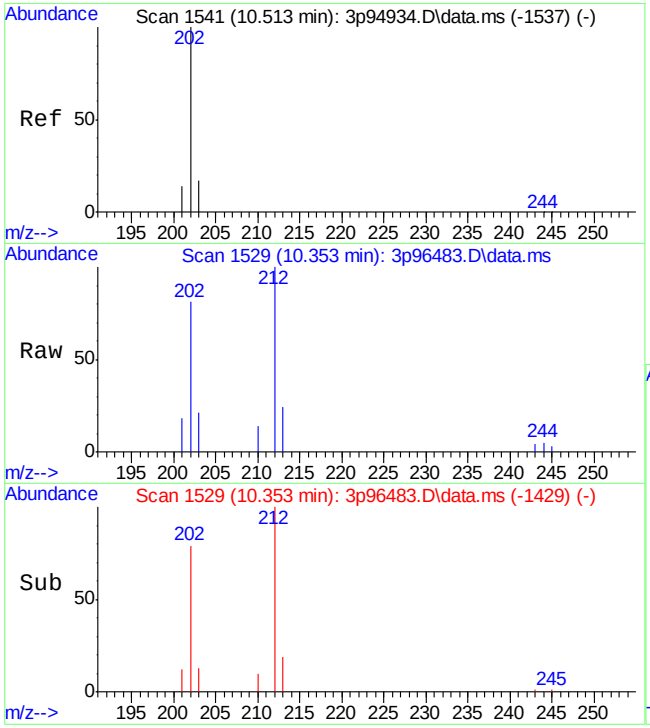


#23
Anthracene
Concen: 13.03 ppb
RT: 9.247 min Scan# 1300
Delta R.T. -0.011 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:178 Resp: 1261

Ion	Ratio	Lower	Upper
178	100		
179	22.8	0.0	43.0
176	22.0	0.0	47.0

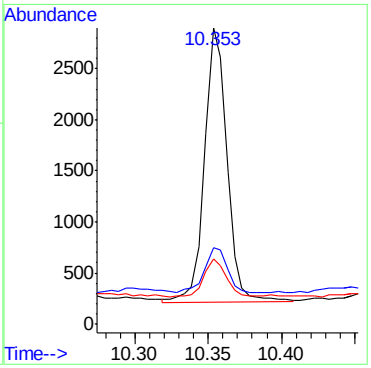


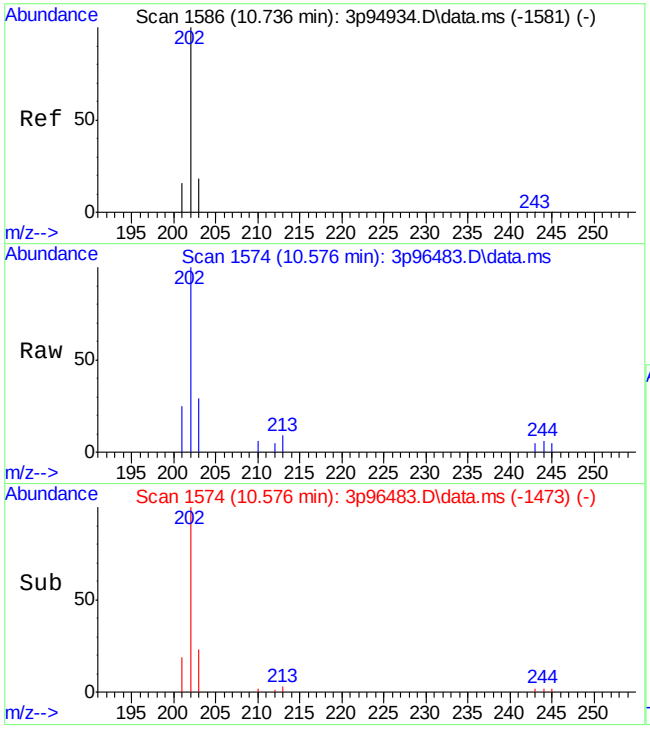


#24
Fluoranthene
Concen: 24.14 ppb
RT: 10.353 min Scan# 1529
Delta R.T. -0.007 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:202 Resp: 2867

Ion	Ratio	Lower	Upper
202	100		
203	16.0	0.0	50.0
201	13.4	0.0	45.9

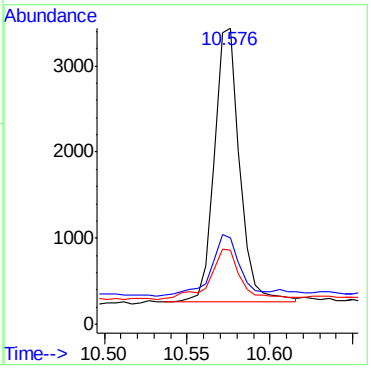


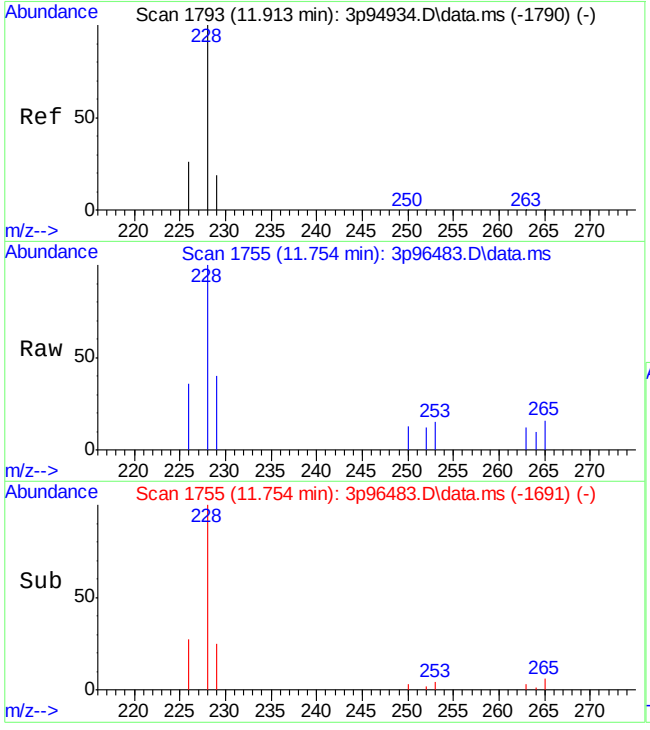


#25
Pyrene
Concen: 27.38 ppb m
RT: 10.576 min Scan# 1574
Delta R.T. -0.001 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:202 Resp: 3377

Ion	Ratio	Lower	Upper
202	100		
203	29.3	0.0	48.7
201	24.9	0.0	46.9

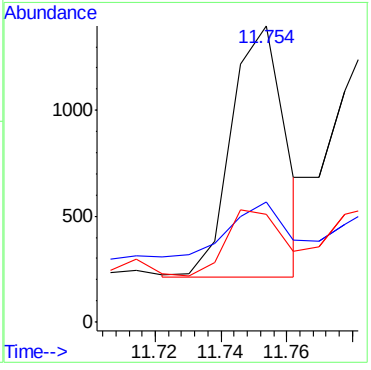


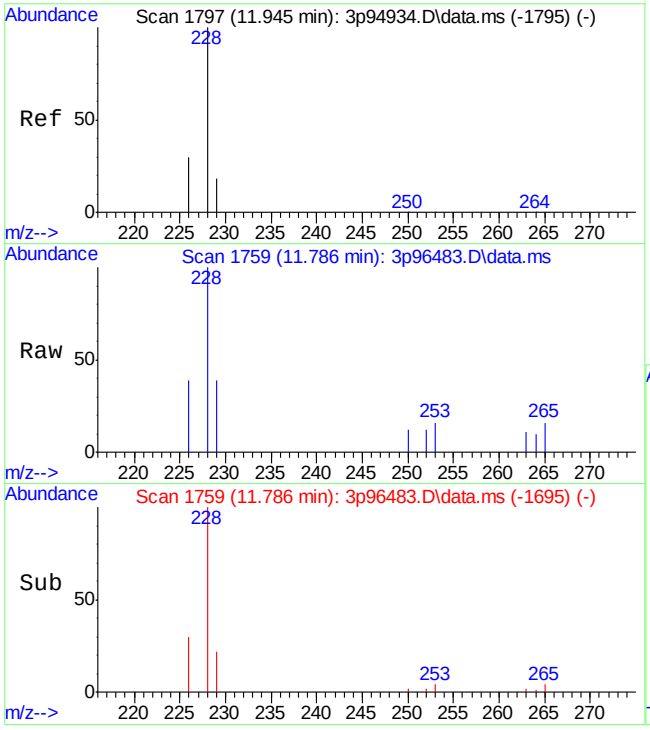


#27
Benzo[a]anthracene
Concen: 15.21 ppb
RT: 11.754 min Scan# 1755
Delta R.T. 0.007 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:228 Resp: 1360

Ion	Ratio	Lower	Upper
228	100		
229	22.8	0.0	49.3
226	24.0	0.0	55.2

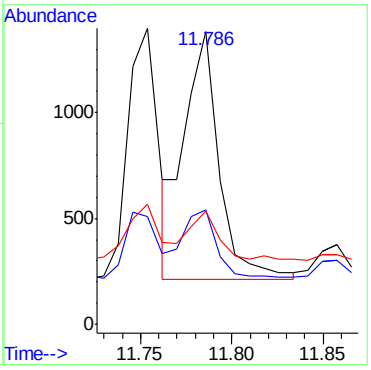


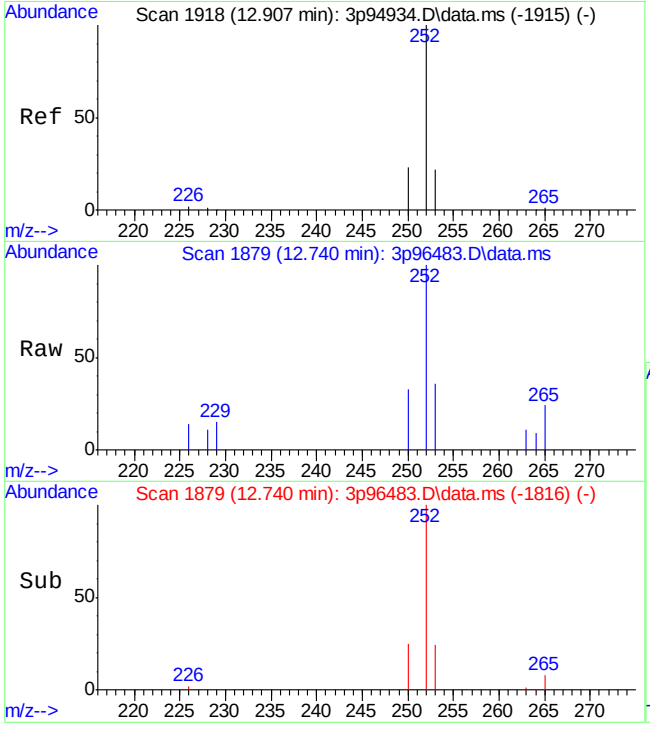


#28
Chrysene
Concen: 13.45 ppb
RT: 11.786 min Scan# 1759
Delta R.T. 0.008 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:228 Resp: 1563

Ion	Ratio	Lower	Upper
228	100		
226	29.0	0.0	55.6
229	20.2	0.0	47.4

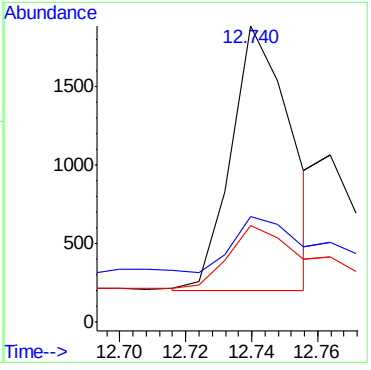


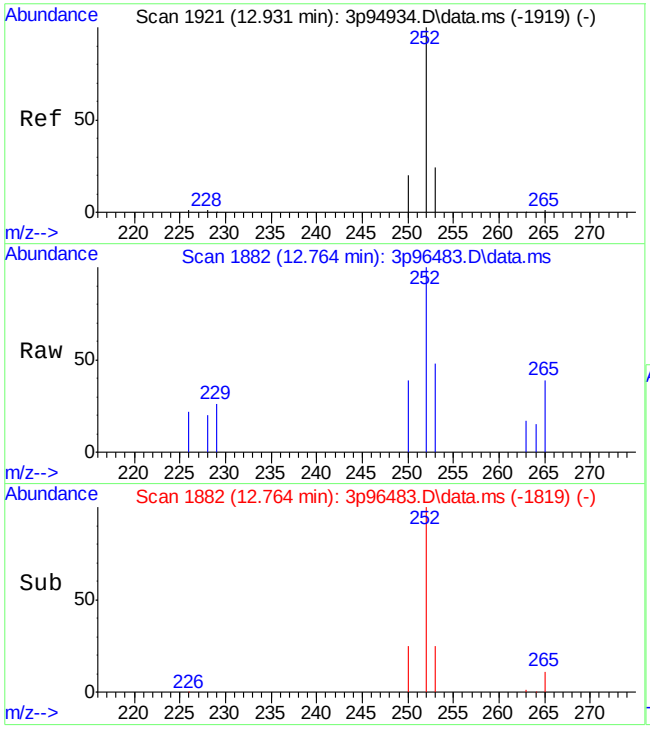


#30
Benzo[b]fluoranthene
Concen: 21.88 ppb m
RT: 12.740 min Scan# 1879
Delta R.T. -0.001 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:252 Resp: 2135

Ion	Ratio	Lower	Upper
252	100		
253	35.5	0.0	51.7
250	32.7	0.0	48.4

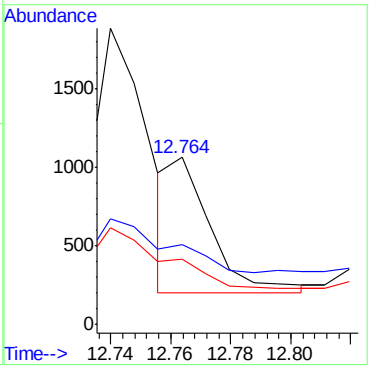


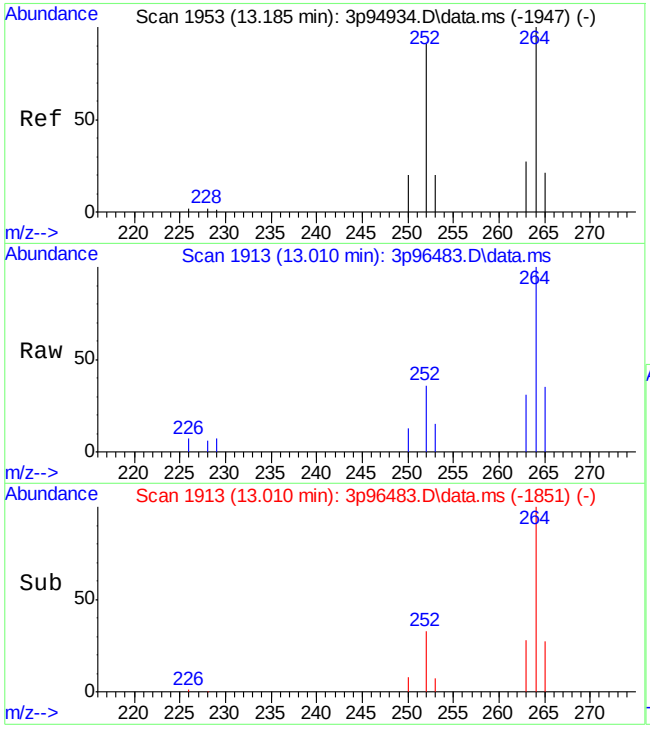


#31
Benzo[k]fluoranthene
Concen: 6.82 ppb m
RT: 12.764 min Scan# 1882
Delta R.T. -0.001 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:252 Resp: 795

Ion	Ratio	Lower	Upper
252	100		
253	47.6	0.0	51.5
250	38.8	0.0	51.3

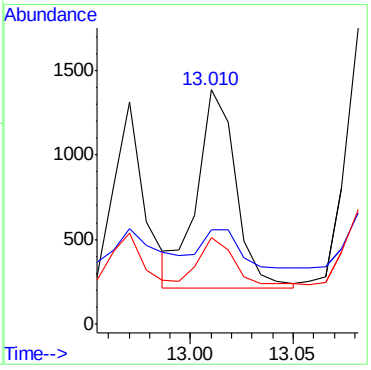


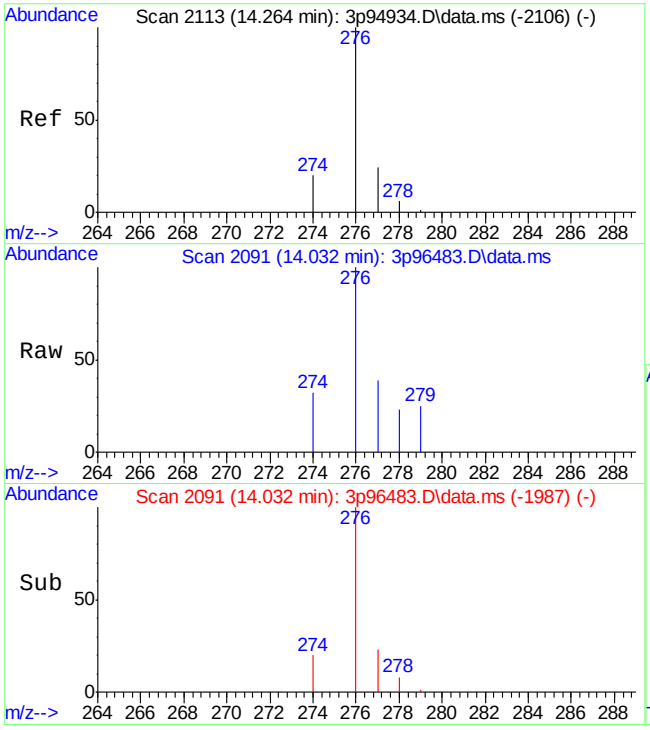


#32
Benzo[a]pyrene
Concen: 14.14 ppb
RT: 13.010 min Scan# 1913
Delta R.T. -0.008 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:252 Resp: 1542

Ion	Ratio	Lower	Upper
252	100		
253	17.2	0.0	52.3
250	24.8	0.0	49.9

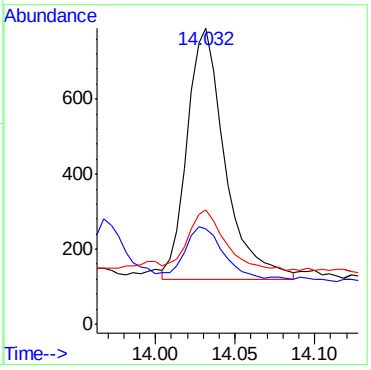


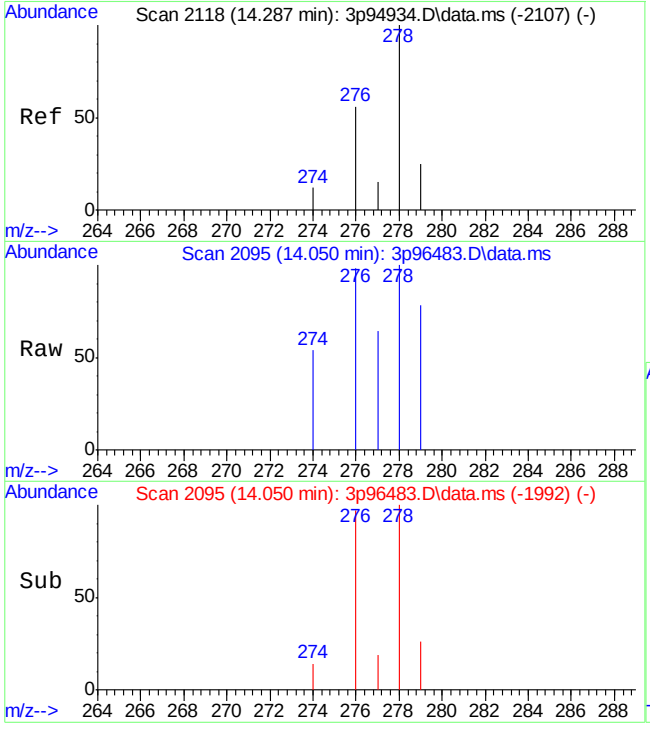


#33
Indeno[1,2,3-cd]pyrene
Concen: 10.69 ppb
RT: 14.032 min Scan# 2091
Delta R.T. -0.026 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:276 Resp: 1109

Ion	Ratio	Lower	Upper
276	100		
274	19.6	0.0	45.2
277	23.7	0.0	52.4

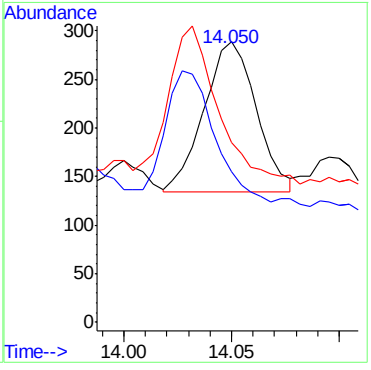


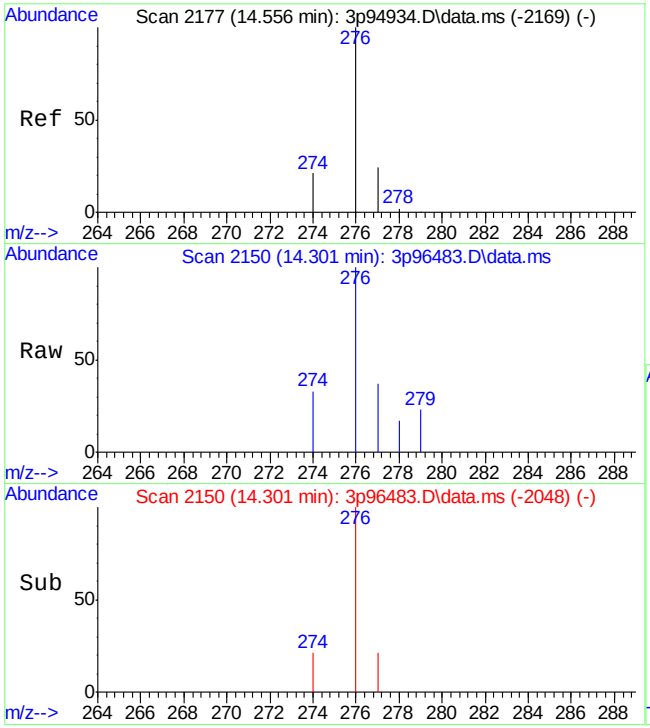


#34
Dibenz[a,h]anthracene
Concen: 3.11 ppb m
RT: 14.050 min Scan# 2095
Delta R.T. -0.030 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:278 Resp: 262

Ion	Ratio	Lower	Upper
278	100		
274	53.6	0.0	40.3#
277	64.0	0.0	40.0#

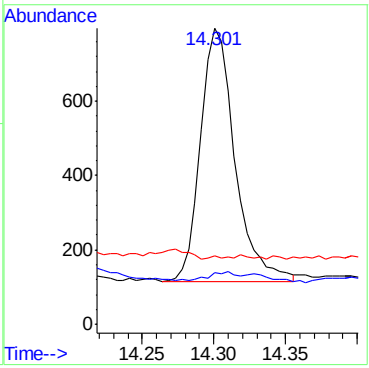




#35
Benzo[g,h,i]perylene
Concen: 11.69 ppb
RT: 14.301 min Scan# 2150
Delta R.T. -0.034 min
Lab File: 3p96483.D
Acq: 20 Apr 2022 7:25 am

Tgt Ion:276 Resp: 1144

Ion	Ratio	Lower	Upper
276	100		
278	2.9	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96484.D
Acq On : 20 Apr 2022 7:48 am
Operator : chriss2
Sample : jd43215-10
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 20 14:51:54 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

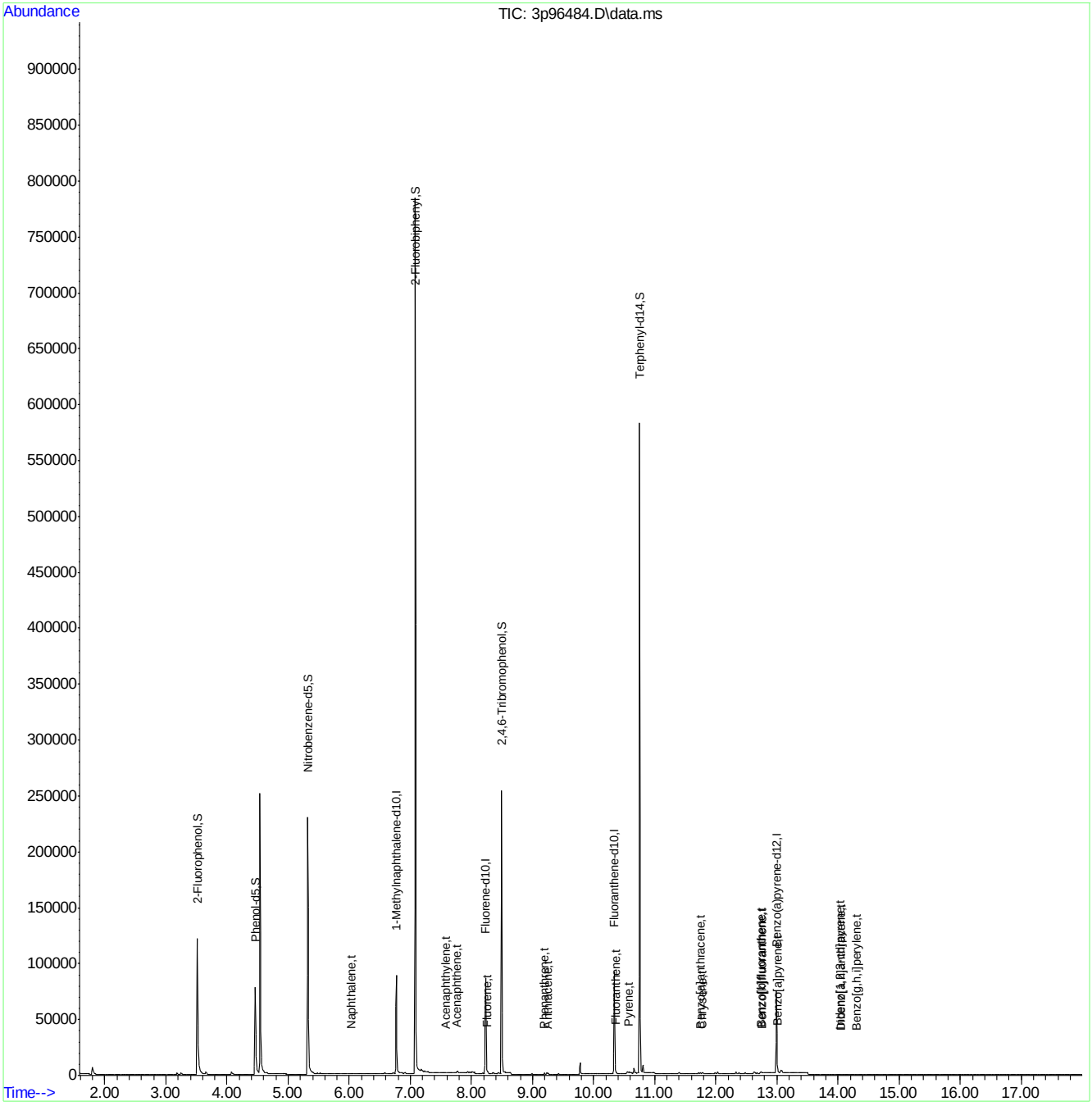
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	29469	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	39586	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	64371	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	48985	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.517	112	92514	4167.69 ppb	-0.03
Spiked Amount 50.000			Recovery	= 8335.38%	
4) Phenol-d5	4.462	99	96039	3186.36 ppb	0.00
Spiked Amount 50.000			Recovery	= 6372.72%	
7) Nitrobenzene-d5	5.320	82	153354	6525.86 ppb	0.00
Spiked Amount 50.000			Recovery	= 13051.72%	
13) 2-Fluorobiphenyl	7.080	172	390151	6279.80 ppb	-0.01
Spiked Amount 50.000			Recovery	= 12559.60%	
18) 2,4,6-Tribromophenol	8.495	330	89650	12014.56 ppb	0.00
Spiked Amount 50.000			Recovery	= 24029.12%	
26) Terphenyl-d14	10.753	244	398327	6640.79 ppb	0.00
Spiked Amount 50.000			Recovery	= 13281.58%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	596	6.63 ppb	92
14) Acenaphthylene	7.589	152	172m	1.83 ppb	
15) Acenaphthene	7.758	153	194m	3.04 ppb	
17) Fluorene	8.261	166	254	3.80 ppb	93
22) Phenanthrene	9.196	178	963m	10.01 ppb	
23) Anthracene	9.251	178	787m	8.46 ppb	
24) Fluoranthene	10.357	202	1160	10.16 ppb	95
25) Pyrene	10.575	202	1279	10.78 ppb	97
27) Benzo[a]anthracene	11.752	228	619	7.20 ppb	98
28) Chrysene	11.784	228	593	5.31 ppb	90
30) Benzo[b]fluoranthene	12.738	252	744	8.37 ppb	93
31) Benzo[k]fluoranthene	12.762	252	366	3.44 ppb	91
32) Benzo[a]pyrene	13.017	252	485	4.53 ppb	96
33) Indeno[1,2,3-cd]pyrene	14.029	276	474	5.01 ppb	95
34) Dibenz[a,h]anthracene	14.052	278	206m	2.69 ppb	
35) Benzo[g,h,i]perylene	14.302	276	481	5.39 ppb	98

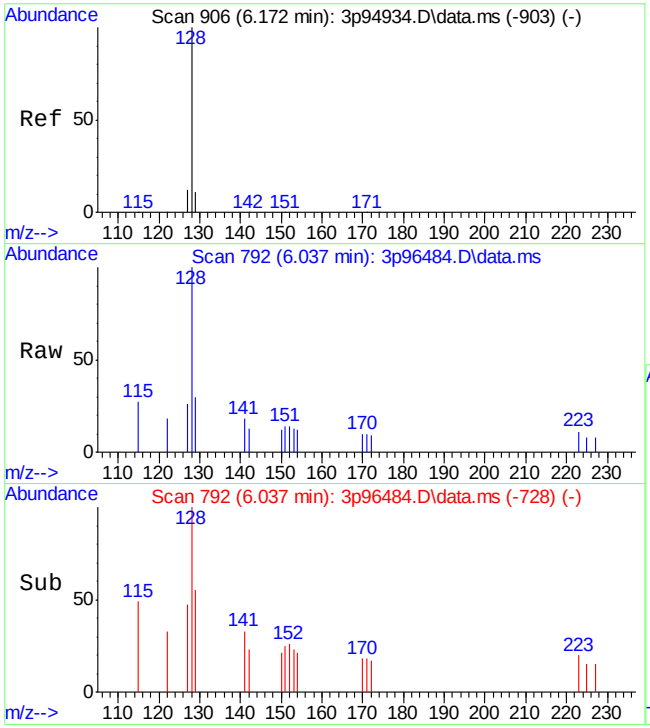
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96484.D
Acq On : 20 Apr 2022 7:48 am
Operator : chriss2
Sample : jd43215-10
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 20 14:51:54 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

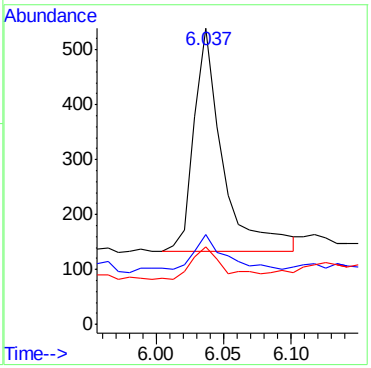


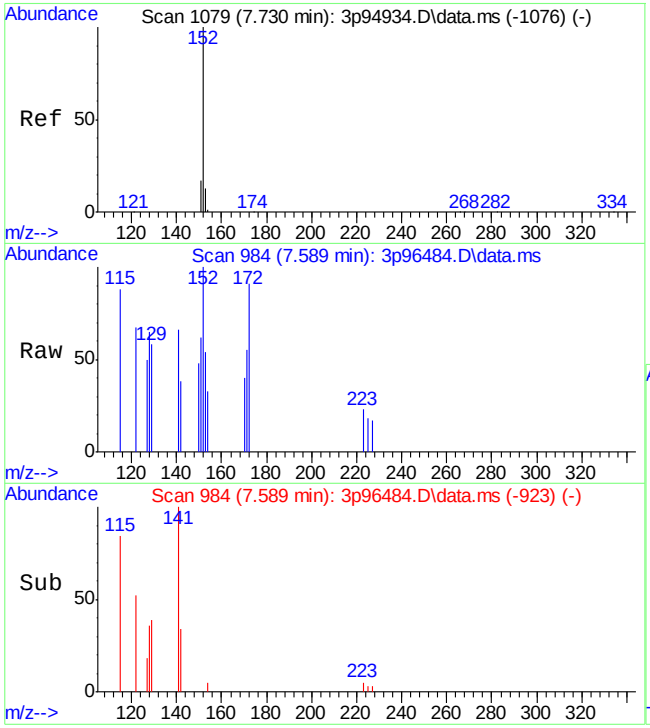


#8
Naphthalene
Concen: 6.63 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:128 Resp: 596

Ion	Ratio	Lower	Upper
128	100		
129	15.4	0.0	41.2
127	13.5	0.0	41.7

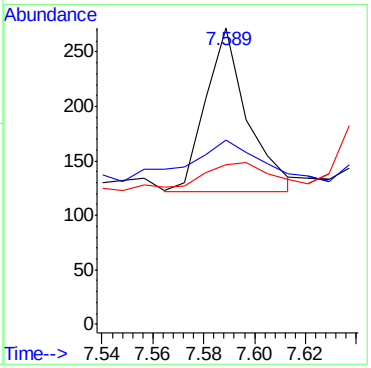


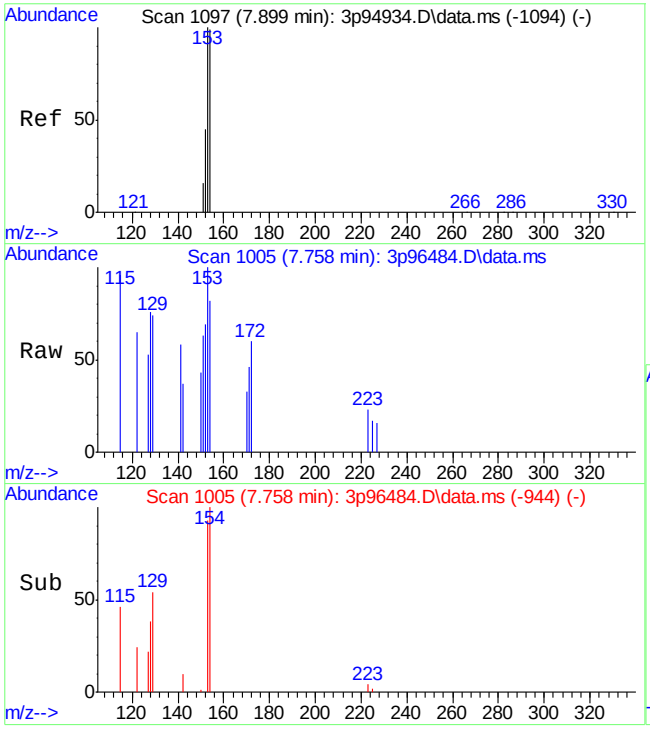


#14
Acenaphthylene
Concen: 1.83 ppb m
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:152 Resp: 172

Ion	Ratio	Lower	Upper
152	100		
151	62.1	0.0	47.3#
153	53.7	0.0	43.3#

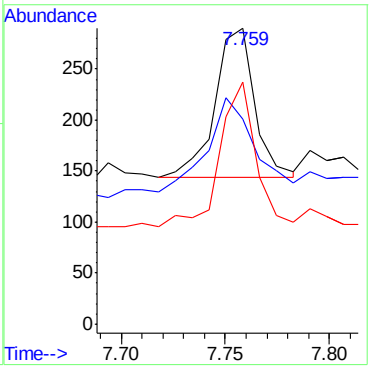


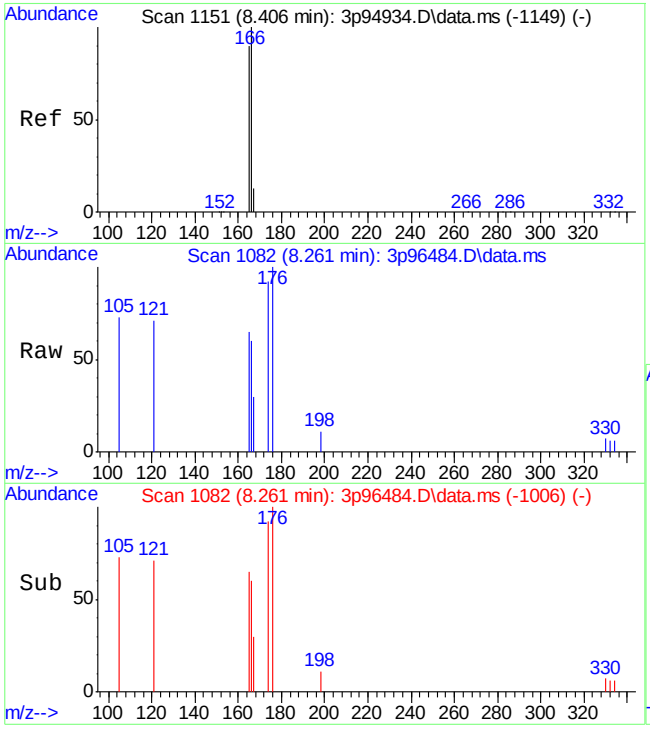


#15
Acenaphthene
Concen: 3.04 ppb m
RT: 7.758 min Scan# 1005
Delta R.T. -0.007 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:153 Resp: 194

Ion	Ratio	Lower	Upper
153	100		
152	69.3	16.5	76.5
154	81.7	73.6	133.6

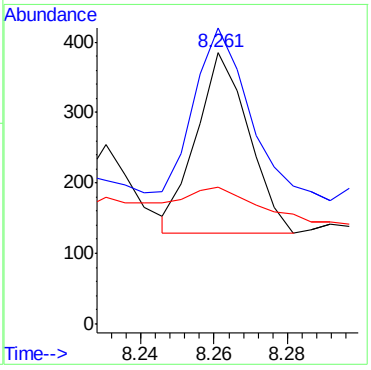


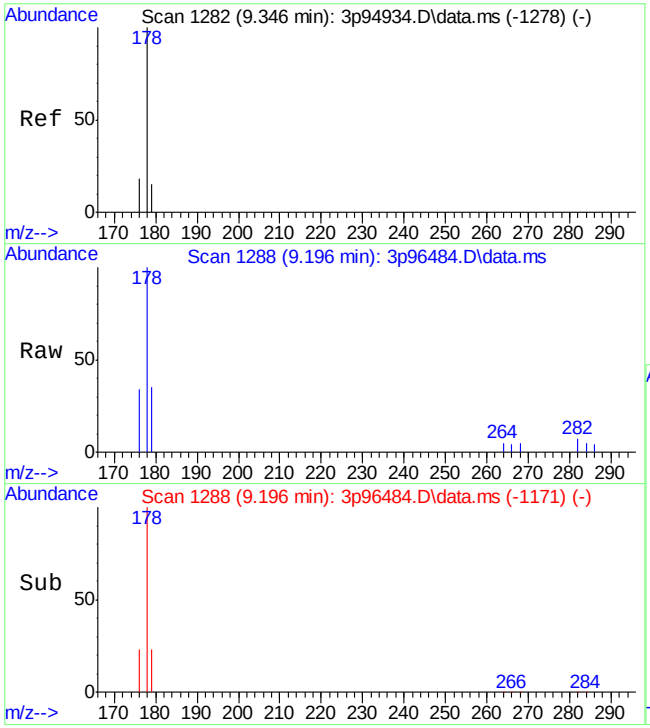


#17
Fluorene
Concen: 3.80 ppb
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:166 Resp: 254

Ion	Ratio	Lower	Upper
166	100		
165	93.3	57.3	117.3
167	12.5	0.0	46.0

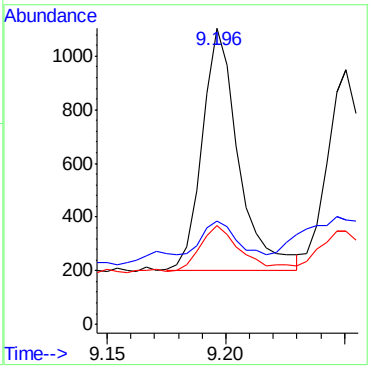


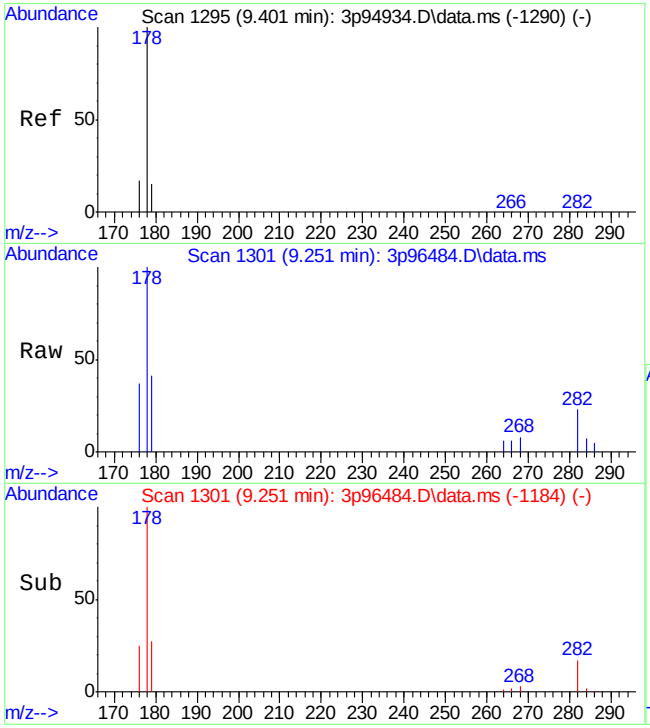


#22
Phenanthrene
Concen: 10.01 ppb m
RT: 9.196 min Scan# 1288
Delta R.T. -0.008 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:178 Resp: 963

Ion	Ratio	Lower	Upper
178	100		
179	34.8	0.0	45.1
176	33.5	0.0	47.5

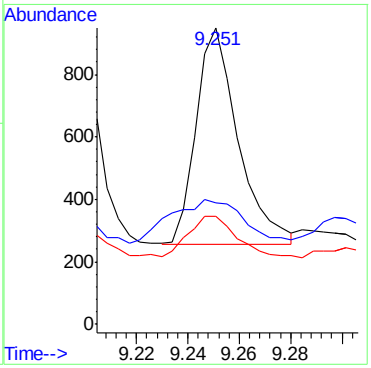


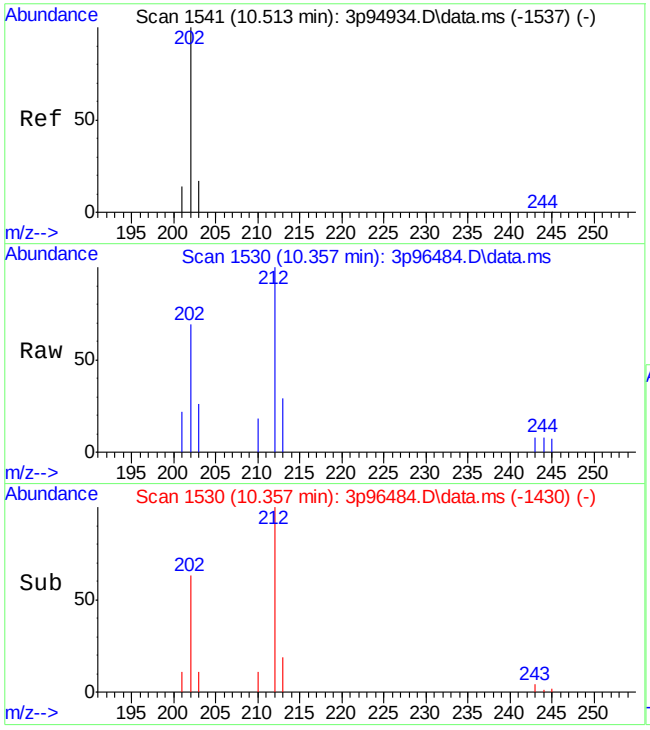


#23
Anthracene
Concen: 8.46 ppb m
RT: 9.251 min Scan# 1301
Delta R.T. -0.008 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:178 Resp: 787

Ion	Ratio	Lower	Upper
178	100		
179	41.0	0.0	43.0
176	36.6	0.0	47.0

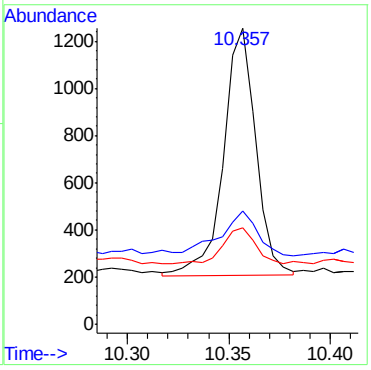


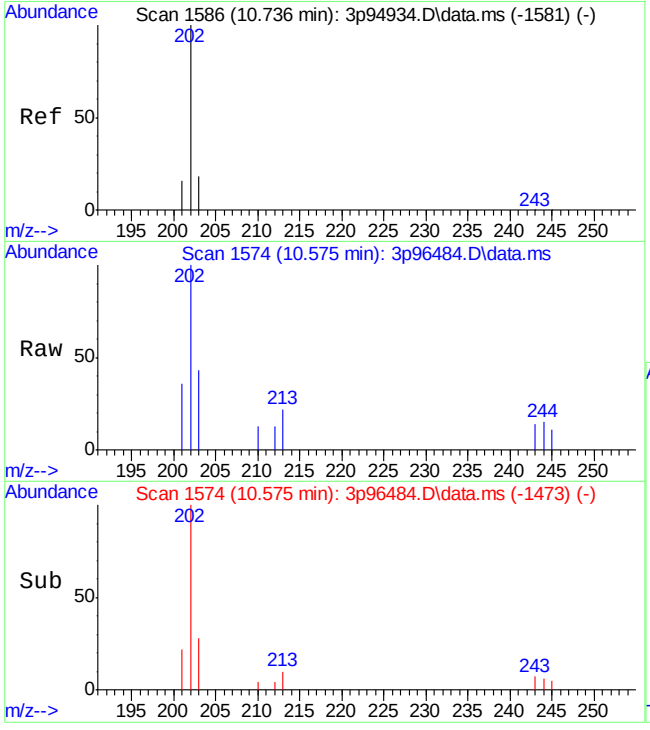


#24
Fluoranthene
Concen: 10.16 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:202 Resp: 1160

Ion	Ratio	Lower	Upper
202	100		
203	17.0	0.0	50.0
201	14.3	0.0	45.9

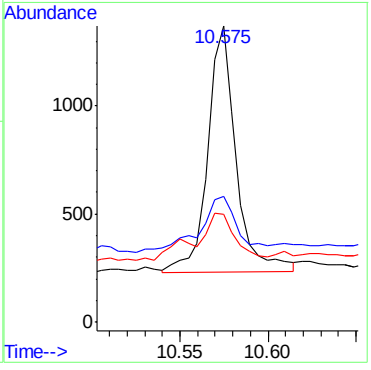


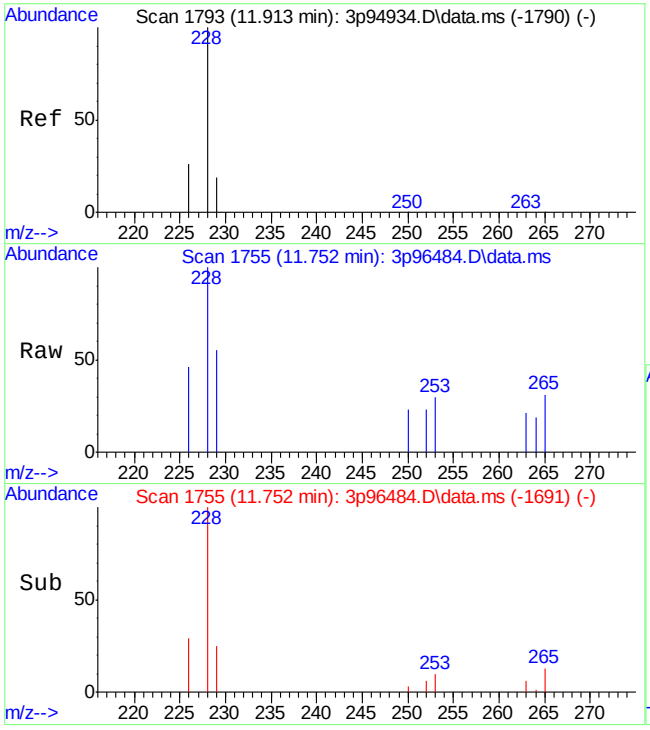


#25
Pyrene
Concen: 10.78 ppb
RT: 10.575 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:202 Resp: 1279

Ion	Ratio	Lower	Upper
202	100		
203	21.1	0.0	48.7
201	16.8	0.0	46.9

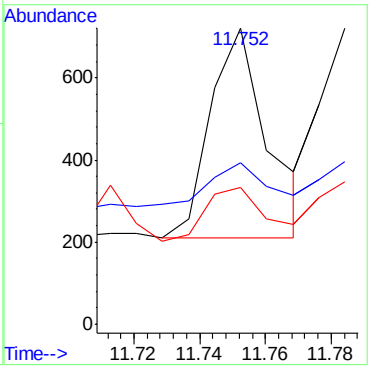


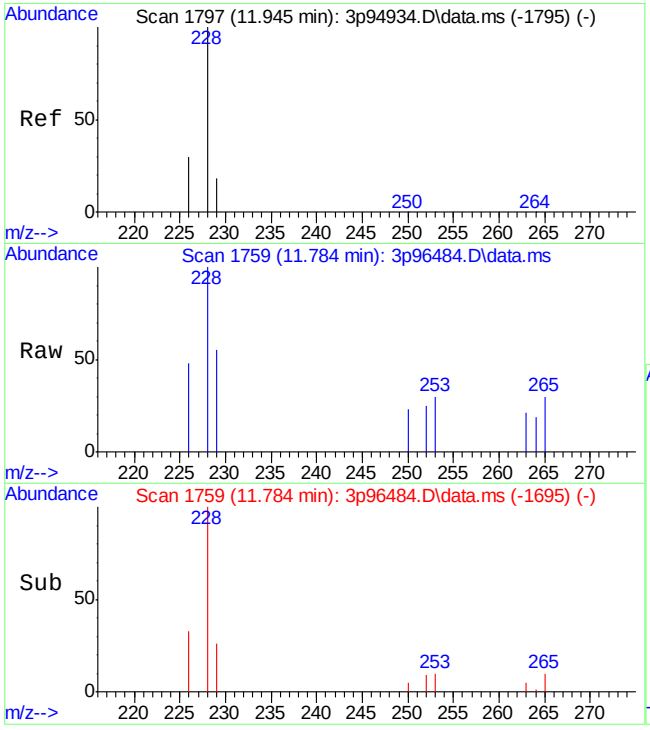


#27
Benzo[a]anthracene
Concen: 7.20 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:228 Resp: 619

Ion	Ratio	Lower	Upper
228	100		
229	21.0	0.0	49.3
226	25.3	0.0	55.2

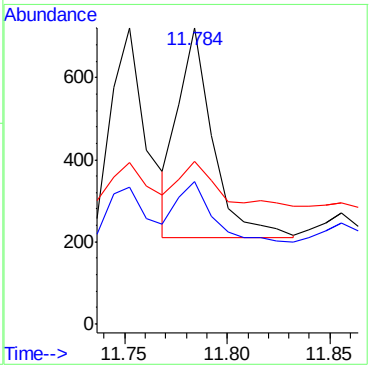


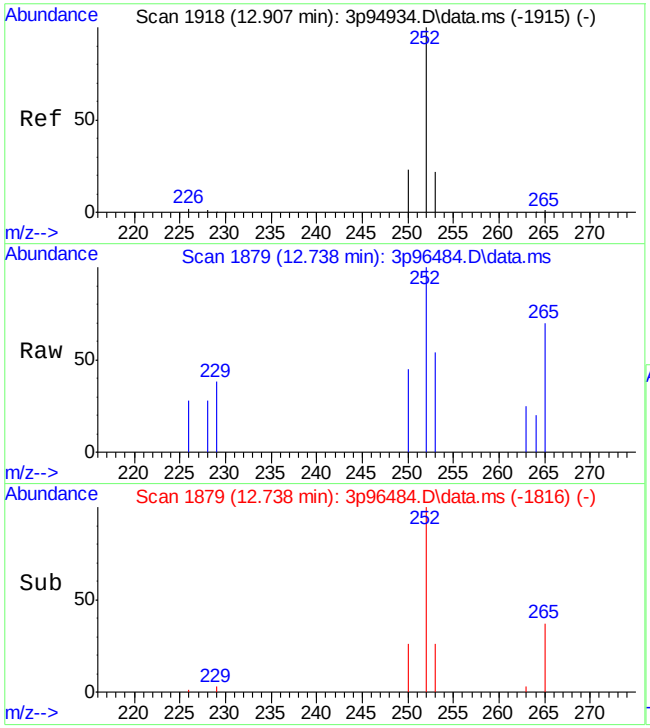


#28
Chrysene
Concen: 5.31 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:228 Resp: 593

Ion	Ratio	Lower	Upper
228	100		
226	29.6	0.0	55.6
229	22.7	0.0	47.4

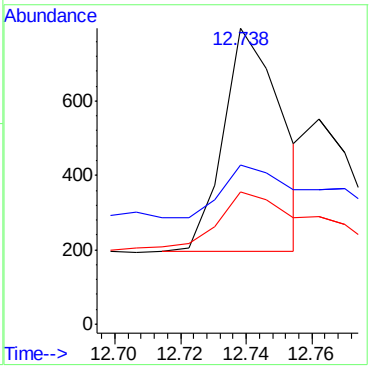


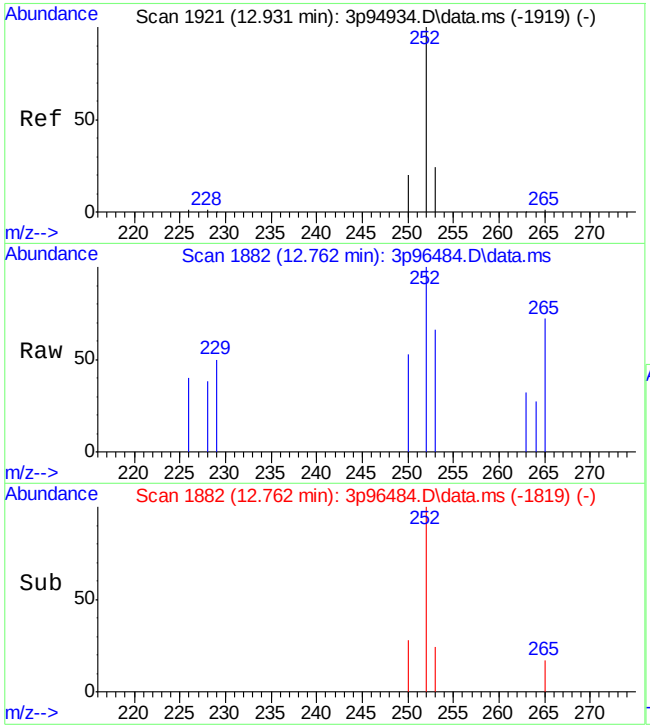


#30
Benzo[b]fluoranthene
Concen: 8.37 ppb
RT: 12.738 min Scan# 1879
Delta R.T. -0.003 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:252 Resp: 744

Ion	Ratio	Lower	Upper
252	100		
253	22.6	0.0	51.7
250	23.9	0.0	48.4

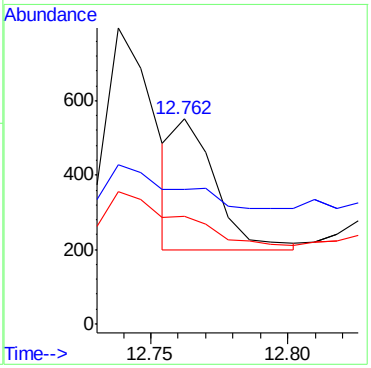


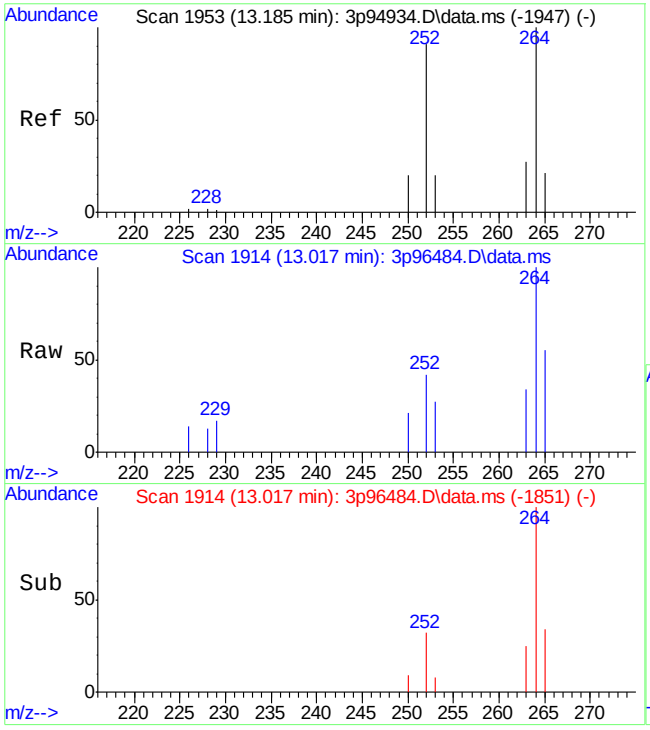


#31
Benzo[k]fluoranthene
Concen: 3.44 ppb
RT: 12.762 min Scan# 1882
Delta R.T. -0.002 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:252 Resp: 366

Ion	Ratio	Lower	Upper
252	100		
253	13.2	0.0	51.5
250	20.7	0.0	51.3

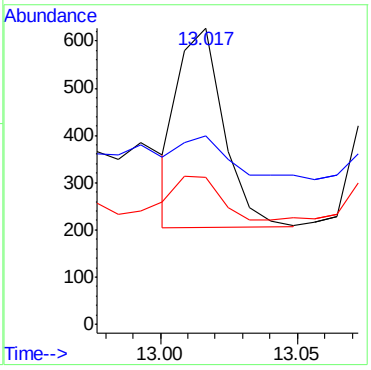


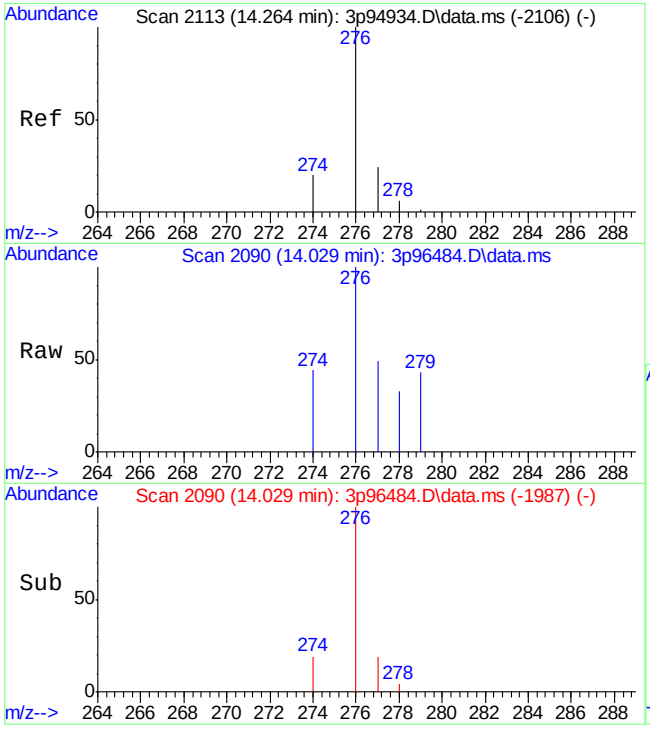


#32
Benzo[a]pyrene
Concen: 4.53 ppb
RT: 13.017 min Scan# 1914
Delta R.T. -0.001 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:252 Resp: 485

Ion	Ratio	Lower	Upper
252	100		
253	19.0	0.0	52.3
250	20.1	0.0	49.9

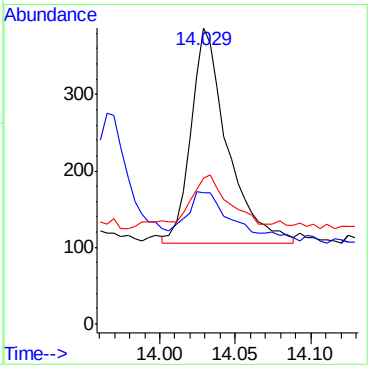


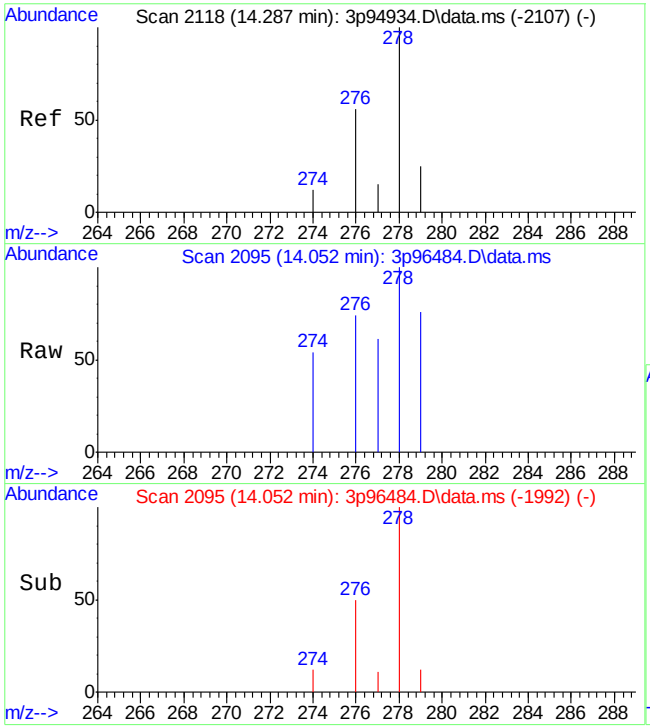


#33
Indeno[1,2,3-cd]pyrene
Concen: 5.01 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:276 Resp: 474

Ion	Ratio	Lower	Upper
276	100		
274	19.7	0.0	45.2
277	21.6	0.0	52.4

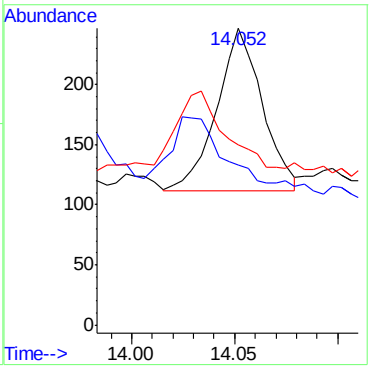


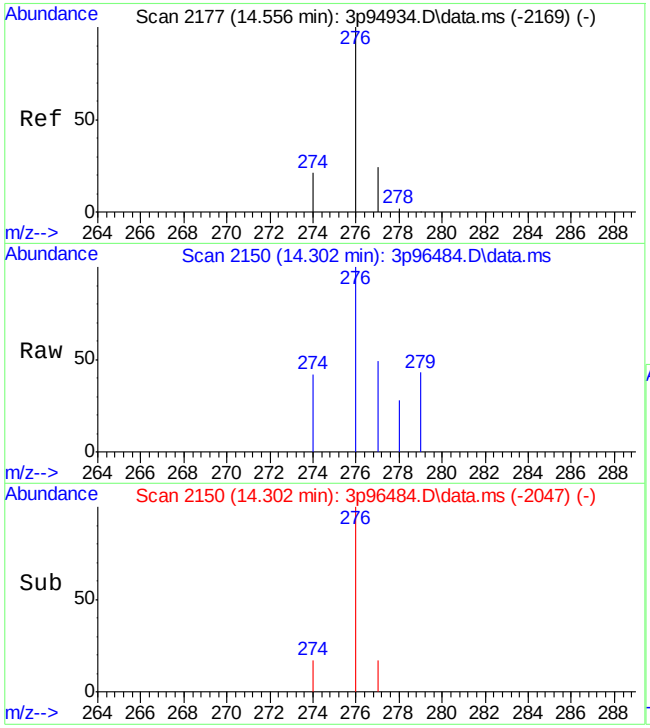


#34
Dibenz[a,h]anthracene
Concen: 2.69 ppb m
RT: 14.052 min Scan# 2095
Delta R.T. -0.028 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:278 Resp: 206

Ion	Ratio	Lower	Upper
278	100		
274	53.8	0.0	40.3#
277	60.7	0.0	40.0#

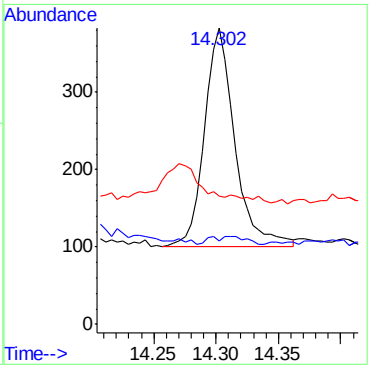




#35
Benzo[g,h,i]perylene
Concen: 5.39 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96484.D
Acq: 20 Apr 2022 7:48 am

Tgt Ion:276 Resp: 481

Ion	Ratio	Lower	Upper
276	100		
278	0.4	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96485.D
Acq On : 20 Apr 2022 8:10 am
Operator : chriss2
Sample : jd43215-11
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Apr 20 14:53:22 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

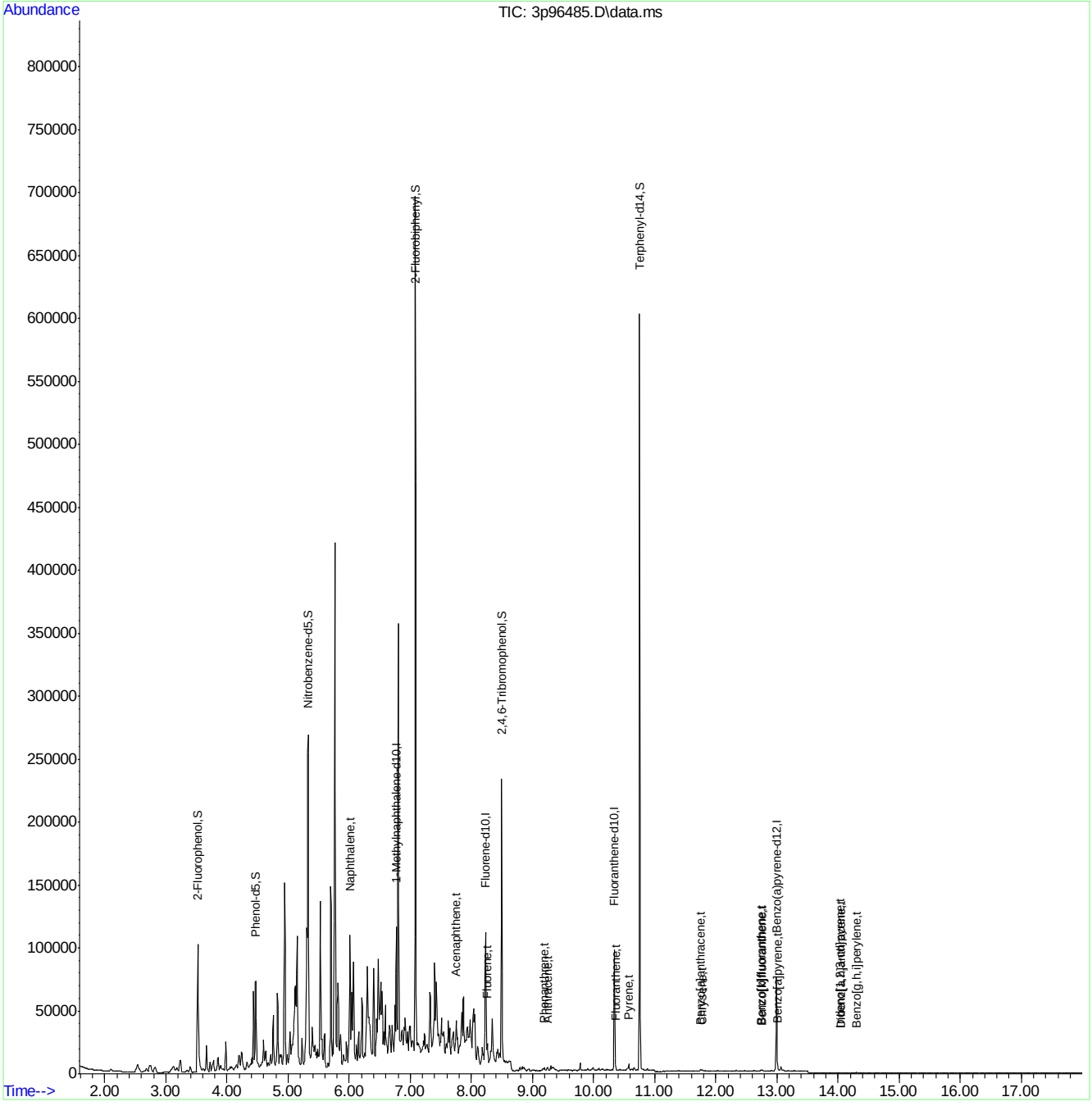
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	30777	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	63014	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	67658	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	52506	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.521	112	86193	3717.91 ppb	-0.02
Spiked Amount 50.000			Recovery	= 7435.82%	
4) Phenol-d5	4.469	99	85190	2706.29 ppb	0.00
Spiked Amount 50.000			Recovery	= 5412.58%	
7) Nitrobenzene-d5	5.320	82	152221	6202.35 ppb	0.00
Spiked Amount 50.000			Recovery	= 12404.70%	
13) 2-Fluorobiphenyl	7.080	172	360028	3640.44 ppb	-0.01
Spiked Amount 50.000			Recovery	= 7280.88%	
18) 2,4,6-Tribromophenol	8.495	330	81718	6879.87 ppb	0.00
Spiked Amount 50.000			Recovery	= 13759.74%	
26) Terphenyl-d14	10.753	244	388161	6156.91 ppb	0.00
Spiked Amount 50.000			Recovery	= 12313.82%	
Target Compounds					Qvalue
8) Naphthalene	6.013	128	31736m	337.99 ppb	
15) Acenaphthene	7.750	153	5114m	50.38 ppb	
17) Fluorene	8.261	166	6226m	58.55 ppb	
22) Phenanthrene	9.192	178	1467m	14.51 ppb	
23) Anthracene	9.247	178	1121m	11.46 ppb	
24) Fluoranthene	10.357	202	2087	17.39 ppb	95
25) Pyrene	10.575	202	3740m	30.00 ppb	
27) Benzo[a]anthracene	11.752	228	848	9.38 ppb	84
28) Chrysene	11.784	228	1067	9.09 ppb	75
30) Benzo[b]fluoranthene	12.738	252	762	7.99 ppb	92
31) Benzo[k]fluoranthene	12.762	252	408	3.58 ppb	78
32) Benzo[a]pyrene	13.017	252	529	4.62 ppb	90
33) Indeno[1,2,3-cd]pyrene	14.029	276	361	3.56 ppb	94
34) Dibenz[a,h]anthracene	14.052	278	177	2.15 ppb	87
35) Benzo[g,h,i]perylene	14.302	276	624	6.53 ppb	99

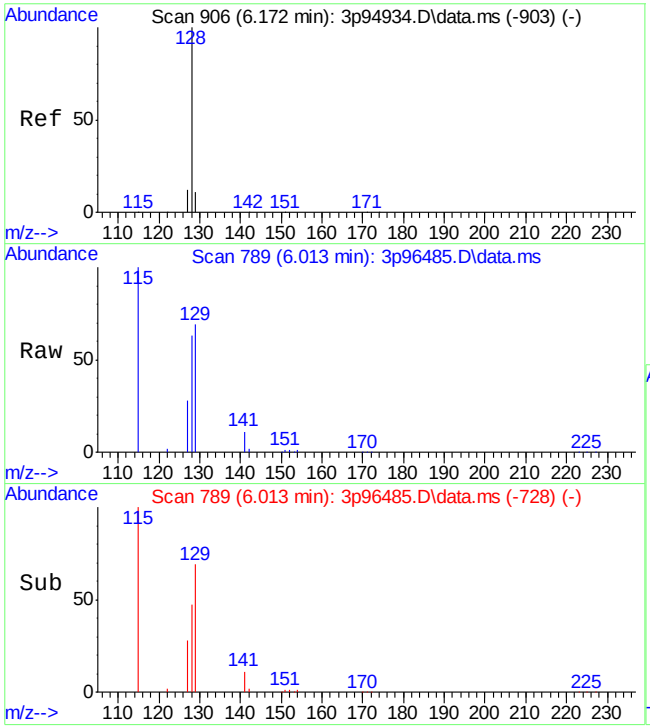
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96485.D
Acq On : 20 Apr 2022 8:10 am
Operator : chriss2
Sample : jd43215-11
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Apr 20 14:53:22 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

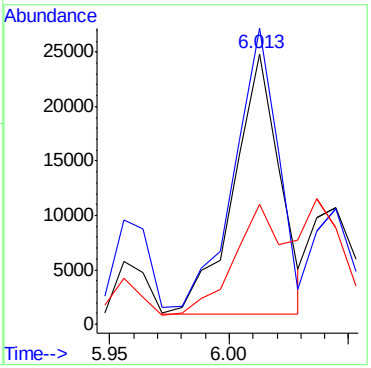


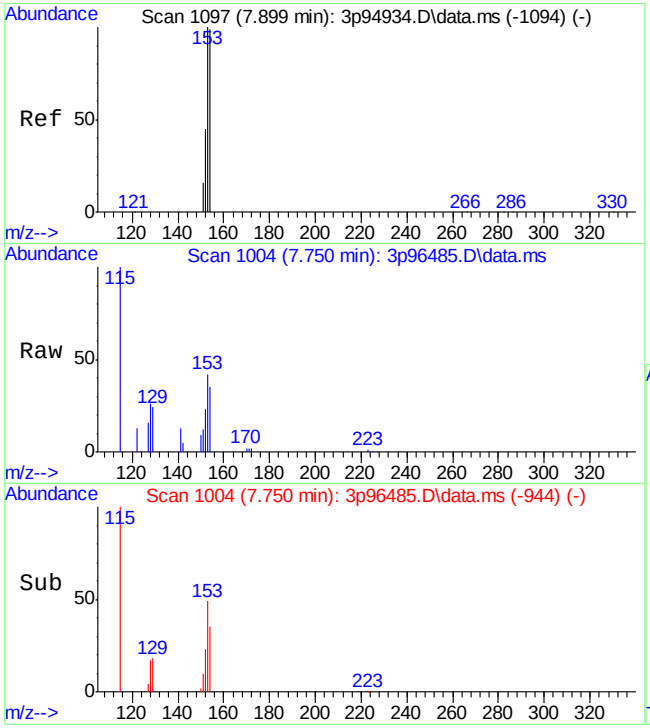


#8
Naphthalene
Concen: 337.99 ppb m
RT: 6.013 min Scan# 789
Delta R.T. -0.021 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:128 Resp: 31736

Ion	Ratio	Lower	Upper
128	100		
129	109.3	0.0	41.2#
127	44.3	0.0	41.7#

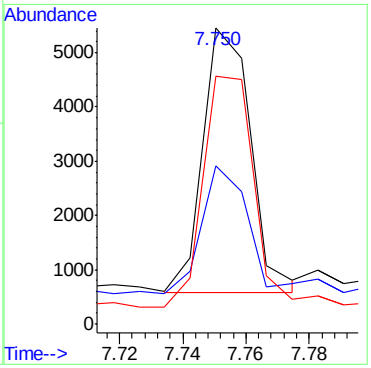


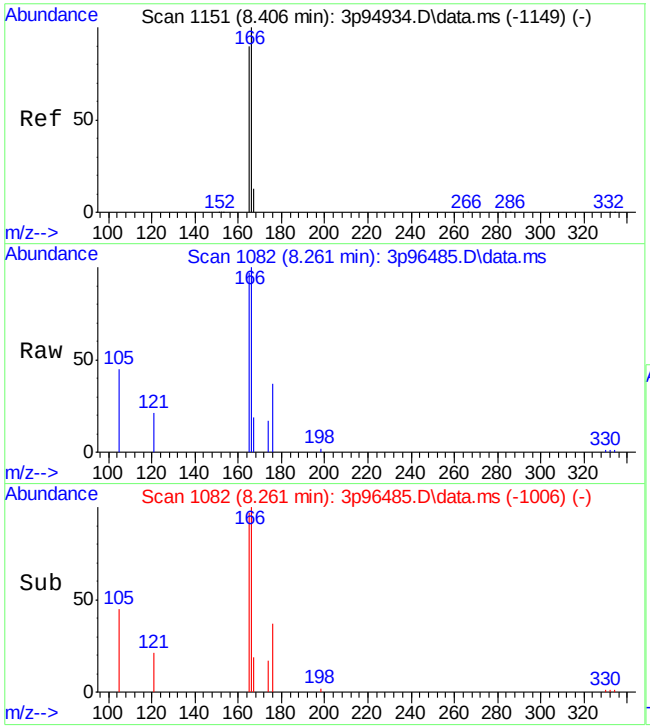


#15
Acenaphthene
Concen: 50.38 ppb m
RT: 7.750 min Scan# 1004
Delta R.T. -0.016 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:153 Resp: 5114

Ion	Ratio	Lower	Upper
153	100		
152	53.3	16.5	76.5
154	83.9	73.6	133.6

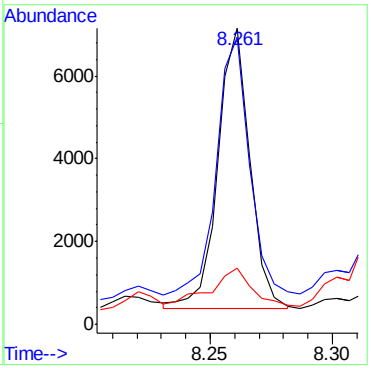


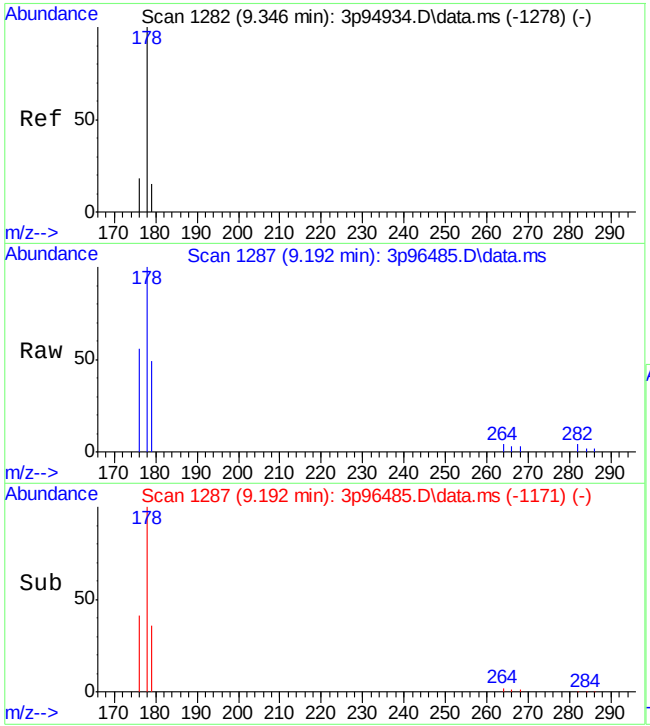


#17
Fluorene
Concen: 58.55 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:166 Resp: 6226

Ion	Ratio	Lower	Upper
166	100		
165	97.1	57.3	117.3
167	19.1	0.0	46.0

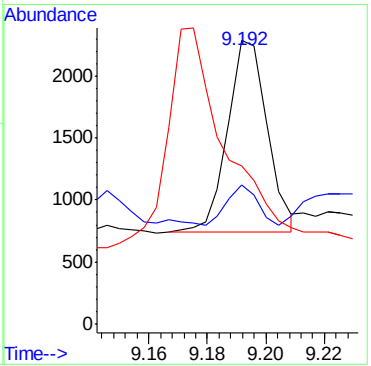


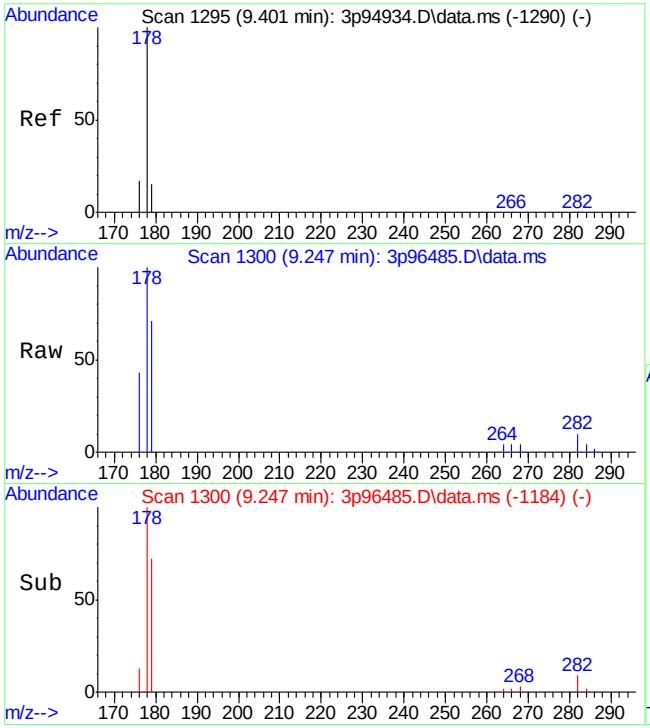


#22
Phenanthrene
Concen: 14.51 ppb m
RT: 9.192 min Scan# 1287
Delta R.T. -0.012 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:178 Resp: 1467

Ion	Ratio	Lower	Upper
178	100		
179	49.1	0.0	45.1#
176	55.7	0.0	47.5#

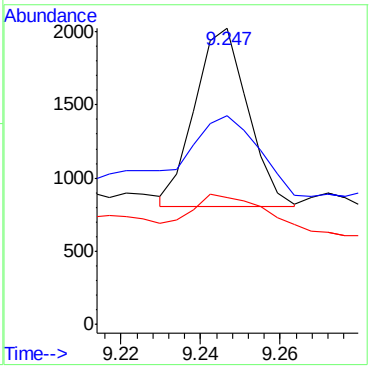


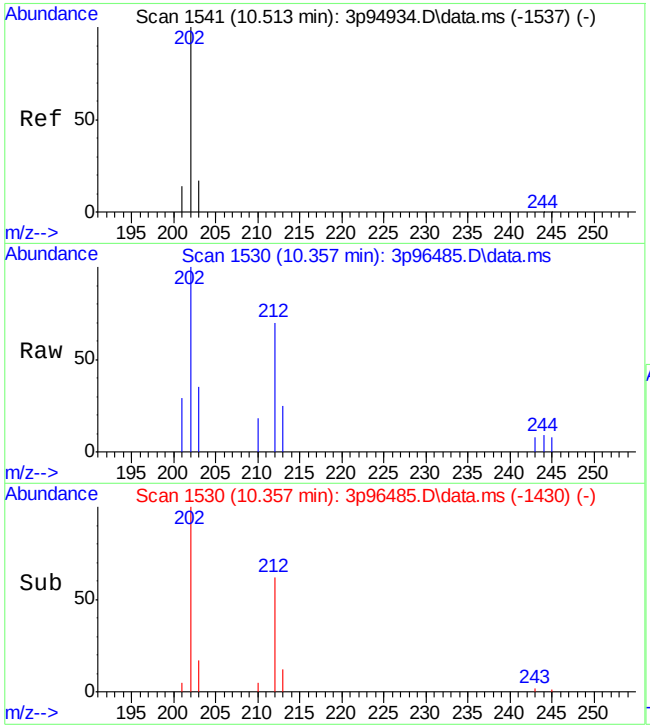


#23
Anthracene
Concen: 11.46 ppb m
RT: 9.247 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:178 Resp: 1121

Ion	Ratio	Lower	Upper
178	100		
179	70.6	0.0	43.0#
176	42.9	0.0	47.0

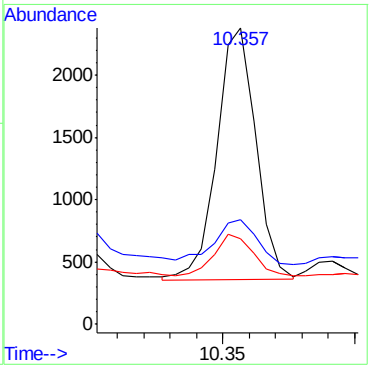


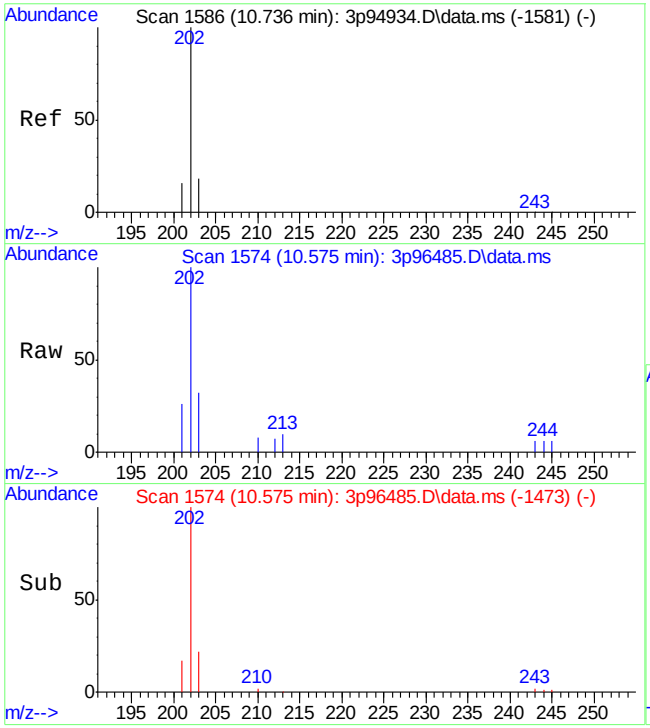


#24
Fluoranthene
Concen: 17.39 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:202 Resp: 2087

Ion	Ratio	Lower	Upper
202	100		
203	16.9	0.0	50.0
201	14.9	0.0	45.9

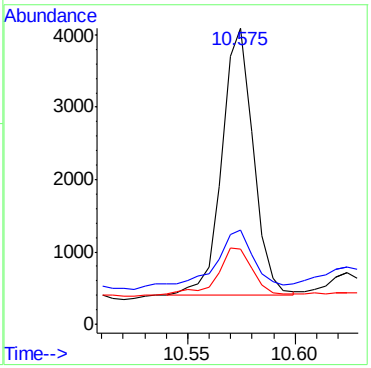


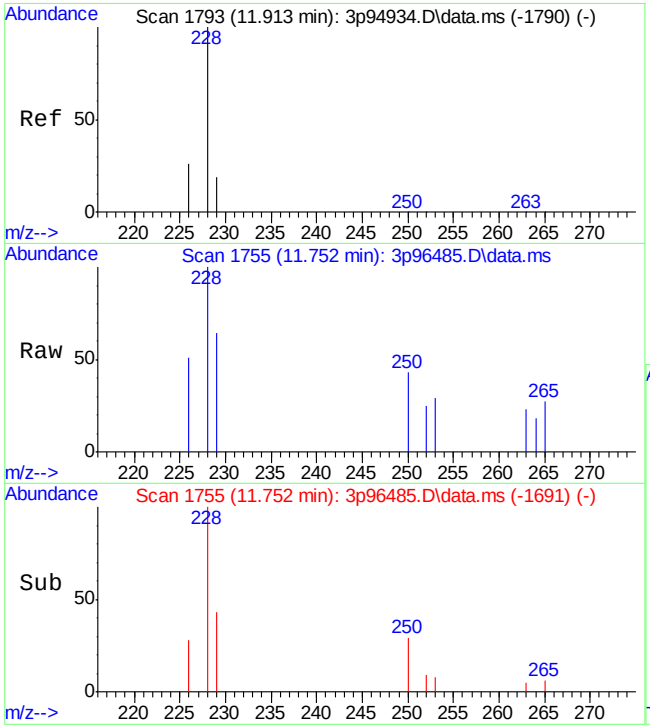


#25
Pyrene
Concen: 30.00 ppb m
RT: 10.575 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:202 Resp: 3740

Ion	Ratio	Lower	Upper
202	100		
203	32.0	0.0	48.7
201	25.5	0.0	46.9

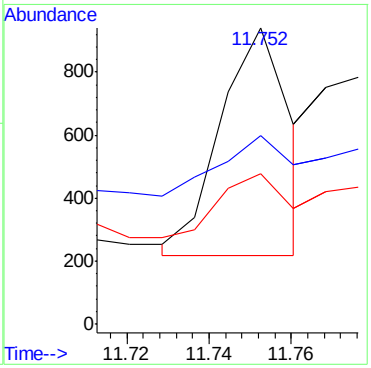


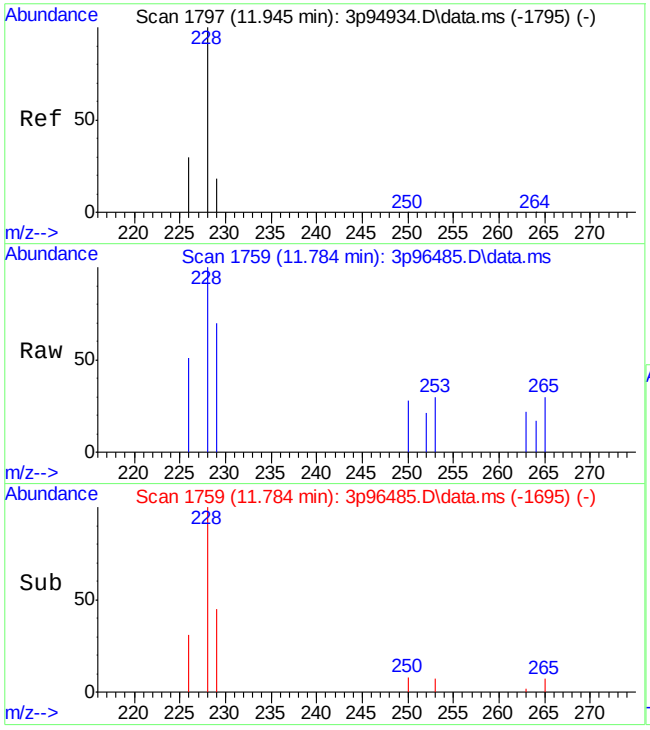


#27
Benzo[a]anthracene
Concen: 9.38 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:228 Resp: 848

Ion	Ratio	Lower	Upper
228	100		
229	28.5	0.0	49.3
226	31.1	0.0	55.2

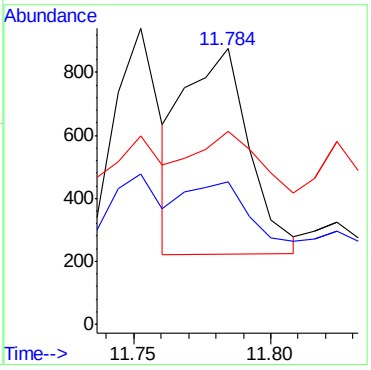


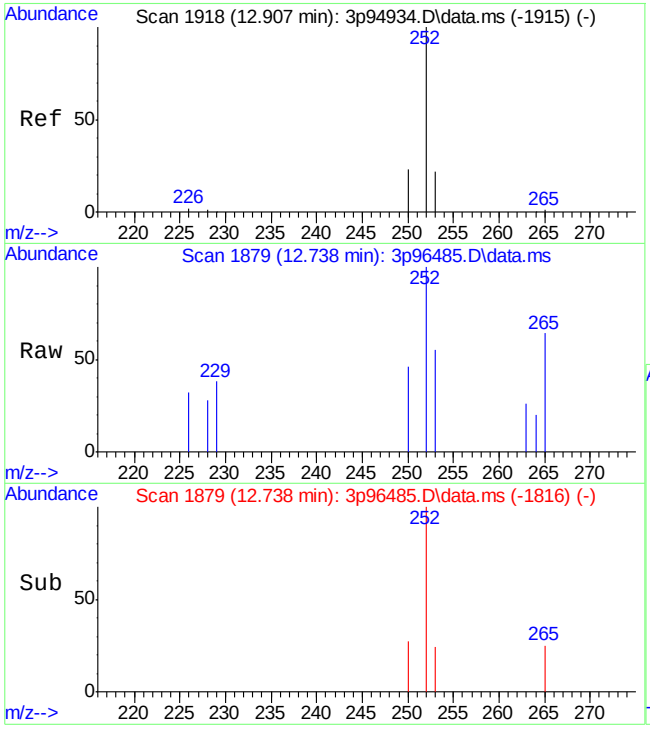


#28
Chrysene
Concen: 9.09 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:228 Resp: 1067

Ion	Ratio	Lower	Upper
228	100		
226	32.3	0.0	55.6
229	35.9	0.0	47.4

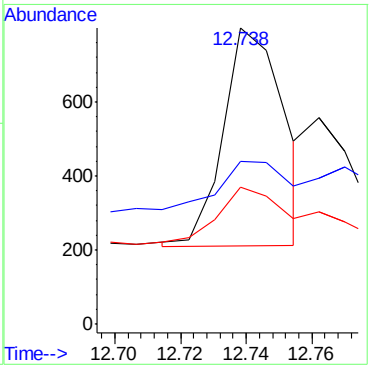


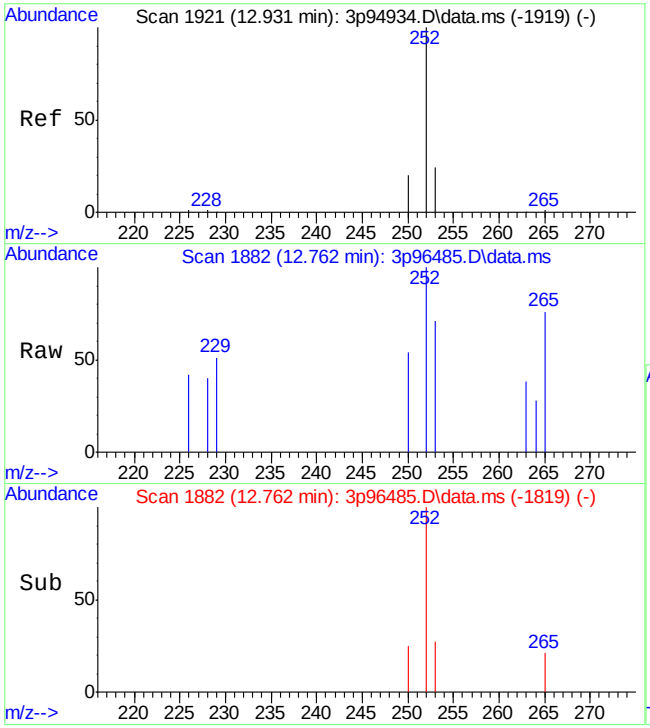


#30
Benzo[b]fluoranthene
Concen: 7.99 ppb
RT: 12.738 min Scan# 1879
Delta R.T. -0.003 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:252 Resp: 762

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	51.7
250	26.1	0.0	48.4

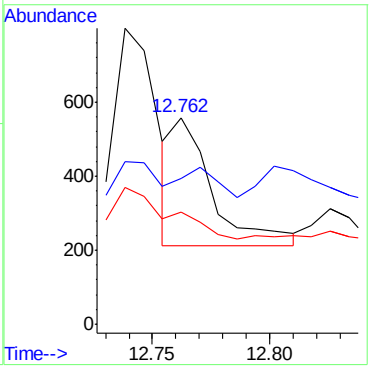


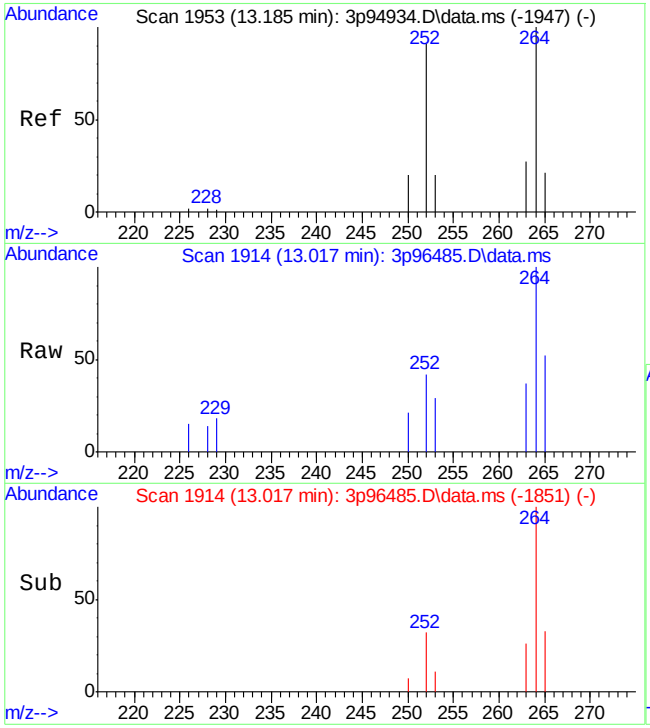


#31
Benzo[k]fluoranthene
Concen: 3.58 ppb
RT: 12.762 min Scan# 1882
Delta R.T. -0.002 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:252 Resp: 408

Ion	Ratio	Lower	Upper
252	100		
253	0.5	0.0	51.5
250	21.3	0.0	51.3

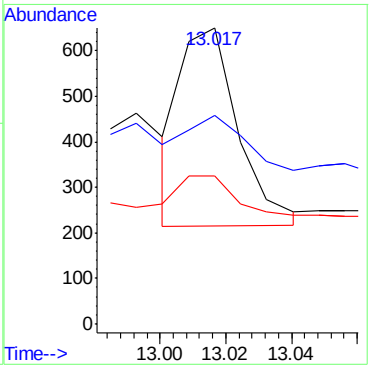


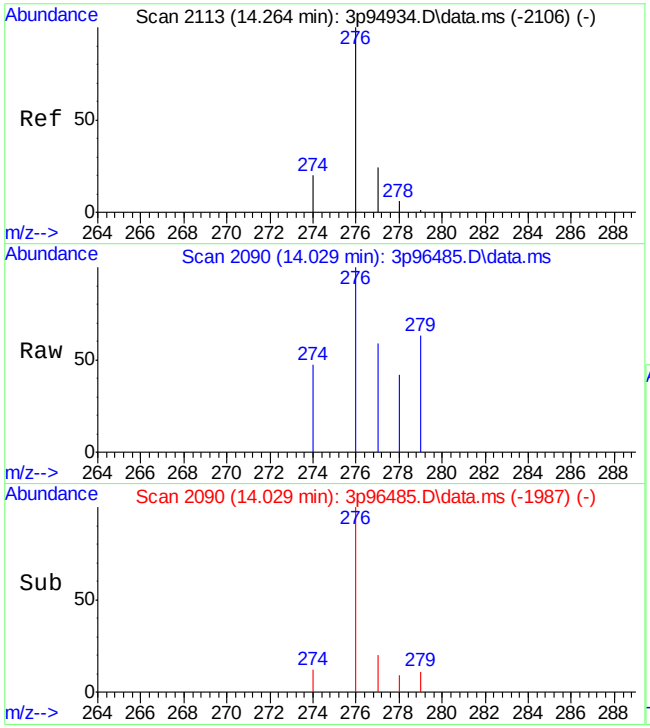


#32
Benzo[a]pyrene
Concen: 4.62 ppb
RT: 13.017 min Scan# 1914
Delta R.T. -0.001 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:252 Resp: 529

Ion	Ratio	Lower	Upper
252	100		
253	28.5	0.0	52.3
250	22.9	0.0	49.9

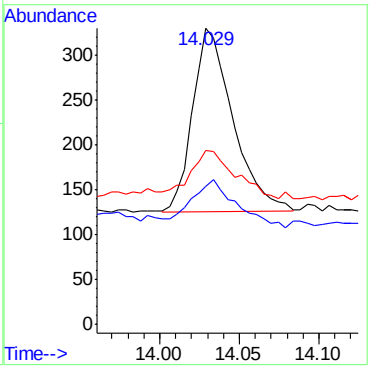


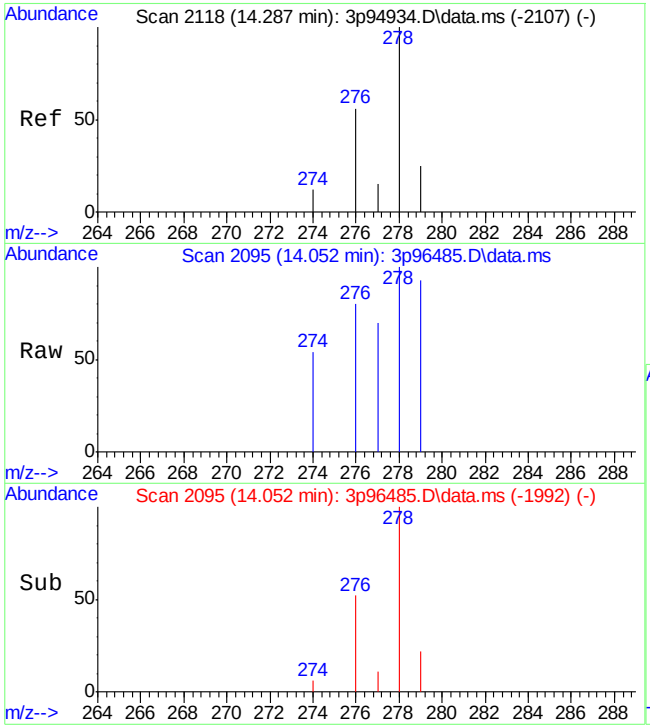


#33
Indeno[1,2,3-cd]pyrene
Concen: 3.56 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:276 Resp: 361

Ion	Ratio	Lower	Upper
276	100		
274	18.7	0.0	45.2
277	24.6	0.0	52.4

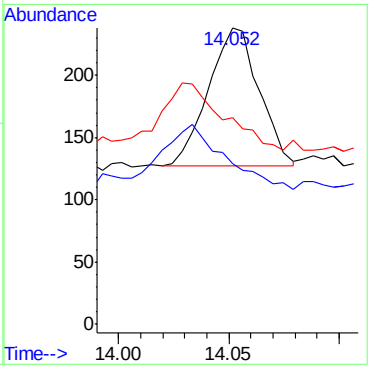


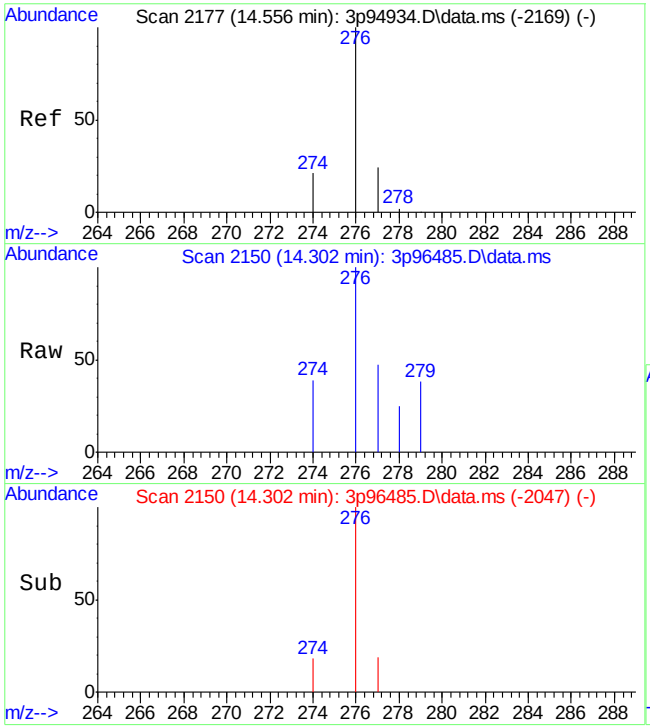


#34
Dibenz[a,h]anthracene
Concen: 2.15 ppb
RT: 14.052 min Scan# 2095
Delta R.T. -0.028 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:278 Resp: 177

Ion	Ratio	Lower	Upper
278	100		
274	4.6	0.0	40.3
277	6.0	0.0	40.0

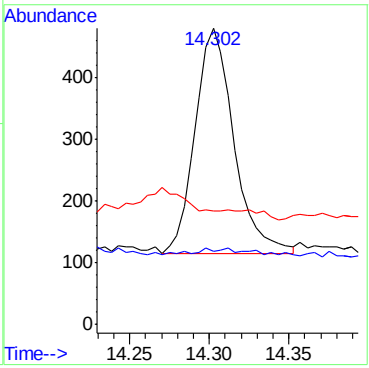




#35
Benzo[g,h,i]perylene
Concen: 6.53 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96485.D
Acq: 20 Apr 2022 8:10 am

Tgt Ion:276 Resp: 624

Ion	Ratio	Lower	Upper
276	100		
278	1.7	0.0	31.3
279	0.0	0.0	30.5



9.1.16

9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96486.D
Acq On : 20 Apr 2022 8:32 am
Operator : chriss2
Sample : jd43215-12
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 20 14:53:59 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

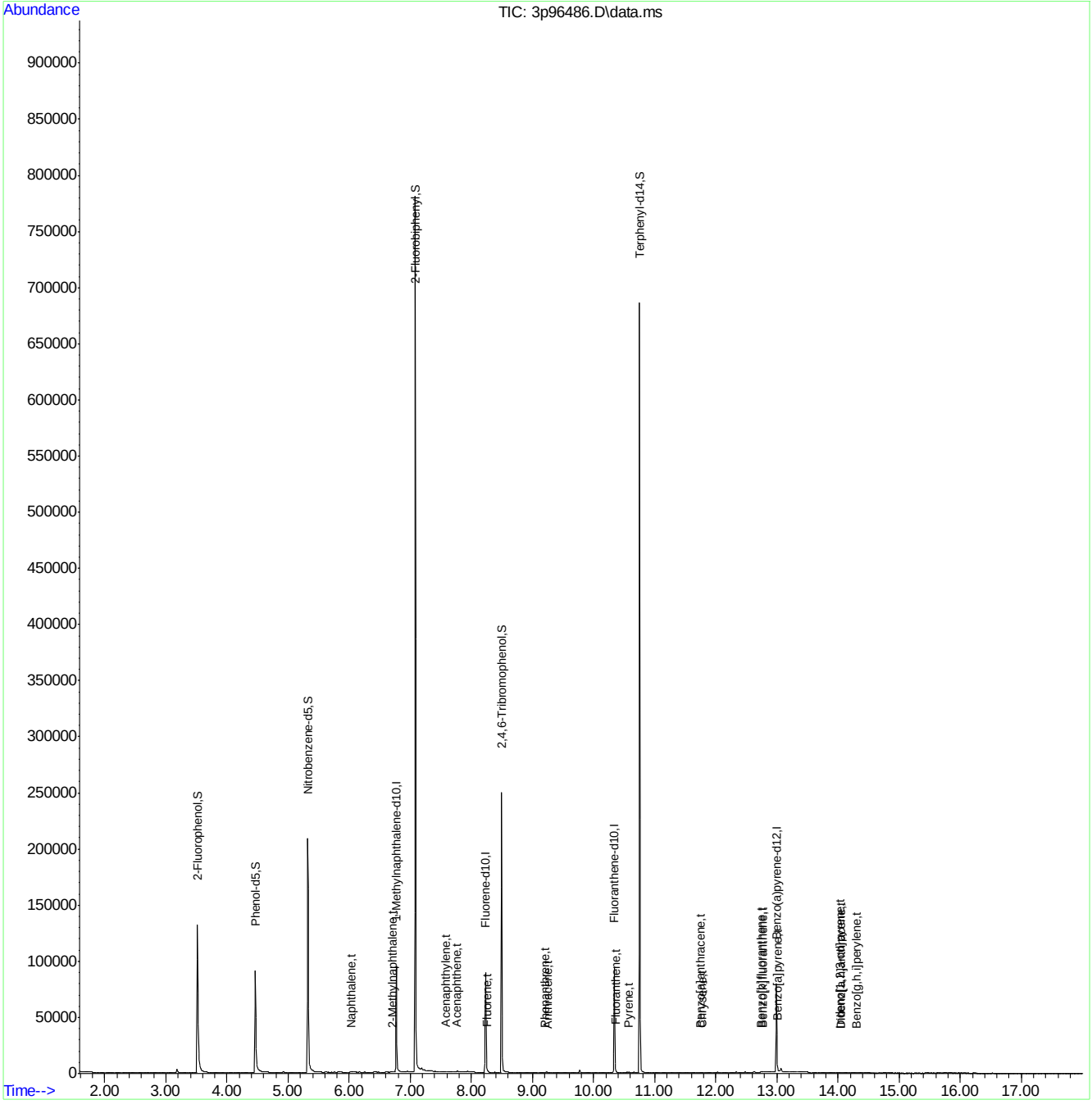
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.772	150	32784	800.00	ppb	# 0.00
12) Fluorene-d10	8.231	176	41217	800.00	ppb	0.00
19) Fluoranthene-d10	10.337	212	65973	800.00	ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	53741	800.00	ppb	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.517	112	102948	4168.79	ppb	-0.03
Spiked Amount 50.000			Recovery	= 8337.58%		
4) Phenol-d5	4.462	99	106005	3161.38	ppb	0.00
Spiked Amount 50.000			Recovery	= 6322.76%		
7) Nitrobenzene-d5	5.320	82	148418	5677.18	ppb	0.00
Spiked Amount 50.000			Recovery	= 11354.36%		
13) 2-Fluorobiphenyl	7.079	172	383771	5932.68	ppb	-0.01
Spiked Amount 50.000			Recovery	= 11865.36%		
18) 2,4,6-Tribromophenol	8.495	330	87315	11238.59	ppb	0.00
Spiked Amount 50.000			Recovery	= 22477.18%		
26) Terphenyl-d14	10.753	244	449095	7305.37	ppb	0.00
Spiked Amount 50.000			Recovery	= 14610.74%		
Target Compounds						Qvalue
8) Naphthalene	6.037	128	354	3.54	ppb	91
10) 2-Methylnaphthalene	6.716	141	251	4.70	ppb	87
14) Acenaphthylene	7.589	152	144	1.47	ppb	85
15) Acenaphthene	7.758	153	126	1.90	ppb	88
17) Fluorene	8.261	166	223	3.21	ppb	92
22) Phenanthrene	9.200	178	575	5.83	ppb	93
23) Anthracene	9.255	178	277	2.90	ppb	83
24) Fluoranthene	10.357	202	473	4.04	ppb	93
25) Pyrene	10.575	202	470	3.87	ppb	98
27) Benzo[a]anthracene	11.752	228	206	2.34	ppb	99
28) Chrysene	11.784	228	207	1.81	ppb	96
30) Benzo[b]fluoranthene	12.746	252	233	2.39	ppb	93
31) Benzo[k]fluoranthene	12.770	252	194	1.66	ppb	82
32) Benzo[a]pyrene	13.009	252	169	1.08	ppb	92
33) Indeno[1,2,3-cd]pyrene	14.034	276	233	2.25	ppb	93
34) Dibenz[a,h]anthracene	14.056	278	167	1.98	ppb	79
35) Benzo[g,h,i]perylene	14.302	276	251	2.56	ppb	96

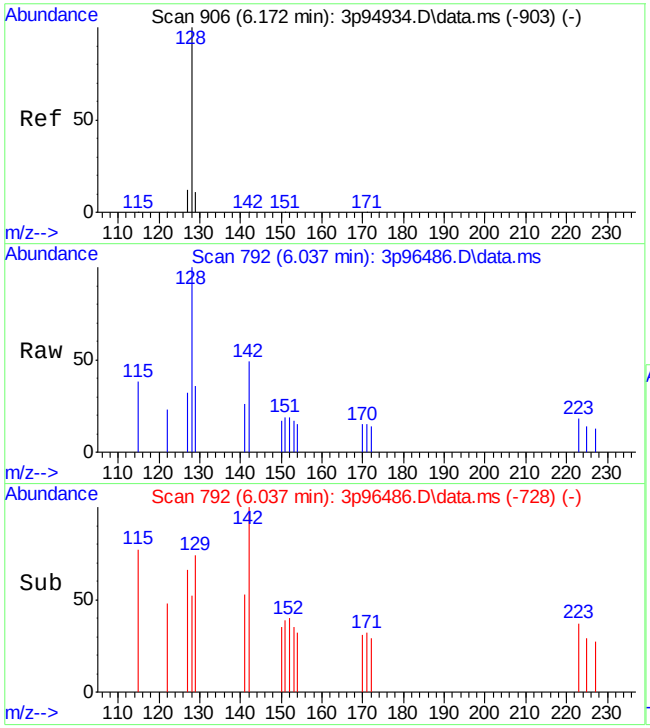
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96486.D
Acq On : 20 Apr 2022 8:32 am
Operator : chriss2
Sample : jd43215-12
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 20 14:53:59 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

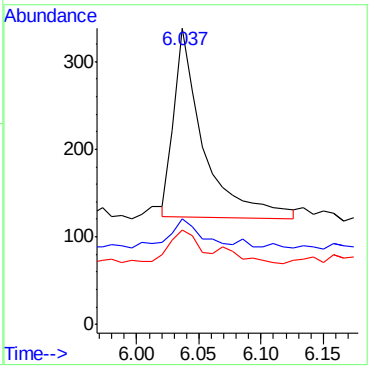


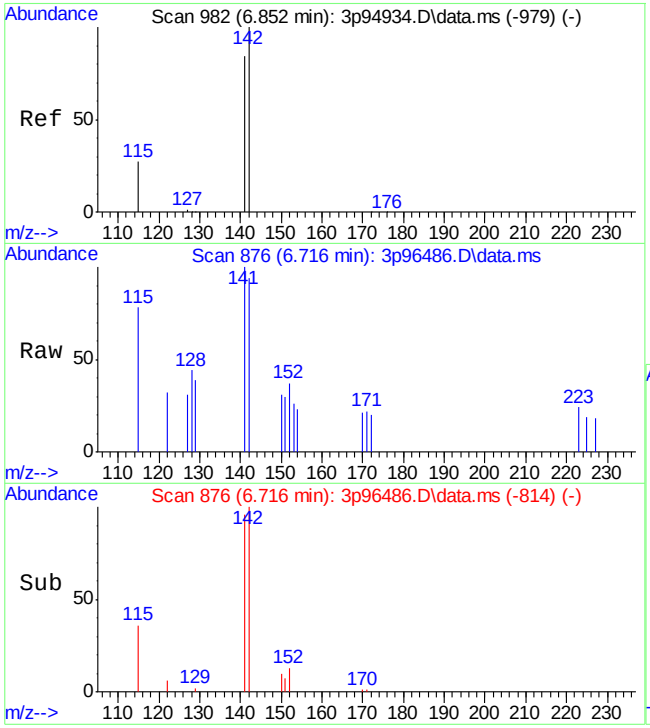


#8
Naphthalene
Concen: 3.54 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:128 Resp: 354

Ion	Ratio	Lower	Upper
128	100		
129	14.8	0.0	41.2
127	15.3	0.0	41.7

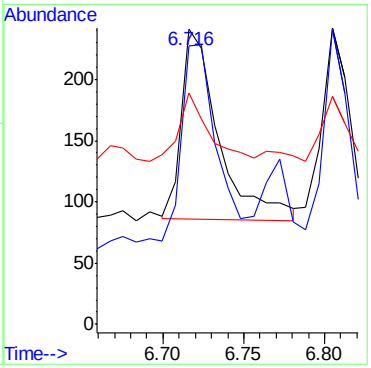


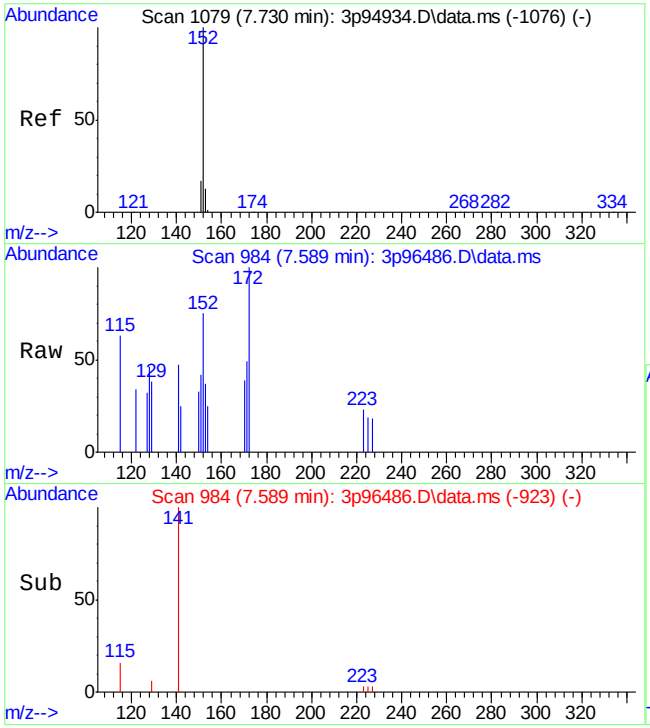


#10
2-Methylnaphthalene
Concen: 4.70 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:141 Resp: 251

Ion	Ratio	Lower	Upper
141	100		
142	101.0	88.8	148.8
115	33.8	1.9	61.9

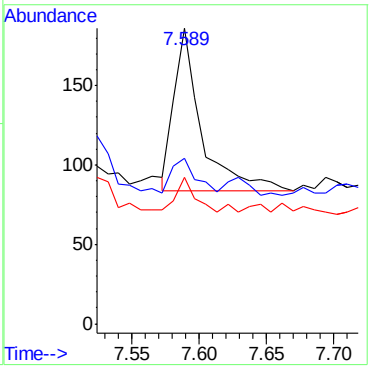


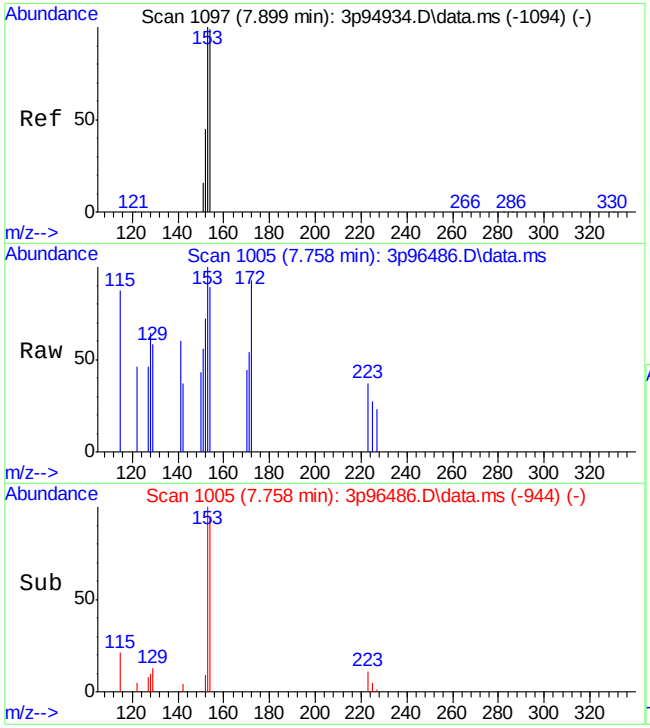


#14
Acenaphthylene
Concen: 1.47 ppb
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:152 Resp: 144

Ion	Ratio	Lower	Upper
152	100		
151	22.4	0.0	47.3
153	20.9	0.0	43.3

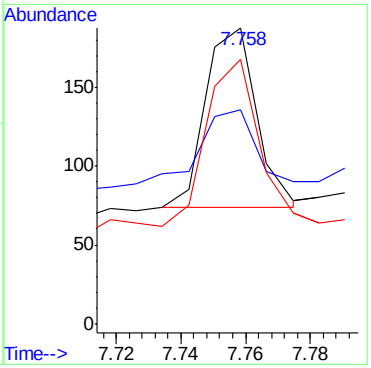


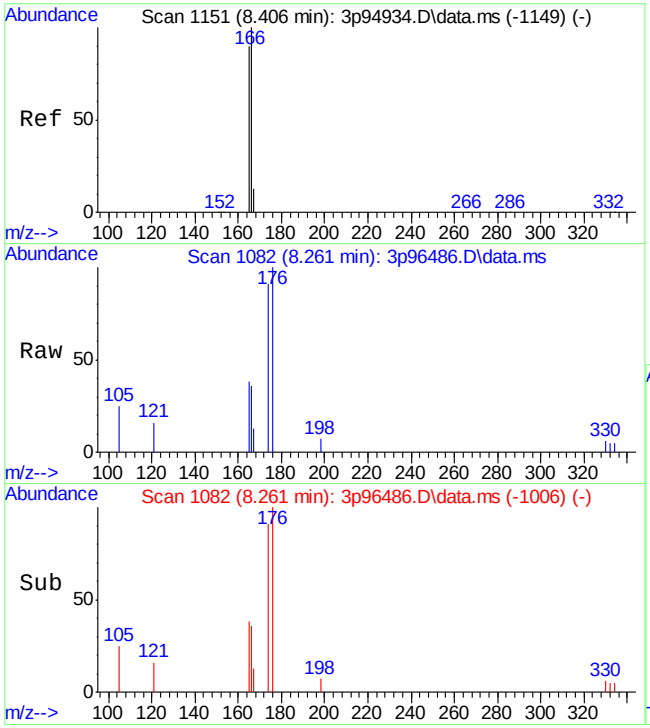


#15
Acenaphthene
Concen: 1.90 ppb
RT: 7.758 min Scan# 1005
Delta R.T. -0.007 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:153 Resp: 126

Ion	Ratio	Lower	Upper
153	100		
152	38.8	16.5	76.5
154	91.1	73.6	133.6

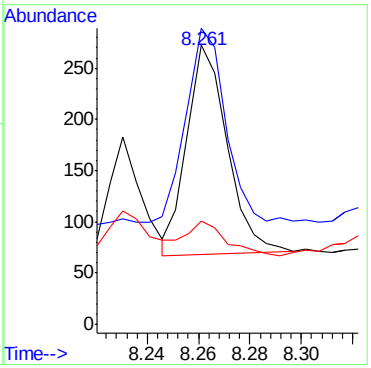


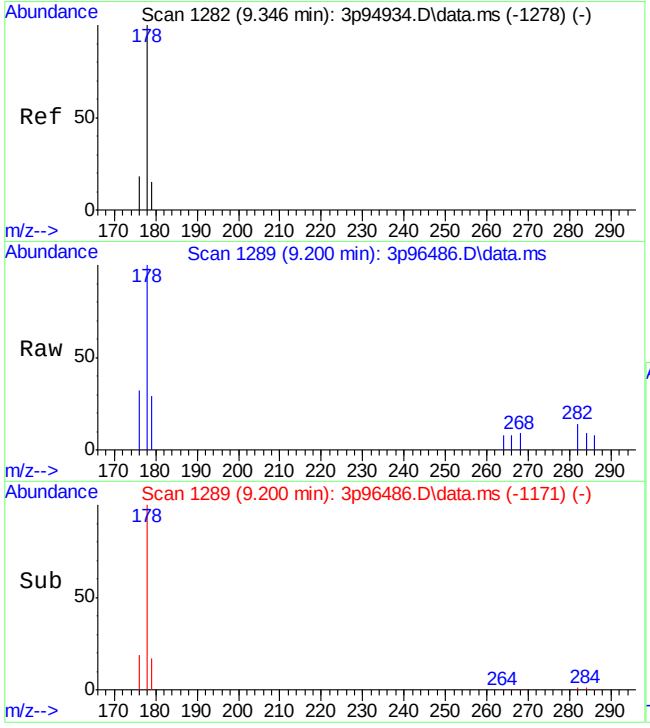


#17
Fluorene
Concen: 3.21 ppb
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:166 Resp: 223

Ion	Ratio	Lower	Upper
166	100		
165	94.9	57.3	117.3
167	12.8	0.0	46.0

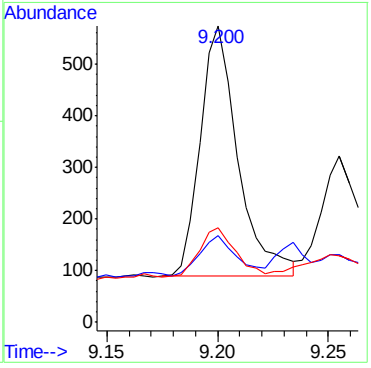


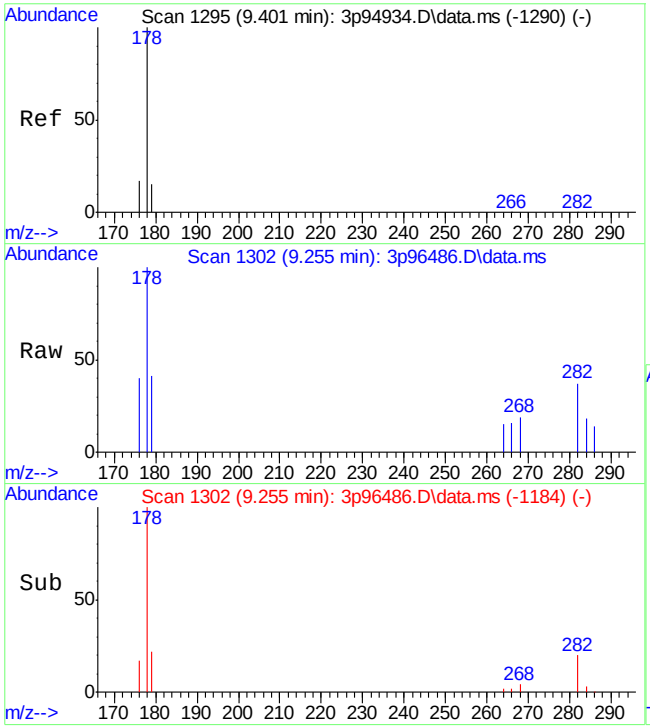


#22
Phenanthrene
Concen: 5.83 ppb
RT: 9.200 min Scan# 1289
Delta R.T. -0.004 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:178 Resp: 575

Ion	Ratio	Lower	Upper
178	100		
179	9.2	0.0	45.1
176	17.9	0.0	47.5

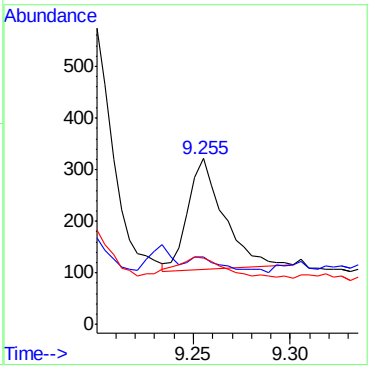


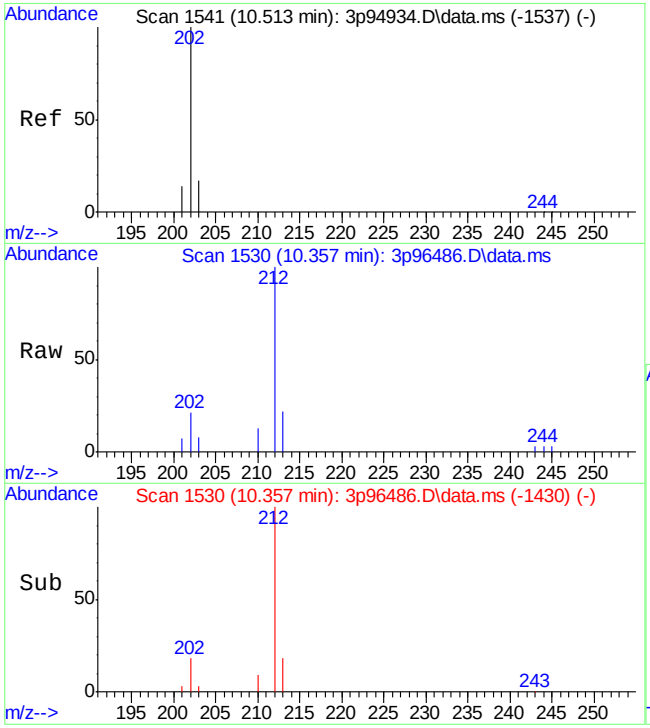


#23
Anthracene
Concen: 2.90 ppb
RT: 9.255 min Scan# 1302
Delta R.T. -0.003 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:178 Resp: 277

Ion	Ratio	Lower	Upper
178	100		
179	0.0	0.0	43.0
176	14.7	0.0	47.0

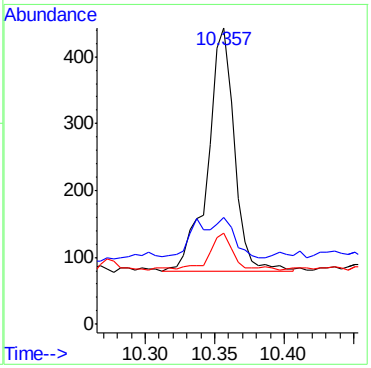


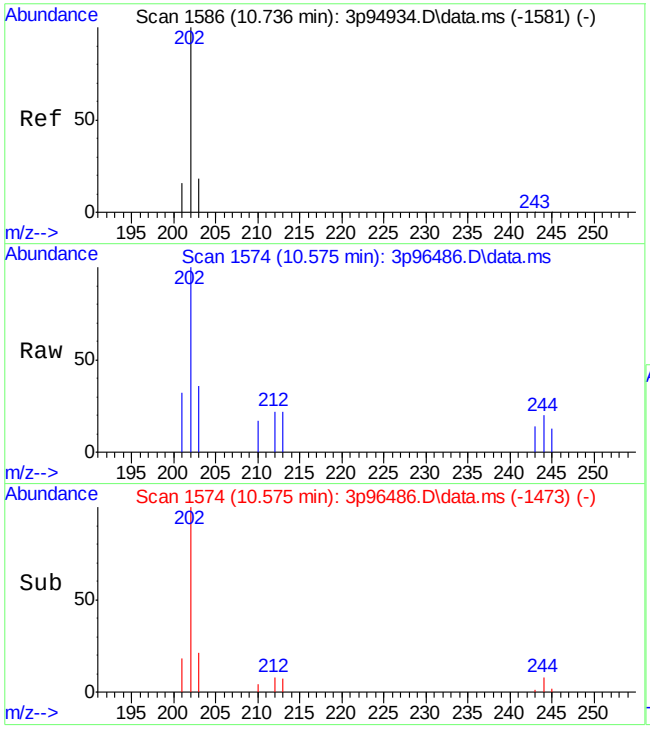


#24
Fluoranthene
Concen: 4.04 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:202 Resp: 473

Ion	Ratio	Lower	Upper
202	100		
203	15.7	0.0	50.0
201	14.5	0.0	45.9

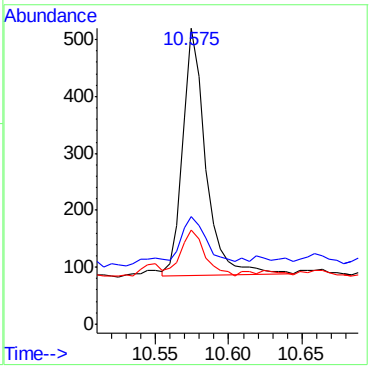


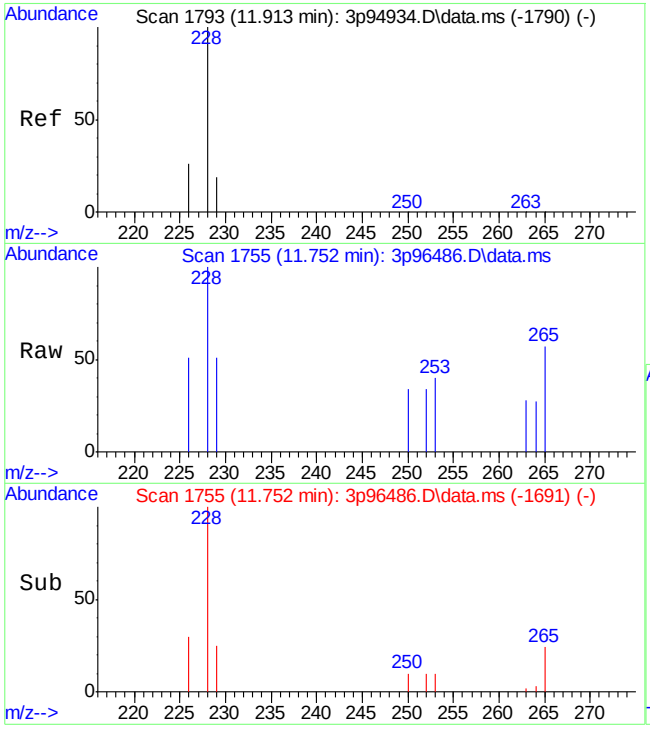


#25
Pyrene
Concen: 3.87 ppb
RT: 10.575 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:202 Resp: 470

Ion	Ratio	Lower	Upper
202	100		
203	17.8	0.0	48.7
201	17.4	0.0	46.9

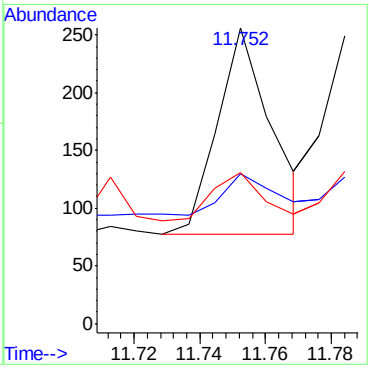


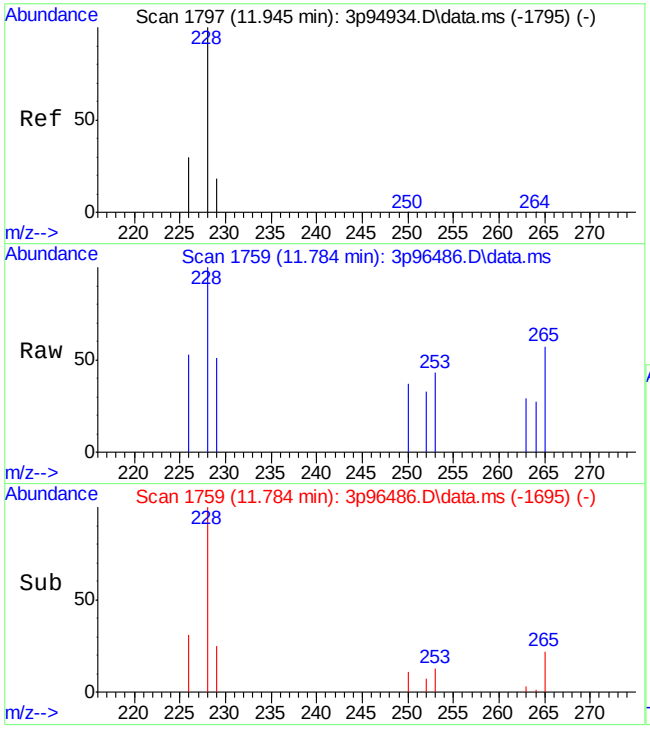


#27
Benzo[a]anthracene
Concen: 2.34 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:228 Resp: 206

Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.0	49.3
226	25.7	0.0	55.2

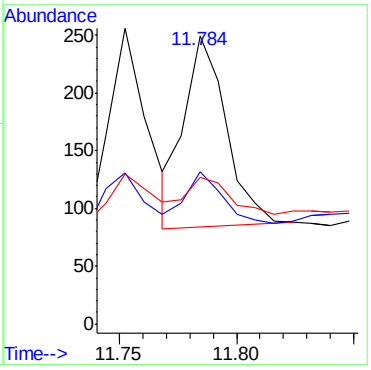


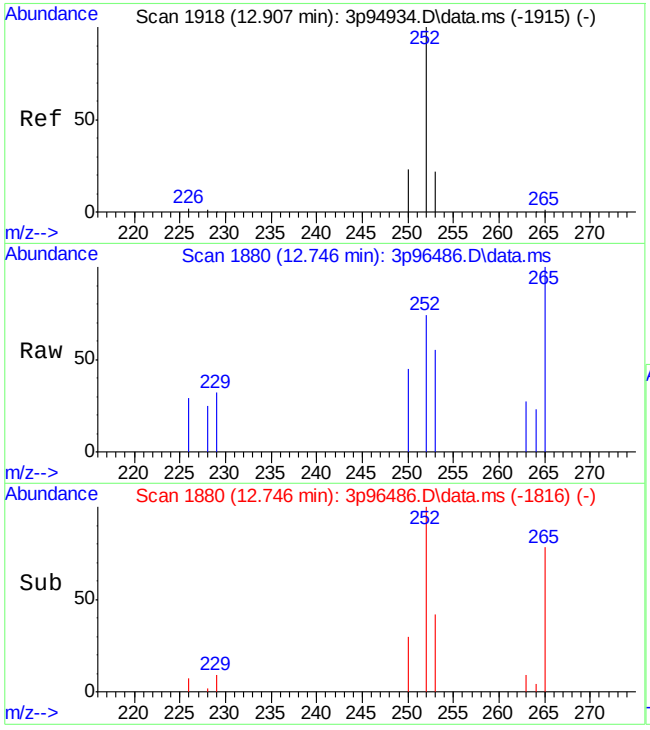


#28
Chrysene
Concen: 1.81 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:228 Resp: 207

Ion	Ratio	Lower	Upper
228	100		
226	28.8	0.0	55.6
229	18.0	0.0	47.4

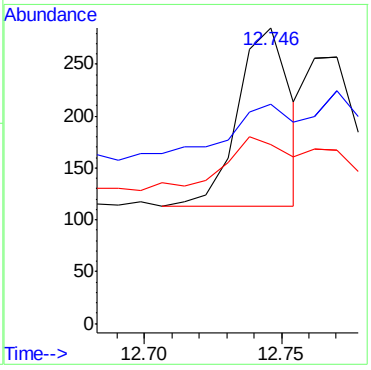


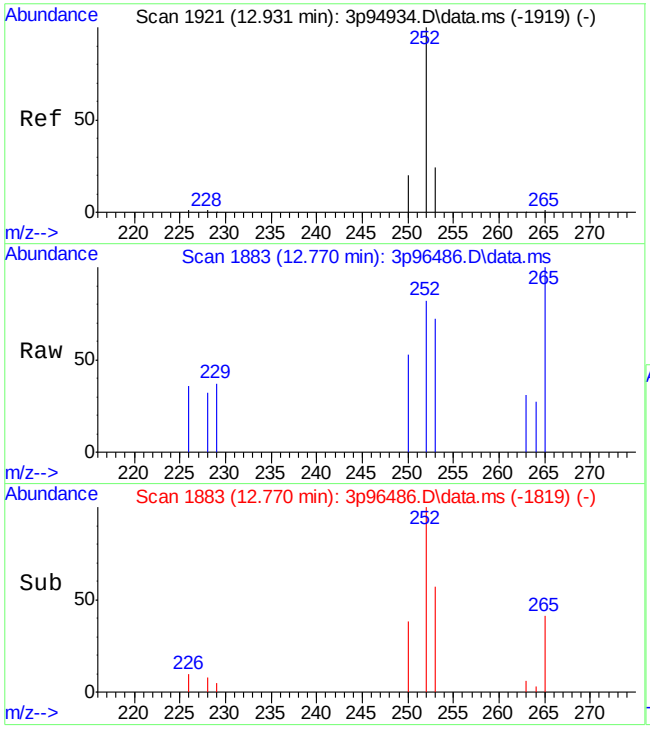


#30
Benzo[b]fluoranthene
Concen: 2.39 ppb
RT: 12.746 min Scan# 1880
Delta R.T. 0.005 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:252 Resp: 233

Ion	Ratio	Lower	Upper
252	100		
253	26.3	0.0	51.7
250	20.2	0.0	48.4

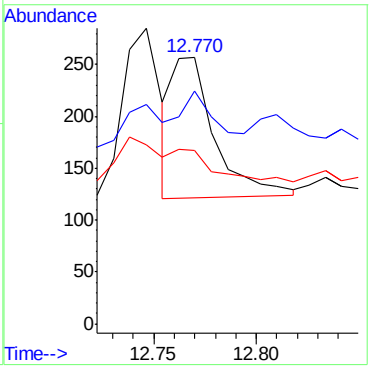


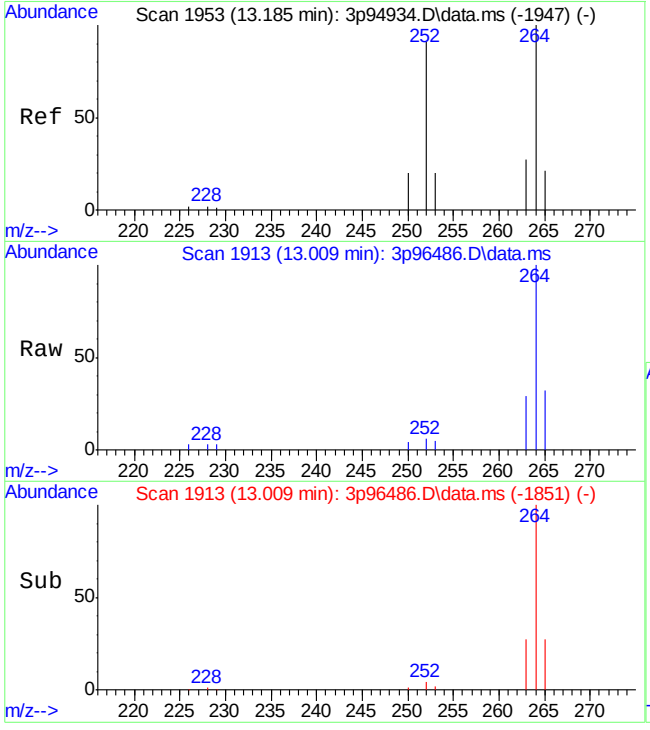


#31
Benzo[k]fluoranthene
Concen: 1.66 ppb
RT: 12.770 min Scan# 1883
Delta R.T. 0.005 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:252 Resp: 194

Ion	Ratio	Lower	Upper
252	100		
253	38.0	0.0	51.5
250	21.1	0.0	51.3

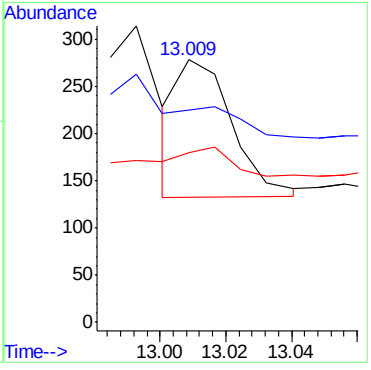


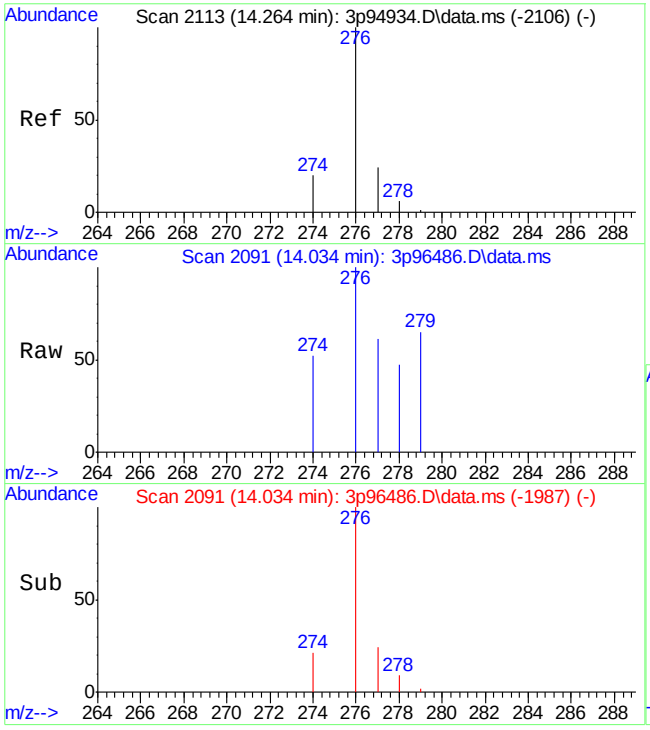


#32
Benzo[a]pyrene
Concen: 1.08 ppb
RT: 13.009 min Scan# 1913
Delta R.T. -0.009 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:252 Resp: 169

Ion	Ratio	Lower	Upper
252	100		
253	16.7	0.0	52.3
250	18.3	0.0	49.9

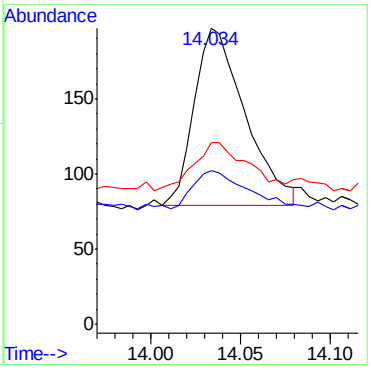


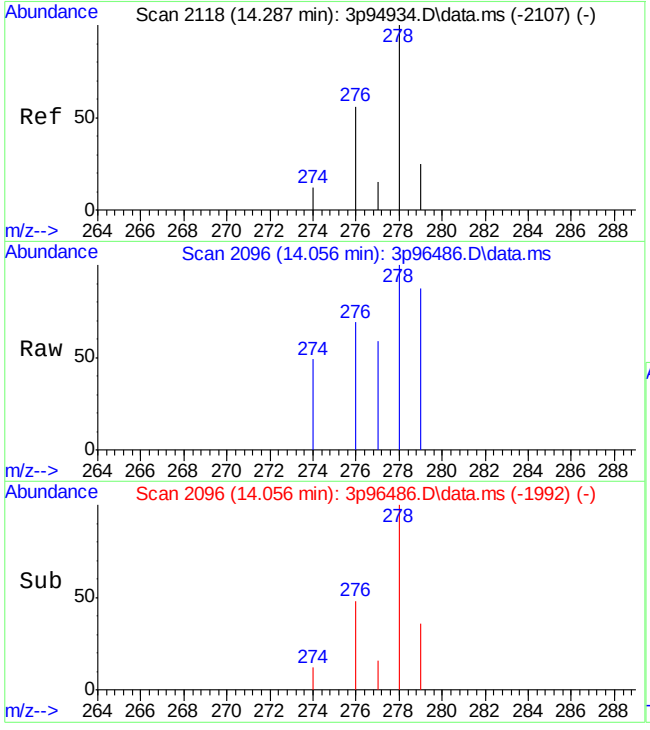


#33
Indeno[1,2,3-cd]pyrene
Concen: 2.25 ppb
RT: 14.034 min Scan# 2091
Delta R.T. -0.024 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:276 Resp: 233

Ion	Ratio	Lower	Upper
276	100		
274	20.1	0.0	45.2
277	24.6	0.0	52.4

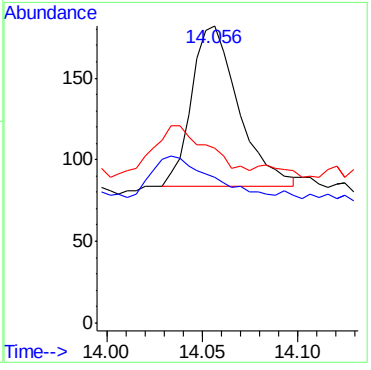


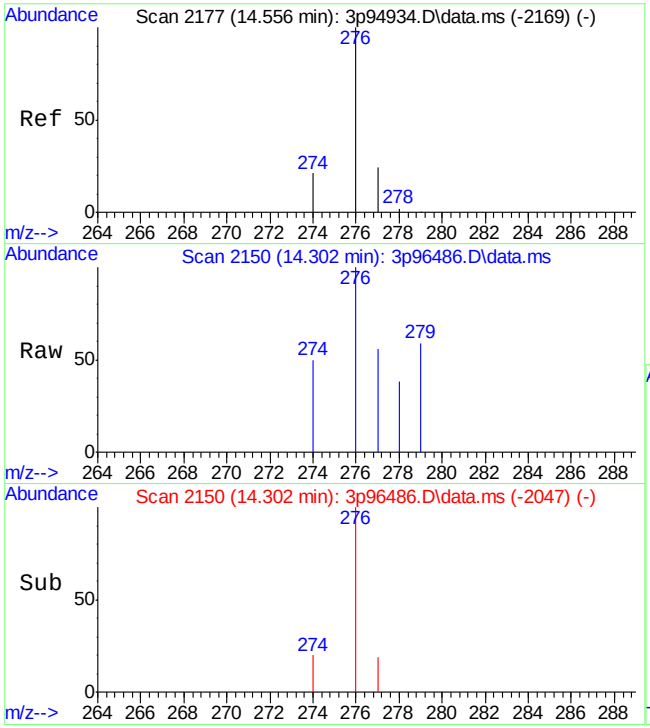


#34
Dibenz[a,h]anthracene
Concen: 1.98 ppb
RT: 14.056 min Scan# 2096
Delta R.T. -0.024 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:278 Resp: 167

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	40.3
277	4.7	0.0	40.0

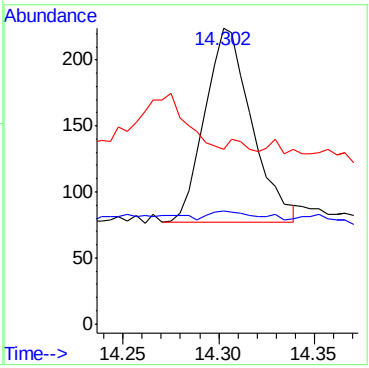




#35
Benzo[g,h,i]perylene
Concen: 2.56 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96486.D
Acq: 20 Apr 2022 8:32 am

Tgt Ion:276 Resp: 251

Ion	Ratio	Lower	Upper
276	100		
278	3.6	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96487.D
Acq On : 20 Apr 2022 8:54 am
Operator : chriss2
Sample : jd43215-13
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 20 14:55:17 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

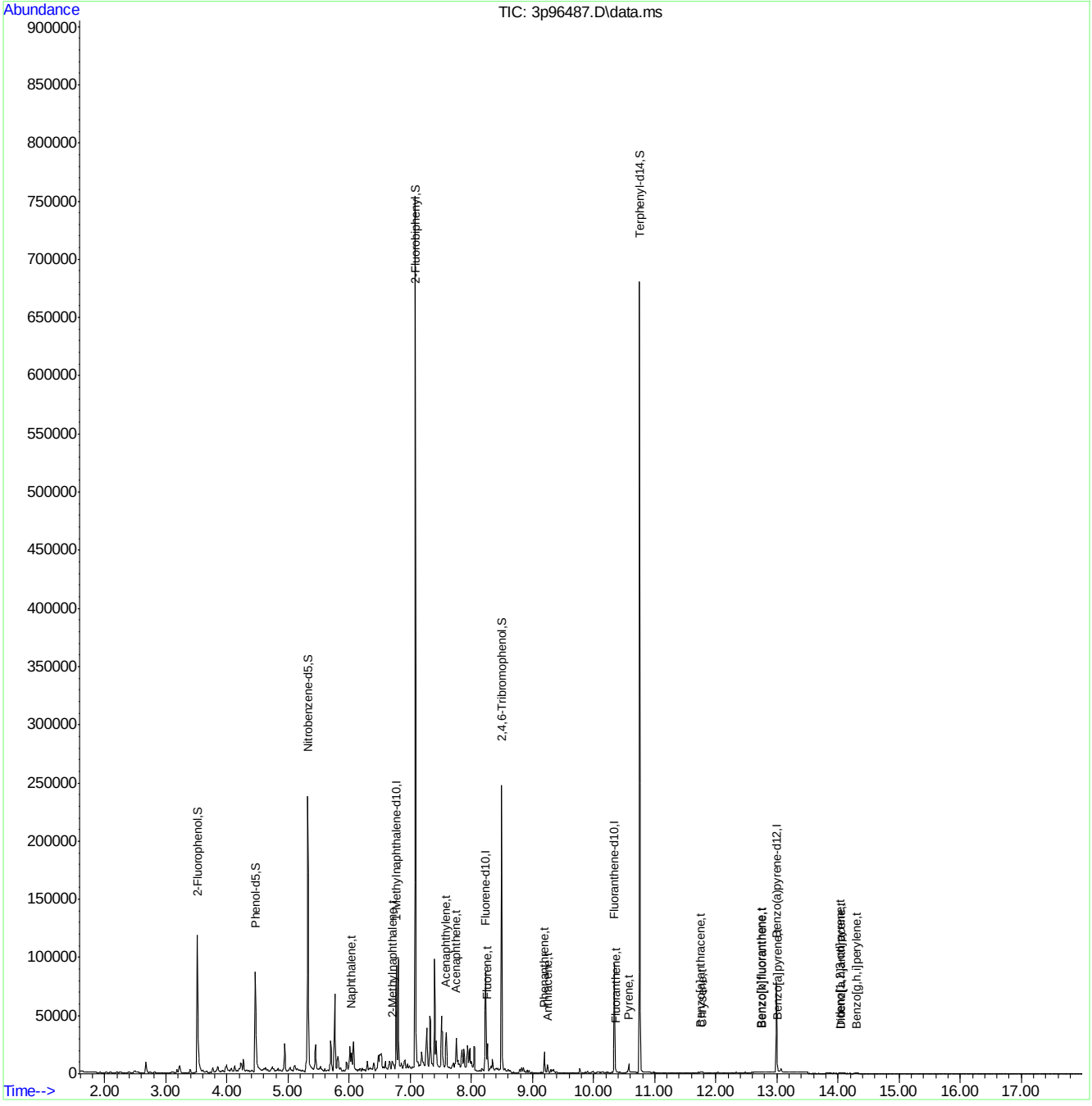
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	30788	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	40489	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	66047	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	52640	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.517	112	91594	3949.47 ppb	-0.03
Spiked Amount 50.000			Recovery	= 7898.94%	
4) Phenol-d5	4.462	99	89751	2850.17 ppb	0.00
Spiked Amount 50.000			Recovery	= 5700.34%	
7) Nitrobenzene-d5	5.320	82	143857	5859.46 ppb	0.00
Spiked Amount 50.000			Recovery	= 11718.92%	
13) 2-Fluorobiphenyl	7.080	172	363790	5724.91 ppb	-0.01
Spiked Amount 50.000			Recovery	= 11449.82%	
18) 2,4,6-Tribromophenol	8.495	330	85705	11229.71 ppb	0.00
Spiked Amount 50.000			Recovery	= 22459.42%	
26) Terphenyl-d14	10.753	244	451812	7341.33 ppb	0.00
Spiked Amount 50.000			Recovery	= 14682.66%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	4746	50.53 ppb	73
10) 2-Methylnaphthalene	6.716	141	3104	61.83 ppb	96
14) Acenaphthylene	7.589	152	2342m	24.35 ppb	
15) Acenaphthene	7.750	153	8818	135.19 ppb	91
17) Fluorene	8.261	166	10053m	147.12 ppb	
22) Phenanthrene	9.192	178	12931m	131.01 ppb	
23) Anthracene	9.247	178	4201m	43.99 ppb	
24) Fluoranthene	10.357	202	1678	14.32 ppb	95
25) Pyrene	10.575	202	5454	44.82 ppb	99
27) Benzo[a]anthracene	11.752	228	681	7.72 ppb	98
28) Chrysene	11.784	228	818	7.14 ppb	95
30) Benzo[b]fluoranthene	12.746	252	417	4.36 ppb	95
31) Benzo[k]fluoranthene	12.762	252	345	3.02 ppb	92
32) Benzo[a]pyrene	13.009	252	342	2.79 ppb	86
33) Indeno[1,2,3-cd]pyrene	14.034	276	282	2.78 ppb	94
34) Dibenz[a,h]anthracene	14.056	278	207	2.51 ppb	97
35) Benzo[g,h,i]perylene	14.302	276	222	2.32 ppb	93

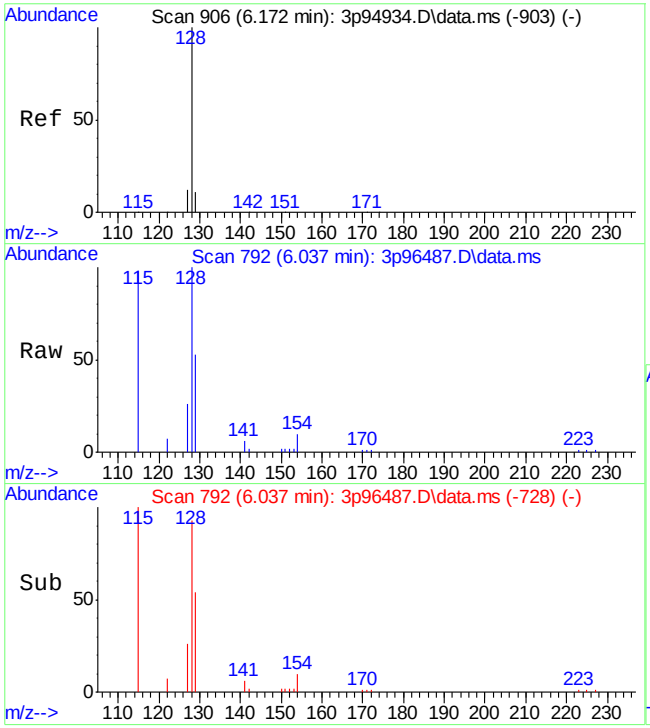
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96487.D
Acq On : 20 Apr 2022 8:54 am
Operator : chriss2
Sample : jd43215-13
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 20 14:55:17 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

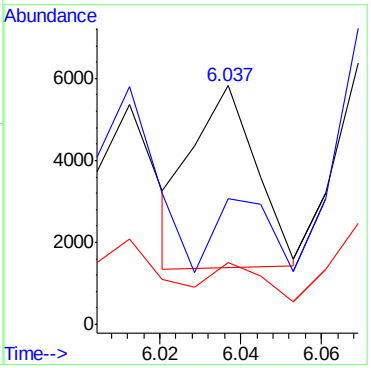


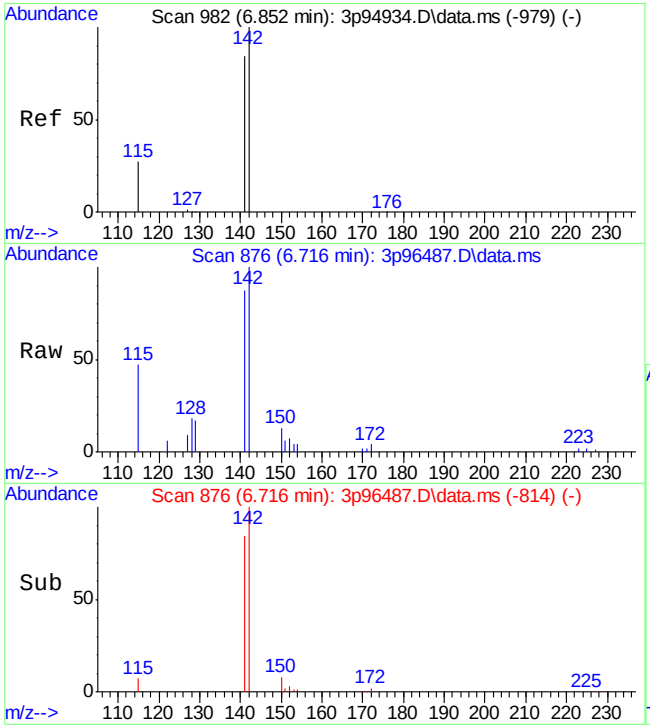


#8
Naphthalene
Concen: 50.53 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:128 Resp: 4746

Ion	Ratio	Lower	Upper
128	100		
129	24.0	0.0	41.2
127	20.1	0.0	41.7

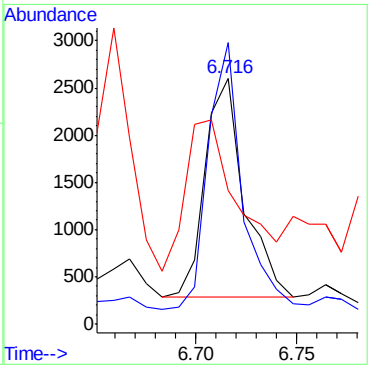


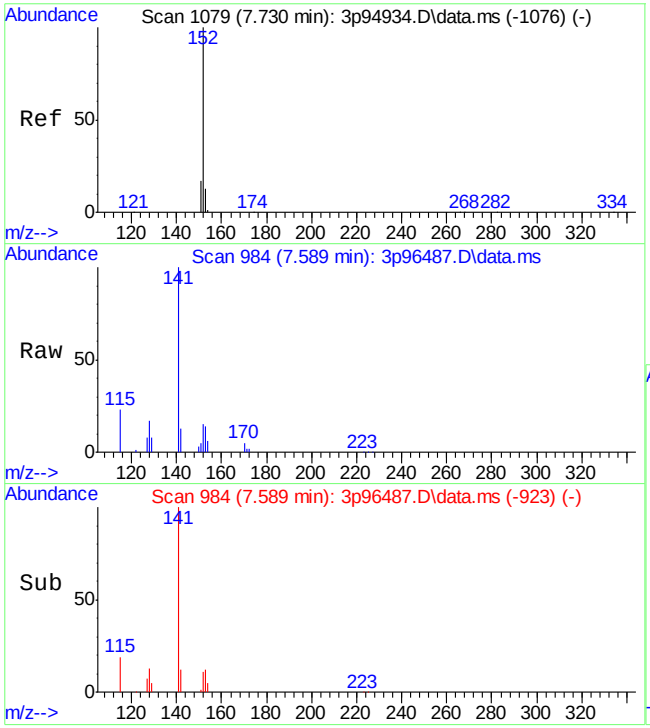


#10
2-Methylnaphthalene
Concen: 61.83 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:141 Resp: 3104

Ion	Ratio	Lower	Upper
141	100		
142	120.6	88.8	148.8
115	24.3	1.9	61.9

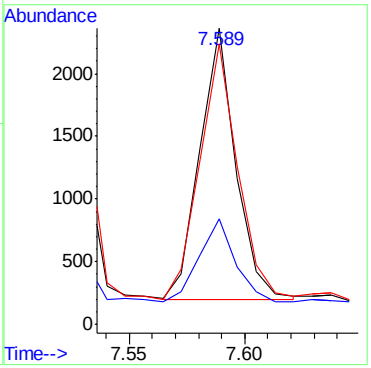


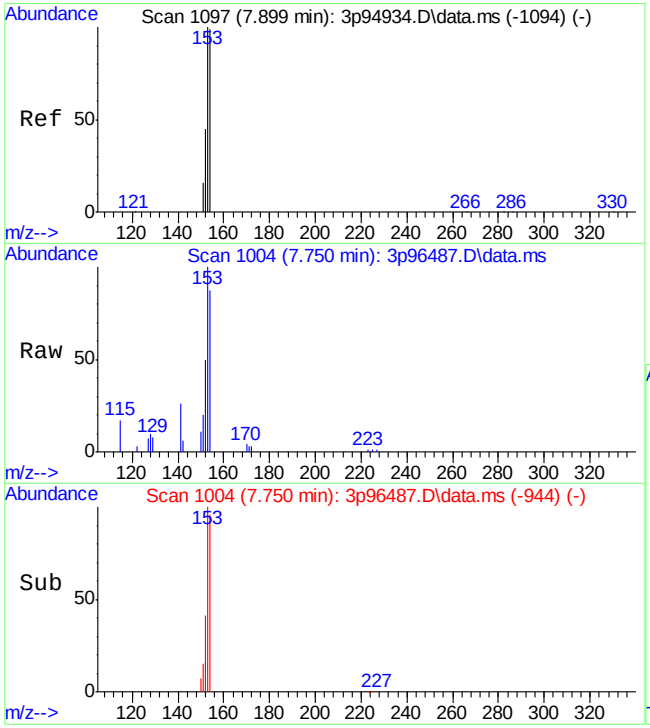


#14
Acenaphthylene
Concen: 24.35 ppb m
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:152 Resp: 2342

Ion	Ratio	Lower	Upper
152	100		
151	35.5	0.0	47.3
153	94.6	0.0	43.3#

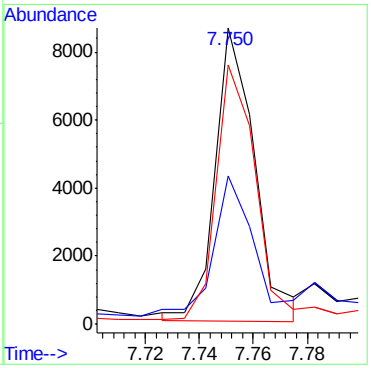


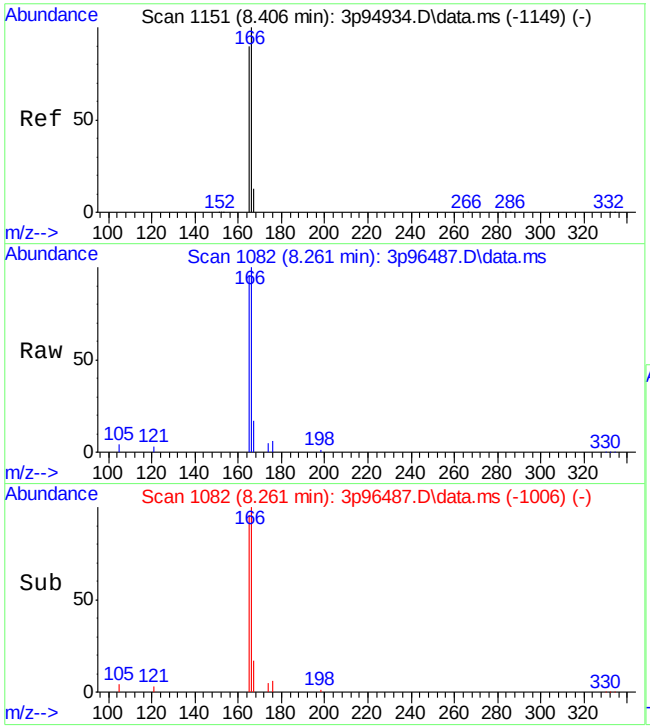


#15
Acenaphthene
Concen: 135.19 ppb
RT: 7.750 min Scan# 1004
Delta R.T. -0.015 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:153 Resp: 8818

Ion	Ratio	Lower	Upper
153	100		
152	46.5	16.5	76.5
154	90.0	73.6	133.6

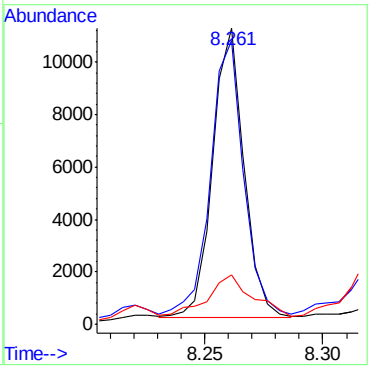


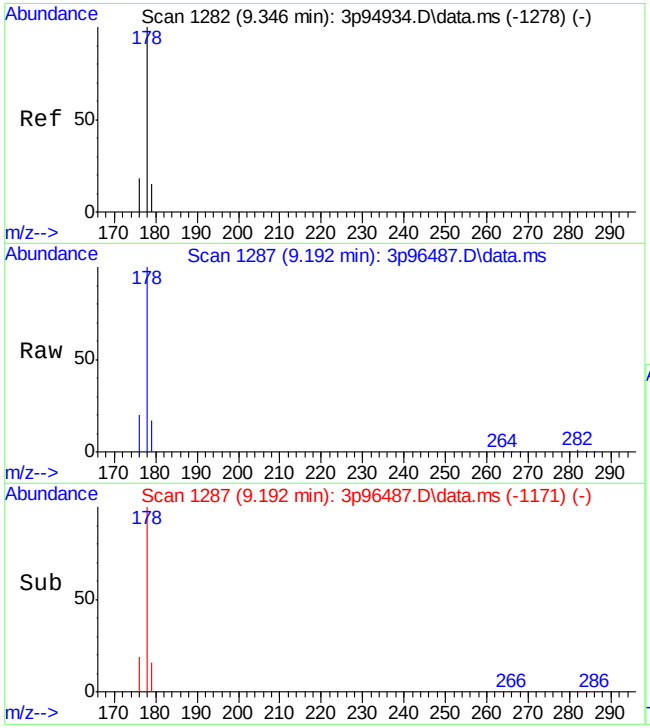


#17
Fluorene
Concen: 147.12 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:166 Resp: 10053

Ion	Ratio	Lower	Upper
166	100		
165	95.8	57.3	117.3
167	16.7	0.0	46.0

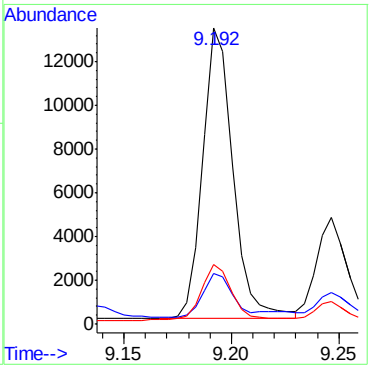


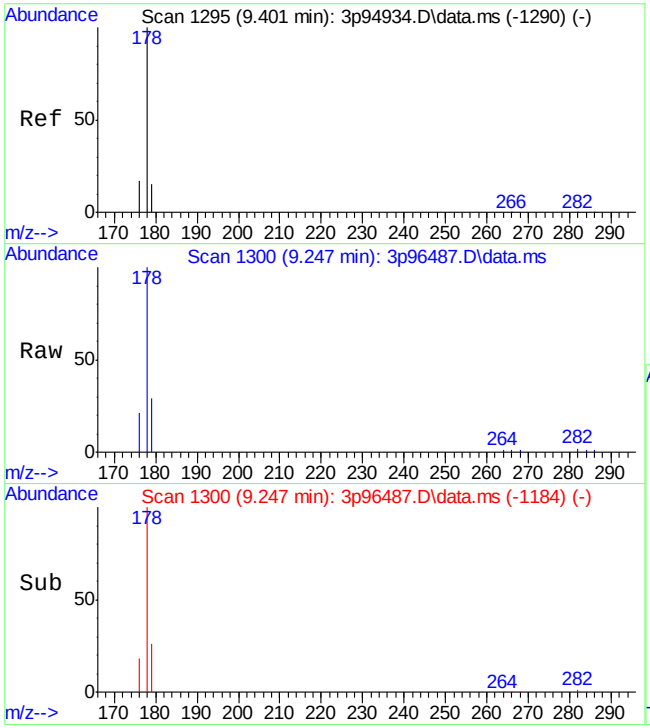


#22
Phenanthrene
Concen: 131.01 ppb m
RT: 9.192 min Scan# 1287
Delta R.T. -0.012 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:178 Resp: 12931

Ion	Ratio	Lower	Upper
178	100		
179	17.1	0.0	45.1
176	20.2	0.0	47.5

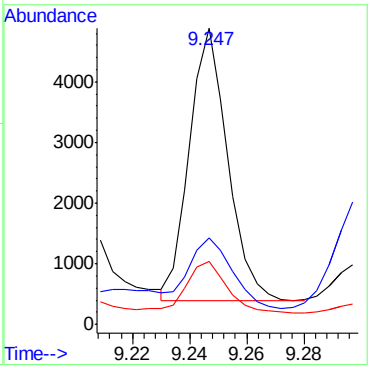


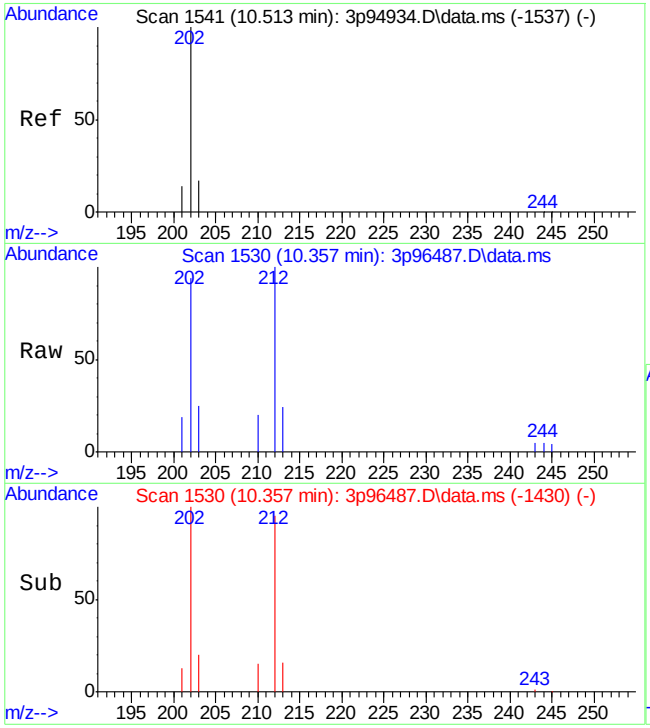


#23
Anthracene
Concen: 43.99 ppb m
RT: 9.247 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:178 Resp: 4201

Ion	Ratio	Lower	Upper
178	100		
179	29.1	0.0	43.0
176	21.2	0.0	47.0

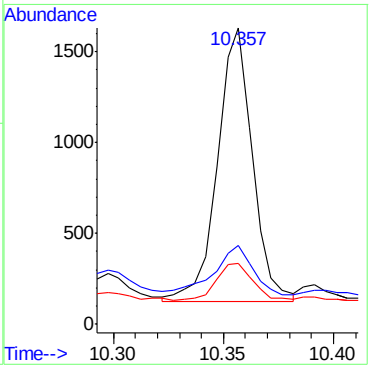


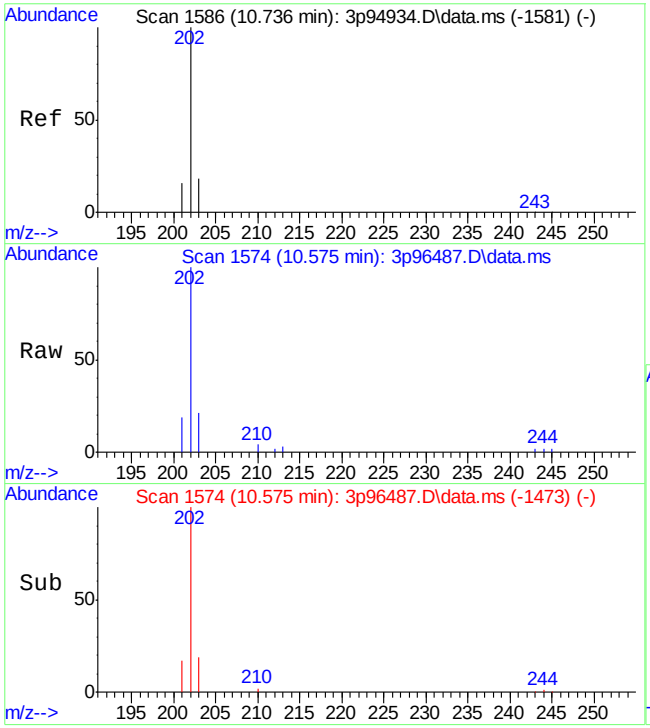


#24
Fluoranthene
Concen: 14.32 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:202 Resp: 1678

Ion	Ratio	Lower	Upper
202	100		
203	17.8	0.0	50.0
201	13.3	0.0	45.9

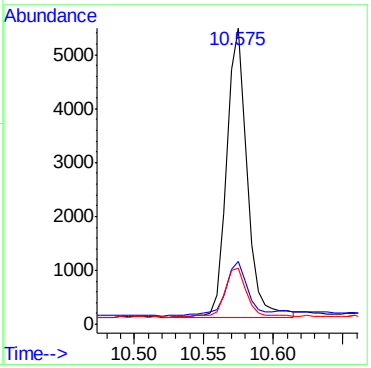


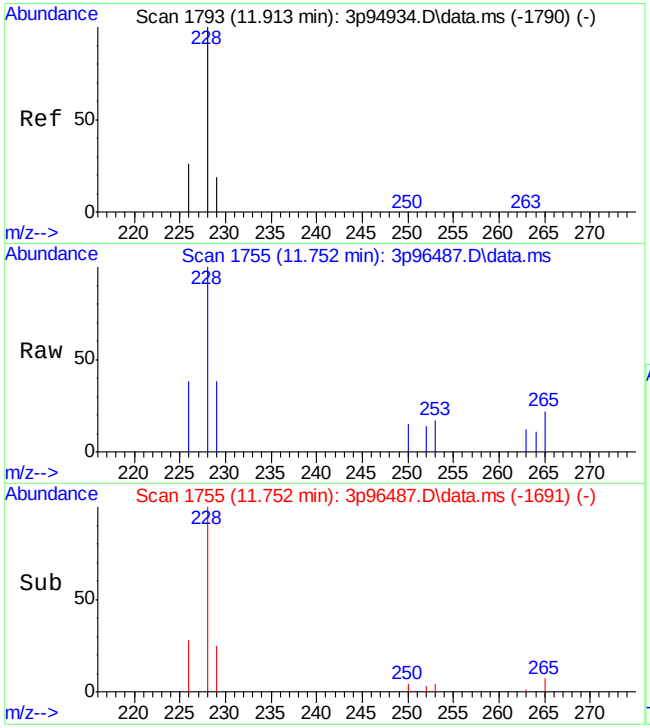


#25
Pyrene
Concen: 44.82 ppb
RT: 10.575 min Scan# 1574
Delta R.T. -0.002 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:202 Resp: 5454

Ion	Ratio	Lower	Upper
202	100		
203	18.1	0.0	48.7
201	16.9	0.0	46.9

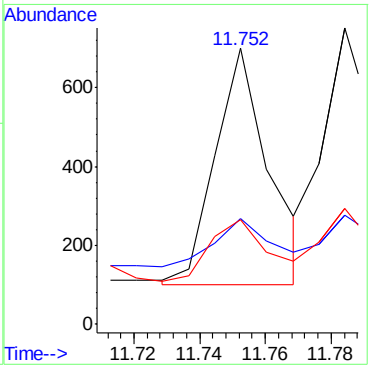


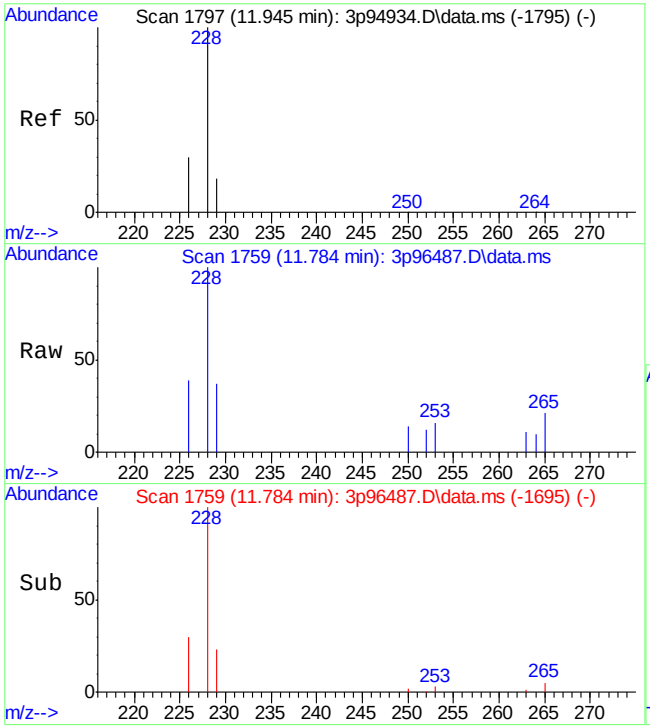


#27
Benzo[a]anthracene
Concen: 7.72 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:228 Resp: 681

Ion	Ratio	Lower	Upper
228	100		
229	20.5	0.0	49.3
226	25.9	0.0	55.2

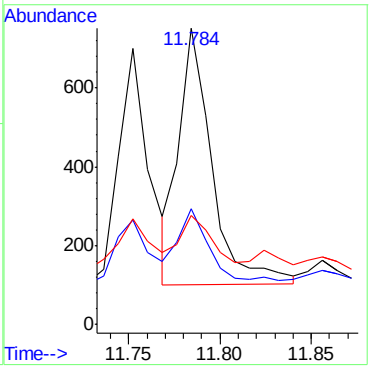


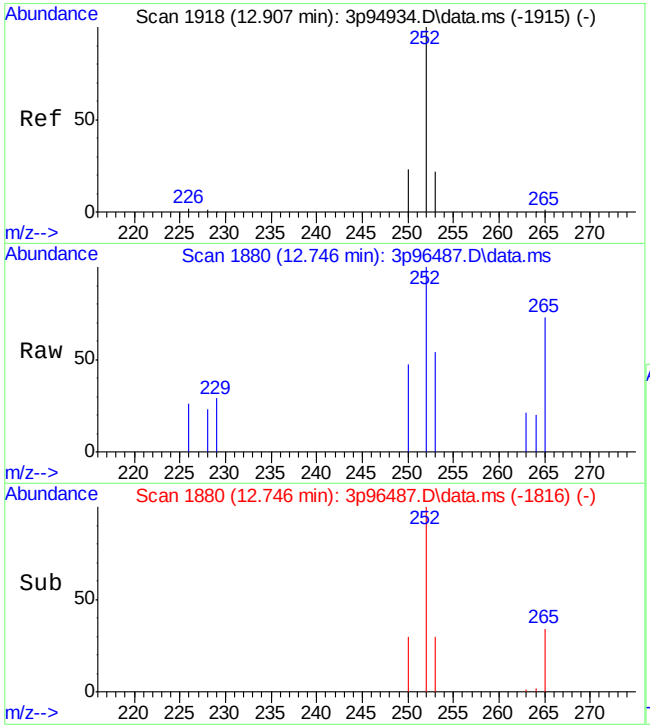


#28
Chrysene
Concen: 7.14 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:228 Resp: 818

Ion	Ratio	Lower	Upper
228	100		
226	28.0	0.0	55.6
229	19.7	0.0	47.4

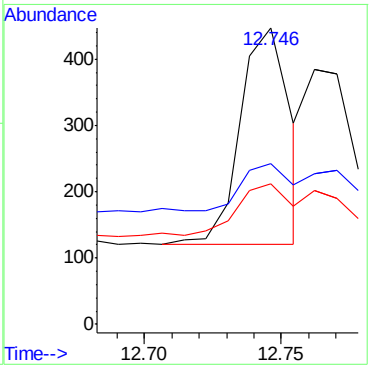


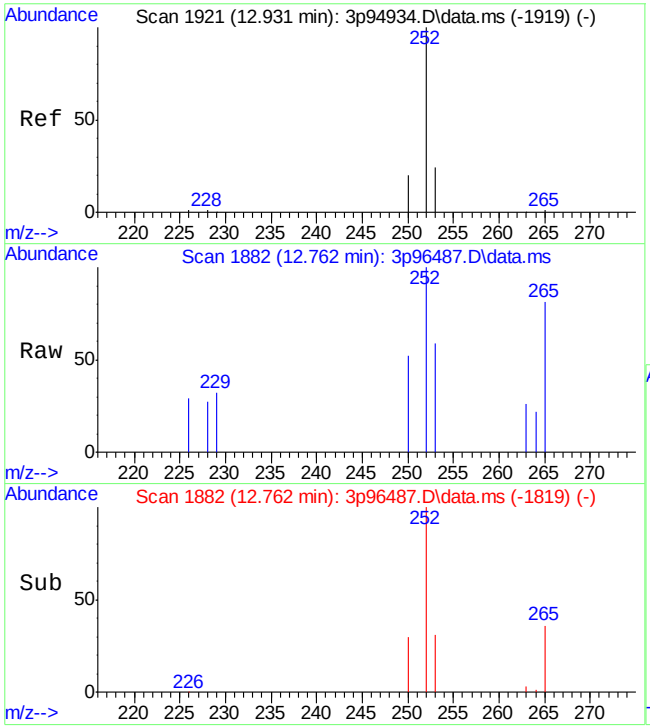


#30
Benzo[b]fluoranthene
Concen: 4.36 ppb
RT: 12.746 min Scan# 1880
Delta R.T. 0.005 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:252 Resp: 417

Ion	Ratio	Lower	Upper
252	100		
253	21.7	0.0	51.7
250	23.2	0.0	48.4

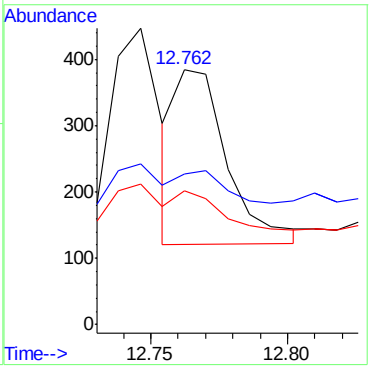


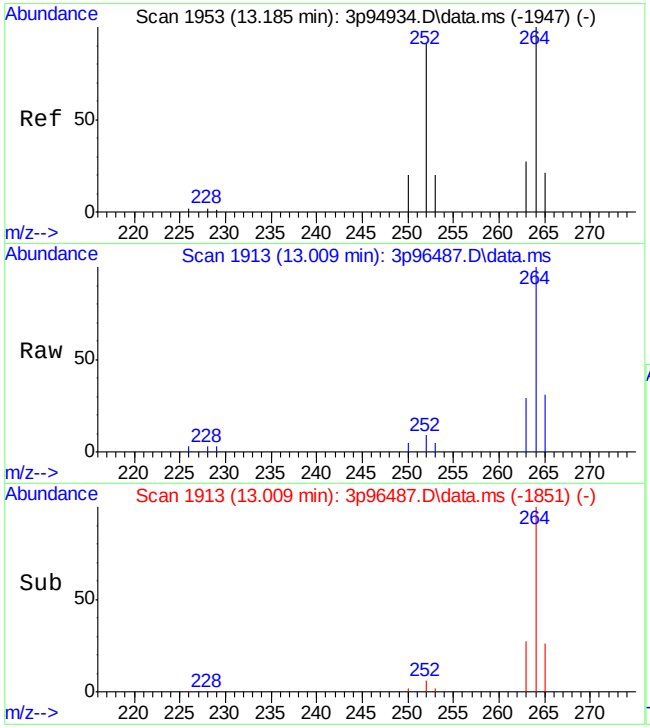


#31
Benzo[k]fluoranthene
Concen: 3.02 ppb
RT: 12.762 min Scan# 1882
Delta R.T. -0.002 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:252 Resp: 345

Ion	Ratio	Lower	Upper
252	100		
253	18.3	0.0	51.5
250	26.1	0.0	51.3

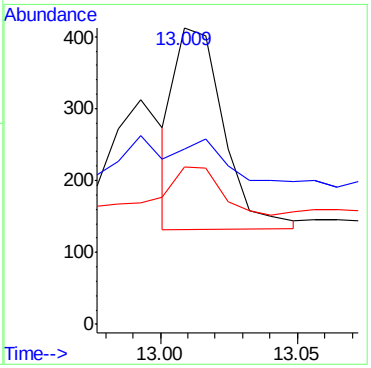


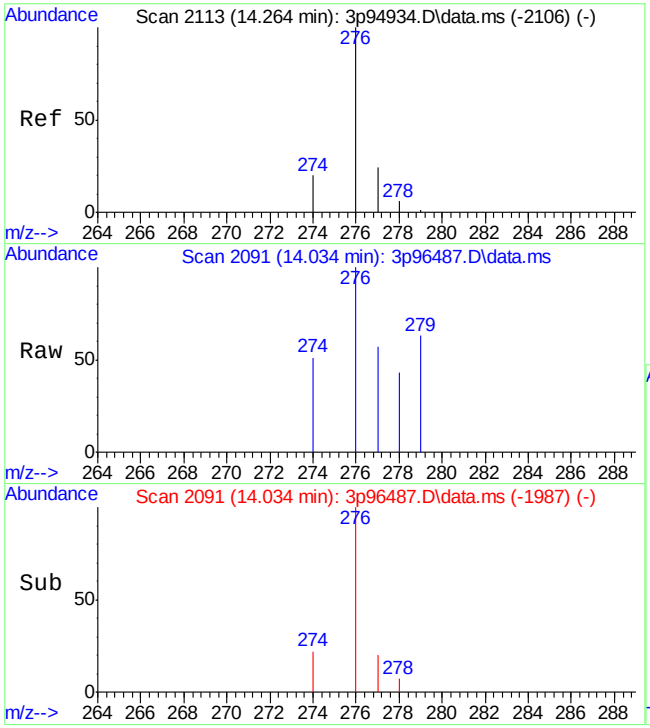


#32
Benzo[a]pyrene
Concen: 2.79 ppb
RT: 13.009 min Scan# 1913
Delta R.T. -0.009 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:252 Resp: 342

Ion	Ratio	Lower	Upper
252	100		
253	14.7	0.0	52.3
250	25.1	0.0	49.9

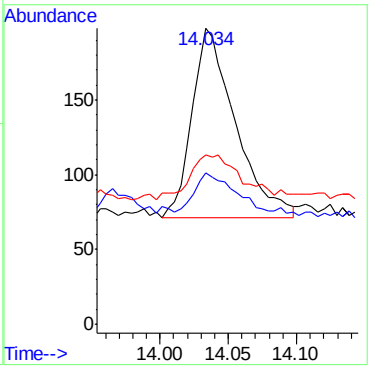


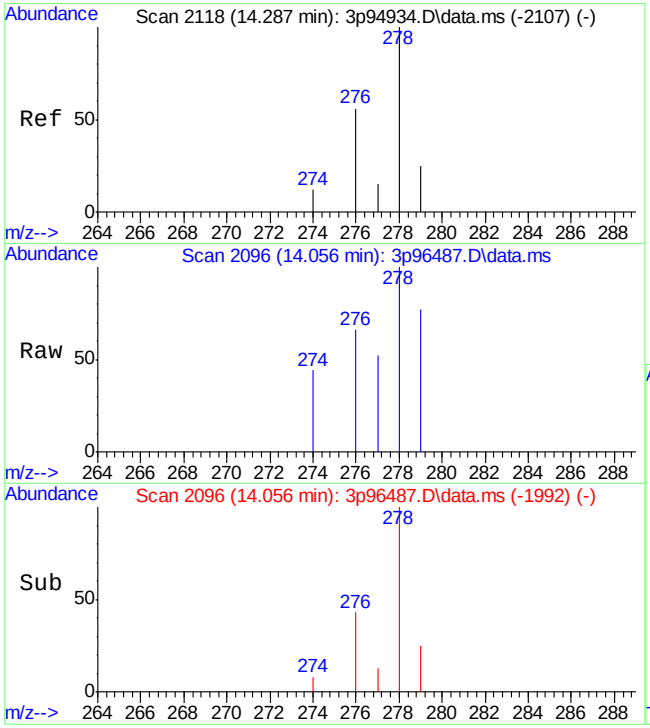


#33
Indeno[1,2,3-cd]pyrene
Concen: 2.78 ppb
RT: 14.034 min Scan# 2091
Delta R.T. -0.024 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:276 Resp: 282

Ion	Ratio	Lower	Upper
276	100		
274	19.5	0.0	45.2
277	20.7	0.0	52.4

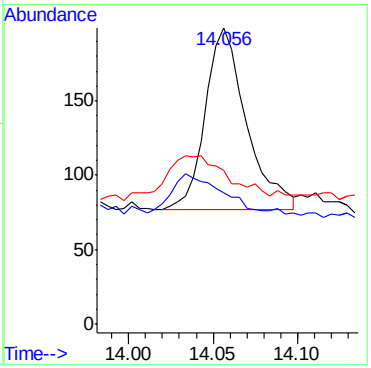


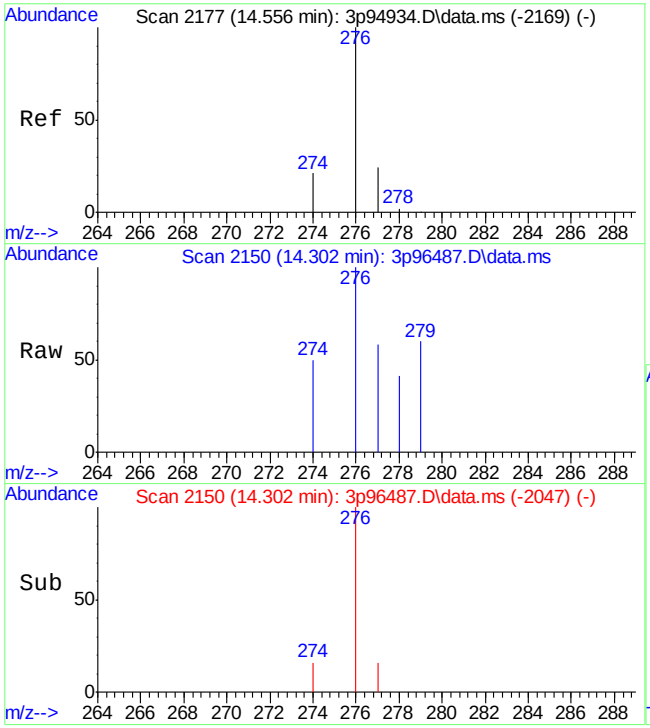


#34
Dibenz[a,h]anthracene
Concen: 2.51 ppb
RT: 14.056 min Scan# 2096
Delta R.T. -0.024 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:278 Resp: 207

Ion	Ratio	Lower	Upper
278	100		
274	8.5	0.0	40.3
277	10.6	0.0	40.0

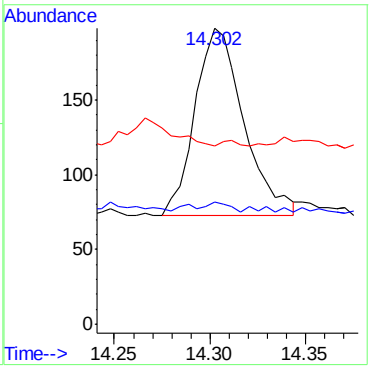




#35
Benzo[g,h,i]perylene
Concen: 2.32 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96487.D
Acq: 20 Apr 2022 8:54 am

Tgt Ion:276 Resp: 222

Ion	Ratio	Lower	Upper
276	100		
278	5.0	0.0	31.3
279	0.0	0.0	30.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123384.D
Acq On : 21 Apr 2022 11:03 am
Operator : chriss2
Sample : jd43215-14
Misc : op39191,e2m5552,280,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 21 12:27:40 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

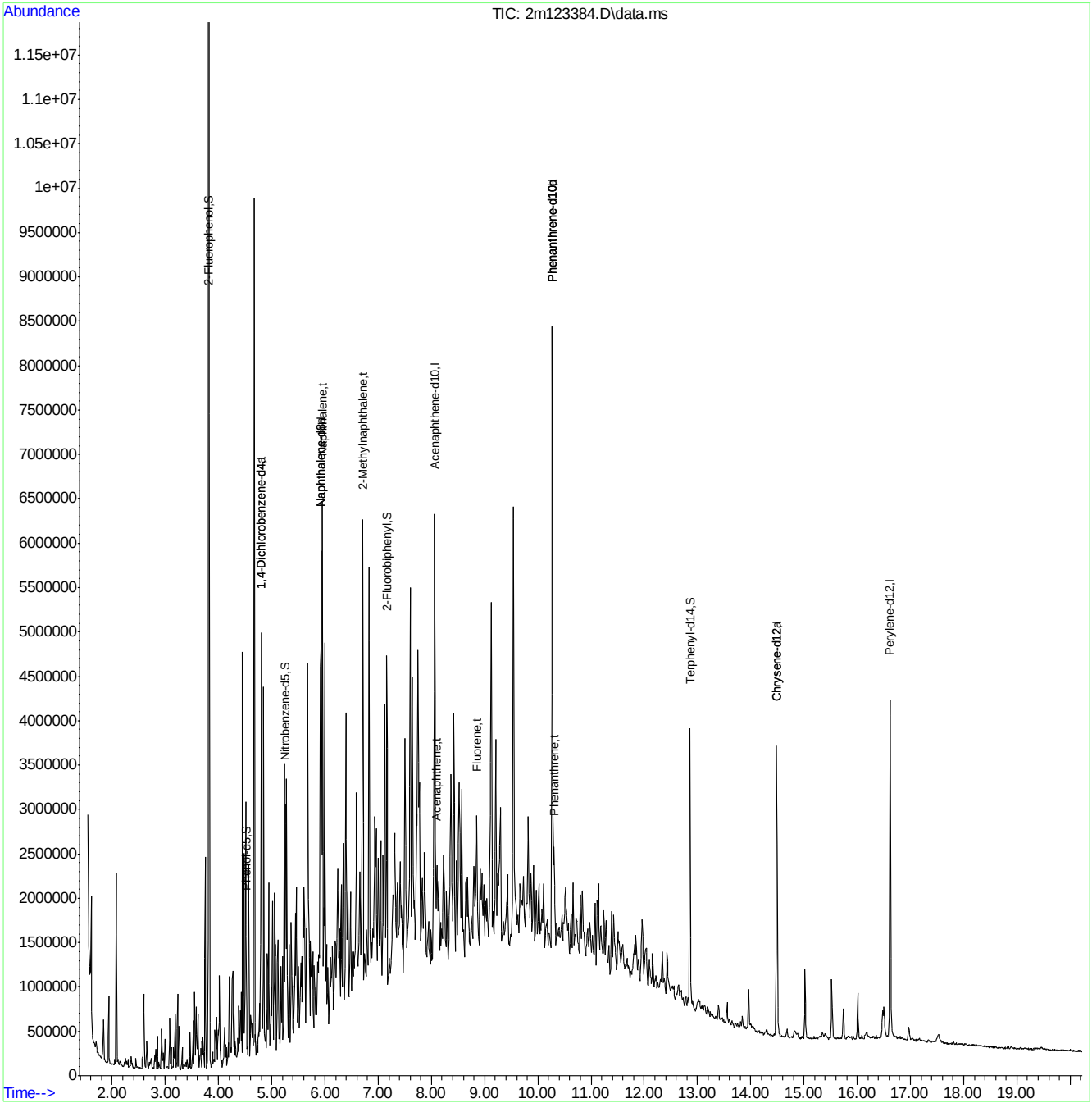
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.805	152	484192	8.00	ppm	-0.01
24) Naphthalene-d8	5.928	136	2043456	8.00	ppm	-0.02
46) Acenaphthene-d10	8.057	164	1112500	8.00	ppm	-0.02
69) Phenanthrene-d10	10.271	188	1795803	8.00	ppm	-0.02
84) Chrysene-d12	14.486	240	1509217	8.00	ppm	-0.03
93) Perylene-d12	16.620	264	2082888	8.00	ppm	-0.03
103) 1,4-Dichlorobenzene-d4a	4.805	152	484192	8.00	ppm	0.00
105) Phenanthrene-d10a	10.271	188	1795803	8.00	ppm	0.00
107) Naphthalene-d8a	5.928	136	2043456	8.00	ppm	-0.01
109) Chrysene-d12a	14.486	240	1509217	8.00	ppm	-0.02
111) Phenanthrene-d10b	10.271	188	1795803	8.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.820	112	238928	3.11	ppm	0.00
Spiked Amount 10.000			Recovery = 31.10%			
8) Phenol-d5	4.516	99	265330	2.54	ppm	0.00
Spiked Amount 10.000			Recovery = 25.40%			
25) Nitrobenzene-d5	5.254	82	588222	6.38	ppm	-0.02
Spiked Amount 10.000			Recovery = 63.80%			
51) 2-Fluorobiphenyl	7.163	172	1194144	6.29	ppm	-0.02
Spiked Amount 10.000			Recovery = 62.90%			
74) 2,4,6-Tribromophenol	0.000	330	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
87) Terphenyl-d14	12.860	244	1529518	6.62	ppm	-0.02
Spiked Amount 10.000			Recovery = 66.20%			
112) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
113) o-terphenyl	0.000	230	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
Target Compounds						Qvalue
38) Naphthalene	5.949	128	2046477	7.84	ppm	99
44) 2-Methylnaphthalene	6.714	141	1212684	7.78	ppm	97
59) Acenaphthene	8.105	153	74479	0.46	ppm	98
66) Fluorene	8.848	166	181875	0.99	ppm	98
78) Phenanthrene	10.308	178	345239	1.39	ppm	96

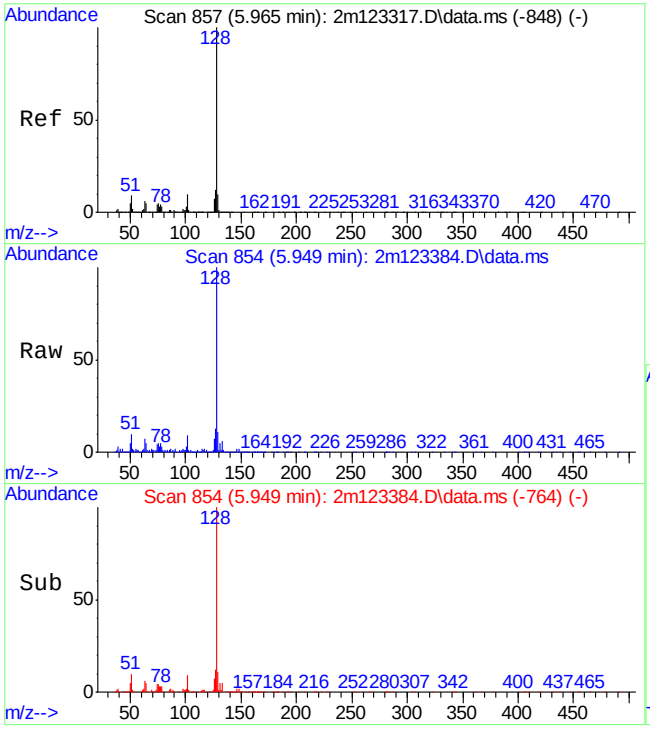
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123384.D
Acq On : 21 Apr 2022 11:03 am
Operator : chriss2
Sample : jd43215-14
Misc : op39191,e2m5552,280,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 21 12:27:40 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

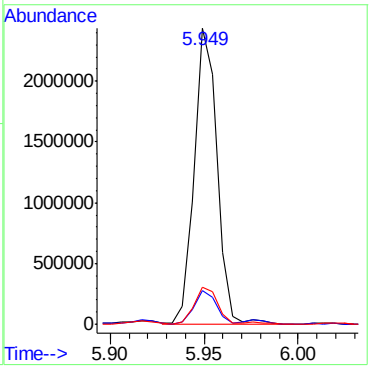


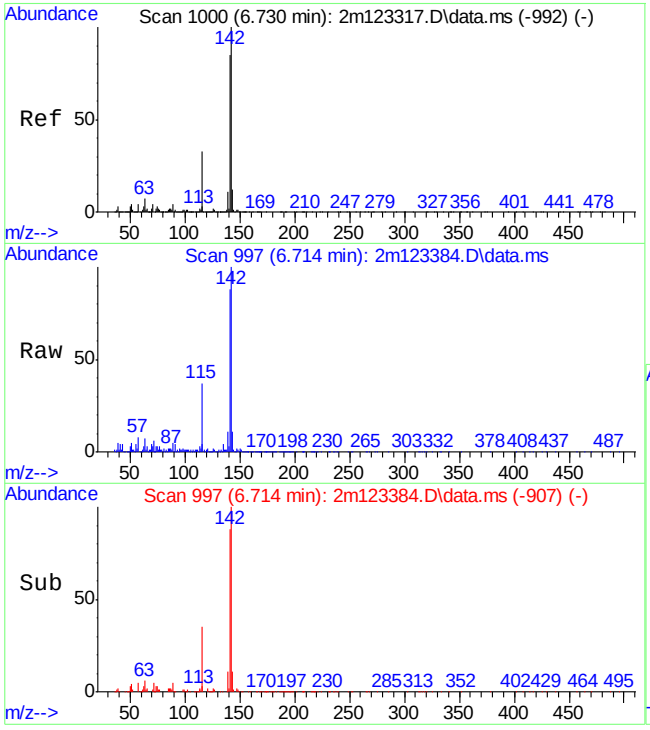


#38
Naphthalene
Concen: 7.84 ppm
RT: 5.949 min Scan# 854
Delta R.T. -0.016 min
Lab File: 2m123384.D
Acq: 21 Apr 2022 11:03 am

Tgt Ion:128 Resp: 2046477

Ion	Ratio	Lower	Upper
128	100		
129	11.2	0.0	40.3
127	12.4	0.0	42.3

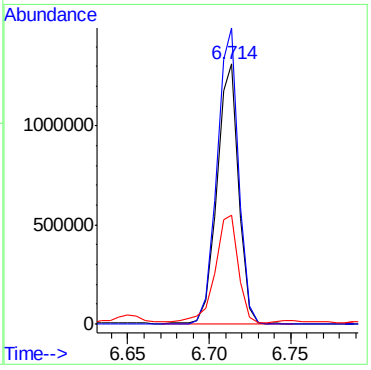


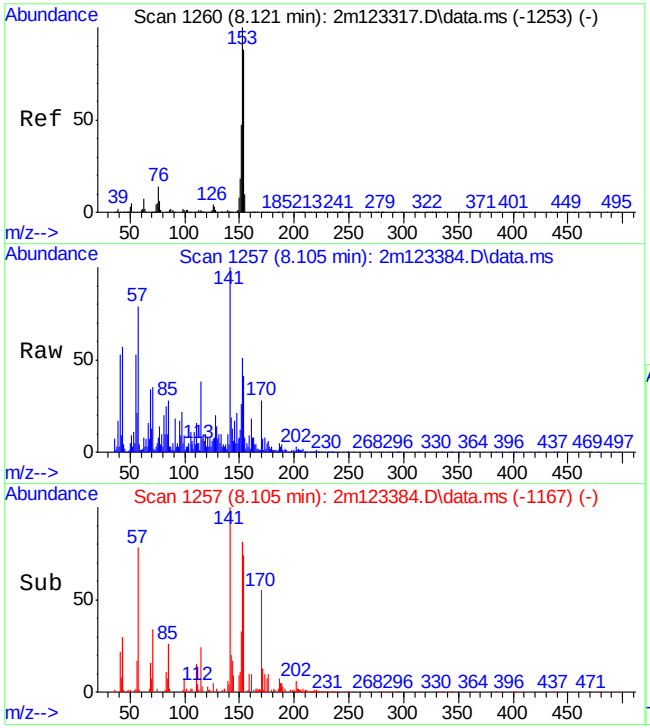


#44
2-Methylnaphthalene
Concen: 7.78 ppm
RT: 6.714 min Scan# 997
Delta R.T. -0.016 min
Lab File: 2m123384.D
Acq: 21 Apr 2022 11:03 am

Tgt Ion:141 Resp: 1212684

Ion	Ratio	Lower	Upper
141	100		
142	113.9	87.3	147.3
115	40.9	8.9	68.9

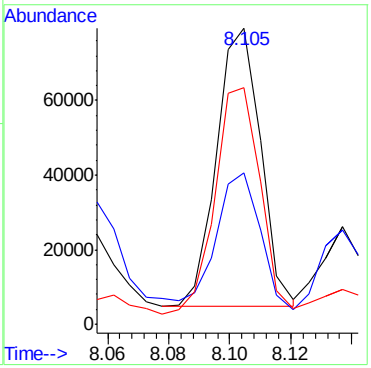


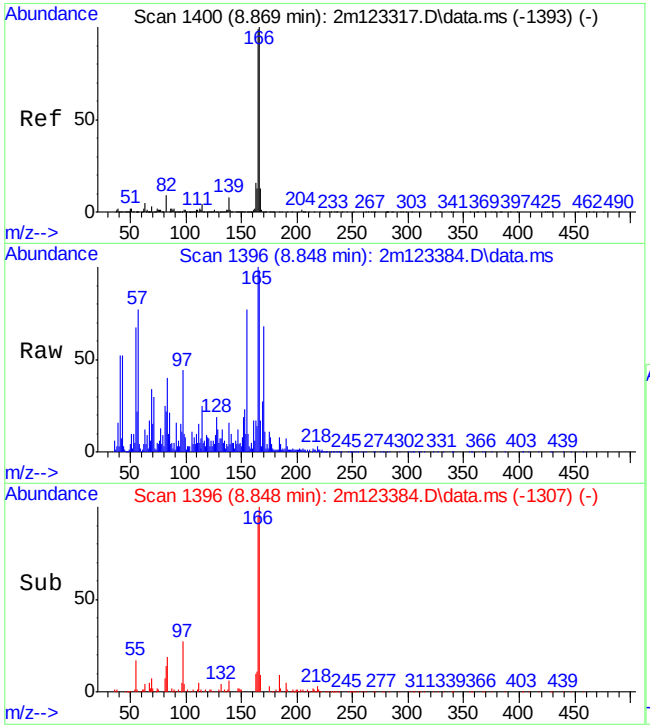


#59
Acenaphthene
Concen: 0.46 ppm
RT: 8.105 min Scan# 1257
Delta R.T. -0.016 min
Lab File: 2m123384.D
Acq: 21 Apr 2022 11:03 am

Tgt Ion:153 Resp: 74479

Ion	Ratio	Lower	Upper
153	100		
152	47.6	17.1	77.1
154	81.2	53.7	113.7

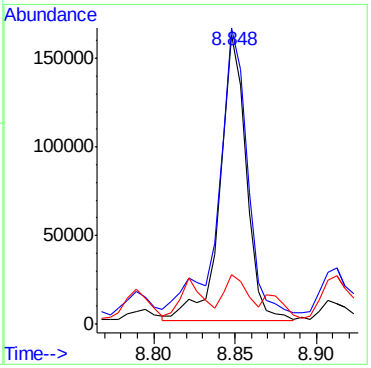


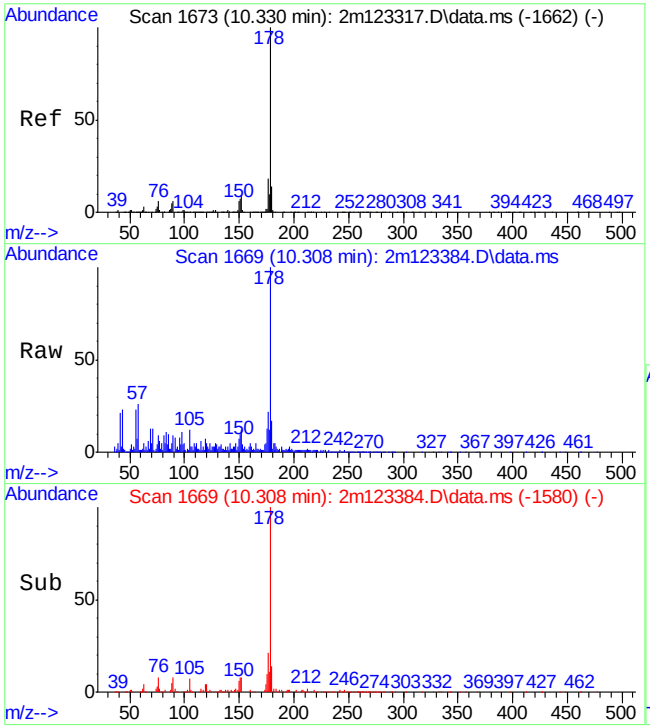


#66
Fluorene
Concen: 0.99 ppm
RT: 8.848 min Scan# 1396
Delta R.T. -0.021 min
Lab File: 2m123384.D
Acq: 21 Apr 2022 11:03 am

Tgt Ion:166 Resp: 181875

Ion	Ratio	Lower	Upper
166	100		
165	100.0	68.9	128.9
167	14.6	0.0	42.7

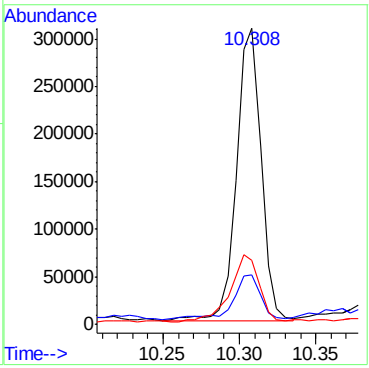




#78
Phenanthrene
Concen: 1.39 ppm
RT: 10.308 min Scan# 1669
Delta R.T. -0.021 min
Lab File: 2m123384.D
Acq: 21 Apr 2022 11:03 am

Tgt Ion:178 Resp: 345239

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	44.0
176	20.7	0.0	48.3



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/22/22 10:29

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96488.D
Acq On : 20 Apr 2022 9:17 am
Operator : chriss2
Sample : jd43215-14
Misc : op39191,e3p4582,280,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 22 09:33:42 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

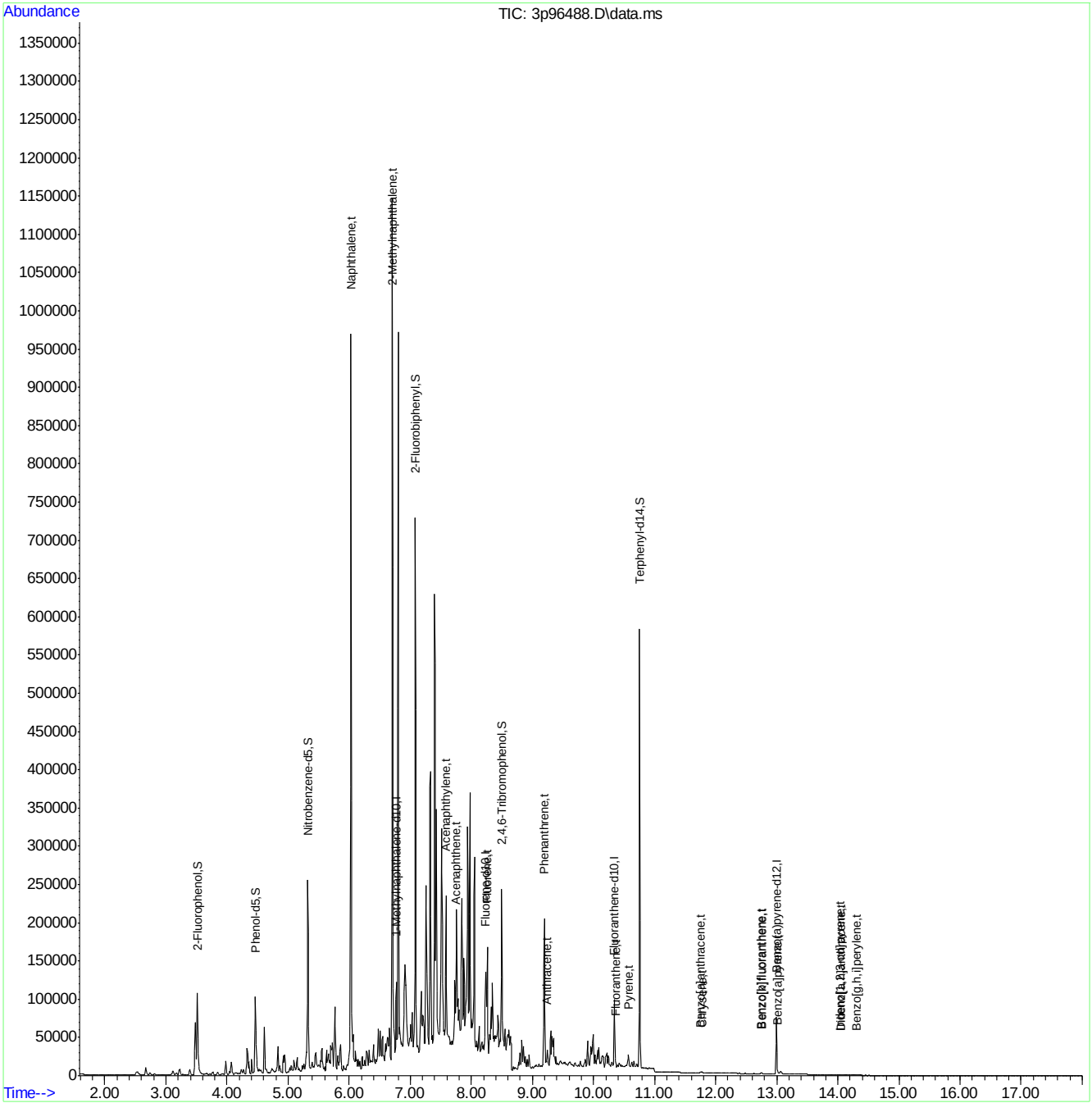
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	40345	800.00 ppb	# 0.00
12) Fluorene-d10	8.230	176	72599m	800.00 ppb	0.00
19) Fluoranthene-d10	10.339	212	60012	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.994	264	50490	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.516	112	84338	2775.15 ppb	-0.03
Spiked Amount 50.000			Recovery	= 5550.30%	
4) Phenol-d5	4.462	99	85683	2076.43 ppb	0.00
Spiked Amount 50.000			Recovery	= 4152.86%	
7) Nitrobenzene-d5	5.320	82	155761	4841.47 ppb	0.00
Spiked Amount 50.000			Recovery	= 9682.94%	
13) 2-Fluorobiphenyl	7.079	172	360127	3160.68 ppb	-0.01
Spiked Amount 50.000			Recovery	= 6321.36%	
18) 2,4,6-Tribromophenol	8.495	330	80337	5870.62 ppb	0.00
Spiked Amount 50.000			Recovery	= 11741.24%	
26) Terphenyl-d14	10.754	244	362400	6480.67 ppb	0.00
Spiked Amount 50.000			Recovery	= 12961.34%	
Target Compounds					Qvalue
8) Naphthalene	6.029	128	664304	5397.01 ppb	99
10) 2-Methylnaphthalene	6.708	141	383270	5826.38 ppb	97
14) Acenaphthylene	7.589	152	11713m	67.92 ppb	
15) Acenaphthene	7.750	153	28581	244.38 ppb	91
17) Fluorene	8.261	166	59361m	484.50 ppb	
22) Phenanthrene	9.193	178	124069m	1383.42 ppb	
23) Anthracene	9.243	178	10204m	117.59 ppb	
24) Fluoranthene	10.358	202	3844	36.10 ppb	73
25) Pyrene	10.571	202	10675m	96.54 ppb	
27) Benzo[a]anthracene	11.746	228	808	10.08 ppb	70
28) Chrysene	11.778	228	1105	10.61 ppb	76
30) Benzo[b]fluoranthene	12.740	252	608	6.63 ppb	92
31) Benzo[k]fluoranthene	12.764	252	324	2.96 ppb	99
32) Benzo[a]pyrene	13.010	252	436	3.88 ppb	84
33) Indeno[1,2,3-cd]pyrene	14.032	276	435	4.46 ppb	91
34) Dibenz[a,h]anthracene	14.050	278	301	3.81 ppb	97
35) Benzo[g,h,i]perylene	14.301	276	448	4.87 ppb	99

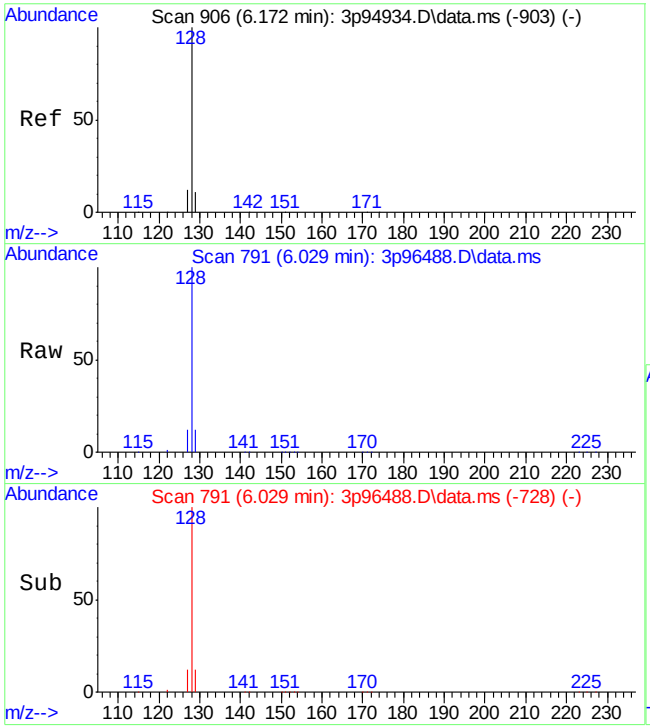
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96488.D
Acq On : 20 Apr 2022 9:17 am
Operator : chriss2
Sample : jd43215-14
Misc : op39191,e3p4582,280,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 22 09:33:42 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

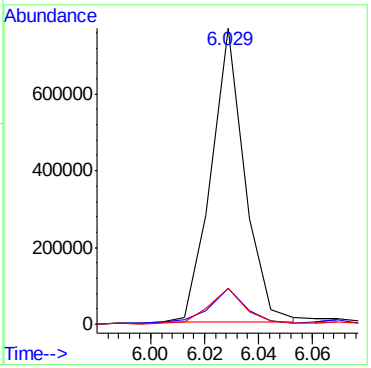


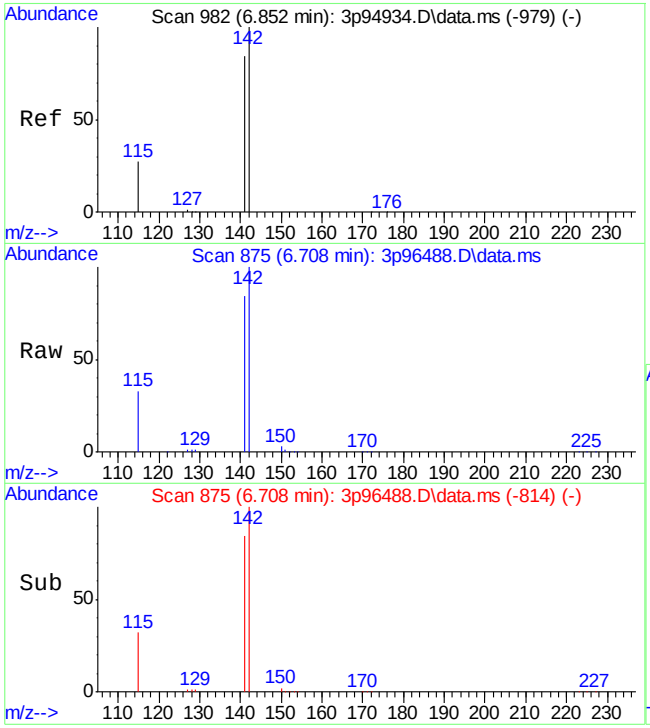


#8
Naphthalene
Concen: 5397.01 ppb
RT: 6.029 min Scan# 791
Delta R.T. -0.005 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:128 Resp: 664304

Ion	Ratio	Lower	Upper
128	100		
129	11.5	0.0	41.2
127	11.9	0.0	41.7

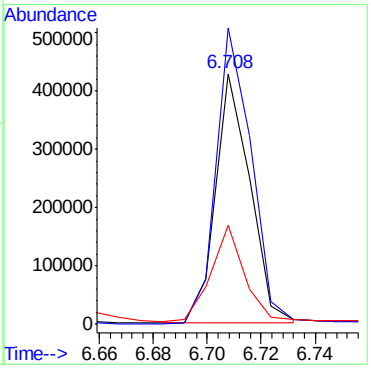


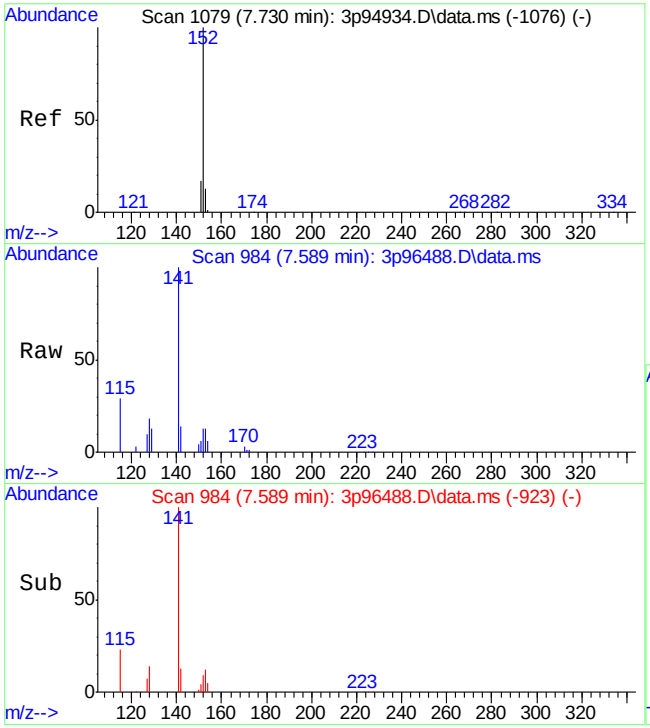


#10
2-Methylnaphthalene
Concen: 5826.38 ppb
RT: 6.708 min Scan# 875
Delta R.T. -0.006 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:141 Resp: 383270

Ion	Ratio	Lower	Upper
141	100		
142	118.8	88.8	148.8
115	38.6	1.9	61.9

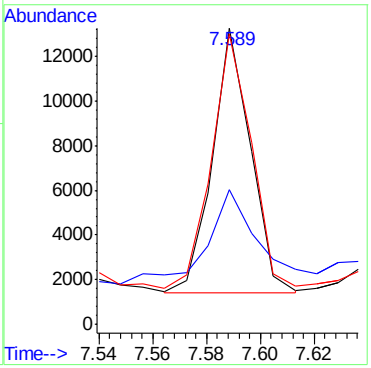


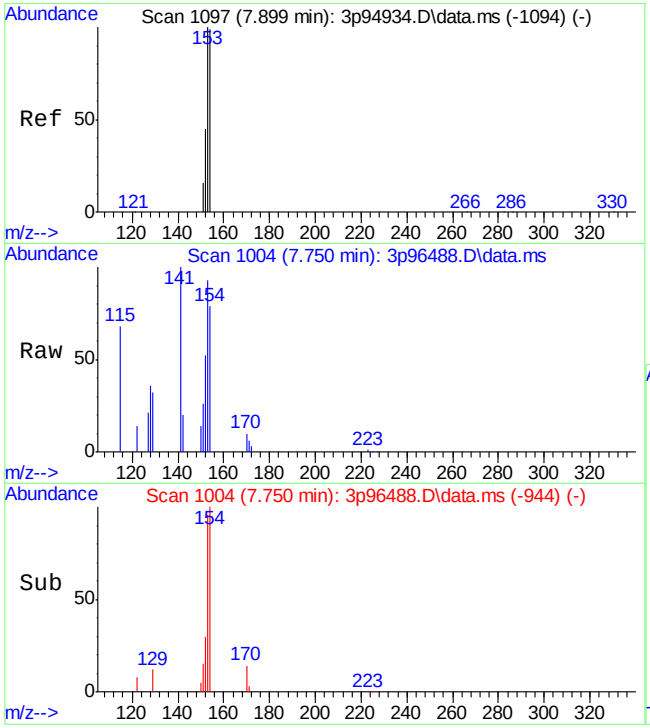


#14
Acenaphthylene
Concen: 67.92 ppb m
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:152 Resp: 11713

Ion	Ratio	Lower	Upper
152	100		
151	45.3	0.0	47.3
153	98.3	0.0	43.3#

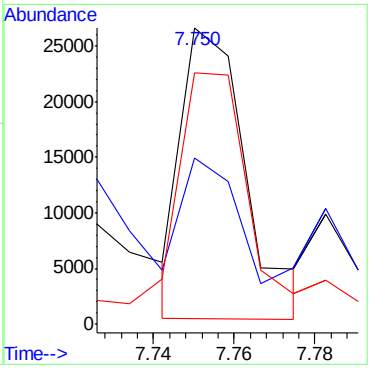


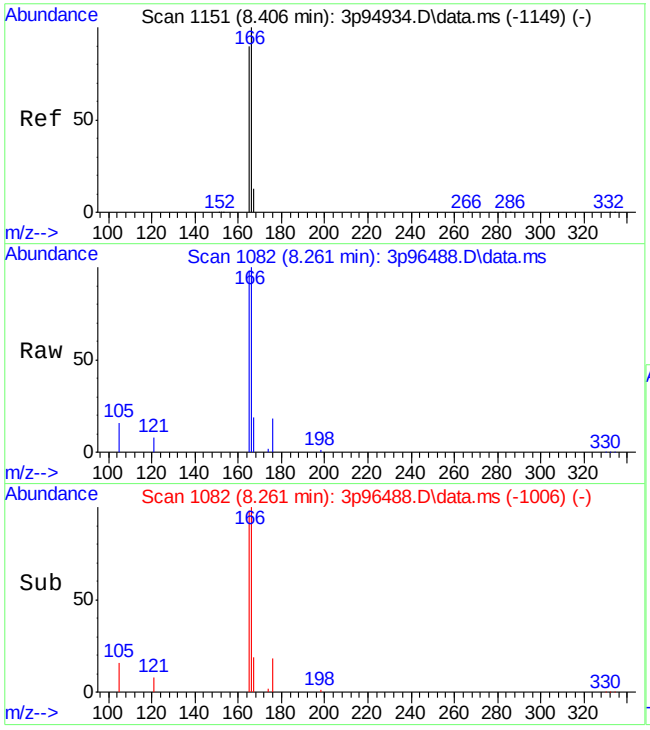


#15
Acenaphthene
Concen: 244.38 ppb
RT: 7.750 min Scan# 1004
Delta R.T. -0.016 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:153 Resp: 28581

Ion	Ratio	Lower	Upper
153	100		
152	46.6	16.5	76.5
154	90.0	73.6	133.6

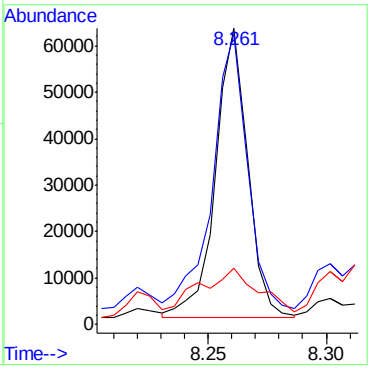


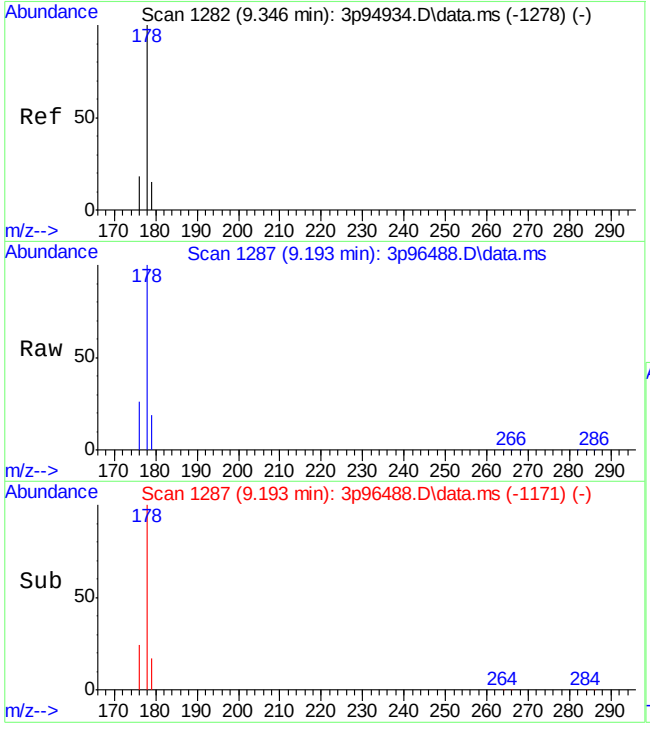


#17
Fluorene
Concen: 484.50 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:166 Resp: 59361

Ion	Ratio	Lower	Upper
166	100		
165	98.1	57.3	117.3
167	18.8	0.0	46.0

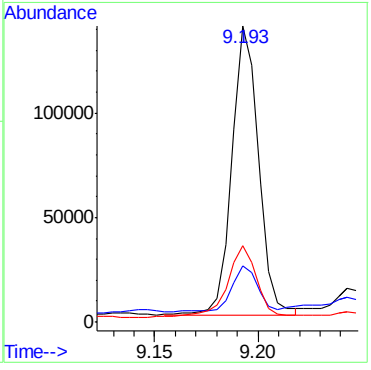


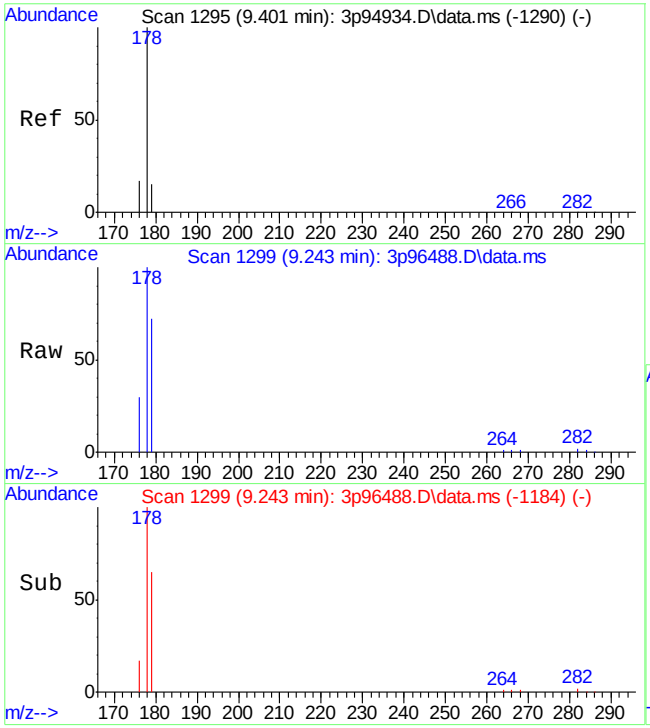


#22
Phenanthrene
Concen: 1383.42 ppb m
RT: 9.193 min Scan# 1287
Delta R.T. -0.011 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:178 Resp: 124069

Ion	Ratio	Lower	Upper
178	100		
179	19.0	0.0	45.1
176	25.6	0.0	47.5

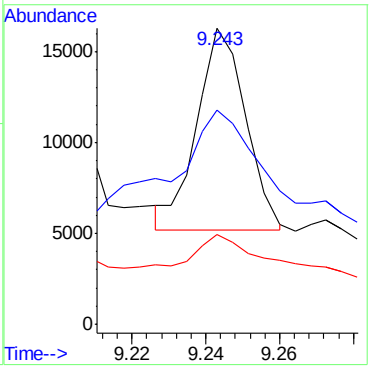


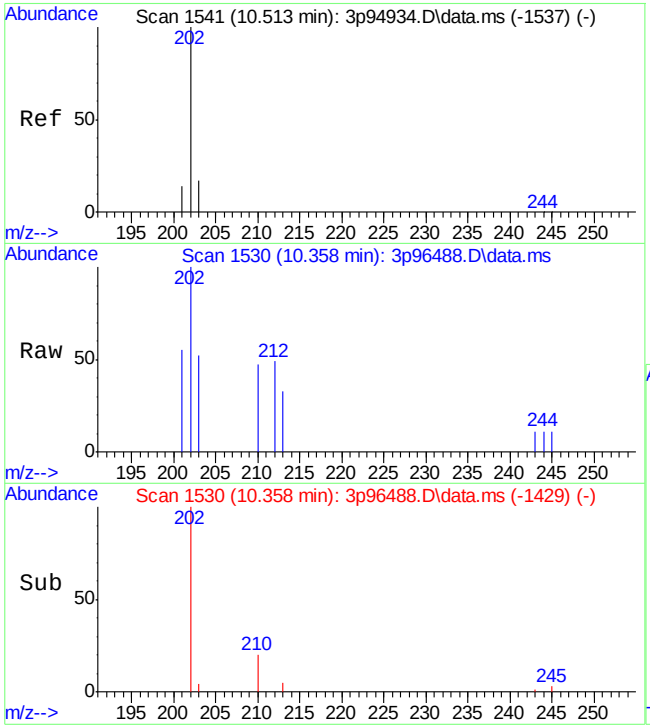


#23
Anthracene
Concen: 117.59 ppb m
RT: 9.243 min Scan# 1299
Delta R.T. -0.015 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:178 Resp: 10204

Ion	Ratio	Lower	Upper
178	100		
179	72.2	0.0	43.0#
176	30.2	0.0	47.0

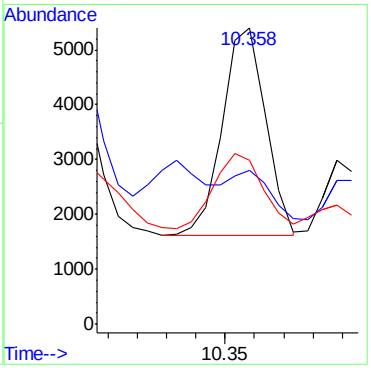


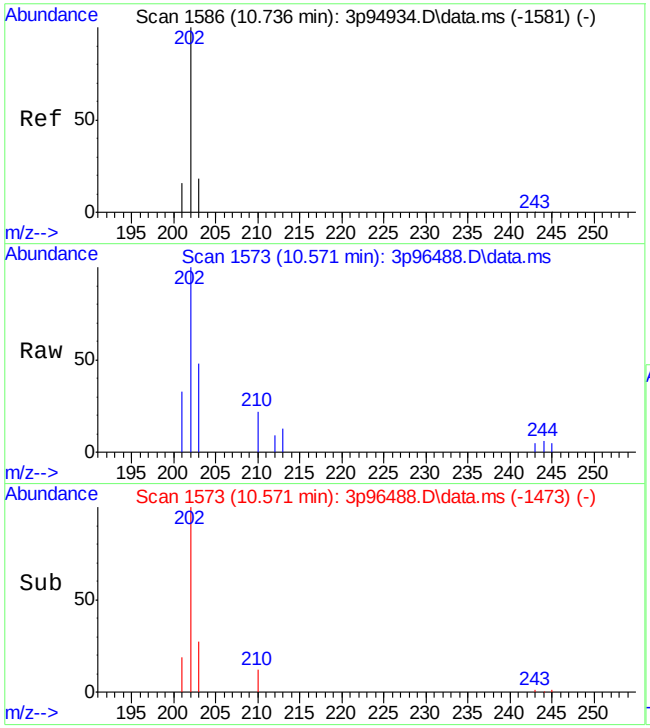


#24
Fluoranthene
Concen: 36.10 ppb
RT: 10.358 min Scan# 1530
Delta R.T. -0.003 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:202 Resp: 3844

Ion	Ratio	Lower	Upper
202	100		
203	11.6	0.0	50.0
201	31.8	0.0	45.9

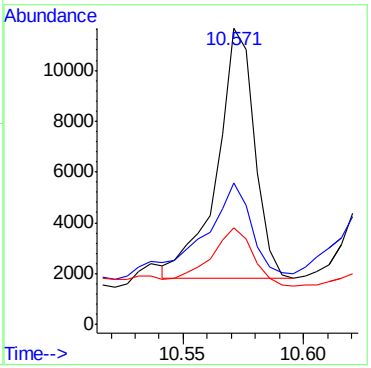


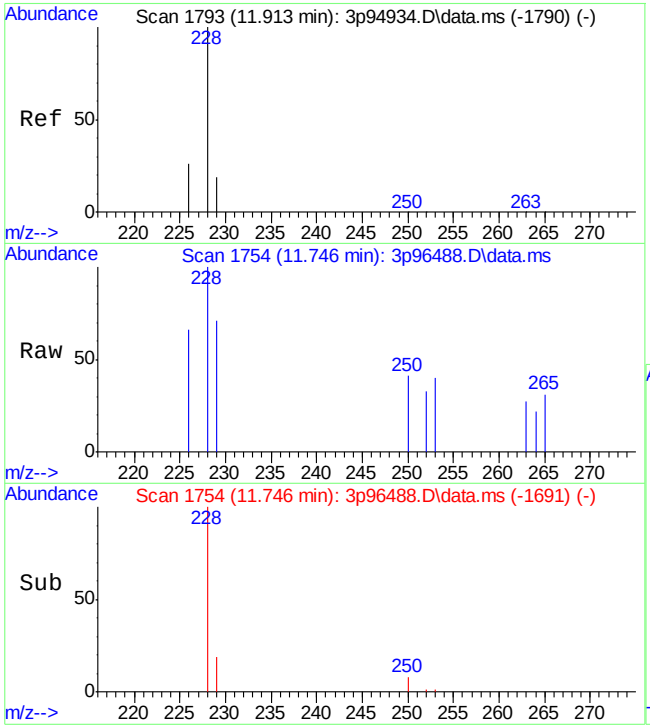


#25
Pyrene
Concen: 96.54 ppb m
RT: 10.571 min Scan# 1573
Delta R.T. -0.006 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:202 Resp: 10675

Ion	Ratio	Lower	Upper
202	100		
203	47.7	0.0	48.7
201	32.8	0.0	46.9

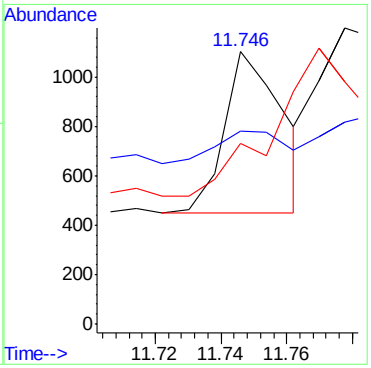


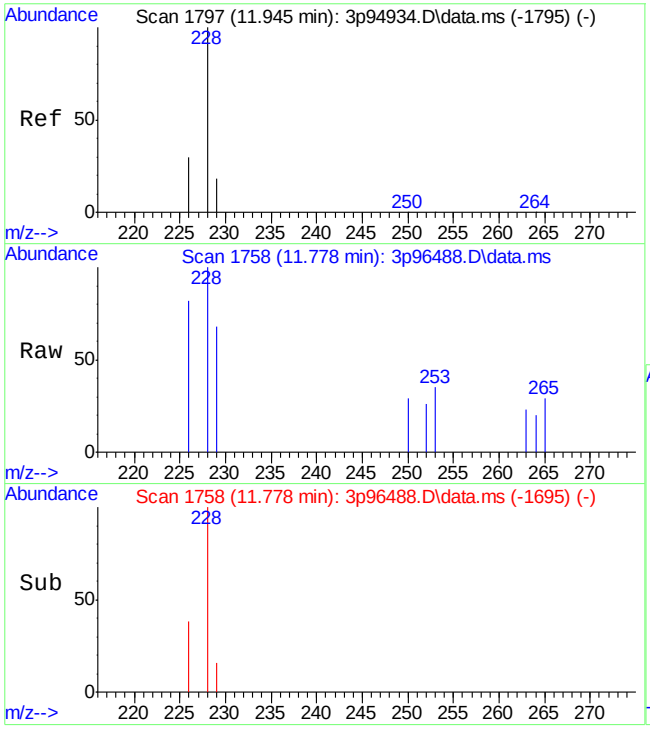


#27
Benzo[a]anthracene
Concen: 10.08 ppb
RT: 11.746 min Scan# 1754
Delta R.T. -0.000 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:228 Resp: 808

Ion	Ratio	Lower	Upper
228	100		
229	21.8	0.0	49.3
226	0.8	0.0	55.2

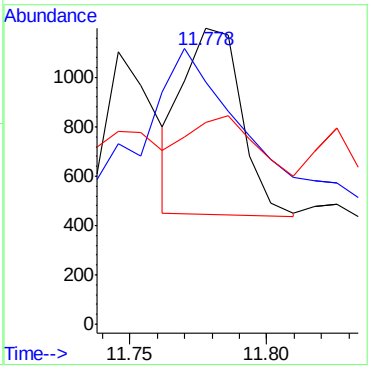


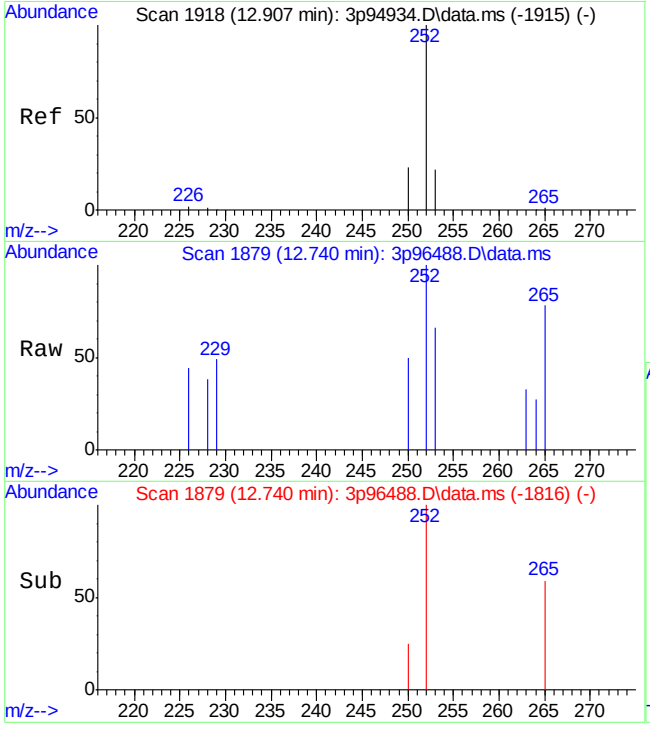


#28
Chrysene
Concen: 10.61 ppb
RT: 11.778 min Scan# 1758
Delta R.T. -0.000 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:228 Resp: 1105

Ion	Ratio	Lower	Upper
228	100		
226	36.8	0.0	55.6
229	28.8	0.0	47.4

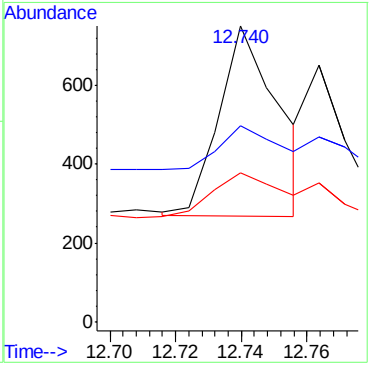


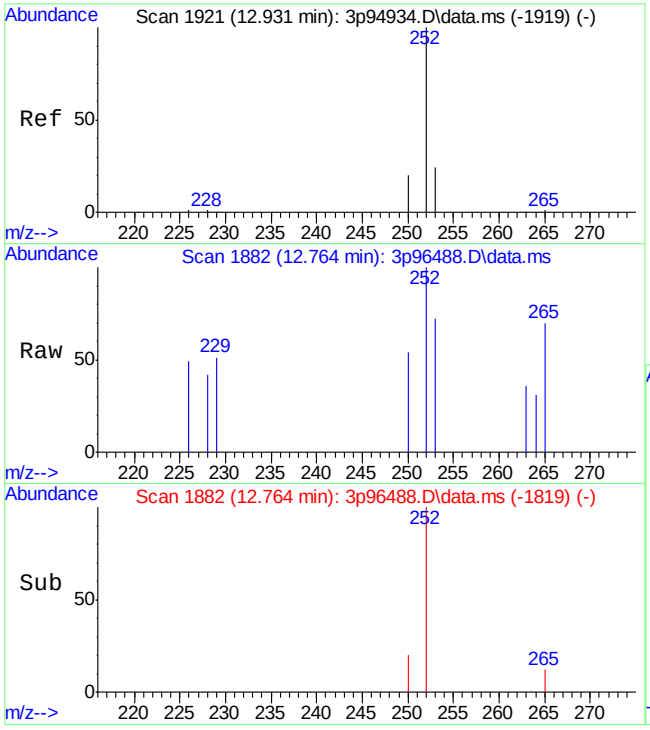


#30
Benzo[b]fluoranthene
Concen: 6.63 ppb
RT: 12.740 min Scan# 1879
Delta R.T. -0.001 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:252 Resp: 608

Ion	Ratio	Lower	Upper
252	100		
253	24.1	0.0	51.7
250	23.1	0.0	48.4

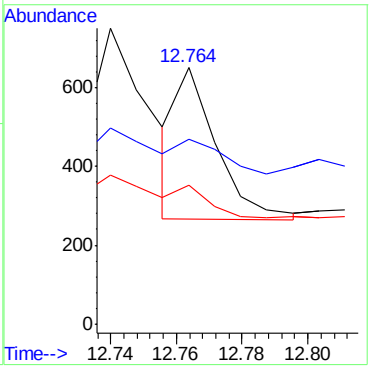


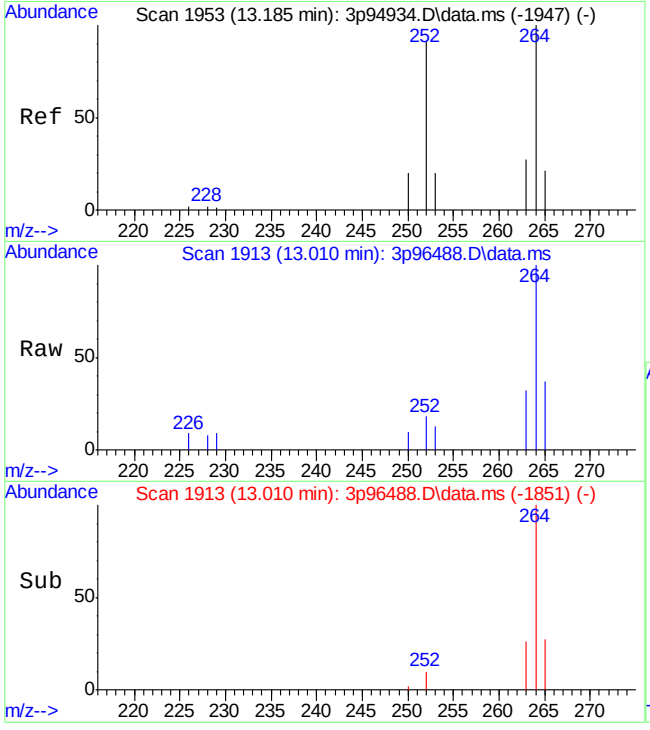


#31
Benzo[k]fluoranthene
Concen: 2.96 ppb
RT: 12.764 min Scan# 1882
Delta R.T. -0.001 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:252 Resp: 324

Ion	Ratio	Lower	Upper
252	100		
253	20.8	0.0	51.5
250	21.6	0.0	51.3

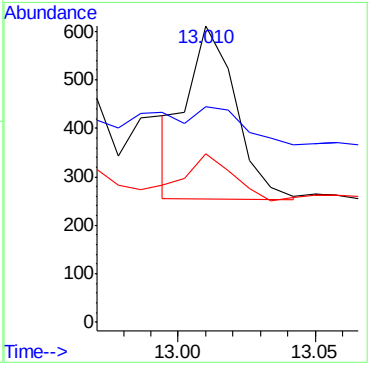


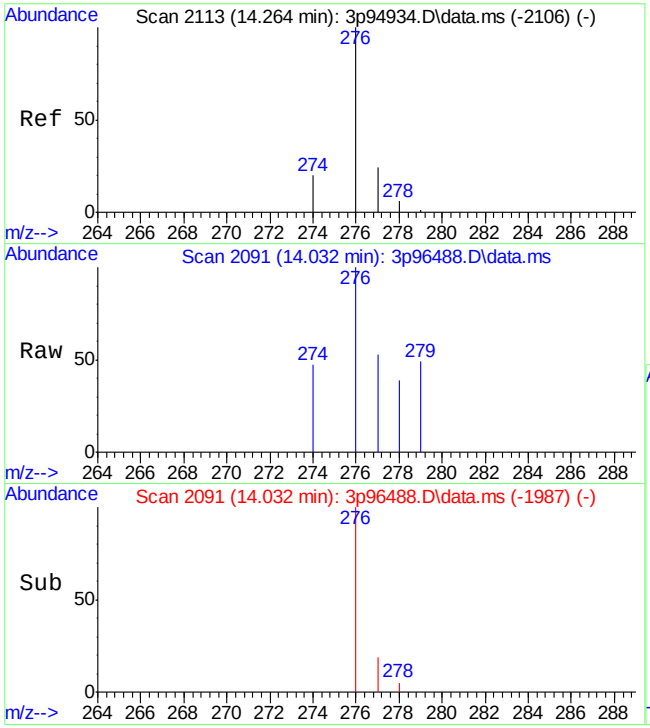


#32
Benzo[a]pyrene
Concen: 3.88 ppb
RT: 13.010 min Scan# 1913
Delta R.T. -0.008 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:252 Resp: 436

Ion	Ratio	Lower	Upper
252	100		
253	16.6	0.0	52.3
250	29.1	0.0	49.9

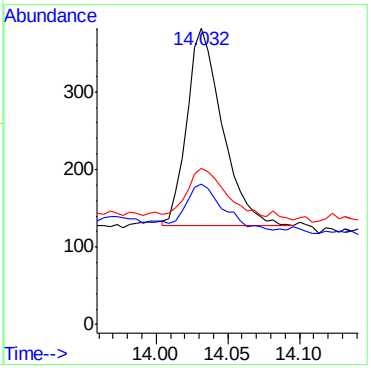


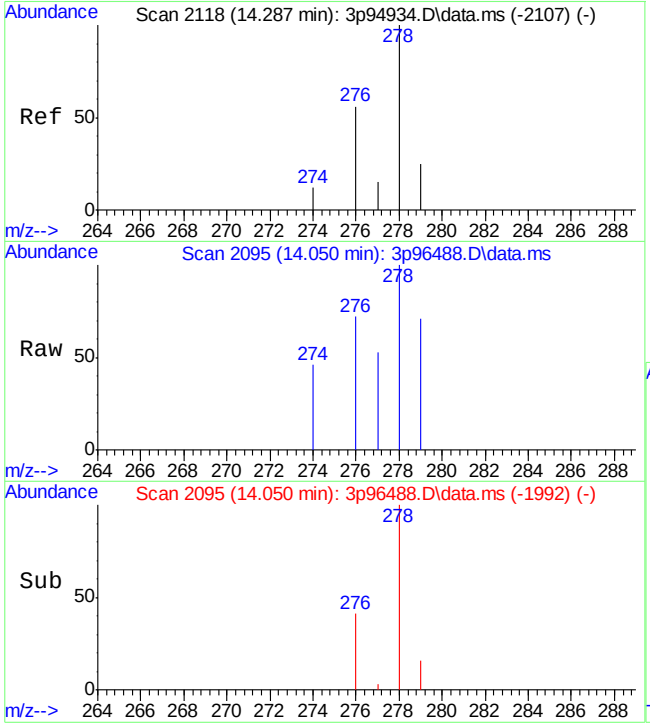


#33
Indeno[1,2,3-cd]pyrene
Concen: 4.46 ppb
RT: 14.032 min Scan# 2091
Delta R.T. -0.026 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:276 Resp: 435

Ion	Ratio	Lower	Upper
276	100		
274	20.5	0.0	45.2
277	25.2	0.0	52.4

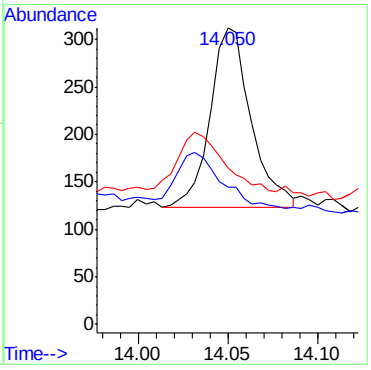


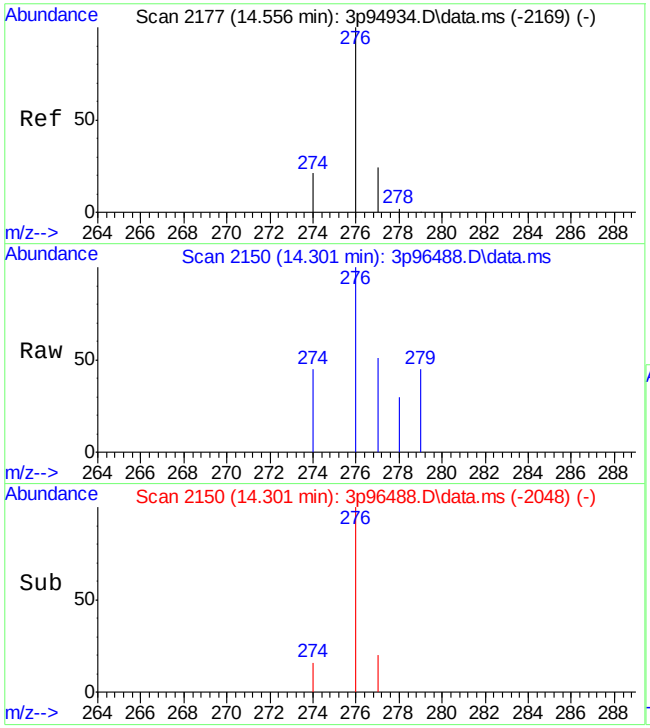


#34
Dibenz[a,h]anthracene
Concen: 3.81 ppb
RT: 14.050 min Scan# 2095
Delta R.T. -0.030 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:278 Resp: 301

Ion	Ratio	Lower	Upper
278	100		
274	9.2	0.0	40.3
277	10.9	0.0	40.0

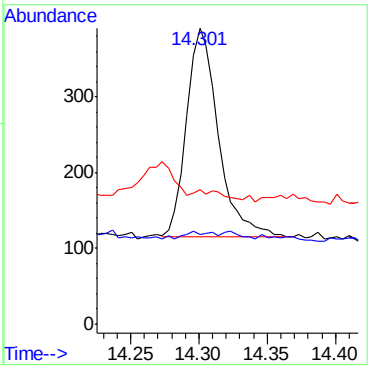




#35
Benzo[g,h,i]perylene
Concen: 4.87 ppb
RT: 14.301 min Scan# 2150
Delta R.T. -0.034 min
Lab File: 3p96488.D
Acq: 20 Apr 2022 9:17 am

Tgt Ion:276 Resp: 448

Ion	Ratio	Lower	Upper
276	100		
278	2.0	0.0	31.3
279	0.0	0.0	30.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123382.D
Acq On : 21 Apr 2022 10:10 am
Operator : chriss2
Sample : jd43215-15
Misc : op39191,e2m5552,260,,,1,20
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 22 09:26:40 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

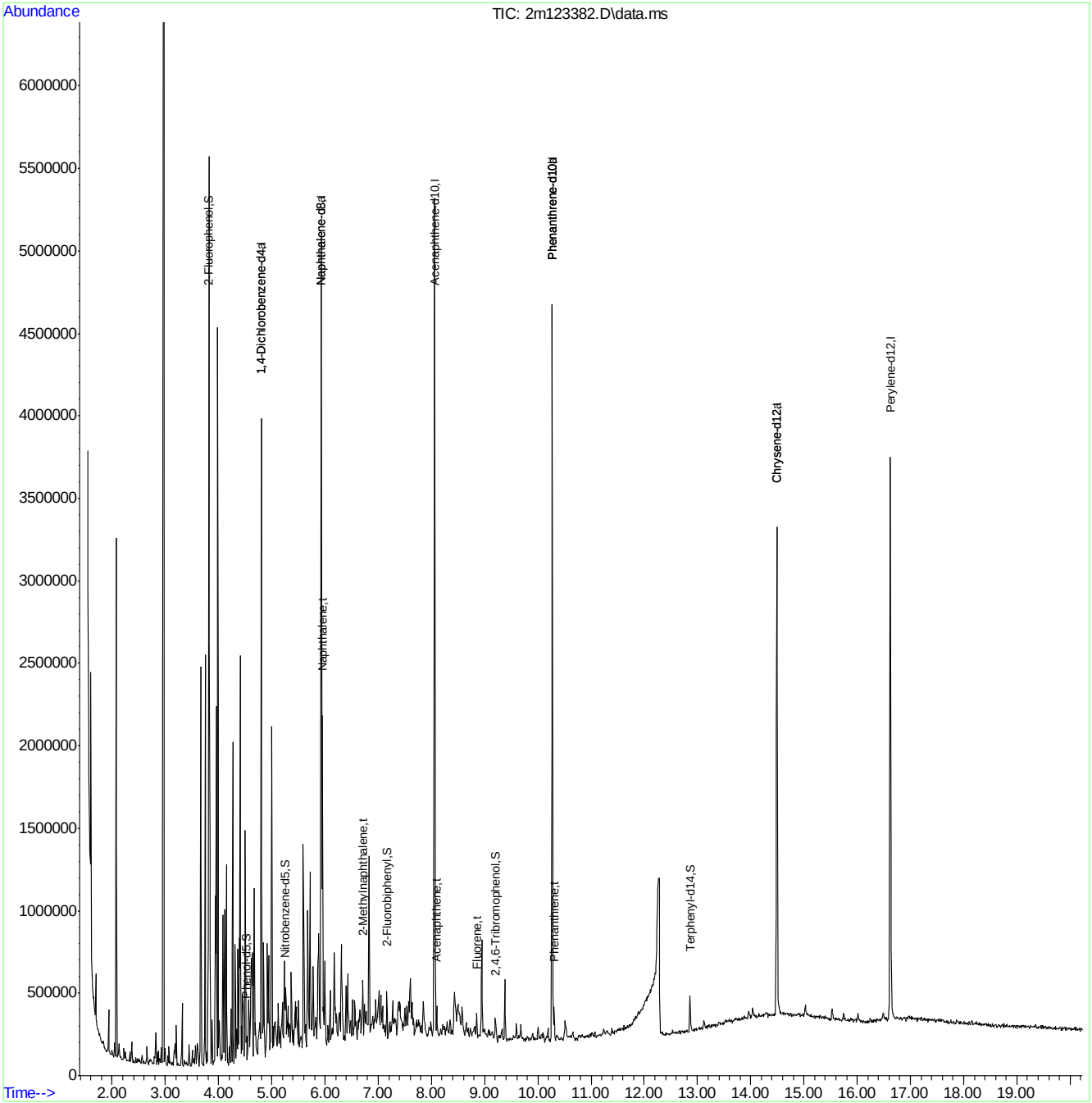
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.805	152	483268	8.00	ppm	-0.01
24) Naphthalene-d8	5.928	136	2119756	8.00	ppm	-0.02
46) Acenaphthene-d10	8.057	164	1202073	8.00	ppm	-0.02
69) Phenanthrene-d10	10.271	188	2080550	8.00	ppm	-0.02
84) Chrysene-d12	14.491	240	1489601	8.00	ppm	-0.03
93) Perylene-d12	16.625	264	1873092	8.00	ppm	-0.03
103) 1,4-Dichlorobenzene-d4a	4.805	152	483268	8.00	ppm	0.00
105) Phenanthrene-d10a	10.271	188	2080550	8.00	ppm	0.00
107) Naphthalene-d8a	5.928	136	2119756	8.00	ppm	-0.01
109) Chrysene-d12a	14.491	240	1489601	8.00	ppm	-0.01
111) Phenanthrene-d10b	10.271	188	2080550	8.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.815	112	20781	0.27	ppm	-0.01
Spiked Amount 10.000			Recovery =	2.70%		
8) Phenol-d5	4.516	99	20601	0.20	ppm	0.00
Spiked Amount 10.000			Recovery =	2.00%		
25) Nitrobenzene-d5	5.254	82	43877	0.46	ppm	-0.02
Spiked Amount 10.000			Recovery =	4.60%		
51) 2-Fluorobiphenyl	7.163	172	85427	0.42	ppm	-0.02
Spiked Amount 10.000			Recovery =	4.20%		
74) 2,4,6-Tribromophenol	9.207	330	18130	0.51	ppm	-0.02
Spiked Amount 10.000			Recovery =	5.10%		
87) Terphenyl-d14	12.860	244	109894	0.48	ppm	-0.02
Spiked Amount 10.000			Recovery =	4.80%		
112) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
113) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 10.000			Recovery =	0.00%		
Target Compounds						Qvalue
38) Naphthalene	5.949	128	727489	2.69	ppm	99
44) 2-Methylnaphthalene	6.709	141	69409	0.43	ppm	99
59) Acenaphthene	8.099	153	49016	0.28	ppm	97
66) Fluorene	8.848	166	40153	0.20	ppm	99
78) Phenanthrene	10.303	178	90260	0.31	ppm	98

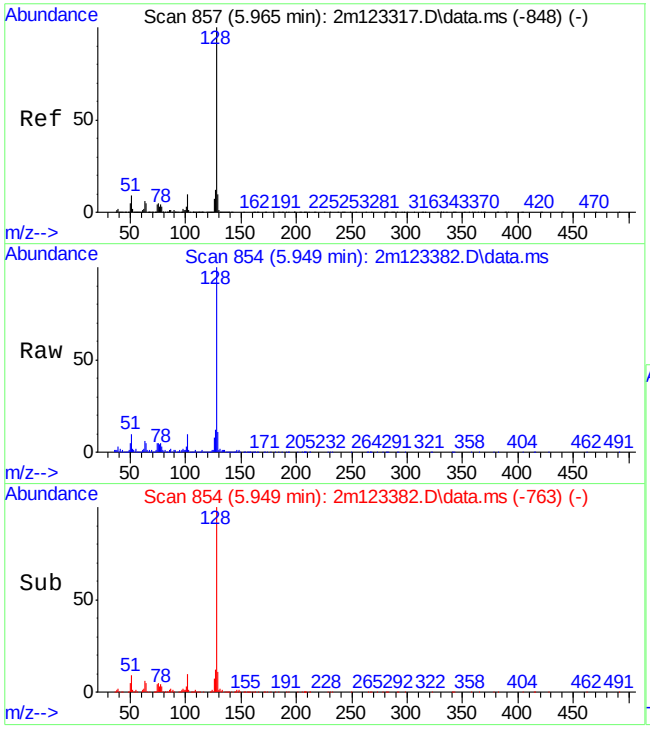
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123382.D
Acq On : 21 Apr 2022 10:10 am
Operator : chriss2
Sample : jd43215-15
Misc : op39191,e2m5552,260,,,1,20
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 22 09:26:40 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

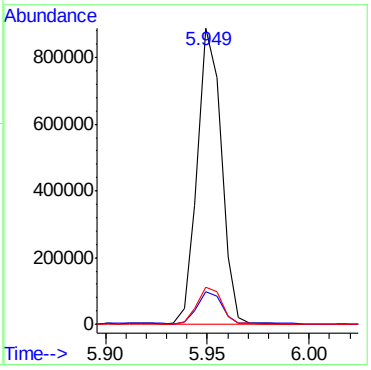


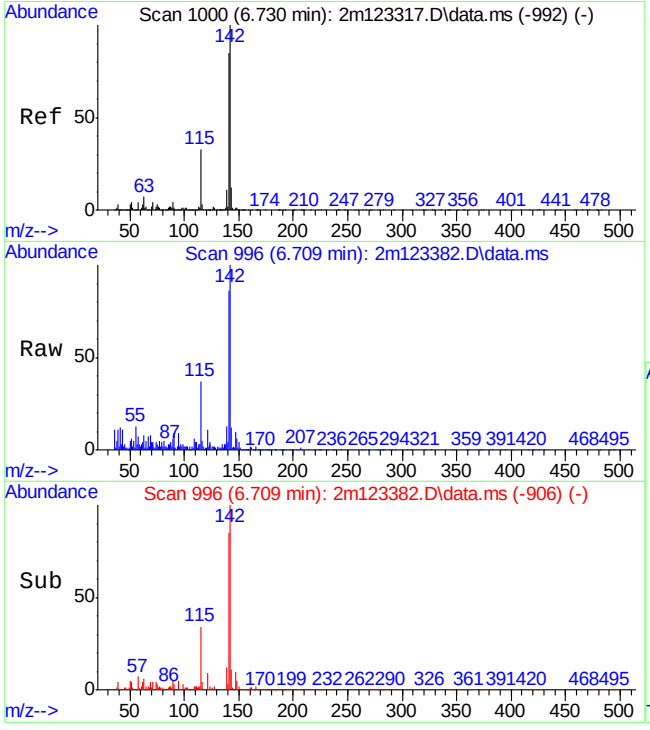


#38
Naphthalene
Concen: 2.69 ppm
RT: 5.949 min Scan# 854
Delta R.T. -0.016 min
Lab File: 2m123382.D
Acq: 21 Apr 2022 10:10 am

Tgt Ion:128 Resp: 727489

Ion	Ratio	Lower	Upper
128	100		
129	10.9	0.0	40.3
127	12.4	0.0	42.3

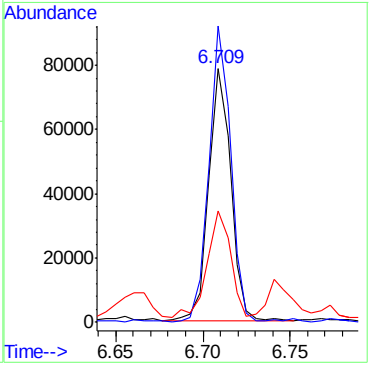


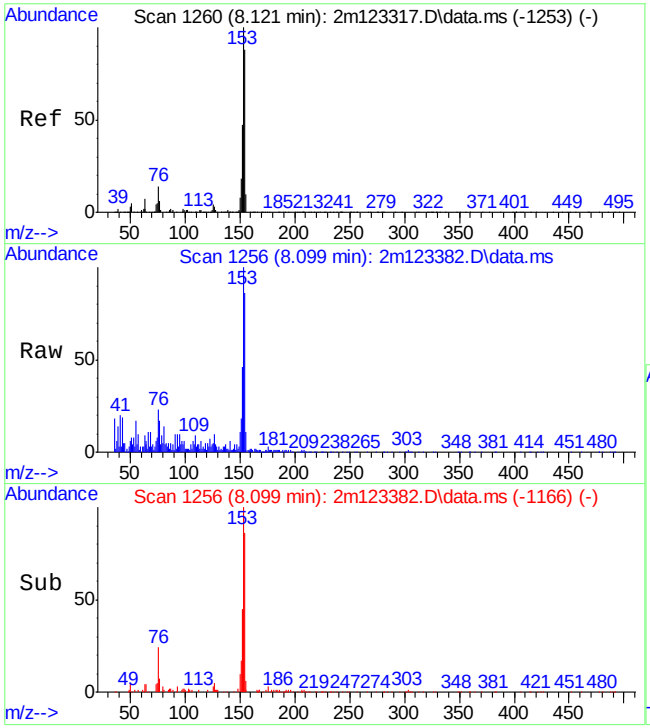


#44
2-Methylnaphthalene
Concen: 0.43 ppm
RT: 6.709 min Scan# 996
Delta R.T. -0.021 min
Lab File: 2m123382.D
Acq: 21 Apr 2022 10:10 am

Tgt Ion:141 Resp: 69409

Ion	Ratio	Lower	Upper
141	100		
142	116.7	87.3	147.3
115	38.1	8.9	68.9

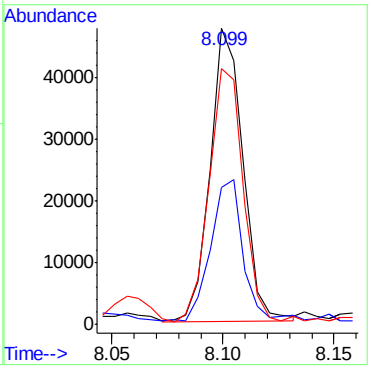


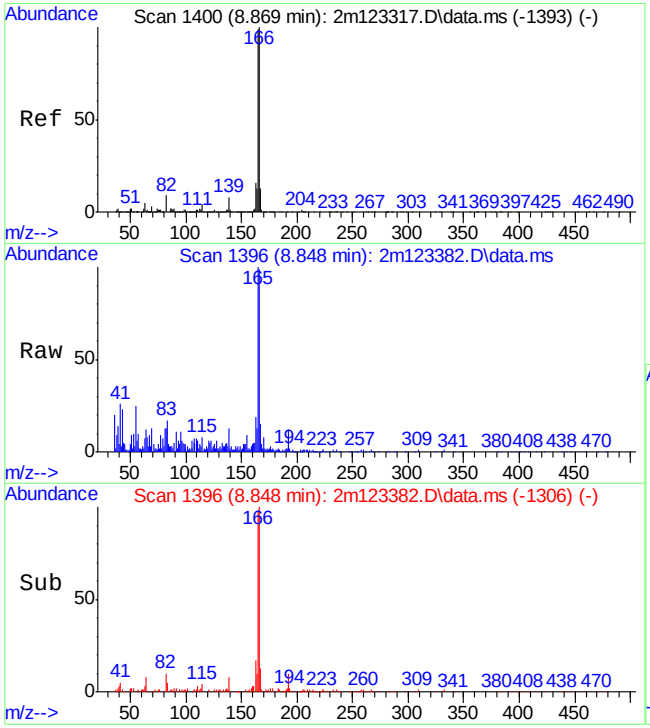


#59
Acenaphthene
Concen: 0.28 ppm
RT: 8.099 min Scan# 1256
Delta R.T. -0.021 min
Lab File: 2m123382.D
Acq: 21 Apr 2022 10:10 am

Tgt Ion:153 Resp: 49016

Ion	Ratio	Lower	Upper
153	100		
152	44.8	17.1	77.1
154	85.8	53.7	113.7

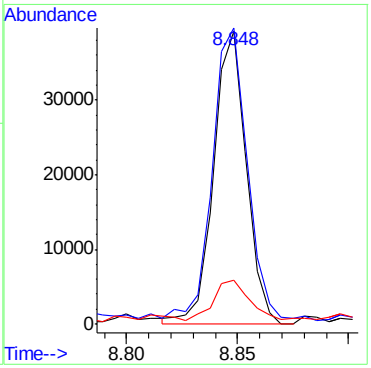


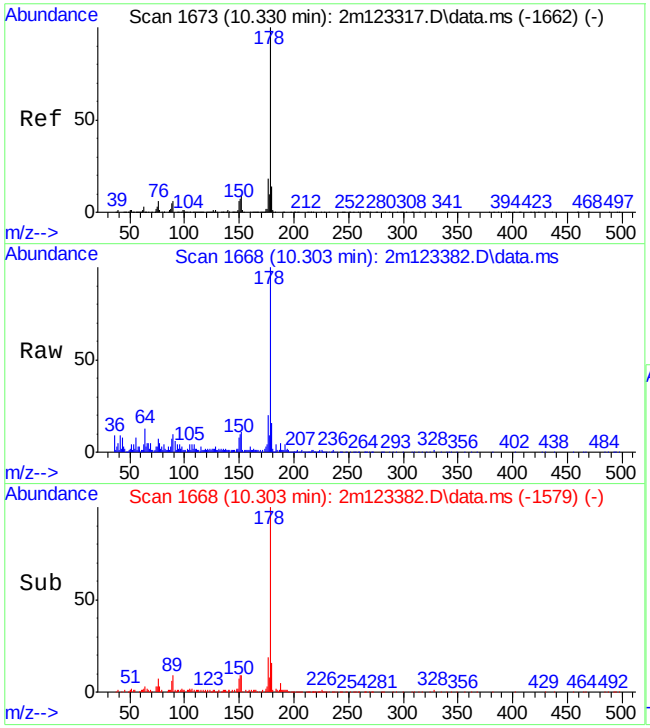


#66
Fluorene
Concen: 0.20 ppm
RT: 8.848 min Scan# 1396
Delta R.T. -0.021 min
Lab File: 2m123382.D
Acq: 21 Apr 2022 10:10 am

Tgt Ion:166 Resp: 40153

Ion	Ratio	Lower	Upper
166	100		
165	100.2	68.9	128.9
167	12.8	0.0	42.7

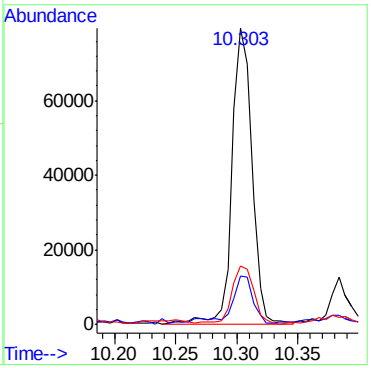




#78
Phenanthrene
Concen: 0.31 ppm
RT: 10.303 min Scan# 1668
Delta R.T. -0.027 min
Lab File: 2m123382.D
Acq: 21 Apr 2022 10:10 am

Tgt Ion:178 Resp: 90260

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	44.0
176	18.8	0.0	48.3



9.1.21

9

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/22/22 10:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96489.D
Acq On : 20 Apr 2022 9:39 am
Operator : chriss2
Sample : jd43215-15
Misc : op39191,e3p4582,260,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 22 09:36:40 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	49495m	800.00 ppb	0.00
12) Fluorene-d10	8.241	176	63578	800.00 ppb	0.00
19) Fluoranthene-d10	10.377	212	70520	800.00 ppb	0.04
29) Benzo(a)pyrene-d12	13.001	264	44995m	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.521	112	85933	2304.90 ppb	-0.02
Spiked Amount 50.000				Recovery = 4609.80%	
4) Phenol-d5	4.469	99	96656	1909.33 ppb	0.00
Spiked Amount 50.000				Recovery = 3818.66%	
7) Nitrobenzene-d5	5.327	82	172894	4380.53 ppb	0.00
Spiked Amount 50.000				Recovery = 8761.06%	
13) 2-Fluorobiphenyl	7.088	172	370802	3716.12 ppb	0.00
Spiked Amount 50.000				Recovery = 7432.24%	
18) 2,4,6-Tribromophenol	8.505	330	76975	6423.06 ppb	0.01
Spiked Amount 50.000				Recovery = 12846.12%	
26) Terphenyl-d14	10.772	244	346944	5279.80 ppb	0.02
Spiked Amount 50.000				Recovery = 10559.60%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	2922734	19355.48 ppb	96
10) 2-Methylnaphthalene	6.716	141	325148	4029.06 ppb	94
15) Acenaphthene	7.758	153	240096	2344.17 ppb	94
17) Fluorene	8.266	166	200253	1866.37 ppb	94
22) Phenanthrene	9.200	178	426415m	4046.22 ppb	
23) Anthracene	9.251	178	73245	718.30 ppb	98
24) Fluoranthene	10.396	202	67812	541.99 ppb	93
25) Pyrene	10.609	202	39079	300.76 ppb	99
27) Benzo[a]anthracene	11.760	228	2290m	24.31 ppb	
28) Chrysene	11.792	228	1423m	11.63 ppb	
30) Benzo[b]fluoranthene	12.746	252	884m	10.82 ppb	
31) Benzo[k]fluoranthene	12.770	252	321m	3.29 ppb	
32) Benzo[a]pyrene	13.017	252	827	8.86 ppb	81
33) Indeno[1,2,3-cd]pyrene	14.034	276	407m	4.69 ppb	
34) Dibenz[a,h]anthracene	14.052	278	204m	2.90 ppb	
35) Benzo[g,h,i]perylene	14.307	276	515m	6.29 ppb	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

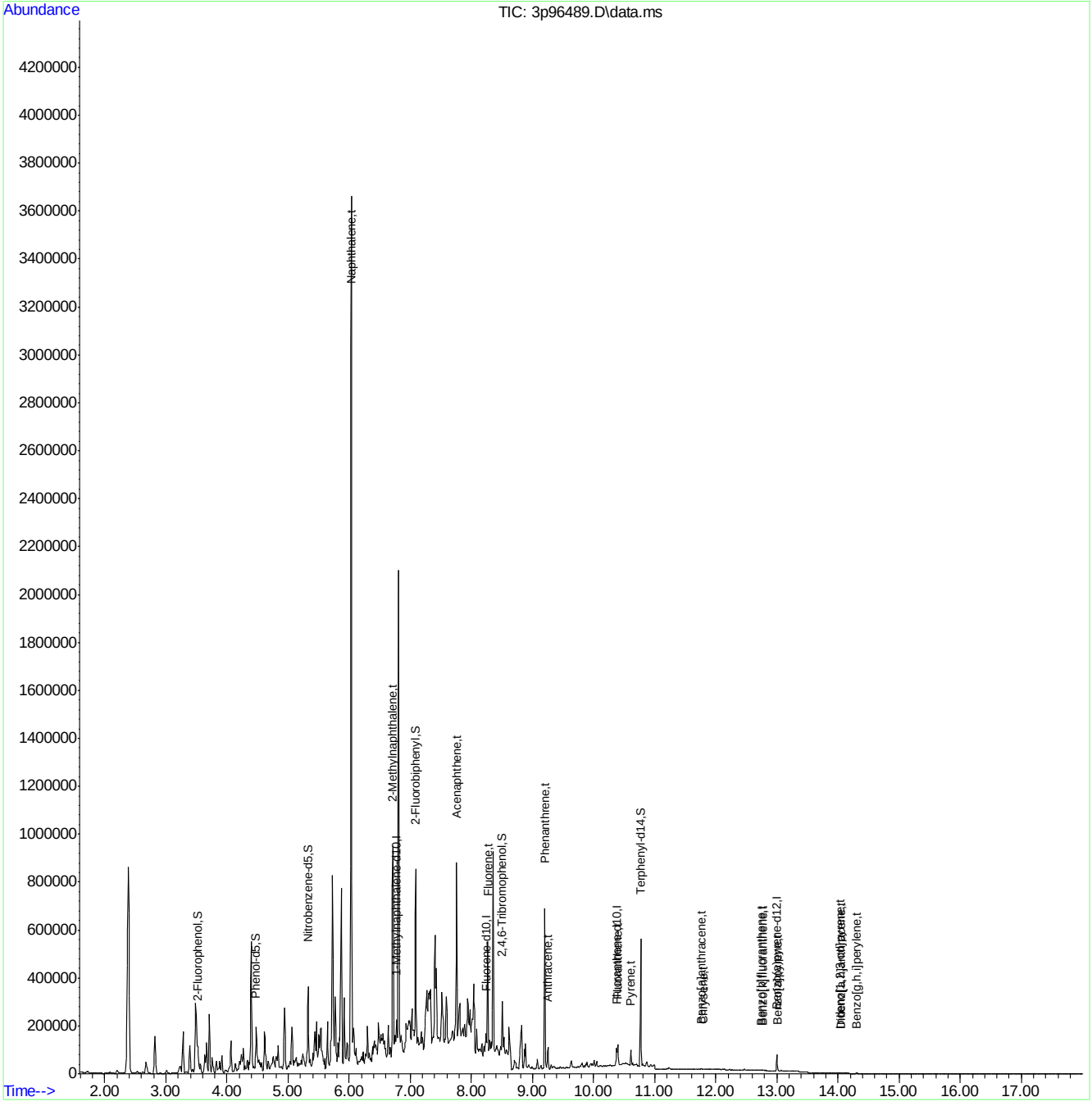
9.1.22

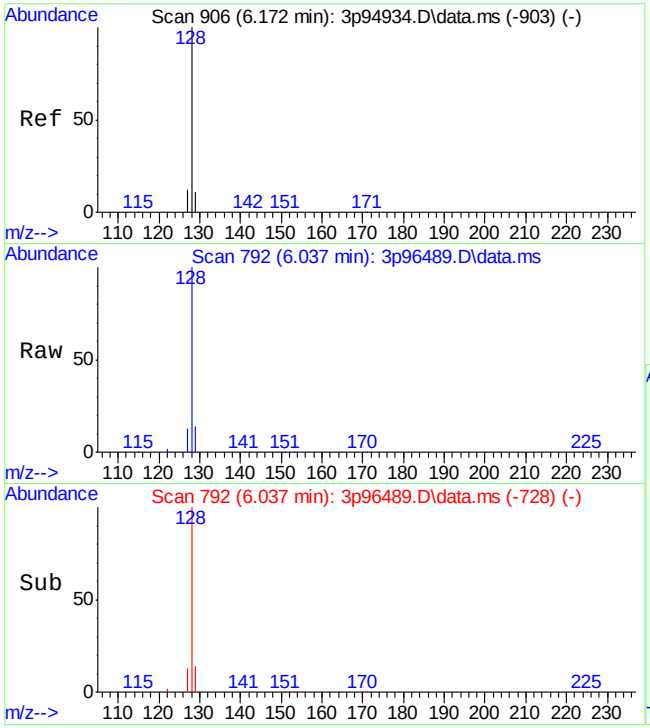
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96489.D
Acq On : 20 Apr 2022 9:39 am
Operator : chriss2
Sample : jd43215-15
Misc : op39191,e3p4582,260,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 22 09:36:40 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

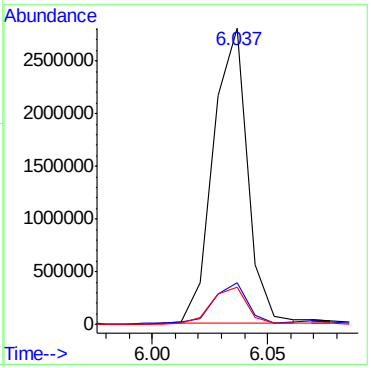


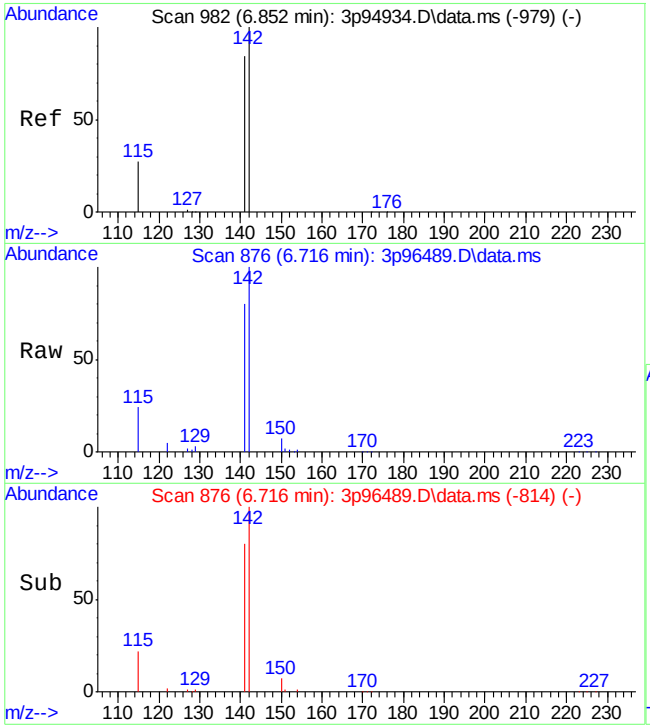


#8
Naphthalene
Concen: 19355.48 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:128 Resp: 2922734

Ion	Ratio	Lower	Upper
128	100		
129	13.8	0.0	41.2
127	12.5	0.0	41.7

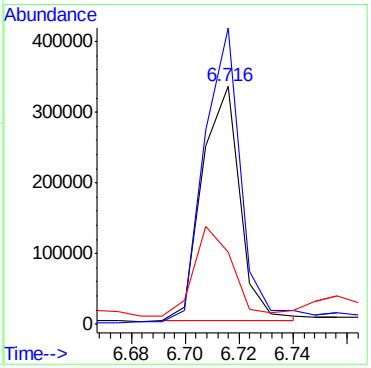


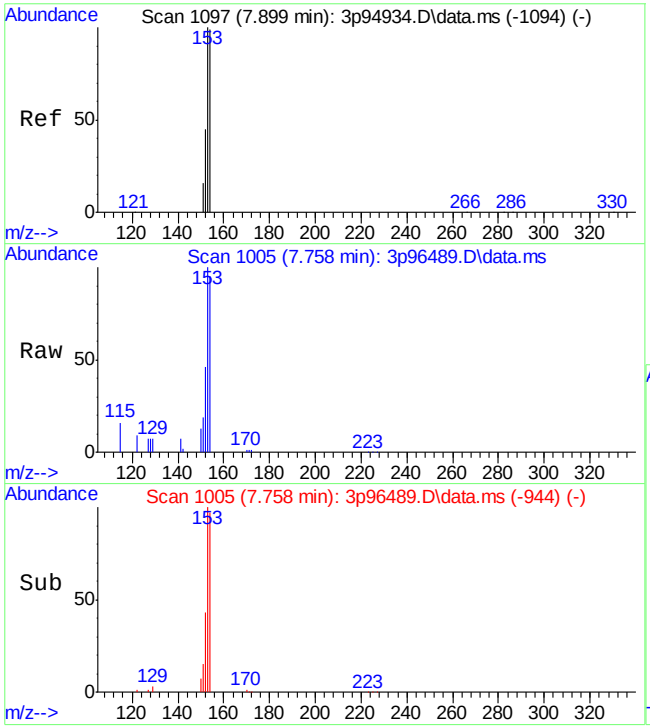


#10
2-Methylnaphthalene
Concen: 4029.06 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:141 Resp: 325148

Ion	Ratio	Lower	Upper
141	100		
142	124.2	88.8	148.8
115	26.2	1.9	61.9

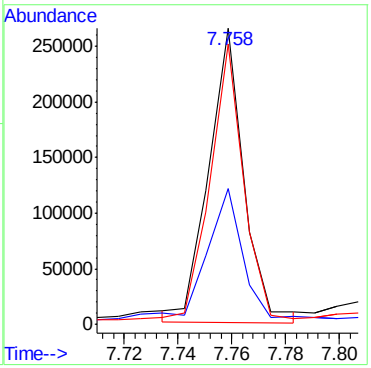


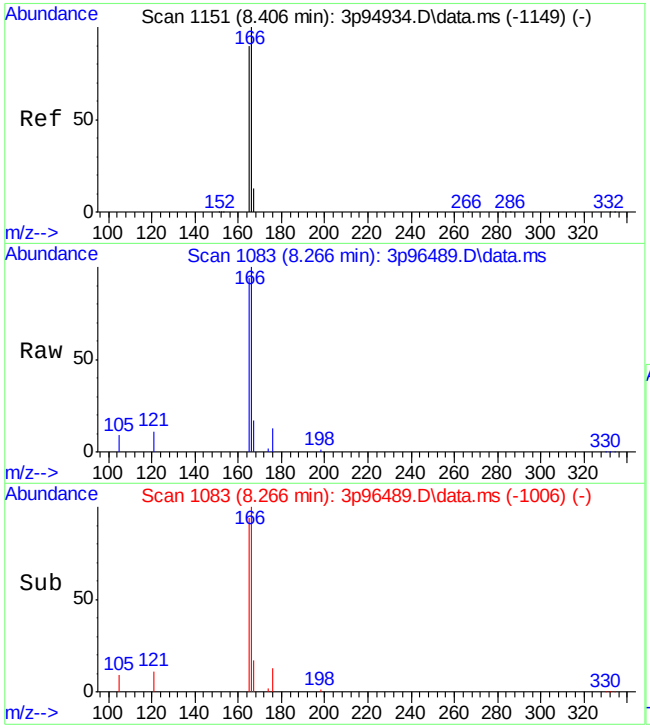


#15
Acenaphthene
Concen: 2344.17 ppb
RT: 7.758 min Scan# 1005
Delta R.T. -0.007 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:153 Resp: 240096

Ion	Ratio	Lower	Upper
153	100		
152	44.6	16.5	76.5
154	96.4	73.6	133.6

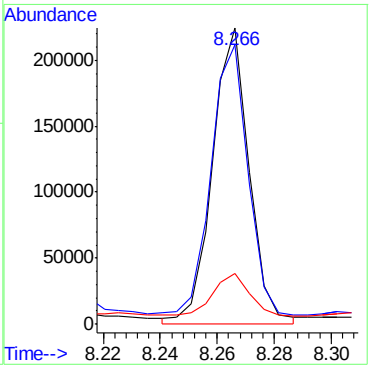


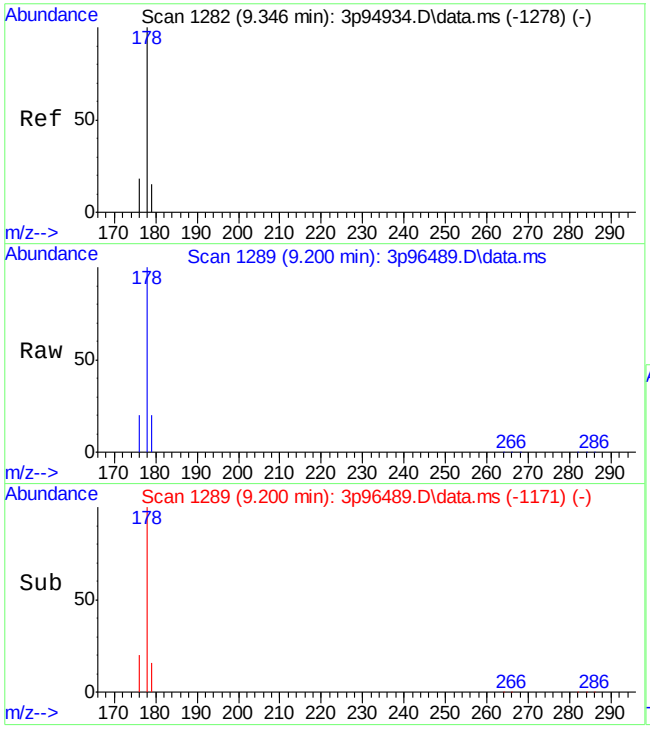


#17
Fluorene
Concen: 1866.37 ppb
RT: 8.266 min Scan# 1083
Delta R.T. 0.003 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:166 Resp: 200253

Ion	Ratio	Lower	Upper
166	100		
165	93.0	57.3	117.3
167	14.7	0.0	46.0

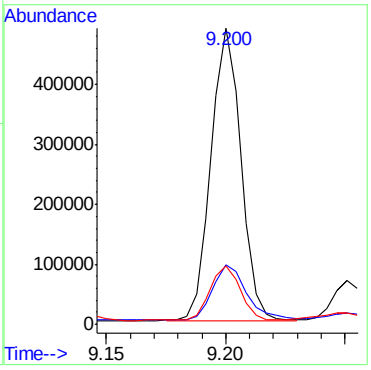


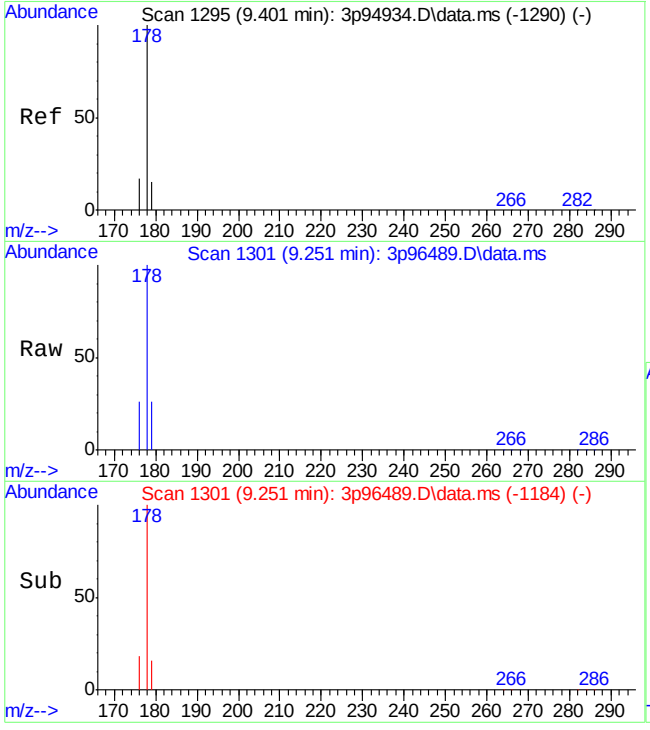


#22
Phenanthrene
Concen: 4046.22 ppb m
RT: 9.200 min Scan# 1289
Delta R.T. -0.004 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:178 Resp: 426415

Ion	Ratio	Lower	Upper
178	100		
179	20.0	0.0	45.1
176	19.9	0.0	47.5

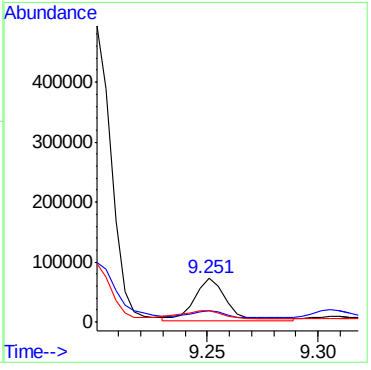


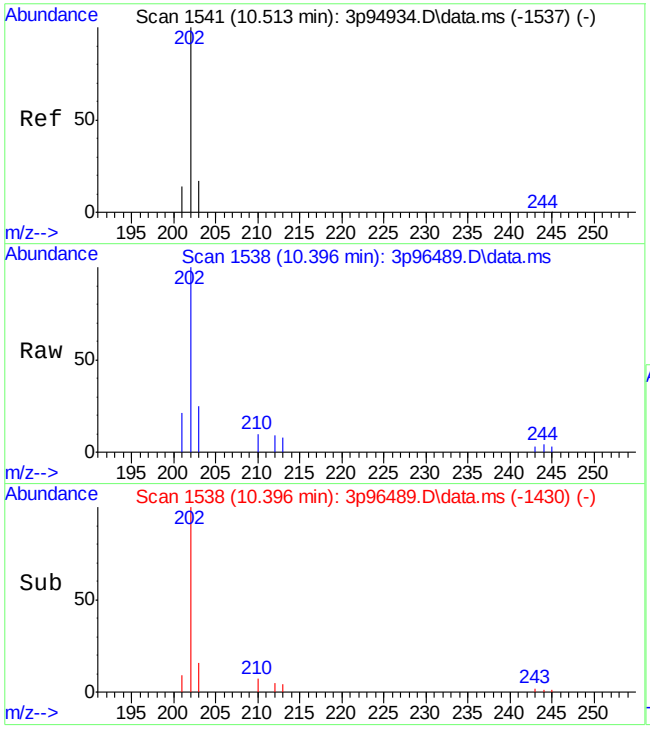


#23
Anthracene
Concen: 718.30 ppb
RT: 9.251 min Scan# 1301
Delta R.T. -0.008 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:178 Resp: 73245

Ion	Ratio	Lower	Upper
178	100		
179	14.8	0.0	43.0
176	16.7	0.0	47.0

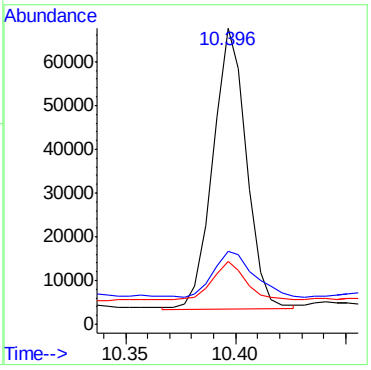


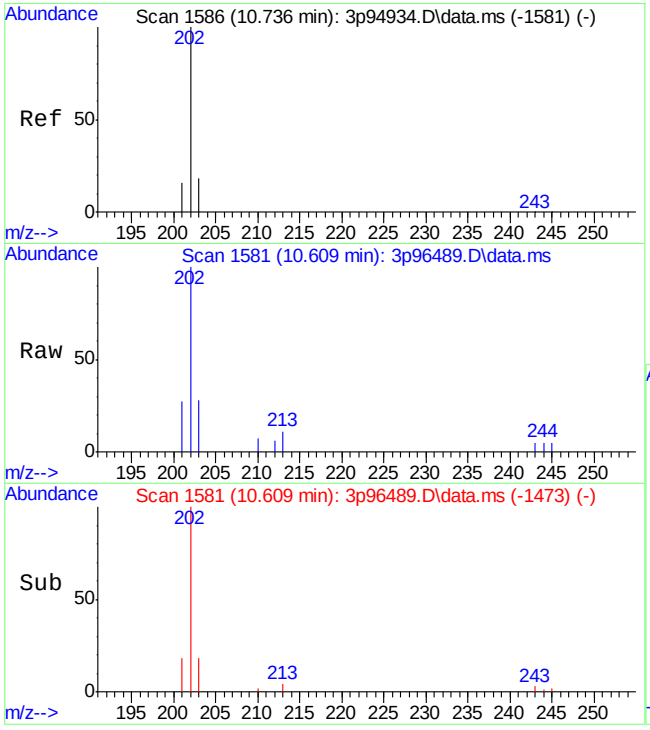


#24
Fluoranthene
Concen: 541.99 ppb
RT: 10.396 min Scan# 1538
Delta R.T. 0.036 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:202 Resp: 67812

Ion	Ratio	Lower	Upper
202	100		
203	16.2	0.0	50.0
201	13.8	0.0	45.9

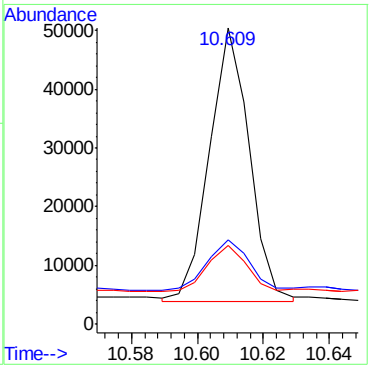


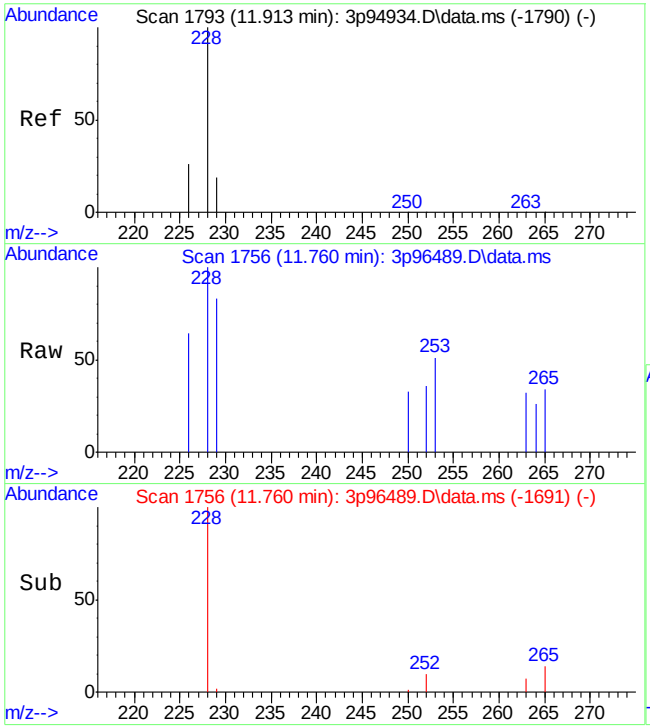


#25
Pyrene
Concen: 300.76 ppb
RT: 10.609 min Scan# 1581
Delta R.T. 0.032 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:202 Resp: 39079

Ion	Ratio	Lower	Upper
202	100		
203	18.3	0.0	48.7
201	16.8	0.0	46.9

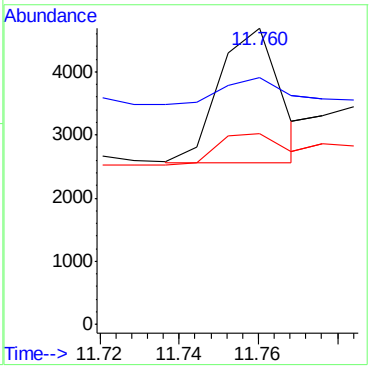


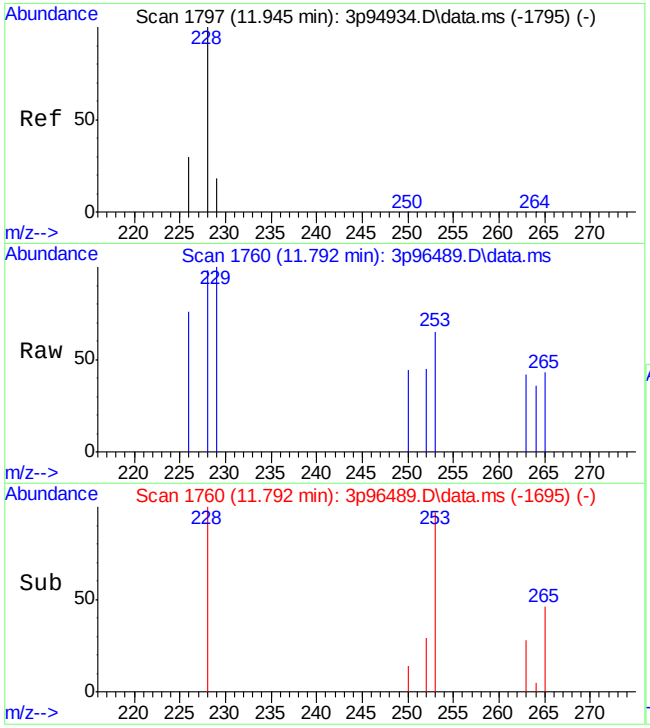


#27
Benzo[a]anthracene
Concen: 24.31 ppb m
RT: 11.760 min Scan# 1756
Delta R.T. 0.014 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:228 Resp: 2290

Ion	Ratio	Lower	Upper
228	100		
229	83.4	0.0	49.3#
226	64.2	0.0	55.2#

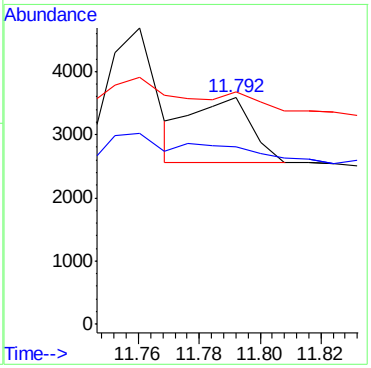


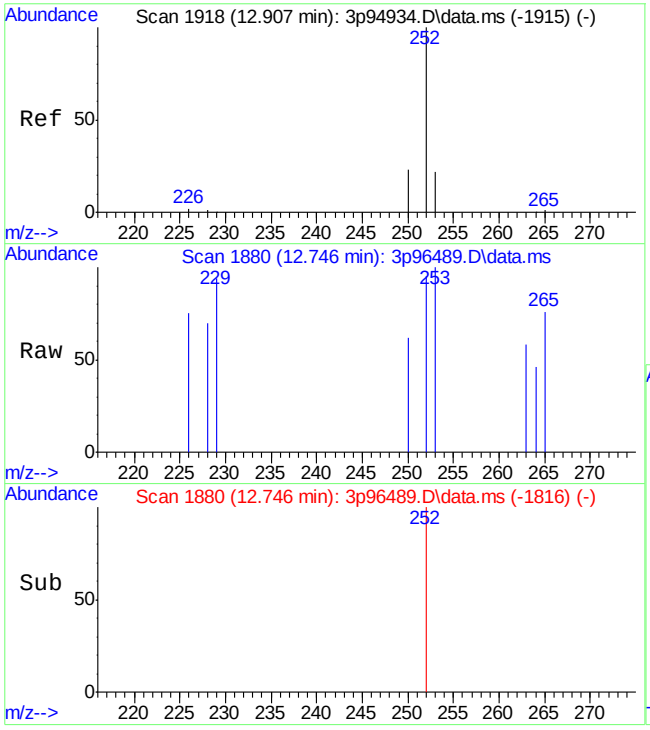


#28
Chrysene
Concen: 11.63 ppb m
RT: 11.792 min Scan# 1760
Delta R.T. 0.014 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:228 Resp: 1423

Ion	Ratio	Lower	Upper
228	100		
226	78.1	0.0	55.6#
229	102.3	0.0	47.4#

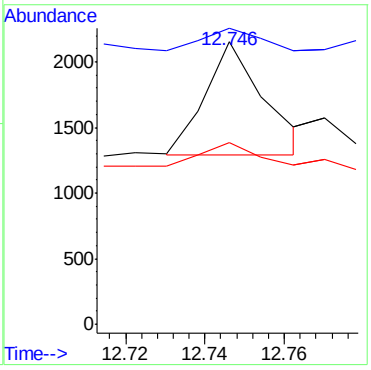


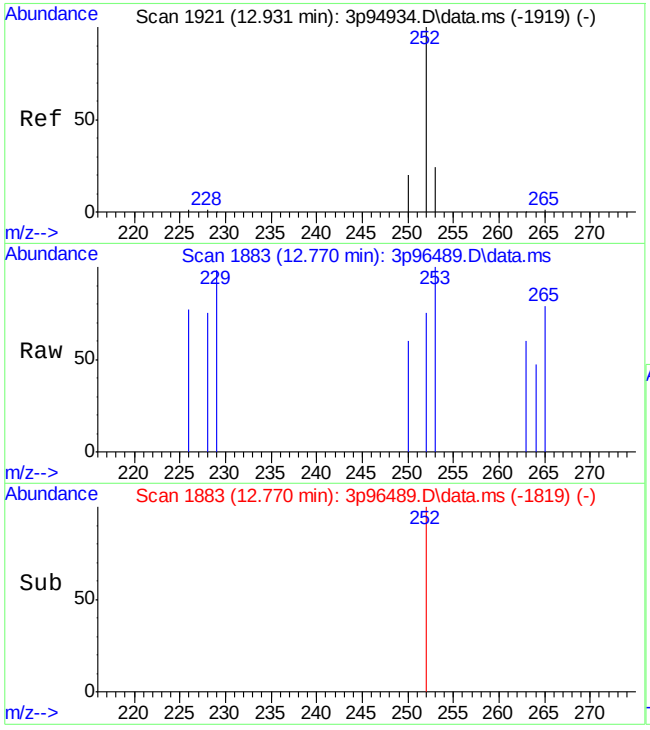


#30
Benzo[b]fluoranthene
Concen: 10.82 ppb m
RT: 12.746 min Scan# 1880
Delta R.T. 0.005 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:252 Resp: 884

Ion	Ratio	Lower	Upper
252	100		
253	104.9	0.0	51.7#
250	64.5	0.0	48.4#

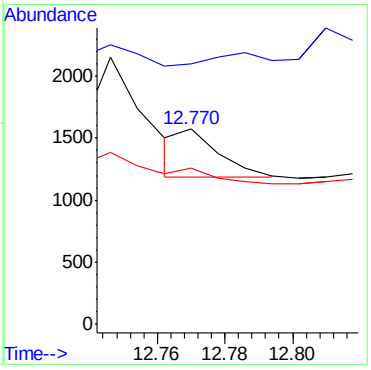


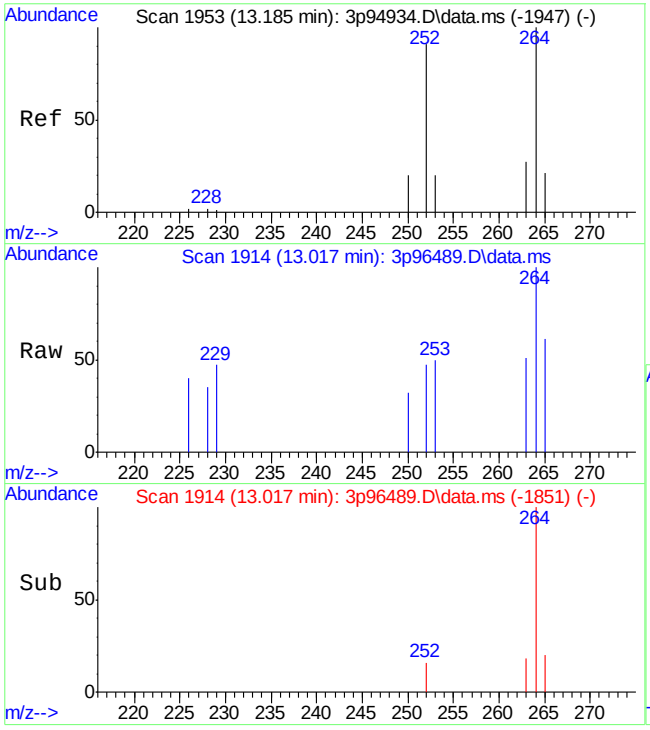


#31
Benzo[k]fluoranthene
Concen: 3.29 ppb m
RT: 12.770 min Scan# 1883
Delta R.T. 0.005 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:252 Resp: 321

Ion	Ratio	Lower	Upper
252	100		
253	133.1	0.0	51.5#
250	79.7	0.0	51.3#

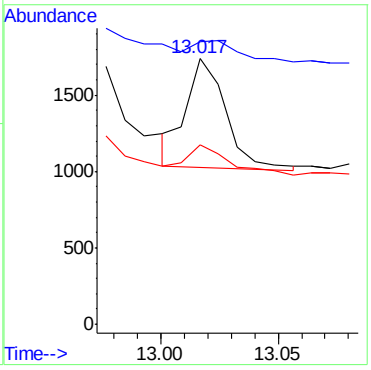


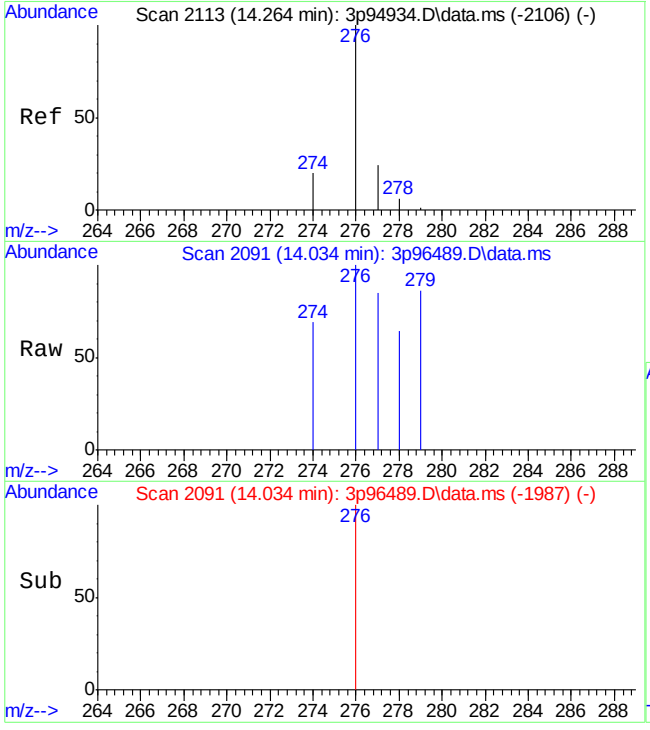


#32
Benzo[a]pyrene
Concen: 8.86 ppb
RT: 13.017 min Scan# 1914
Delta R.T. -0.001 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:252 Resp: 827

Ion	Ratio	Lower	Upper
252	100		
253	12.3	0.0	52.3
250	27.9	0.0	49.9

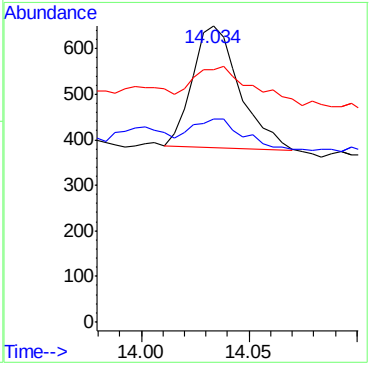


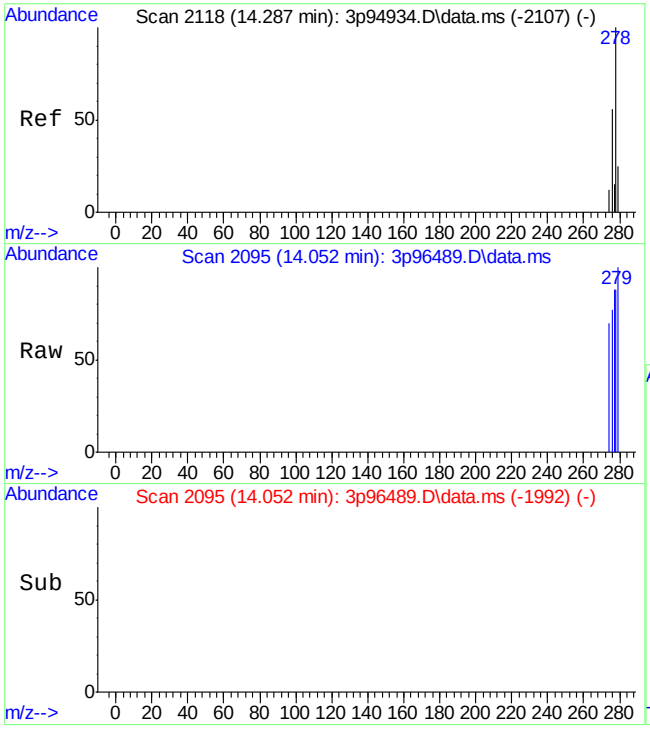


#33
Indeno[1,2,3-cd]pyrene
Concen: 4.69 ppb m
RT: 14.034 min Scan# 2091
Delta R.T. -0.024 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:276 Resp: 407

Ion	Ratio	Lower	Upper
276	100		
274	68.6	0.0	45.2#
277	85.1	0.0	52.4#

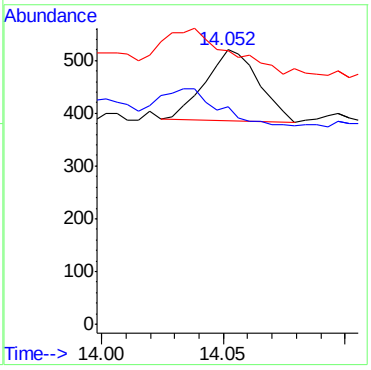


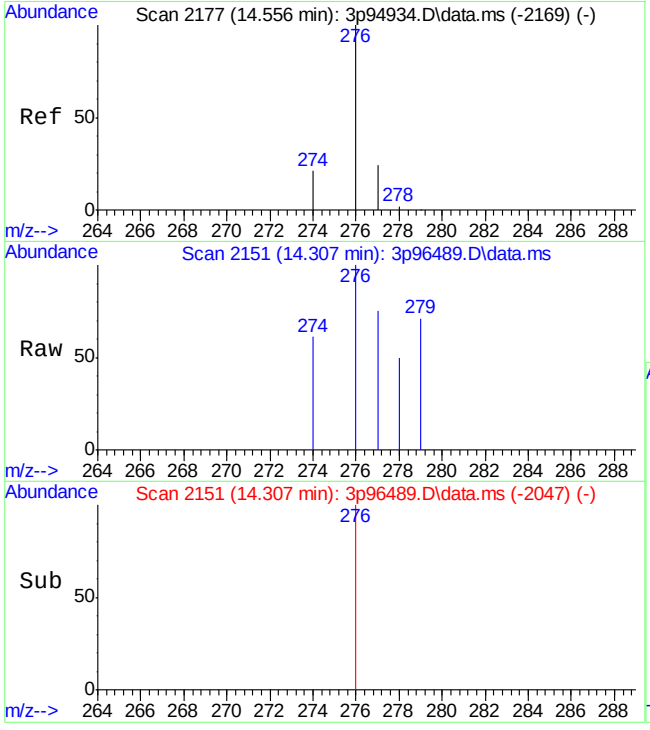


#34
Dibenz[a,h]anthracene
Concen: 2.90 ppb m
RT: 14.052 min Scan# 2095
Delta R.T. -0.028 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:278 Resp: 204

Ion	Ratio	Lower	Upper
278	100		
274	79.2	0.0	40.3#
277	99.8	0.0	40.0#

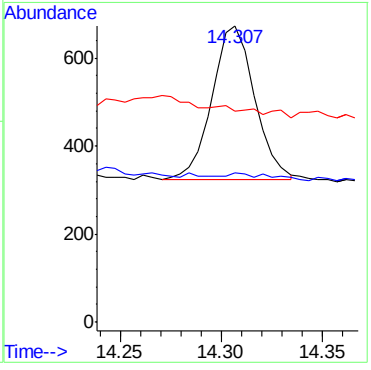




#35
Benzo[g,h,i]perylene
Concen: 6.29 ppb m
RT: 14.307 min Scan# 2151
Delta R.T. -0.027 min
Lab File: 3p96489.D
Acq: 20 Apr 2022 9:39 am

Tgt Ion:276 Resp: 515

Ion	Ratio	Lower	Upper
276	100		
278	50.4	0.0	31.3#
279	71.2	0.0	30.5#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123383.D
Acq On : 21 Apr 2022 10:36 am
Operator : chriss2
Sample : jd43215-16
Misc : op39191,e2m5552,260,,,1,20
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 21 11:13:00 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

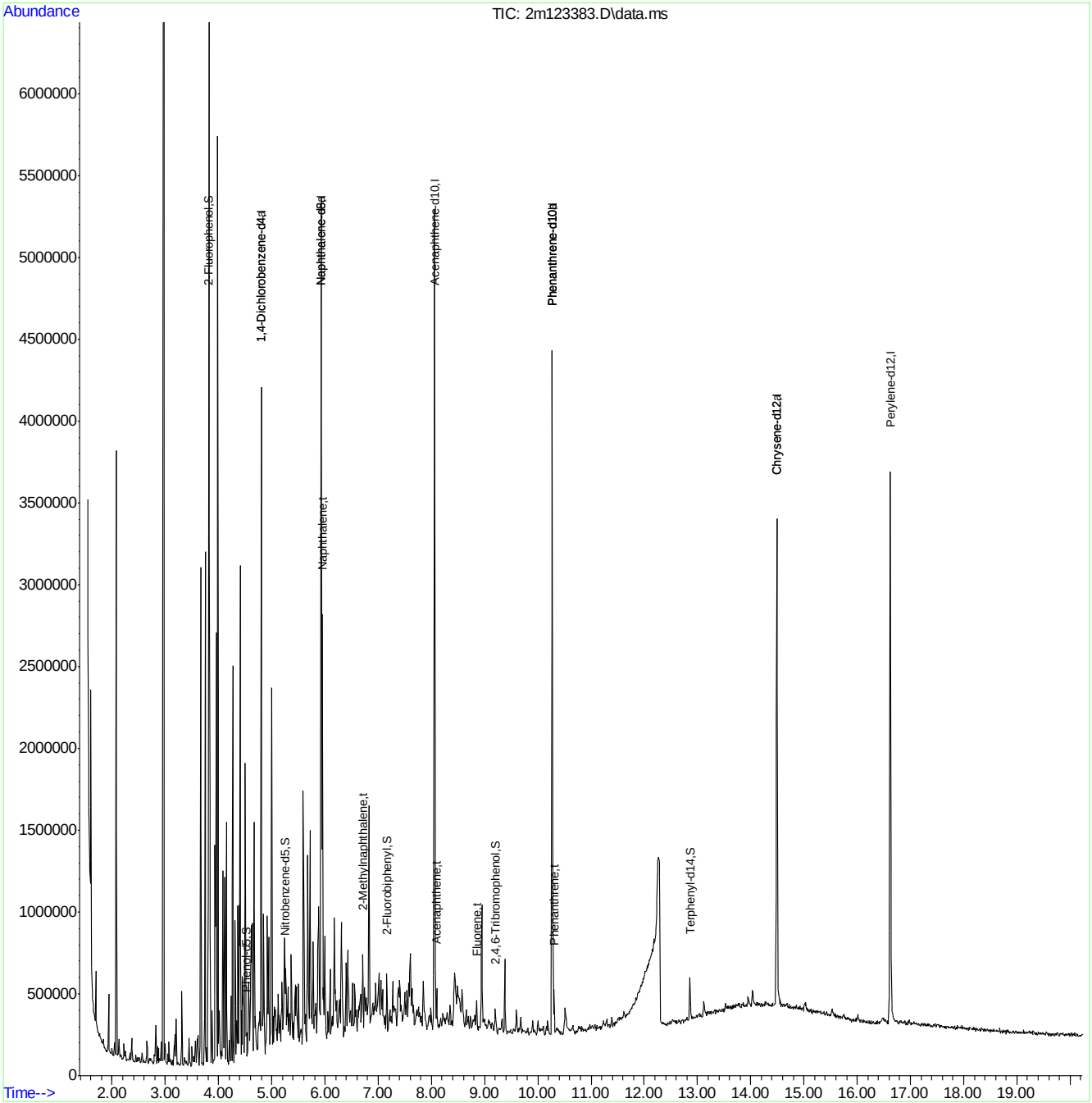
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.799	152	481958	8.00	ppm	-0.02
24) Naphthalene-d8	5.928	136	2140361	8.00	ppm	-0.02
46) Acenaphthene-d10	8.057	164	1191649	8.00	ppm	-0.02
69) Phenanthrene-d10	10.271	188	2052058	8.00	ppm	-0.02
84) Chrysene-d12	14.491	240	1463902	8.00	ppm	-0.03
93) Perylene-d12	16.625	264	1947743	8.00	ppm	-0.03
103) 1,4-Dichlorobenzene-d4a	4.799	152	481958	8.00	ppm	-0.01
105) Phenanthrene-d10a	10.271	188	2052058	8.00	ppm	0.00
107) Naphthalene-d8a	5.928	136	2140361	8.00	ppm	-0.01
109) Chrysene-d12a	14.491	240	1463902	8.00	ppm	-0.01
111) Phenanthrene-d10b	10.271	188	2052058	8.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.815	112	25491	0.33	ppm	-0.01
Spiked Amount 10.000			Recovery = 3.30%			
8) Phenol-d5	4.516	99	27194	0.26	ppm	0.00
Spiked Amount 10.000			Recovery = 2.60%			
25) Nitrobenzene-d5	5.254	82	49269	0.51	ppm	-0.02
Spiked Amount 10.000			Recovery = 5.10%			
51) 2-Fluorobiphenyl	7.163	172	101213	0.50	ppm	-0.02
Spiked Amount 10.000			Recovery = 5.00%			
74) 2,4,6-Tribromophenol	9.201	330	18637	0.53	ppm	-0.02
Spiked Amount 10.000			Recovery = 5.30%			
87) Terphenyl-d14	12.860	244	135788	0.61	ppm	-0.02
Spiked Amount 10.000			Recovery = 6.10%			
112) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
113) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
Target Compounds						Qvalue
38) Naphthalene	5.949	128	928352	3.39	ppm	99
44) 2-Methylnaphthalene	6.709	141	90920	0.56	ppm	95
59) Acenaphthene	8.099	153	62128	0.36	ppm	91
66) Fluorene	8.848	166	52908	0.27	ppm	91
78) Phenanthrene	10.303	178	110967	0.39	ppm	99

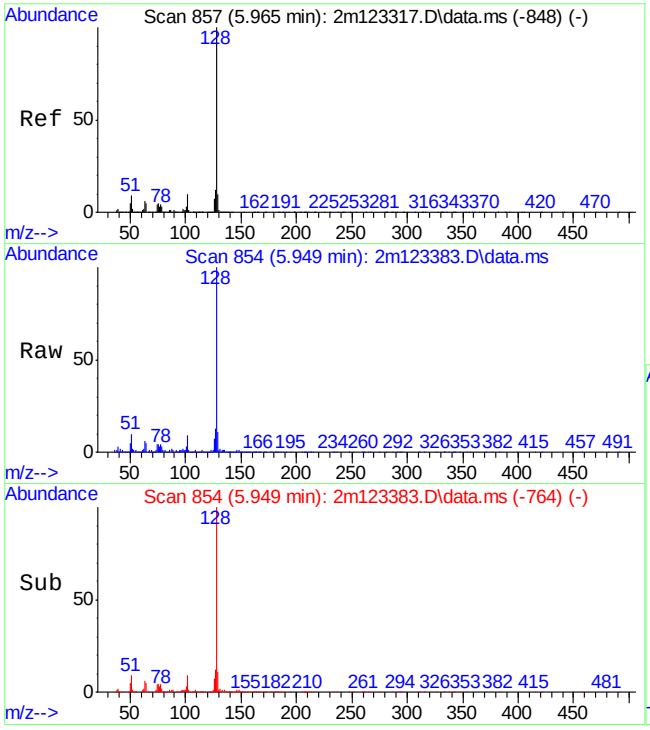
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123383.D
Acq On : 21 Apr 2022 10:36 am
Operator : chriss2
Sample : jd43215-16
Misc : op39191,e2m5552,260,,,1,20
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 21 11:13:00 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

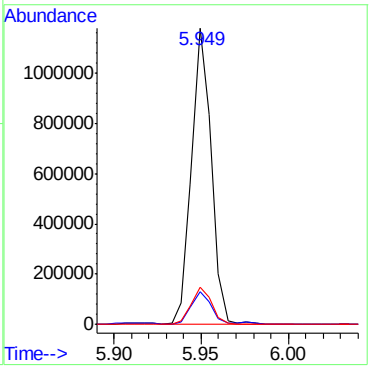


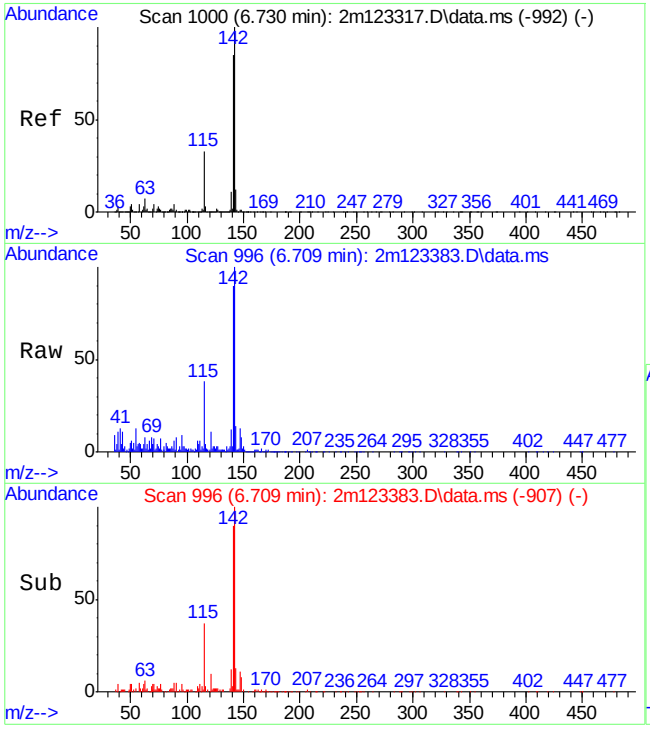


#38
Naphthalene
Concen: 3.39 ppm
RT: 5.949 min Scan# 854
Delta R.T. -0.016 min
Lab File: 2m123383.D
Acq: 21 Apr 2022 10:36 am

Tgt Ion:128 Resp: 928352

Ion	Ratio	Lower	Upper
128	100		
129	11.0	0.0	40.3
127	12.5	0.0	42.3

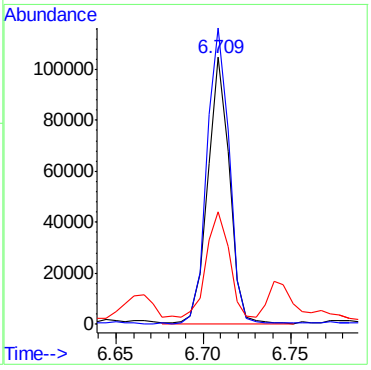


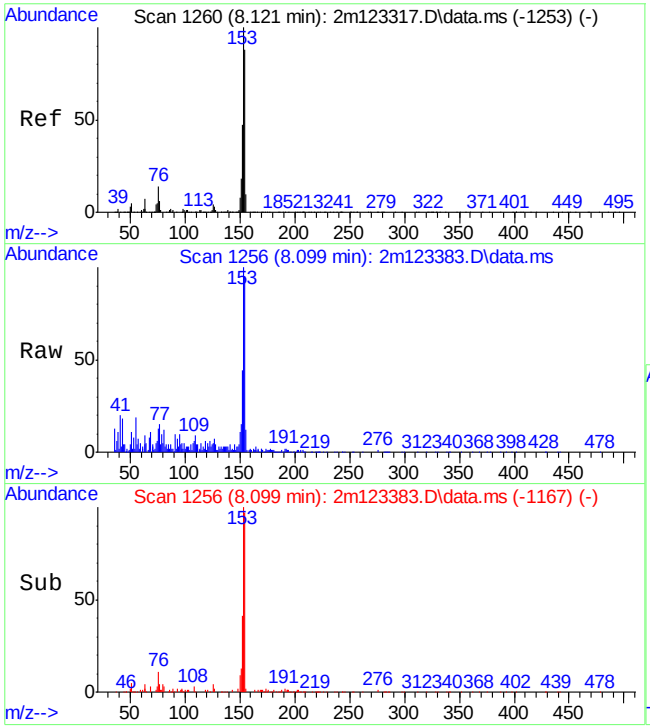


#44
2-Methylnaphthalene
Concen: 0.56 ppm
RT: 6.709 min Scan# 996
Delta R.T. -0.021 min
Lab File: 2m123383.D
Acq: 21 Apr 2022 10:36 am

Tgt Ion:141 Resp: 90920

Ion	Ratio	Lower	Upper
141	100		
142	110.9	87.3	147.3
115	37.2	8.9	68.9

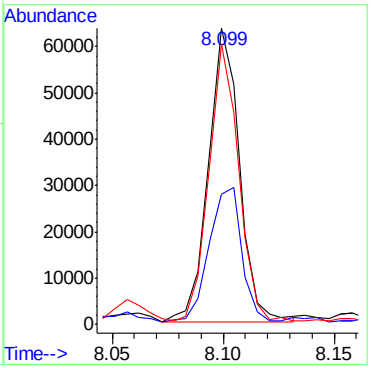


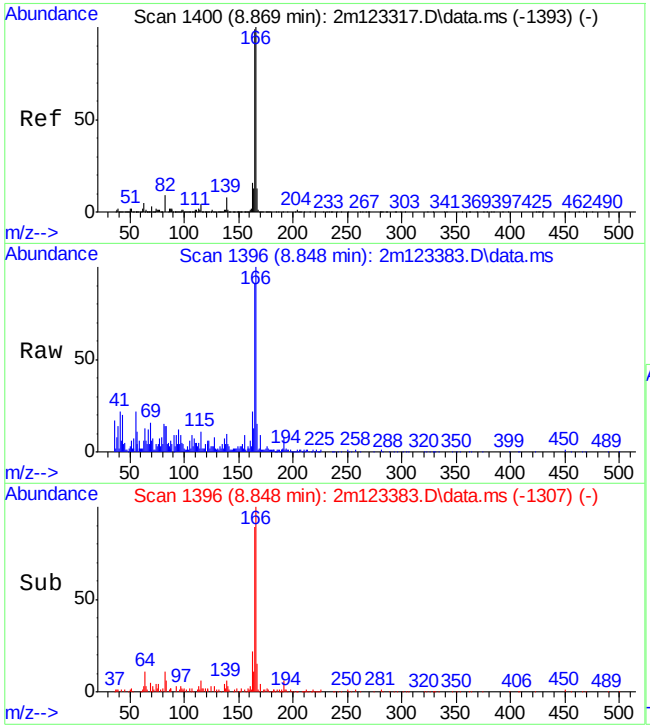


#59
Acenaphthene
Concen: 0.36 ppm
RT: 8.099 min Scan# 1256
Delta R.T. -0.021 min
Lab File: 2m123383.D
Acq: 21 Apr 2022 10:36 am

Tgt Ion:153 Resp: 62128

Ion	Ratio	Lower	Upper
153	100		
152	43.1	17.1	77.1
154	93.7	53.7	113.7

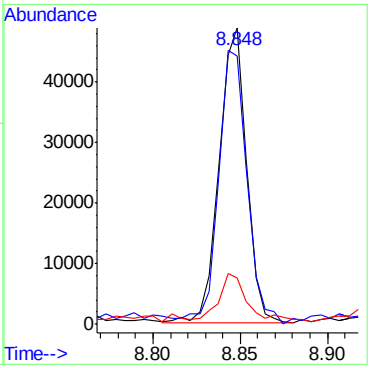


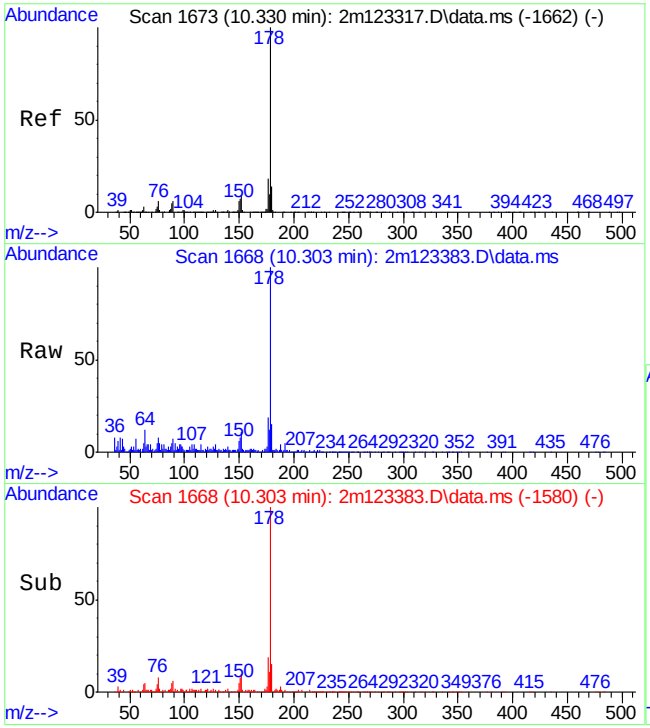


#66
Fluorene
Concen: 0.27 ppm
RT: 8.848 min Scan# 1396
Delta R.T. -0.021 min
Lab File: 2m123383.D
Acq: 21 Apr 2022 10:36 am

Tgt Ion:166 Resp: 52908

Ion	Ratio	Lower	Upper
166	100		
165	89.5	68.9	128.9
167	14.3	0.0	42.7

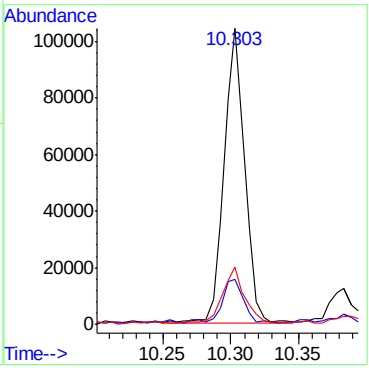




#78
Phenanthrene
Concen: 0.39 ppm
RT: 10.303 min Scan# 1668
Delta R.T. -0.027 min
Lab File: 2m123383.D
Acq: 21 Apr 2022 10:36 am

Tgt Ion:178 Resp: 110967

Ion	Ratio	Lower	Upper
178	100		
179	14.4	0.0	44.0
176	18.6	0.0	48.3



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/22/22 10:24

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96490.D
Acq On : 20 Apr 2022 10:01 am
Operator : chriss2
Sample : jd43215-16
Misc : op39191,e3p4582,260,,,1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 22 09:35:59 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

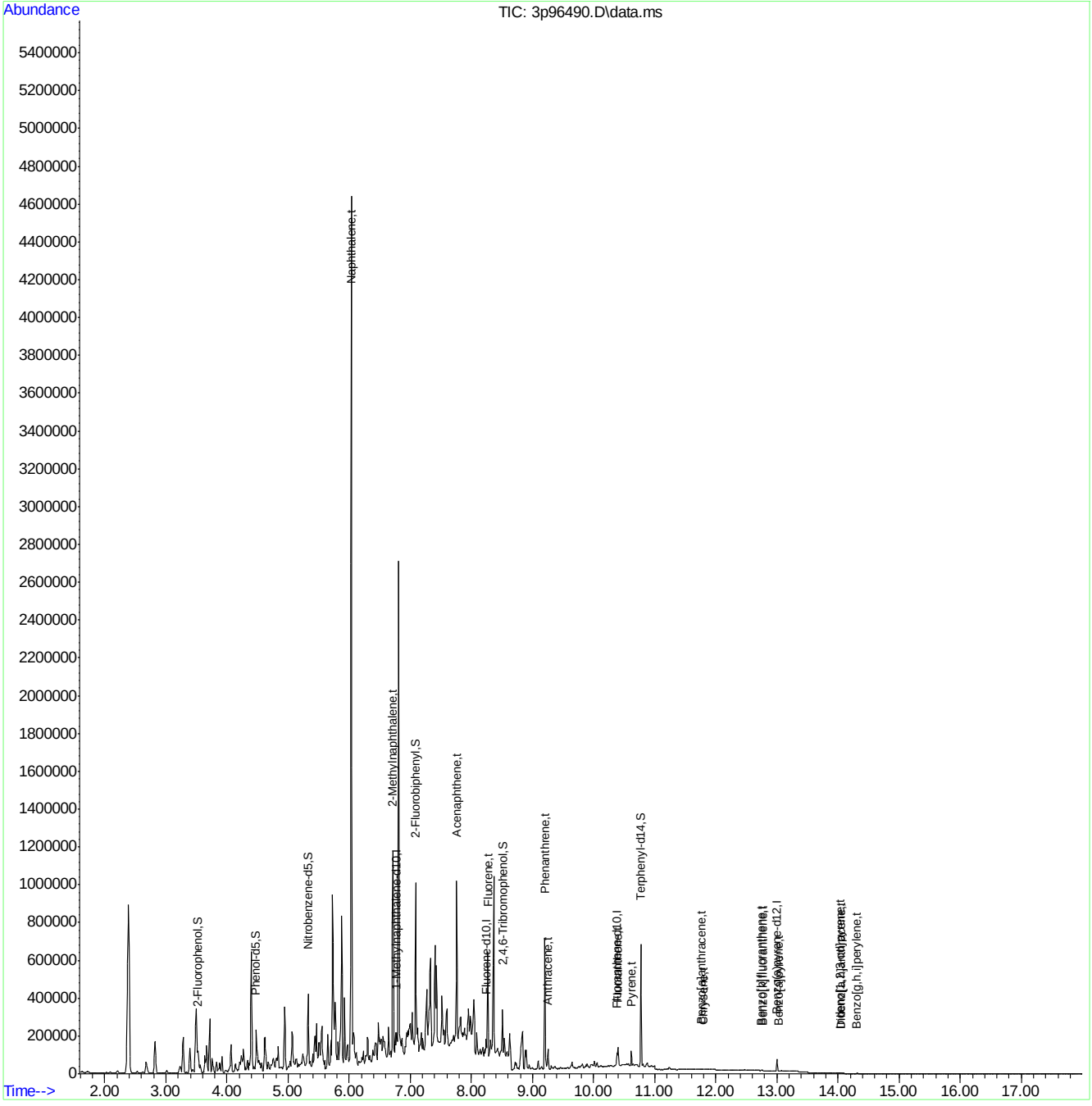
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	44006m	800.00 ppb	0.00
12) Fluorene-d10	8.241	176	41081	800.00 ppb	# 0.00
19) Fluoranthene-d10	10.381	212	65053m	800.00 ppb	0.04
29) Benzo(a)pyrene-d12	13.001	264	44579	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.526	112	96342	2906.41 ppb	-0.02
Spiked Amount 50.000			Recovery	= 5812.82%	
4) Phenol-d5	4.475	99	138664	3080.81 ppb	0.00
Spiked Amount 50.000			Recovery	= 6161.62%	
7) Nitrobenzene-d5	5.327	82	191424	5454.97 ppb	0.00
Spiked Amount 50.000			Recovery	= 10909.94%	
13) 2-Fluorobiphenyl	7.088	172	408360	6333.70 ppb	0.00
Spiked Amount 50.000			Recovery	= 12667.40%	
18) 2,4,6-Tribromophenol	8.510	330	86312	11146.27 ppb	0.02
Spiked Amount 50.000			Recovery	= 22292.54%	
26) Terphenyl-d14	10.777	244	384036	6335.41 ppb	0.02
Spiked Amount 50.000			Recovery	= 12670.82%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	3317471	24709.91 ppb	94
10) 2-Methylnaphthalene	6.716	141	372358	5189.59 ppb	96
15) Acenaphthene	7.758	153	274121	4142.01 ppb	94
17) Fluorene	8.266	166	216532m	3123.25 ppb	
22) Phenanthrene	9.200	178	495786	5099.84 ppb	99
23) Anthracene	9.255	178	69481	738.65 ppb	93
24) Fluoranthene	10.401	202	76287m	660.97 ppb	
25) Pyrene	10.619	202	45075	376.06 ppb	99
27) Benzo[a]anthracene	11.760	228	3228	37.15 ppb	94
28) Chrysene	11.792	228	1657m	14.67 ppb	
30) Benzo[b]fluoranthene	12.746	252	1223	15.11 ppb	90
31) Benzo[k]fluoranthene	12.770	252	531	5.49 ppb	59
32) Benzo[a]pyrene	13.024	252	834	9.03 ppb	94
33) Indeno[1,2,3-cd]pyrene	14.033	276	498	5.79 ppb	90
34) Dibenz[a,h]anthracene	14.056	278	299	4.28 ppb	85
35) Benzo[g,h,i]perylene	14.307	276	534m	6.58 ppb	

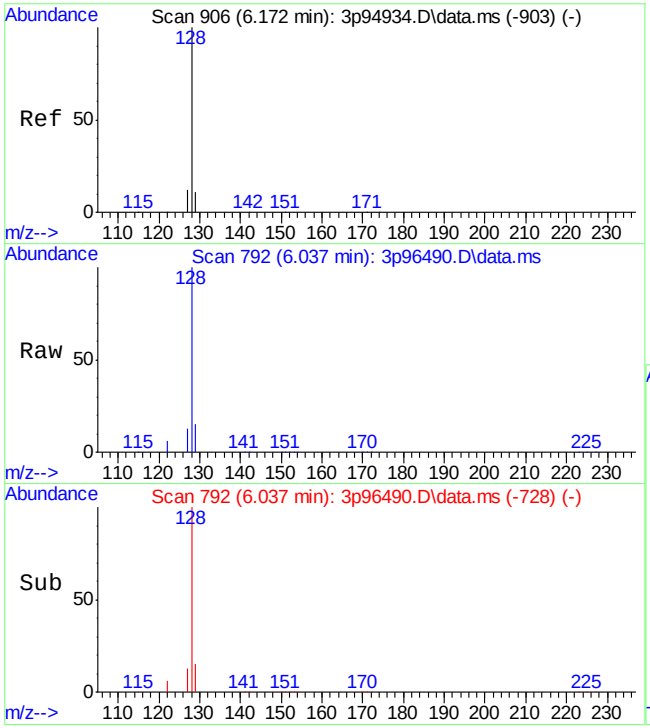
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96490.D
Acq On : 20 Apr 2022 10:01 am
Operator : chriss2
Sample : jd43215-16
Misc : op39191,e3p4582,260,,,1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 22 09:35:59 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

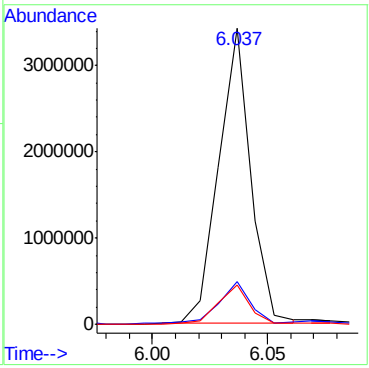


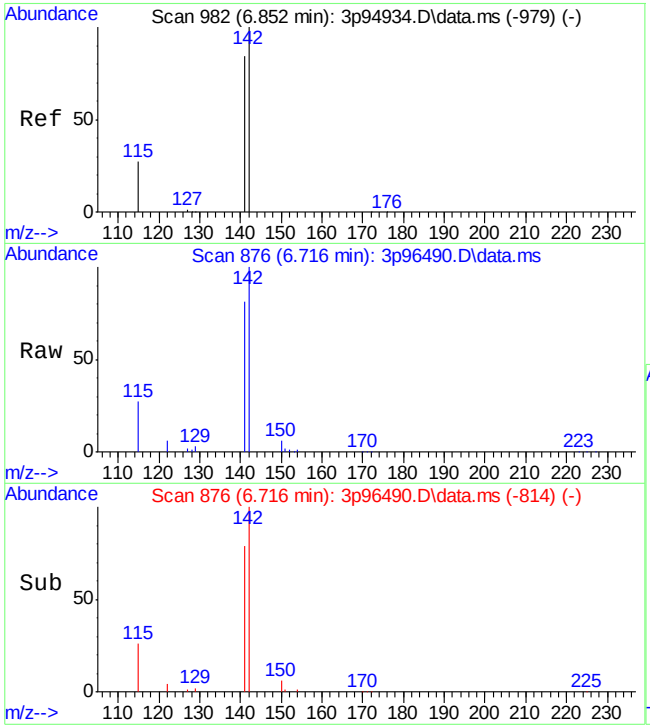


#8
Naphthalene
Concen: 24709.91 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:128 Resp: 3317471

Ion	Ratio	Lower	Upper
128	100		
129	14.2	0.0	41.2
127	13.2	0.0	41.7

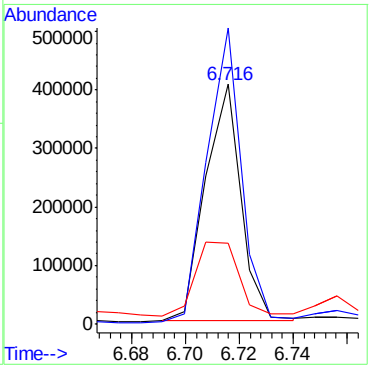


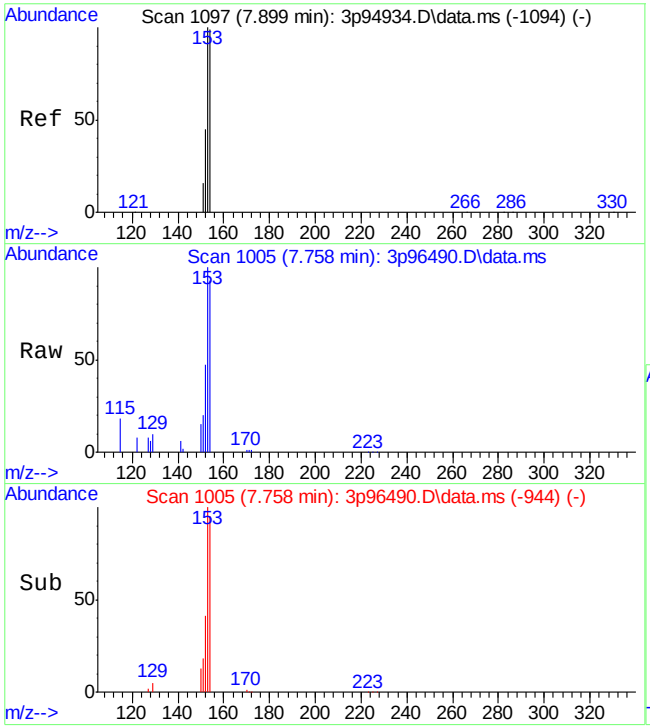


#10
2-Methylnaphthalene
Concen: 5189.59 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:141 Resp: 372358

Ion	Ratio	Lower	Upper
141	100		
142	124.4	88.8	148.8
115	30.5	1.9	61.9

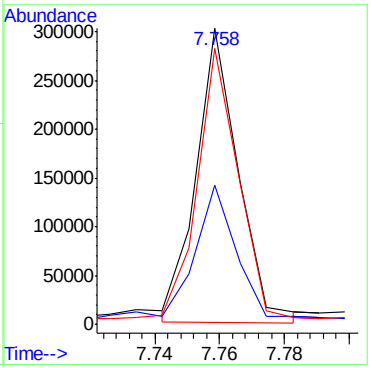


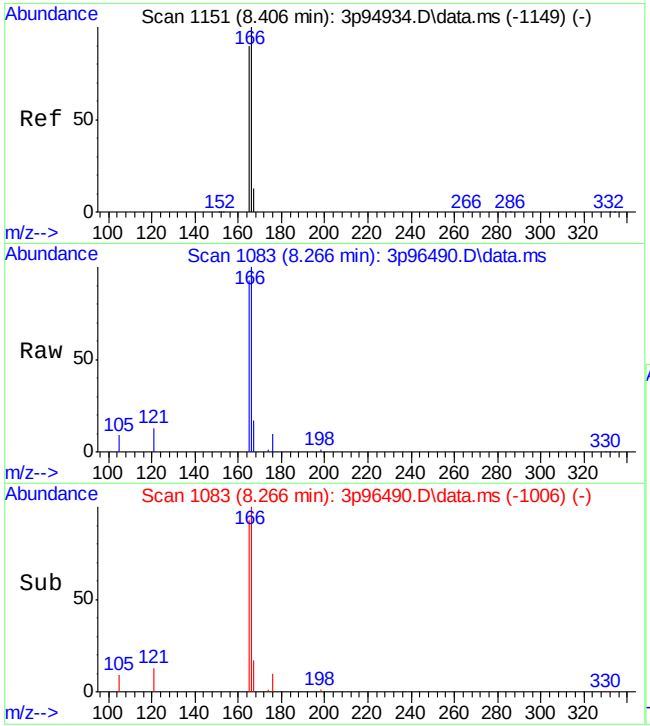


#15
Acenaphthene
Concen: 4142.01 ppb
RT: 7.758 min Scan# 1005
Delta R.T. -0.008 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:153 Resp: 274121

Ion	Ratio	Lower	Upper
153	100		
152	46.2	16.5	76.5
154	94.6	73.6	133.6

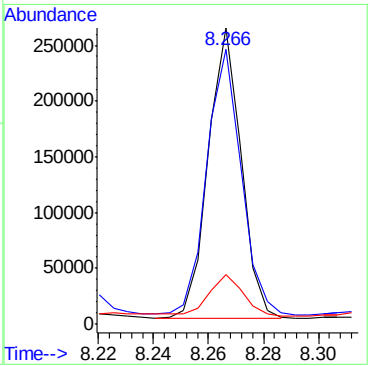


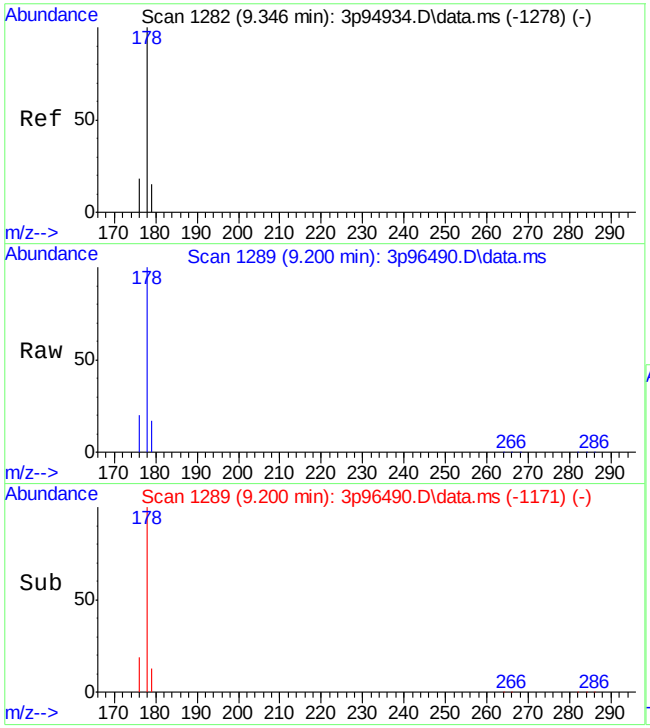


#17
Fluorene
Concen: 3123.25 ppb m
RT: 8.266 min Scan# 1083
Delta R.T. 0.003 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:166 Resp: 216532

Ion	Ratio	Lower	Upper
166	100		
165	92.9	57.3	117.3
167	16.7	0.0	46.0

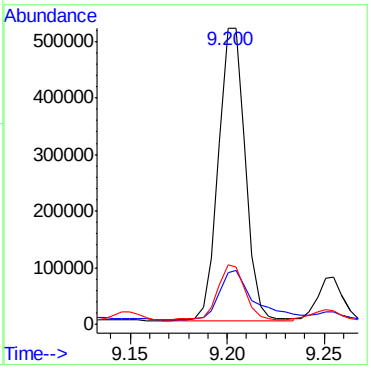


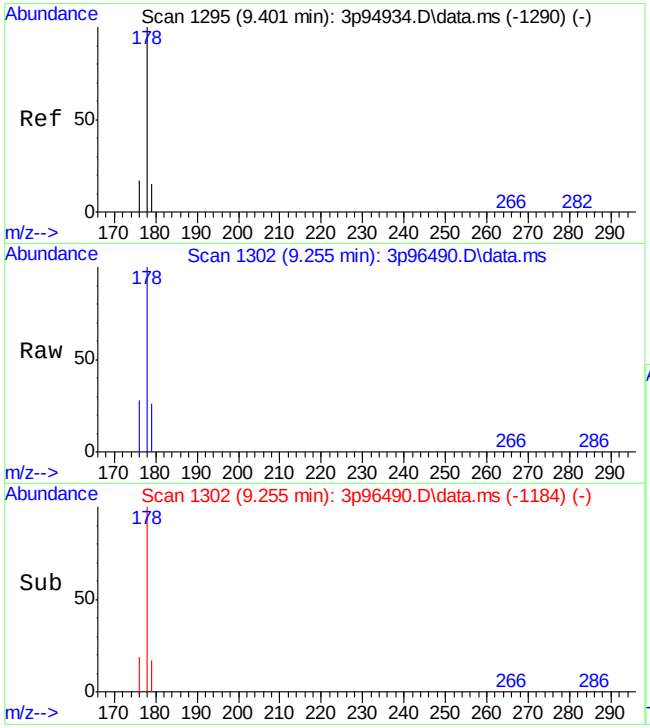


#22
Phenanthrene
Concen: 5099.84 ppb
RT: 9.200 min Scan# 1289
Delta R.T. -0.004 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:178 Resp: 495786

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	45.1
176	18.6	0.0	47.5

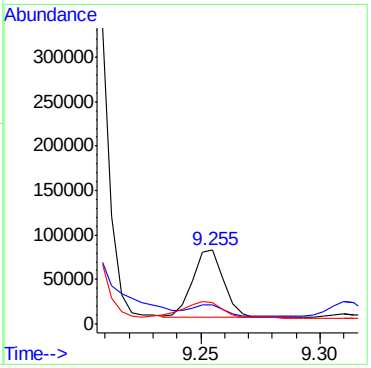


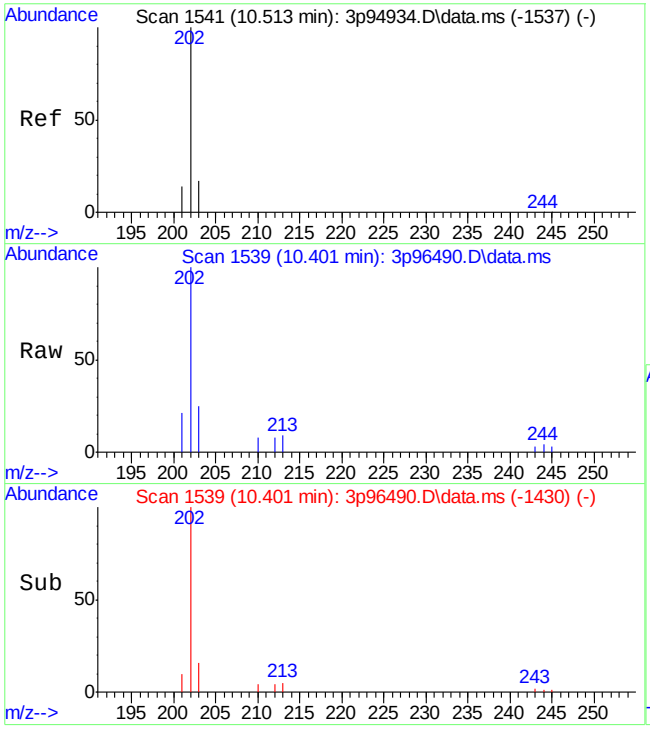


#23
Anthracene
Concen: 738.65 ppb
RT: 9.255 min Scan# 1302
Delta R.T. -0.003 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:178 Resp: 69481

Ion	Ratio	Lower	Upper
178	100		
179	10.3	0.0	43.0
176	20.3	0.0	47.0

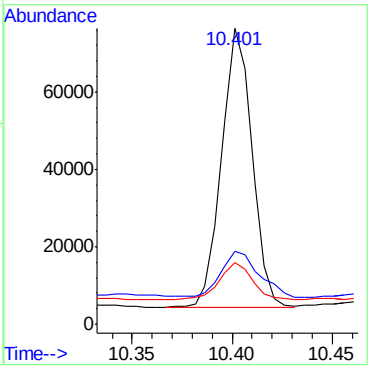


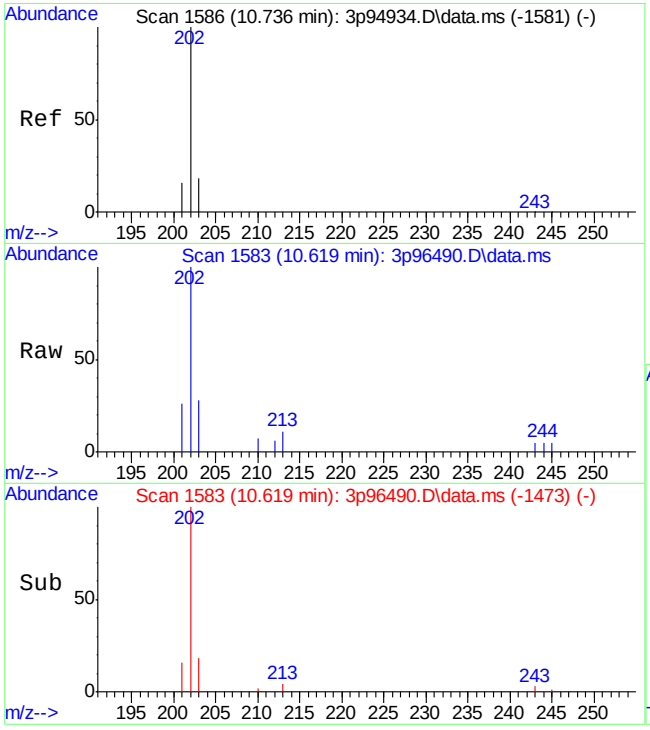


#24
Fluoranthene
Concen: 660.97 ppb m
RT: 10.401 min Scan# 1539
Delta R.T. 0.040 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:202 Resp: 76287

Ion	Ratio	Lower	Upper
202	100		
203	24.7	0.0	50.0
201	21.0	0.0	45.9

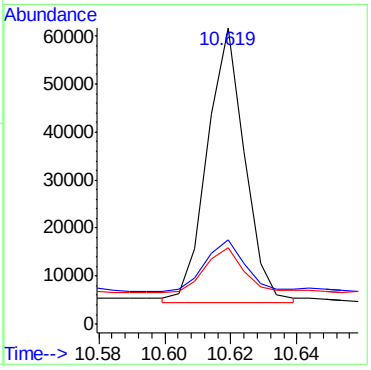


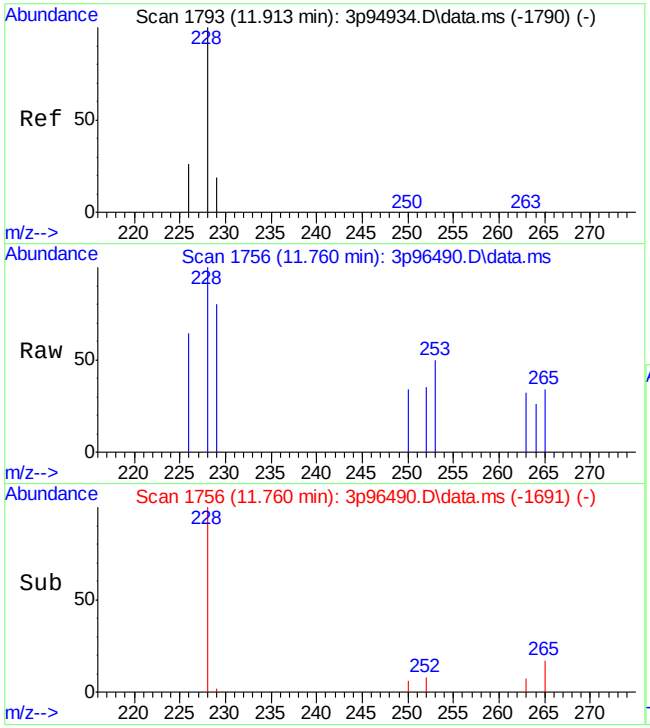


#25
Pyrene
Concen: 376.06 ppb
RT: 10.619 min Scan# 1583
Delta R.T. 0.042 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:202 Resp: 45075

Ion	Ratio	Lower	Upper
202	100		
203	18.7	0.0	48.7
201	16.3	0.0	46.9

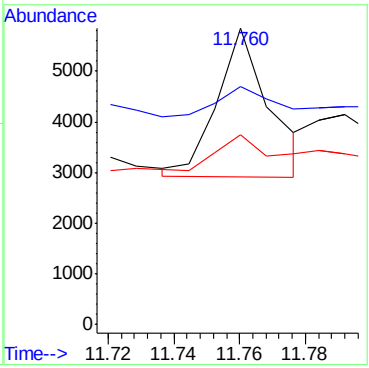


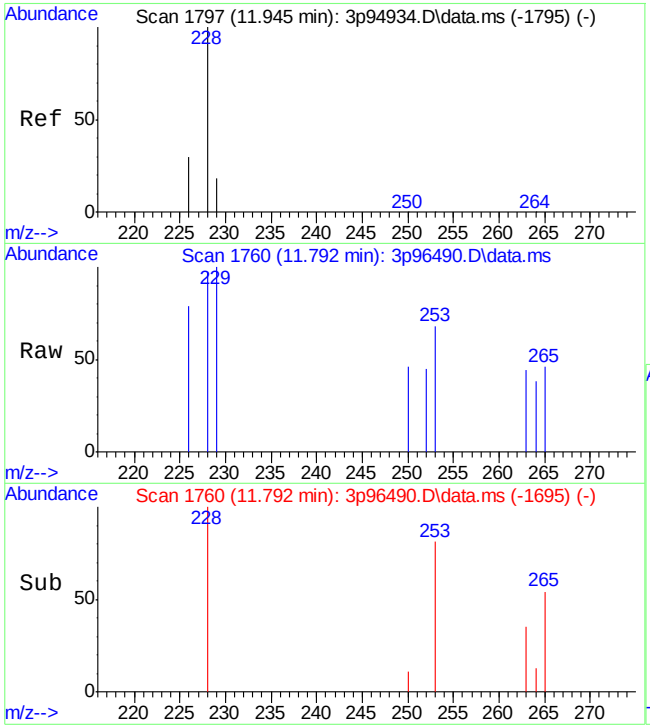


#27
Benzo[a]anthracene
Concen: 37.15 ppb
RT: 11.760 min Scan# 1756
Delta R.T. 0.014 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:228 Resp: 3228

Ion	Ratio	Lower	Upper
228	100		
229	21.8	0.0	49.3
226	22.0	0.0	55.2

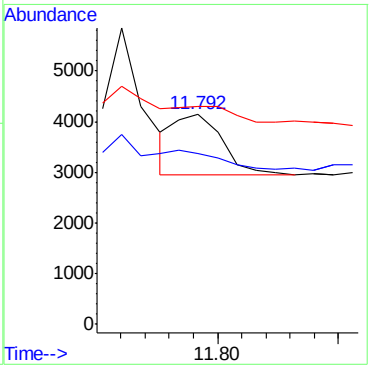


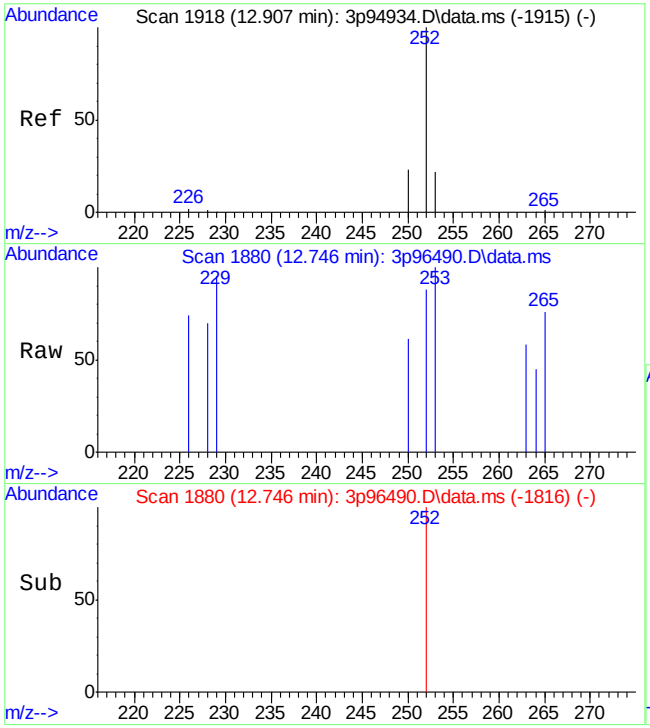


#28
Chrysene
Concen: 14.67 ppb m
RT: 11.792 min Scan# 1760
Delta R.T. 0.014 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:228 Resp: 1657

Ion	Ratio	Lower	Upper
228	100		
226	81.2	0.0	55.6#
229	103.3	0.0	47.4#

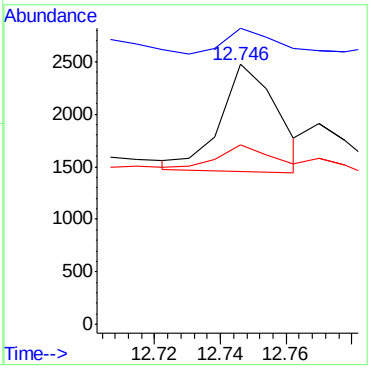


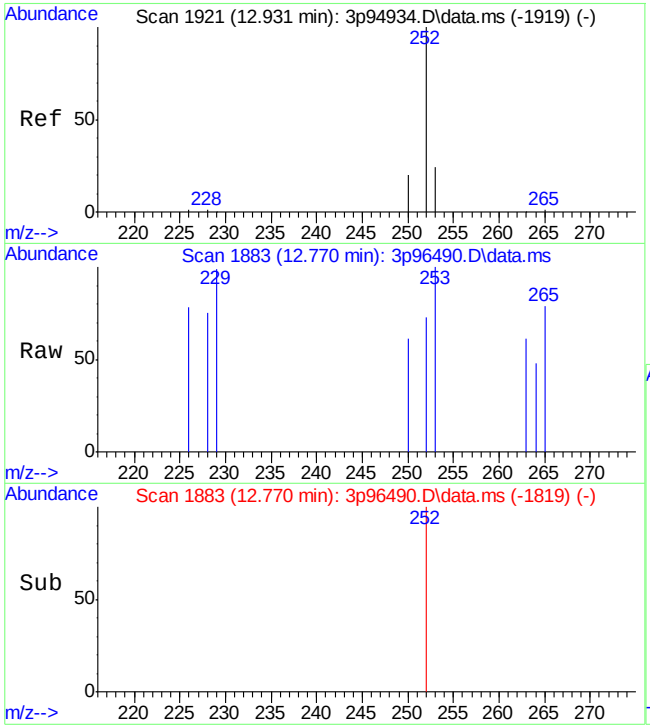


#30
Benzo[b]fluoranthene
Concen: 15.11 ppb
RT: 12.746 min Scan# 1880
Delta R.T. 0.005 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:252 Resp: 1223

Ion	Ratio	Lower	Upper
252	100		
253	24.1	0.0	51.7
250	25.0	0.0	48.4

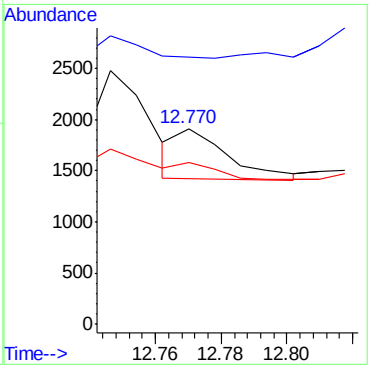


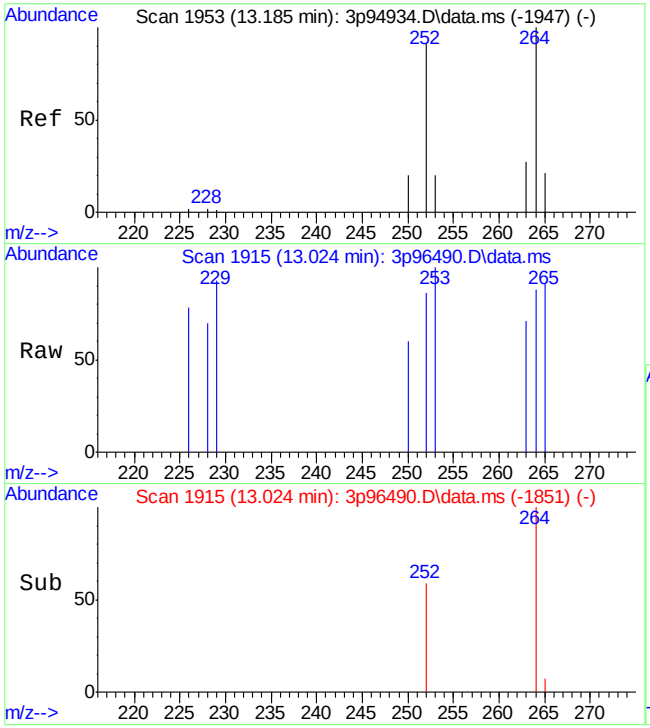


#31
Benzo[k]fluoranthene
Concen: 5.49 ppb
RT: 12.770 min Scan# 1883
Delta R.T. 0.005 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:252 Resp: 531

Ion	Ratio	Lower	Upper
252	100		
253	0.0	0.0	51.5
250	38.3	0.0	51.3

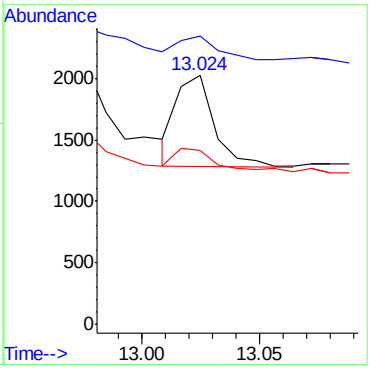


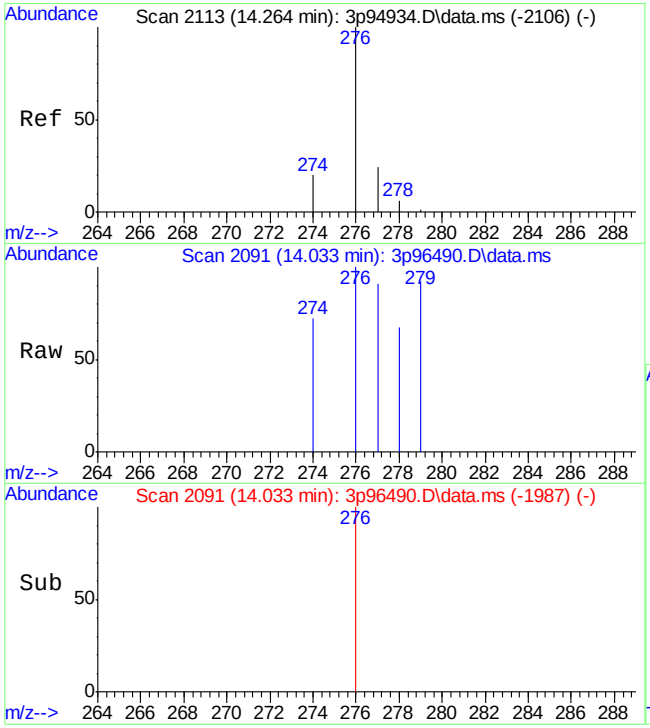


#32
Benzo[a]pyrene
Concen: 9.03 ppb
RT: 13.024 min Scan# 1915
Delta R.T. 0.007 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:252 Resp: 834

Ion	Ratio	Lower	Upper
252	100		
253	24.4	0.0	52.3
250	23.4	0.0	49.9

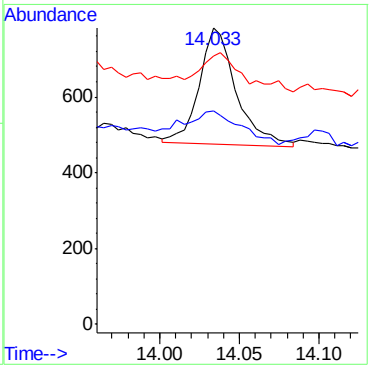


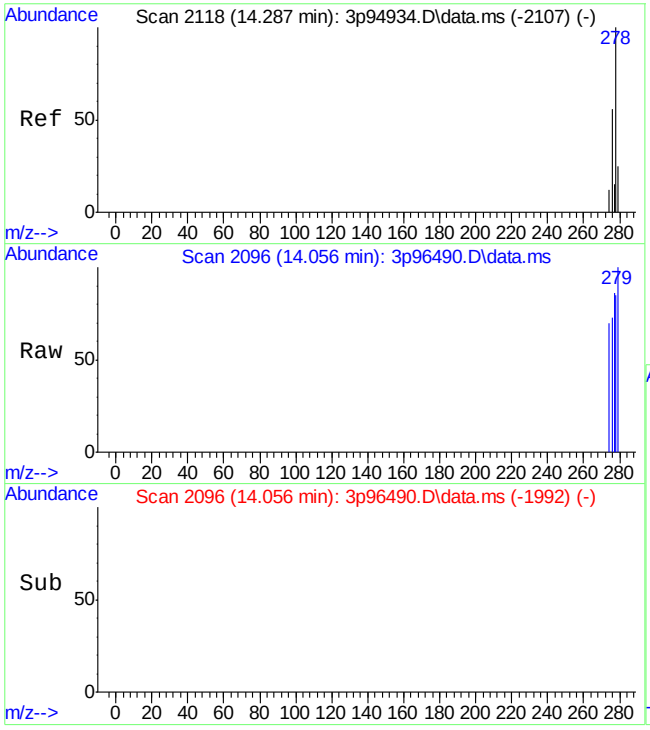


#33
Indeno[1,2,3-cd]pyrene
Concen: 5.79 ppb
RT: 14.033 min Scan# 2091
Delta R.T. -0.024 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:276 Resp: 498

Ion	Ratio	Lower	Upper
276	100		
274	20.8	0.0	45.2
277	26.1	0.0	52.4

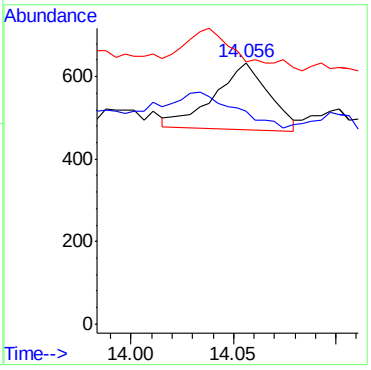


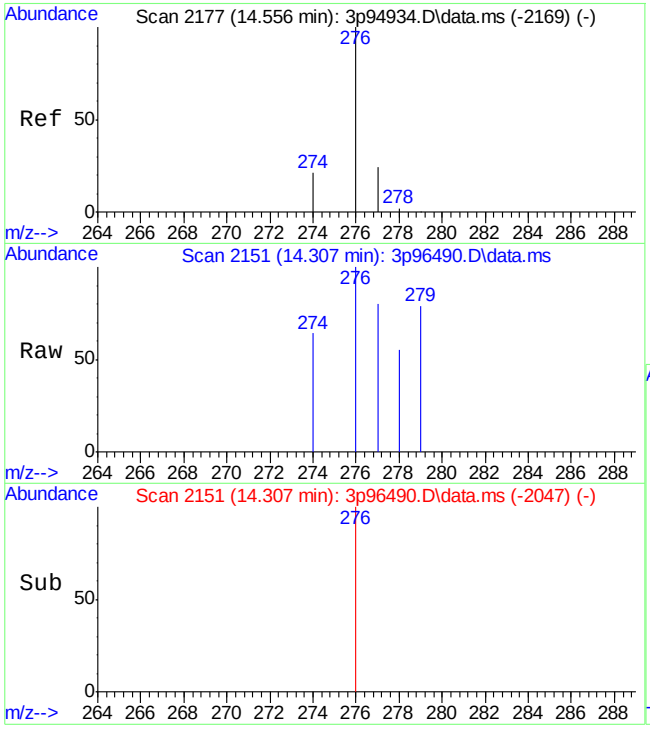


#34
Dibenz[a,h]anthracene
Concen: 4.28 ppb
RT: 14.056 min Scan# 2096
Delta R.T. -0.024 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:278 Resp: 299

Ion	Ratio	Lower	Upper
278	100		
274	8.1	0.0	40.3
277	0.7	0.0	40.0

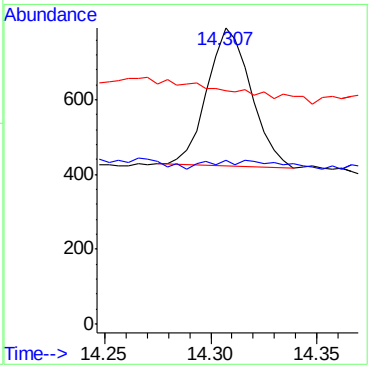




#35
Benzo[g,h,i]perylene
Concen: 6.58 ppb m
RT: 14.307 min Scan# 2151
Delta R.T. -0.027 min
Lab File: 3p96490.D
Acq: 20 Apr 2022 10:01 am

Tgt Ion:276 Resp: 534

Ion	Ratio	Lower	Upper
276	100		
278	55.3	0.0	31.3#
279	78.9	0.0	30.5#



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96491.D
Acq On : 20 Apr 2022 10:23 am
Operator : chriss2
Sample : jd43215-17
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 20 15:38:25 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

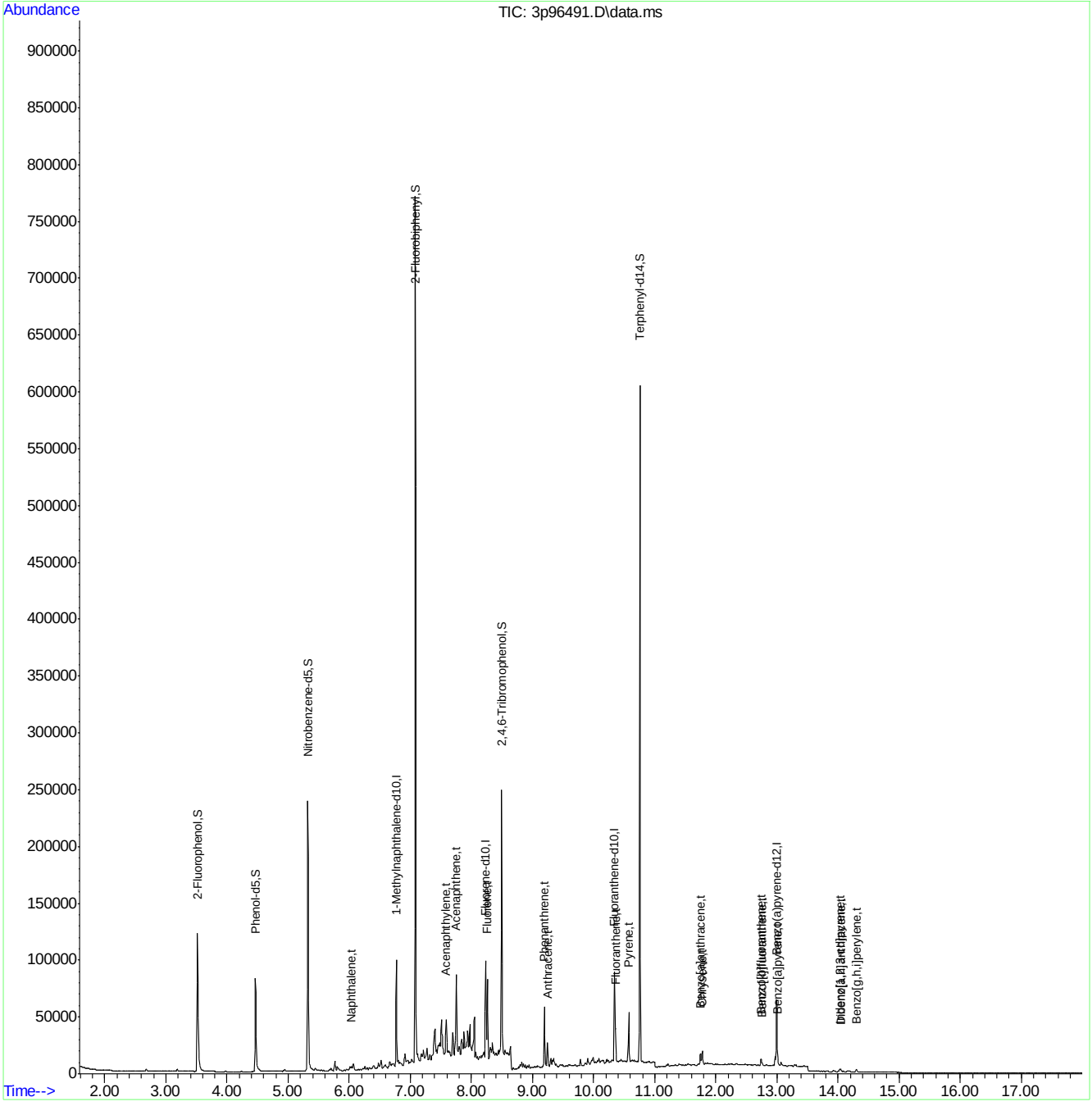
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	29409	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	40448	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	59354	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	45176	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.521	112	93807	4234.56 ppb	-0.02
Spiked Amount 50.000			Recovery	= 8469.12%	
4) Phenol-d5	4.462	99	93968	3124.01 ppb	0.00
Spiked Amount 50.000			Recovery	= 6248.02%	
7) Nitrobenzene-d5	5.320	82	160894	6860.69 ppb	0.00
Spiked Amount 50.000			Recovery	= 13721.38%	
13) 2-Fluorobiphenyl	7.080	172	408413	6433.65 ppb	-0.01
Spiked Amount 50.000			Recovery	= 12867.30%	
18) 2,4,6-Tribromophenol	8.495	330	86377	11329.23 ppb	0.00
Spiked Amount 50.000			Recovery	= 22658.46%	
26) Terphenyl-d14	10.758	244	374687	6774.68 ppb	0.00
Spiked Amount 50.000			Recovery	= 13549.36%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	1364m	15.20 ppb	
14) Acenaphthylene	7.589	152	4328m	45.04 ppb	
15) Acenaphthene	7.750	153	25999m	399.00 ppb	
17) Fluorene	8.261	166	28738m	421.00 ppb	
22) Phenanthrene	9.192	178	36035m	406.26 ppb	
23) Anthracene	9.247	178	13937m	162.39 ppb	
24) Fluoranthene	10.357	202	19069	181.08 ppb	95
25) Pyrene	10.575	202	28891	264.18 ppb	99
27) Benzo[a]anthracene	11.752	228	7243	91.36 ppb	96
28) Chrysene	11.784	228	10077	97.81 ppb	92
30) Benzo[b]fluoranthene	12.746	252	5102m	62.21 ppb	
31) Benzo[k]fluoranthene	12.754	252	1390m	14.18 ppb	
32) Benzo[a]pyrene	13.017	252	3872	43.50 ppb	97
33) Indeno[1,2,3-cd]pyrene	14.029	276	2336	26.79 ppb	90
34) Dibenz[a,h]anthracene	14.047	278	1210m	17.11 ppb	
35) Benzo[g,h,i]perylene	14.302	276	2928	35.59 ppb	98

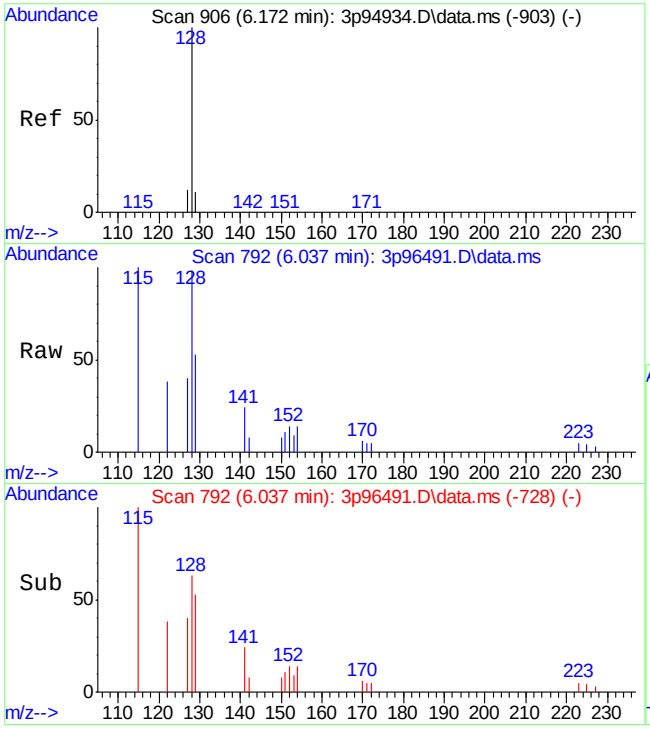
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96491.D
Acq On : 20 Apr 2022 10:23 am
Operator : chriss2
Sample : jd43215-17
Misc : op39191,e3p4582,290,,,1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 20 15:38:25 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

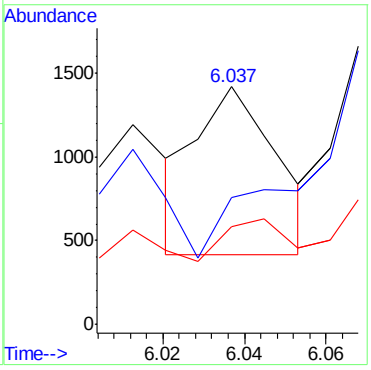


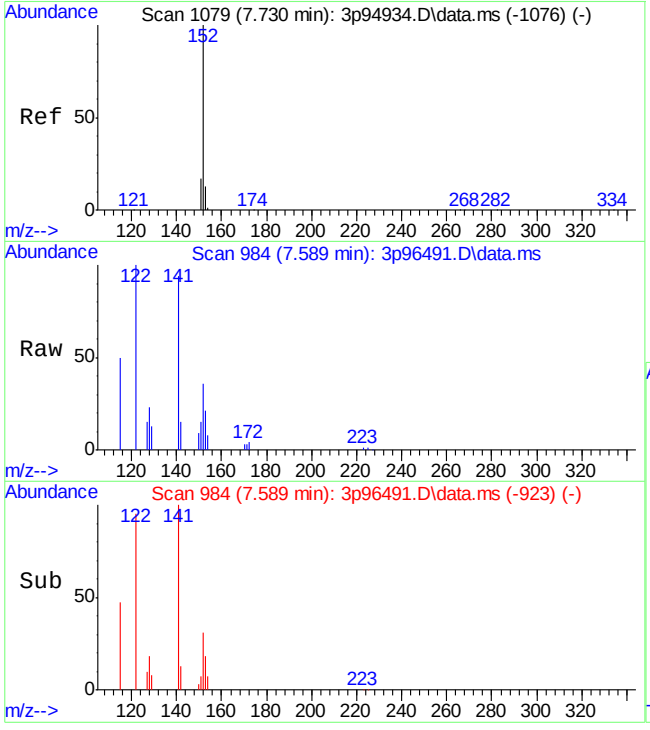


#8
Naphthalene
Concen: 15.20 ppb m
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:128 Resp: 1364

Ion	Ratio	Lower	Upper
128	100		
129	53.5	0.0	41.2#
127	41.0	0.0	41.7

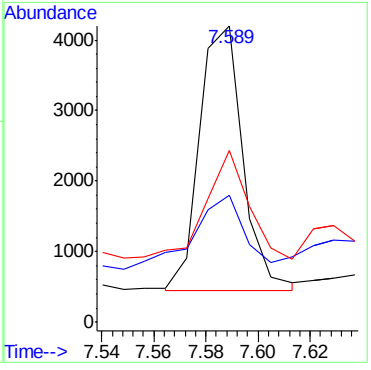


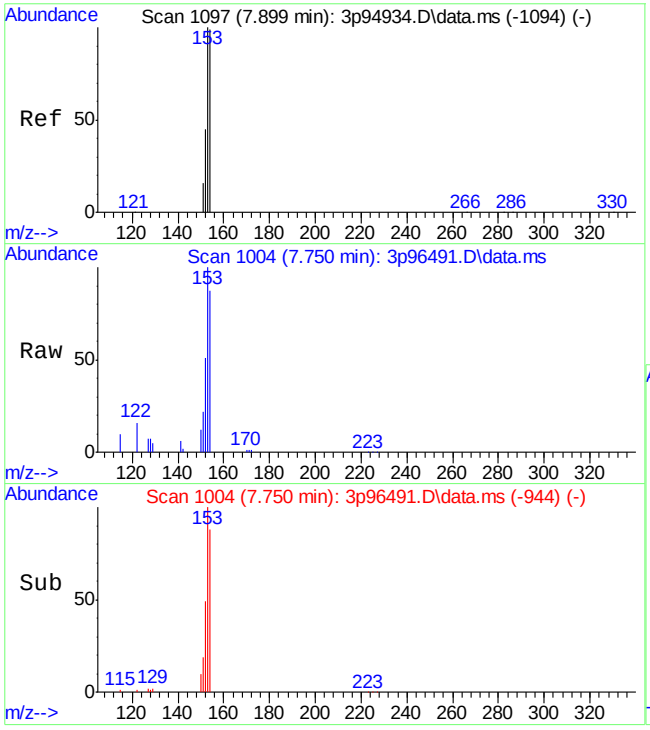


#14
Acenaphthylene
Concen: 45.04 ppb m
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:152 Resp: 4328

Ion	Ratio	Lower	Upper
152	100		
151	42.8	0.0	47.3
153	57.8	0.0	43.3#

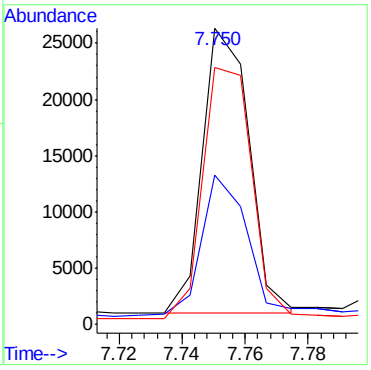


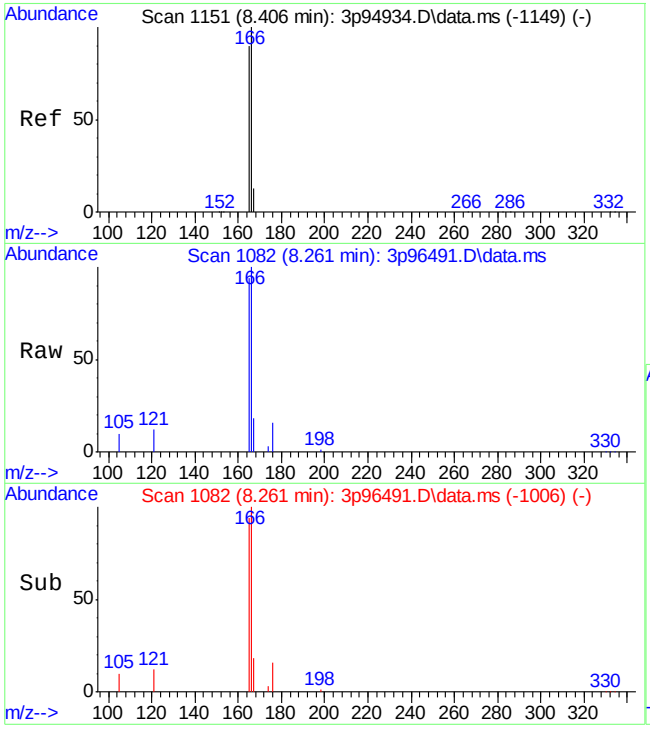


#15
Acenaphthene
Concen: 399.00 ppb m
RT: 7.750 min Scan# 1004
Delta R.T. -0.015 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:153 Resp: 25999

Ion	Ratio	Lower	Upper
153	100		
152	50.5	16.5	76.5
154	86.8	73.6	133.6

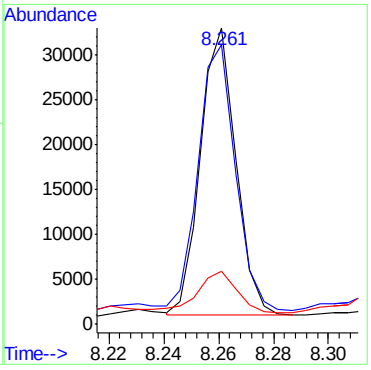


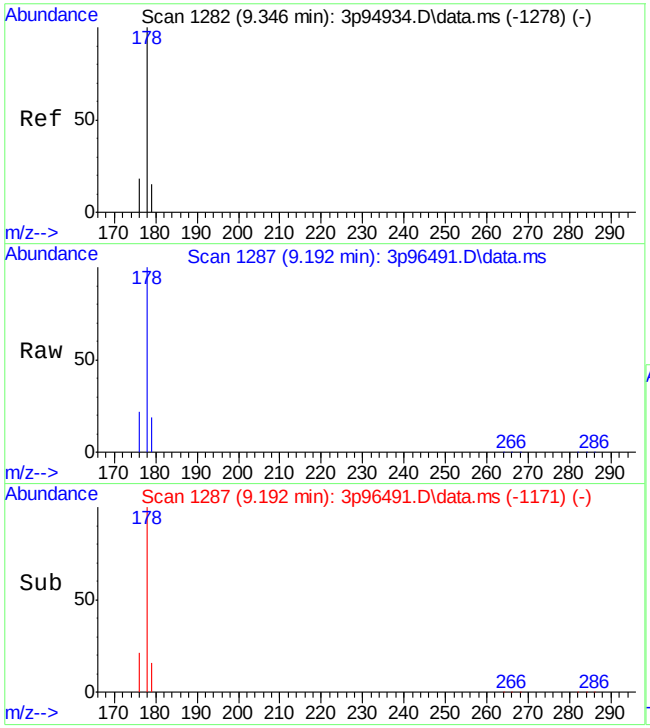


#17
Fluorene
Concen: 421.00 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:166 Resp: 28738

Ion	Ratio	Lower	Upper
166	100		
165	94.2	57.3	117.3
167	17.7	0.0	46.0

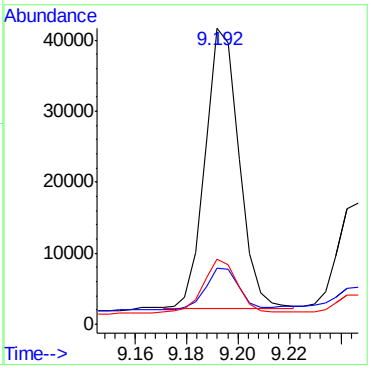


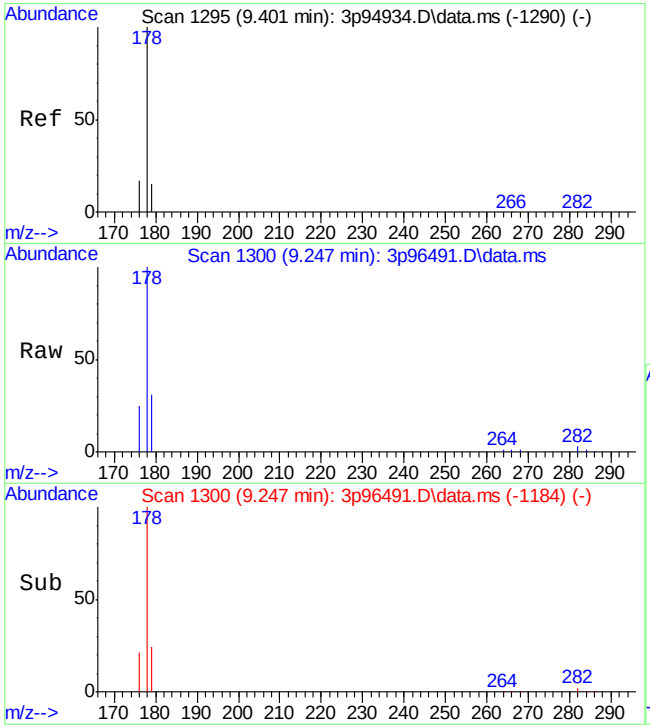


#22
Phenanthrene
Concen: 406.26 ppb m
RT: 9.192 min Scan# 1287
Delta R.T. -0.012 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:178 Resp: 36035

Ion	Ratio	Lower	Upper
178	100		
179	18.9	0.0	45.1
176	22.2	0.0	47.5

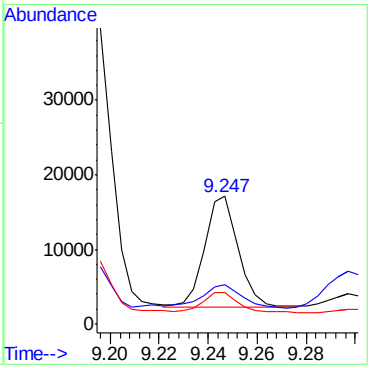


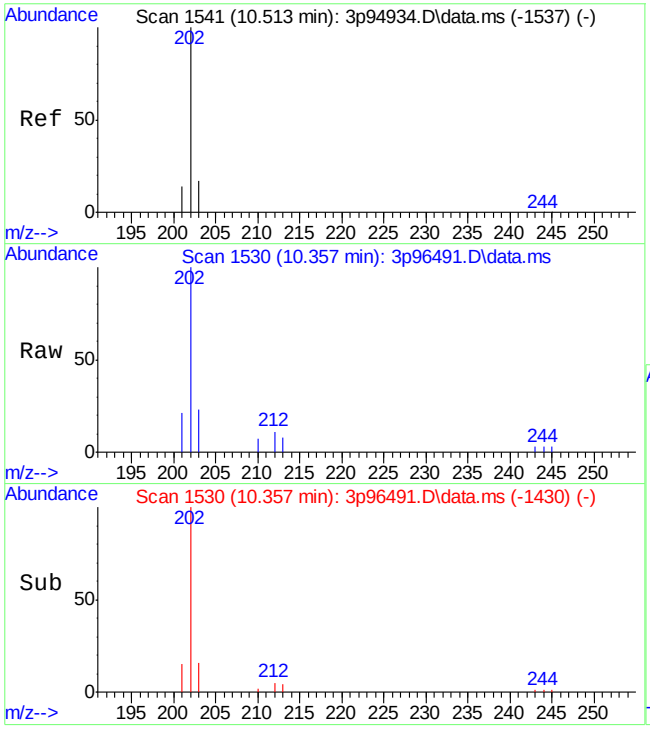


#23
Anthracene
Concen: 162.39 ppb m
RT: 9.247 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:178 Resp: 13937

Ion	Ratio	Lower	Upper
178	100		
179	30.5	0.0	43.0
176	24.6	0.0	47.0

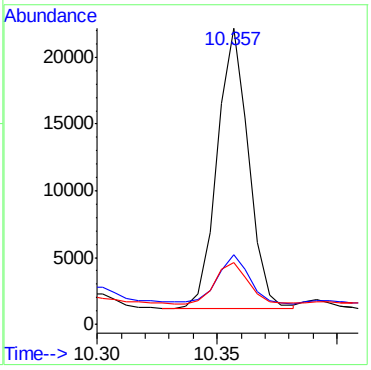


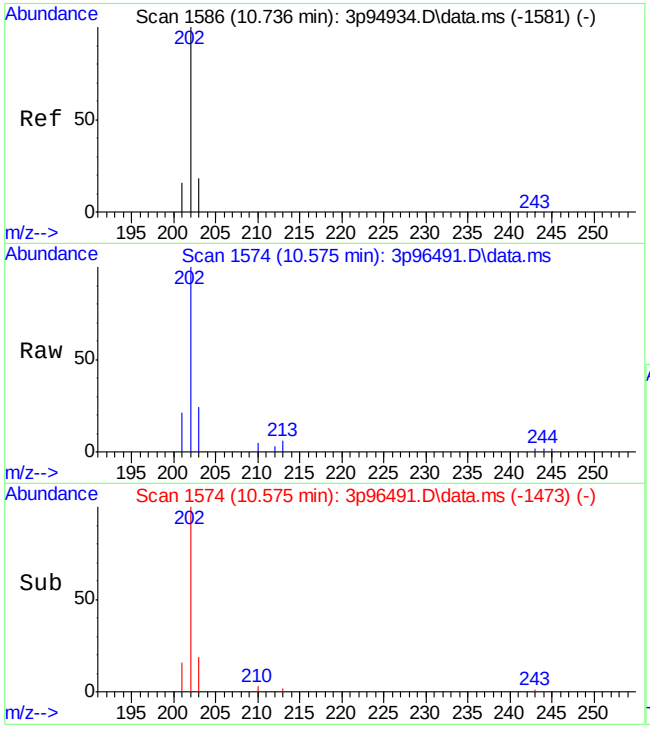


#24
Fluoranthene
Concen: 181.08 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:202 Resp: 19069

Ion	Ratio	Lower	Upper
202	100		
203	17.1	0.0	50.0
201	14.3	0.0	45.9

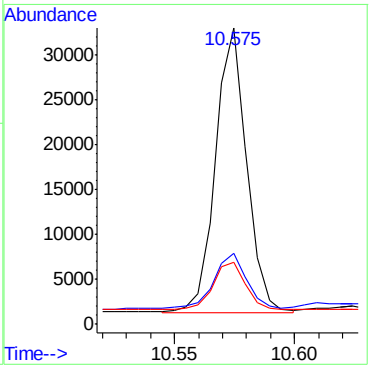


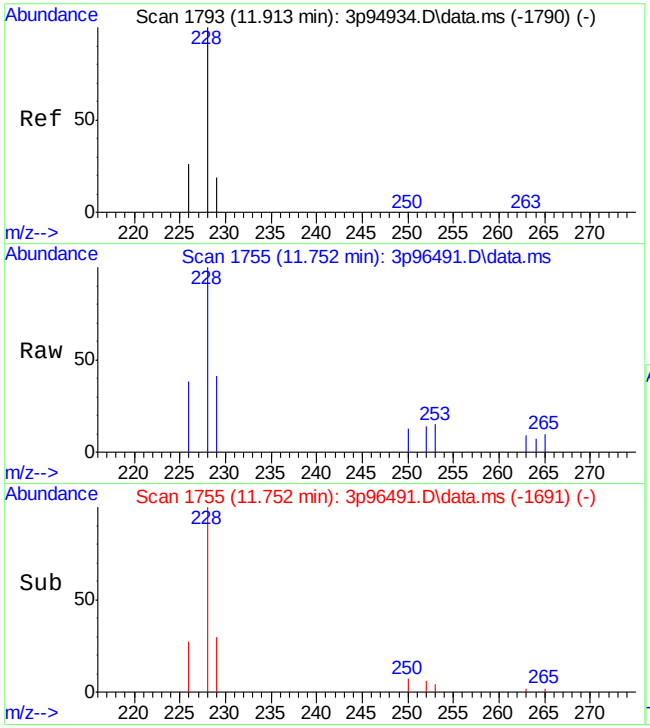


#25
Pyrene
Concen: 264.18 ppb
RT: 10.575 min Scan# 1574
Delta R.T. -0.002 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:202 Resp: 28891

Ion	Ratio	Lower	Upper
202	100		
203	19.0	0.0	48.7
201	16.7	0.0	46.9

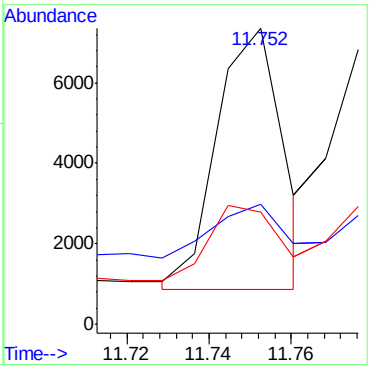


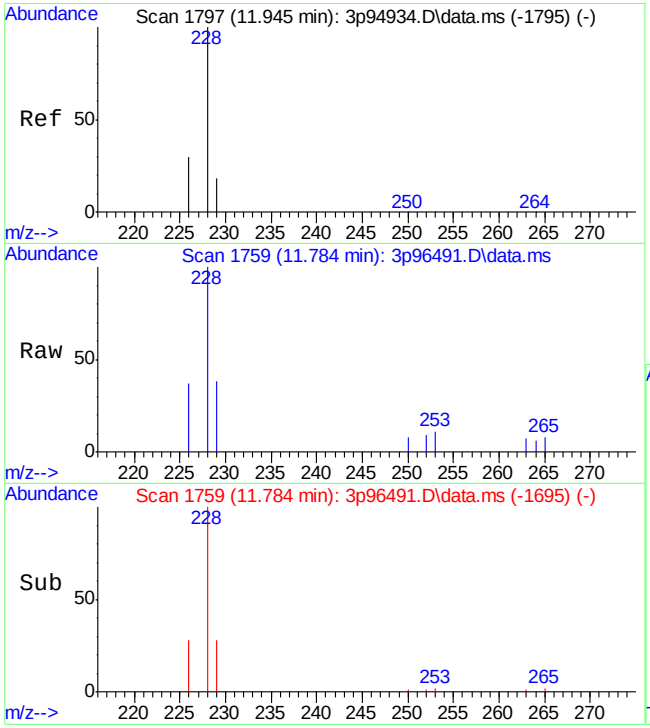


#27
Benzo[a]anthracene
Concen: 91.36 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:228 Resp: 7243

Ion	Ratio	Lower	Upper
228	100		
229	22.1	0.0	49.3
226	26.8	0.0	55.2

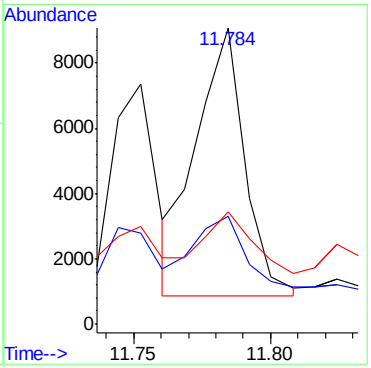


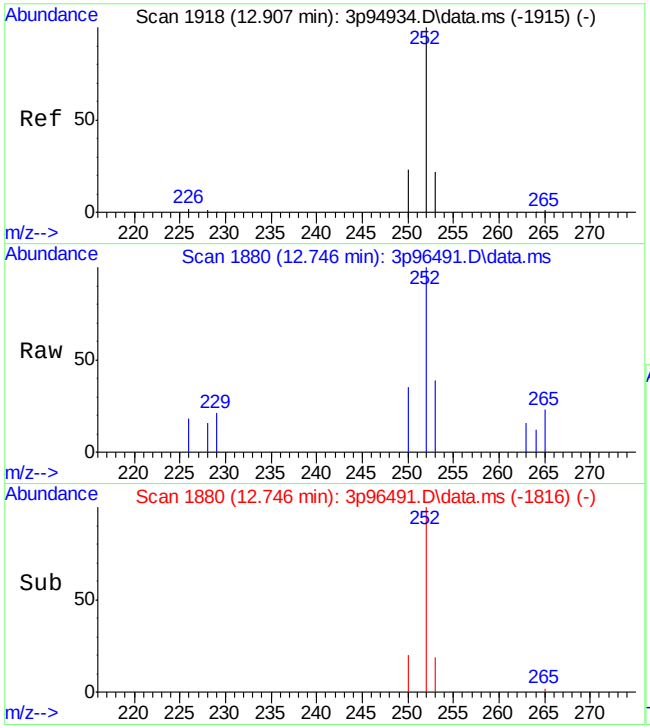


#28
Chrysene
Concen: 97.81 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:228 Resp: 10077

Ion	Ratio	Lower	Upper
228	100		
226	27.6	0.0	55.6
229	23.9	0.0	47.4

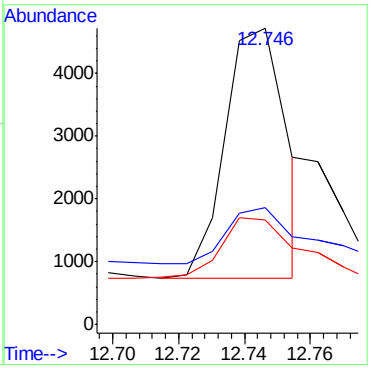


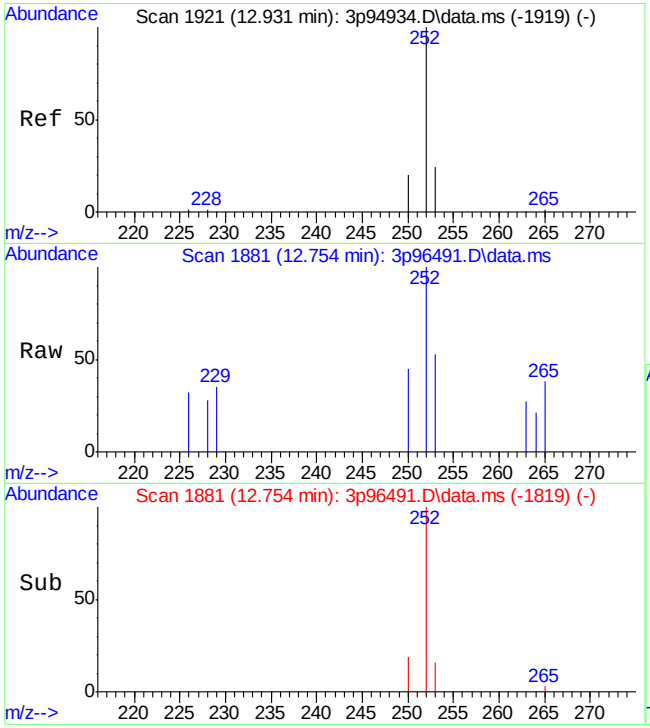


#30
Benzo[b]fluoranthene
Concen: 62.21 ppb m
RT: 12.746 min Scan# 1880
Delta R.T. 0.005 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:252 Resp: 5102

Ion	Ratio	Lower	Upper
252	100		
253	39.4	0.0	51.7
250	35.3	0.0	48.4

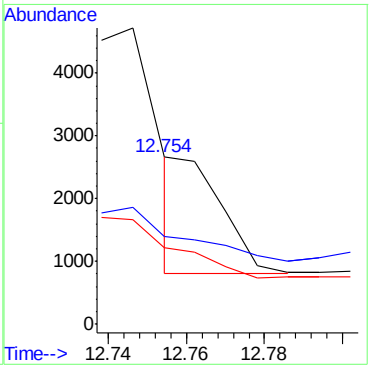


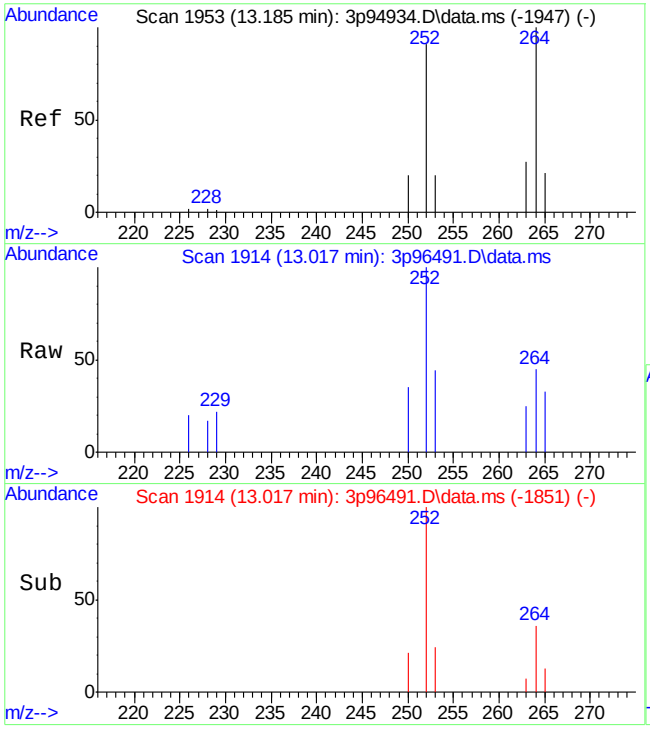


#31
Benzo[k]fluoranthene
Concen: 14.18 ppb m
RT: 12.754 min Scan# 1881
Delta R.T. -0.010 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:252 Resp: 1390

Ion	Ratio	Lower	Upper
252	100		
253	52.7	0.0	51.5#
250	45.4	0.0	51.3

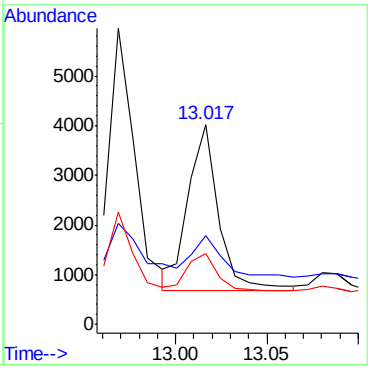


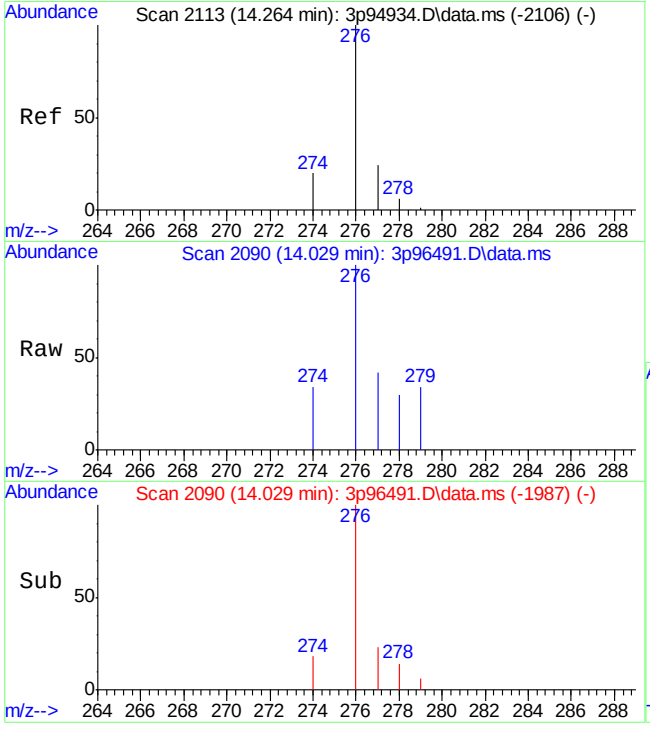


#32
Benzo[a]pyrene
Concen: 43.50 ppb
RT: 13.017 min Scan# 1914
Delta R.T. -0.001 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:252 Resp: 3872

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	52.3
250	22.6	0.0	49.9

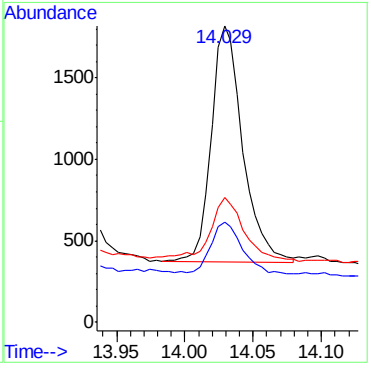


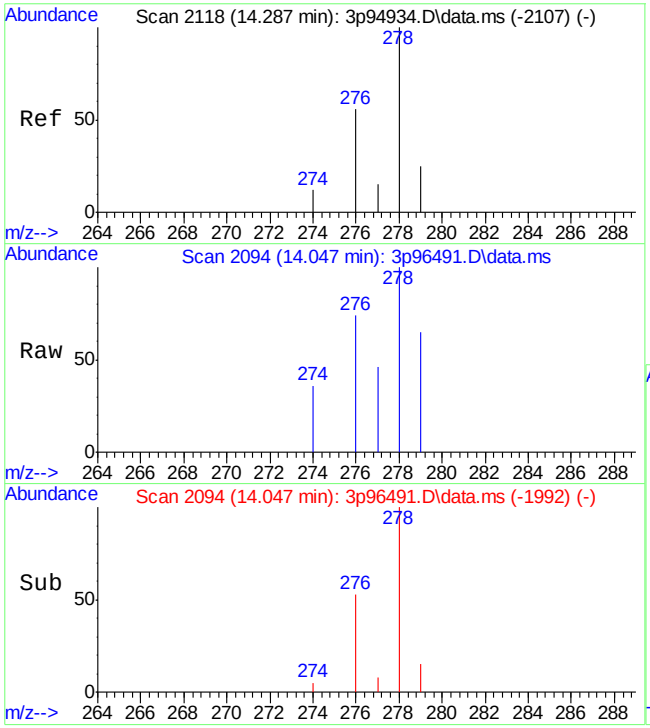


#33
Indeno[1,2,3-cd]pyrene
Concen: 26.79 ppb
RT: 14.029 min Scan# 2090
Delta R.T. -0.029 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:276 Resp: 2336

Ion	Ratio	Lower	Upper
276	100		
274	21.3	0.0	45.2
277	25.8	0.0	52.4

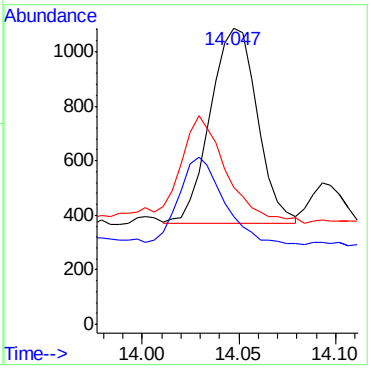


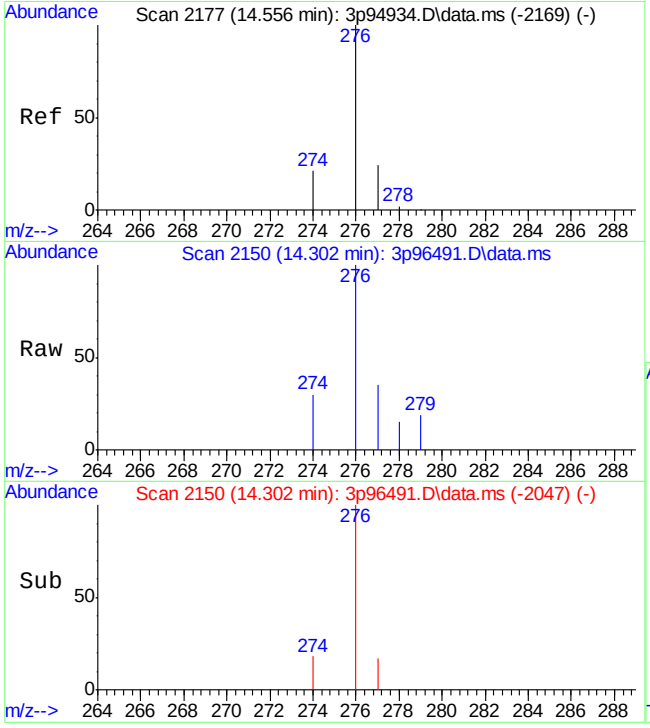


#34
Dibenz[a,h]anthracene
Concen: 17.11 ppb m
RT: 14.047 min Scan# 2094
Delta R.T. -0.033 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:278 Resp: 1210

Ion	Ratio	Lower	Upper
278	100		
274	36.4	0.0	40.3
277	46.1	0.0	40.0#

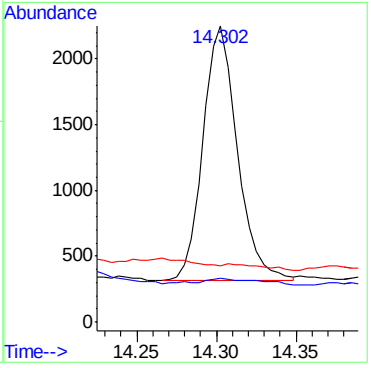




#35
Benzo[g,h,i]perylene
Concen: 35.59 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96491.D
Acq: 20 Apr 2022 10:23 am

Tgt Ion:276 Resp: 2928

Ion	Ratio	Lower	Upper
276	100		
278	2.3	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96492.D
Acq On : 20 Apr 2022 10:46 am
Operator : chriss2
Sample : jd43215-18
Misc : op39191,e3p4582,270,,,1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 20 15:39:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

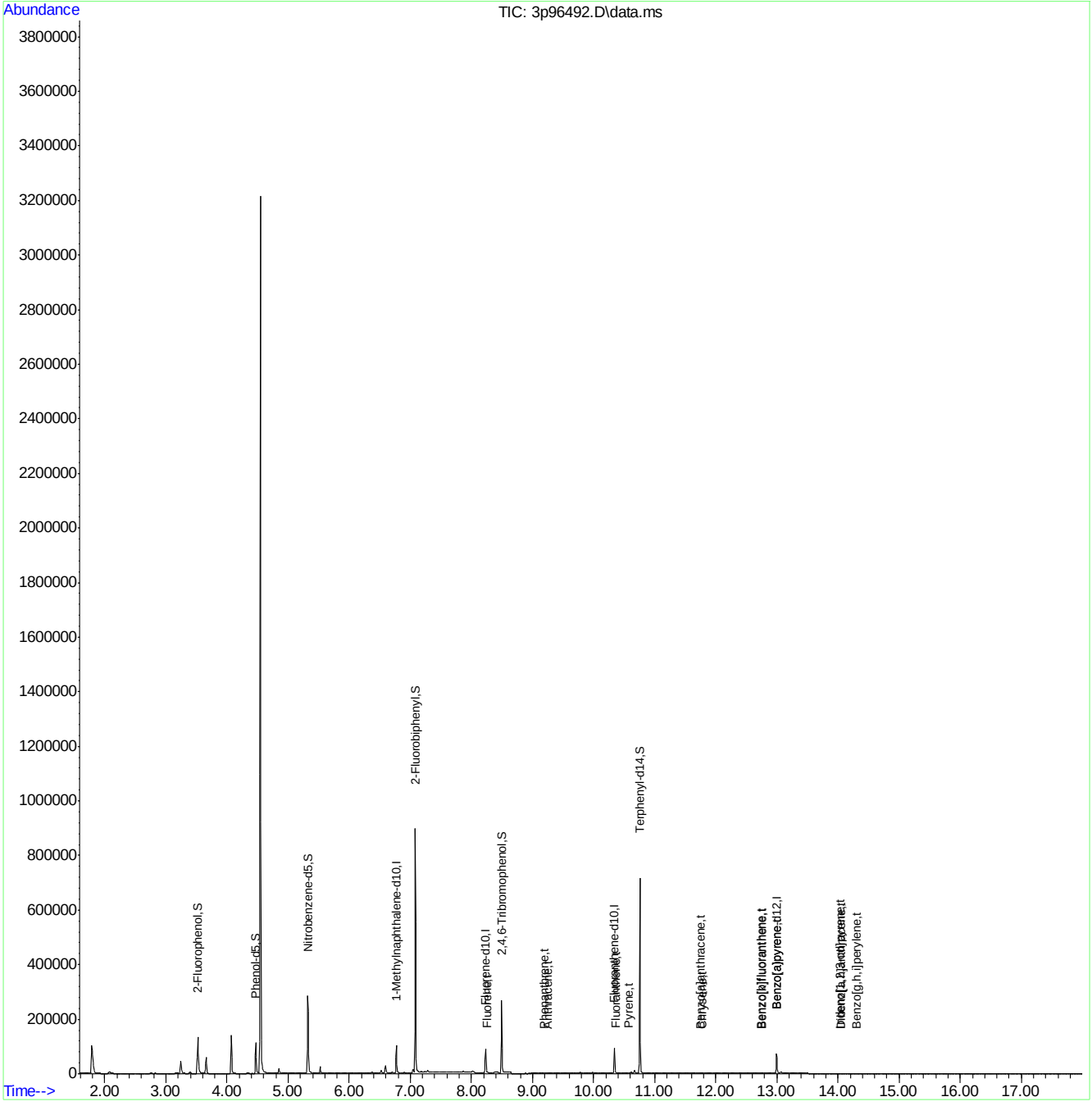
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.772	150	31855	800.00	ppb	0.00
12) Fluorene-d10	8.231	176	41834	800.00	ppb	0.00
19) Fluoranthene-d10	10.337	212	67220	800.00	ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	53937	800.00	ppb	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.521	112	107525	4481.11	ppb	-0.02
Spiked Amount 50.000			Recovery	= 8962.22%		
4) Phenol-d5	4.469	99	110539	3392.74	ppb	0.00
Spiked Amount 50.000			Recovery	= 6785.48%		
7) Nitrobenzene-d5	5.320	82	189367	7454.78	ppb	0.00
Spiked Amount 50.000			Recovery	= 14909.56%		
13) 2-Fluorobiphenyl	7.080	172	470449	7165.36	ppb	-0.01
Spiked Amount 50.000			Recovery	= 14330.72%		
18) 2,4,6-Tribromophenol	8.495	330	97072	12310.16	ppb	0.00
Spiked Amount 50.000			Recovery	= 24620.32%		
26) Terphenyl-d14	10.758	244	461787	7372.47	ppb	0.00
Spiked Amount 50.000			Recovery	= 14744.94%		
Target Compounds						Qvalue
17) Fluorene	8.261	166	184m	2.61	ppb	
22) Phenanthrene	9.196	178	484m	4.82	ppb	
23) Anthracene	9.247	178	1304m	13.42	ppb	
24) Fluoranthene	10.357	202	310m	2.60	ppb	
25) Pyrene	10.575	202	464m	3.75	ppb	
27) Benzo[a]anthracene	11.752	228	236	2.63	ppb	93
28) Chrysene	11.784	228	258	2.21	ppb	81
30) Benzo[b]fluoranthene	12.746	252	162	1.65	ppb	66
31) Benzo[k]fluoranthene	12.762	252	122	1.04	ppb	77
32) Benzo[a]pyrene	12.993	252	198	1.35	ppb	64
33) Indeno[1,2,3-cd]pyrene	14.034	276	93	0.89	ppb	85
34) Dibenz[a,h]anthracene	14.052	278	79	0.94	ppb	98
35) Benzo[g,h,i]perylene	14.302	276	107	1.09	ppb	90

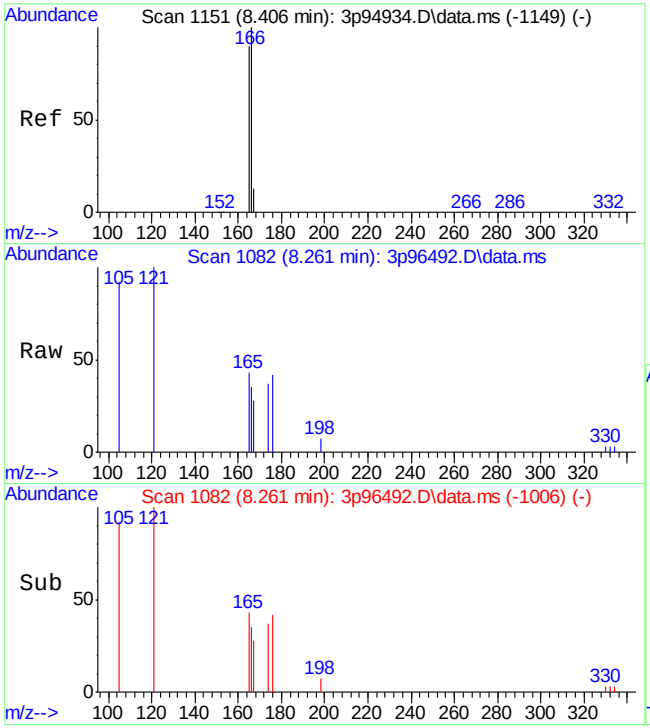
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96492.D
Acq On : 20 Apr 2022 10:46 am
Operator : chriss2
Sample : jd43215-18
Misc : op39191,e3p4582,270,,,1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 20 15:39:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

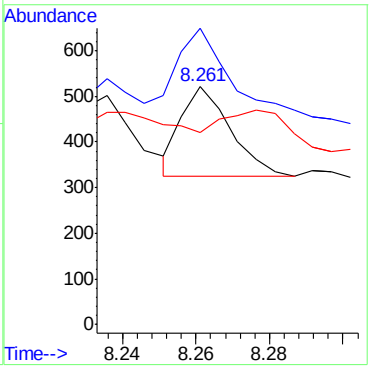


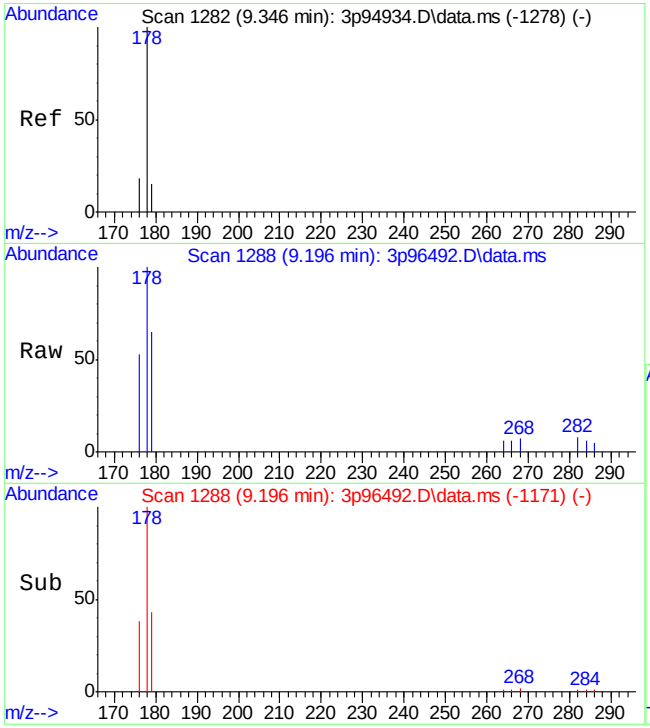


#17
Fluorene
Concen: 2.61 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:166 Resp: 184

Ion	Ratio	Lower	Upper
166	100		
165	124.3	57.3	117.3#
167	80.7	0.0	46.0#

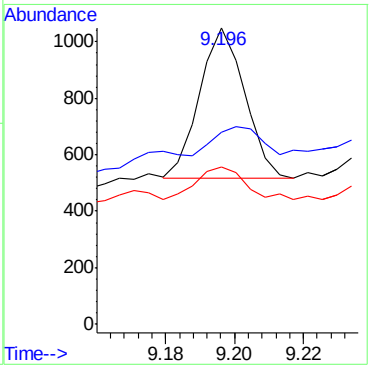


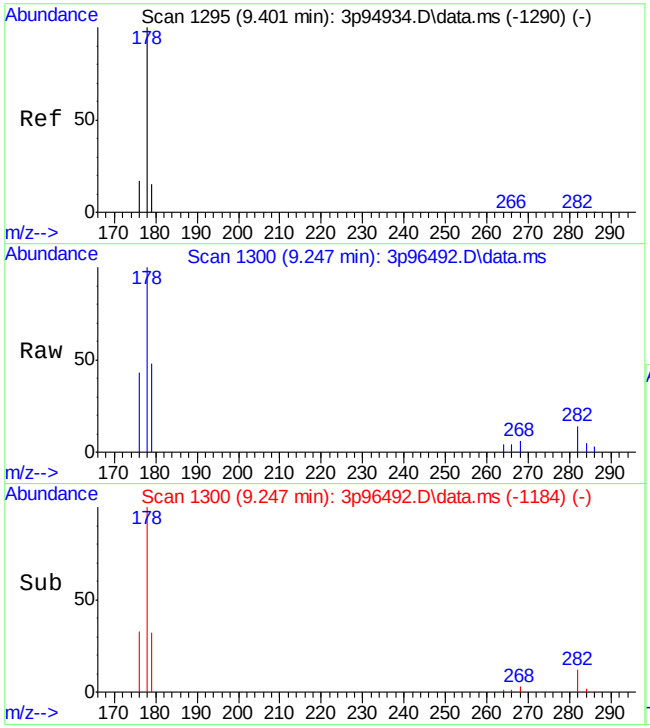


#22
Phenanthrene
Concen: 4.82 ppb m
RT: 9.196 min Scan# 1288
Delta R.T. -0.008 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:178 Resp: 484

Ion	Ratio	Lower	Upper
178	100		
179	64.8	0.0	45.1#
176	52.9	0.0	47.5#

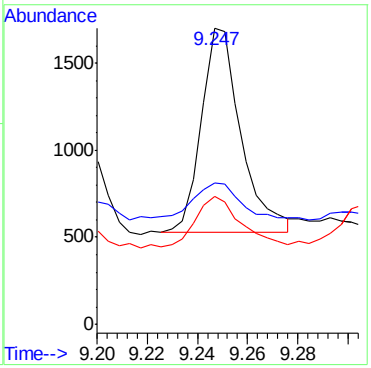


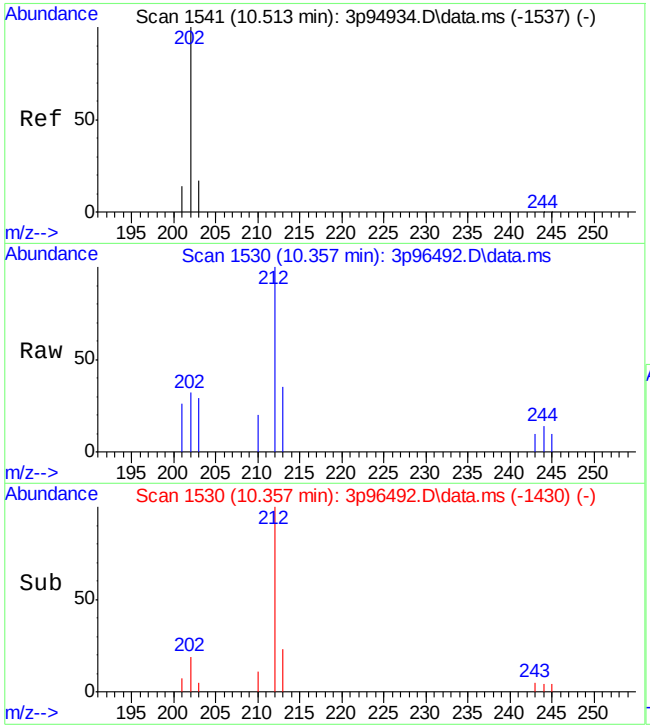


#23
Anthracene
Concen: 13.42 ppb m
RT: 9.247 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:178 Resp: 1304

Ion	Ratio	Lower	Upper
178	100		
179	47.6	0.0	43.0#
176	43.1	0.0	47.0

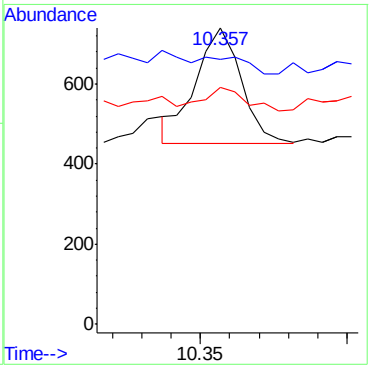


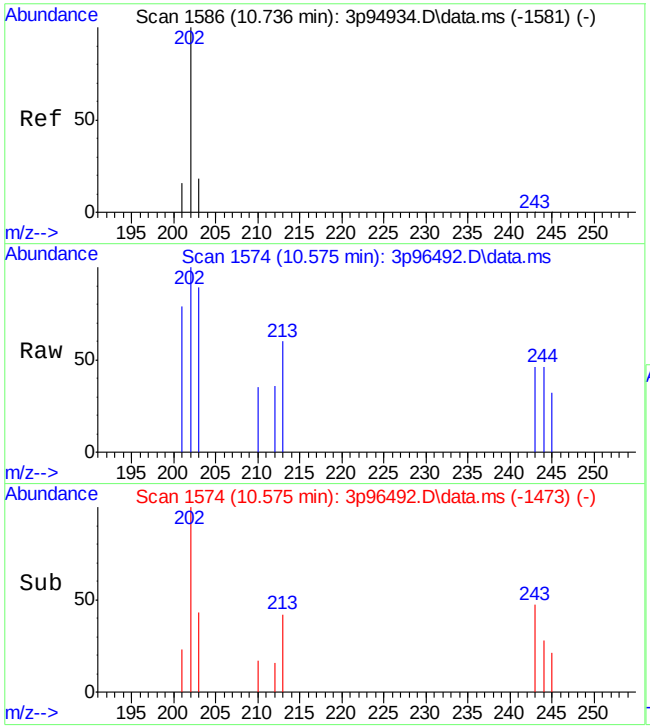


#24
Fluoranthene
Concen: 2.60 ppb m
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:202 Resp: 310

Ion	Ratio	Lower	Upper
202	100		
203	89.6	0.0	50.0#
201	79.9	0.0	45.9#

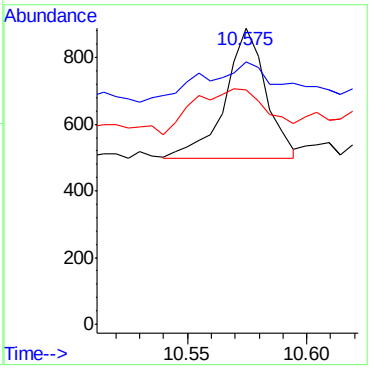


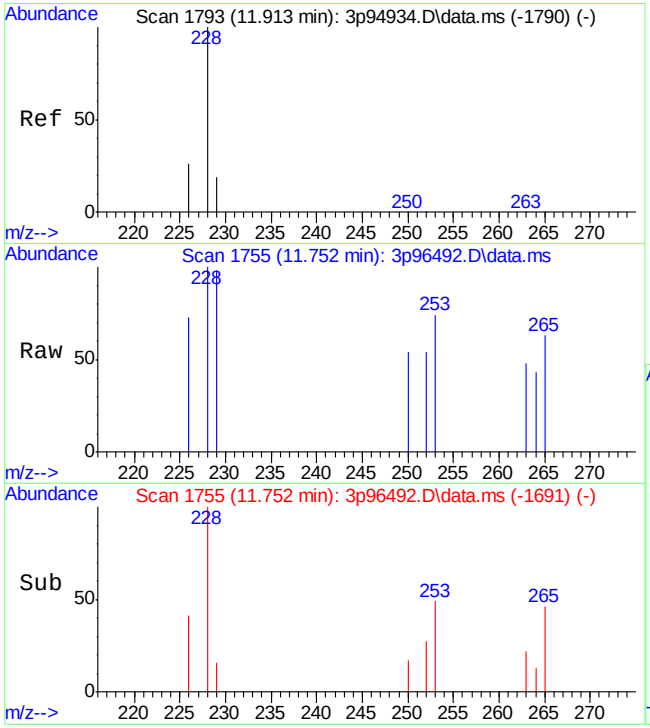


#25
Pyrene
Concen: 3.75 ppb m
RT: 10.575 min Scan# 1574
Delta R.T. -0.002 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:202 Resp: 464

Ion	Ratio	Lower	Upper
202	100		
203	88.6	0.0	48.7#
201	79.2	0.0	46.9#

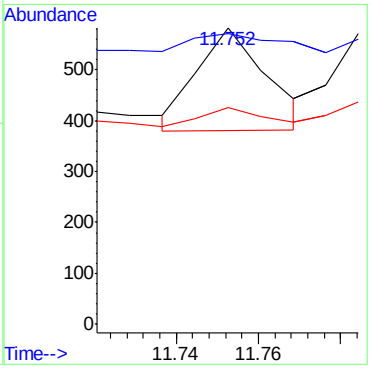


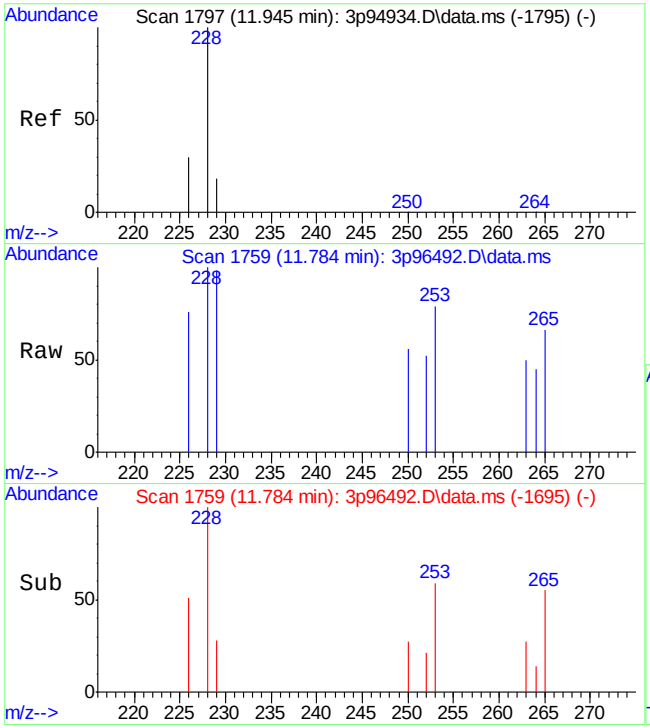


#27
Benzo[a]anthracene
Concen: 2.63 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:228 Resp: 236

Ion	Ratio	Lower	Upper
228	100		
229	16.5	0.0	49.3
226	21.0	0.0	55.2

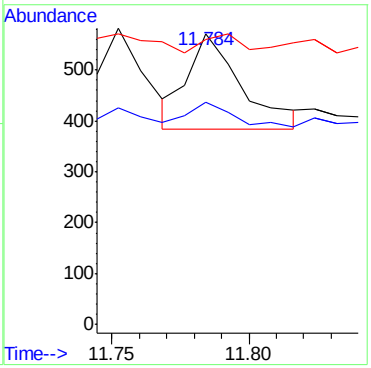


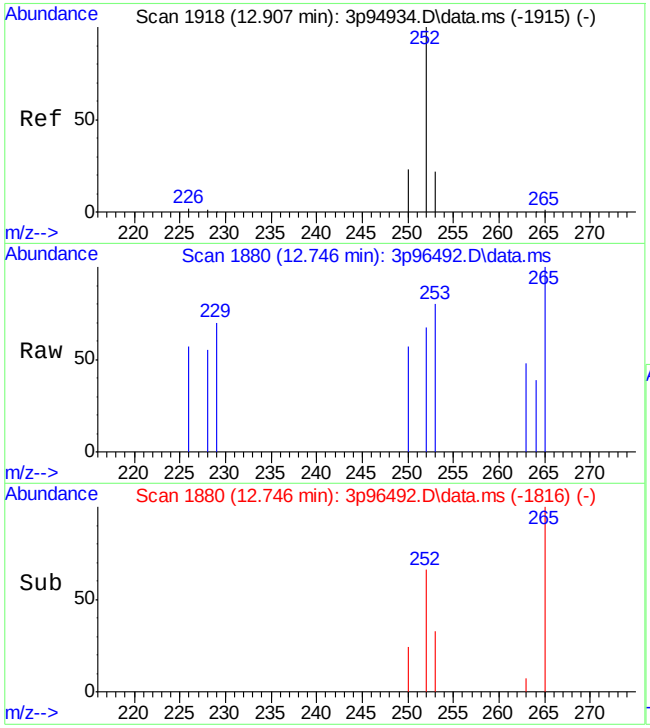


#28
Chrysene
Concen: 2.21 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:228 Resp: 258

Ion	Ratio	Lower	Upper
228	100		
226	31.3	0.0	55.6
229	4.0	0.0	47.4

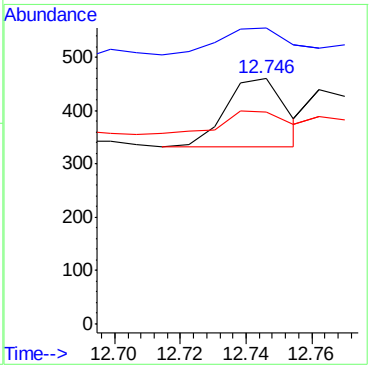


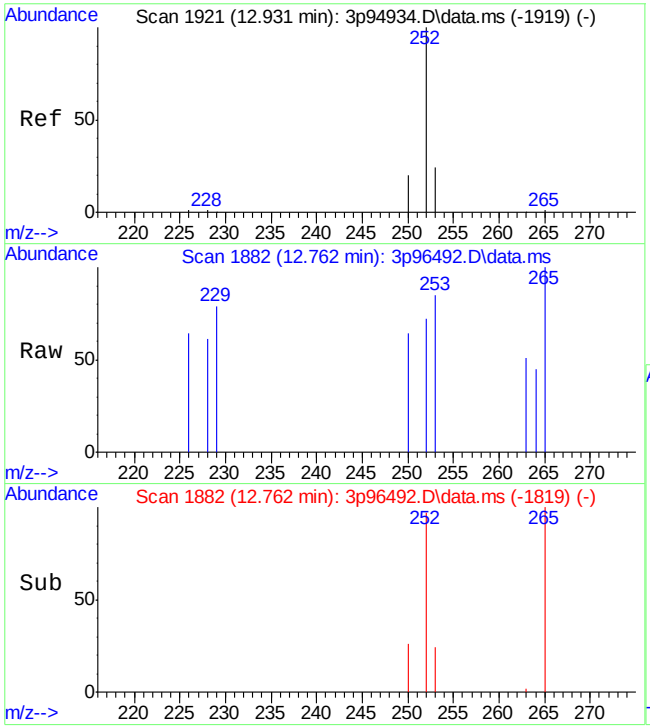


#30
Benzo[b]fluoranthene
Concen: 1.65 ppb
RT: 12.746 min Scan# 1880
Delta R.T. 0.005 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:252 Resp: 162

Ion	Ratio	Lower	Upper
252	100		
253	40.7	0.0	51.7
250	30.4	0.0	48.4

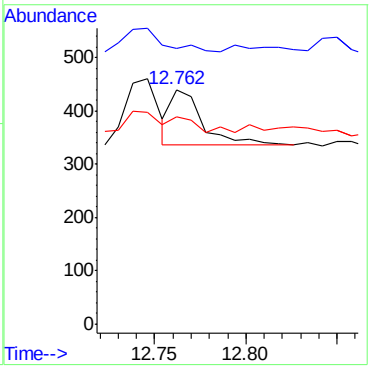


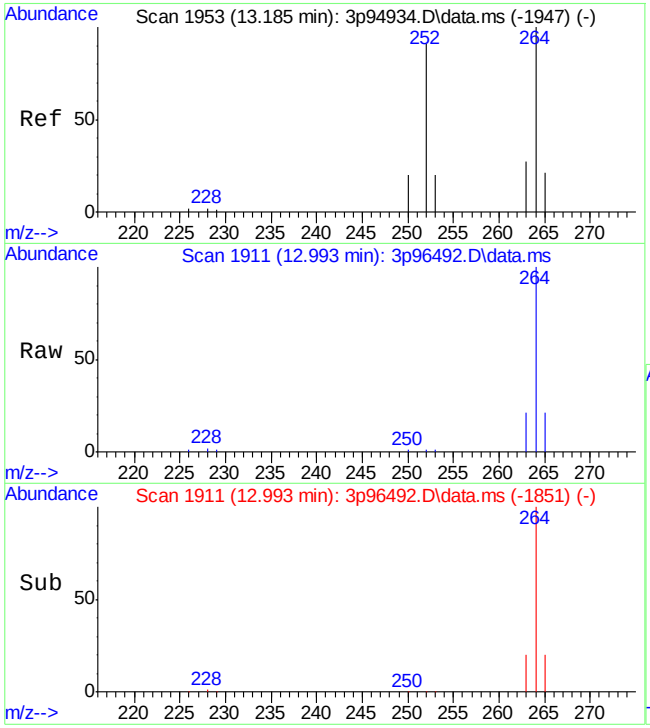


#31
Benzo[k]fluoranthene
Concen: 1.04 ppb
RT: 12.762 min Scan# 1882
Delta R.T. -0.002 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:252 Resp: 122

Ion	Ratio	Lower	Upper
252	100		
253	0.0	0.0	51.5
250	20.9	0.0	51.3

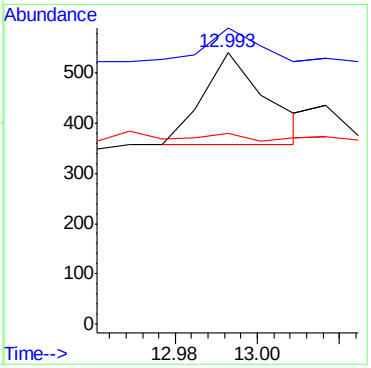


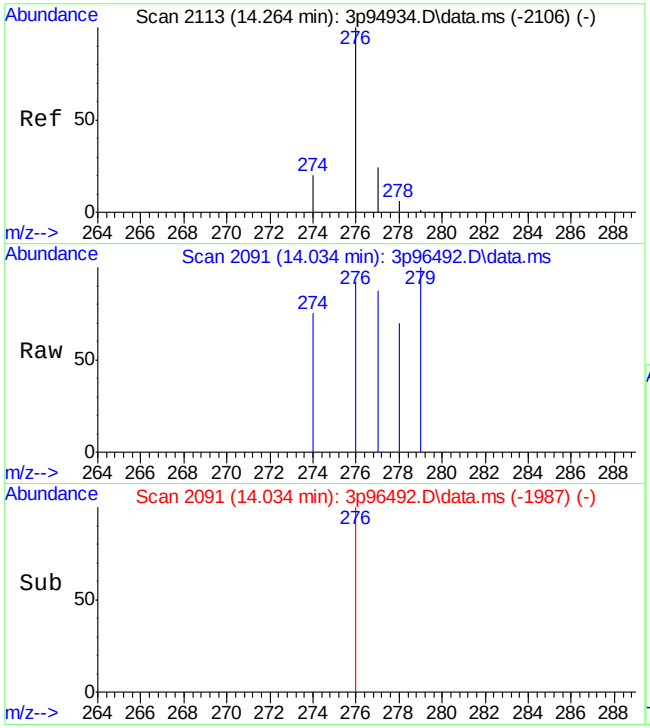


#32
Benzo[a]pyrene
Concen: 1.35 ppb
RT: 12.993 min Scan# 1911
Delta R.T. -0.025 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:252 Resp: 198

Ion	Ratio	Lower	Upper
252	100		
253	42.6	0.0	52.3
250	6.6	0.0	49.9

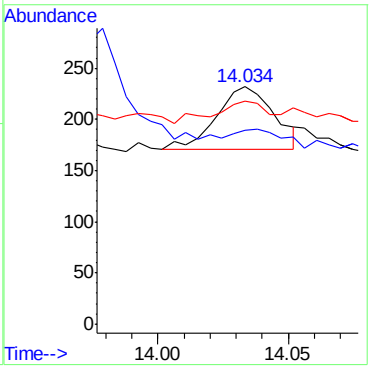


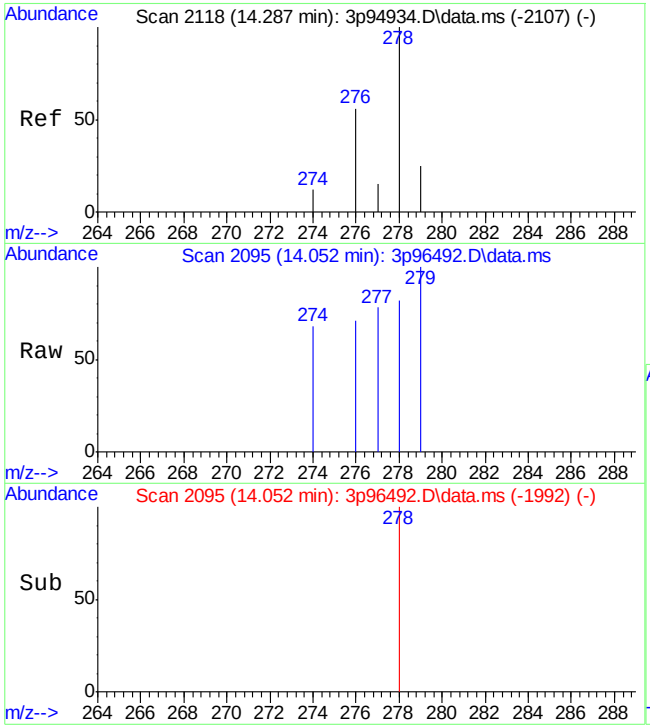


#33
Indeno[1,2,3-cd]pyrene
Concen: 0.89 ppb
RT: 14.034 min Scan# 2091
Delta R.T. -0.024 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:276 Resp: 93

Ion	Ratio	Lower	Upper
276	100		
274	0.0	0.0	45.2
277	22.0	0.0	52.4

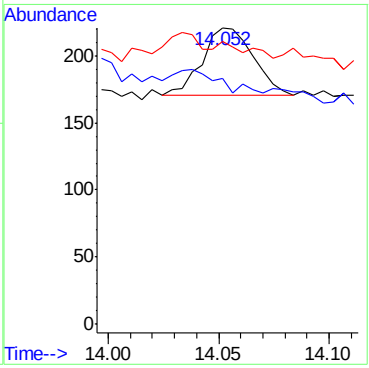


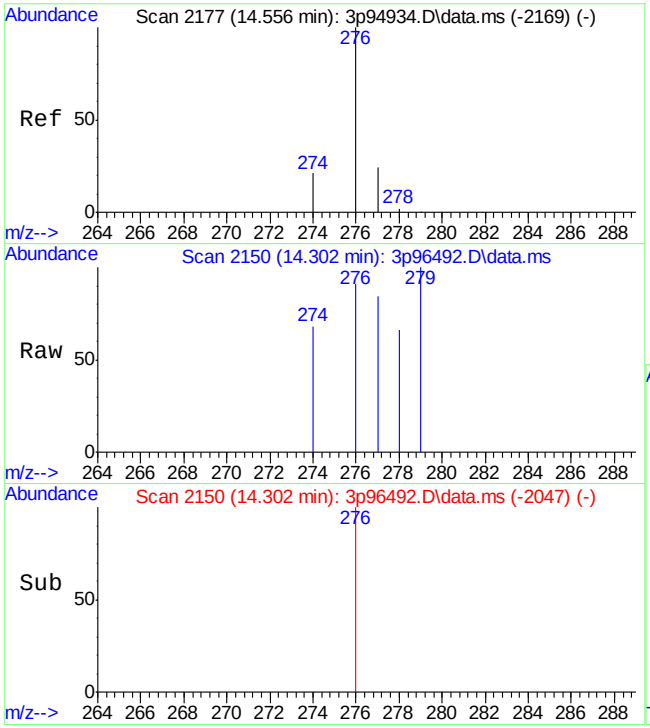


#34
Dibenz[a,h]anthracene
Concen: 0.94 ppb
RT: 14.052 min Scan# 2095
Delta R.T. -0.028 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:278 Resp: 79

Ion	Ratio	Lower	Upper
278	100		
274	11.0	0.0	40.3
277	9.0	0.0	40.0

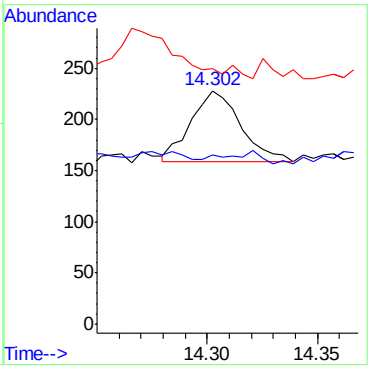




#35
Benzo[g,h,i]perylene
Concen: 1.09 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96492.D
Acq: 20 Apr 2022 10:46 am

Tgt Ion:276 Resp: 107

Ion	Ratio	Lower	Upper
276	100		
278	6.8	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96493.D
Acq On : 20 Apr 2022 11:08 am
Operator : chriss2
Sample : jd43215-19
Misc : op39191,e3p4582,270,,,1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 20 15:40:44 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

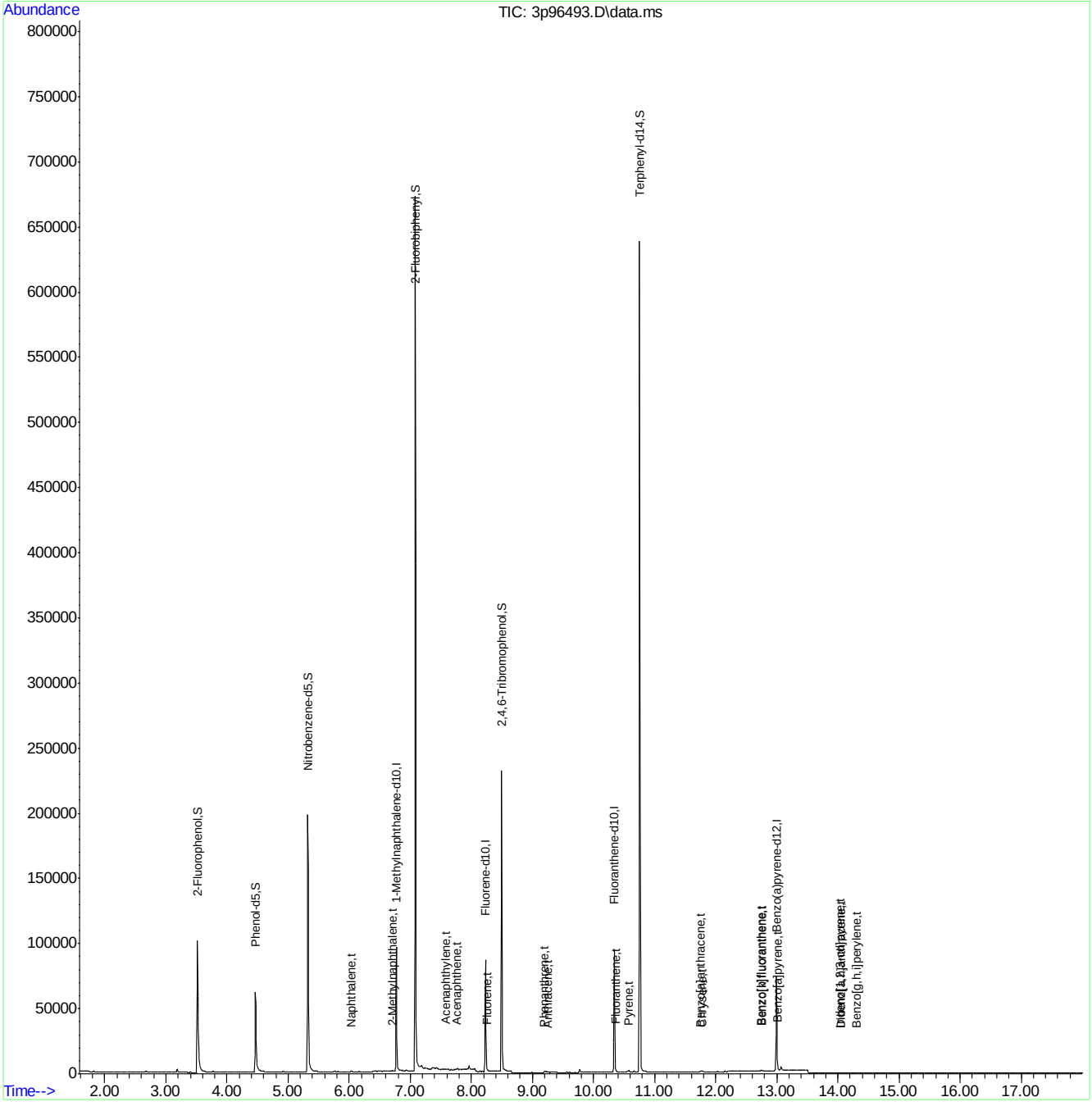
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.772	150	30832	800.00	ppb	# 0.00
12) Fluorene-d10	8.230	176	41282	800.00	ppb	0.00
19) Fluoranthene-d10	10.338	212	66192	800.00	ppb	0.00
29) Benzo(a)pyrene-d12	12.994	264	50806	800.00	ppb	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.516	112	78368	3374.35	ppb	-0.03
Spiked Amount 50.000			Recovery	= 6748.70%		
4) Phenol-d5	4.462	99	76739	2433.48	ppb	0.00
Spiked Amount 50.000			Recovery	= 4866.96%		
7) Nitrobenzene-d5	5.320	82	138643	5639.03	ppb	0.00
Spiked Amount 50.000			Recovery	= 11278.06%		
13) 2-Fluorobiphenyl	7.079	172	345014	5325.14	ppb	-0.01
Spiked Amount 50.000			Recovery	= 10650.28%		
18) 2,4,6-Tribromophenol	8.495	330	83974	10791.54	ppb	0.00
Spiked Amount 50.000			Recovery	= 21583.08%		
26) Terphenyl-d14	10.754	244	415319	6733.58	ppb	0.00
Spiked Amount 50.000			Recovery	= 13467.16%		
Target Compounds						Qvalue
8) Naphthalene	6.037	128	372	3.95	ppb	85
10) 2-Methylnaphthalene	6.716	141	388	7.72	ppb	96
14) Acenaphthylene	7.589	152	181m	1.85	ppb	
15) Acenaphthene	7.758	153	192m	2.89	ppb	
17) Fluorene	8.261	166	264	3.79	ppb	91
22) Phenanthrene	9.197	178	960	9.71	ppb	95
23) Anthracene	9.252	178	401	4.19	ppb	96
24) Fluoranthene	10.358	202	768	6.54	ppb	93
25) Pyrene	10.576	202	1050m	8.61	ppb	
27) Benzo[a]anthracene	11.754	228	400	4.52	ppb	95
28) Chrysene	11.786	228	607	5.28	ppb	88
30) Benzo[b]fluoranthene	12.740	252	468	5.07	ppb	90
31) Benzo[k]fluoranthene	12.764	252	235	2.13	ppb	93
32) Benzo[a]pyrene	13.018	252	416	3.65	ppb	93
33) Indeno[1,2,3-cd]pyrene	14.035	276	256	2.61	ppb	95
34) Dibenz[a,h]anthracene	14.053	278	152	1.91	ppb	83
35) Benzo[g,h,i]perylene	14.304	276	309	3.34	ppb	99

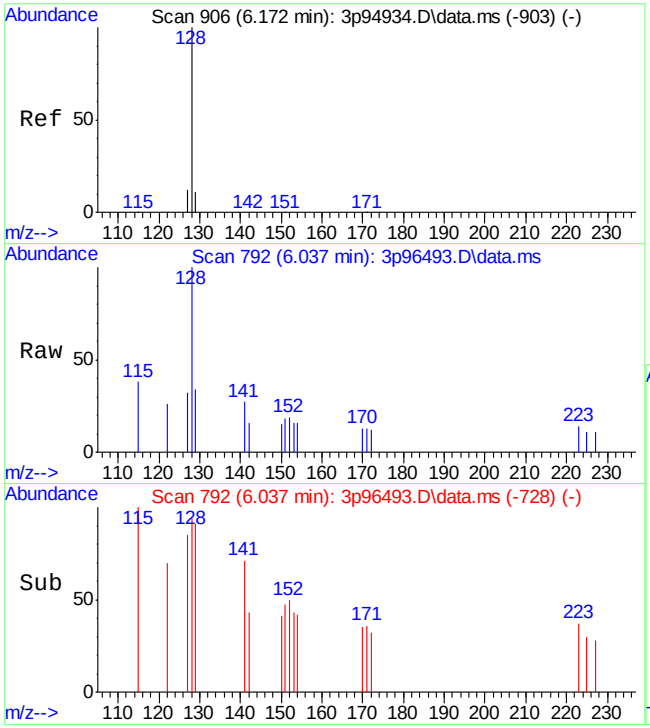
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96493.D
Acq On : 20 Apr 2022 11:08 am
Operator : chriss2
Sample : jd43215-19
Misc : op39191,e3p4582,270,,,1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 20 15:40:44 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

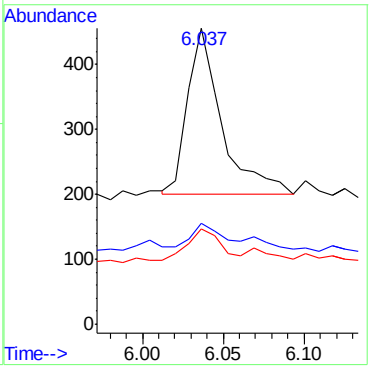


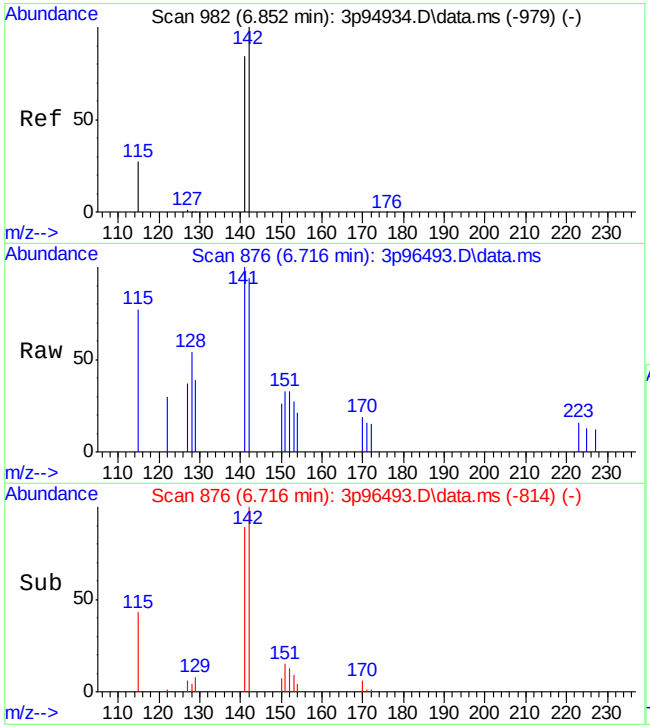


#8
Naphthalene
Concen: 3.95 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:128 Resp: 372

Ion	Ratio	Lower	Upper
128	100		
129	15.4	0.0	41.2
127	18.6	0.0	41.7

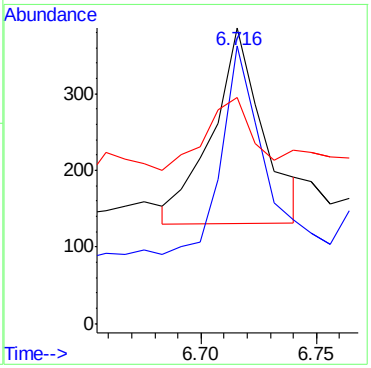


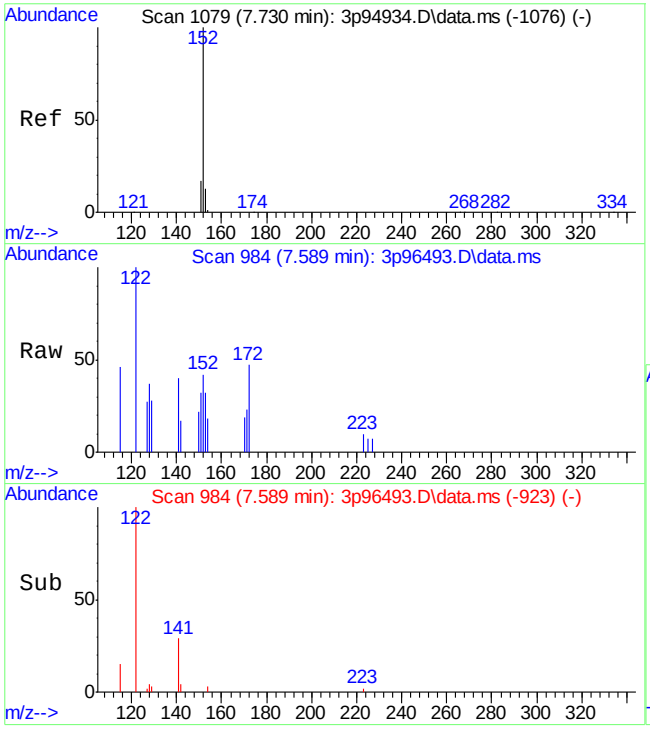


#10
2-Methylnaphthalene
Concen: 7.72 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:141 Resp: 388

Ion	Ratio	Lower	Upper
141	100		
142	116.4	88.8	148.8
115	38.6	1.9	61.9

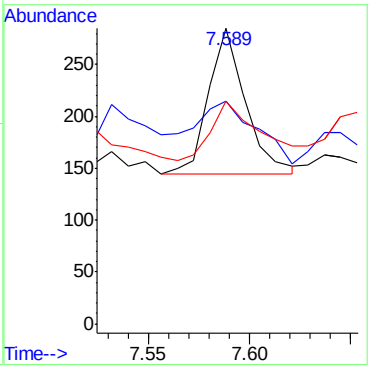


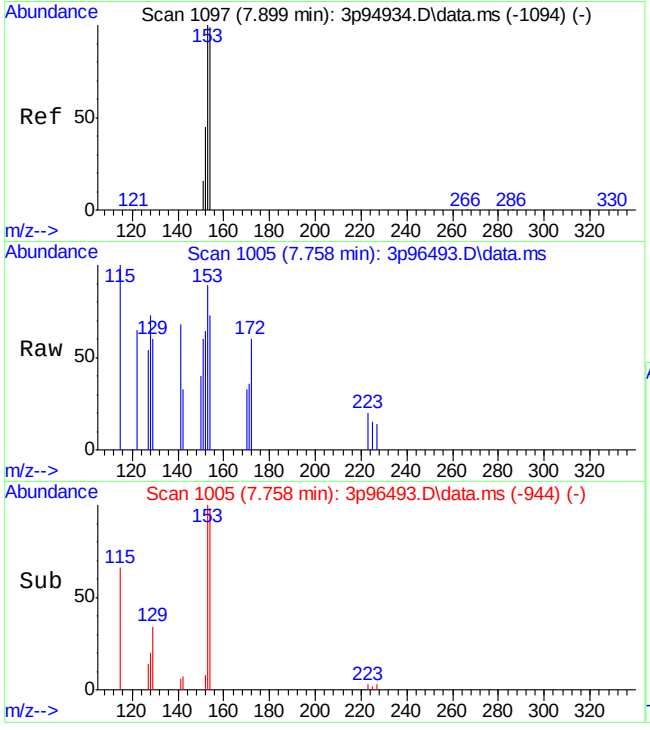


#14
Acenaphthylene
Concen: 1.85 ppb m
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:152 Resp: 181

Ion	Ratio	Lower	Upper
152	100		
151	75.4	0.0	47.3#
153	75.4	0.0	43.3#

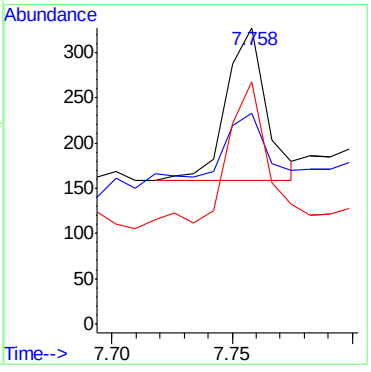


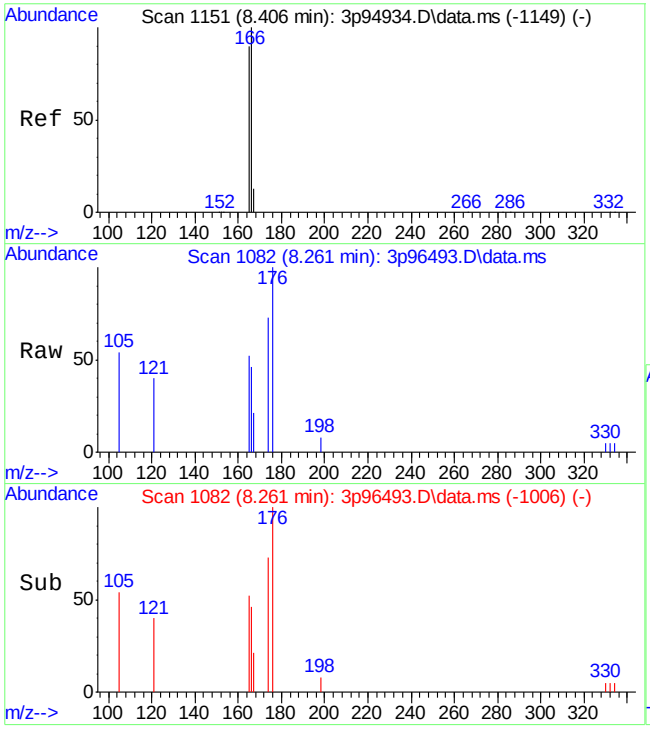


#15
Acenaphthene
Concen: 2.89 ppb m
RT: 7.758 min Scan# 1005
Delta R.T. -0.008 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:153 Resp: 192

Ion	Ratio	Lower	Upper
153	100		
152	71.3	16.5	76.5
154	82.0	73.6	133.6

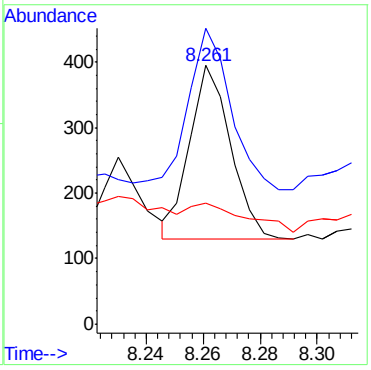


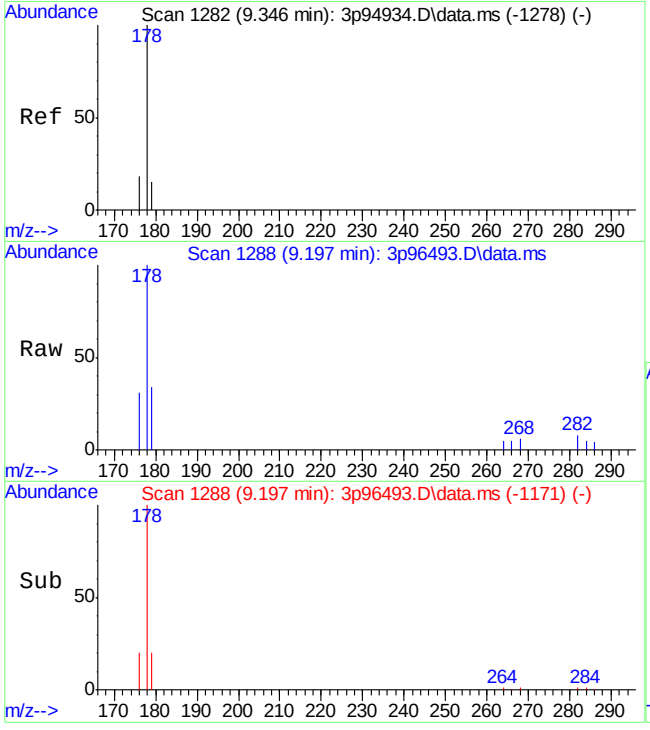


#17
Fluorene
Concen: 3.79 ppb
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:166 Resp: 264

Ion	Ratio	Lower	Upper
166	100		
165	94.4	57.3	117.3
167	10.2	0.0	46.0

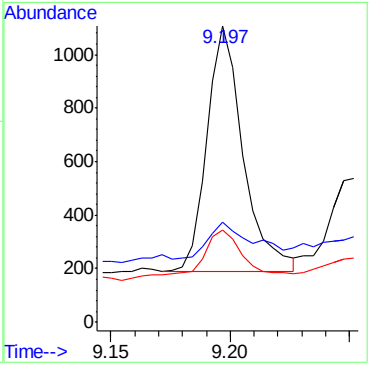


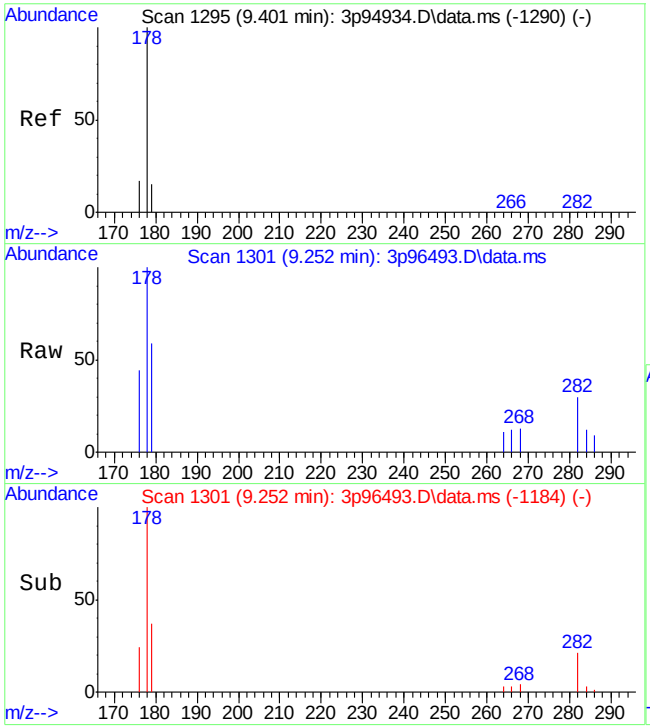


#22
Phenanthrene
Concen: 9.71 ppb
RT: 9.197 min Scan# 1288
Delta R.T. -0.007 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:178 Resp: 960

Ion	Ratio	Lower	Upper
178	100		
179	11.9	0.0	45.1
176	18.6	0.0	47.5

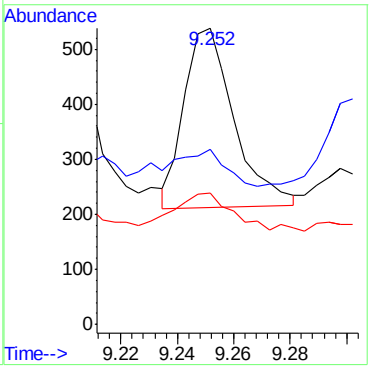


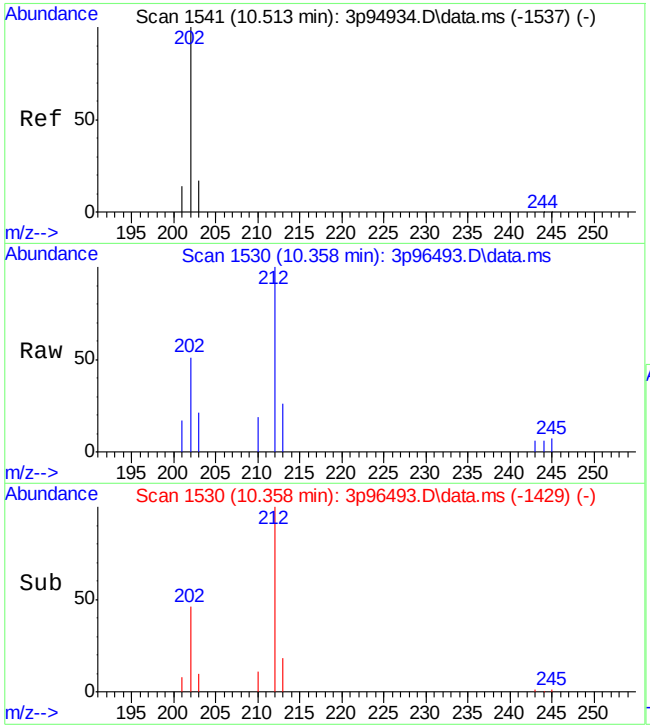


#23
Anthracene
Concen: 4.19 ppb
RT: 9.252 min Scan# 1301
Delta R.T. -0.007 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:178 Resp: 401

Ion	Ratio	Lower	Upper
178	100		
179	16.1	0.0	43.0
176	17.3	0.0	47.0

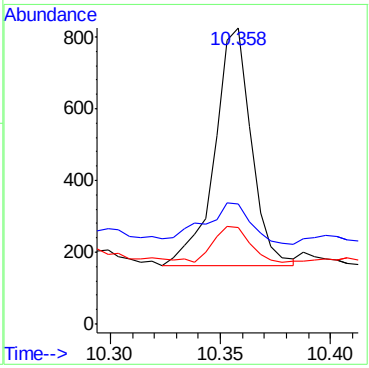


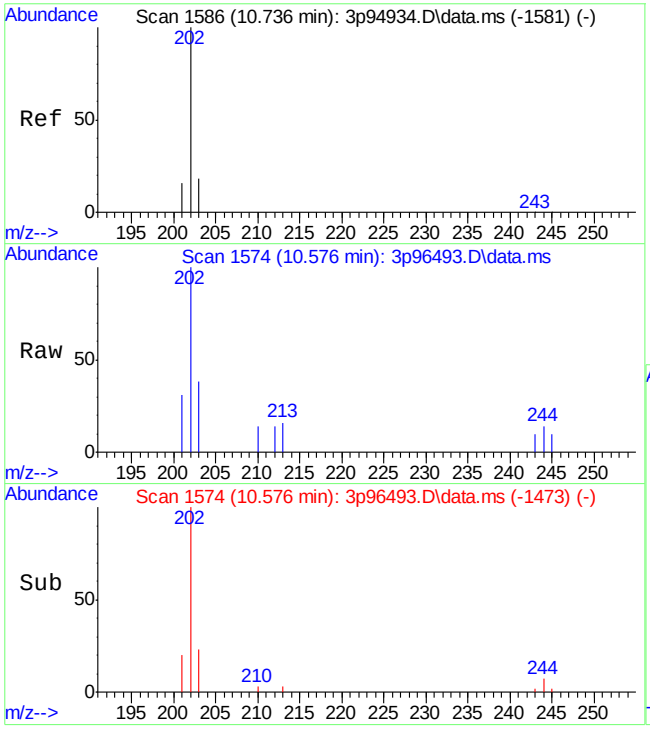


#24
Fluoranthene
Concen: 6.54 ppb
RT: 10.358 min Scan# 1530
Delta R.T. -0.003 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:202 Resp: 768

Ion	Ratio	Lower	Upper
202	100		
203	16.3	0.0	50.0
201	13.8	0.0	45.9

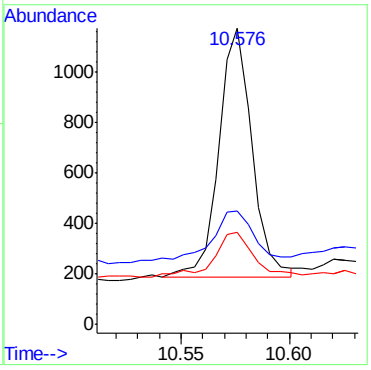


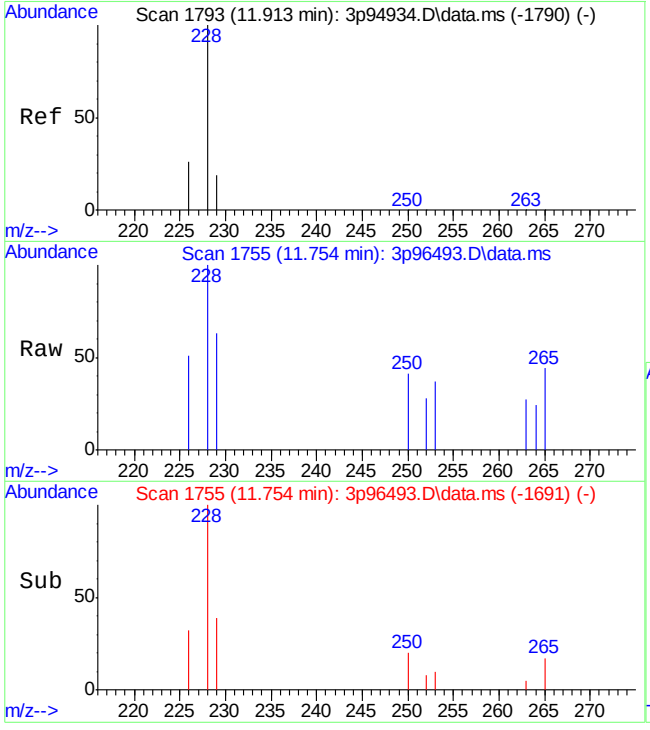


#25
Pyrene
Concen: 8.61 ppb m
RT: 10.576 min Scan# 1574
Delta R.T. -0.001 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:202 Resp: 1050

Ion	Ratio	Lower	Upper
202	100		
203	38.4	0.0	48.7
201	31.1	0.0	46.9

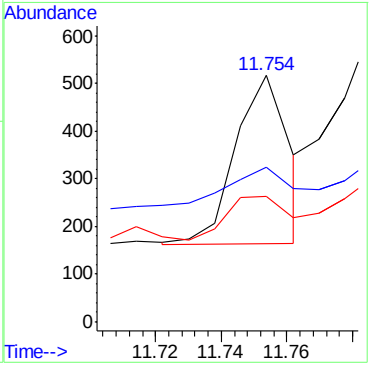


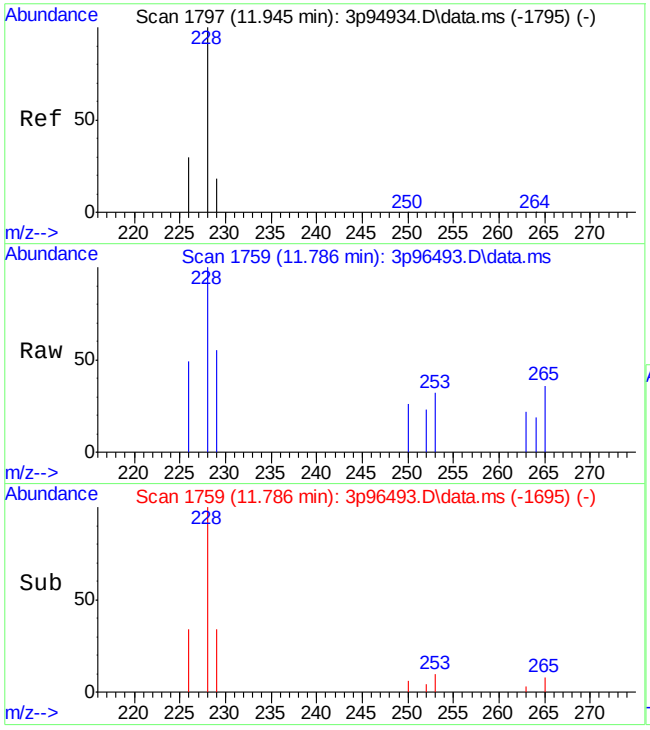


#27
Benzo[a]anthracene
Concen: 4.52 ppb
RT: 11.754 min Scan# 1755
Delta R.T. 0.007 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:228 Resp: 400

Ion	Ratio	Lower	Upper
228	100		
229	23.9	0.0	49.3
226	25.1	0.0	55.2

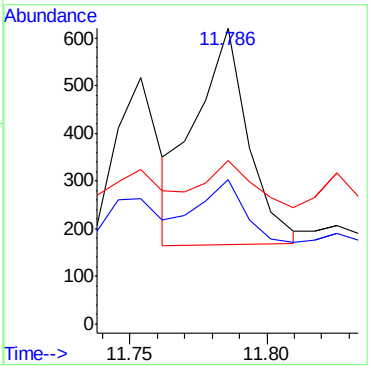


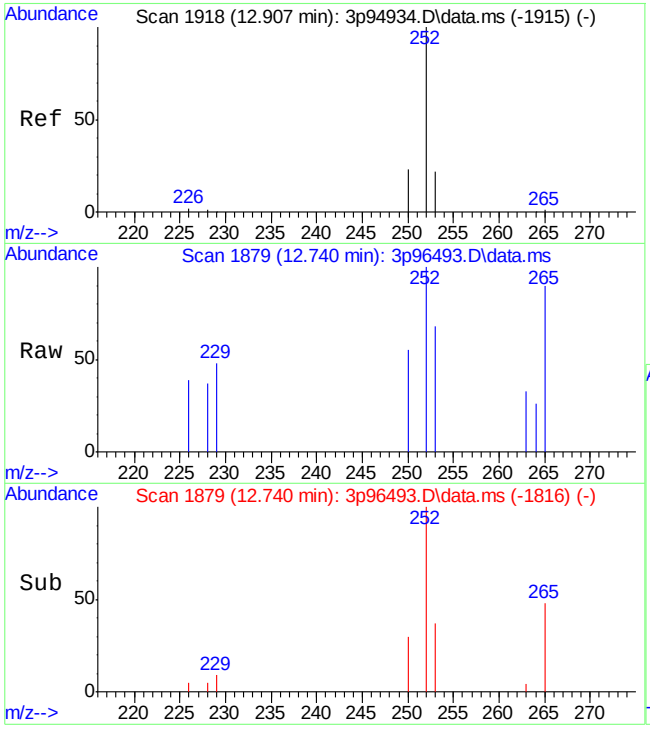


#28
Chrysene
Concen: 5.28 ppb
RT: 11.786 min Scan# 1759
Delta R.T. 0.008 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:228 Resp: 607

Ion	Ratio	Lower	Upper
228	100		
226	30.7	0.0	55.6
229	23.4	0.0	47.4

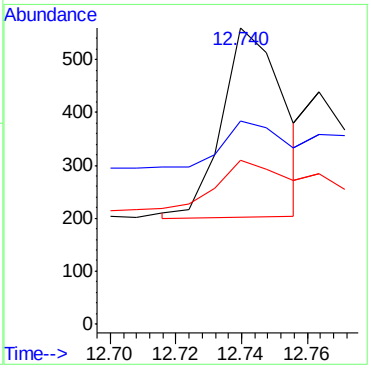


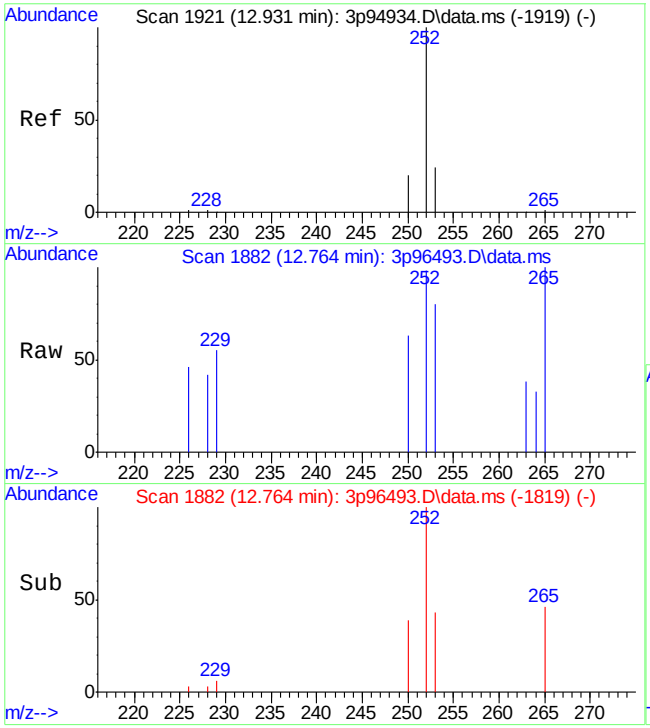


#30
Benzo[b]fluoranthene
Concen: 5.07 ppb
RT: 12.740 min Scan# 1879
Delta R.T. -0.001 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:252 Resp: 468

Ion	Ratio	Lower	Upper
252	100		
253	25.8	0.0	51.7
250	24.1	0.0	48.4

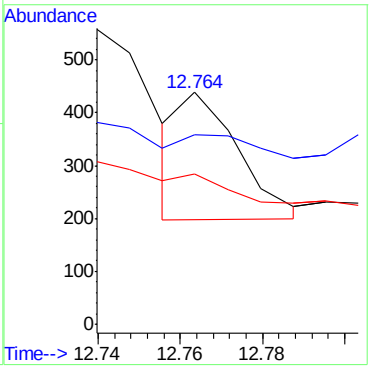


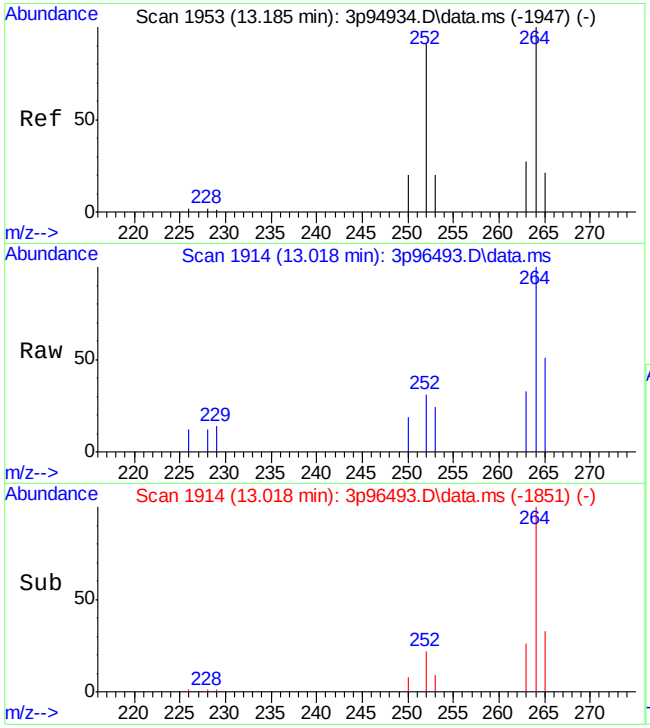


#31
Benzo[k]fluoranthene
Concen: 2.13 ppb
RT: 12.764 min Scan# 1882
Delta R.T. -0.001 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:252 Resp: 235

Ion	Ratio	Lower	Upper
252	100		
253	25.0	0.0	51.5
250	24.6	0.0	51.3

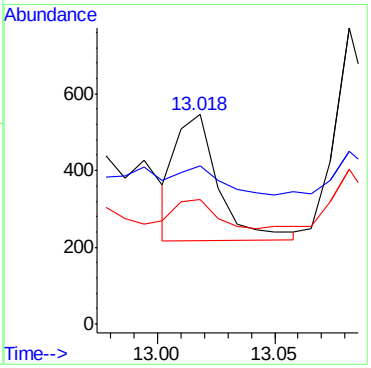


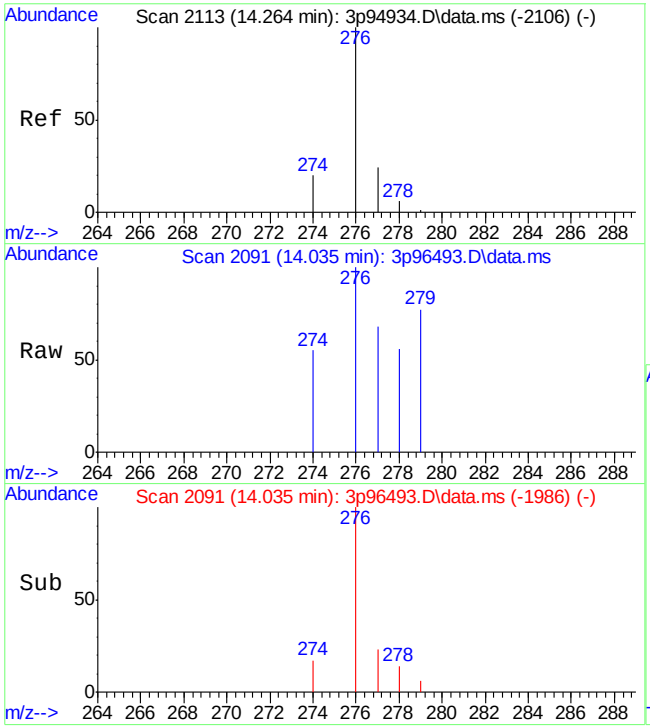


#32
Benzo[a]pyrene
Concen: 3.65 ppb
RT: 13.018 min Scan# 1914
Delta R.T. 0.000 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:252 Resp: 416

Ion	Ratio	Lower	Upper
252	100		
253	21.4	0.0	52.3
250	25.9	0.0	49.9

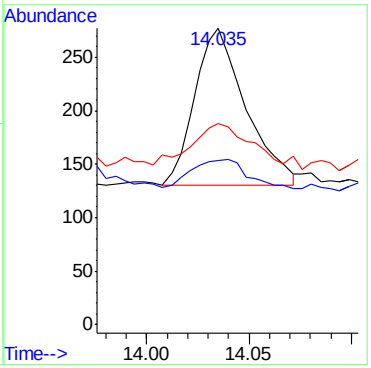


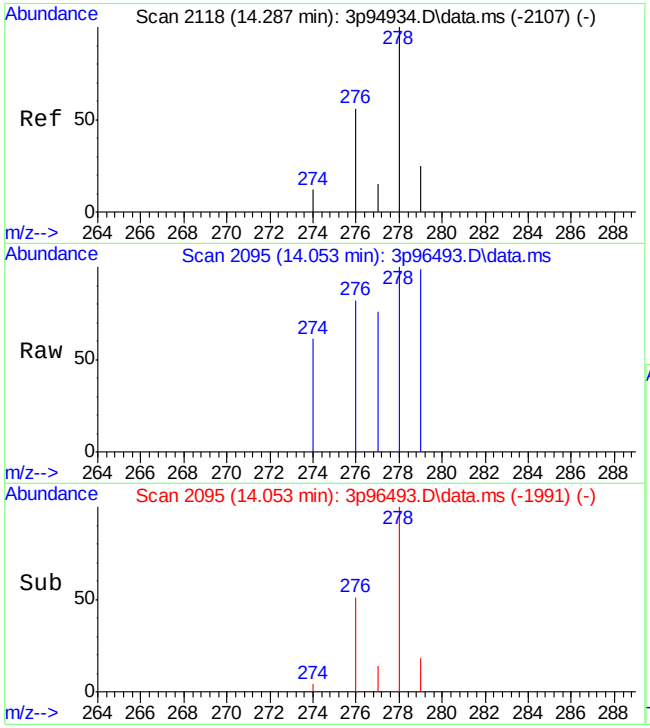


#33
Indeno[1,2,3-cd]pyrene
Concen: 2.61 ppb
RT: 14.035 min Scan# 2091
Delta R.T. -0.023 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:276 Resp: 256

Ion	Ratio	Lower	Upper
276	100		
274	18.0	0.0	45.2
277	20.8	0.0	52.4

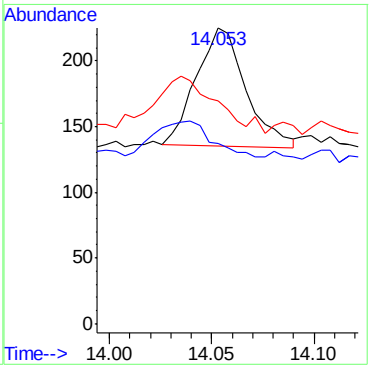


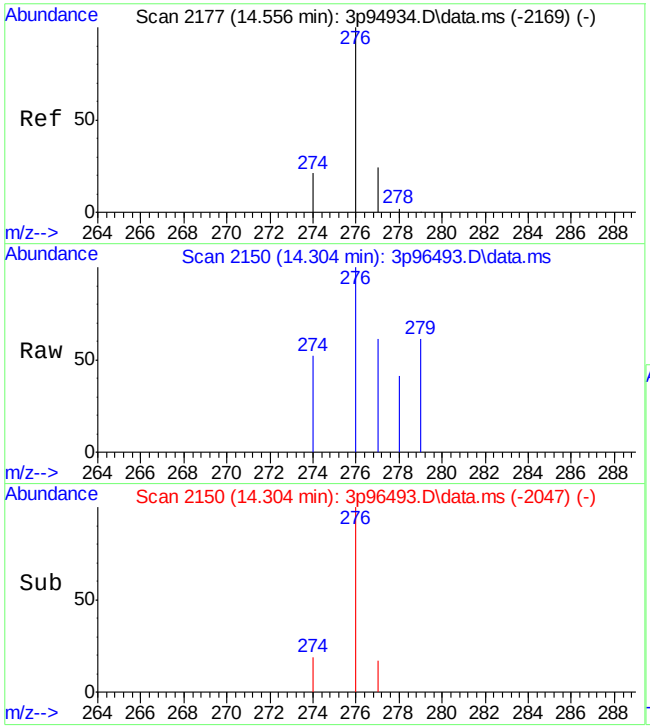


#34
Dibenz[a,h]anthracene
Concen: 1.91 ppb
RT: 14.053 min Scan# 2095
Delta R.T. -0.027 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:278 Resp: 152

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	40.3
277	8.1	0.0	40.0

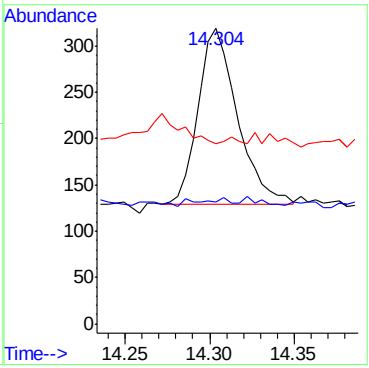




#35
Benzo[g,h,i]perylene
Concen: 3.34 ppb
RT: 14.304 min Scan# 2150
Delta R.T. -0.030 min
Lab File: 3p96493.D
Acq: 20 Apr 2022 11:08 am

Tgt Ion:276 Resp: 309

Ion	Ratio	Lower	Upper
276	100		
278	1.1	0.0	31.3
279	0.0	0.0	30.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:41

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96494.D
Acq On : 20 Apr 2022 11:30 am
Operator : chriss2
Sample : jd43215-20
Misc : op39191,e3p4582,260,,,1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 20 15:42:03 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

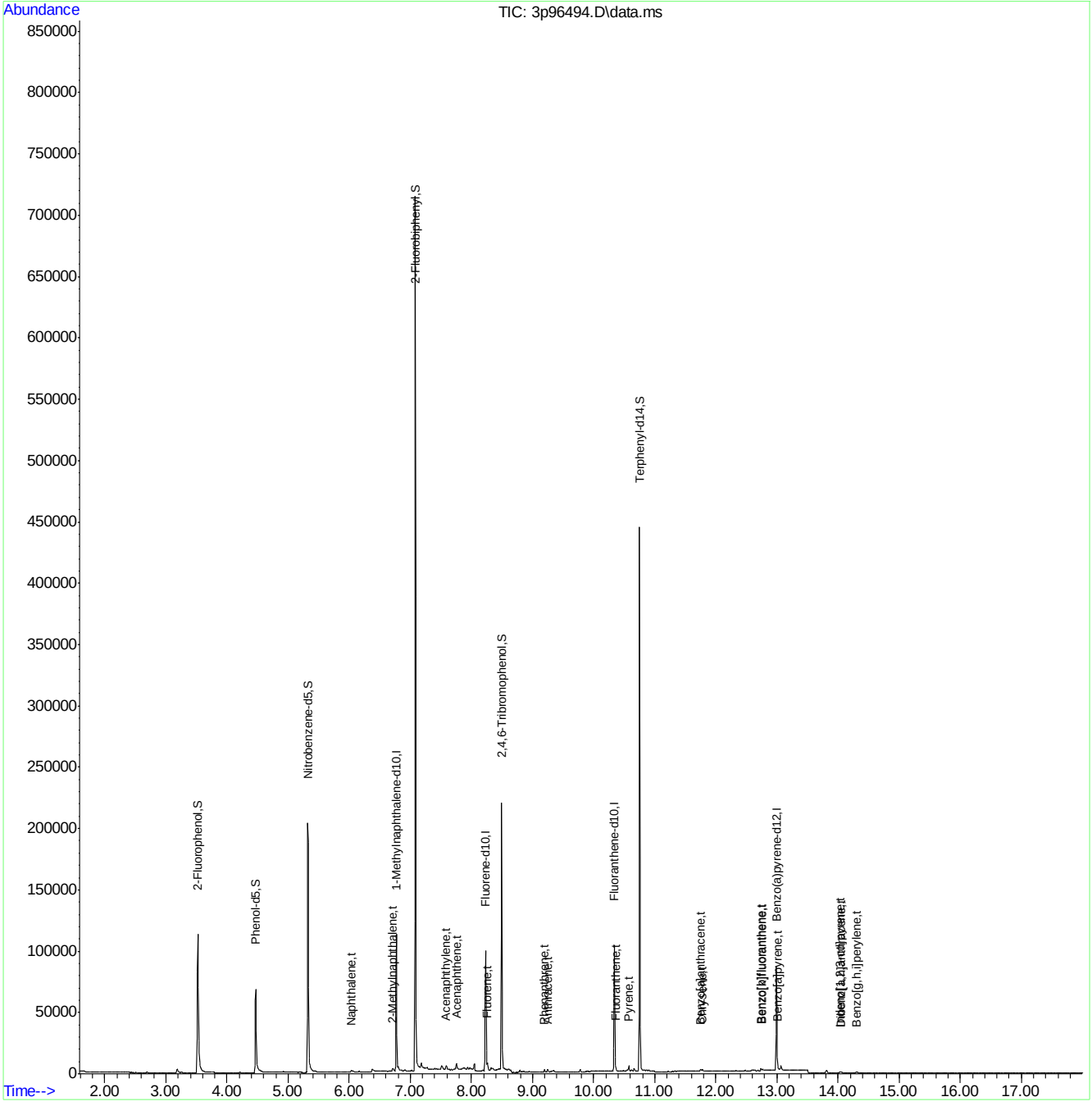
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1-Methylnaphthalene-d10	6.772	150	35900	800.00 ppb	# 0.00
12) Fluorene-d10	8.231	176	47844	800.00 ppb	0.00
19) Fluoranthene-d10	10.337	212	74137	800.00 ppb	0.00
29) Benzo(a)pyrene-d12	12.993	264	58779	800.00 ppb	0.00
System Monitoring Compounds					
3) 2-Fluorophenol	3.521	112	90505	3346.81 ppb	-0.02
Spiked Amount 50.000			Recovery	= 6693.62%	
4) Phenol-d5	4.469	99	87025	2370.08 ppb	0.00
Spiked Amount 50.000			Recovery	= 4740.16%	
7) Nitrobenzene-d5	5.320	82	152190	5316.18 ppb	0.00
Spiked Amount 50.000			Recovery	= 10632.36%	
13) 2-Fluorobiphenyl	7.079	172	359819	4791.94 ppb	-0.01
Spiked Amount 50.000			Recovery	= 9583.88%	
18) 2,4,6-Tribromophenol	8.495	330	79655	8832.52 ppb	0.00
Spiked Amount 50.000			Recovery	= 17665.04%	
26) Terphenyl-d14	10.753	244	295536	4278.05 ppb	0.00
Spiked Amount 50.000			Recovery	= 8556.10%	
Target Compounds					Qvalue
8) Naphthalene	6.037	128	1102	10.06 ppb	92
10) 2-Methylnaphthalene	6.716	141	1316	22.48 ppb	95
14) Acenaphthylene	7.589	152	635m	5.59 ppb	
15) Acenaphthene	7.758	153	2023m	26.25 ppb	
17) Fluorene	8.261	166	2376m	29.43 ppb	
22) Phenanthrene	9.196	178	1632m	14.73 ppb	
23) Anthracene	9.247	178	1715m	16.00 ppb	
24) Fluoranthene	10.357	202	2021	15.36 ppb	95
25) Pyrene	10.575	202	2916	21.35 ppb	99
27) Benzo[a]anthracene	11.752	228	1102	11.13 ppb	96
28) Chrysene	11.784	228	1596	12.40 ppb	89
30) Benzo[b]fluoranthene	12.738	252	1287	12.06 ppb	93
31) Benzo[k]fluoranthene	12.762	252	1027	8.05 ppb	96
32) Benzo[a]pyrene	13.017	252	1230	10.17 ppb	95
33) Indeno[1,2,3-cd]pyrene	14.034	276	1121	9.88 ppb	91
34) Dibenz[a,h]anthracene	14.052	278	853	9.27 ppb	97
35) Benzo[g,h,i]perylene	14.302	276	1120	10.46 ppb	97

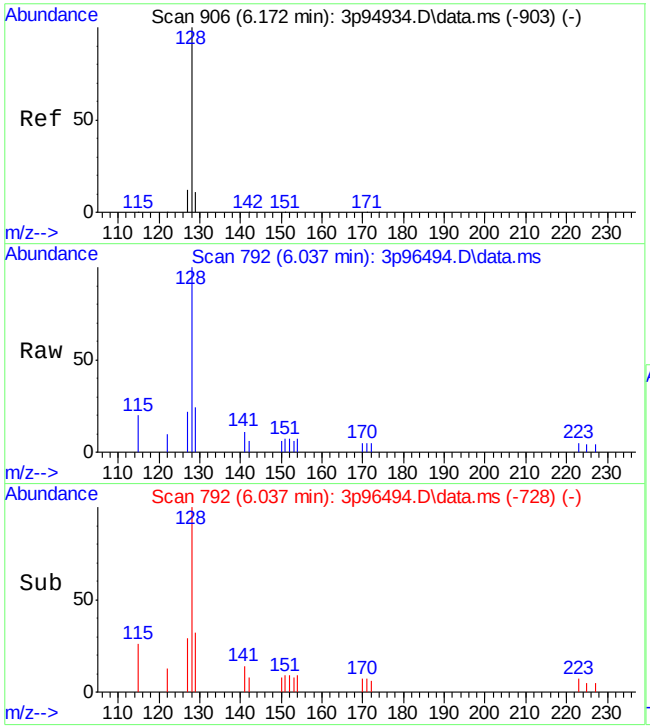
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96494.D
Acq On : 20 Apr 2022 11:30 am
Operator : chriss2
Sample : jd43215-20
Misc : op39191,e3p4582,260,,,1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Apr 20 15:42:03 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

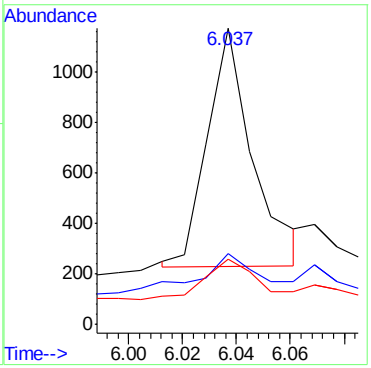


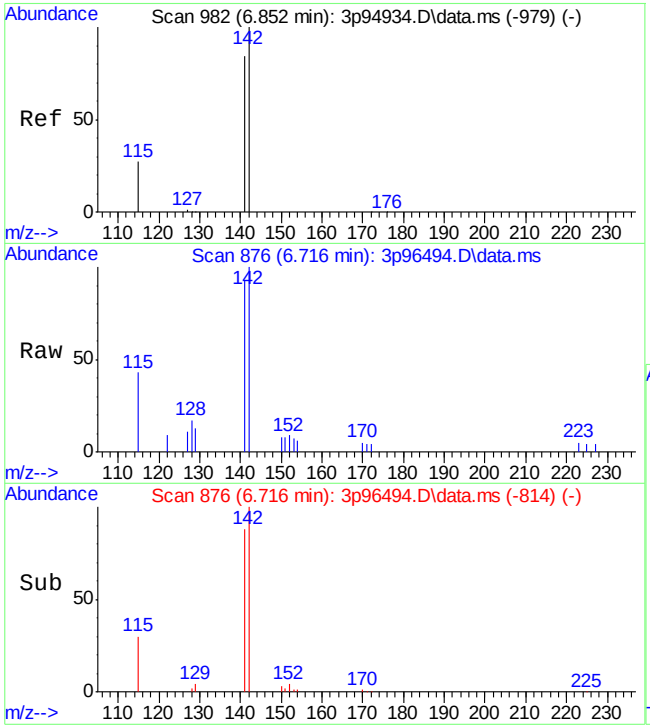


#8
Naphthalene
Concen: 10.06 ppb
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:128 Resp: 1102

Ion	Ratio	Lower	Upper
128	100		
129	12.9	0.0	41.2
127	16.2	0.0	41.7

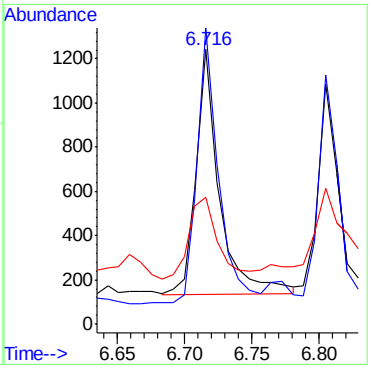


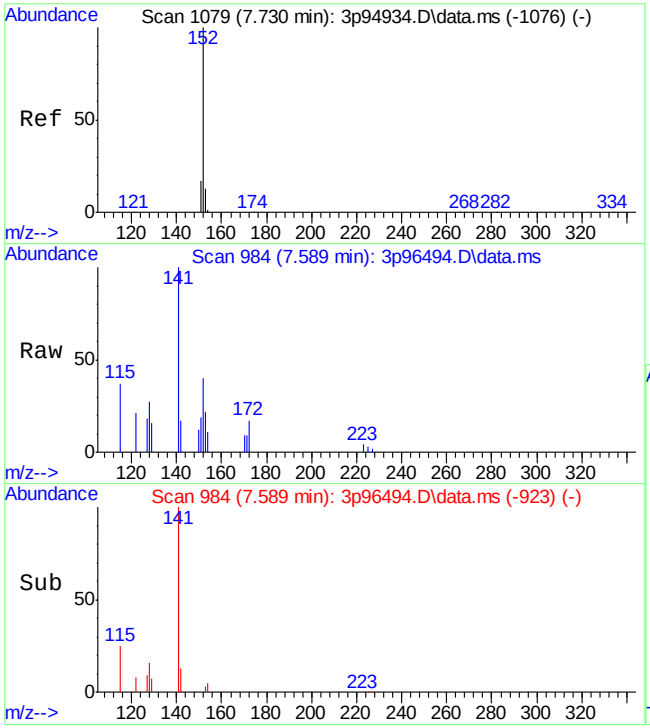


#10
2-Methylnaphthalene
Concen: 22.48 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:141 Resp: 1316

Ion	Ratio	Lower	Upper
141	100		
142	112.5	88.8	148.8
115	31.5	1.9	61.9

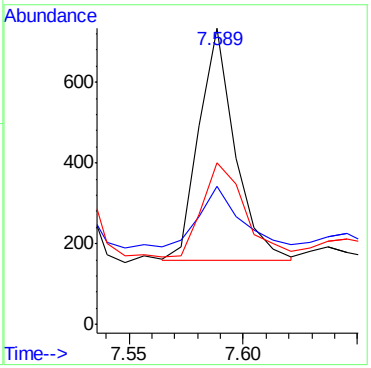


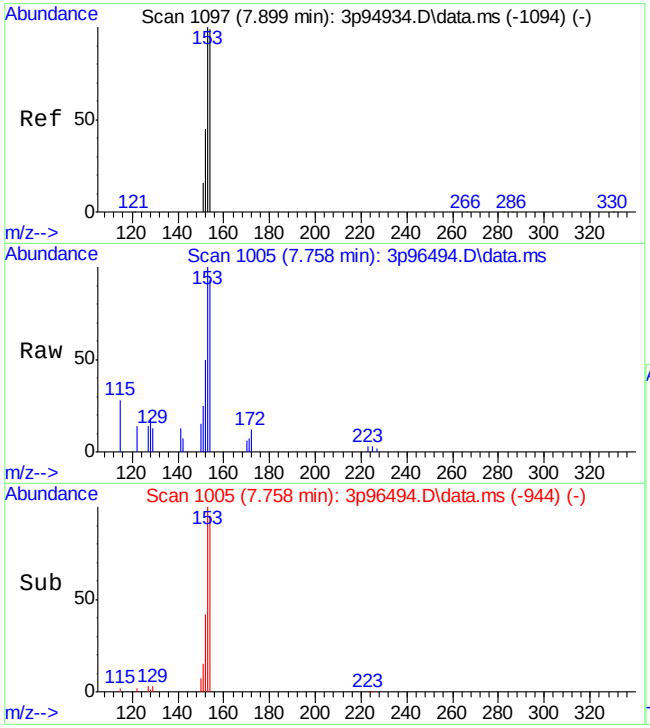


#14
Acenaphthylene
Concen: 5.59 ppb m
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:152 Resp: 635

Ion	Ratio	Lower	Upper
152	100		
151	46.7	0.0	47.3
153	54.6	0.0	43.3#

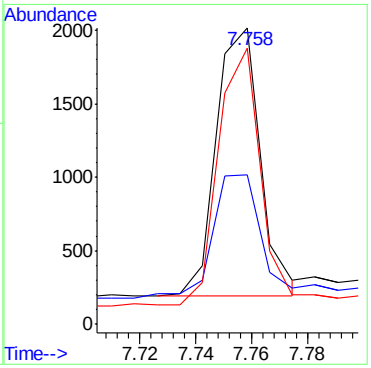


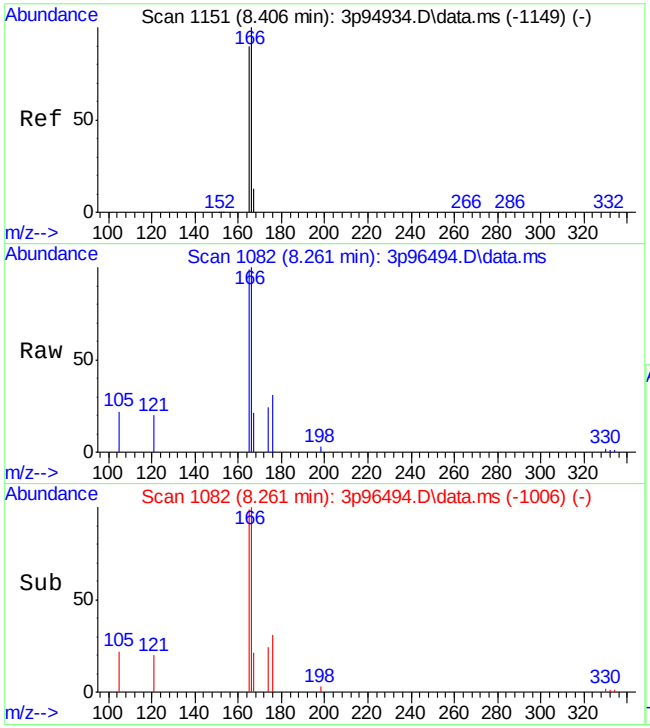


#15
Acenaphthene
Concen: 26.25 ppb m
RT: 7.758 min Scan# 1005
Delta R.T. -0.007 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:153 Resp: 2023

Ion	Ratio	Lower	Upper
153	100		
152	50.3	16.5	76.5
154	93.1	73.6	133.6

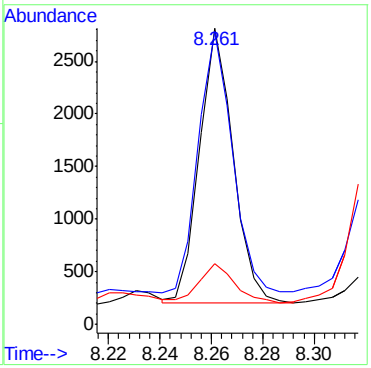


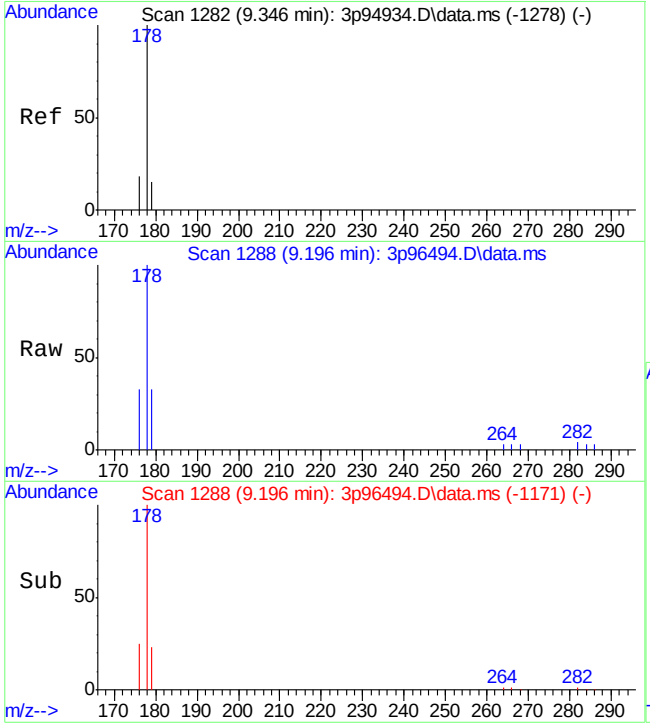


#17
Fluorene
Concen: 29.43 ppb m
RT: 8.261 min Scan# 1082
Delta R.T. -0.002 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:166 Resp: 2376

Ion	Ratio	Lower	Upper
166	100		
165	99.0	57.3	117.3
167	20.6	0.0	46.0

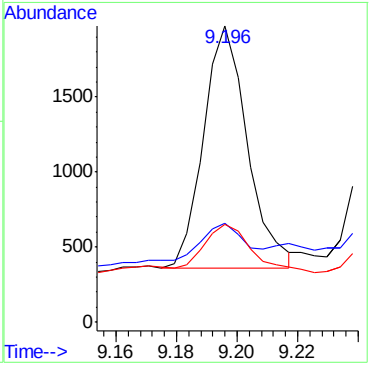


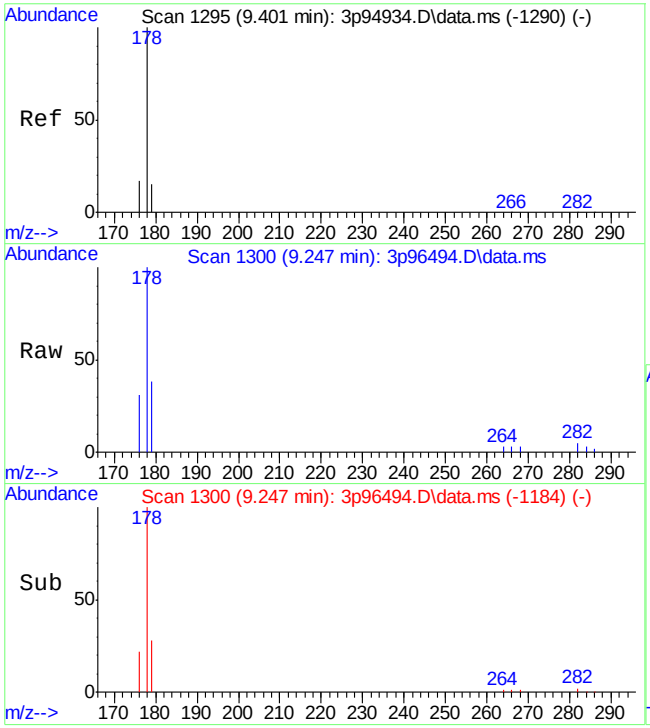


#22
Phenanthrene
Concen: 14.73 ppb m
RT: 9.196 min Scan# 1288
Delta R.T. -0.008 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:178 Resp: 1632

Ion	Ratio	Lower	Upper
178	100		
179	33.3	0.0	45.1
176	33.2	0.0	47.5

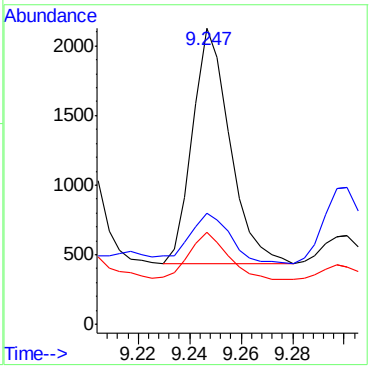


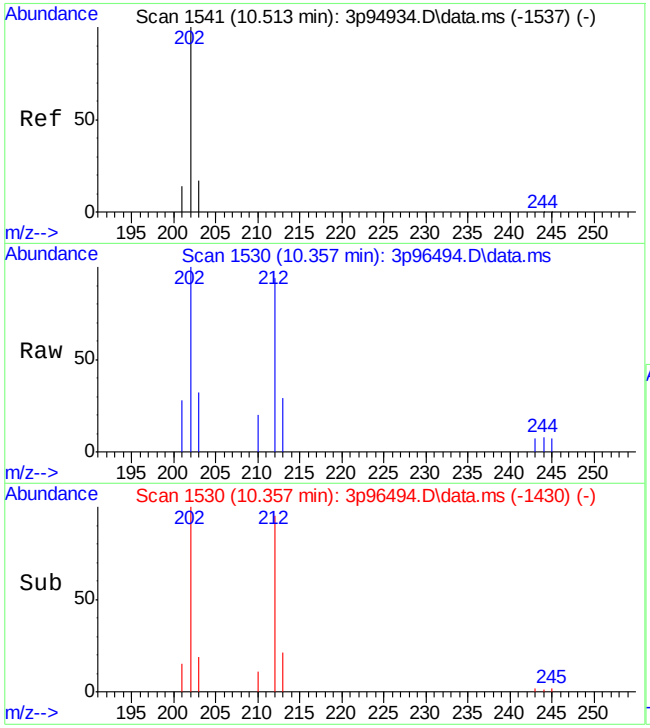


#23
Anthracene
Concen: 16.00 ppb m
RT: 9.247 min Scan# 1300
Delta R.T. -0.012 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:178 Resp: 1715

Ion	Ratio	Lower	Upper
178	100		
179	37.7	0.0	43.0
176	31.2	0.0	47.0

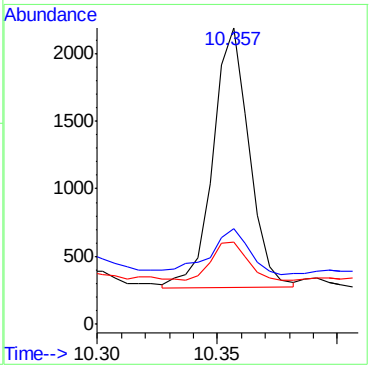


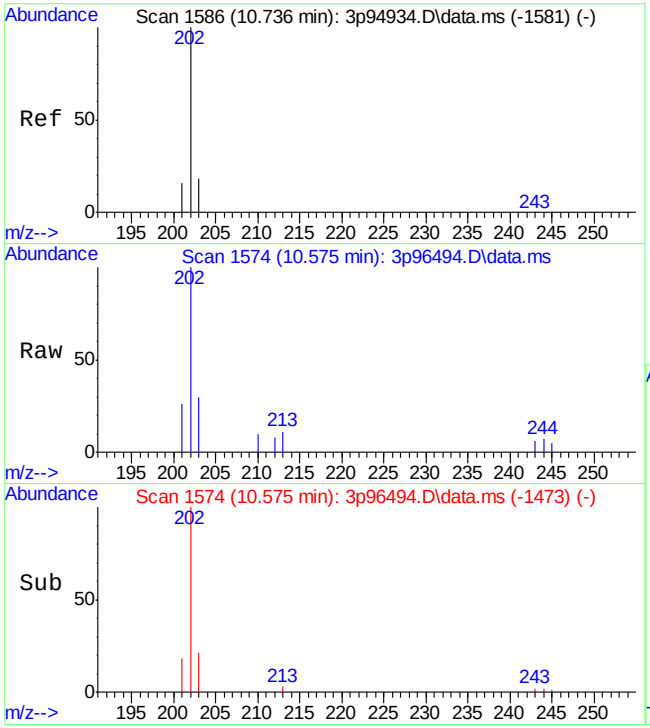


#24
Fluoranthene
Concen: 15.36 ppb
RT: 10.357 min Scan# 1530
Delta R.T. -0.004 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:202 Resp: 2021

Ion	Ratio	Lower	Upper
202	100		
203	17.0	0.0	50.0
201	14.5	0.0	45.9

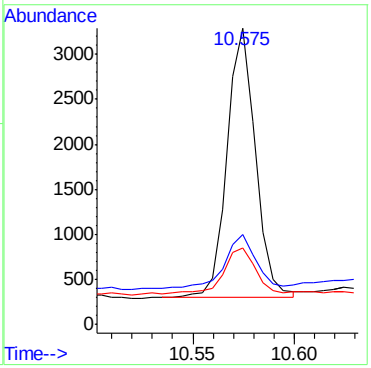


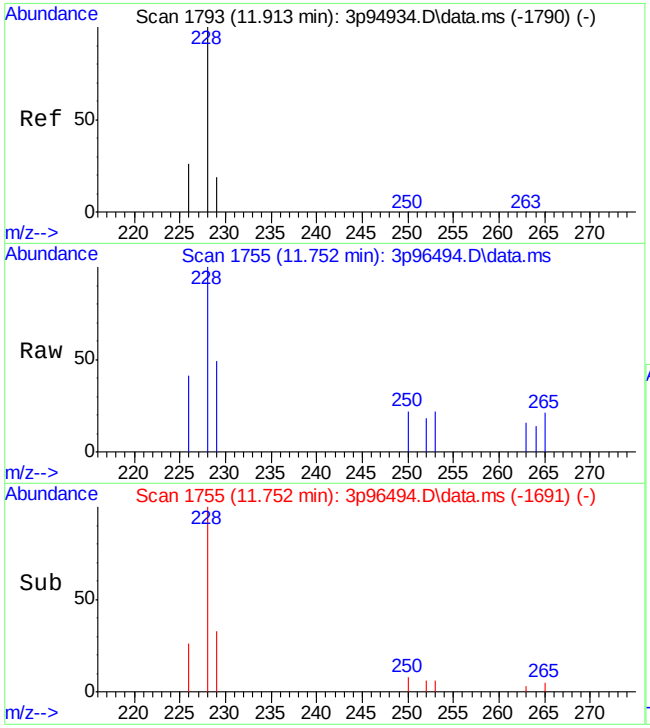


#25
Pyrene
Concen: 21.35 ppb
RT: 10.575 min Scan# 1574
Delta R.T. -0.003 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:202 Resp: 2916

Ion	Ratio	Lower	Upper
202	100		
203	19.5	0.0	48.7
201	17.2	0.0	46.9

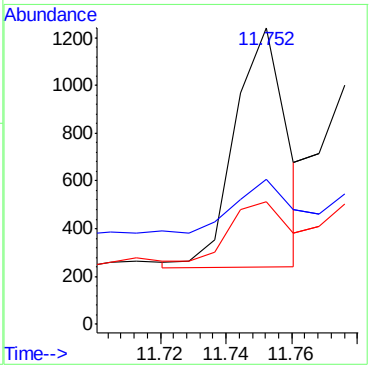


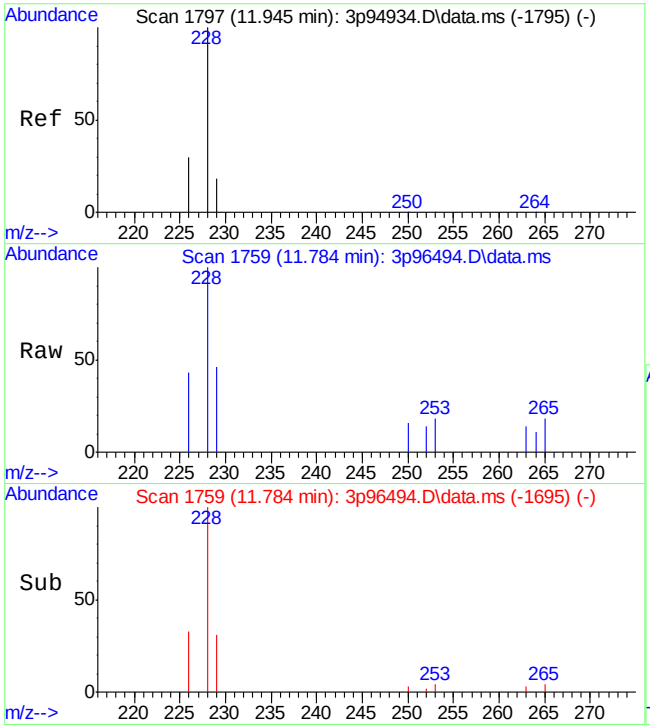


#27
Benzo[a]anthracene
Concen: 11.13 ppb
RT: 11.752 min Scan# 1755
Delta R.T. 0.006 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:228 Resp: 1102

Ion	Ratio	Lower	Upper
228	100		
229	22.2	0.0	49.3
226	24.3	0.0	55.2

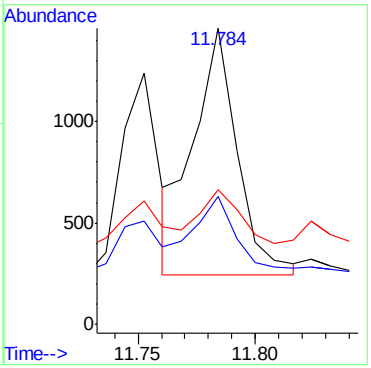


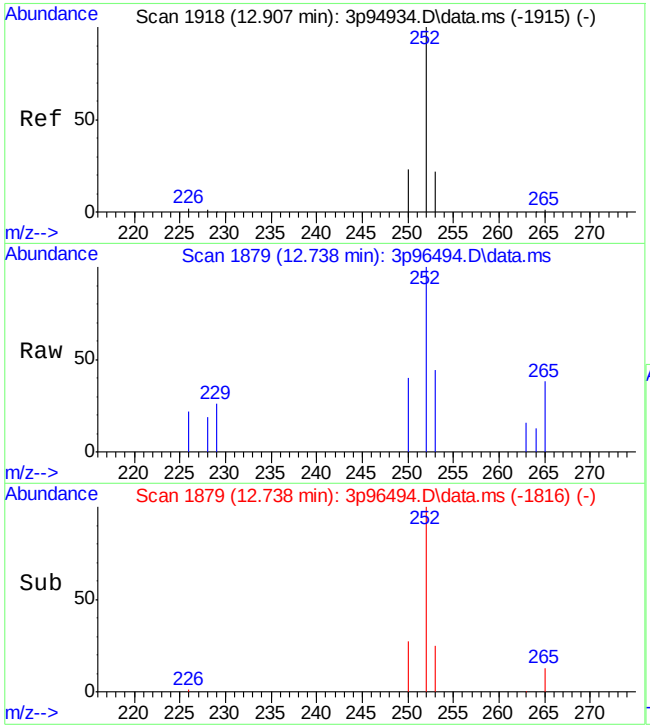


#28
Chrysene
Concen: 12.40 ppb
RT: 11.784 min Scan# 1759
Delta R.T. 0.006 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:228 Resp: 1596

Ion	Ratio	Lower	Upper
228	100		
226	31.1	0.0	55.6
229	22.3	0.0	47.4

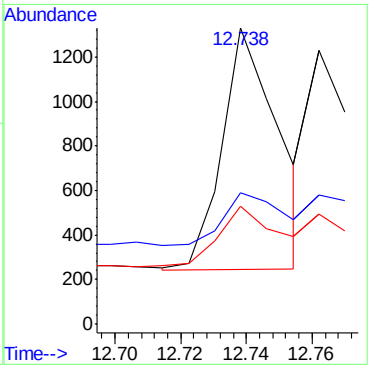


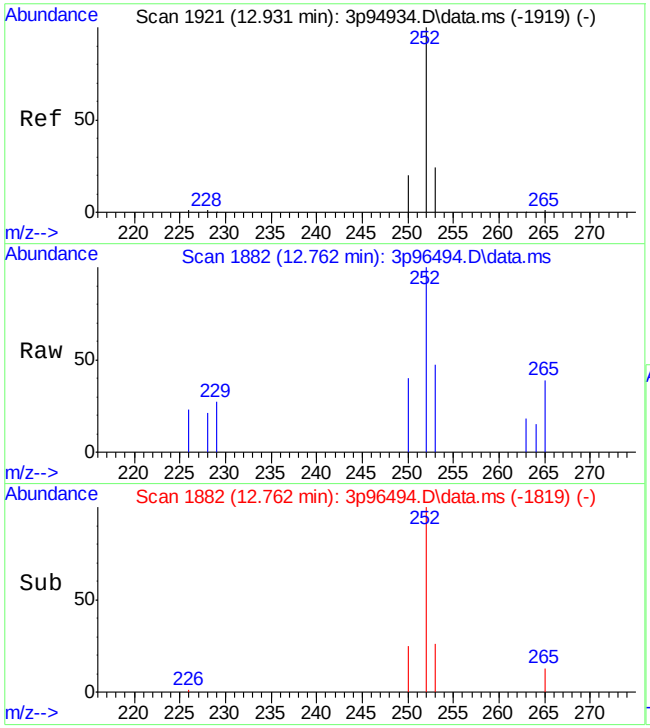


#30
Benzo[b]fluoranthene
Concen: 12.06 ppb
RT: 12.738 min Scan# 1879
Delta R.T. -0.003 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:252 Resp: 1287

Ion	Ratio	Lower	Upper
252	100		
253	20.8	0.0	51.7
250	24.0	0.0	48.4

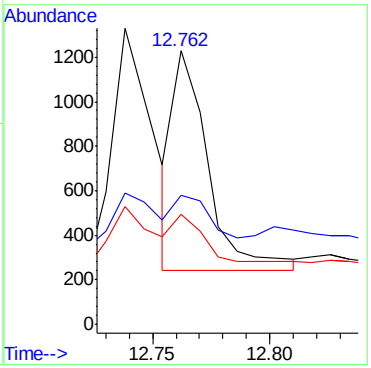


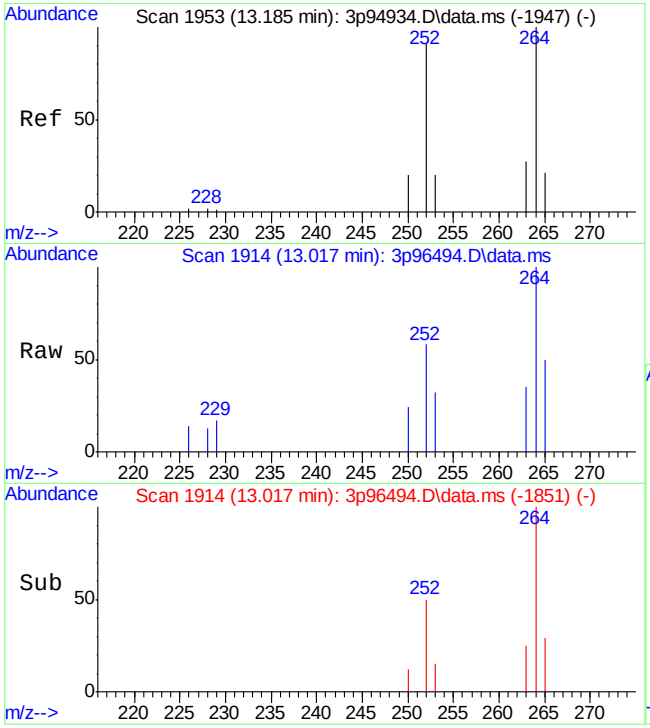


#31
Benzo[k]fluoranthene
Concen: 8.05 ppb
RT: 12.762 min Scan# 1882
Delta R.T. -0.003 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:252 Resp: 1027

Ion	Ratio	Lower	Upper
252	100		
253	18.5	0.0	51.5
250	21.7	0.0	51.3

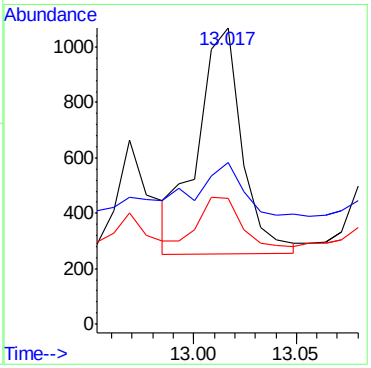


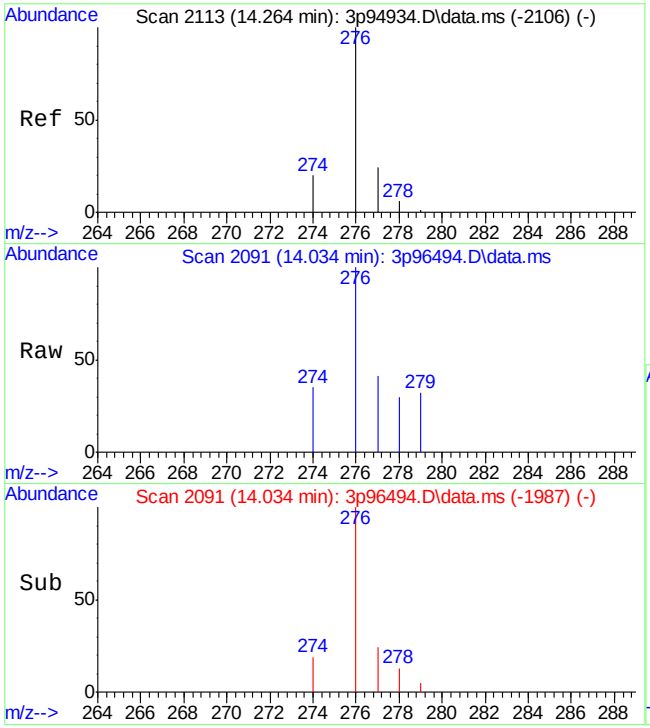


#32
Benzo[a]pyrene
Concen: 10.17 ppb
RT: 13.017 min Scan# 1914
Delta R.T. -0.001 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:252 Resp: 1230

Ion	Ratio	Lower	Upper
252	100		
253	23.5	0.0	52.3
250	23.2	0.0	49.9

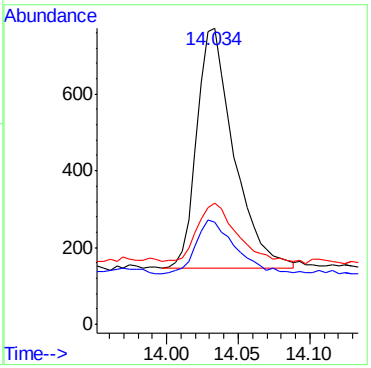


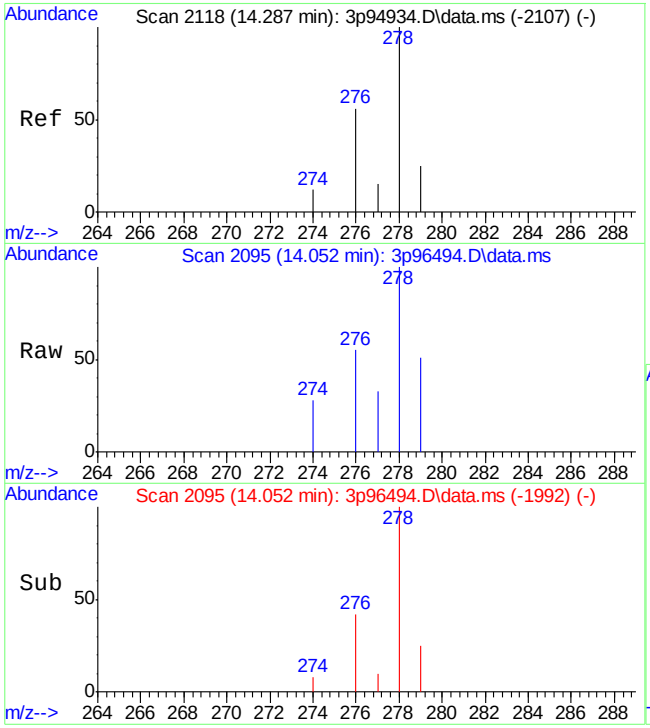


#33
Indeno[1,2,3-cd]pyrene
Concen: 9.88 ppb
RT: 14.034 min Scan# 2091
Delta R.T. -0.024 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:276 Resp: 1121

Ion	Ratio	Lower	Upper
276	100		
274	21.4	0.0	45.2
277	24.6	0.0	52.4

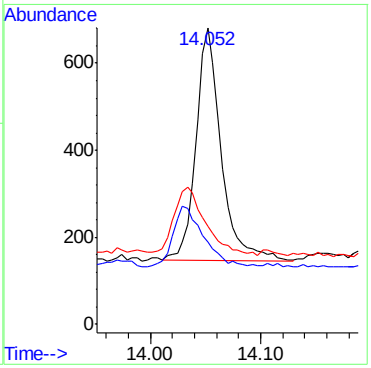


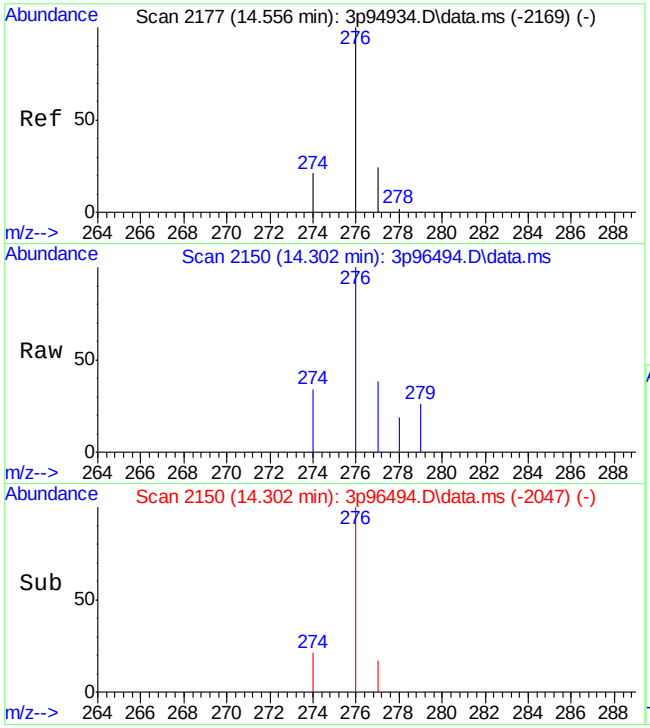


#34
Dibenz[a,h]anthracene
Concen: 9.27 ppb
RT: 14.052 min Scan# 2095
Delta R.T. -0.028 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:278 Resp: 853

Ion	Ratio	Lower	Upper
278	100		
274	9.1	0.0	40.3
277	10.7	0.0	40.0

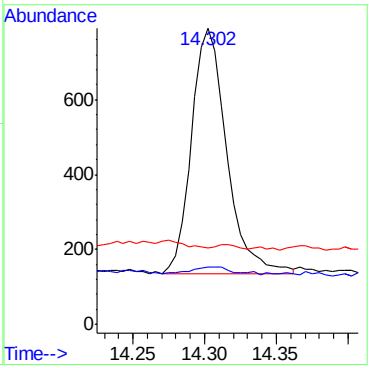




#35
Benzo[g,h,i]perylene
Concen: 10.46 ppb
RT: 14.302 min Scan# 2150
Delta R.T. -0.032 min
Lab File: 3p96494.D
Acq: 20 Apr 2022 11:30 am

Tgt Ion:276 Resp: 1120

Ion	Ratio	Lower	Upper
276	100		
278	3.0	0.0	31.3
279	0.0	0.0	30.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53081.D
Acq On : 21 Apr 2022 6:41 am
Operator : chriss2
Sample : jd43215-21
Misc : op39192a,e4p2772,250,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 21 14:18:03 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

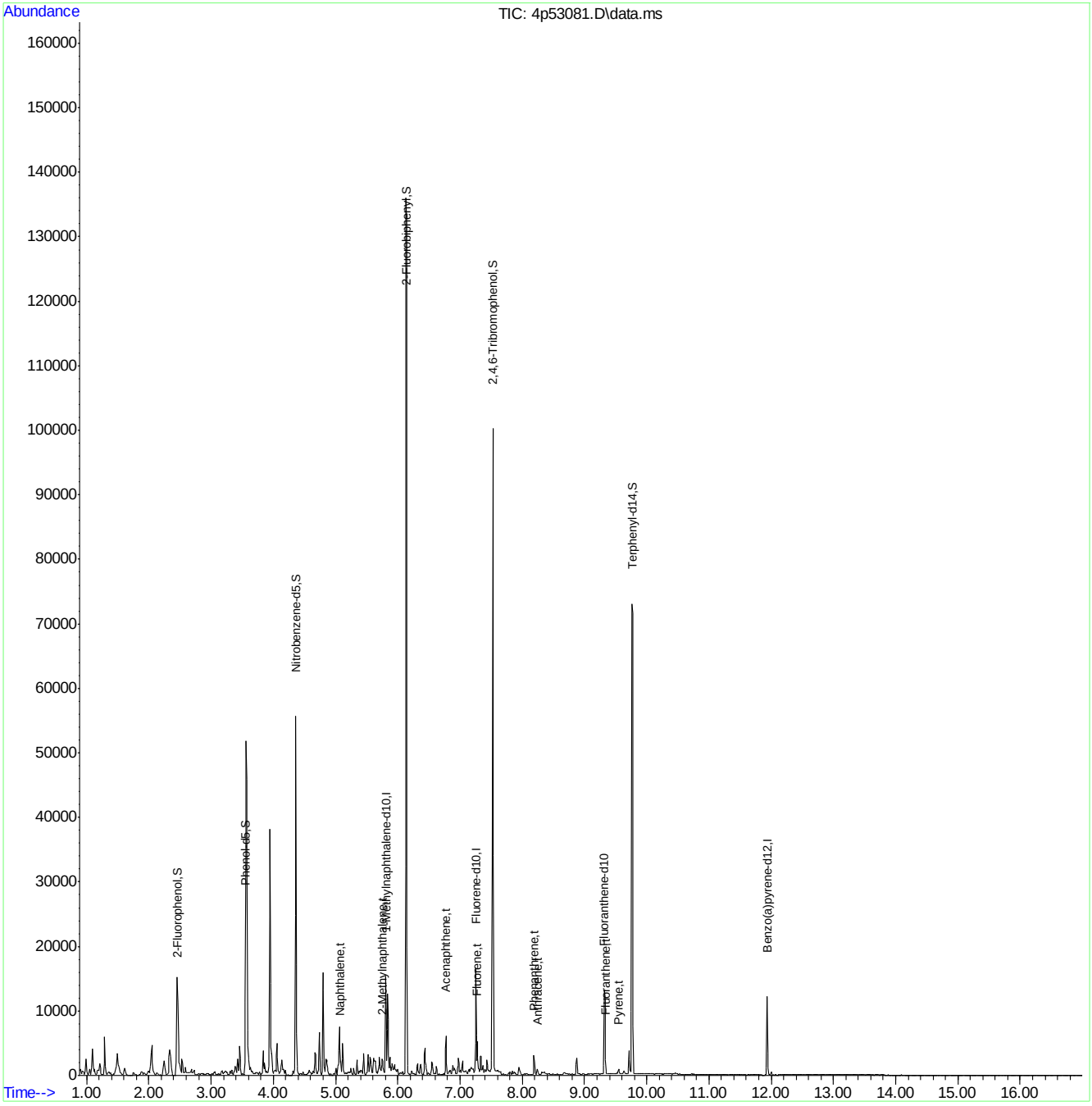
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	5.809	150	5529	800.00	ppm	-0.06
13) Fluorene-d10	7.252	176	7769	800.00	ppm	-0.07
20) Fluoranthene-d10	9.318	212	11894	800.00	ppm	-0.08
30) Benzo(a)pyrene-d12	11.936	264	9095	800.00	ppm	-0.07
System Monitoring Compounds						
3) 2-Fluorophenol	2.464	112	11170	3538.75	ppm	-0.08
Spiked Amount 50.000			Recovery = 7077.50%			
4) Phenol-d5	3.552	99	13010	2594.27	ppm	-0.06
Spiked Amount 50.000			Recovery = 5188.54%			
7) Nitrobenzene-d5	4.364	82	33460	6043.74	ppm	-0.07
Spiked Amount 50.000			Recovery = 12087.48%			
14) 2-Fluorobiphenyl	6.142	172	85635	6557.99	ppm	-0.06
Spiked Amount 50.000			Recovery = 13115.98%			
19) 2,4,6-Tribromophenol	7.525	330	36643	8291.81	ppm	-0.07
Spiked Amount 50.000			Recovery = 16583.62%			
27) Terphenyl-d14	9.769	244	64608	5261.28	ppm	-0.07
Spiked Amount 50.000			Recovery = 10522.56%			
Target Compounds						Qvalue
8) Naphthalene	5.079	128	900	53.40	ppm	# 1
10) 2-Methylnaphthalene	5.749	141	586	64.74	ppm	# 57
16) Acenaphthene	6.778	153	2377	200.41	ppm	95
17) Fluorene	7.278	166	2003	157.98	ppm	91
23) Phenanthrene	8.187	178	2514	139.81	ppm	92
24) Anthracene	8.242	178	617	35.98	ppm	83
25) Fluoranthene	9.337	202	639	30.97	ppm	97
26) Pyrene	9.549	202	520	23.66	ppm	90

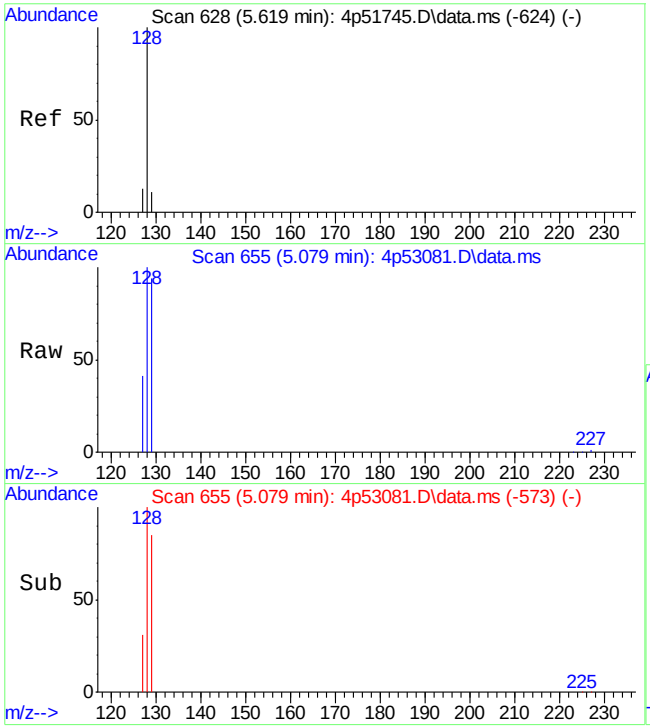
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53081.D
Acq On : 21 Apr 2022 6:41 am
Operator : chriss2
Sample : jd43215-21
Misc : op39192a,e4p2772,250,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 21 14:18:03 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

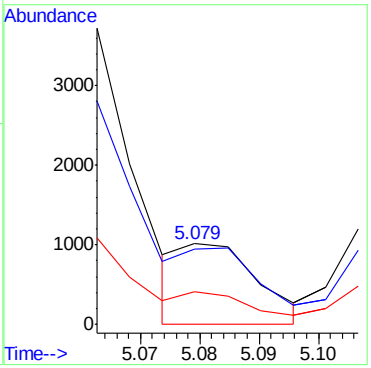


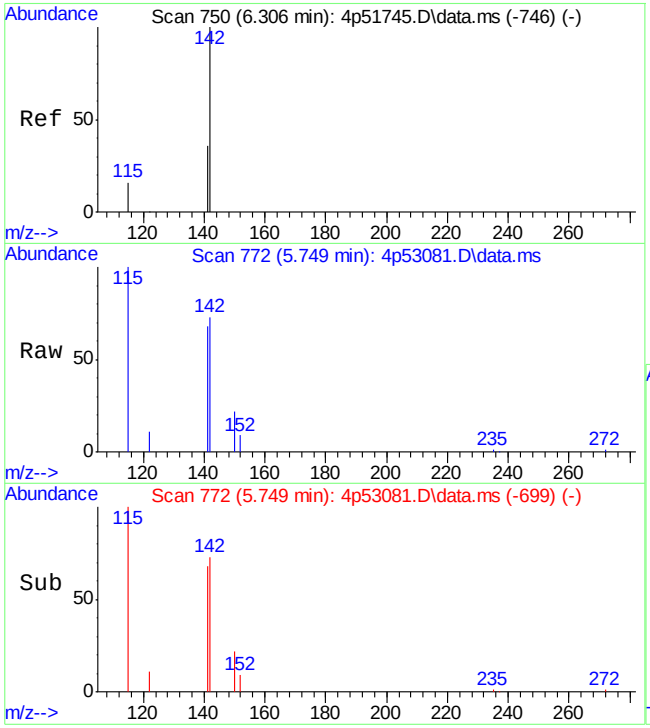


#8
Naphthalene
Concen: 53.40 ppm
RT: 5.079 min Scan# 655
Delta R.T. -0.048 min
Lab File: 4p53081.D
Acq: 21 Apr 2022 6:41 am

Tgt Ion:128 Resp: 900

Ion	Ratio	Lower	Upper
128	100		
129	97.2	0.0	39.8#
127	47.6	0.0	44.0#

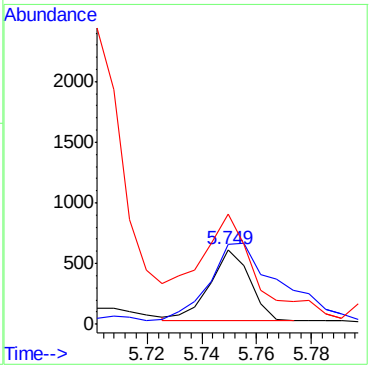


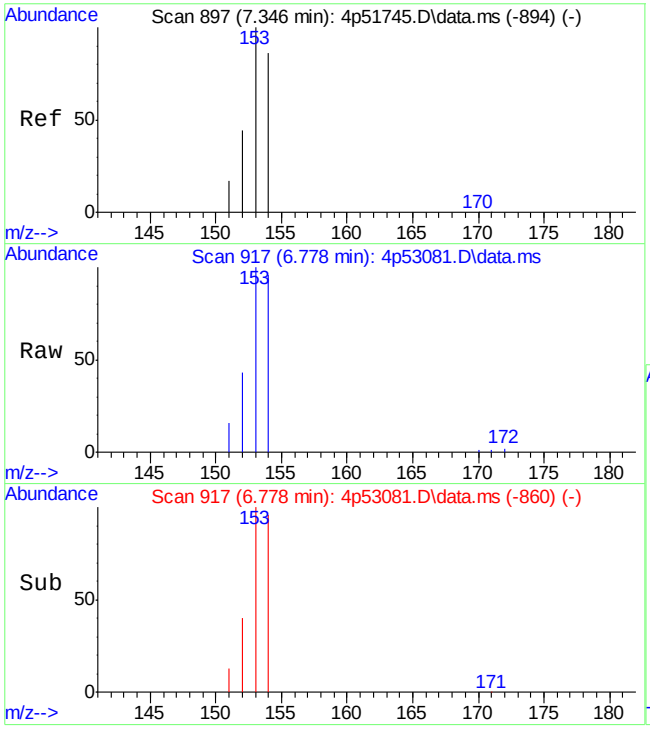


#10
2-Methylnaphthalene
Concen: 64.74 ppm
RT: 5.749 min Scan# 772
Delta R.T. -0.070 min
Lab File: 4p53081.D
Acq: 21 Apr 2022 6:41 am

Tgt Ion:141 Resp: 586

Ion	Ratio	Lower	Upper
141	100		
142	88.2	81.8	141.8
115	113.0	21.4	81.4#

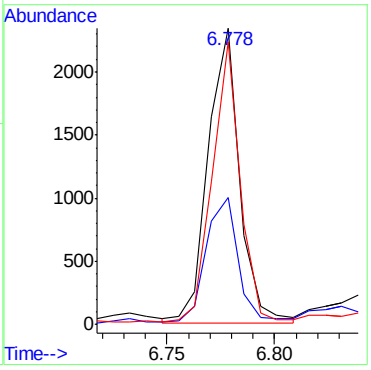


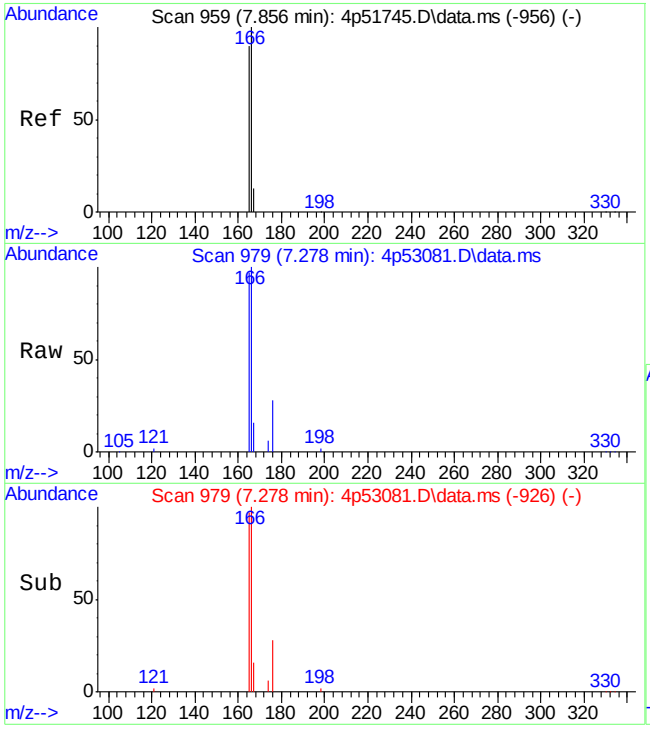


#16
Acenaphthene
Concen: 200.41 ppm
RT: 6.778 min Scan# 917
Delta R.T. -0.067 min
Lab File: 4p53081.D
Acq: 21 Apr 2022 6:41 am

Tgt Ion:153 Resp: 2377

Ion	Ratio	Lower	Upper
153	100		
152	42.4	14.3	74.3
154	96.5	61.2	121.2

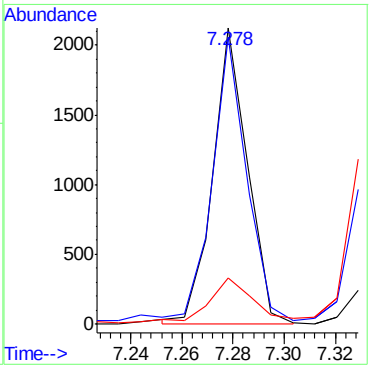


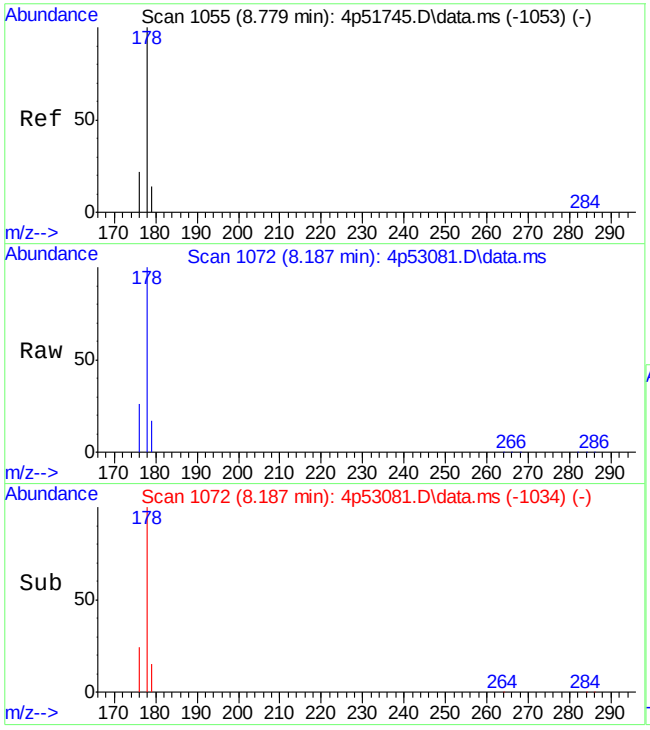


#17
Fluorene
Concen: 157.98 ppm
RT: 7.278 min Scan# 979
Delta R.T. -0.067 min
Lab File: 4p53081.D
Acq: 21 Apr 2022 6:41 am

Tgt Ion:166 Resp: 2003

Ion	Ratio	Lower	Upper
166	100		
165	96.2	76.1	136.1
167	14.1	0.0	41.0

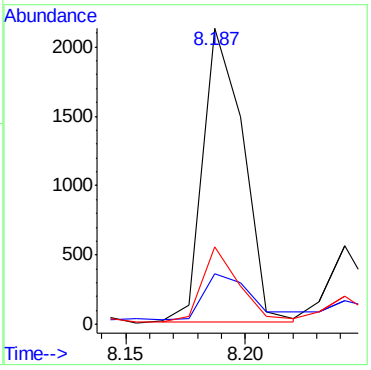


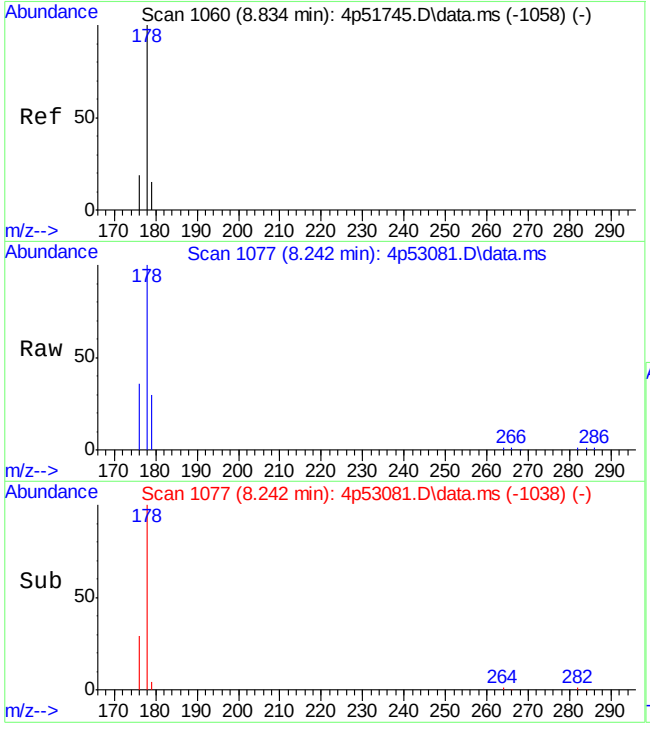


#23
Phenanthrene
Concen: 139.81 ppm
RT: 8.187 min Scan# 1072
Delta R.T. -0.078 min
Lab File: 4p53081.D
Acq: 21 Apr 2022 6:41 am

Tgt Ion:178 Resp: 2514

Ion	Ratio	Lower	Upper
178	100		
179	14.4	0.0	44.1
176	25.3	0.0	49.6

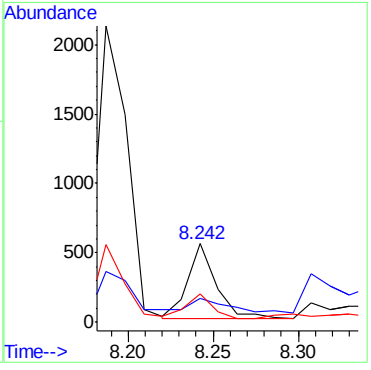


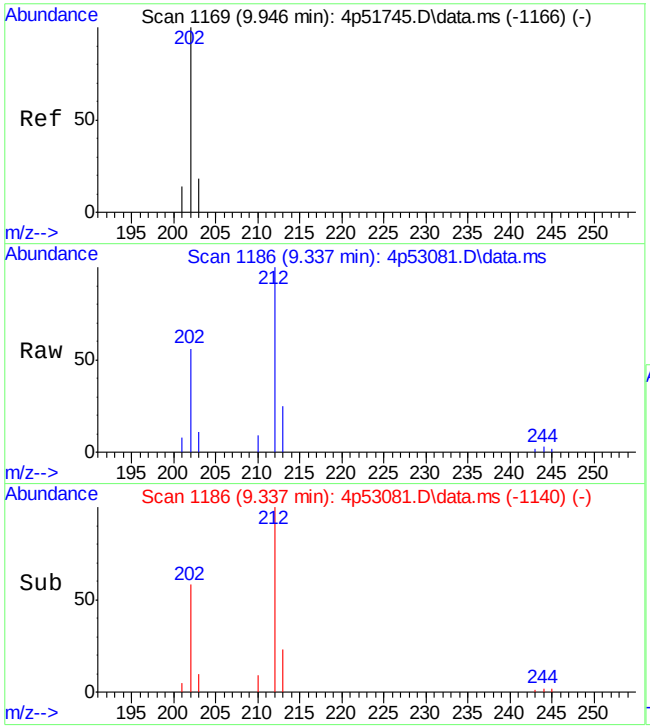


#24
Anthracene
Concen: 35.98 ppm
RT: 8.242 min Scan# 1077
Delta R.T. -0.067 min
Lab File: 4p53081.D
Acq: 21 Apr 2022 6:41 am

Tgt Ion:178 Resp: 617

Ion	Ratio	Lower	Upper
178	100		
179	17.6	0.0	46.4
176	30.1	0.0	46.5

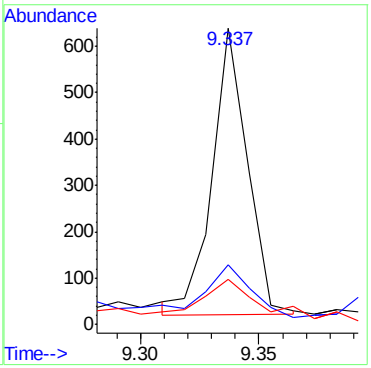


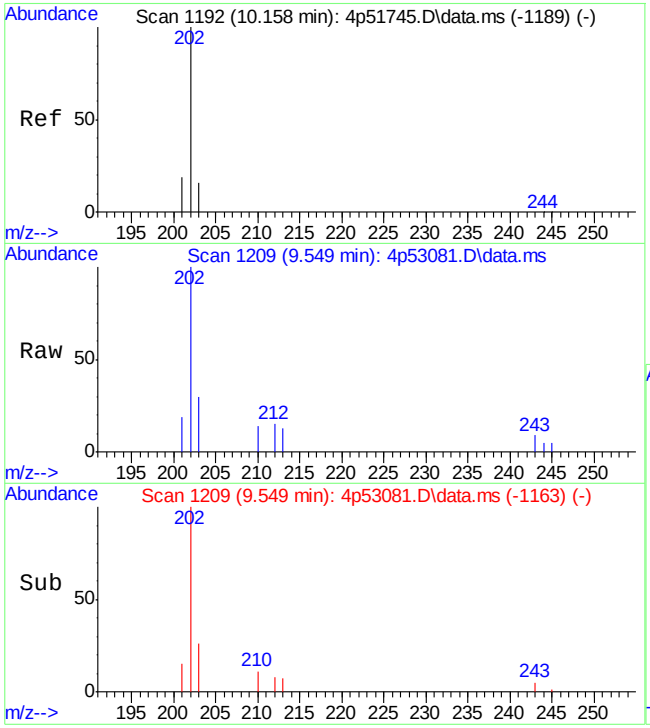


#25
Fluoranthene
Concen: 30.97 ppm
RT: 9.337 min Scan# 1186
Delta R.T. -0.075 min
Lab File: 4p53081.D
Acq: 21 Apr 2022 6:41 am

Tgt Ion:202 Resp: 639

Ion	Ratio	Lower	Upper
202	100		
203	16.9	0.0	47.5
201	10.8	0.0	42.8

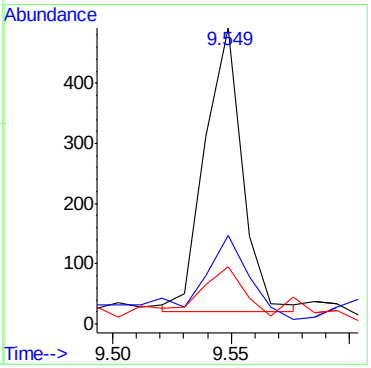




#26
Pyrene
Concen: 23.66 ppm
RT: 9.549 min Scan# 1209
Delta R.T. -0.075 min
Lab File: 4p53081.D
Acq: 21 Apr 2022 6:41 am

Tgt Ion:202 Resp: 520

Ion	Ratio	Lower	Upper
202	100		
203	26.4	0.0	49.7
201	12.9	0.0	44.4



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53086.D
Acq On : 21 Apr 2022 8:36 am
Operator : chriss2
Sample : jd43215-22
Misc : op39192a,e4p2772,260,,,1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 21 14:32:19 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Apr 21 14:29:57 2022
Response via : Initial Calibration

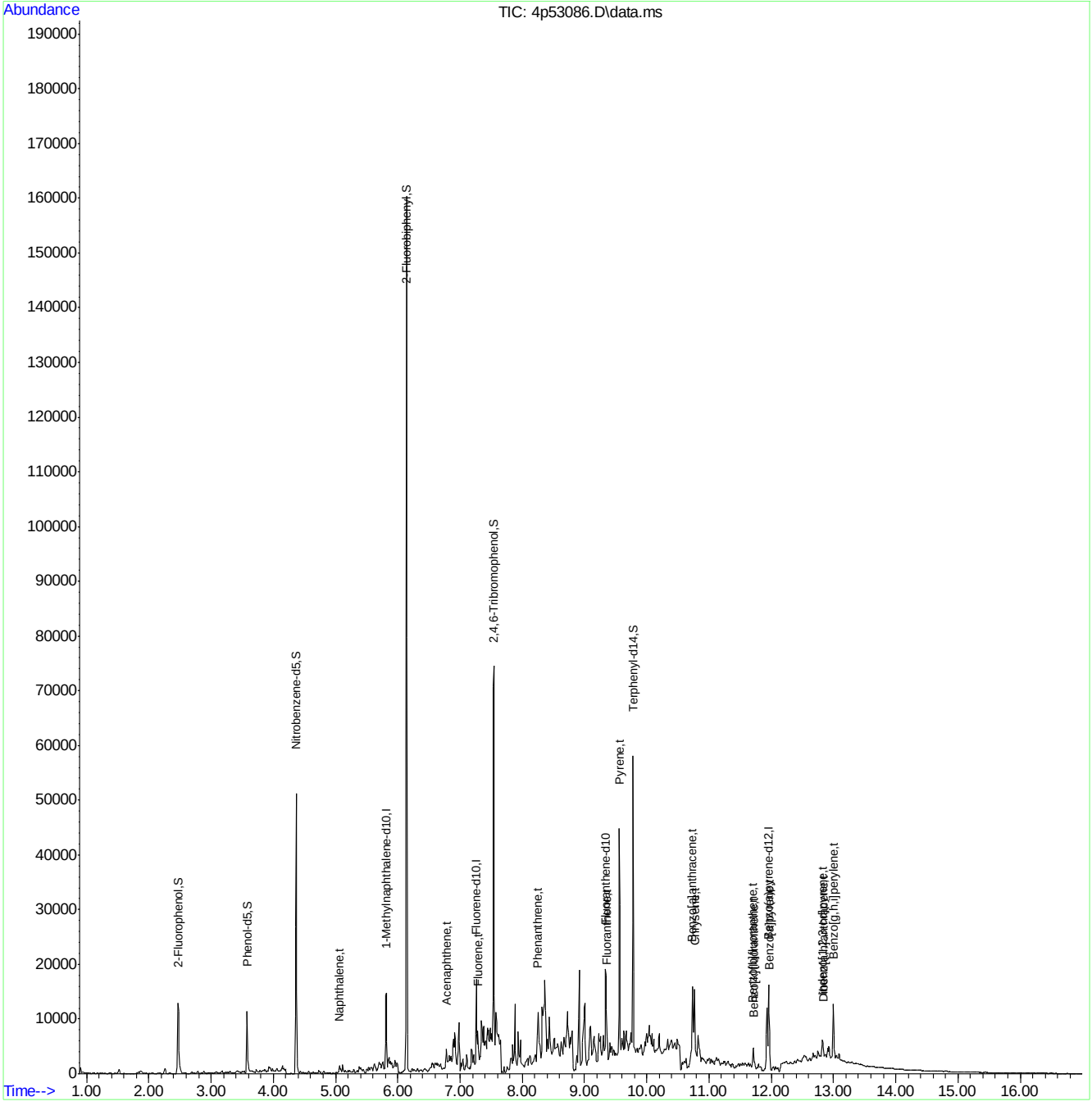
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	5.815	150	4984	800.00	ppm	-0.06
13) Fluorene-d10	7.261	176	8450	800.00	ppm	-0.06
20) Fluoranthene-d10	9.337	212	14022	800.00	ppm	-0.06
30) Benzo(a)pyrene-d12	11.955	264	10945	800.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	2.475	112	9821	3451.60	ppm	-0.07
Spiked Amount 50.000			Recovery = 6903.20%			
4) Phenol-d5	3.575	99	10975	2427.79	ppm	-0.04
Spiked Amount 50.000			Recovery = 4855.58%			
7) Nitrobenzene-d5	4.367	82	33292	6670.96	ppm	-0.06
Spiked Amount 50.000			Recovery = 13341.92%			
14) 2-Fluorobiphenyl	6.142	172	81756	5756.36	ppm	-0.06
Spiked Amount 50.000			Recovery = 11512.72%			
19) 2,4,6-Tribromophenol	7.533	330	32968	6858.97	ppm	-0.06
Spiked Amount 50.000			Recovery = 13717.94%			
27) Terphenyl-d14	9.778	244	37034	2558.13	ppm	-0.06
Spiked Amount 50.000			Recovery = 5116.26%			
Target Compounds						Qvalue
8) Naphthalene	5.062	128	789m	51.93	ppm	
16) Acenaphthene	6.786	153	1577m	122.25	ppm	
17) Fluorene	7.286	166	2572m	186.51	ppm	
23) Phenanthrene	8.253	178	8697	410.26	ppm	85
25) Fluoranthene	9.355	202	4973	204.44	ppm	75
26) Pyrene	9.558	202	31533	1216.97	ppm	95
28) Benzo[a]anthracene	10.735	228	10217	440.15	ppm	87
29) Chrysene	10.767	228	11911	543.93	ppm	87
31) Benzo[b]fluoranthene	11.708	252	2699m	97.37	ppm	
32) Benzo[k]fluoranthene	11.724	252	583m	23.09	ppm	
33) Benzo[a]pyrene	11.970	252	7061m	295.20	ppm	
34) Indeno[1,2,3-cd]pyrene	12.822	276	2318m	77.82	ppm	
35) Dibenz[a,h]anthracene	12.838	278	1285m	52.11	ppm	
36) Benzo[g,h,i]perylene	12.997	276	8043m	318.86	ppm	

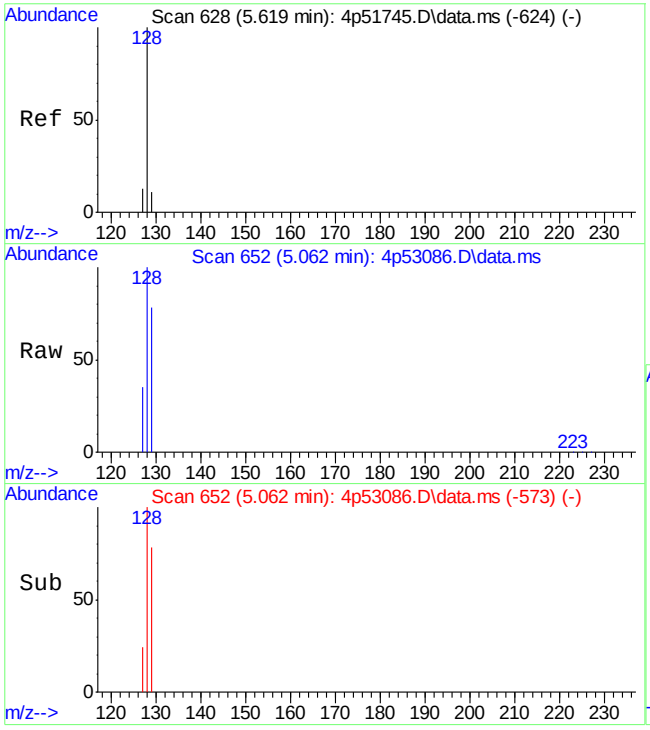
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53086.D
Acq On : 21 Apr 2022 8:36 am
Operator : chriss2
Sample : jd43215-22
Misc : op39192a,e4p2772,260,,,1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Apr 21 14:32:19 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Apr 21 14:29:57 2022
Response via : Initial Calibration

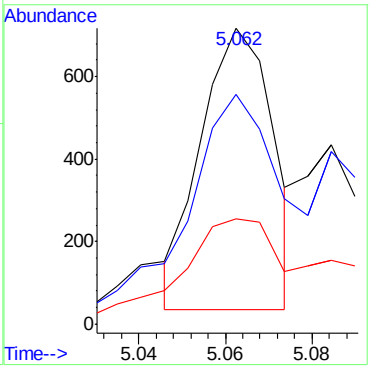


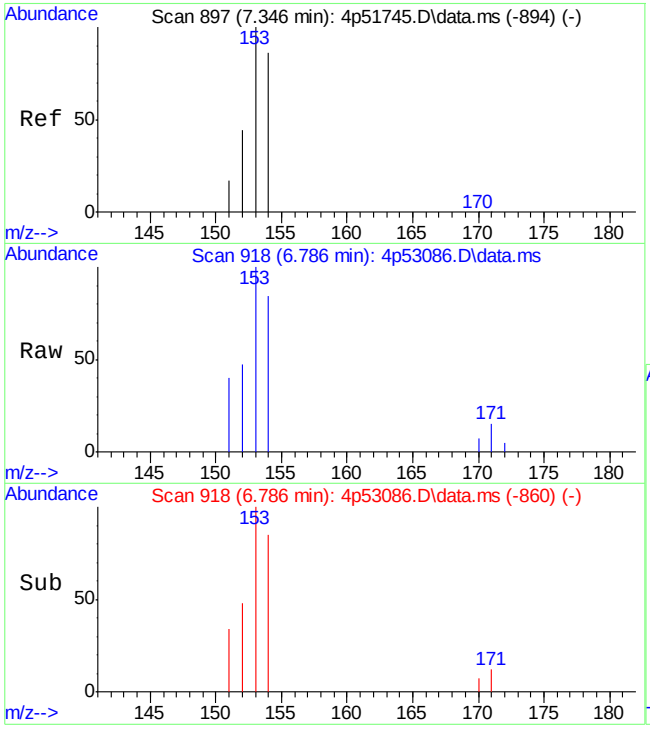


#8
Naphthalene
Concen: 51.93 ppm m
RT: 5.062 min Scan# 652
Delta R.T. -0.065 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:128 Resp: 789

Ion	Ratio	Lower	Upper
128	100		
129	77.7	0.0	39.8#
127	35.4	0.0	44.0

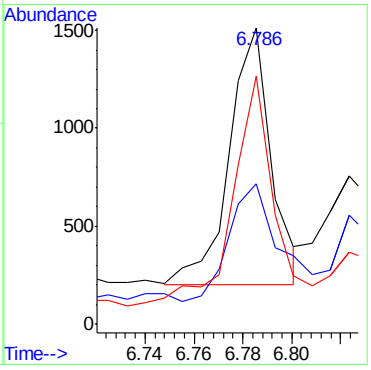


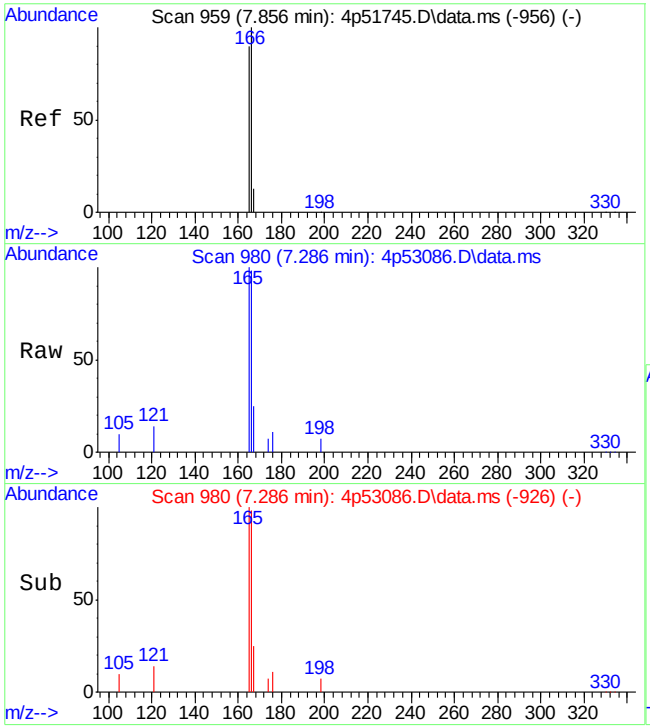


#16
Acenaphthene
Concen: 122.25 ppm m
RT: 6.786 min Scan# 918
Delta R.T. -0.060 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:153 Resp: 1577

Ion	Ratio	Lower	Upper
153	100		
152	47.2	14.3	74.3
154	83.6	61.2	121.2

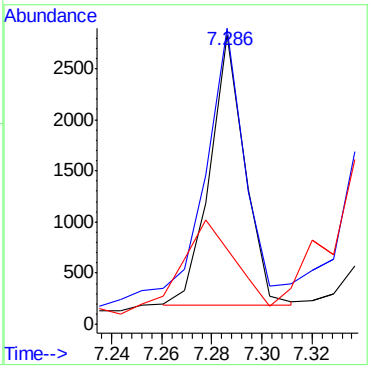


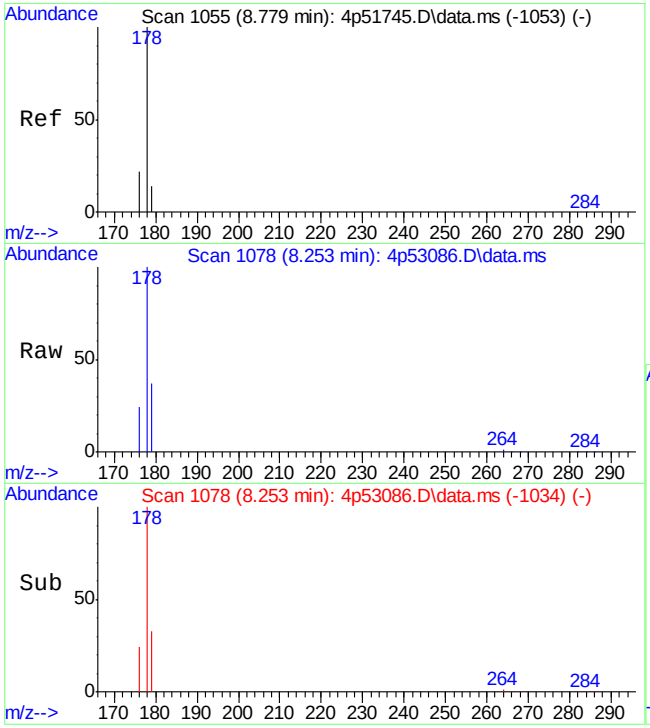


#17
Fluorene
Concen: 186.51 ppm m
RT: 7.286 min Scan# 980
Delta R.T. -0.059 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:166 Resp: 2572

Ion	Ratio	Lower	Upper
166	100		
165	102.3	76.1	136.1
167	25.9	0.0	41.0

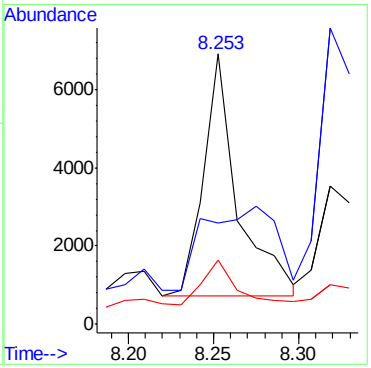


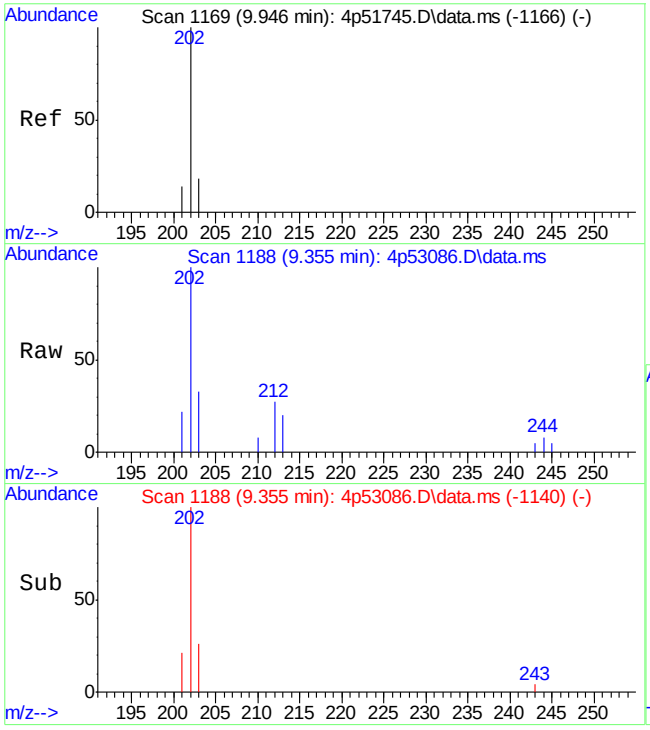


#23
Phenanthrene
Concen: 410.26 ppm
RT: 8.253 min Scan# 1078
Delta R.T. -0.013 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:178 Resp: 8697

Ion	Ratio	Lower	Upper
178	100		
179	26.3	0.0	44.1
176	17.9	0.0	49.6

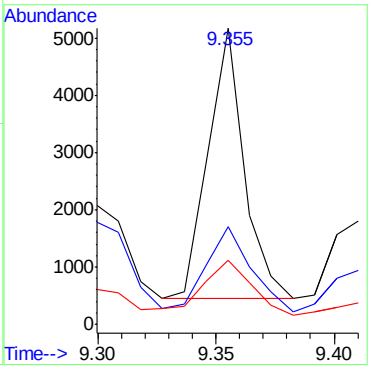


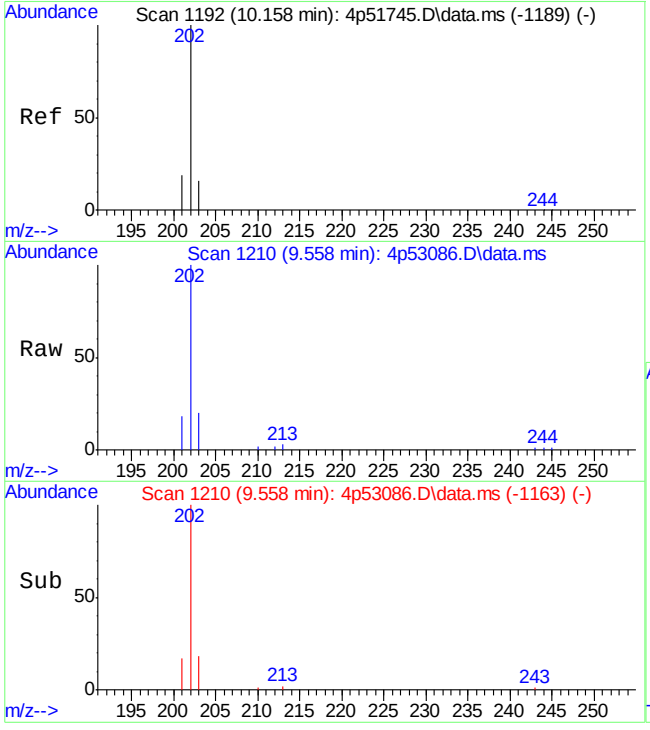


#25
Fluoranthene
Concen: 204.44 ppm
RT: 9.355 min Scan# 1188
Delta R.T. -0.057 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:202 Resp: 4973

Ion	Ratio	Lower	Upper
202	100		
203	30.8	0.0	47.5
201	19.4	0.0	42.8

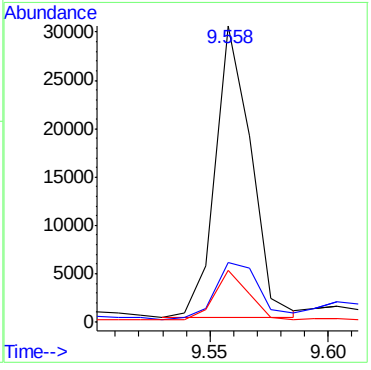


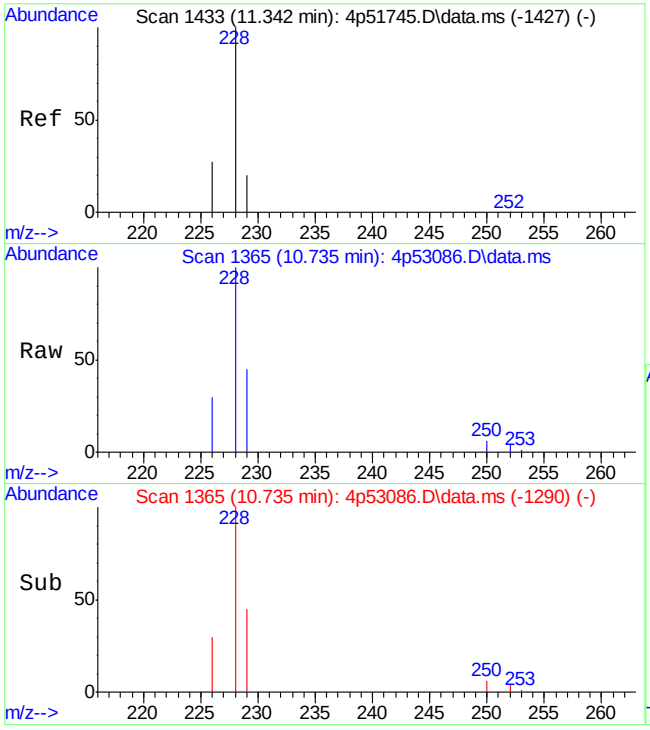


#26
Pyrene
Concen: 1216.97 ppm
RT: 9.558 min Scan# 1210
Delta R.T. -0.066 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:202 Resp: 31533

Ion	Ratio	Lower	Upper
202	100		
203	18.6	0.0	49.7
201	17.5	0.0	44.4

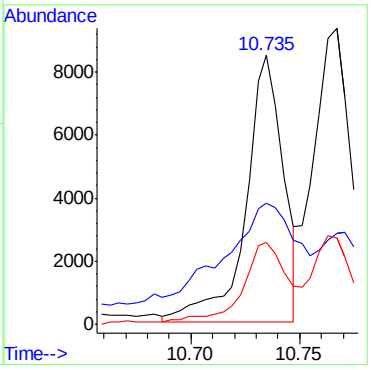


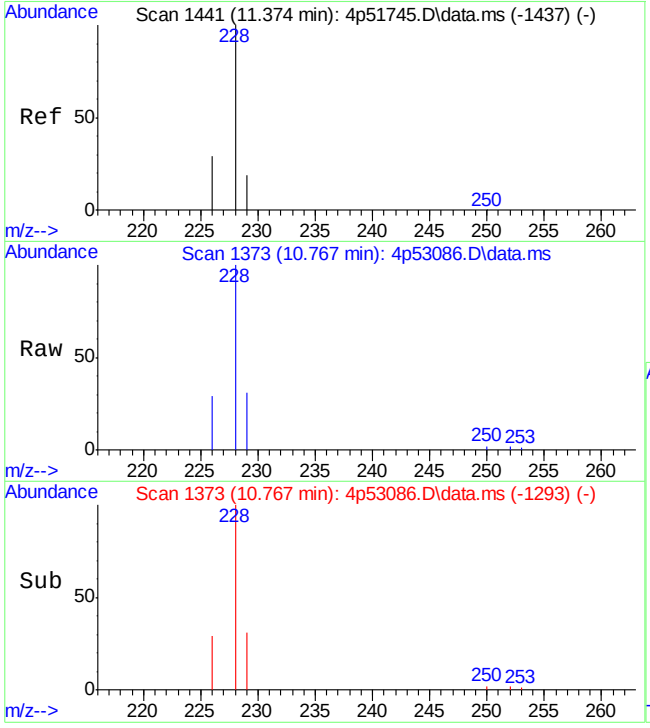


#28
Benzo[a]anthracene
Concen: 440.15 ppm
RT: 10.735 min Scan# 1365
Delta R.T. -0.058 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:228 Resp: 10217

Ion	Ratio	Lower	Upper
228	100		
229	30.5	0.0	51.2
226	28.5	0.0	55.2

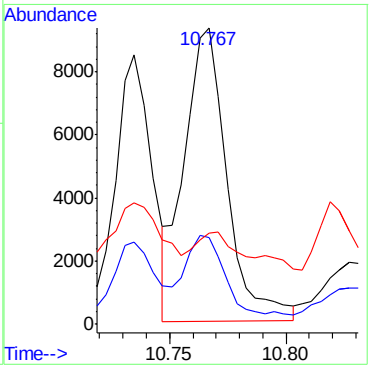


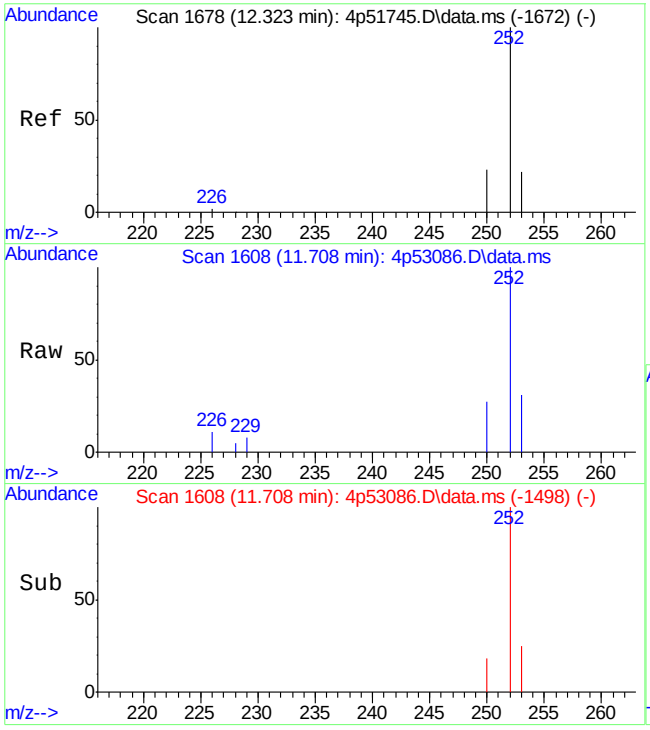


#29
Chrysene
Concen: 543.93 ppm
RT: 10.767 min Scan# 1373
Delta R.T. -0.058 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:228 Resp: 11911

Ion	Ratio	Lower	Upper
228	100		
226	26.2	0.0	59.4
229	8.9	0.0	50.1

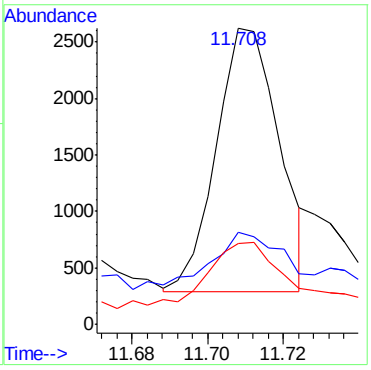


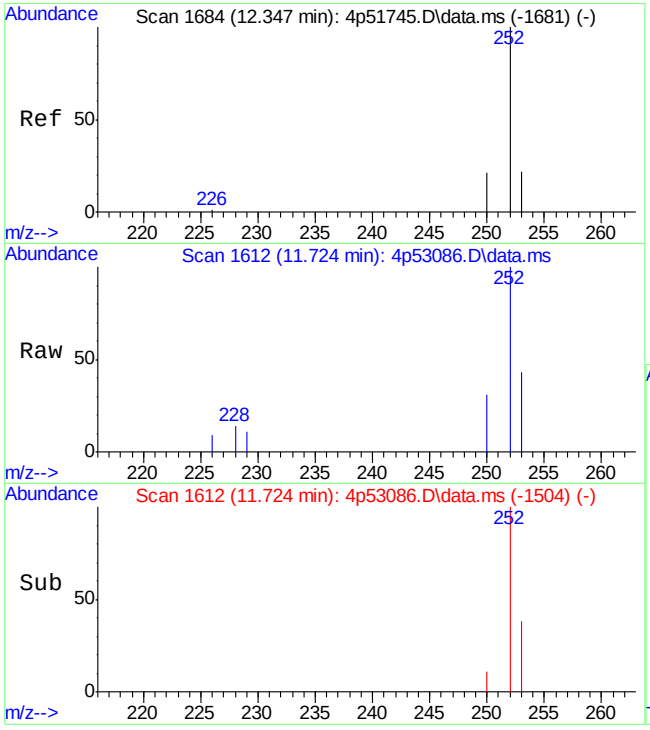


#31
Benzo[b]fluoranthene
Concen: 97.37 ppm m
RT: 11.708 min Scan# 1608
Delta R.T. -0.058 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:252 Resp: 2699

Ion	Ratio	Lower	Upper
252	100		
253	31.2	0.0	52.5
250	27.4	0.0	54.0

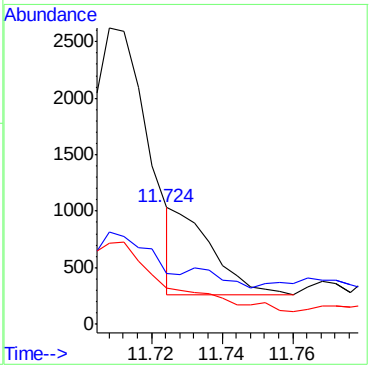


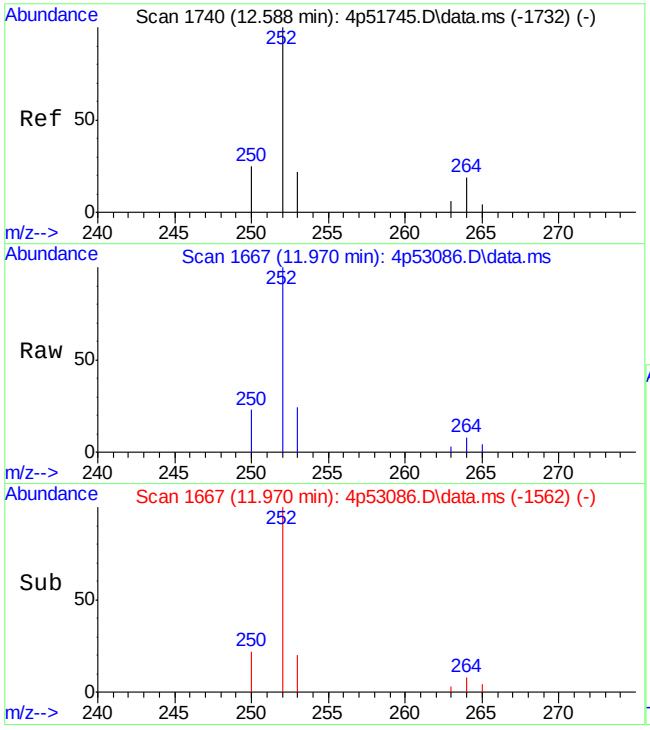


#32
Benzo[k]fluoranthene
Concen: 23.09 ppm m
RT: 11.724 min Scan# 1612
Delta R.T. -0.066 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:252 Resp: 583

Ion	Ratio	Lower	Upper
252	100		
253	43.0	0.0	52.1
250	31.1	0.0	51.9

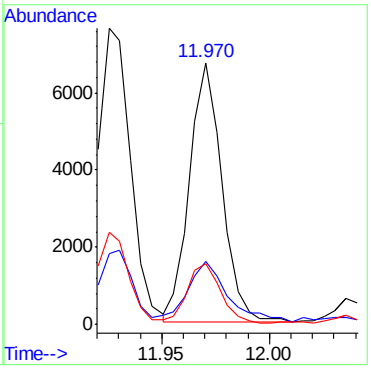


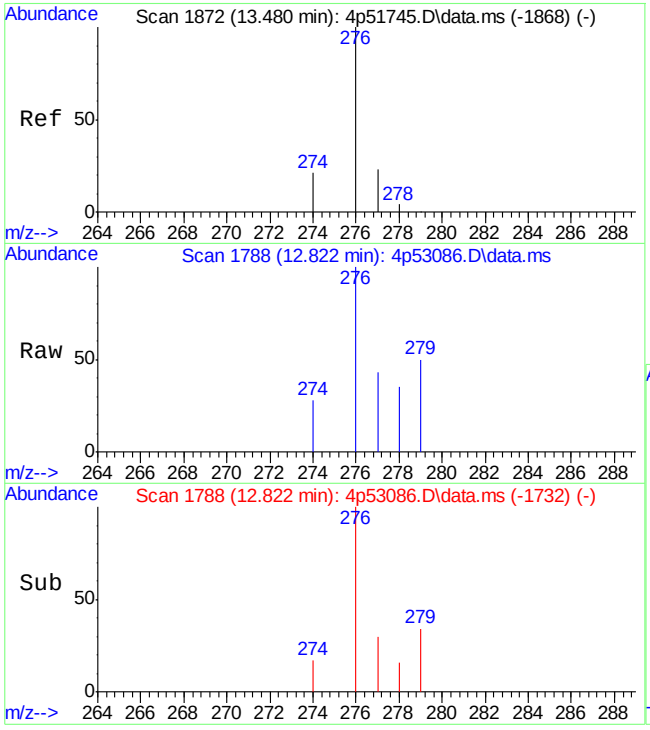


#33
Benzo[a]pyrene
Concen: 295.20 ppm m
RT: 11.970 min Scan# 1667
Delta R.T. -0.053 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:252 Resp: 7061

Ion	Ratio	Lower	Upper
252	100		
253	23.9	0.0	49.3
250	23.1	0.0	53.7

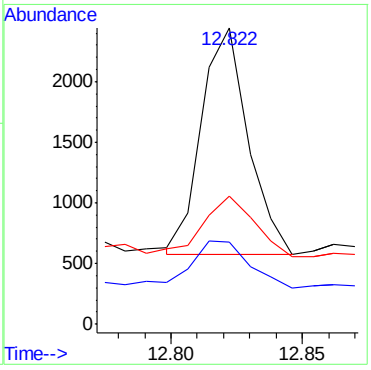


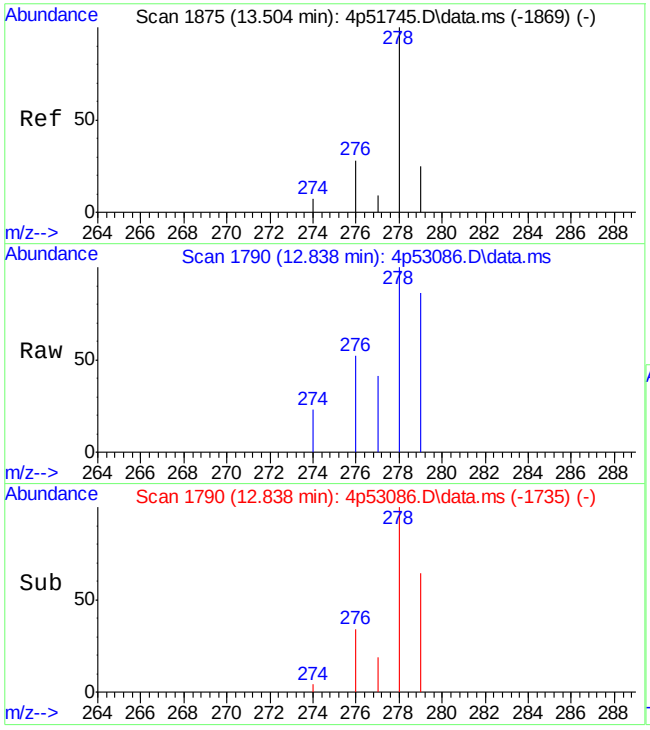


#34
Indeno[1,2,3-cd]pyrene
Concen: 77.82 ppm m
RT: 12.822 min Scan# 1788
Delta R.T. -0.053 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:276 Resp: 2318

Ion	Ratio	Lower	Upper
276	100		
274	27.7	0.0	52.3
277	43.1	0.0	50.6

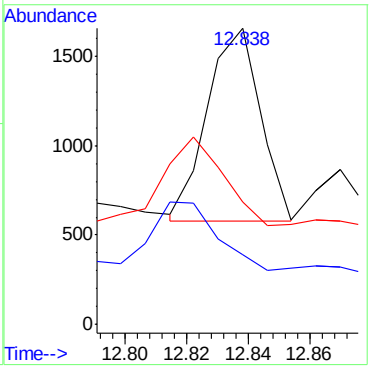


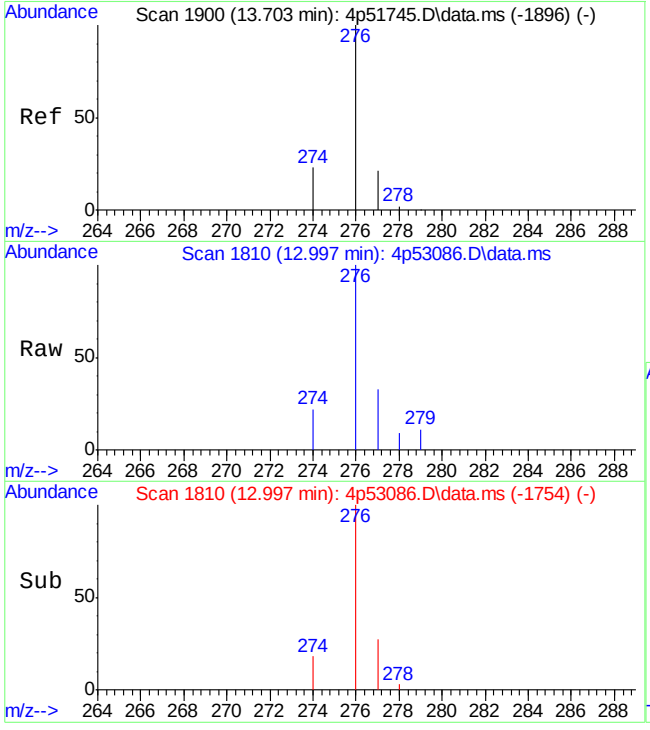


#35
Dibenz[a,h]anthracene
Concen: 52.11 ppm m
RT: 12.838 min Scan# 1790
Delta R.T. -0.061 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:278 Resp: 1285

Ion	Ratio	Lower	Upper
278	100		
274	23.4	0.0	35.0
277	41.4	0.0	37.0#

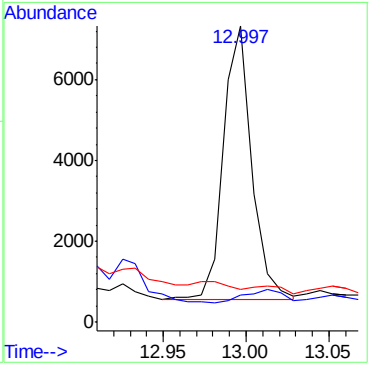




#36
Benzo[g,h,i]perylene
Concen: 318.86 ppm m
RT: 12.997 min Scan# 1810
Delta R.T. -0.053 min
Lab File: 4p53086.D
Acq: 21 Apr 2022 8:36 am

Tgt Ion:276 Resp: 8043

Ion	Ratio	Lower	Upper
276	100		
278	9.0	0.0	32.8
279	11.2	0.0	30.0



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53088.D
Acq On : 21 Apr 2022 11:09 am
Operator : chriss2
Sample : jd43215-22
Misc : op39192a,e4p2772,260,,,1,2
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 21 14:36:07 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

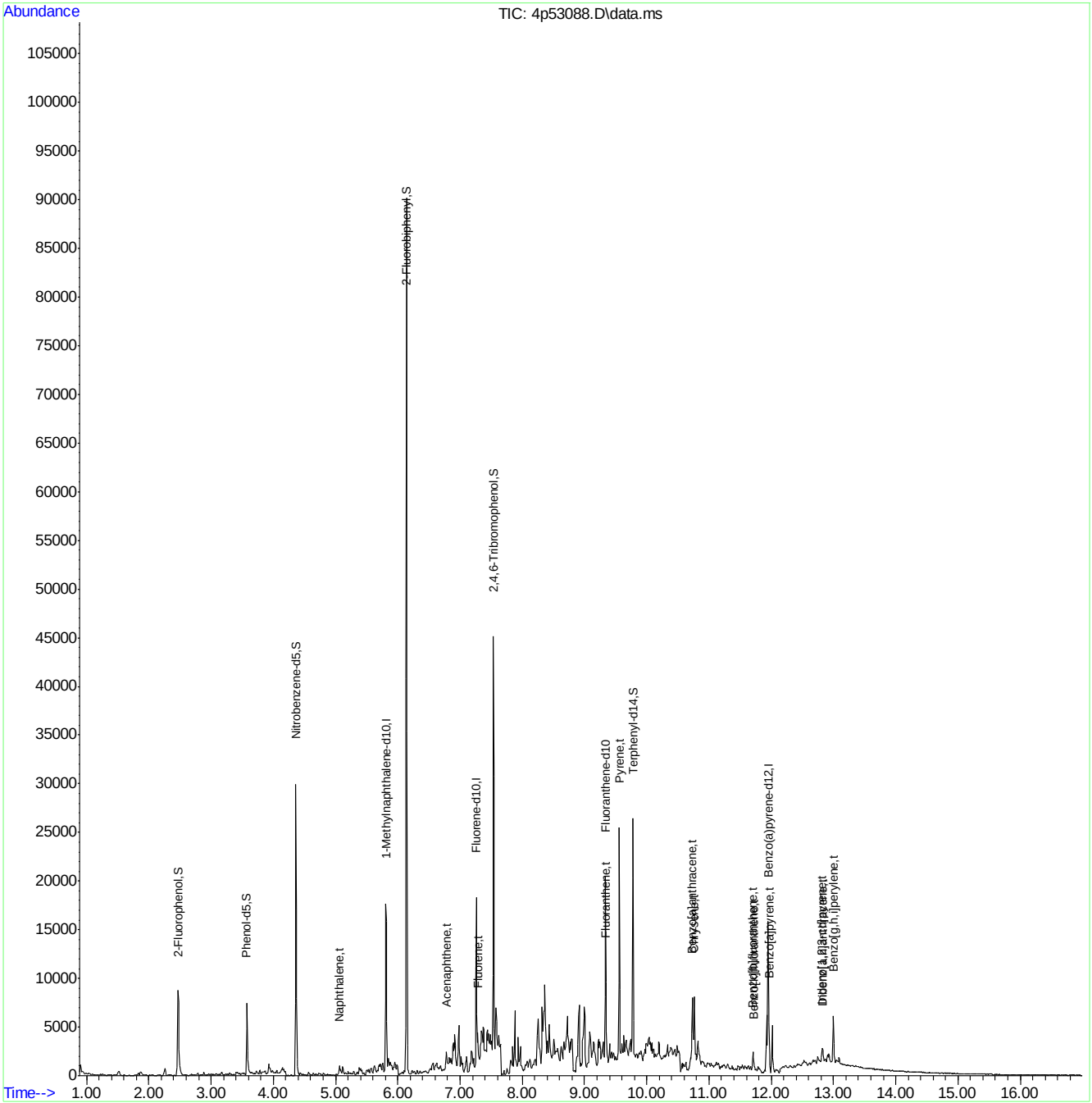
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	5.809	150	5966	800.00	ppm	-0.06
13) Fluorene-d10	7.261	176	8640	800.00	ppm	-0.06
20) Fluoranthene-d10	9.337	212	13318	800.00	ppm	-0.06
30) Benzo(a)pyrene-d12	11.950	264	10823	800.00	ppm	-0.06
System Monitoring Compounds						
3) 2-Fluorophenol	2.475	112	6990	2052.28	ppm	-0.07
Spiked Amount 50.000			Recovery = 4104.56%			
4) Phenol-d5	3.575	99	7048	1302.47	ppm	-0.04
Spiked Amount 50.000			Recovery = 2604.94%			
7) Nitrobenzene-d5	4.363	82	19643	3288.15	ppm	-0.07
Spiked Amount 50.000			Recovery = 6576.30%			
14) 2-Fluorobiphenyl	6.142	172	46124	3176.13	ppm	-0.06
Spiked Amount 50.000			Recovery = 6352.26%			
19) 2,4,6-Tribromophenol	7.533	330	17333	3526.82	ppm	-0.06
Spiked Amount 50.000			Recovery = 7053.64%			
27) Terphenyl-d14	9.778	244	19072	1387.04	ppm	-0.06
Spiked Amount 50.000			Recovery = 2774.08%			
Target Compounds						Qvalue
8) Naphthalene	5.062	128	560m	30.79	ppm	
16) Acenaphthene	6.786	153	748m	56.71	ppm	
17) Fluorene	7.286	166	1428m	101.28	ppm	
25) Fluoranthene	9.346	202	2642	114.35	ppm	77
26) Pyrene	9.558	202	15939	647.66	ppm	97
28) Benzo[a]anthracene	10.731	228	4293m	194.72	ppm	
29) Chrysene	10.763	228	4884m	234.83	ppm	
31) Benzo[b]fluoranthene	11.704	252	1254m	45.75	ppm	
32) Benzo[k]fluoranthene	11.724	252	241m	9.65	ppm	
33) Benzo[a]pyrene	11.965	252	3361	142.10	ppm	99
34) Indeno[1,2,3-cd]pyrene	12.814	276	1114m	37.82	ppm	
35) Dibenz[a,h]anthracene	12.830	278	614m	25.18	ppm	
36) Benzo[g,h,i]perylene	12.997	276	4007	160.64	ppm	97

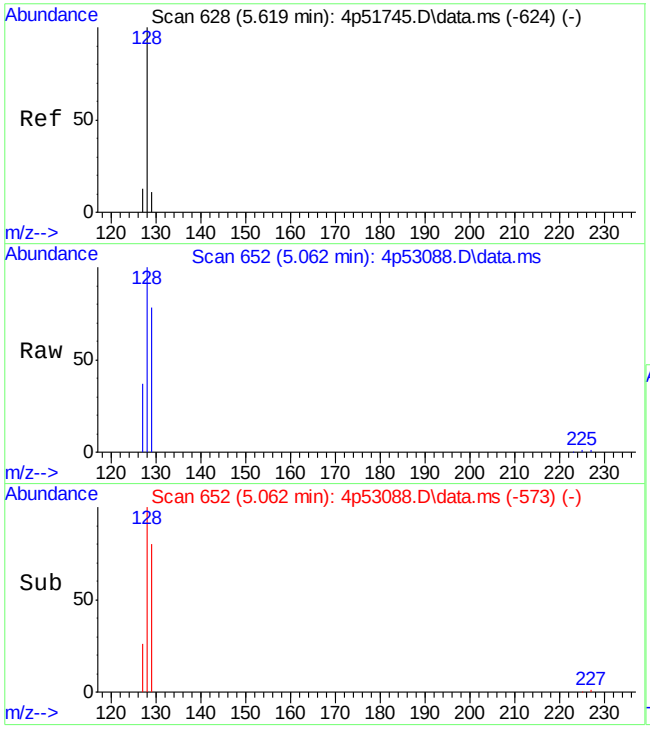
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53088.D
Acq On : 21 Apr 2022 11:09 am
Operator : chriss2
Sample : jd43215-22
Misc : op39192a,e4p2772,260,,,1,2
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Apr 21 14:36:07 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

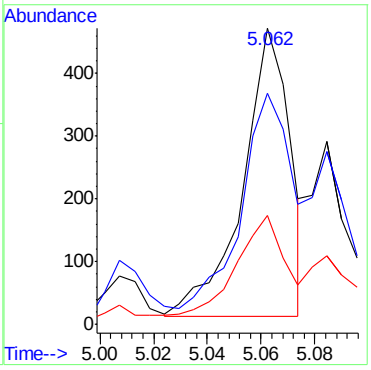


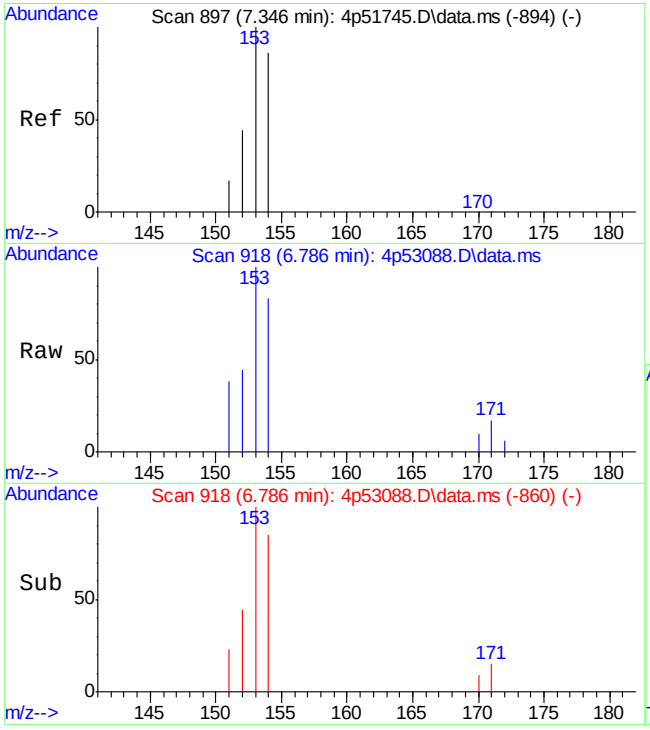


#8
Naphthalene
Concen: 30.79 ppm m
RT: 5.062 min Scan# 652
Delta R.T. -0.065 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:128 Resp: 560

Ion	Ratio	Lower	Upper
128	100		
129	78.0	0.0	39.8#
127	36.7	0.0	44.0

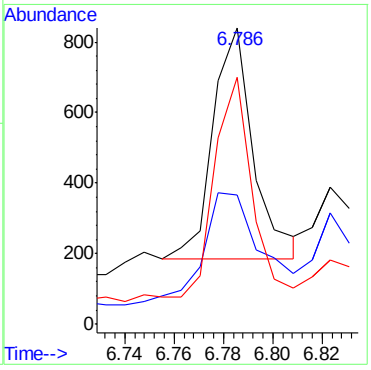


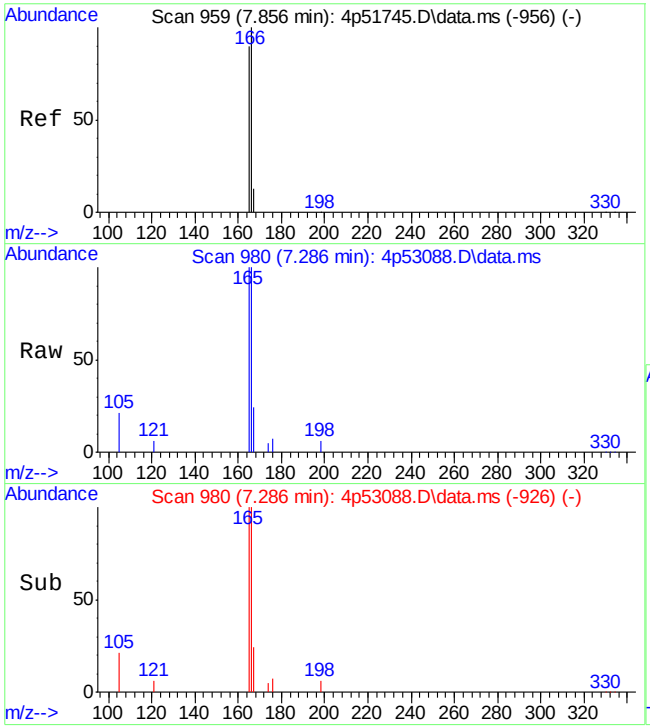


#16
Acenaphthene
Concen: 56.71 ppm m
RT: 6.786 min Scan# 918
Delta R.T. -0.060 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:153 Resp: 748

Ion	Ratio	Lower	Upper
153	100		
152	43.6	14.3	74.3
154	83.5	61.2	121.2

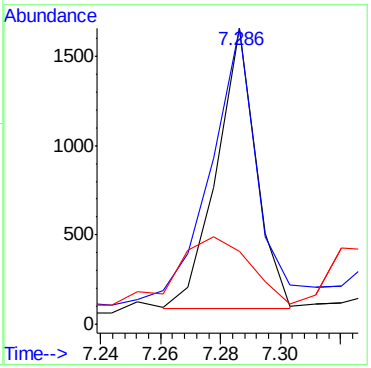


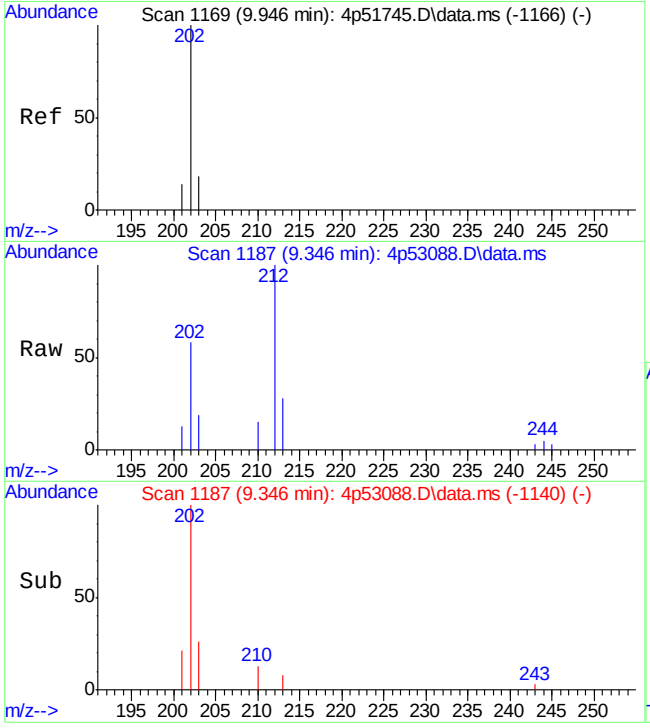


#17
Fluorene
Concen: 101.28 ppm m
RT: 7.286 min Scan# 980
Delta R.T. -0.059 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:166 Resp: 1428

Ion	Ratio	Lower	Upper
166	100		
165	99.9	76.1	136.1
167	24.5	0.0	41.0

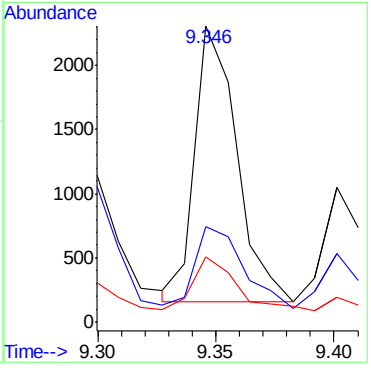


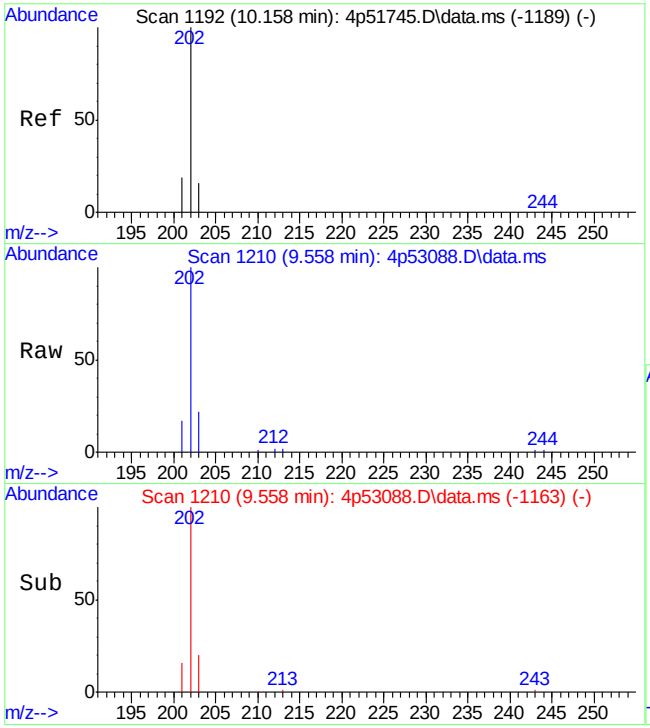


#25
Fluoranthene
Concen: 114.35 ppm
RT: 9.346 min Scan# 1187
Delta R.T. -0.066 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:202 Resp: 2642

Ion	Ratio	Lower	Upper
202	100		
203	29.8	0.0	47.5
201	18.9	0.0	42.8

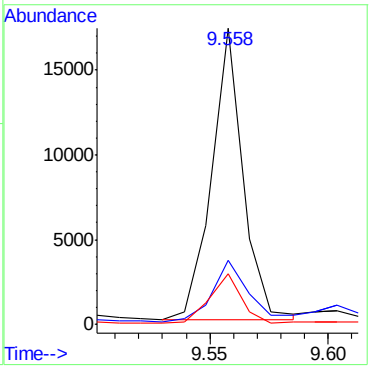


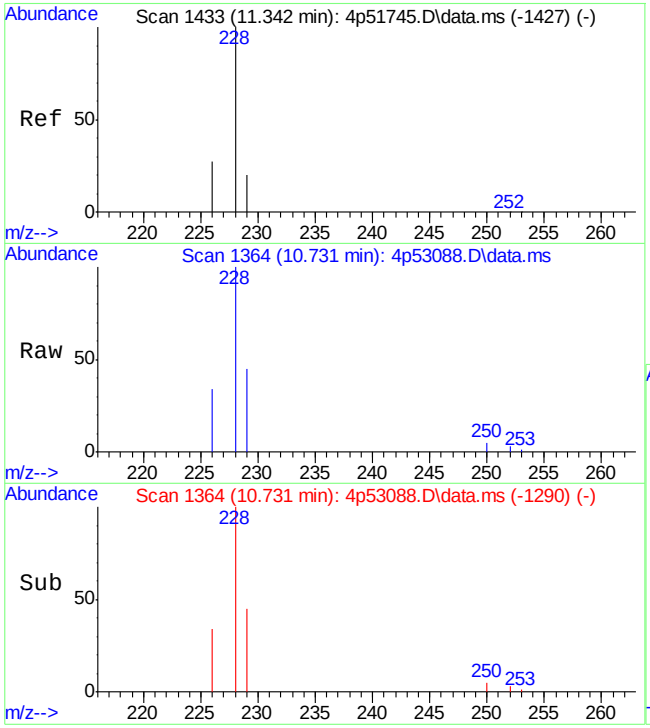


#26
Pyrene
Concen: 647.66 ppm
RT: 9.558 min Scan# 1210
Delta R.T. -0.066 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:202 Resp: 15939

Ion	Ratio	Lower	Upper
202	100		
203	20.3	0.0	49.7
201	16.6	0.0	44.4

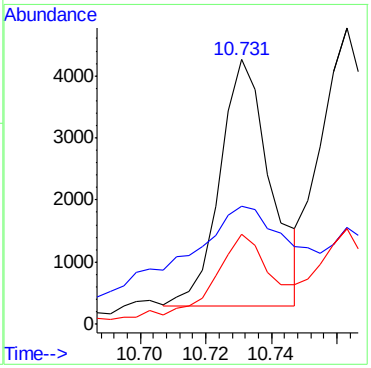


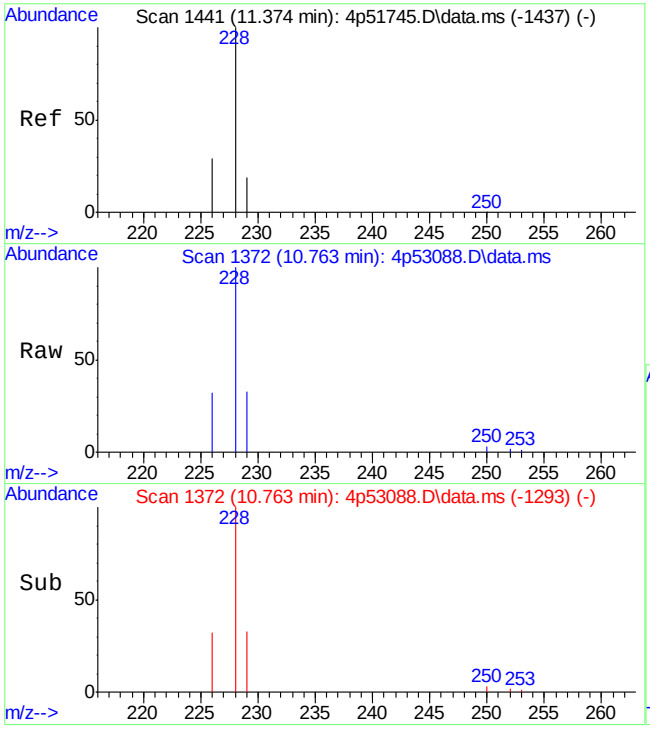


#28
Benzo[a]anthracene
Concen: 194.72 ppm m
RT: 10.731 min Scan# 1364
Delta R.T. -0.062 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:228 Resp: 4293

Ion	Ratio	Lower	Upper
228	100		
229	44.7	0.0	51.2
226	33.9	0.0	55.2

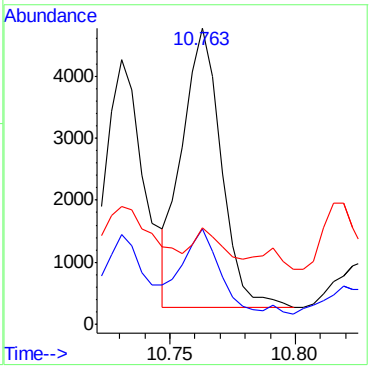


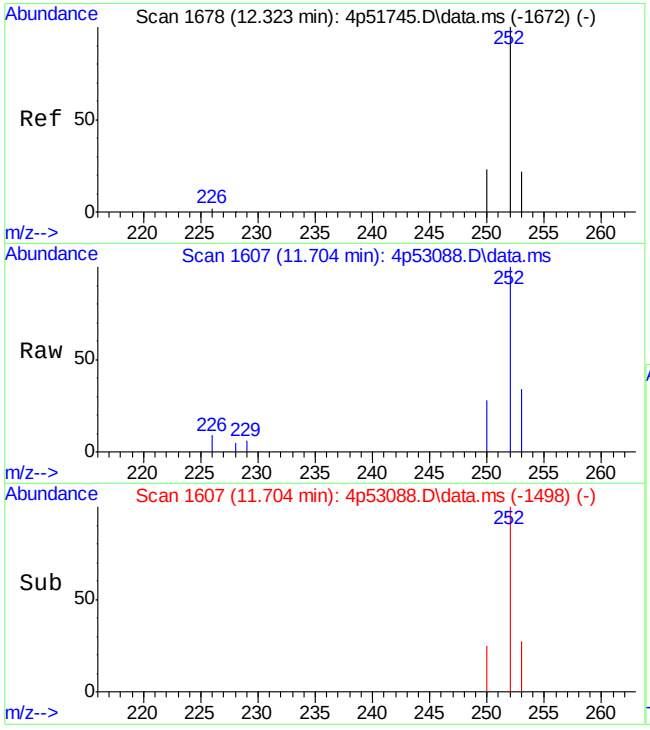


#29
Chrysene
Concen: 234.83 ppm m
RT: 10.763 min Scan# 1372
Delta R.T. -0.062 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:228 Resp: 4884

Ion	Ratio	Lower	Upper
228	100		
226	32.0	0.0	59.4
229	32.8	0.0	50.1

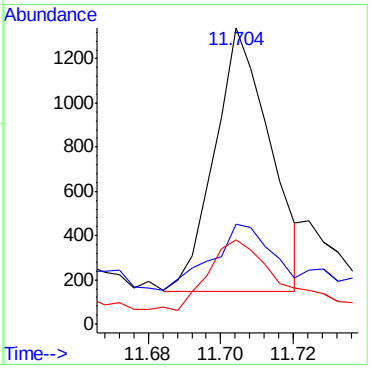


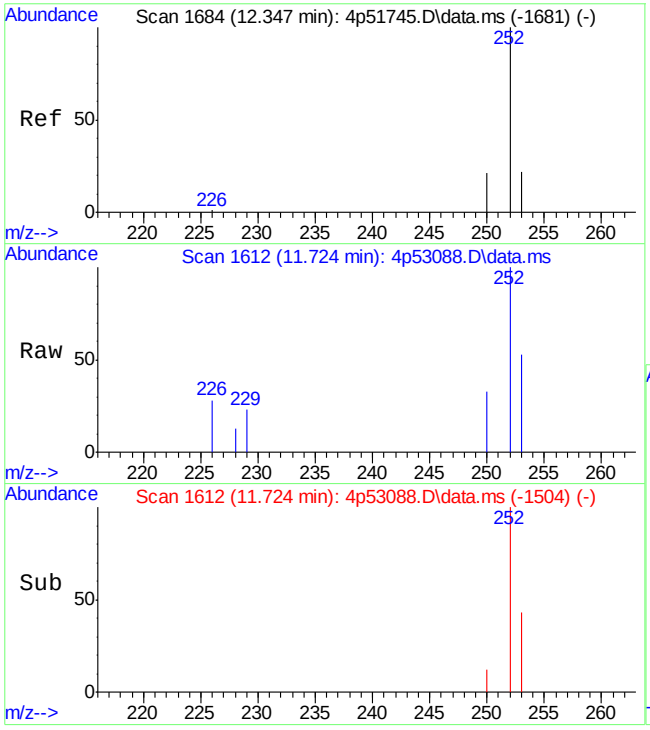


#31
Benzo[b]fluoranthene
Concen: 45.75 ppm m
RT: 11.704 min Scan# 1607
Delta R.T. -0.062 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:252 Resp: 1254

Ion	Ratio	Lower	Upper
252	100		
253	33.8	0.0	52.5
250	28.4	0.0	54.0

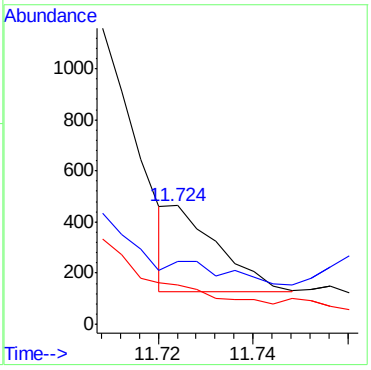


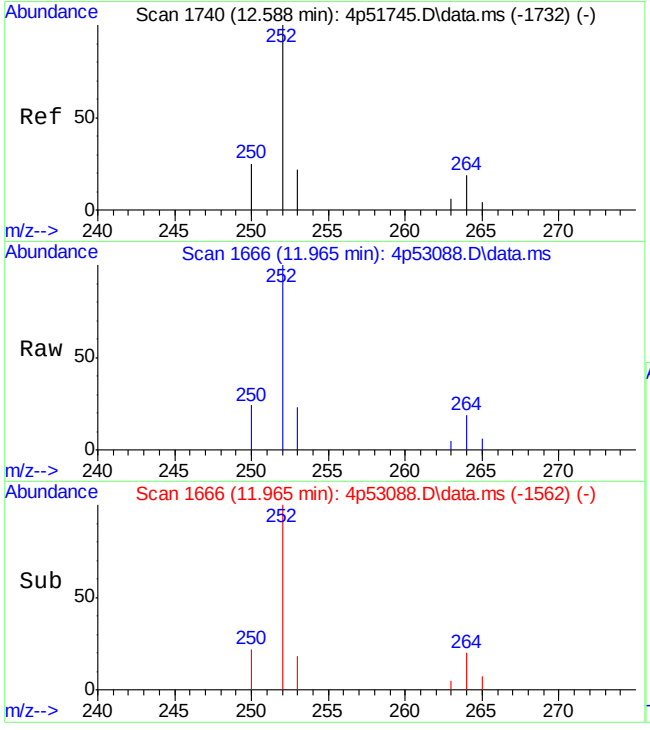


#32
Benzo[k]fluoranthene
Concen: 9.65 ppm m
RT: 11.724 min Scan# 1612
Delta R.T. -0.066 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:252 Resp: 241

Ion	Ratio	Lower	Upper
252	100		
253	52.7	0.0	52.1#
250	32.9	0.0	51.9

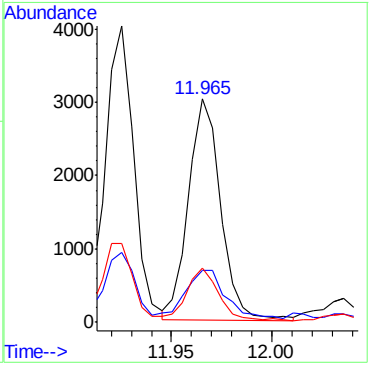


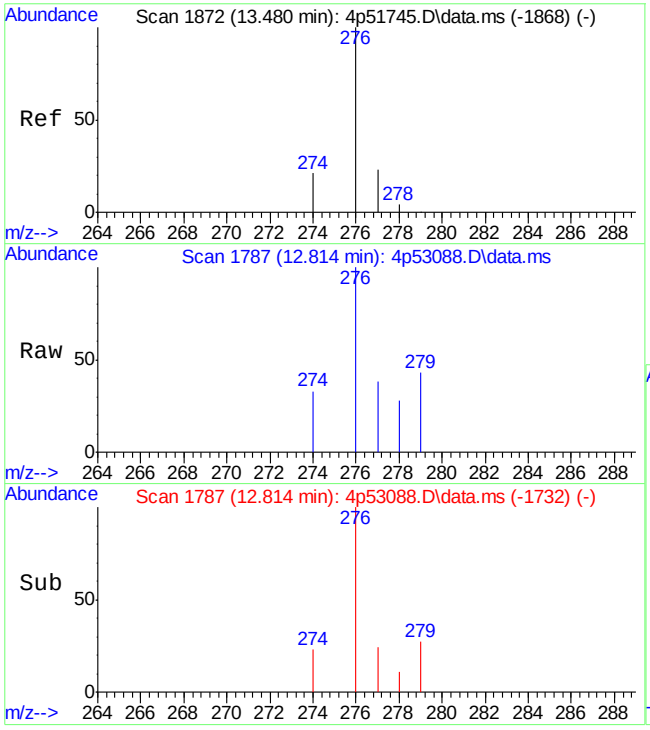


#33
Benzo[a]pyrene
Concen: 142.10 ppm
RT: 11.965 min Scan# 1666
Delta R.T. -0.058 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:252 Resp: 3361

Ion	Ratio	Lower	Upper
252	100		
253	20.0	0.0	49.3
250	23.5	0.0	53.7

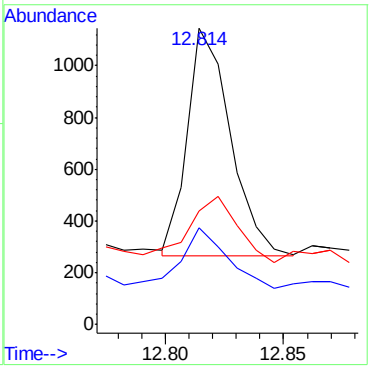


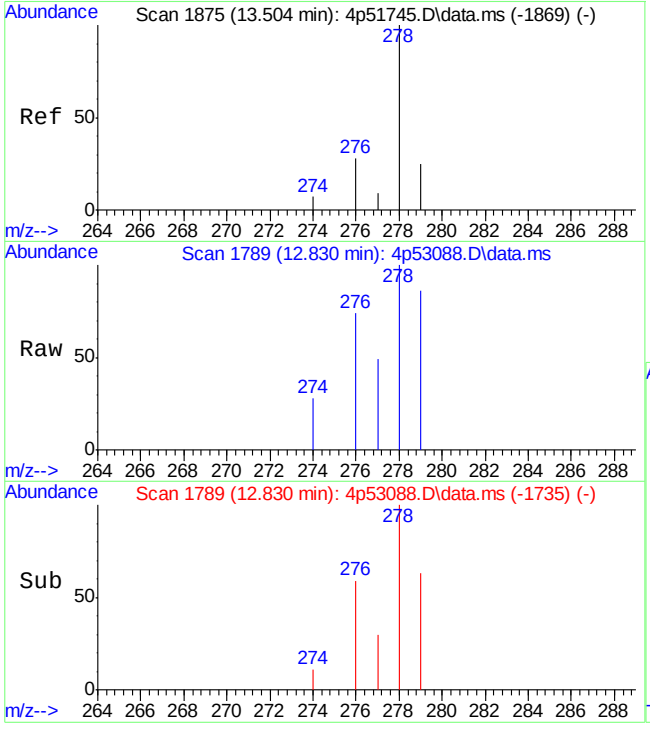


#34
Indeno[1,2,3-cd]pyrene
Concen: 37.82 ppm m
RT: 12.814 min Scan# 1787
Delta R.T. -0.061 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:276 Resp: 1114

Ion	Ratio	Lower	Upper
276	100		
274	32.8	0.0	52.3
277	38.3	0.0	50.6

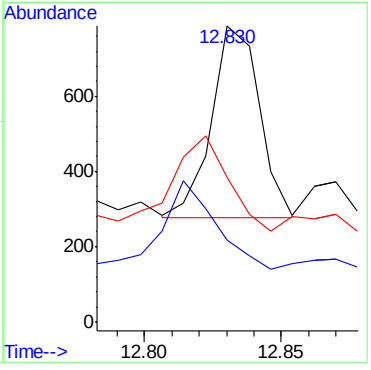


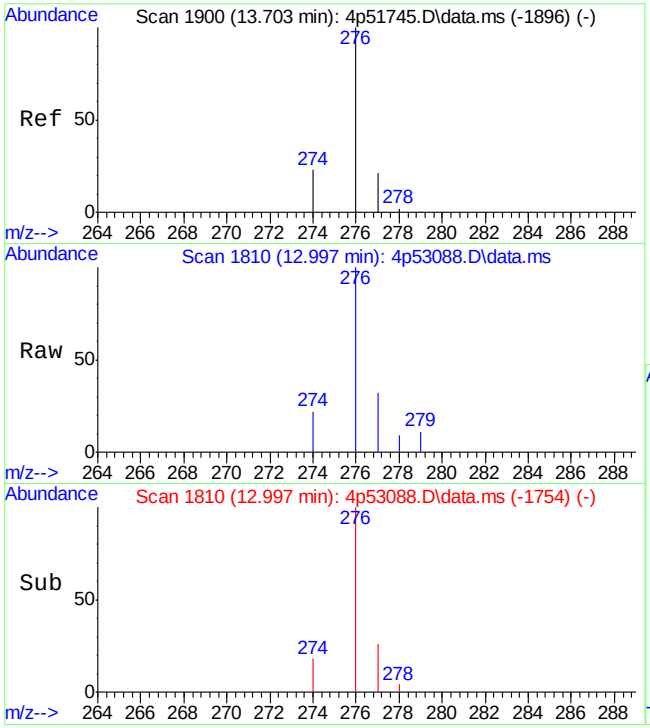


#35
Dibenz[a,h]anthracene
Concen: 25.18 ppm m
RT: 12.830 min Scan# 1789
Delta R.T. -0.069 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:278 Resp: 614

Ion	Ratio	Lower	Upper
278	100		
274	27.7	0.0	35.0
277	48.8	0.0	37.0#

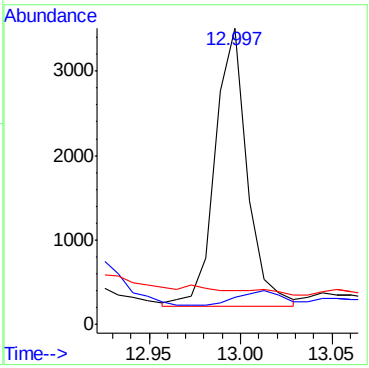




#36
Benzo[g,h,i]perylene
Concen: 160.64 ppm
RT: 12.997 min Scan# 1810
Delta R.T. -0.053 min
Lab File: 4p53088.D
Acq: 21 Apr 2022 11:09 am

Tgt Ion:276 Resp: 4007

Ion	Ratio	Lower	Upper
276	100		
278	1.9	0.0	32.8
279	0.0	0.0	30.0



9.1.31

9

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:06

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53082.D
Acq On : 21 Apr 2022 7:04 am
Operator : chriss2
Sample : jd43215-23
Misc : op39192a,e4p2772,250,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 21 14:22:10 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

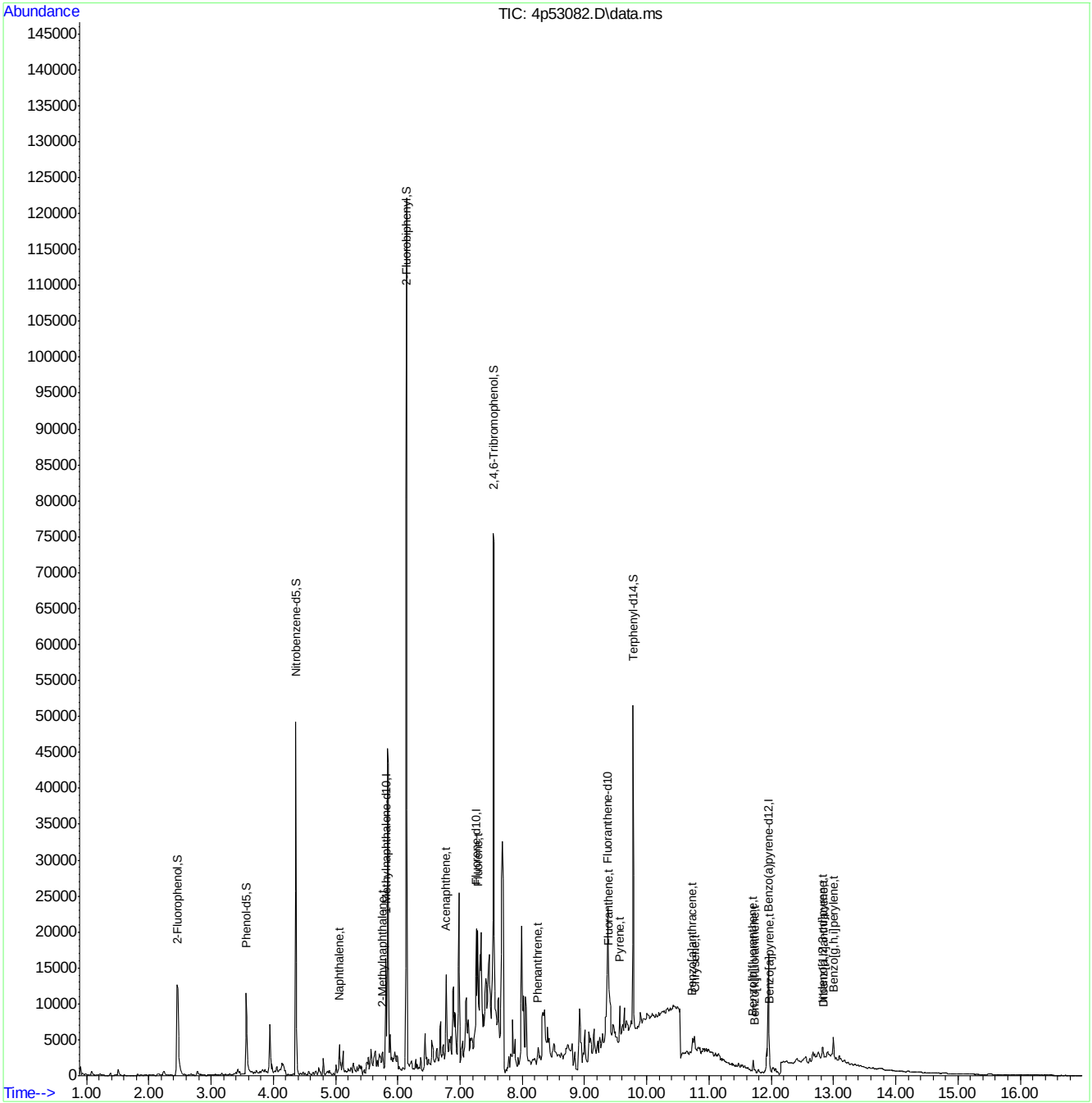
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	5.809	150	5512	800.00	ppm	-0.06
13) Fluorene-d10	7.261	176	9177	800.00	ppm	-0.06
20) Fluoranthene-d10	9.373	212	15490m	800.00	ppm	-0.02
30) Benzo(a)pyrene-d12	11.951	264	12350	800.00	ppm	-0.06
System Monitoring Compounds						
3) 2-Fluorophenol	2.464	112	10913m	3467.99	ppm	-0.08
Spiked Amount 50.000			Recovery	= 6935.98%		
4) Phenol-d5	3.561	99	12931	2586.47	ppm	-0.05
Spiked Amount 50.000			Recovery	= 5172.94%		
7) Nitrobenzene-d5	4.363	82	32440	5877.57	ppm	-0.07
Spiked Amount 50.000			Recovery	= 11755.14%		
14) 2-Fluorobiphenyl	6.142	172	67671	4387.19	ppm	-0.06
Spiked Amount 50.000			Recovery	= 8774.38%		
19) 2,4,6-Tribromophenol	7.533	330	31010	5940.52	ppm	-0.06
Spiked Amount 50.000			Recovery	= 11881.04%		
27) Terphenyl-d14	9.779	244	29743	1859.80	ppm	-0.06
Spiked Amount 50.000			Recovery	= 3719.60%		
Target Compounds						Qvalue
8) Naphthalene	5.063	128	2635m	156.82	ppm	
10) 2-Methylnaphthalene	5.755	141	794	87.98	ppm	# 1
16) Acenaphthene	6.778	153	5537m	395.22	ppm	
17) Fluorene	7.286	166	5284m	352.82	ppm	
23) Phenanthrene	8.253	178	1744m	74.47	ppm	
25) Fluoranthene	9.392	202	1654m	61.55	ppm	
26) Pyrene	9.567	202	3680	128.56	ppm	92
28) Benzo[a]anthracene	10.735	228	1020m	39.78	ppm	
29) Chrysene	10.767	228	1752m	72.43	ppm	
31) Benzo[b]fluoranthene	11.708	252	1141m	36.48	ppm	
32) Benzo[k]fluoranthene	11.732	252	164m	5.76	ppm	
33) Benzo[a]pyrene	11.971	252	2063m	76.43	ppm	
34) Indeno[1,2,3-cd]pyrene	12.822	276	827m	24.61	ppm	
35) Dibenz[a,h]anthracene	12.838	278	668m	24.01	ppm	
36) Benzo[g,h,i]perylene	12.997	276	2588m	90.93	ppm	

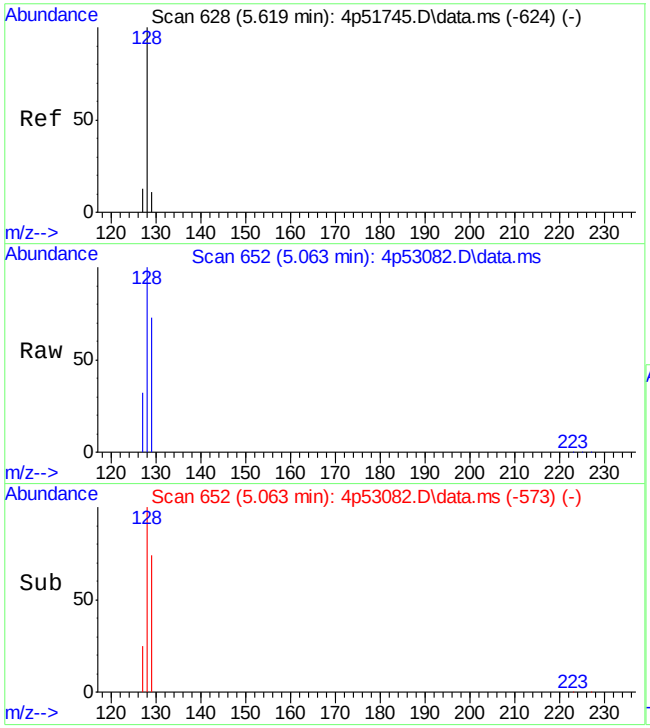
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53082.D
Acq On : 21 Apr 2022 7:04 am
Operator : chriss2
Sample : jd43215-23
Misc : op39192a,e4p2772,250,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 21 14:22:10 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

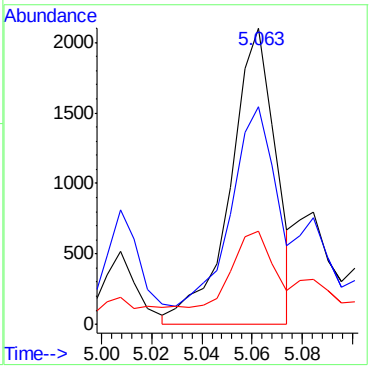


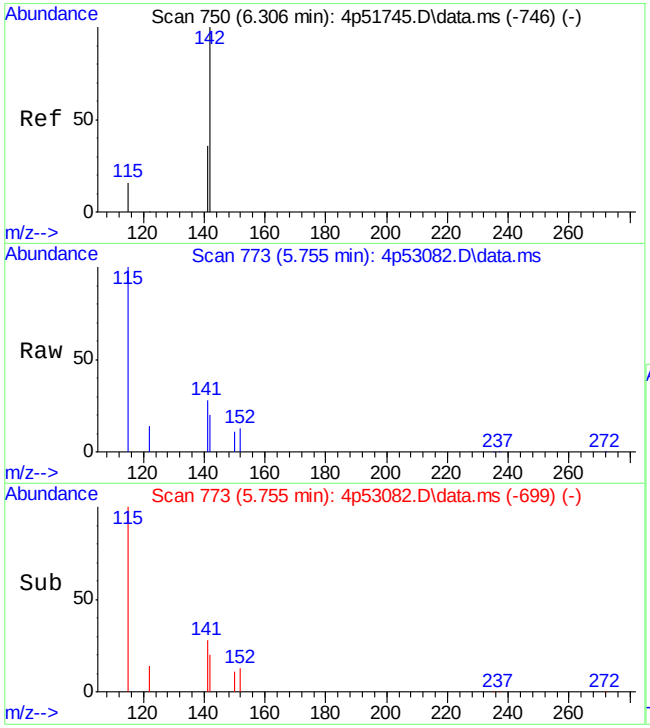


#8
Naphthalene
Concen: 156.82 ppm m
RT: 5.063 min Scan# 652
Delta R.T. -0.065 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:128 Resp: 2635

Ion	Ratio	Lower	Upper
128	100		
129	73.4	0.0	39.8#
127	31.6	0.0	44.0

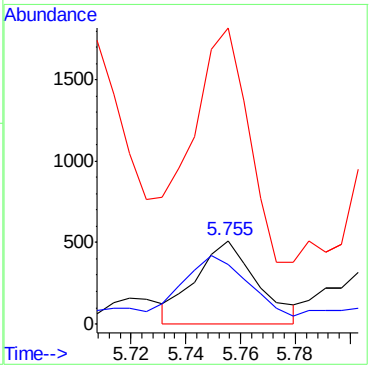


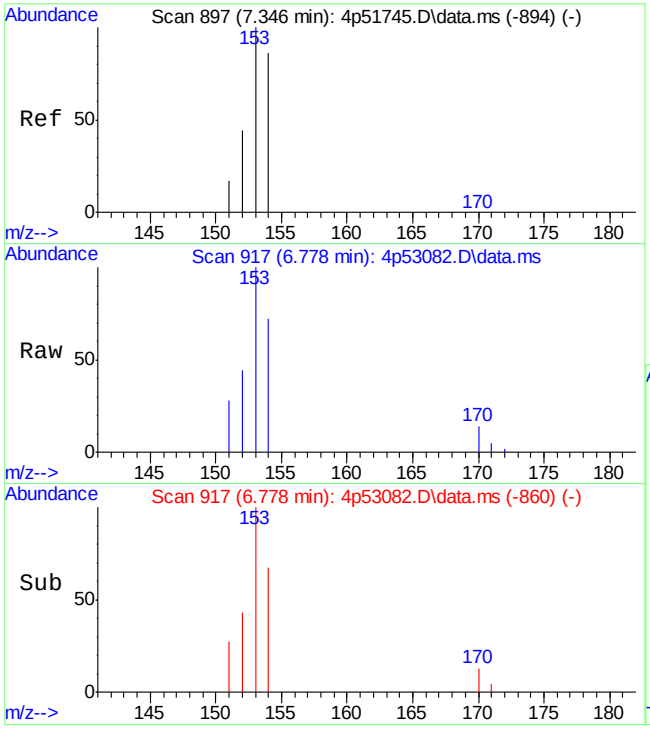


#10
2-Methylnaphthalene
Concen: 87.98 ppm
RT: 5.755 min Scan# 773
Delta R.T. -0.064 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:141 Resp: 794

Ion	Ratio	Lower	Upper
141	100		
142	71.7	81.8	141.8#
115	318.8	21.4	81.4#

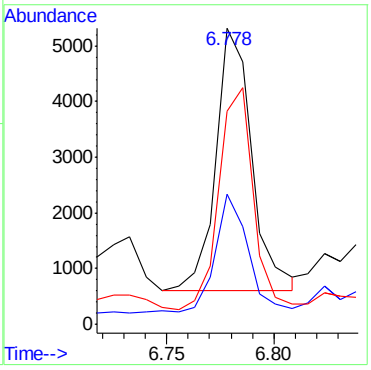


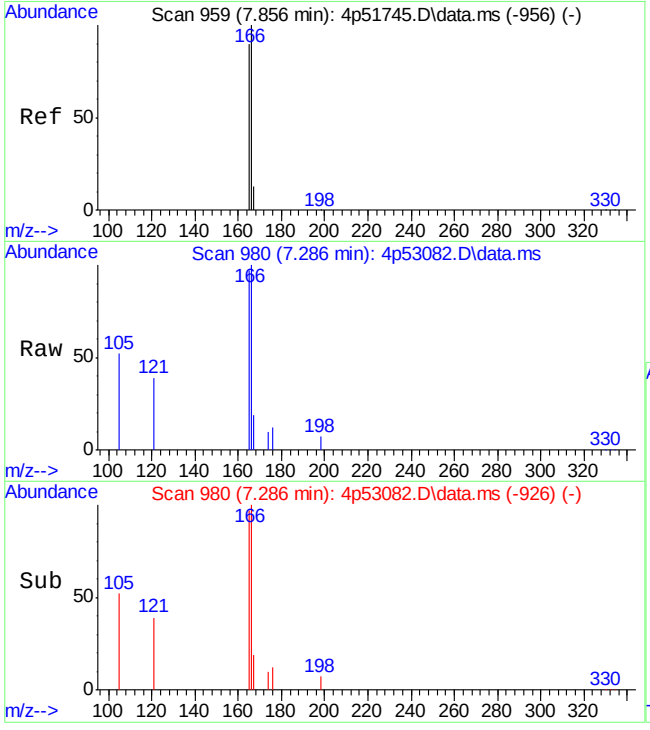


#16
Acenaphthene
Concen: 395.22 ppm m
RT: 6.778 min Scan# 917
Delta R.T. -0.068 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:153 Resp: 5537

Ion	Ratio	Lower	Upper
153	100		
152	43.9	14.3	74.3
154	72.0	61.2	121.2

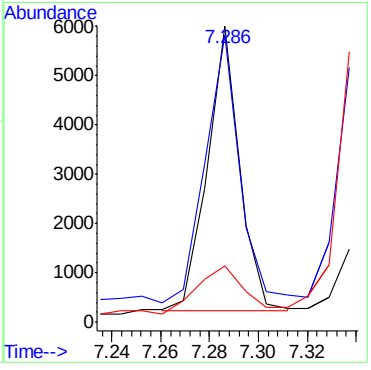


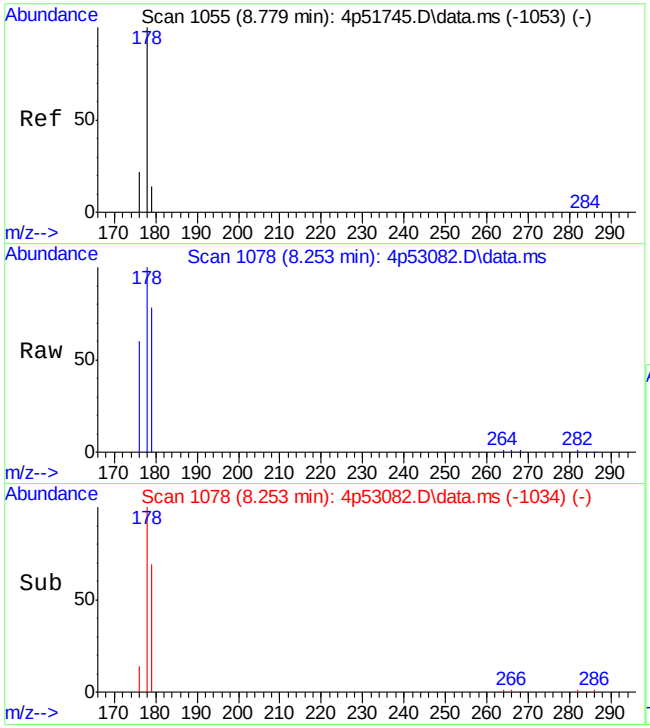


#17
Fluorene
Concen: 352.82 ppm m
RT: 7.286 min Scan# 980
Delta R.T. -0.059 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:166 Resp: 5284

Ion	Ratio	Lower	Upper
166	100		
165	97.0	76.1	136.1
167	19.1	0.0	41.0

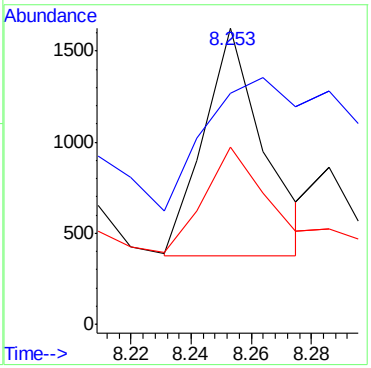


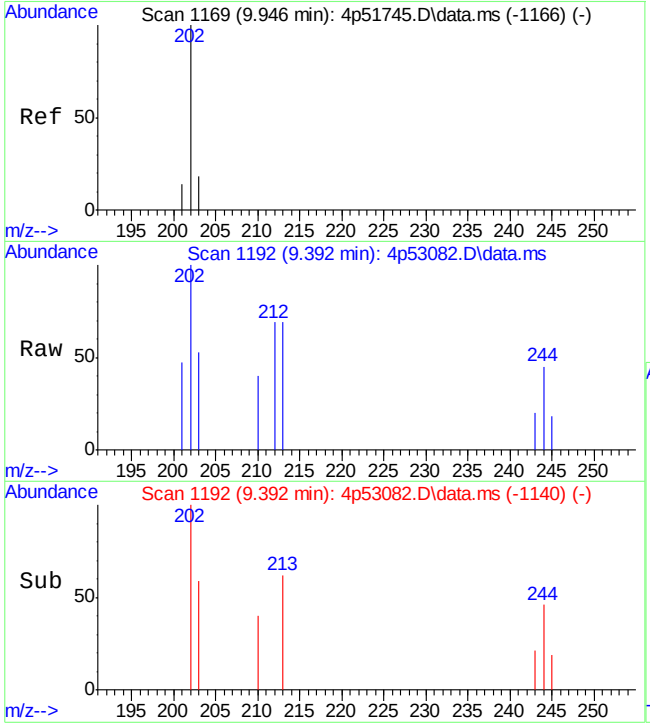


#23
Phenanthrene
Concen: 74.47 ppm m
RT: 8.253 min Scan# 1078
Delta R.T. -0.013 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:178 Resp: 1744

Ion	Ratio	Lower	Upper
178	100		
179	78.0	0.0	44.1#
176	60.0	0.0	49.6#

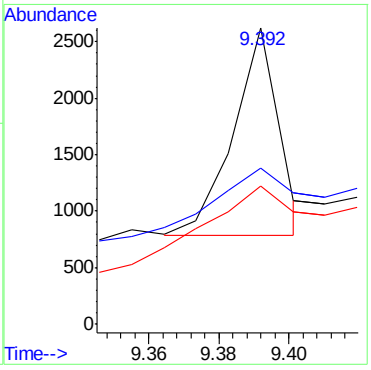


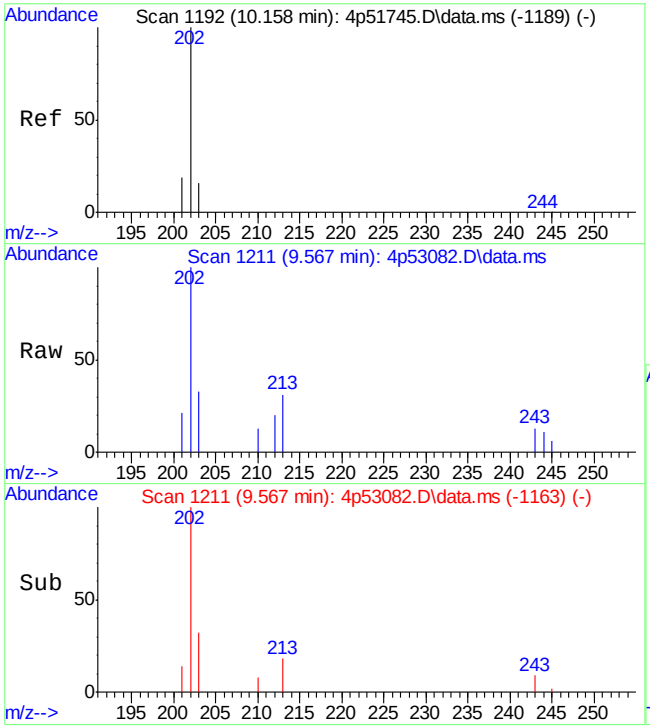


#25
Fluoranthene
Concen: 61.55 ppm m
RT: 9.392 min Scan# 1192
Delta R.T. -0.020 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:202 Resp: 1654

Ion	Ratio	Lower	Upper
202	100		
203	52.7	0.0	47.5#
201	46.6	0.0	42.8#

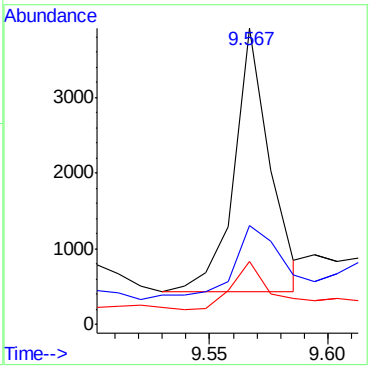


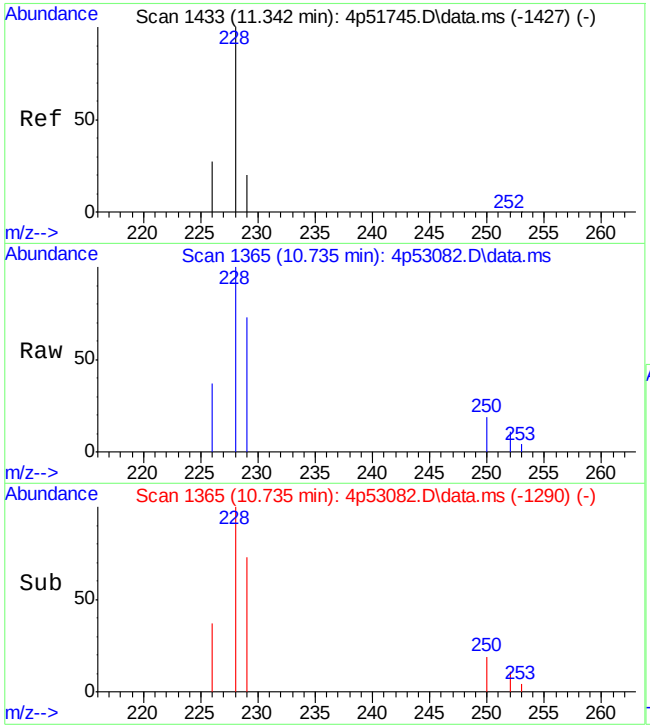


#26
Pyrene
Concen: 128.56 ppm
RT: 9.567 min Scan# 1211
Delta R.T. -0.057 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:202 Resp: 3680

Ion	Ratio	Lower	Upper
202	100		
203	24.1	0.0	49.7
201	17.0	0.0	44.4

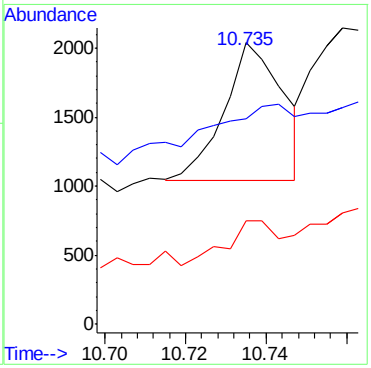


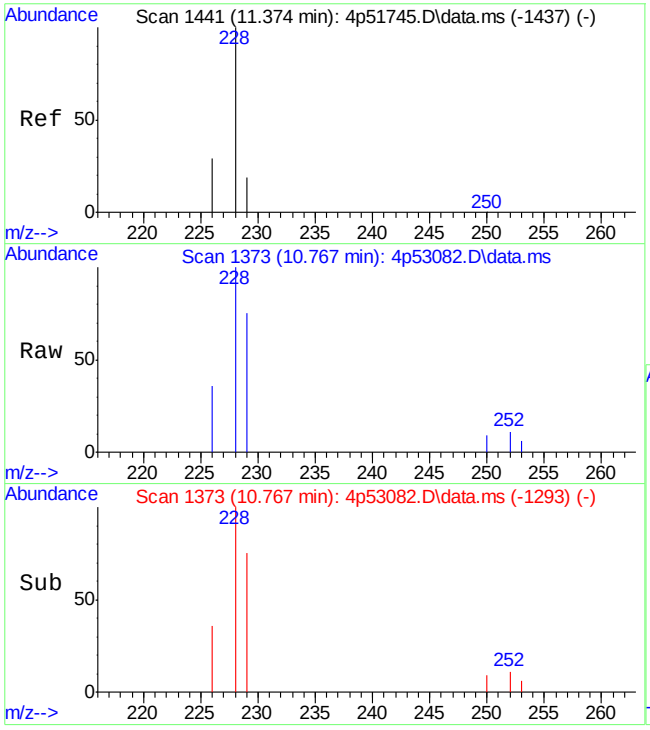


#28
Benzo[a]anthracene
Concen: 39.78 ppm m
RT: 10.735 min Scan# 1365
Delta R.T. -0.058 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:228 Resp: 1020

Ion	Ratio	Lower	Upper
228	100		
229	72.9	0.0	51.2#
226	36.8	0.0	55.2

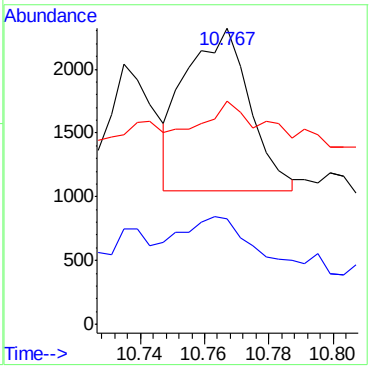


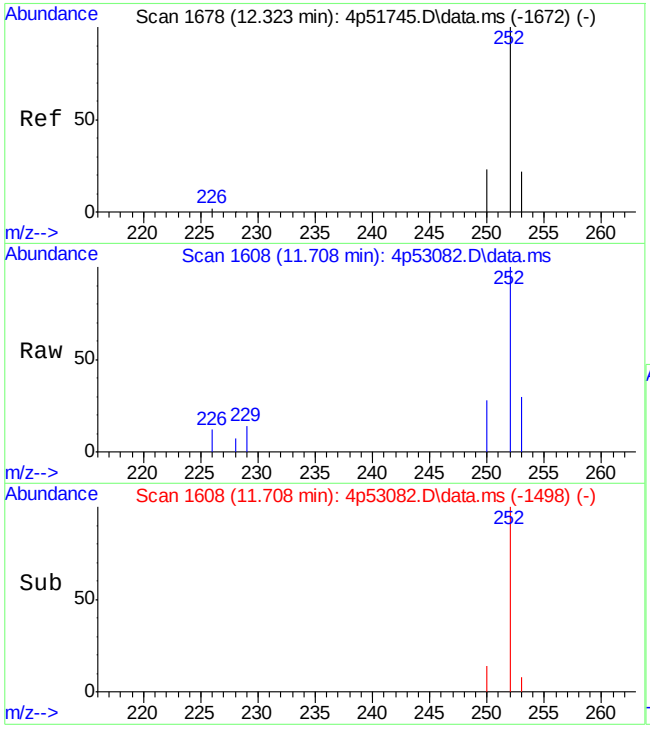


#29
Chrysene
Concen: 72.43 ppm m
RT: 10.767 min Scan# 1373
Delta R.T. -0.058 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:228 Resp: 1752

Ion	Ratio	Lower	Upper
228	100		
226	35.8	0.0	59.4
229	75.4	0.0	50.1#

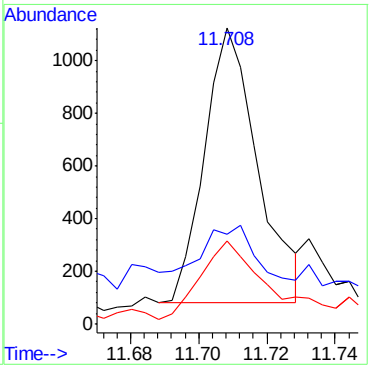


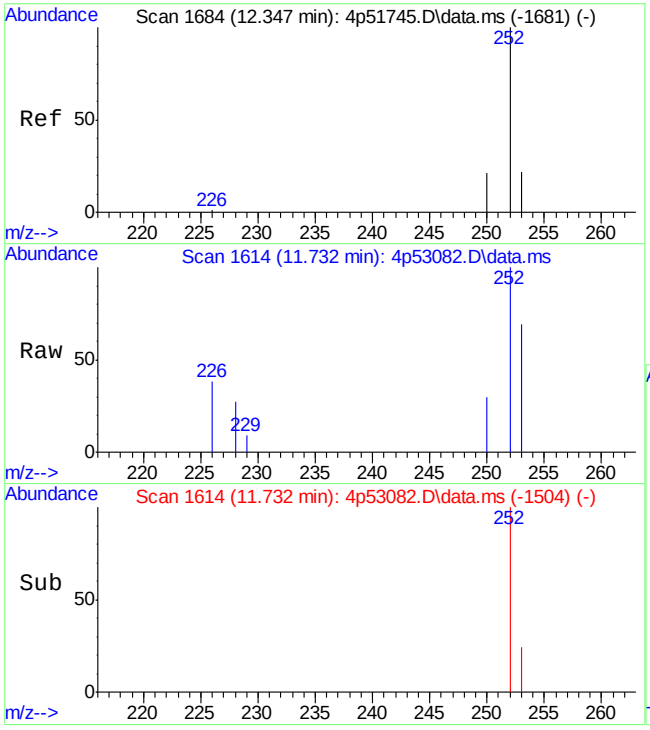


#31
Benzo[b]fluoranthene
Concen: 36.48 ppm m
RT: 11.708 min Scan# 1608
Delta R.T. -0.058 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:252 Resp: 1141

Ion	Ratio	Lower	Upper
252	100		
253	30.4	0.0	52.5
250	28.0	0.0	54.0

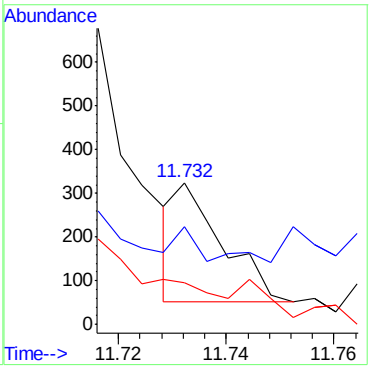


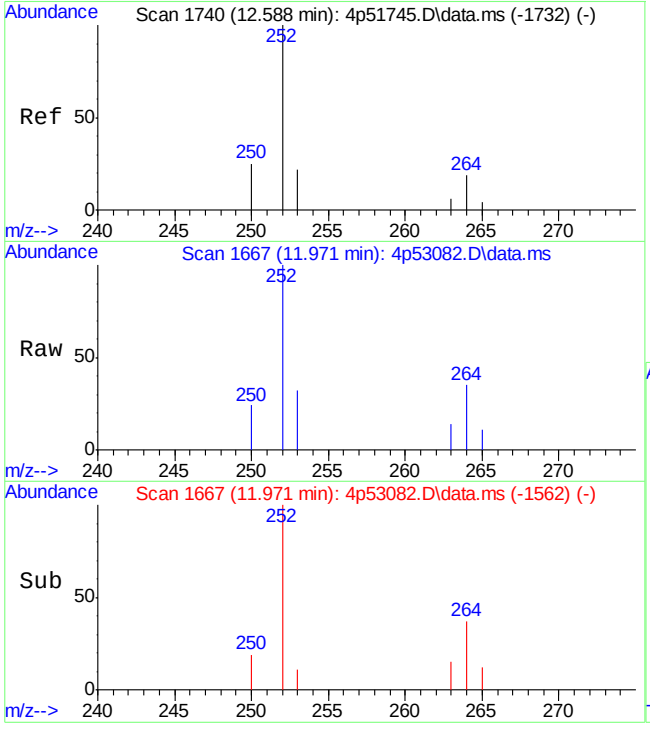


#32
Benzo[k]fluoranthene
Concen: 5.76 ppm m
RT: 11.732 min Scan# 1614
Delta R.T. -0.058 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:252 Resp: 164

Ion	Ratio	Lower	Upper
252	100		
253	69.1	0.0	52.1#
250	29.6	0.0	51.9

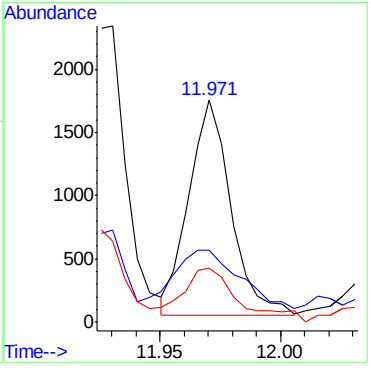


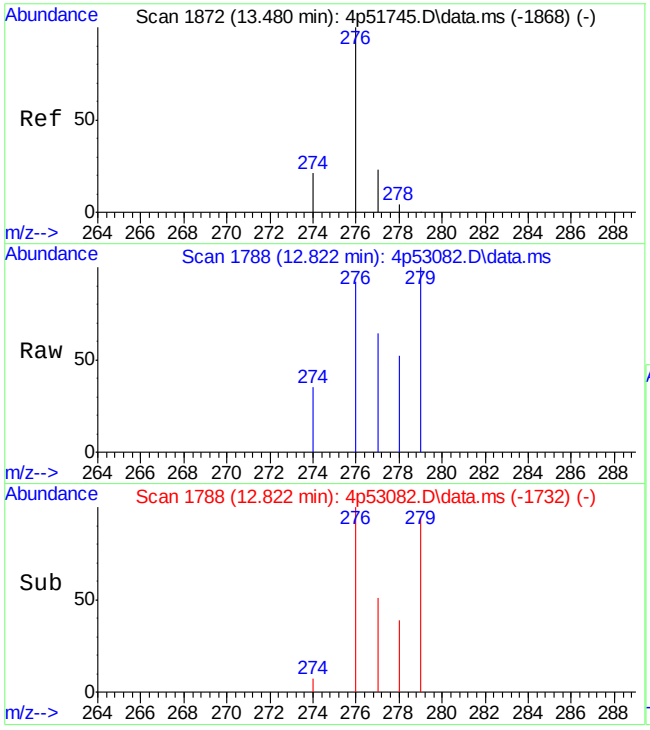


#33
Benzo[a]pyrene
Concen: 76.43 ppm m
RT: 11.971 min Scan# 1667
Delta R.T. -0.053 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:252 Resp: 2063

Ion	Ratio	Lower	Upper
252	100		
253	32.3	0.0	49.3
250	24.2	0.0	53.7

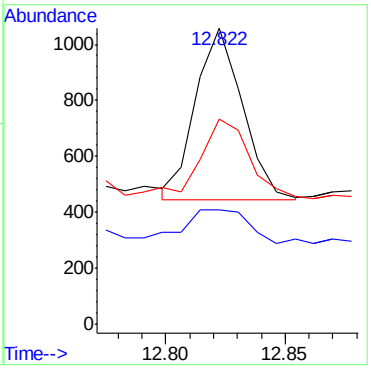


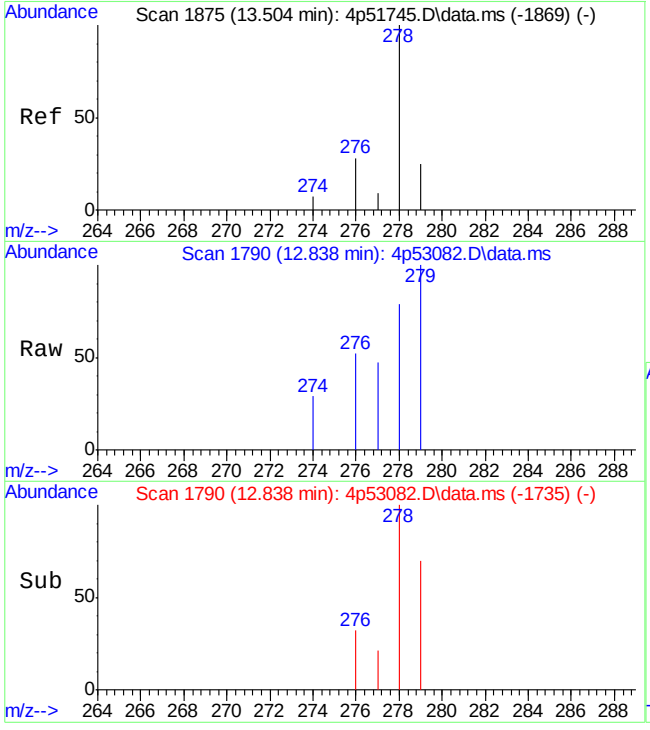


#34
Indeno[1,2,3-cd]pyrene
Concen: 24.61 ppm m
RT: 12.822 min Scan# 1788
Delta R.T. -0.053 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:276 Resp: 827

Ion	Ratio	Lower	Upper
276	100		
274	38.6	0.0	52.3
277	69.4	0.0	50.6#

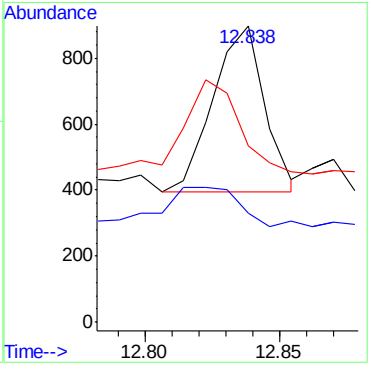


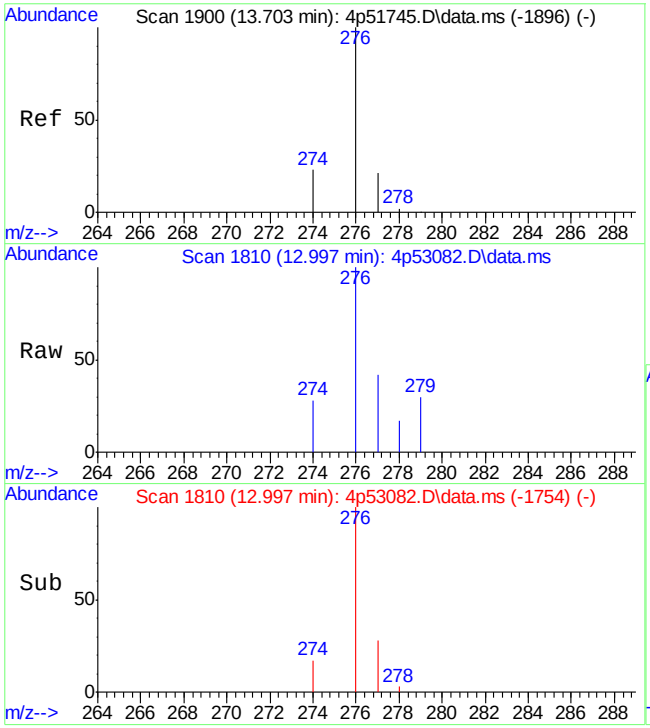


#35
Dibenz[a,h]anthracene
Concen: 24.01 ppm m
RT: 12.838 min Scan# 1790
Delta R.T. -0.061 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:278 Resp: 668

Ion	Ratio	Lower	Upper
278	100		
274	36.7	0.0	35.0#
277	59.5	0.0	37.0#

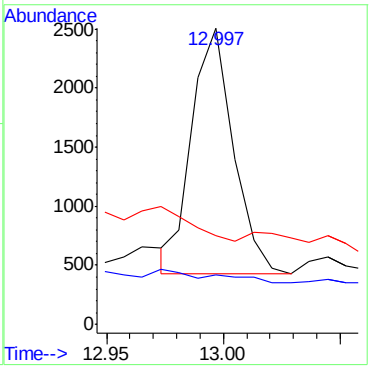




#36
Benzo[g,h,i]perylene
Concen: 90.93 ppm m
RT: 12.997 min Scan# 1810
Delta R.T. -0.053 min
Lab File: 4p53082.D
Acq: 21 Apr 2022 7:04 am

Tgt Ion:276 Resp: 2588

Ion	Ratio	Lower	Upper
276	100		
278	16.7	0.0	32.8
279	29.8	0.0	30.0



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:06

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53083.D
Acq On : 21 Apr 2022 7:27 am
Operator : chriss2
Sample : jd43215-24
Misc : op39192a,e4p2772,230,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 21 14:23:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

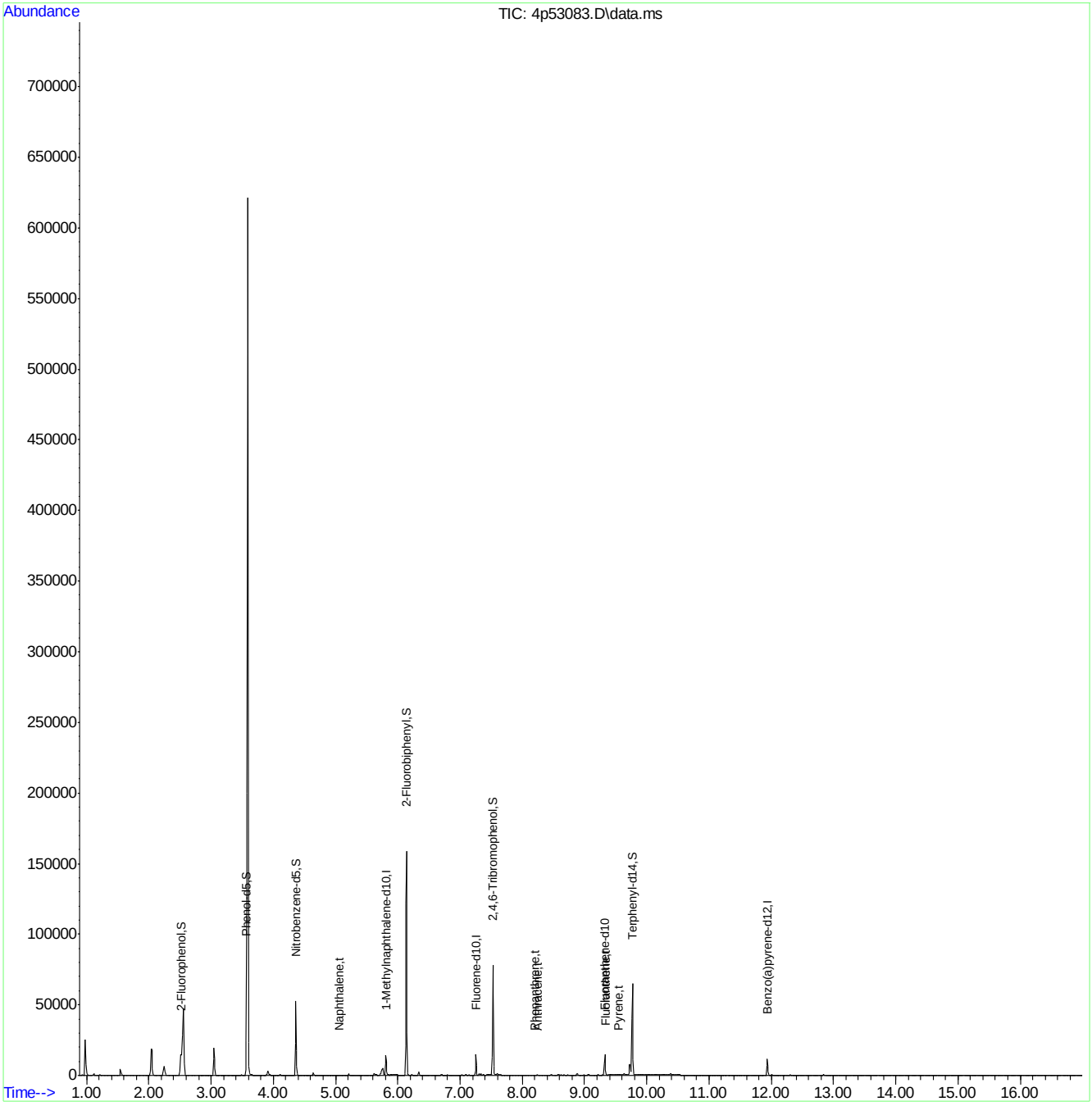
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	5.809	150	4453	800.00	ppm	-0.06
13) Fluorene-d10	7.252	176	6797	800.00	ppm	-0.07
20) Fluoranthene-d10	9.327	212	11407	800.00	ppm	-0.07
30) Benzo(a)pyrene-d12	11.935	264	8648	800.00	ppm	-0.07
System Monitoring Compounds						
3) 2-Fluorophenol	2.521	112	10594	4167.26	ppm	-0.02
Spiked Amount 50.000			Recovery = 8334.52%			
4) Phenol-d5	3.565	99	13622	3372.66	ppm	-0.05
Spiked Amount 50.000			Recovery = 6745.32%			
7) Nitrobenzene-d5	4.363	82	32730	7340.40	ppm	-0.07
Spiked Amount 50.000			Recovery = 14680.80%			
14) 2-Fluorobiphenyl	6.142	172	87787	7684.18	ppm	-0.06
Spiked Amount 50.000			Recovery = 15368.36%			
19) 2,4,6-Tribromophenol	7.525	330	33548	8677.06	ppm	-0.07
Spiked Amount 50.000			Recovery = 17354.12%			
27) Terphenyl-d14	9.769	244	47621	4043.52	ppm	-0.07
Spiked Amount 50.000			Recovery = 8087.04%			
Target Compounds						Qvalue
8) Naphthalene	5.062	128	111m	8.18	ppm	
23) Phenanthrene	8.198	178	90m	5.22	ppm	
24) Anthracene	8.242	178	303	18.42	ppm	93
25) Fluoranthene	9.337	202	81m	4.09	ppm	
26) Pyrene	9.548	202	113m	5.36	ppm	

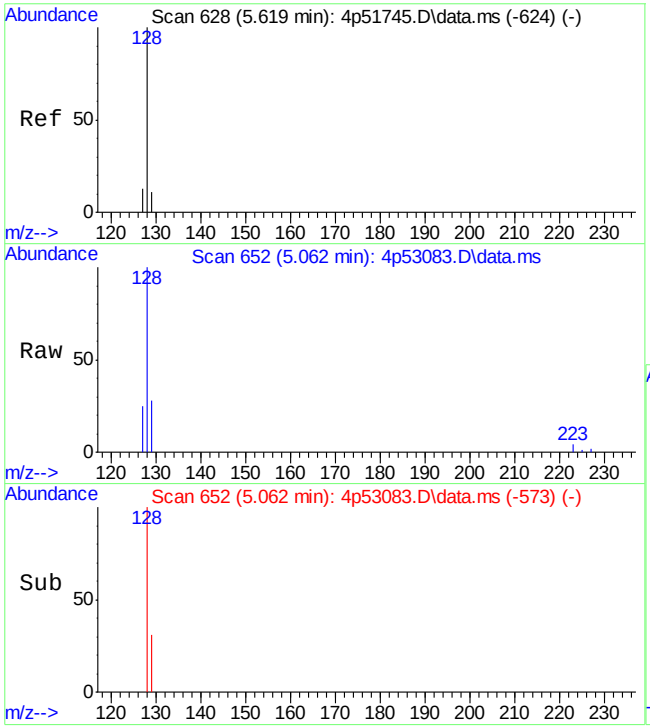
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53083.D
Acq On : 21 Apr 2022 7:27 am
Operator : chriss2
Sample : jd43215-24
Misc : op39192a,e4p2772,230,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 21 14:23:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

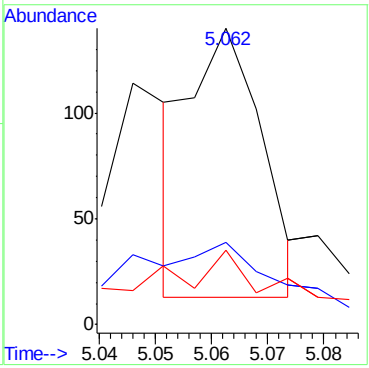


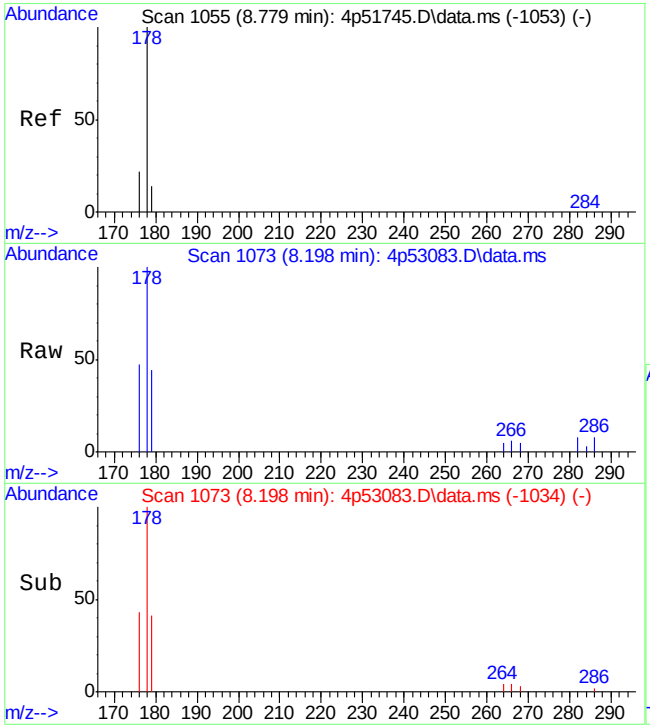


#8
Naphthalene
Concen: 8.18 ppm m
RT: 5.062 min Scan# 652
Delta R.T. -0.065 min
Lab File: 4p53083.D
Acq: 21 Apr 2022 7:27 am

Tgt Ion:128 Resp: 111

Ion	Ratio	Lower	Upper
128	100		
129	27.9	0.0	39.8
127	25.0	0.0	44.0

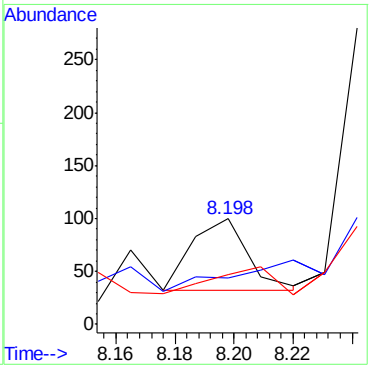


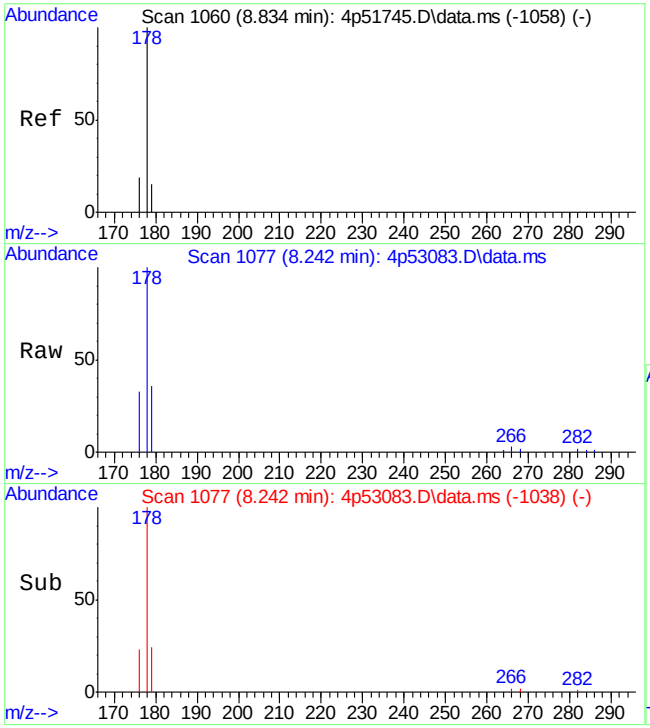


#23
Phenanthrene
Concen: 5.22 ppm m
RT: 8.198 min Scan# 1073
Delta R.T. -0.068 min
Lab File: 4p53083.D
Acq: 21 Apr 2022 7:27 am

Tgt Ion:178 Resp: 90

Ion	Ratio	Lower	Upper
178	100		
179	44.0	0.0	44.1
176	47.0	0.0	49.6

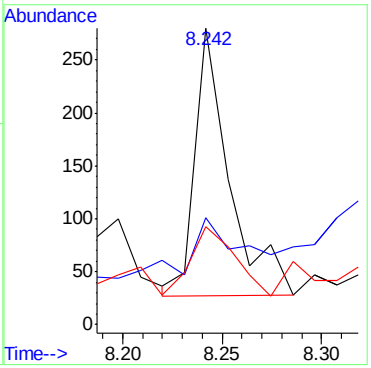


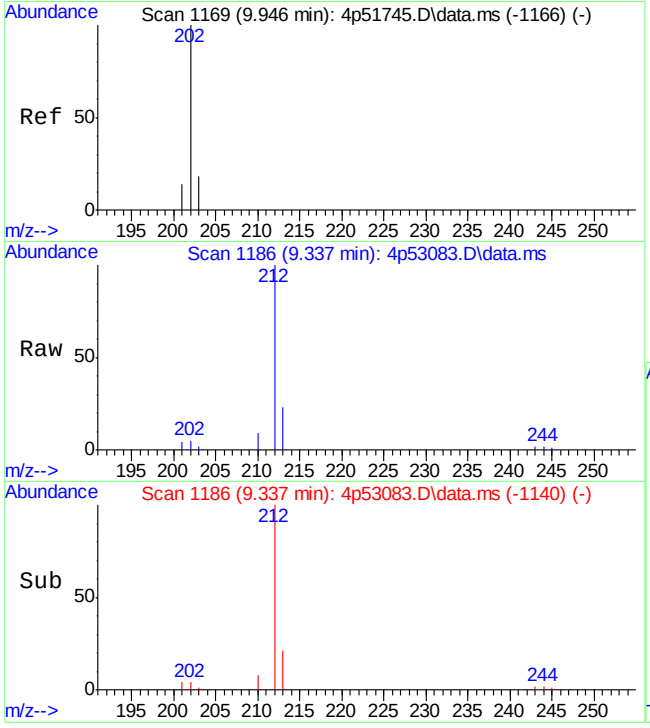


#24
Anthracene
Concen: 18.42 ppm
RT: 8.242 min Scan# 1077
Delta R.T. -0.068 min
Lab File: 4p53083.D
Acq: 21 Apr 2022 7:27 am

Tgt Ion:178 Resp: 303

Ion	Ratio	Lower	Upper
178	100		
179	13.5	0.0	46.4
176	19.8	0.0	46.5

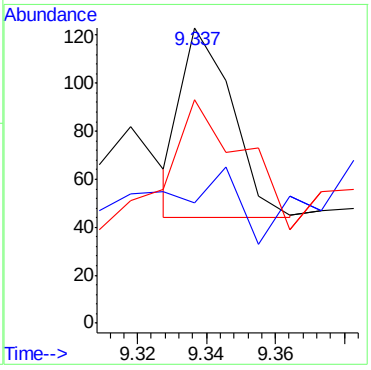


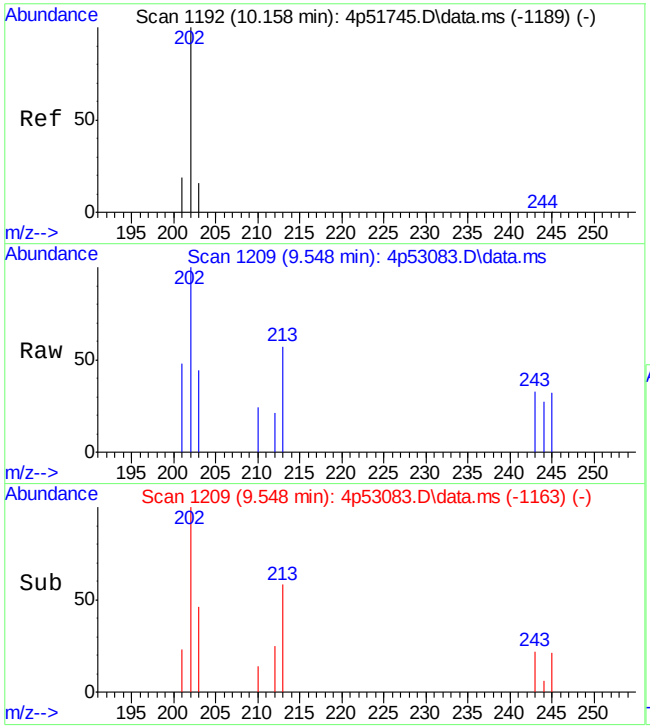


#25
Fluoranthene
Concen: 4.09 ppm m
RT: 9.337 min Scan# 1186
Delta R.T. -0.075 min
Lab File: 4p53083.D
Acq: 21 Apr 2022 7:27 am

Tgt Ion:202 Resp: 81

Ion	Ratio	Lower	Upper
202	100		
203	40.7	0.0	47.5
201	75.6	0.0	42.8#

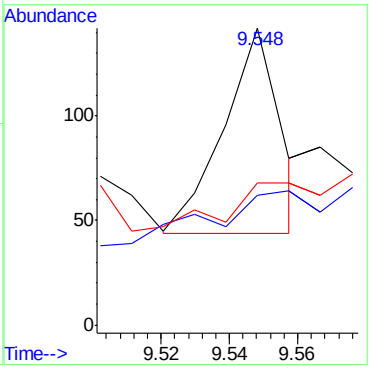




#26
Pyrene
Concen: 5.36 ppm m
RT: 9.548 min Scan# 1209
Delta R.T. -0.075 min
Lab File: 4p53083.D
Acq: 21 Apr 2022 7:27 am

Tgt Ion:202 Resp: 113

Ion	Ratio	Lower	Upper
202	100		
203	43.7	0.0	49.7
201	47.9	0.0	44.4#



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:06

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53084.D
Acq On : 21 Apr 2022 7:50 am
Operator : chriss2
Sample : jd43215-25
Misc : op39192a,e4p2772,230,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 21 14:27:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

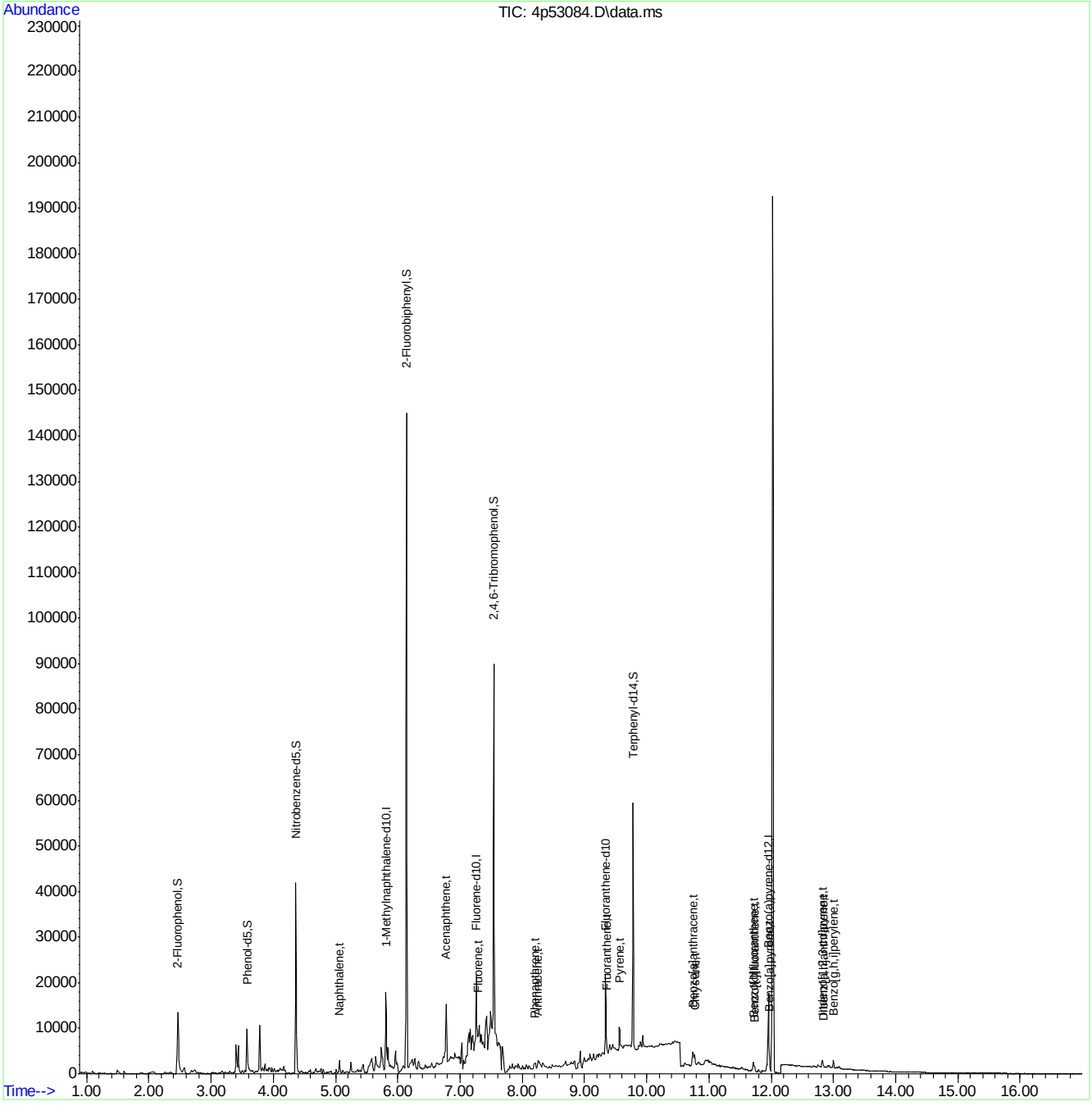
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	5.809	150	5576	800.00	ppm	-0.06
13) Fluorene-d10	7.261	176	7711	800.00	ppm	-0.06
20) Fluoranthene-d10	9.337	212	14070	800.00	ppm	-0.06
30) Benzo(a)pyrene-d12	11.956	264	12812	800.00	ppm	-0.05
System Monitoring Compounds						
3) 2-Fluorophenol	2.464	112	9149m	2874.05	ppm	-0.08
Spiked Amount 50.000			Recovery	= 5748.10%		
4) Phenol-d5	3.575	99	10623	2100.43	ppm	-0.04
Spiked Amount 50.000			Recovery	= 4200.86%		
7) Nitrobenzene-d5	4.364	82	28219	5054.12	ppm	-0.07
Spiked Amount 50.000			Recovery	= 10108.24%		
14) 2-Fluorobiphenyl	6.142	172	75030	5789.07	ppm	-0.06
Spiked Amount 50.000			Recovery	= 11578.14%		
19) 2,4,6-Tribromophenol	7.542	330	31502	7182.09	ppm	-0.05
Spiked Amount 50.000			Recovery	= 14364.18%		
27) Terphenyl-d14	9.779	244	37964	2613.43	ppm	-0.06
Spiked Amount 50.000			Recovery	= 5226.86%		
Target Compounds						Qvalue
8) Naphthalene	5.063	128	1917	112.78	ppm	77
16) Acenaphthene	6.778	153	6490m	551.31	ppm	
17) Fluorene	7.286	166	1416m	112.52	ppm	
23) Phenanthrene	8.209	178	1356m	63.75	ppm	
24) Anthracene	8.253	178	1292m	63.69	ppm	
25) Fluoranthene	9.355	202	2541	104.10	ppm	93
26) Pyrene	9.558	202	4591	176.58	ppm	93
28) Benzo[a]anthracene	10.739	228	2054m	88.18	ppm	
29) Chrysene	10.771	228	1594m	72.54	ppm	
31) Benzo[b]fluoranthene	11.712	252	1898	58.49	ppm	84
32) Benzo[k]fluoranthene	11.728	252	729	24.66	ppm	85
33) Benzo[a]pyrene	11.971	252	1990	71.07	ppm	99
34) Indeno[1,2,3-cd]pyrene	12.822	276	1408	40.38	ppm	93
35) Dibenz[a,h]anthracene	12.838	278	476	16.49	ppm	82
36) Benzo[g,h,i]perylene	12.997	276	1448	49.04	ppm	95

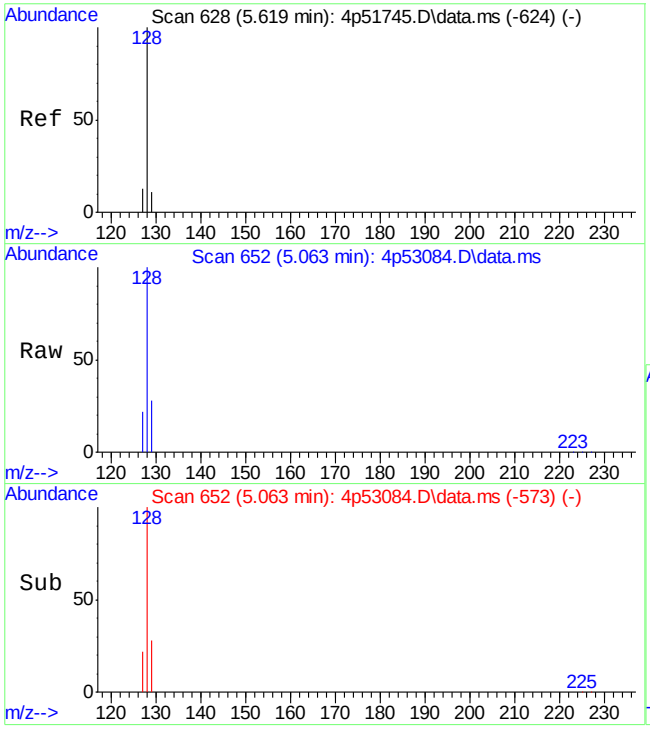
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53084.D
Acq On : 21 Apr 2022 7:50 am
Operator : chriss2
Sample : jd43215-25
Misc : op39192a,e4p2772,230,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 21 14:27:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

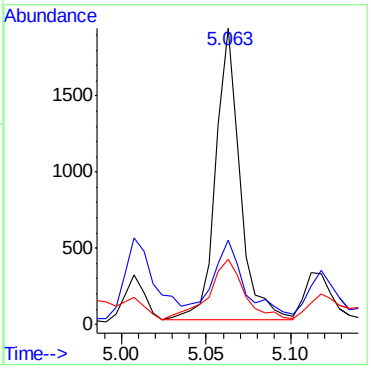


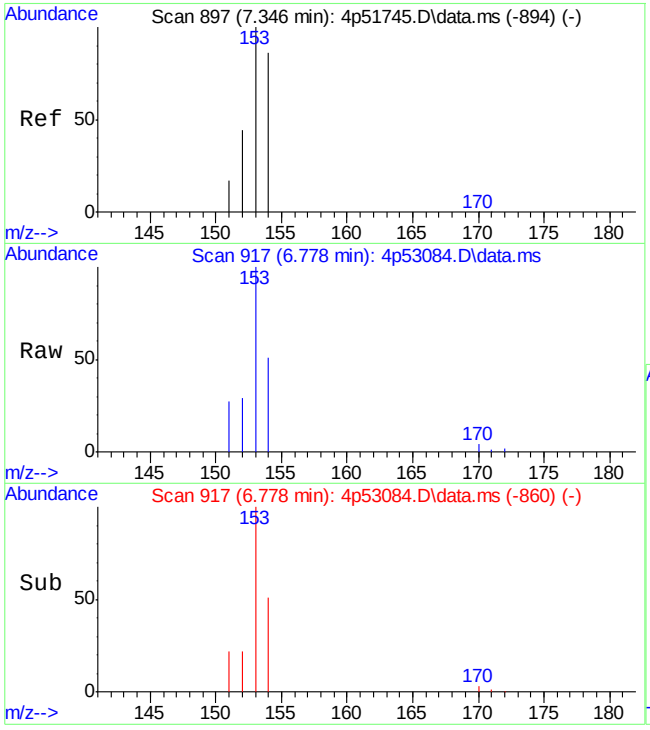


#8
Naphthalene
Concen: 112.78 ppm
RT: 5.063 min Scan# 652
Delta R.T. -0.065 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:128 Resp: 1917

Ion	Ratio	Lower	Upper
128	100		
129	22.1	0.0	39.8
127	20.6	0.0	44.0

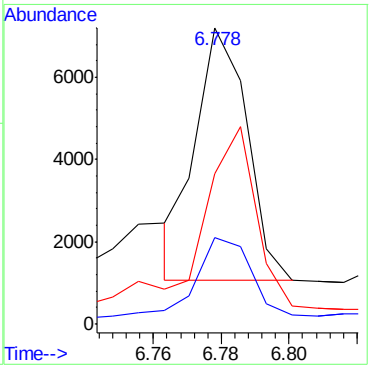


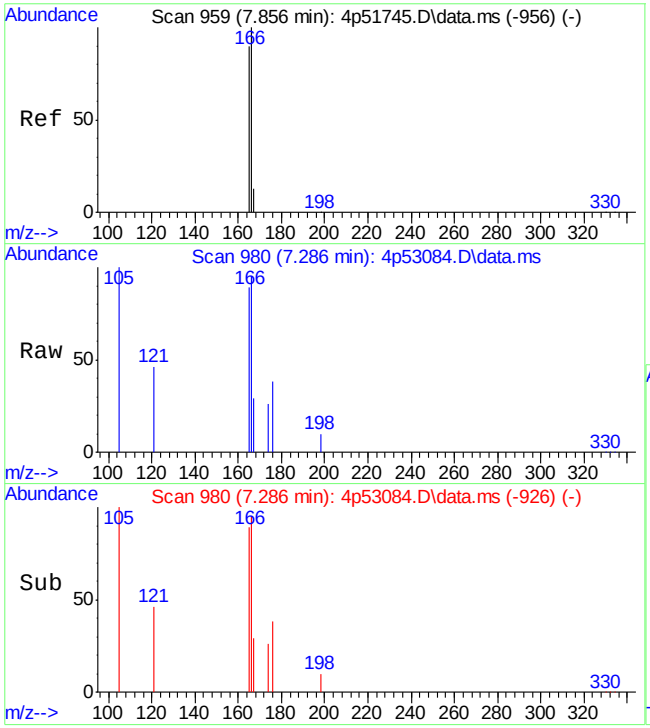


#16
Acenaphthene
Concen: 551.31 ppm m
RT: 6.778 min Scan# 917
Delta R.T. -0.068 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:153 Resp: 6490

Ion	Ratio	Lower	Upper
153	100		
152	29.3	14.3	74.3
154	50.8	61.2	121.2#

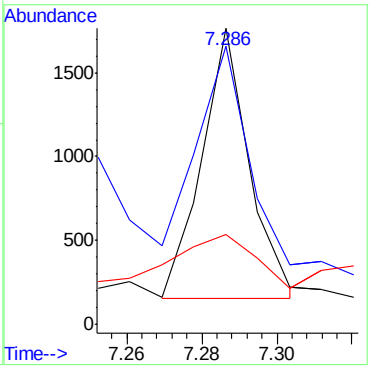


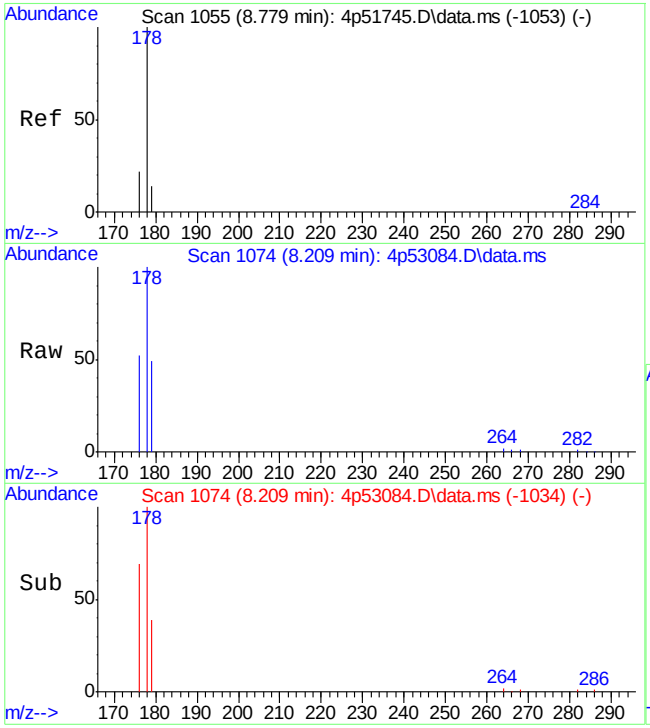


#17
Fluorene
Concen: 112.52 ppm m
RT: 7.286 min Scan# 980
Delta R.T. -0.059 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:166 Resp: 1416

Ion	Ratio	Lower	Upper
166	100		
165	93.8	76.1	136.1
167	30.4	0.0	41.0

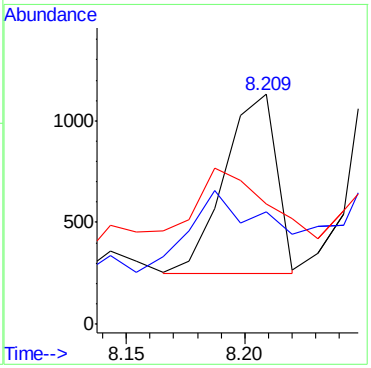


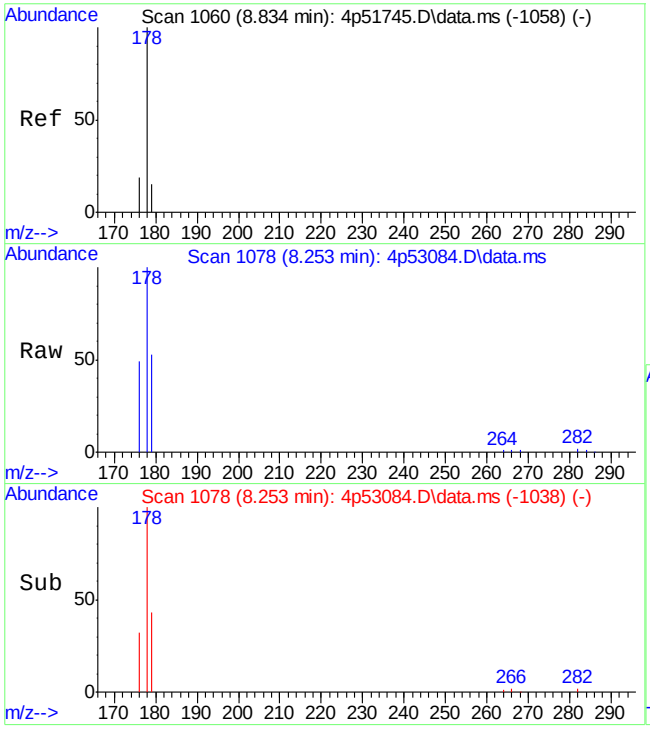


#23
Phenanthrene
Concen: 63.75 ppm m
RT: 8.209 min Scan# 1074
Delta R.T. -0.056 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:178 Resp: 1356

Ion	Ratio	Lower	Upper
178	100		
179	48.9	0.0	44.1#
176	52.4	0.0	49.6#

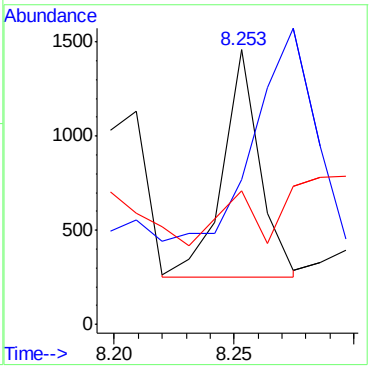


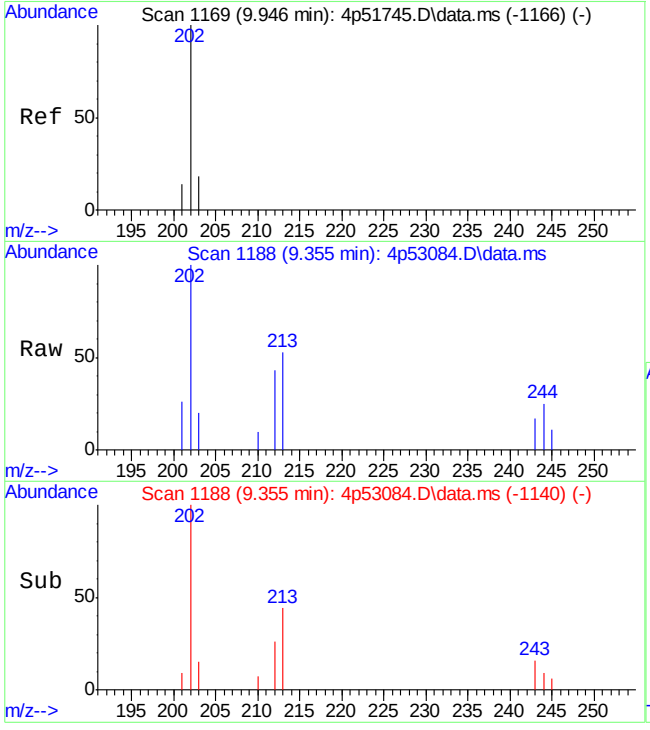


#24
Anthracene
Concen: 63.69 ppm m
RT: 8.253 min Scan# 1078
Delta R.T. -0.056 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:178 Resp: 1292

Ion	Ratio	Lower	Upper
178	100		
179	52.9	0.0	46.4#
176	48.8	0.0	46.5#

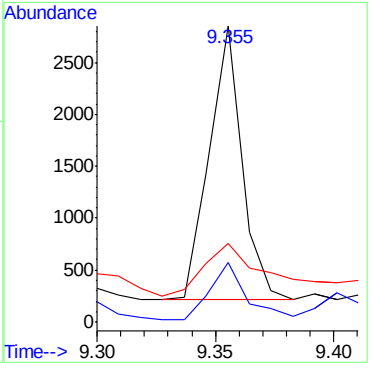


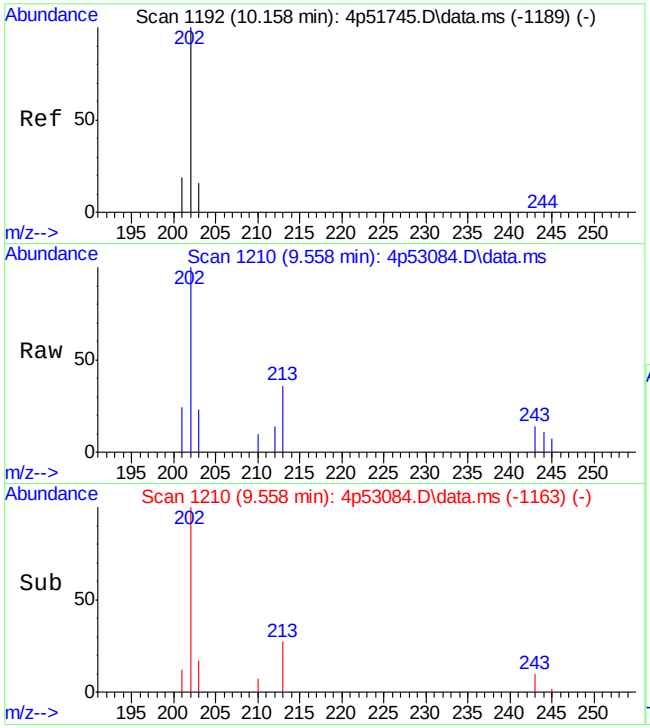


#25
Fluoranthene
Concen: 104.10 ppm
RT: 9.355 min Scan# 1188
Delta R.T. -0.057 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:202 Resp: 2541

Ion	Ratio	Lower	Upper
202	100		
203	20.3	0.0	47.5
201	16.1	0.0	42.8

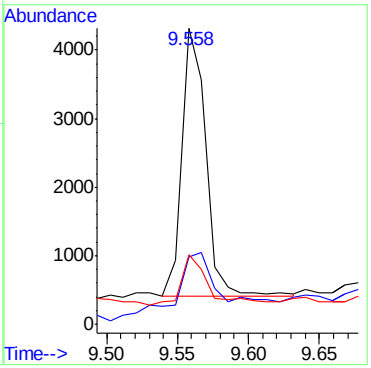


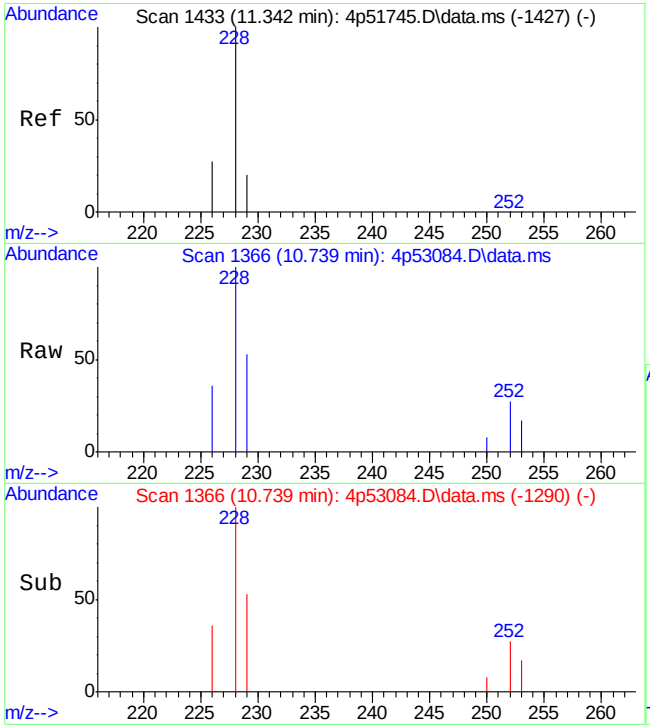


#26
Pyrene
Concen: 176.58 ppm
RT: 9.558 min Scan# 1210
Delta R.T. -0.066 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:202 Resp: 4591

Ion	Ratio	Lower	Upper
202	100		
203	16.7	0.0	49.7
201	17.2	0.0	44.4

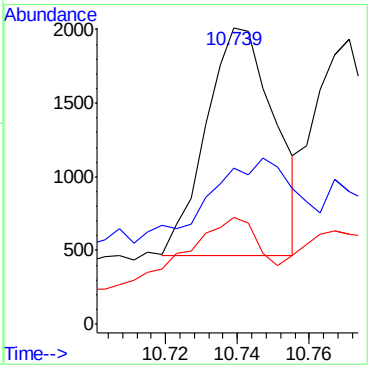


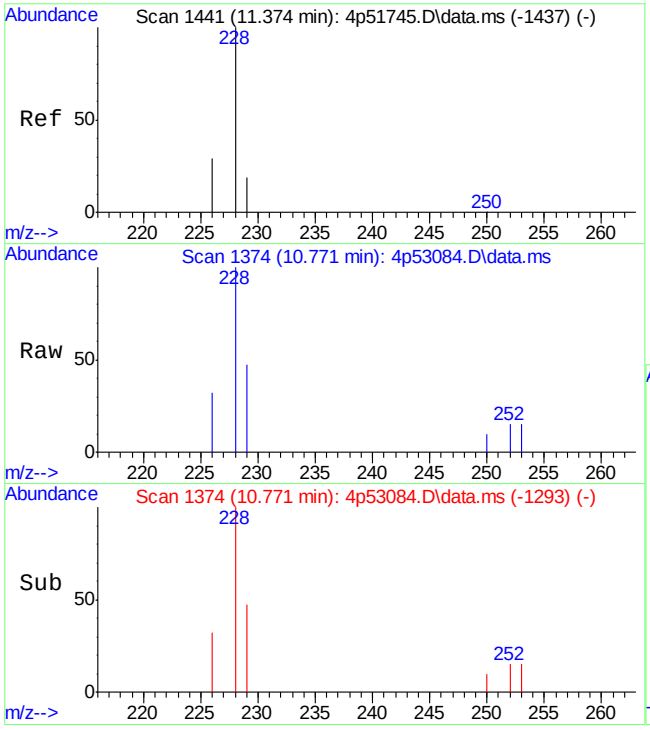


#28
Benzo[a]anthracene
Concen: 88.18 ppm m
RT: 10.739 min Scan# 1366
Delta R.T. -0.054 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:228 Resp: 2054

Ion	Ratio	Lower	Upper
228	100		
229	52.7	0.0	51.2#
226	36.2	0.0	55.2

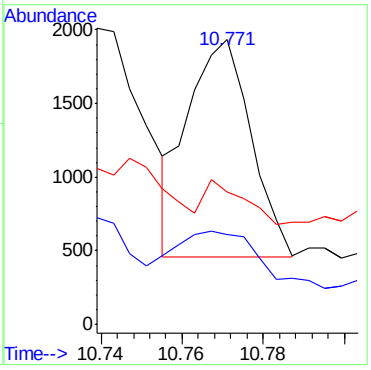


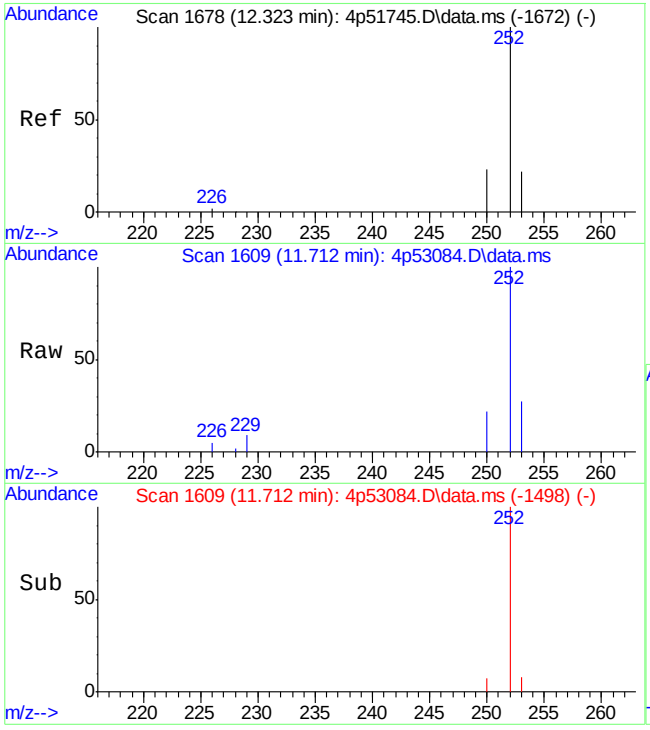


#29
Chrysene
Concen: 72.54 ppm m
RT: 10.771 min Scan# 1374
Delta R.T. -0.054 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:228 Resp: 1594

Ion	Ratio	Lower	Upper
228	100		
226	31.6	0.0	59.4
229	46.6	0.0	50.1

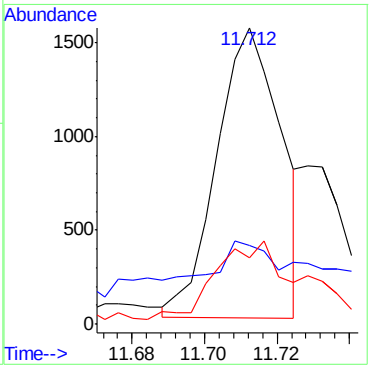


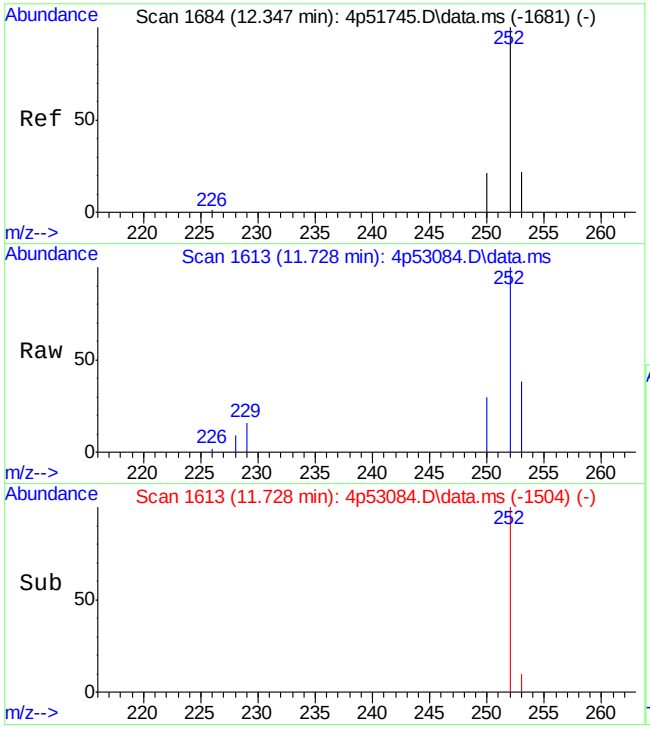


#31
Benzo[b]fluoranthene
Concen: 58.49 ppm
RT: 11.712 min Scan# 1609
Delta R.T. -0.054 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:252 Resp: 1898

Ion	Ratio	Lower	Upper
252	100		
253	12.5	0.0	52.5
250	18.3	0.0	54.0

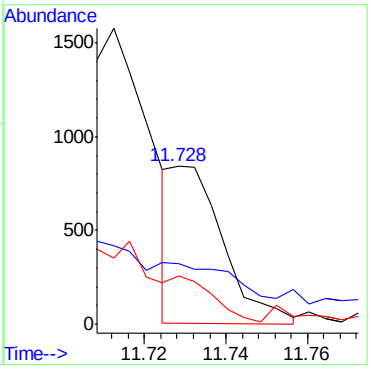


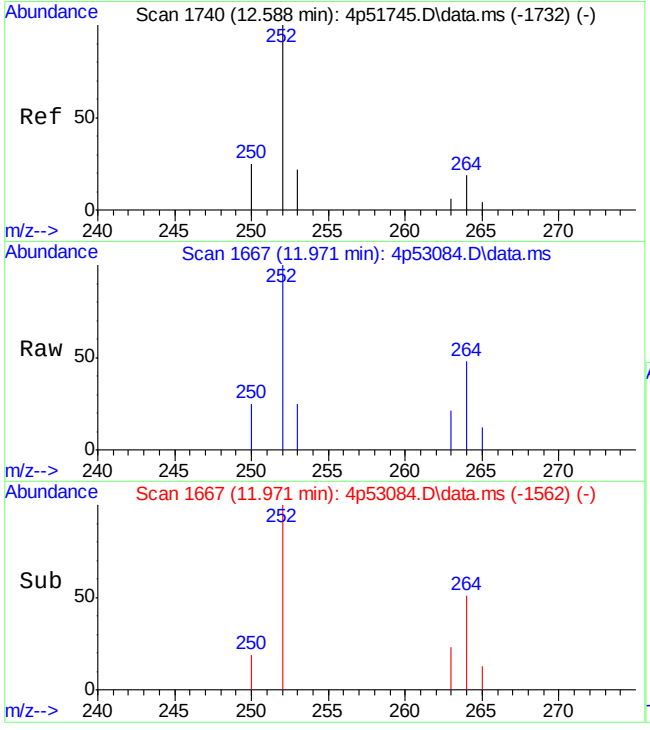


#32
Benzo[k]fluoranthene
Concen: 24.66 ppm
RT: 11.728 min Scan# 1613
Delta R.T. -0.062 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:252 Resp: 729

Ion	Ratio	Lower	Upper
252	100		
253	15.5	0.0	52.1
250	29.4	0.0	51.9

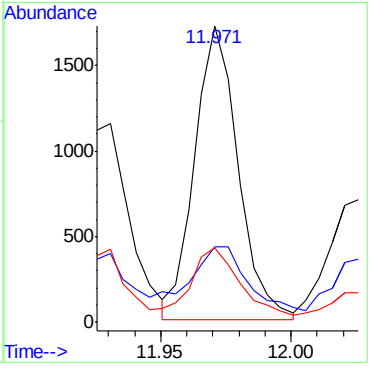


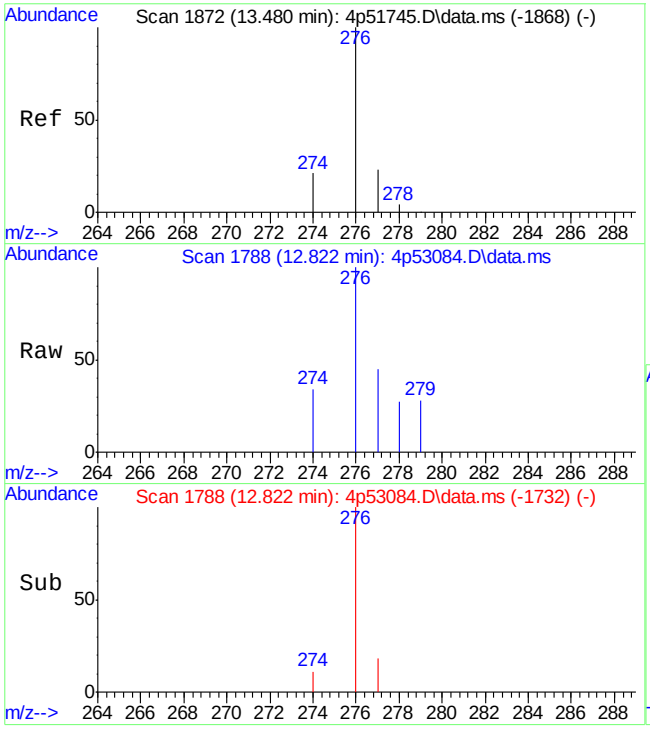


#33
Benzo[a]pyrene
Concen: 71.07 ppm
RT: 11.971 min Scan# 1667
Delta R.T. -0.053 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:252 Resp: 1990

Ion	Ratio	Lower	Upper
252	100		
253	19.0	0.0	49.3
250	22.9	0.0	53.7

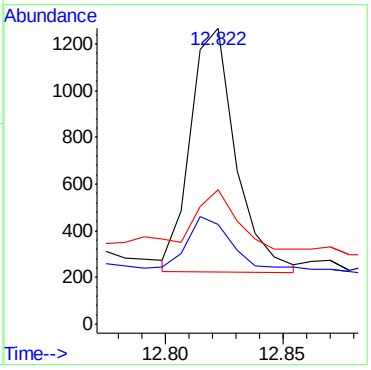


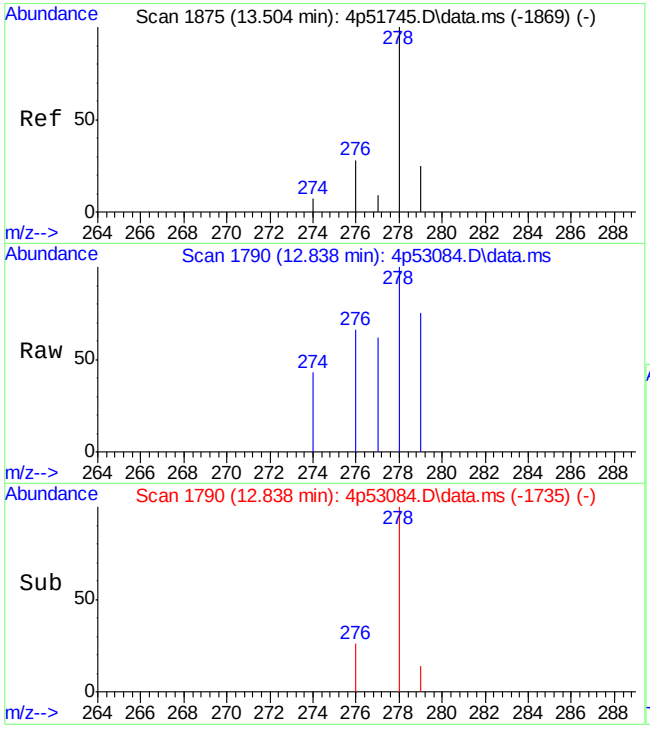


#34
Indeno[1,2,3-cd]pyrene
Concen: 40.38 ppm
RT: 12.822 min Scan# 1788
Delta R.T. -0.053 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:276 Resp: 1408

Ion	Ratio	Lower	Upper
276	100		
274	18.0	0.0	52.3
277	23.1	0.0	50.6

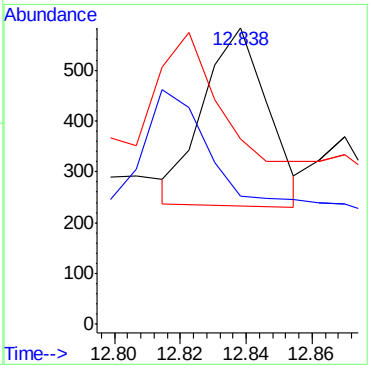


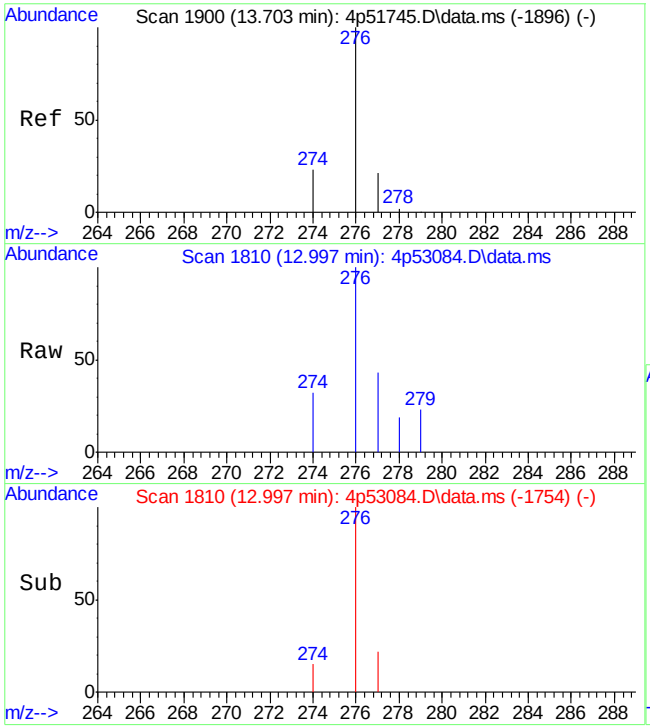


#35
Dibenz[a,h]anthracene
Concen: 16.49 ppm
RT: 12.838 min Scan# 1790
Delta R.T. -0.061 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:278 Resp: 476

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	35.0
277	0.0	0.0	37.0

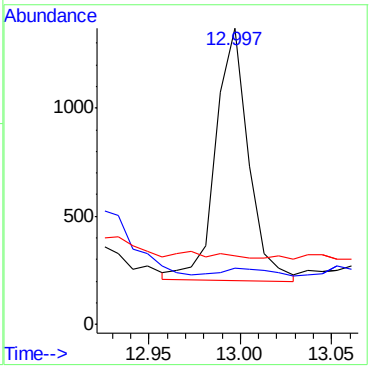




#36
Benzo[g,h,i]perylene
Concen: 49.04 ppm
RT: 12.997 min Scan# 1810
Delta R.T. -0.053 min
Lab File: 4p53084.D
Acq: 21 Apr 2022 7:50 am

Tgt Ion:276 Resp: 1448

Ion	Ratio	Lower	Upper
276	100		
278	1.1	0.0	32.8
279	1.1	0.0	30.0



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:08

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53085.D
Acq On : 21 Apr 2022 8:14 am
Operator : chriss2
Sample : jd43215-26
Misc : op39192a,e4p2772,230,,,1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 21 14:29:07 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

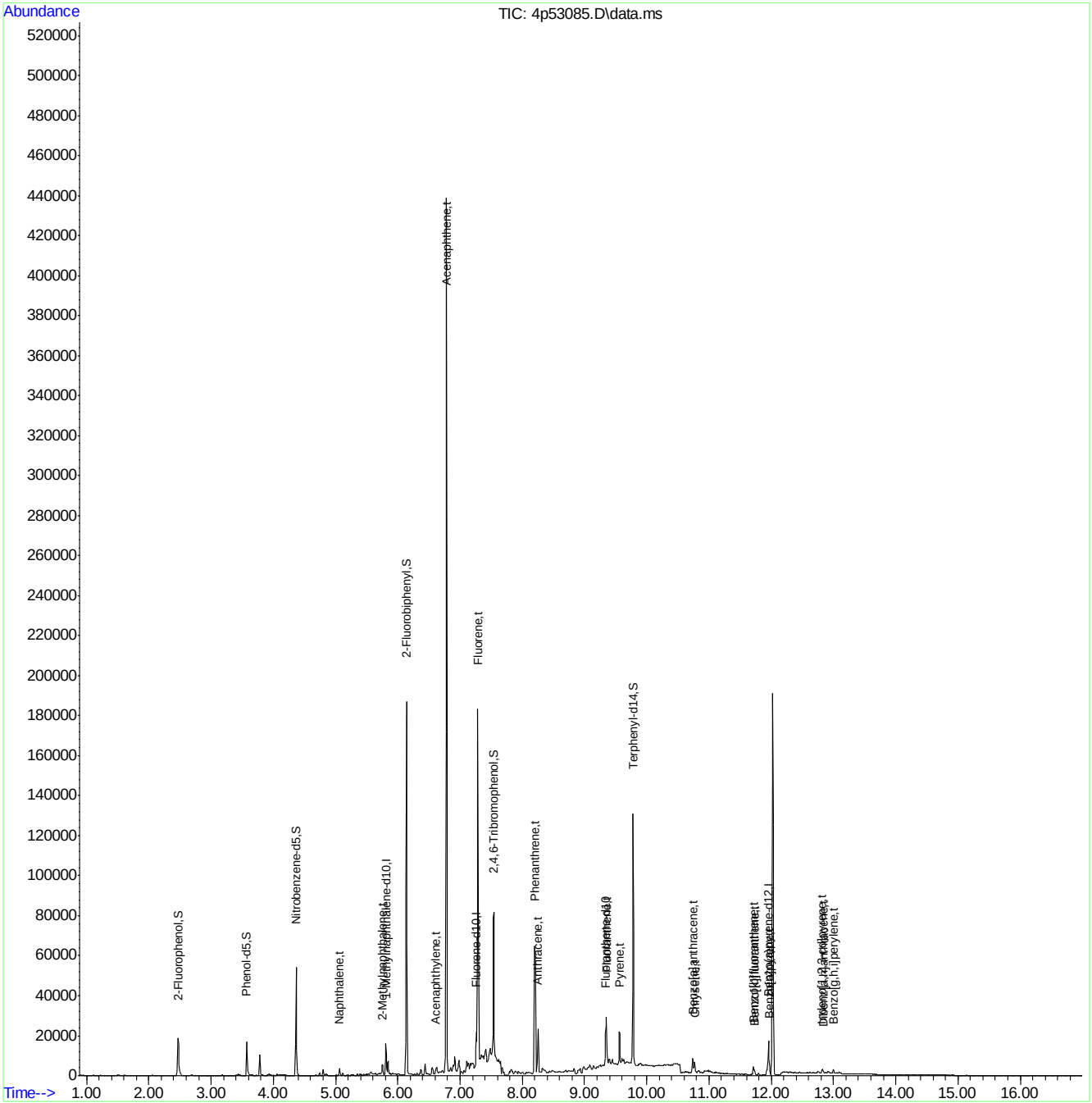
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	5.809	150	5019	800.00	ppm	-0.06
13) Fluorene-d10	7.261	176	10538	800.00	ppm	-0.06
20) Fluoranthene-d10	9.337	212	13662	800.00	ppm	-0.06
30) Benzo(a)pyrene-d12	11.955	264	12522	800.00	ppm	-0.05
System Monitoring Compounds						
3) 2-Fluorophenol	2.475	112	14121	4928.24	ppm	-0.07
Spiked Amount 50.000			Recovery	= 9856.48%		
4) Phenol-d5	3.570	99	16234	3566.09	ppm	-0.04
Spiked Amount 50.000			Recovery	= 7132.18%		
7) Nitrobenzene-d5	4.363	82	36362	7235.31	ppm	-0.07
Spiked Amount 50.000			Recovery	= 14470.62%		
14) 2-Fluorobiphenyl	6.142	172	96557	5451.43	ppm	-0.06
Spiked Amount 50.000			Recovery	= 10902.86%		
19) 2,4,6-Tribromophenol	7.533	330	35212	5874.30	ppm	-0.06
Spiked Amount 50.000			Recovery	= 11748.60%		
27) Terphenyl-d14	9.778	244	93586	6634.82	ppm	-0.06
Spiked Amount 50.000			Recovery	= 13269.64%		
Target Compounds						Qvalue
8) Naphthalene	5.062	128	2604	170.20	ppm	67
10) 2-Methylnaphthalene	5.749	141	1977	240.59	ppm	# 75
15) Acenaphthylene	6.611	152	2563m	112.95	ppm	
16) Acenaphthene	6.786	153	150405	9349.08	ppm	96
17) Fluorene	7.286	166	74872	4353.67	ppm	91
23) Phenanthrene	8.198	178	61249	2965.38	ppm	96
24) Anthracene	8.253	178	15353	779.50	ppm	98
25) Fluoranthene	9.355	202	17401	734.19	ppm	96
26) Pyrene	9.558	202	14193	562.19	ppm	93
28) Benzo[a]anthracene	10.739	228	5248m	232.04	ppm	
29) Chrysene	10.771	228	3659m	171.50	ppm	
31) Benzo[b]fluoranthene	11.712	252	3546m	111.81	ppm	
32) Benzo[k]fluoranthene	11.728	252	1306m	45.20	ppm	
33) Benzo[a]pyrene	11.970	252	3436	125.56	ppm	97
34) Indeno[1,2,3-cd]pyrene	12.814	276	1959	57.48	ppm	98
35) Dibenz[a,h]anthracene	12.838	278	674	23.89	ppm	82
36) Benzo[g,h,i]perylene	12.997	276	1662	57.59	ppm	92

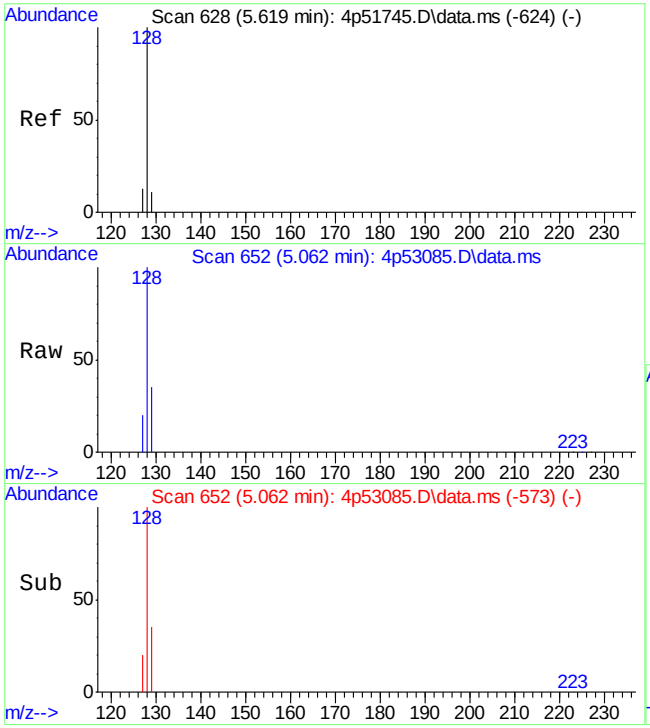
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4P2772\
Data File : 4p53085.D
Acq On : 21 Apr 2022 8:14 am
Operator : chriss2
Sample : jd43215-26
Misc : op39192a,e4p2772,230,,,1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 21 14:29:07 2022
Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Apr 15 09:26:03 2022
Response via : Initial Calibration

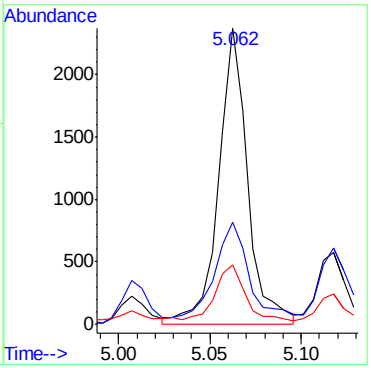


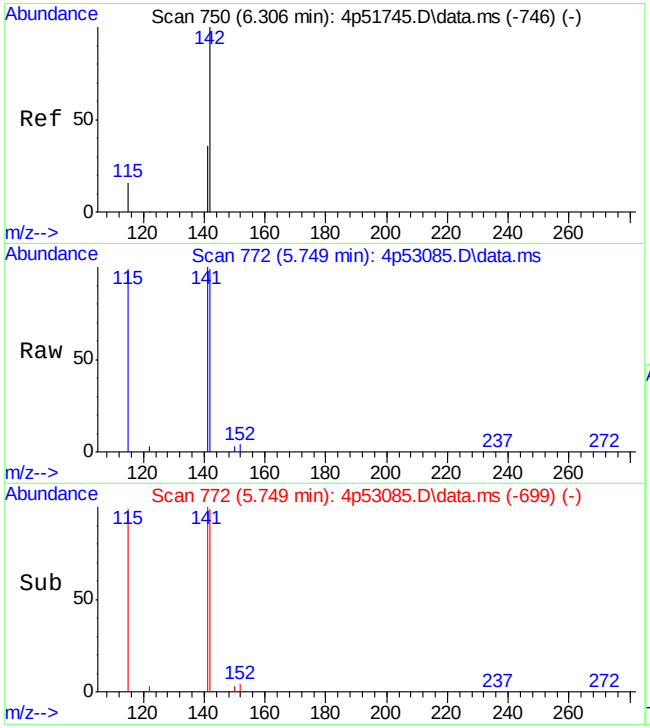


#8
Naphthalene
Concen: 170.20 ppm
RT: 5.062 min Scan# 652
Delta R.T. -0.065 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:128 Resp: 2604

Ion	Ratio	Lower	Upper
128	100		
129	32.7	0.0	39.8
127	19.3	0.0	44.0

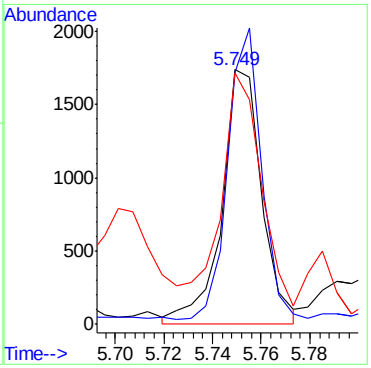


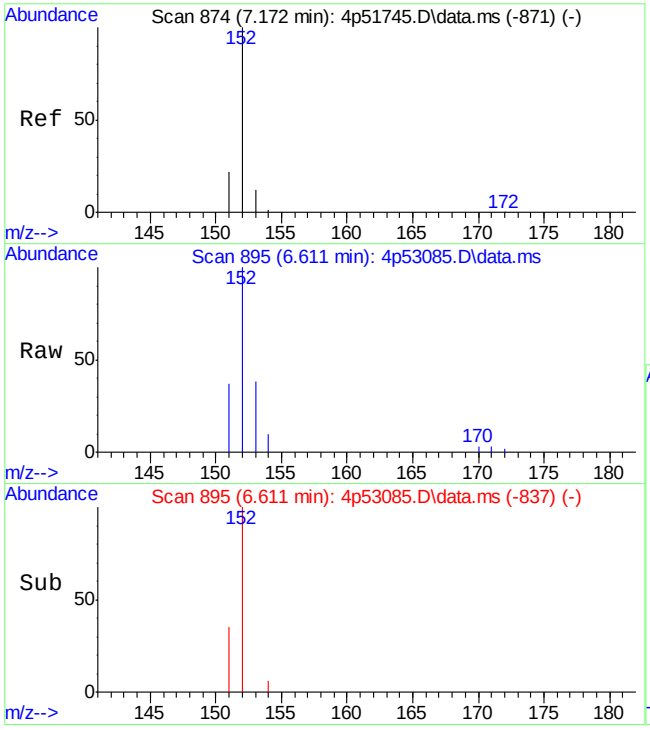


#10
2-Methylnaphthalene
Concen: 240.59 ppm
RT: 5.749 min Scan# 772
Delta R.T. -0.070 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:141 Resp: 1977

Ion	Ratio	Lower	Upper
141	100		
142	99.8	81.8	141.8
115	89.4	21.4	81.4#

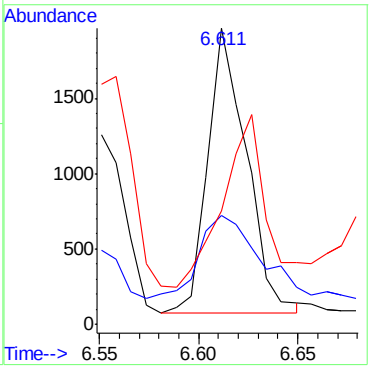


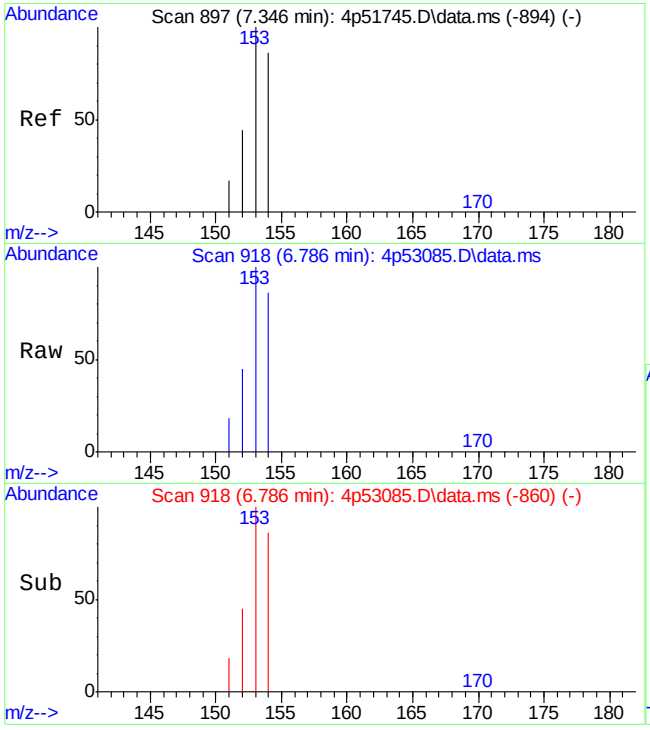


#15
Acenaphthylene
Concen: 112.95 ppm m
RT: 6.611 min Scan# 895
Delta R.T. -0.060 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:152 Resp: 2563

Ion	Ratio	Lower	Upper
152	100		
151	36.9	0.0	51.0
153	38.2	0.0	42.1

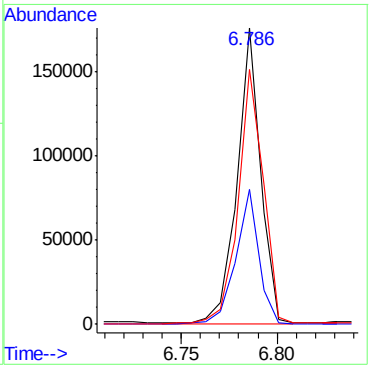


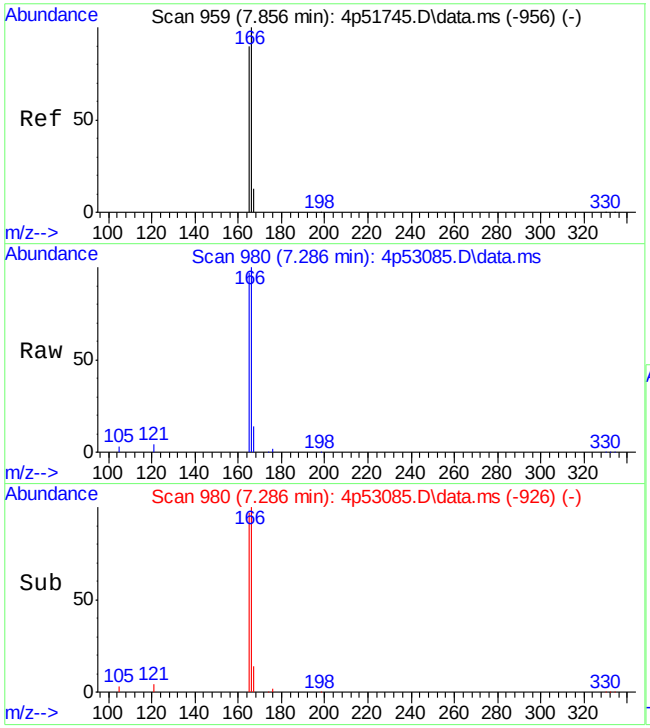


#16
Acenaphthene
Concen: 9349.08 ppm
RT: 6.786 min Scan# 918
Delta R.T. -0.060 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:153 Resp: 150405

Ion	Ratio	Lower	Upper
153	100		
152	45.5	14.3	74.3
154	85.9	61.2	121.2

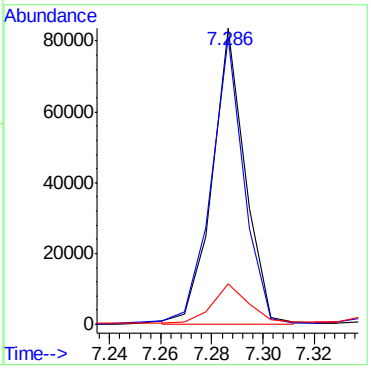


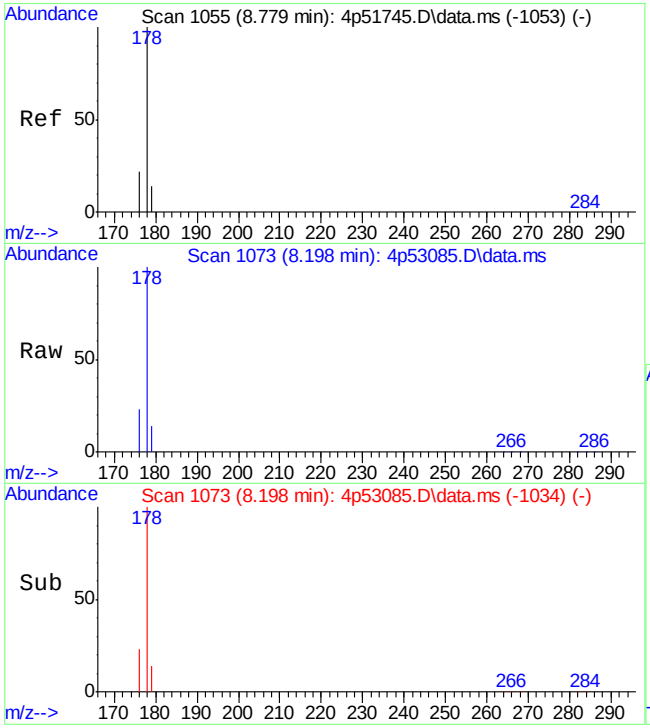


#17
Fluorene
Concen: 4353.67 ppm
RT: 7.286 min Scan# 980
Delta R.T. -0.059 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:166 Resp: 74872

Ion	Ratio	Lower	Upper
166	100		
165	96.8	76.1	136.1
167	13.0	0.0	41.0

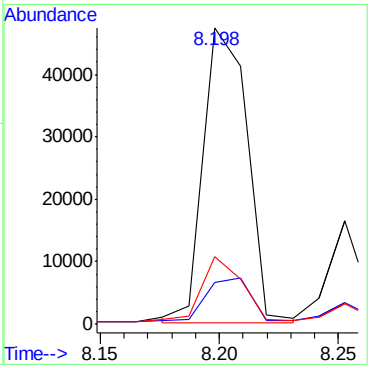


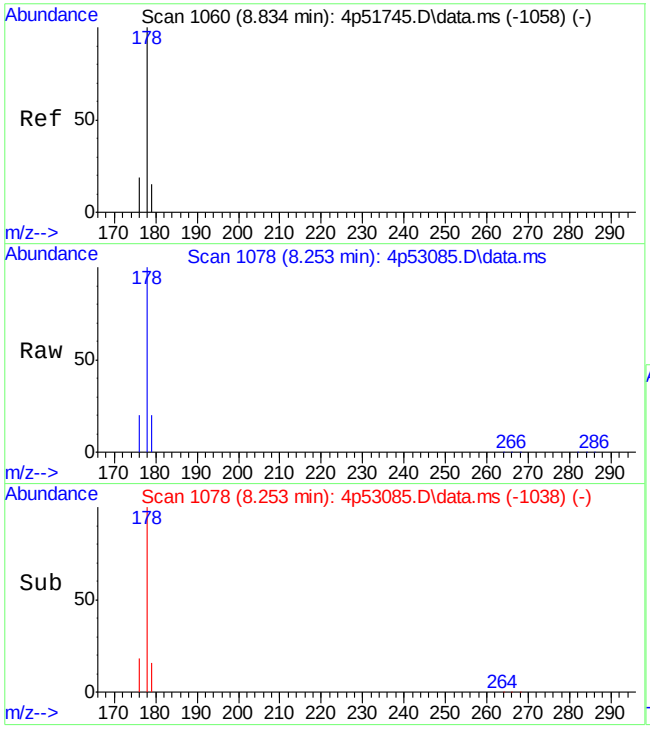


#23
Phenanthrene
Concen: 2965.38 ppm
RT: 8.198 min Scan# 1073
Delta R.T. -0.068 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:178 Resp: 61249

Ion	Ratio	Lower	Upper
178	100		
179	13.2	0.0	44.1
176	21.9	0.0	49.6

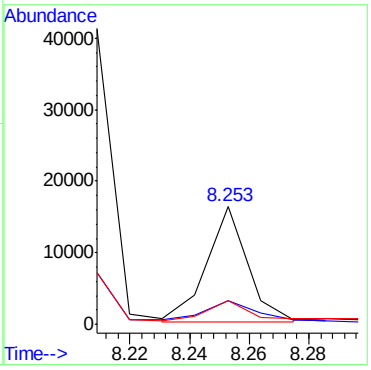


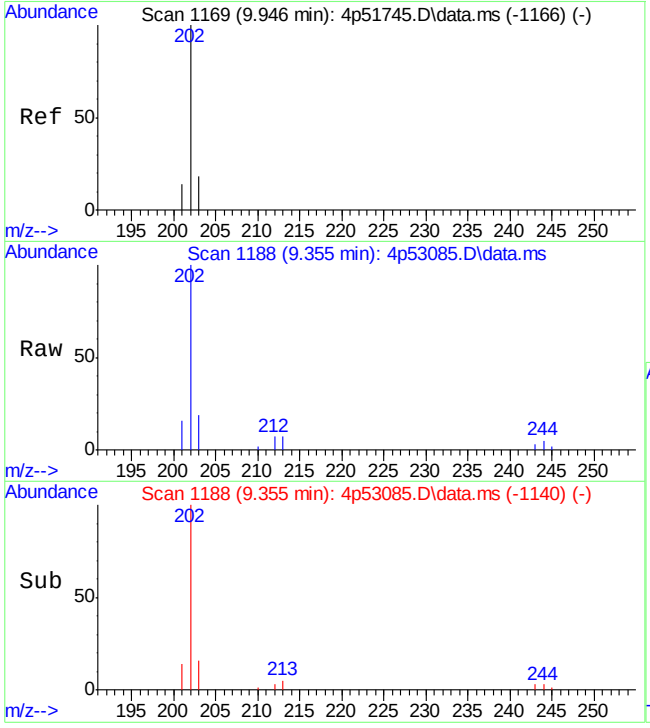


#24
Anthracene
Concen: 779.50 ppm
RT: 8.253 min Scan# 1078
Delta R.T. -0.057 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:178 Resp: 15353

Ion	Ratio	Lower	Upper
178	100		
179	17.4	0.0	46.4
176	17.1	0.0	46.5

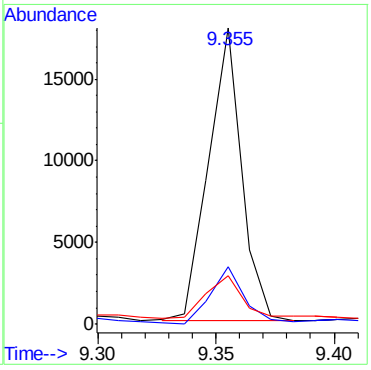


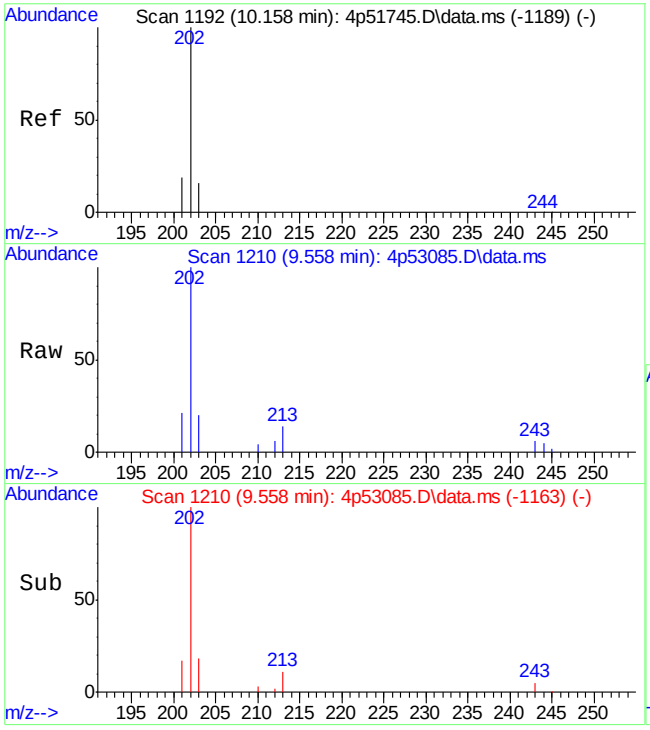


#25
Fluoranthene
Concen: 734.19 ppm
RT: 9.355 min Scan# 1188
Delta R.T. -0.057 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:202 Resp: 17401

Ion	Ratio	Lower	Upper
202	100		
203	19.2	0.0	47.5
201	14.1	0.0	42.8

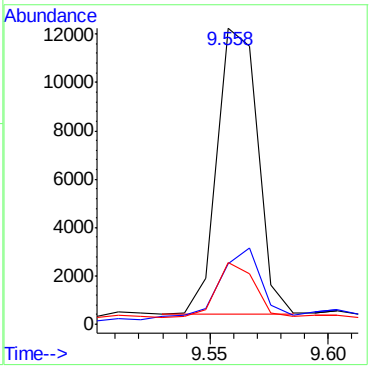


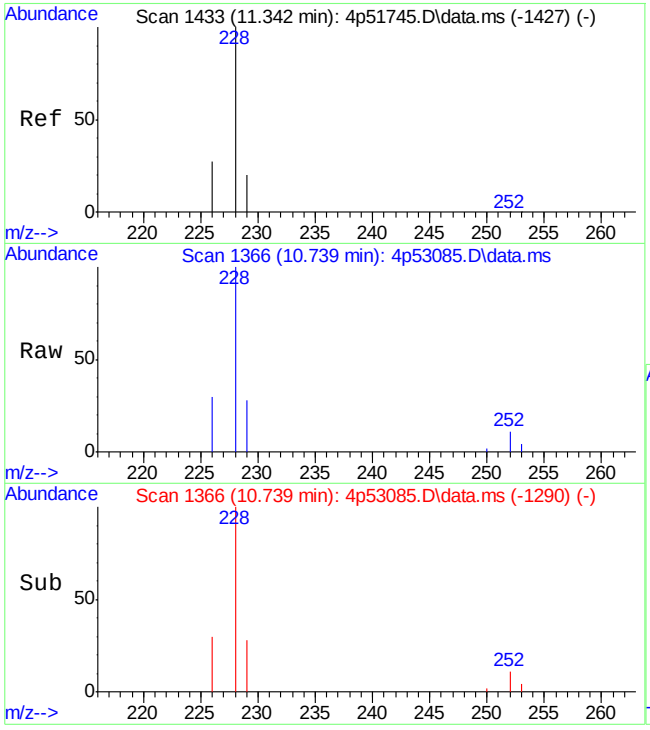


#26
Pyrene
Concen: 562.19 ppm
RT: 9.558 min Scan# 1210
Delta R.T. -0.066 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:202 Resp: 14193

Ion	Ratio	Lower	Upper
202	100		
203	18.2	0.0	49.7
201	19.2	0.0	44.4

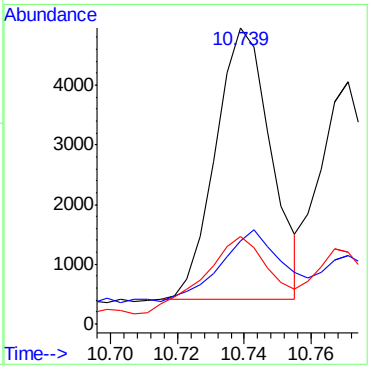


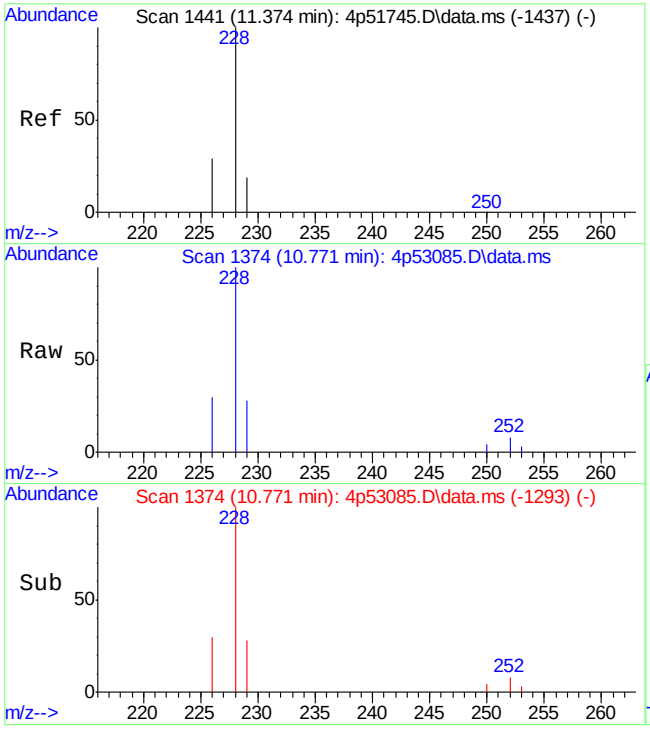


#28
Benzo[a]anthracene
Concen: 232.04 ppm m
RT: 10.739 min Scan# 1366
Delta R.T. -0.054 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:228 Resp: 5248

Ion	Ratio	Lower	Upper
228	100		
229	27.9	0.0	51.2
226	29.5	0.0	55.2

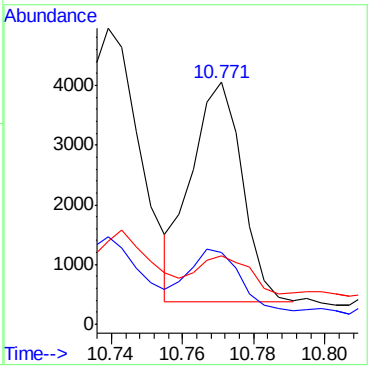


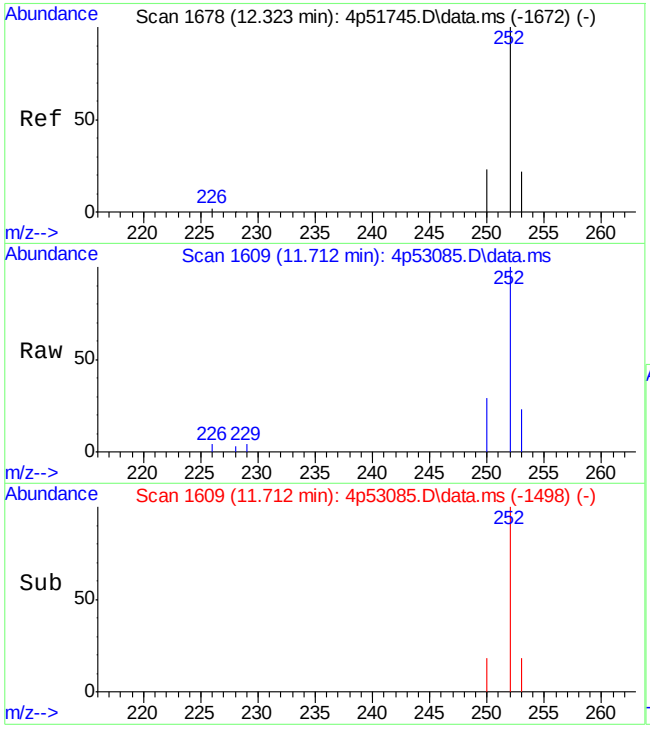


#29
Chrysene
Concen: 171.50 ppm m
RT: 10.771 min Scan# 1374
Delta R.T. -0.054 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:228 Resp: 3659

Ion	Ratio	Lower	Upper
228	100		
226	29.5	0.0	59.4
229	28.3	0.0	50.1

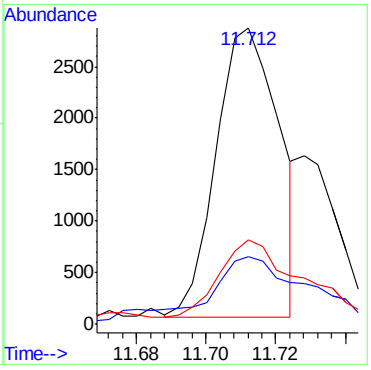


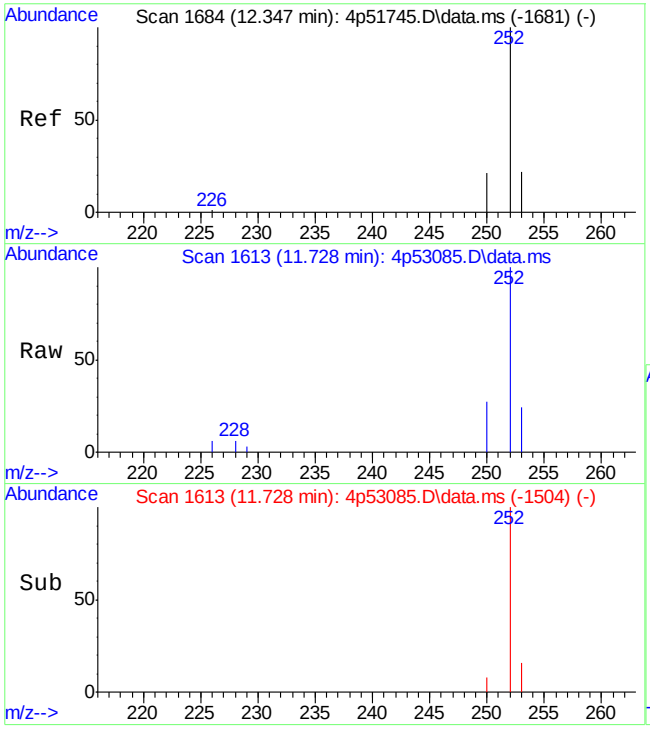


#31
Benzo[b]fluoranthene
Concen: 111.81 ppm m
RT: 11.712 min Scan# 1609
Delta R.T. -0.054 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:252 Resp: 3546

Ion	Ratio	Lower	Upper
252	100		
253	22.7	0.0	52.5
250	28.5	0.0	54.0

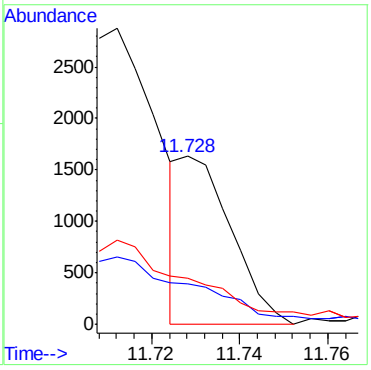


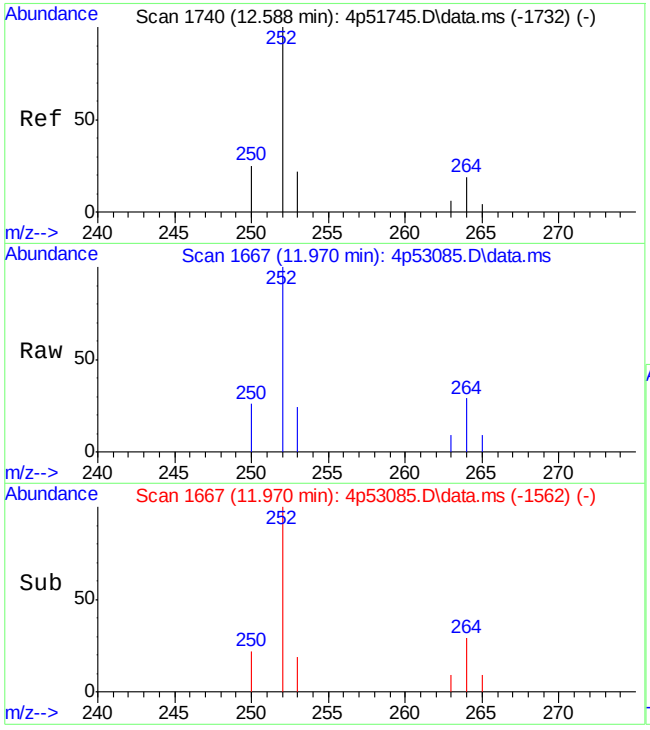


#32
Benzo[k]fluoranthene
Concen: 45.20 ppm m
RT: 11.728 min Scan# 1613
Delta R.T. -0.062 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:252 Resp: 1306

Ion	Ratio	Lower	Upper
252	100		
253	24.1	0.0	52.1
250	27.3	0.0	51.9

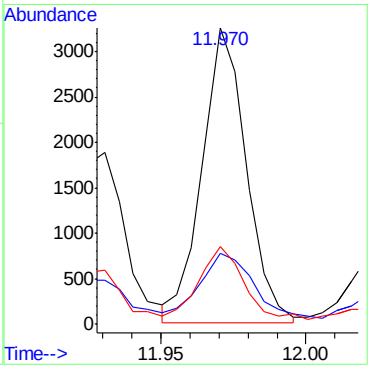


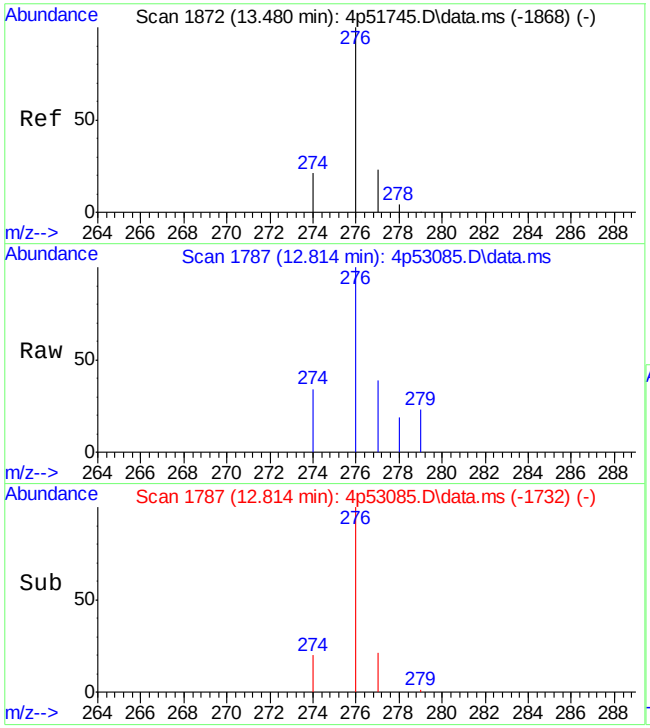


#33
Benzo[a]pyrene
Concen: 125.56 ppm
RT: 11.970 min Scan# 1667
Delta R.T. -0.053 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:252 Resp: 3436

Ion	Ratio	Lower	Upper
252	100		
253	21.2	0.0	49.3
250	24.3	0.0	53.7

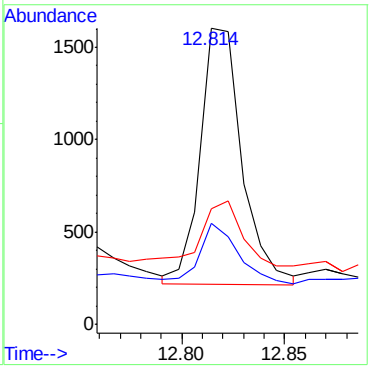


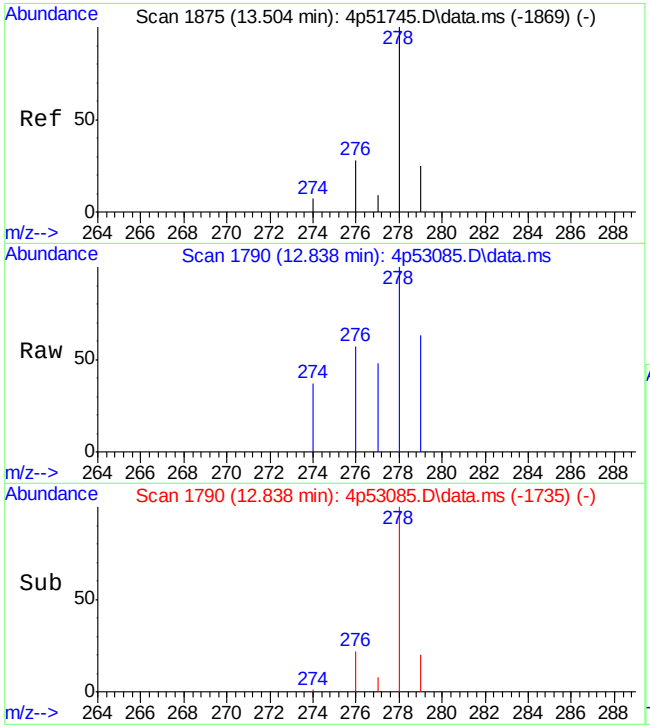


#34
Indeno[1,2,3-cd]pyrene
Concen: 57.48 ppm
RT: 12.814 min Scan# 1787
Delta R.T. -0.061 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:276 Resp: 1959

Ion	Ratio	Lower	Upper
276	100		
274	23.5	0.0	52.3
277	21.2	0.0	50.6

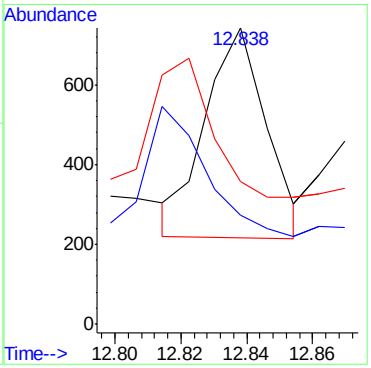


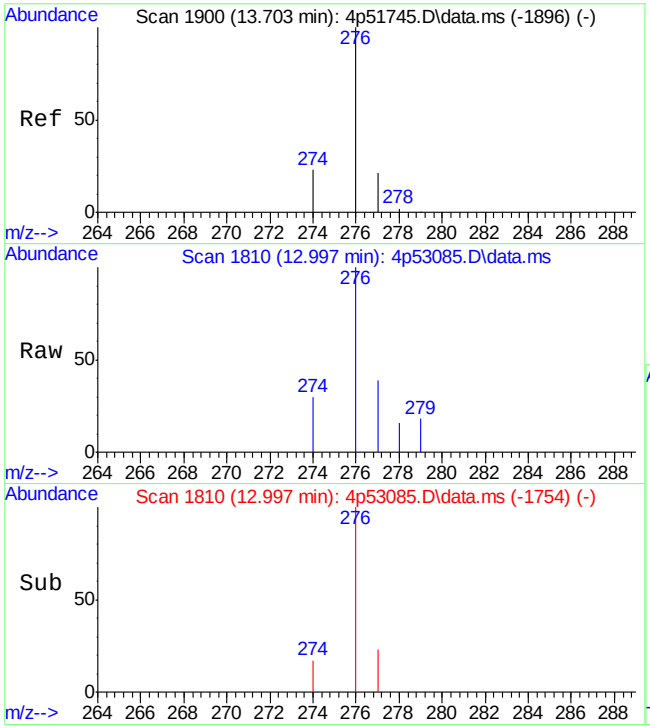


#35
Dibenz[a,h]anthracene
Concen: 23.89 ppm
RT: 12.838 min Scan# 1790
Delta R.T. -0.061 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:278 Resp: 674

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	35.0
277	0.0	0.0	37.0

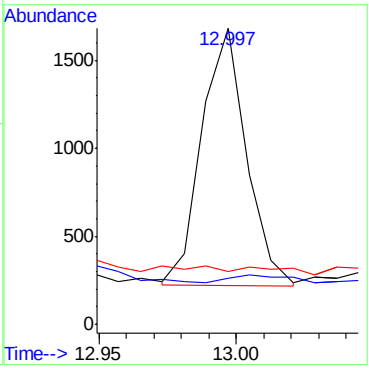




#36
Benzo[g,h,i]perylene
Concen: 57.59 ppm
RT: 12.997 min Scan# 1810
Delta R.T. -0.053 min
Lab File: 4p53085.D
Acq: 21 Apr 2022 8:14 am

Tgt Ion:276 Resp: 1662

Ion	Ratio	Lower	Upper
276	100		
278	0.0	0.0	32.8
279	0.0	0.0	30.0



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/22/22 09:43

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\jonkm\042122\e2m5551\
Data File : 2m123363.d
Acq On : 20 Apr 2022 5:27 pm
Operator : kristis
Sample : op39191-mb1 Inst : MS2M
Misc : op39191,e2m5551,250,,,1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Results File: M2M5549LVI.RES
Quant Time: Apr 21 01:25:28 2022
Quant Title : Semi Volatile GC/MS,zb-5msplus 30m x .25mm x .25MWed Apr 20 11:00:32 2022
QLast Update : Thu Apr 21 01:00:50 2022
Response via : Initial Calibration

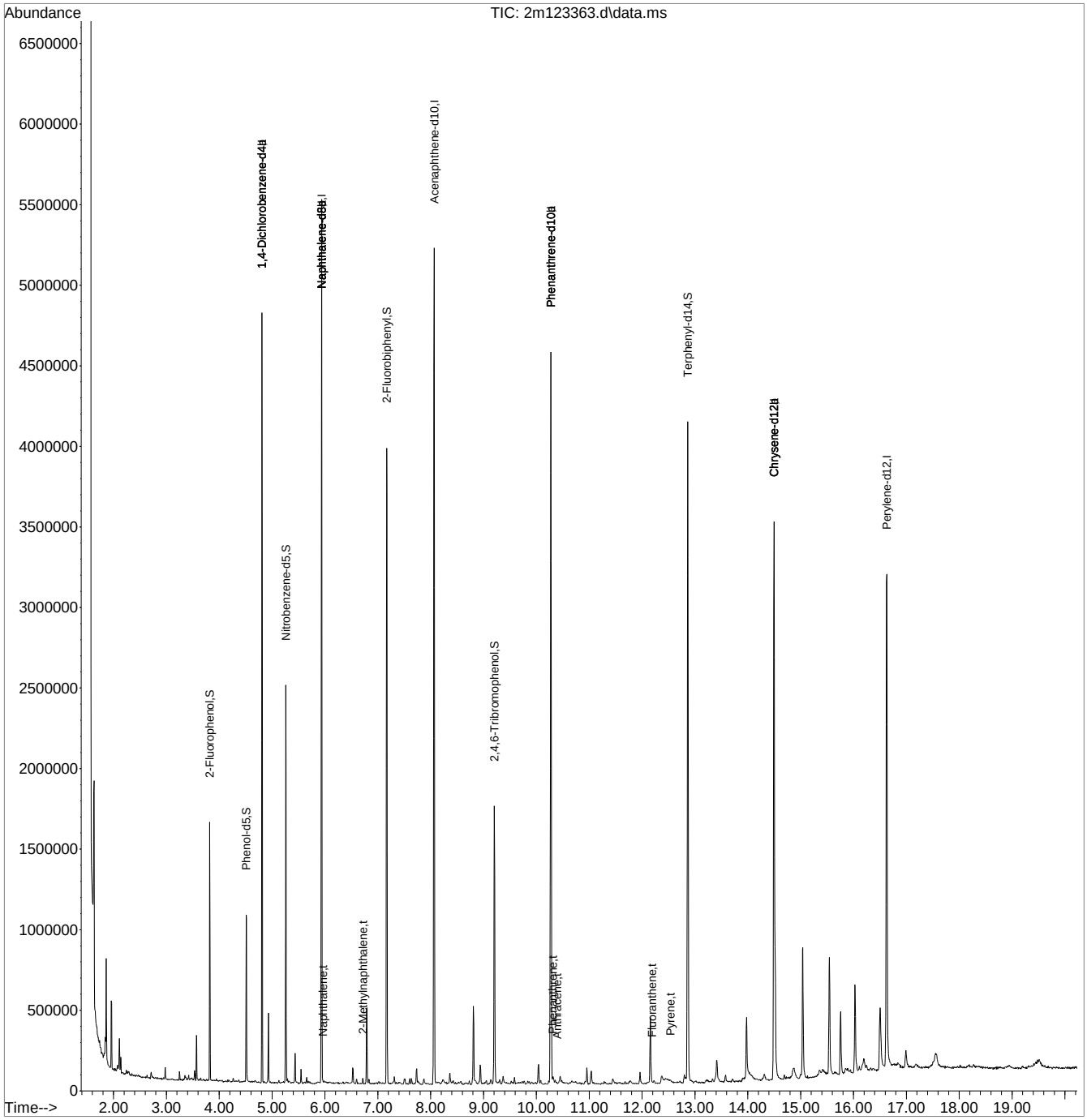
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.810	152	521890	40.00	ppm	0.00
24) Naphthalene-d8	5.938	136	2255967	40.00	ppm	0.00
46) Acenaphthene-d10	8.067	164	1263902	40.00	ppm	0.00
69) Phenanthrene-d10	10.276	188	2148723	40.00	ppm	0.00
84) Chrysene-d12	14.496	240	1644658	40.00	ppm	0.00
93) Perylene-d12	16.630	264	1678206	40.00	ppm	0.00
103) 1,4-Dichlorobenzene-d4a	4.810	152	521890	40.00	ppm	0.00
105) Phenanthrene-d10a	10.276	188	2148723	40.00	ppm	0.00
107) Naphthalene-d8a	5.938	136	2255967	40.00	ppm	0.00
109) Phenanthrene-d10b	10.276	188	2148723	40.00	ppm	0.00
112) Chrysene-d12a	14.496	240	1644658	40.00	ppm	0.00
114) Naphthalene-d8b	5.938	136	2255967	40.00	ppm	0.00
117) Naphthalene-d8c	5.938	136	2255967	40.00	ppm	0.00
119) Chrysene-d12b	14.496	240	1648247	40.00	ppm	0.00
121) 1,4-Dichlorobenzene-d4b	4.810	152	521890	40.00	ppm	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.820	112	297568	18.03	ppm	0.00
Spiked Amount 50.000			Recovery = 36.06%			
8) Phenol-d5	4.510	99	269052	13.12	ppm	0.00
Spiked Amount 50.000			Recovery = 26.24%			
25) Nitrobenzene-d5	5.259	82	629699	34.00	ppm	0.00
Spiked Amount 50.000			Recovery = 68.00%			
51) 2-Fluorobiphenyl	7.169	172	1335213	31.23	ppm	-0.01
Spiked Amount 50.000			Recovery = 62.46%			
74) 2,4,6-Tribromophenol	9.206	330	249596	42.37	ppm	-0.01
Spiked Amount 50.000			Recovery = 84.74%			
87) Terphenyl-d14	12.865	244	1974743	49.22	ppm	0.00
Spiked Amount 50.000			Recovery = 98.44%			
110) 1-chlorooctadecane	0.000	56	0d	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
111) o-terphenyl	0.000	230	0d	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
38) Naphthalene	5.960	128	4776	0.08	ppm	80
44) 2-Methylnaphthalene	6.719	141	8685	0.24	ppm	90
78) Phenanthrene	10.308	178	3938	0.06	ppm	80
79) Anthracene	10.394	178	1642	0.03	ppm	73
82) Fluoranthene	12.191	202	4385	0.07	ppm	93
86) Pyrene	12.539	202	4670m	0.09	ppm	

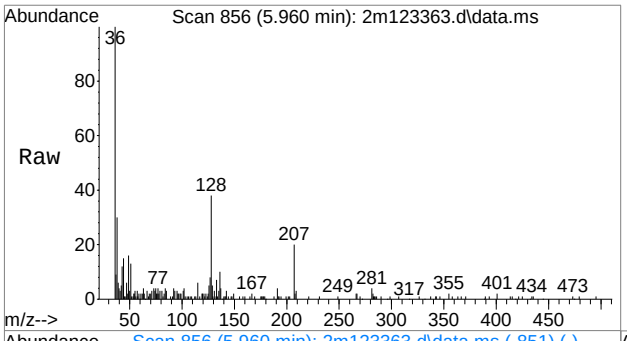
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\jonkm\042122\e2m5551\
Data File : 2m123363.d
Acq On : 20 Apr 2022 5:27 pm
Operator : kristis
Sample : op39191-mb1 Inst : MS2M
Misc : op39191,e2m5551,250,,,1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Results File: M2M5549LVI.RES
Quant Time: Apr 21 01:25:28 2022
Quant Title : Semi Volatile GC/MS,zb-5msplus 30m x .25mm x .25MWed Apr 20 11:00:32 2022
QLast Update : Thu Apr 21 01:00:50 2022
Response via : Initial Calibration

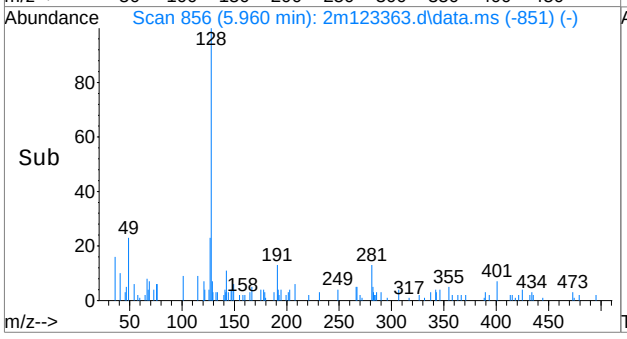


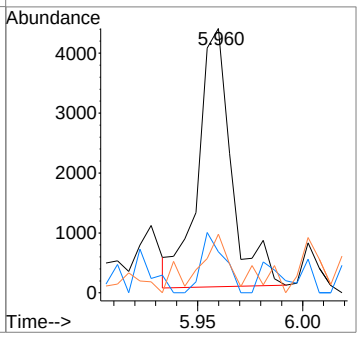


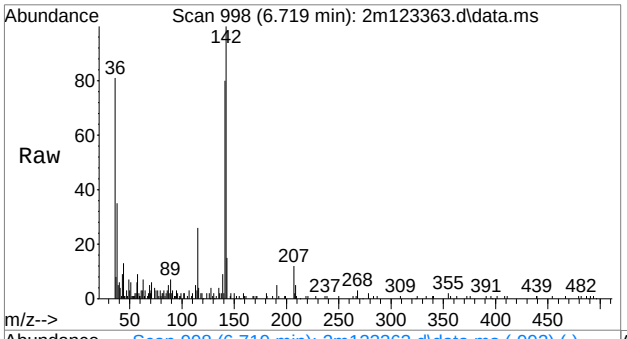
#38
Naphthalene
Concen: 0.08 ppm
RT: 5.960 min Scan# 856
Delta R.T. -0.005 min
Lab File: 2m123363.d
Acq: 20 Apr 2022 5:27 pm

Tgt Ion:128 Resp: 4776

Ion	Ratio	Lower	Upper
128	100		
129	11.4	0.0	40.3
127	25.7	0.0	42.4



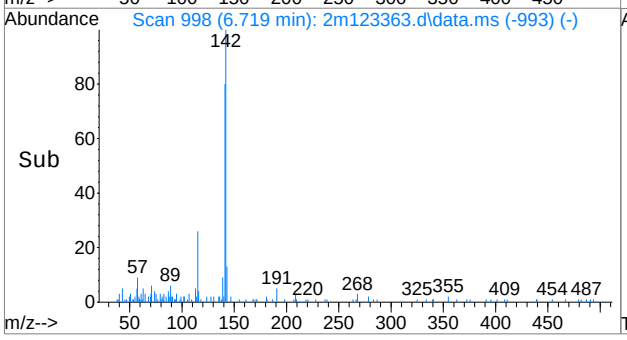


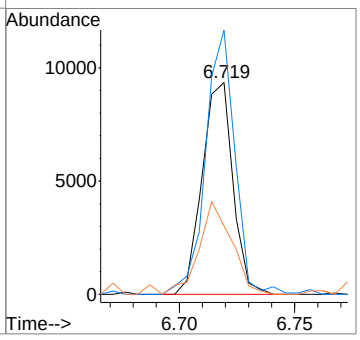


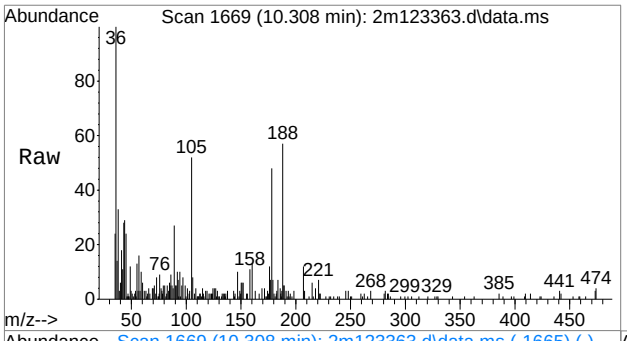
#44
2-Methylnaphthalene
Concen: 0.24 ppm
RT: 6.719 min Scan# 998
Delta R.T. -0.005 min
Lab File: 2m123363.d
Acq: 20 Apr 2022 5:27 pm

Tgt Ion:141 Resp: 8685

Ion	Ratio	Lower	Upper
141	100		
142	124.5	85.3	145.3
115	31.6	9.3	69.3



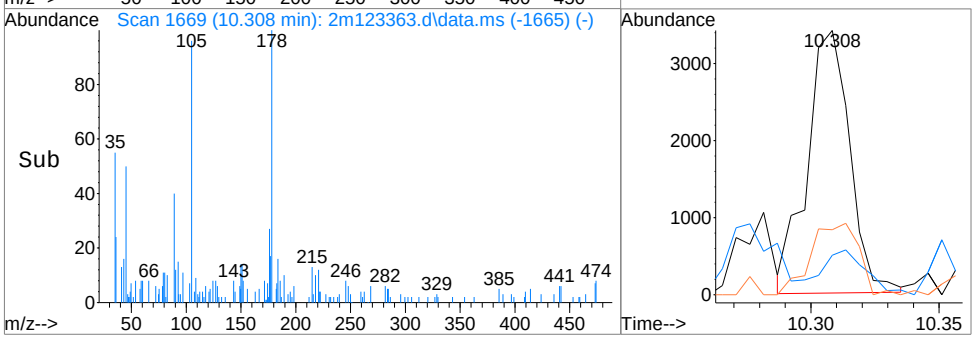


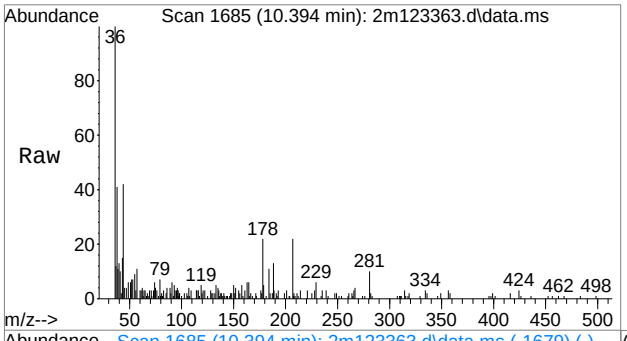


#78
Phenanthrene
Concen: 0.06 ppm
RT: 10.308 min Scan# 1669
Delta R.T. -0.011 min
Lab File: 2m123363.d
Acq: 20 Apr 2022 5:27 pm

Tgt Ion:178 Resp: 3938

Ion	Ratio	Lower	Upper
178	100		
179	4.5	0.0	44.2
176	25.9	0.0	48.5

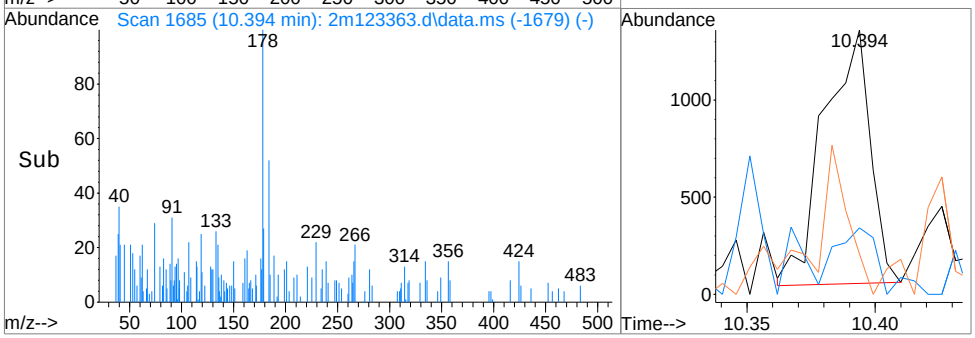


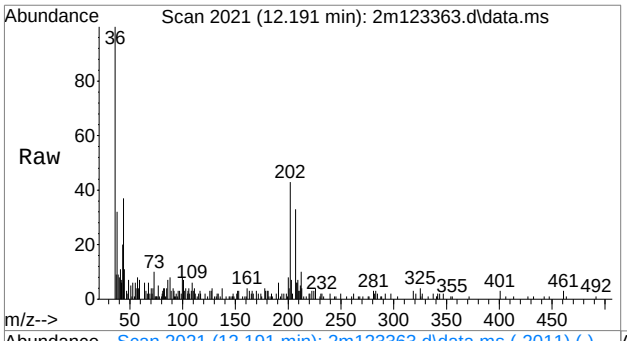


#79
Anthracene
Concen: 0.03 ppm
RT: 10.394 min Scan# 1685
Delta R.T. -0.005 min
Lab File: 2m123363.d
Acq: 20 Apr 2022 5:27 pm

Tgt Ion:178 Resp: 1642

Ion	Ratio	Lower	Upper
178	100		
179	24.0	0.0	44.9
176	4.3	0.0	47.8

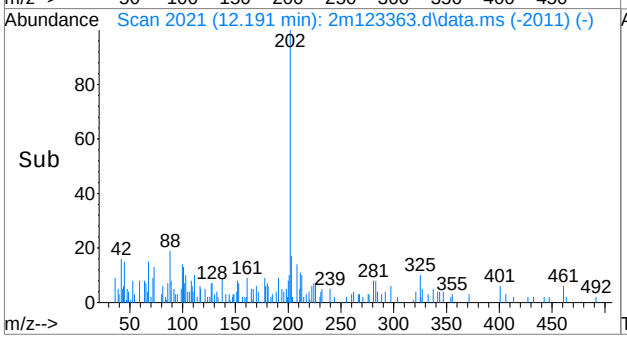


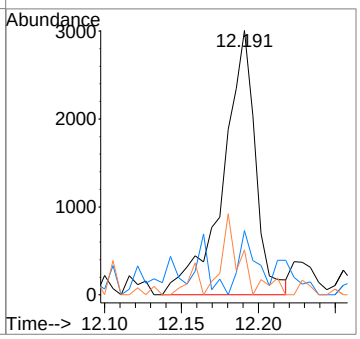


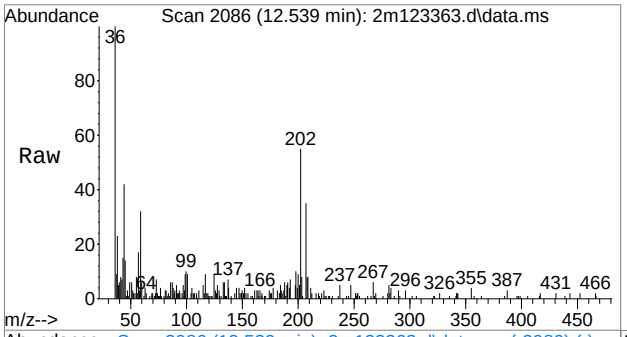
#82
Fluoranthene
Concen: 0.07 ppm
RT: 12.191 min Scan# 2021
Delta R.T. -0.005 min
Lab File: 2m123363.d
Acq: 20 Apr 2022 5:27 pm

Tgt Ion:202 Resp: 4385

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	39.9
203	17.5	0.0	46.9



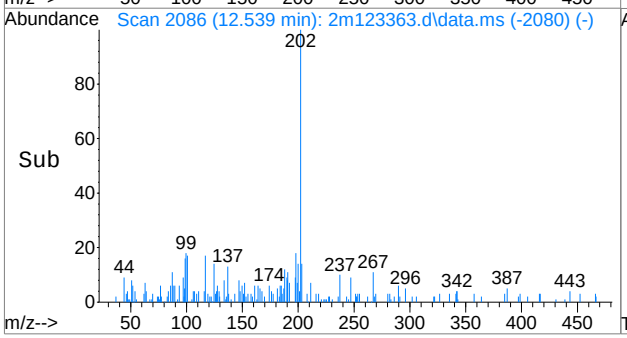


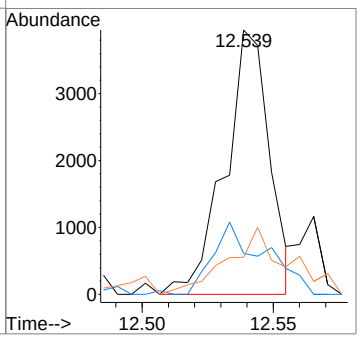


#86
Pyrene
Concen: 0.09 ppm m
RT: 12.539 min Scan# 2086
Delta R.T. -0.011 min
Lab File: 2m123363.d
Acq: 20 Apr 2022 5:27 pm

Tgt Ion:202 Resp: 4670

Ion	Ratio	Lower	Upper
202	100		
200	15.5	0.0	50.7
203	14.0	0.0	47.2





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123376.D
Acq On : 21 Apr 2022 2:42 am
Operator : chriss2
Sample : op39192a-mb1
Misc : op39192,e2m5552,250,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 21 10:13:33 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration

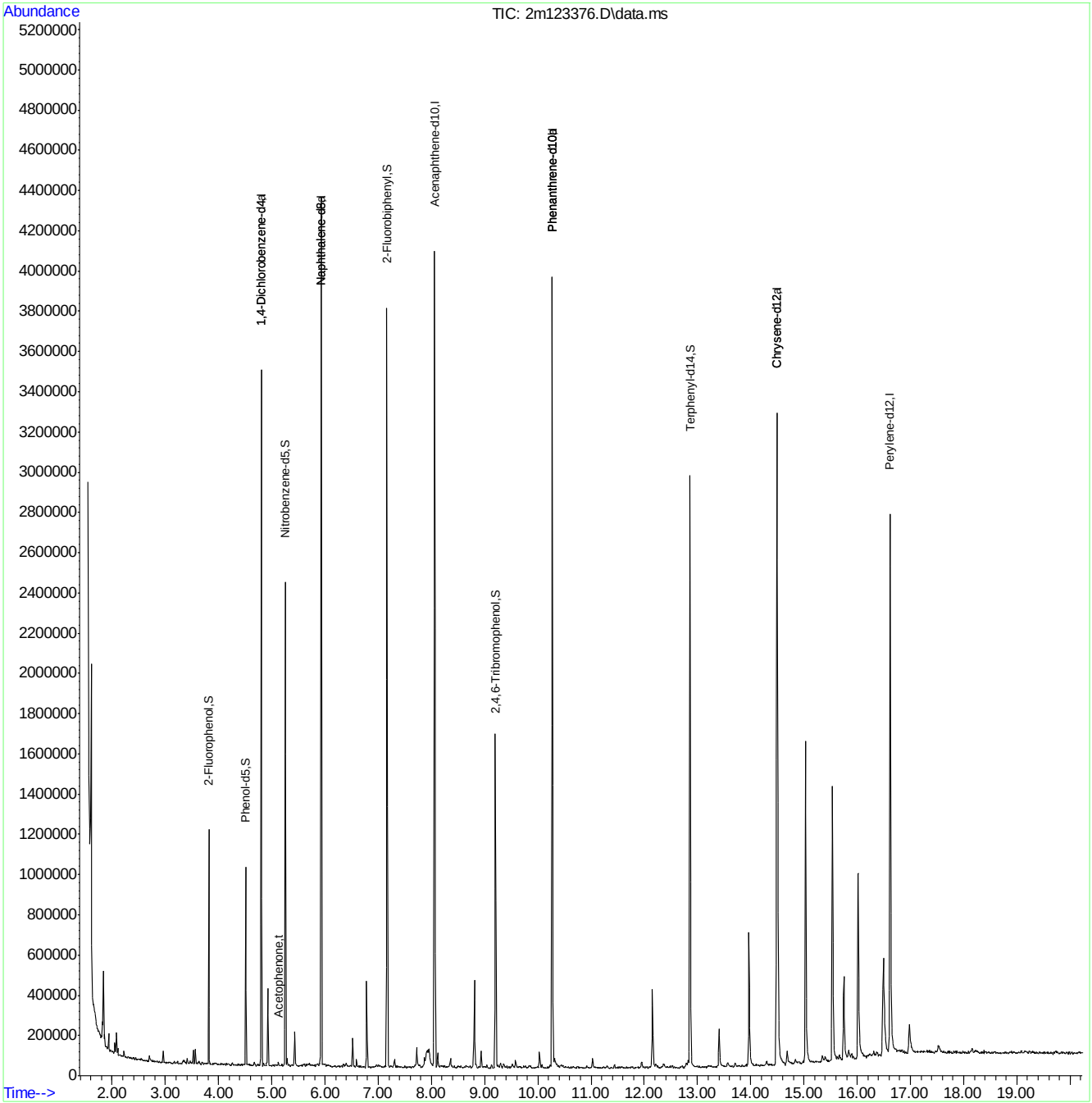
Compound		R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards							
1) 1,4-Dichlorobenzene-d4		4.804	152	419044	8.00	ppm	-0.01
24) Naphthalene-d8		5.928	136	1817887	8.00	ppm	-0.02
46) Acenaphthene-d10		8.062	164	1059958	8.00	ppm	-0.02
69) Phenanthrene-d10		10.271	188	1929078	8.00	ppm	-0.02
84) Chrysene-d12		14.491	240	1517081	8.00	ppm	-0.03
93) Perylene-d12		16.620	264	1428629	8.00	ppm	-0.03
103) 1,4-Dichlorobenzene-d4a		4.804	152	419044	8.00	ppm	0.00
105) Phenanthrene-d10a		10.271	188	1929078	8.00	ppm	0.00
107) Naphthalene-d8a		5.928	136	1817887	8.00	ppm	-0.01
109) Chrysene-d12a		14.491	240	1517081	8.00	ppm	-0.01
111) Phenanthrene-d10b		10.271	188	1929078	8.00	ppm	0.00
System Monitoring Compounds							
5) 2-Fluorophenol		3.815	112	220508	3.32	ppm	-0.01
Spiked Amount	10.000			Recovery	=	33.20%	
8) Phenol-d5		4.510	99	202561	2.24	ppm	-0.01
Spiked Amount	10.000			Recovery	=	22.40%	
25) Nitrobenzene-d5		5.254	82	584767	7.13	ppm	-0.02
Spiked Amount	10.000			Recovery	=	71.30%	
51) 2-Fluorobiphenyl		7.163	172	1246268	6.89	ppm	-0.02
Spiked Amount	10.000			Recovery	=	68.90%	
74) 2,4,6-Tribromophenol		9.206	330	245154	7.48	ppm	-0.02
Spiked Amount	10.000			Recovery	=	74.80%	
87) Terphenyl-d14		12.860	244	1391740	6.00	ppm	-0.02
Spiked Amount	10.000			Recovery	=	60.00%	
112) 1-chlorooctadecane		0.000	57	0d	0.00	ppm	
Spiked Amount	10.000			Recovery	=	0.00%	
113) o-terphenyl		0.000	230	0	0.00	ppm	
Spiked Amount	10.000			Recovery	=	0.00%	
Target Compounds							Qvalue
18) Acetophenone		5.120	105	3426	0.03	ppm	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

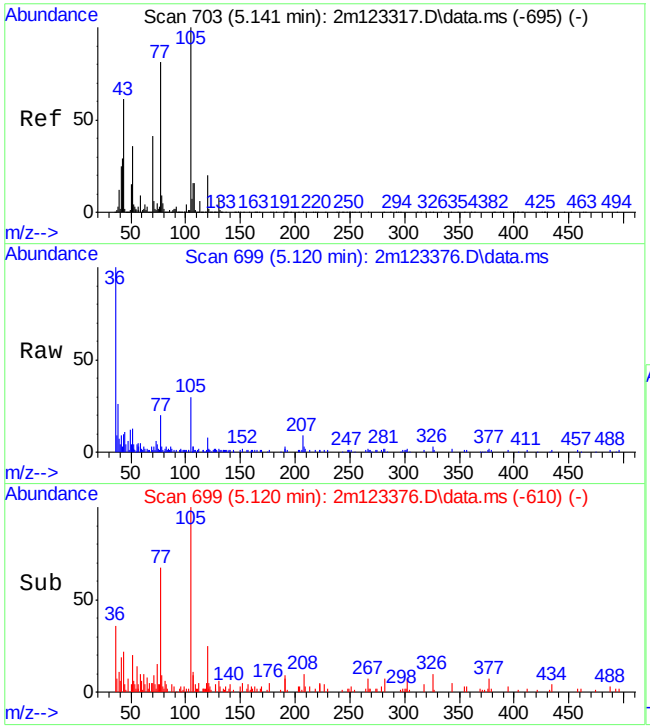
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E2M5552\
Data File : 2m123376.D
Acq On : 21 Apr 2022 2:42 am
Operator : chriss2
Sample : op39192a-mb1
Misc : op39192,e2m5552,250,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 21 10:13:33 2022
Quant Method : C:\MSDCHEM\1\METHODS\M2M5549LVI.M
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Wed Apr 20 17:02:01 2022
Response via : Initial Calibration



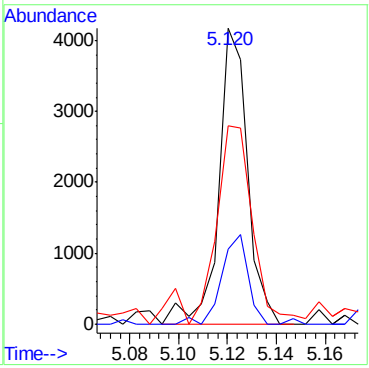
M2M5549LVI.M Thu Apr 21 10:13:37 2022 Page: 2



#18
Acetophenone
Concen: 0.03 ppm
RT: 5.120 min Scan# 699
Delta R.T. -0.021 min
Lab File: 2m123376.D
Acq: 21 Apr 2022 2:42 am

Tgt Ion:105 Resp: 3426

Ion	Ratio	Lower	Upper
105	100		
120	29.2	0.0	50.4
77	61.7	50.5	110.5



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
04/21/22 17:37

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96472.D
Acq On : 20 Apr 2022 3:21 am
Operator : chriss2
Sample : op39191-mb1
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 20 10:29:13 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

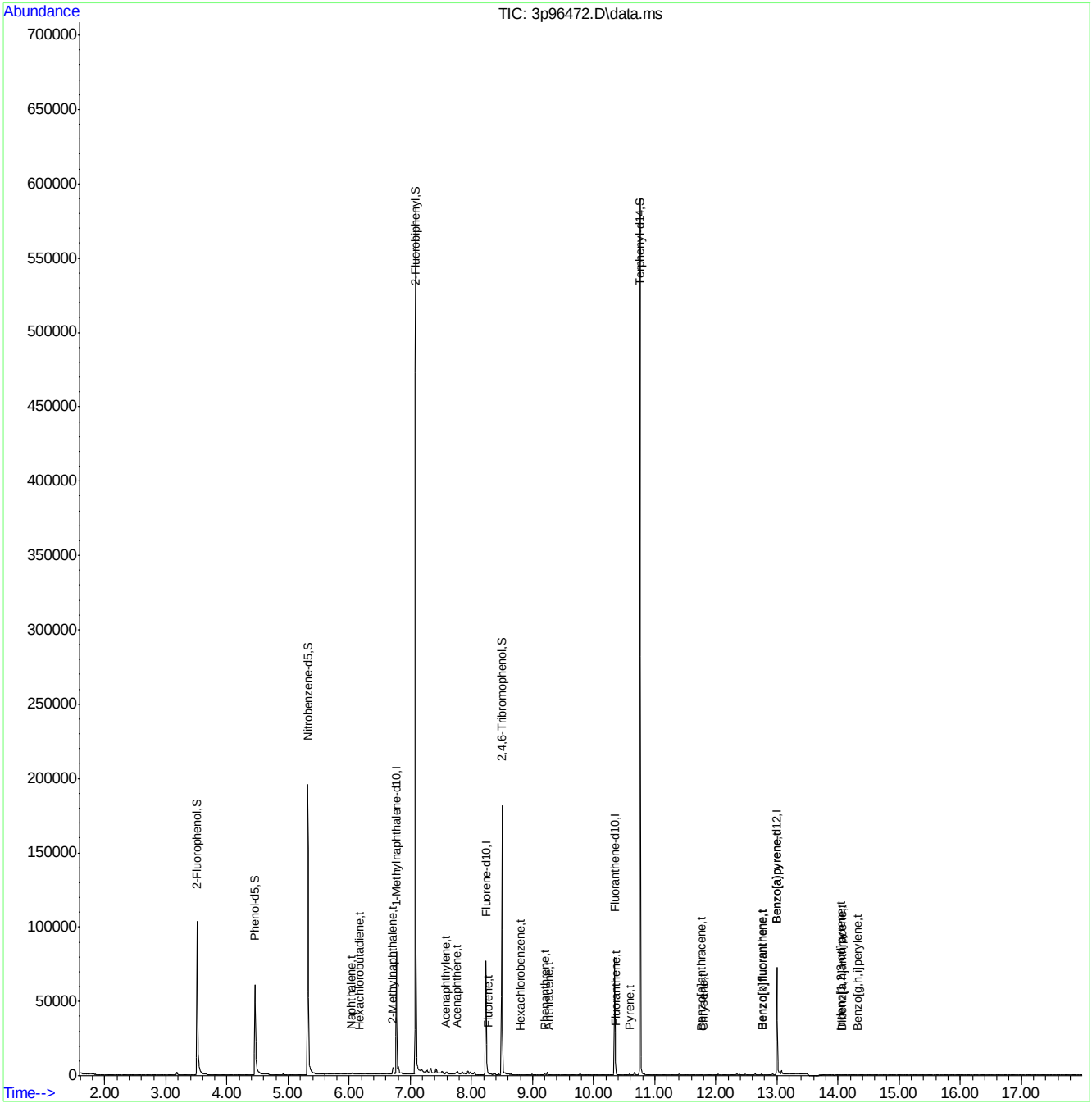
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	6.772	150	26749	800.00	ppb		0.00
12) Fluorene-d10	8.236	176	34574	800.00	ppb		0.00
19) Fluoranthene-d10	10.342	212	57560	800.00	ppb		0.00
29) Benzo(a)pyrene-d12	13.001	264	47611	800.00	ppb		0.00
System Monitoring Compounds							
3) 2-Fluorophenol	3.512	112	77693	3855.92	ppb		-0.03
Spiked Amount 50.000			Recovery	= 7711.84%			
4) Phenol-d5	4.455	99	72693	2657.04	ppb		-0.02
Spiked Amount 50.000			Recovery	= 5314.08%			
7) Nitrobenzene-d5	5.320	82	135889	6370.67	ppb		0.00
Spiked Amount 50.000			Recovery	= 12741.34%			
13) 2-Fluorobiphenyl	7.088	172	335900	6190.35	ppb		0.00
Spiked Amount 50.000			Recovery	= 12380.70%			
18) 2,4,6-Tribromophenol	8.500	330	68409	10496.94	ppb		0.00
Spiked Amount 50.000			Recovery	= 20993.88%			
26) Terphenyl-d14	10.763	244	403522	7523.44	ppb		0.00
Spiked Amount 50.000			Recovery	= 15046.88%			
Target Compounds							Qvalue
8) Naphthalene	6.037	128	794m	9.73	ppb		
9) Hexachlorobutadiene	6.166	225	29	2.38	ppb		97
10) 2-Methylnaphthalene	6.716	141	2200	50.44	ppb		93
14) Acenaphthylene	7.589	152	168	2.05	ppb	#	55
15) Acenaphthene	7.759	153	209m	3.75	ppb		
17) Fluorene	8.266	166	471m	8.07	ppb		
20) Hexachlorobenzene	8.796	284	81	4.33	ppb		88
22) Phenanthrene	9.205	178	752m	8.74	ppb		
23) Anthracene	9.259	178	286m	3.44	ppb		
24) Fluoranthene	10.362	202	308	3.02	ppb		96
25) Pyrene	10.584	202	351	3.31	ppb		99
27) Benzo[a]anthracene	11.760	228	104	1.35	ppb		94
28) Chrysene	11.792	228	125	1.25	ppb		93
30) Benzo[b]fluoranthene	12.754	252	110	1.27	ppb		77
31) Benzo[k]fluoranthene	12.778	252	73	0.71	ppb		74
32) Benzo[a]pyrene	13.001	252	264	2.30	ppb		64
33) Indeno[1,2,3-cd]pyrene	14.052	276	69	0.75	ppb		95
34) Dibenz[a,h]anthracene	14.070	278	45	0.60	ppb		75
35) Benzo[g,h,i]perylene	14.316	276	67	0.77	ppb		97

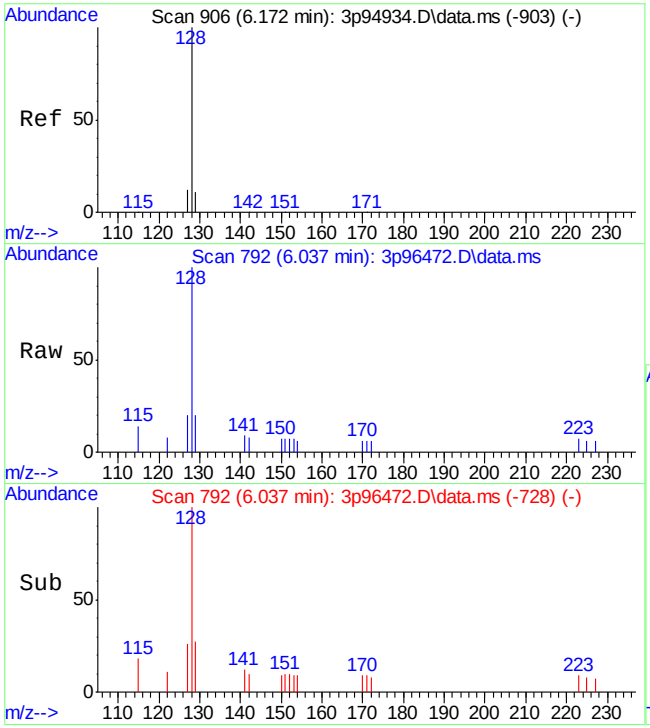
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P4582\
Data File : 3p96472.D
Acq On : 20 Apr 2022 3:21 am
Operator : chriss2
Sample : op39191-mb1
Misc : op39191,e3p4582,250,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 20 10:29:13 2022
Quant Method : C:\MSDCHEM\1\METHODS\M3P4567SIMLVI.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Tue Apr 19 02:56:39 2022
Response via : Initial Calibration

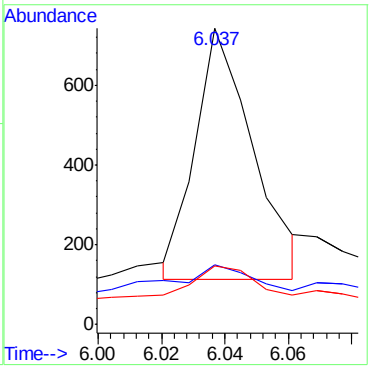


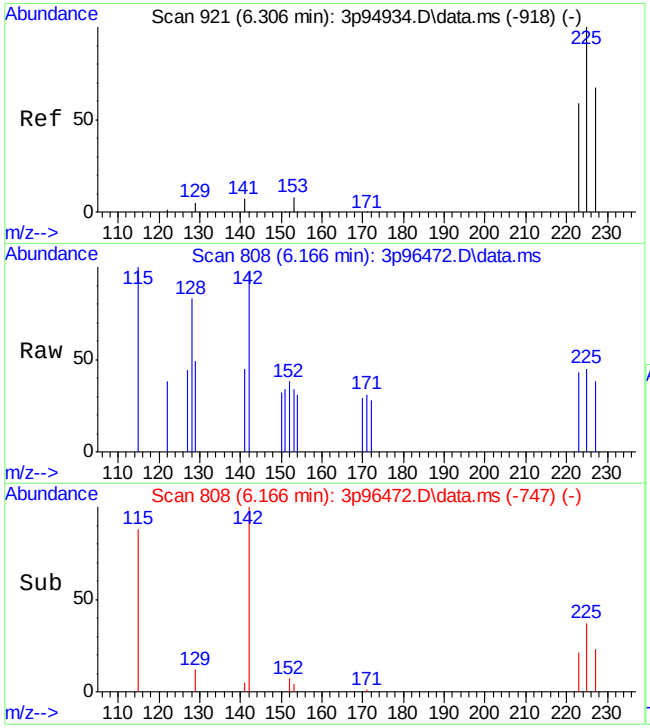


#8
Naphthalene
Concen: 9.73 ppb m
RT: 6.037 min Scan# 792
Delta R.T. 0.003 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:128 Resp: 794

Ion	Ratio	Lower	Upper
128	100		
129	20.1	0.0	41.2
127	19.7	0.0	41.7

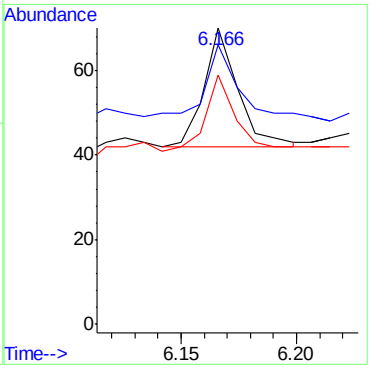


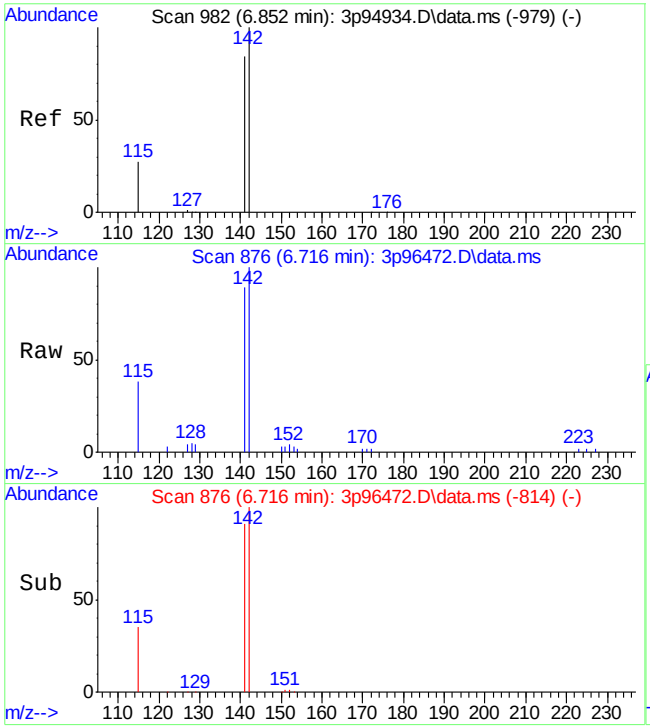


#9
Hexachlorobutadiene
Concen: 2.38 ppb
RT: 6.166 min Scan# 808
Delta R.T. -0.004 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:225 Resp: 29

Ion	Ratio	Lower	Upper
225	100		
223	58.2	28.5	88.5
227	63.6	37.4	97.4

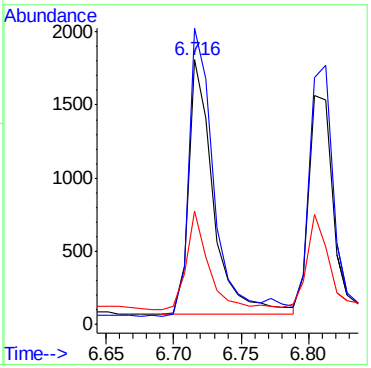


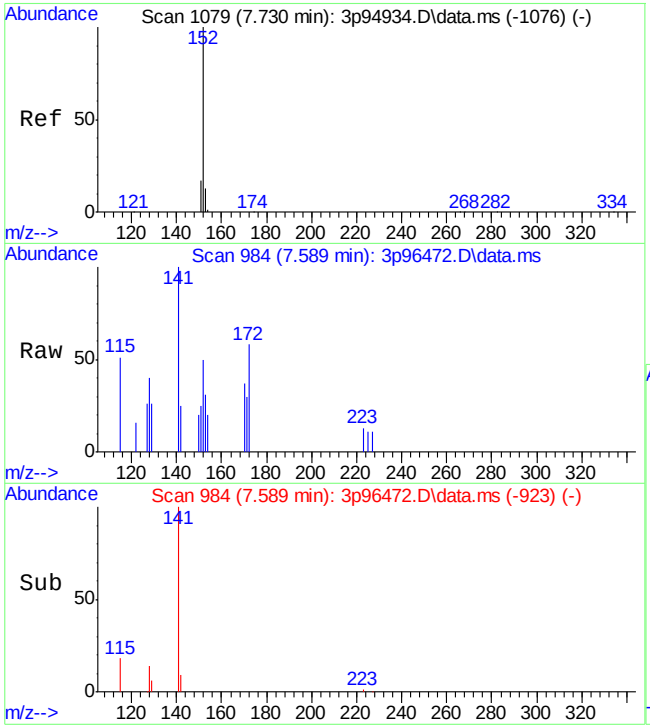


#10
2-Methylnaphthalene
Concen: 50.44 ppb
RT: 6.716 min Scan# 876
Delta R.T. 0.002 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:141 Resp: 2200

Ion	Ratio	Lower	Upper
141	100		
142	112.6	88.8	148.8
115	38.1	1.9	61.9

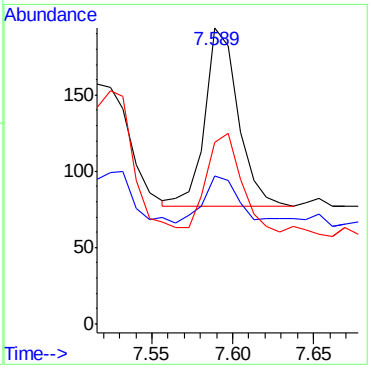


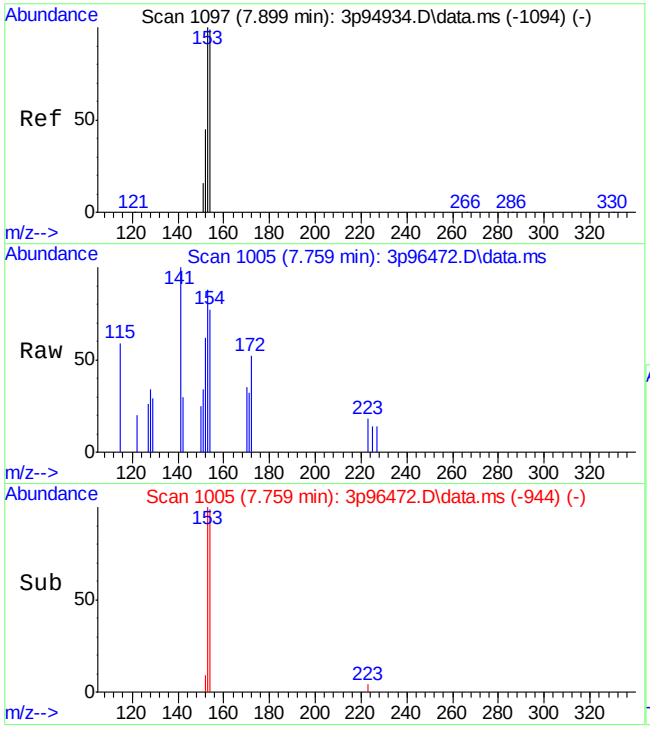


#14
Acenaphthylene
Concen: 2.05 ppb
RT: 7.589 min Scan# 984
Delta R.T. -0.009 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:152 Resp: 168

Ion	Ratio	Lower	Upper
152	100		
151	23.9	0.0	47.3
153	46.5	0.0	43.3#

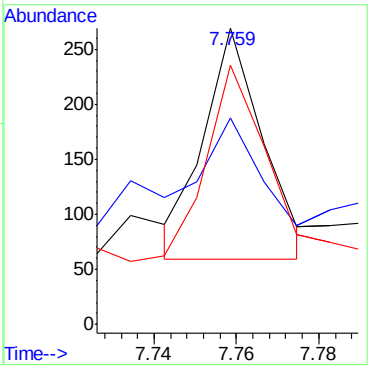


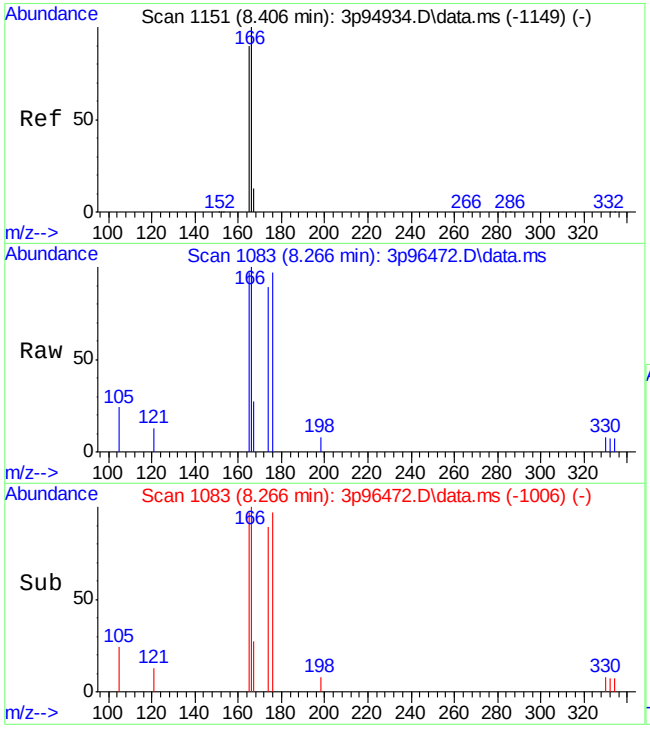


#15
Acenaphthene
Concen: 3.75 ppb m
RT: 7.759 min Scan# 1005
Delta R.T. -0.007 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:153 Resp: 209

Ion	Ratio	Lower	Upper
153	100		
152	69.9	16.5	76.5
154	87.4	73.6	133.6

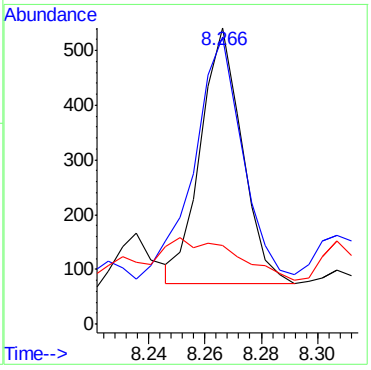


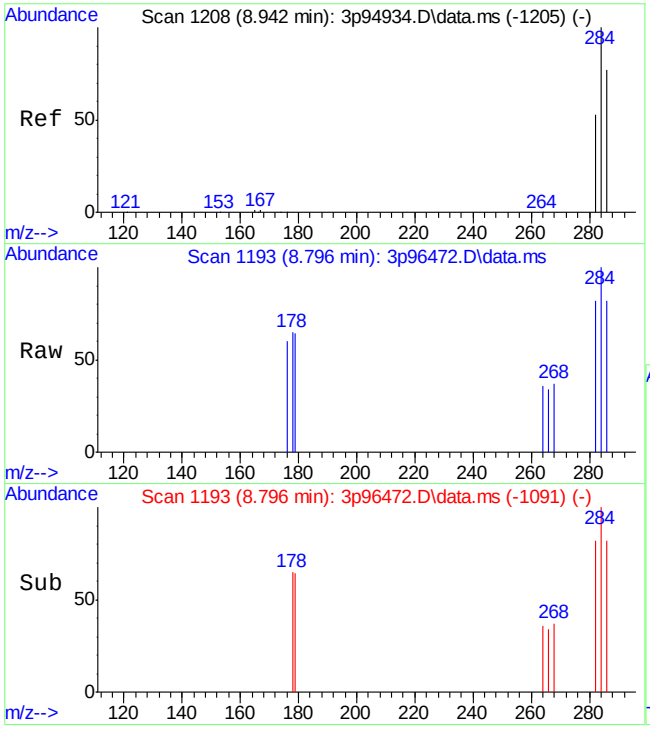


#17
Fluorene
Concen: 8.07 ppb m
RT: 8.266 min Scan# 1083
Delta R.T. 0.003 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:166 Resp: 471

Ion	Ratio	Lower	Upper
166	100		
165	96.9	57.3	117.3
167	26.6	0.0	46.0

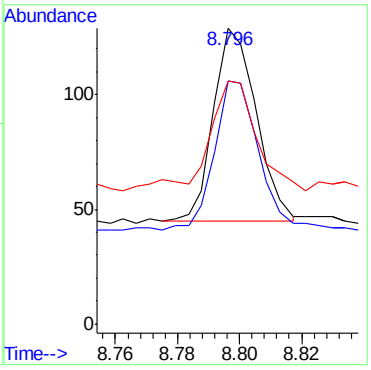


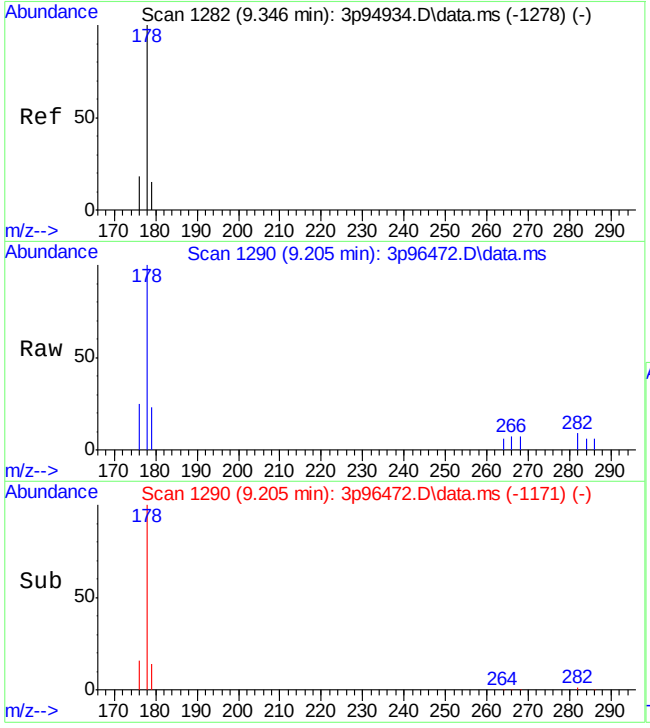


#20
Hexachlorobenzene
Concen: 4.33 ppb
RT: 8.796 min Scan# 1193
Delta R.T. -0.011 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:284 Resp: 81

Ion	Ratio	Lower	Upper
284	100		
286	76.5	35.2	95.2
282	52.4	16.0	76.0

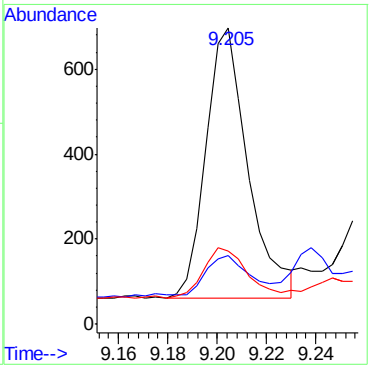


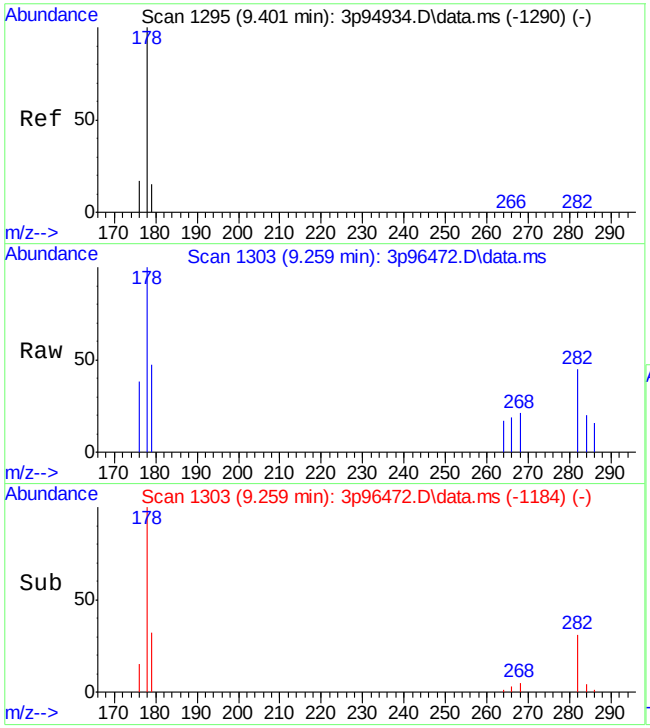


#22
Phenanthrene
Concen: 8.74 ppb m
RT: 9.205 min Scan# 1290
Delta R.T. 0.001 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:178 Resp: 752

Ion	Ratio	Lower	Upper
178	100		
179	23.0	0.0	45.1
176	24.7	0.0	47.5

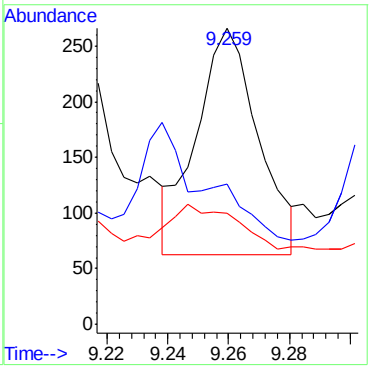


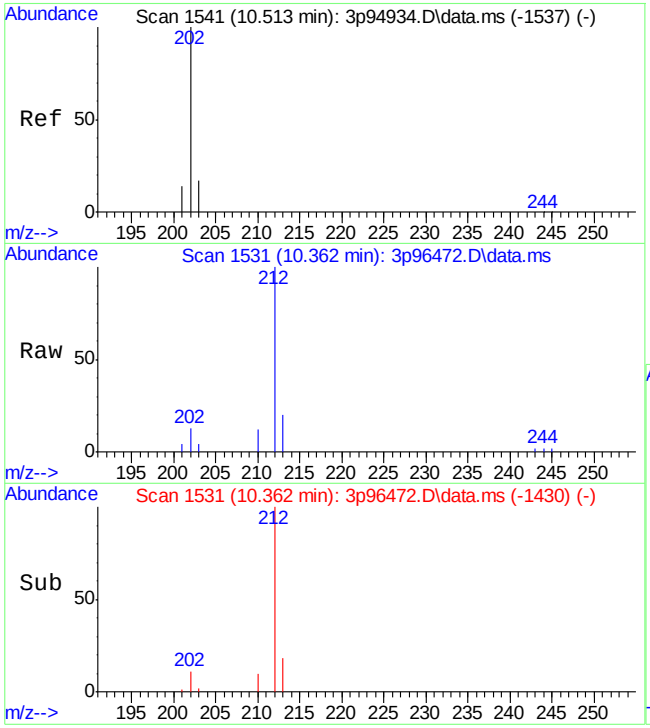


#23
Anthracene
Concen: 3.44 ppb m
RT: 9.259 min Scan# 1303
Delta R.T. 0.001 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:178 Resp: 286

Ion	Ratio	Lower	Upper
178	100		
179	47.4	0.0	43.0#
176	37.6	0.0	47.0

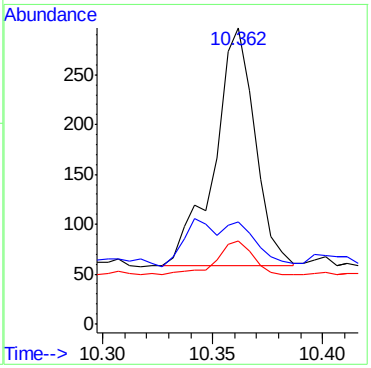


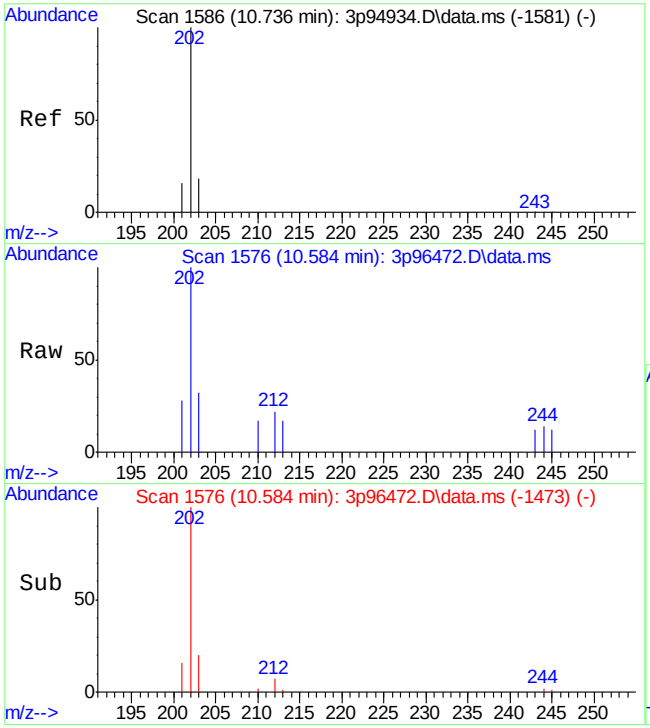


#24
Fluoranthene
Concen: 3.02 ppb
RT: 10.362 min Scan# 1531
Delta R.T. 0.001 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:202 Resp: 308

Ion	Ratio	Lower	Upper
202	100		
203	18.1	0.0	50.0
201	13.9	0.0	45.9

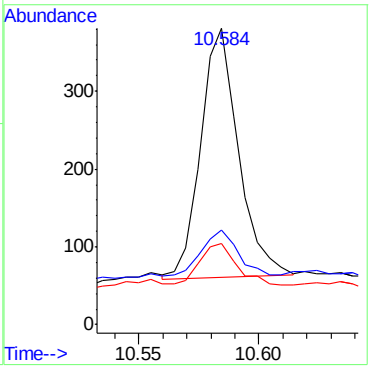


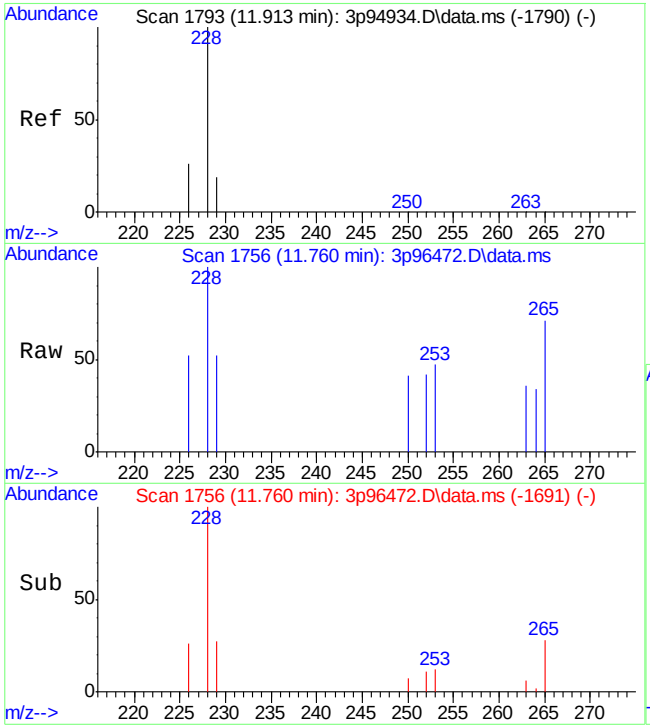


#25
Pyrene
Concen: 3.31 ppb
RT: 10.584 min Scan# 1576
Delta R.T. 0.007 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:202 Resp: 351

Ion	Ratio	Lower	Upper
202	100		
203	17.6	0.0	48.7
201	16.8	0.0	46.9

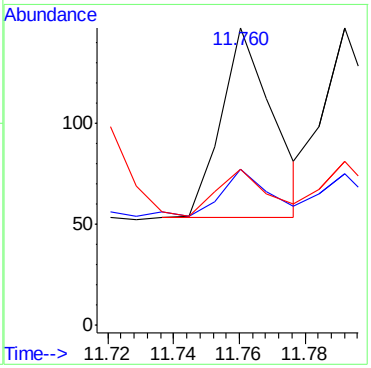


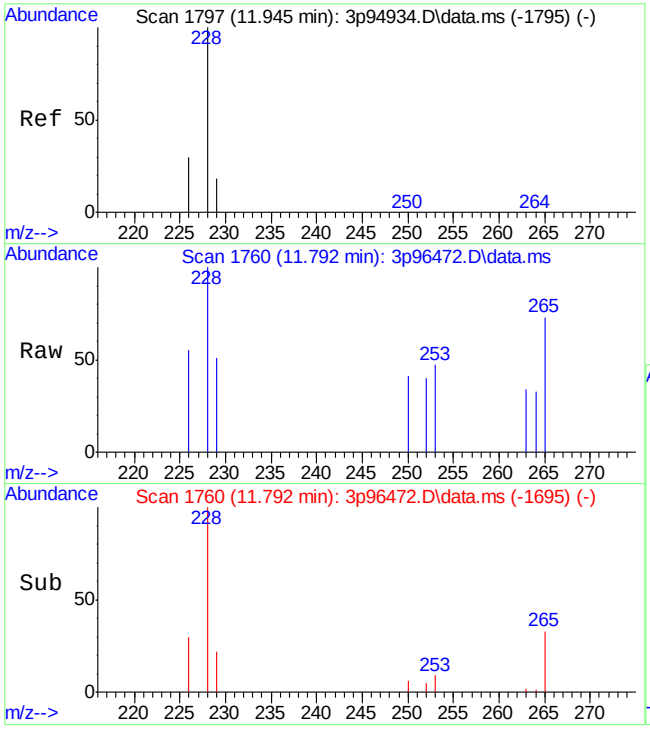


#27
Benzo[a]anthracene
Concen: 1.35 ppb
RT: 11.760 min Scan# 1756
Delta R.T. 0.014 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:228 Resp: 104

Ion	Ratio	Lower	Upper
228	100		
229	24.4	0.0	49.3
226	23.8	0.0	55.2

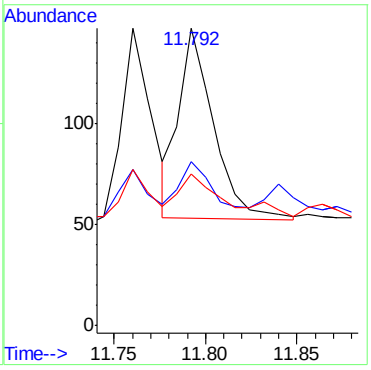


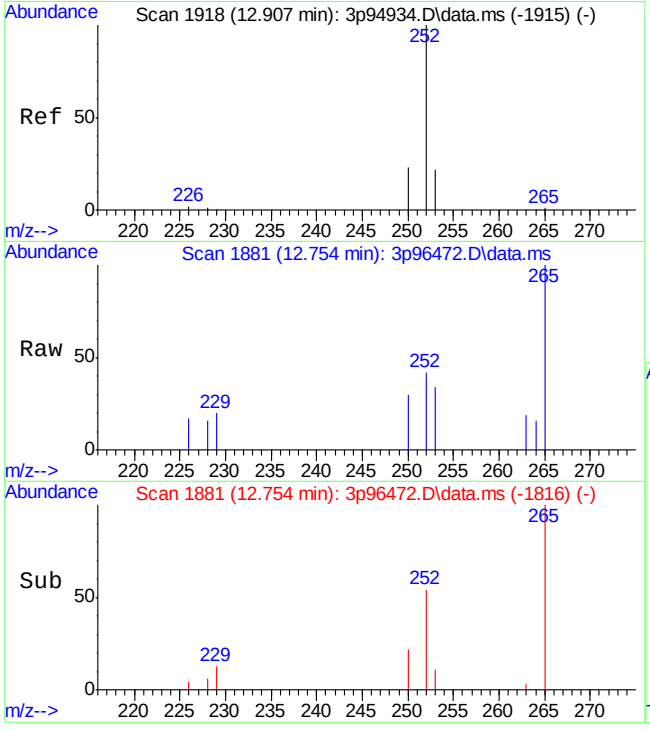


#28
Chrysene
Concen: 1.25 ppb
RT: 11.792 min Scan# 1760
Delta R.T. 0.014 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:228 Resp: 125

Ion	Ratio	Lower	Upper
228	100		
226	24.5	0.0	55.6
229	23.3	0.0	47.4

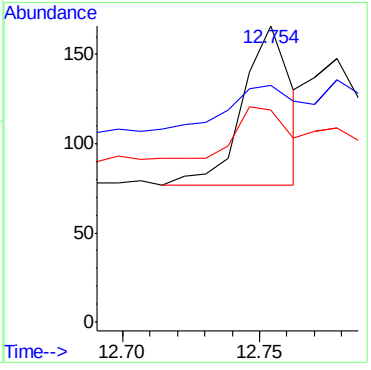


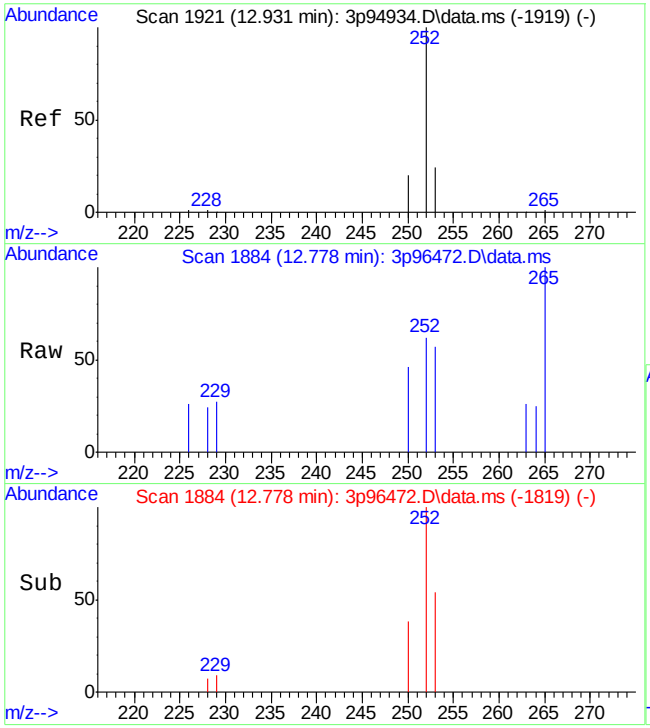


#30
Benzo[b]fluoranthene
Concen: 1.27 ppb
RT: 12.754 min Scan# 1881
Delta R.T. 0.013 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:252 Resp: 110

Ion	Ratio	Lower	Upper
252	100		
253	27.2	0.0	51.7
250	34.4	0.0	48.4

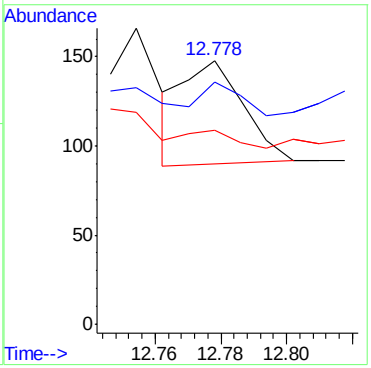


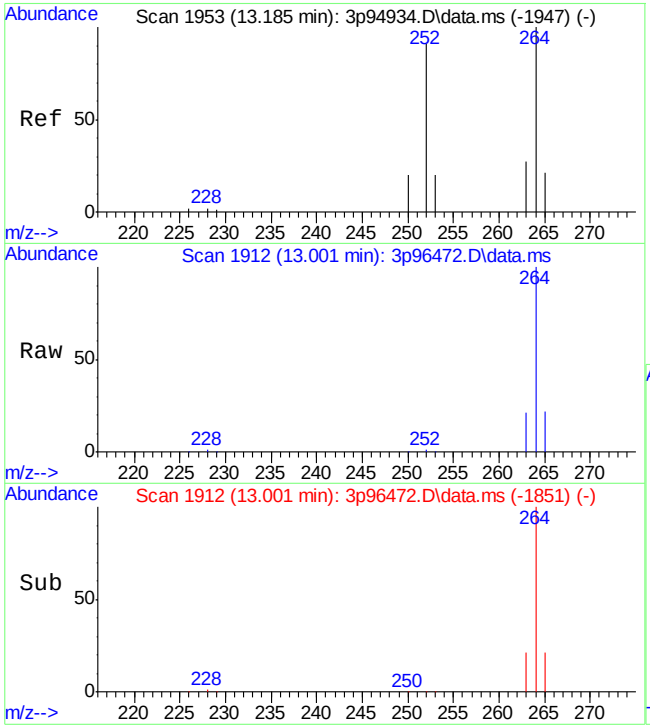


#31
Benzo[k]fluoranthene
Concen: 0.71 ppb
RT: 12.778 min Scan# 1884
Delta R.T. 0.013 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:252 Resp: 73

Ion	Ratio	Lower	Upper
252	100		
253	39.2	0.0	51.5
250	14.9	0.0	51.3

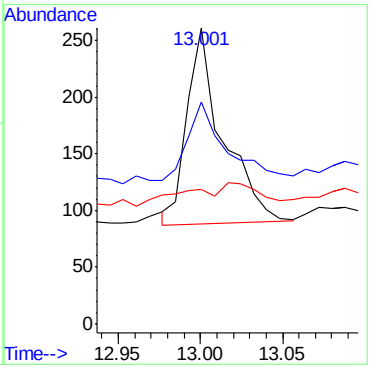


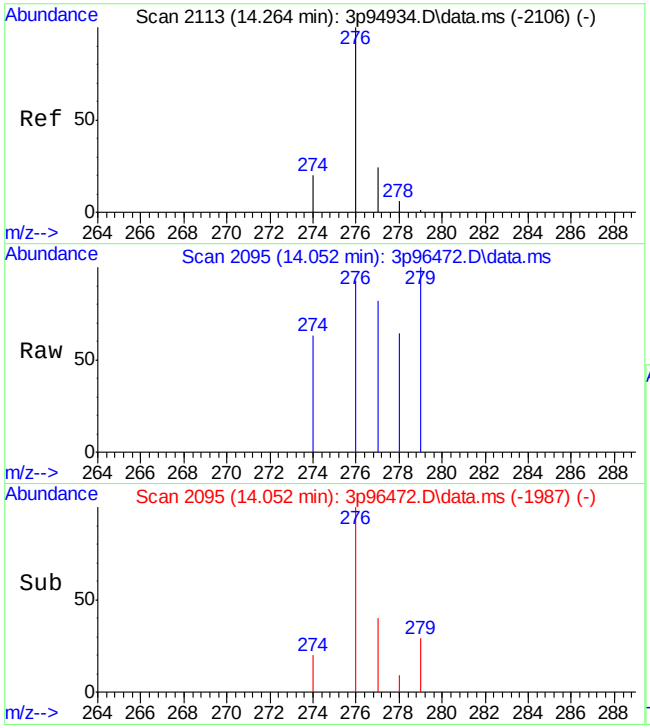


#32
Benzo[a]pyrene
Concen: 2.30 ppb
RT: 13.001 min Scan# 1912
Delta R.T. -0.017 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:252 Resp: 264

Ion	Ratio	Lower	Upper
252	100		
253	40.8	0.0	52.3
250	4.2	0.0	49.9

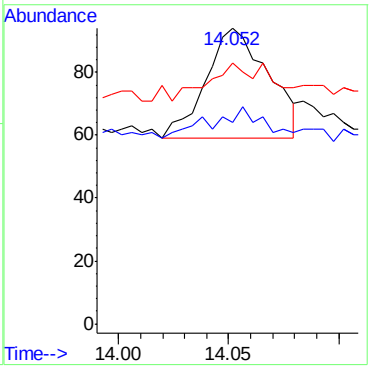


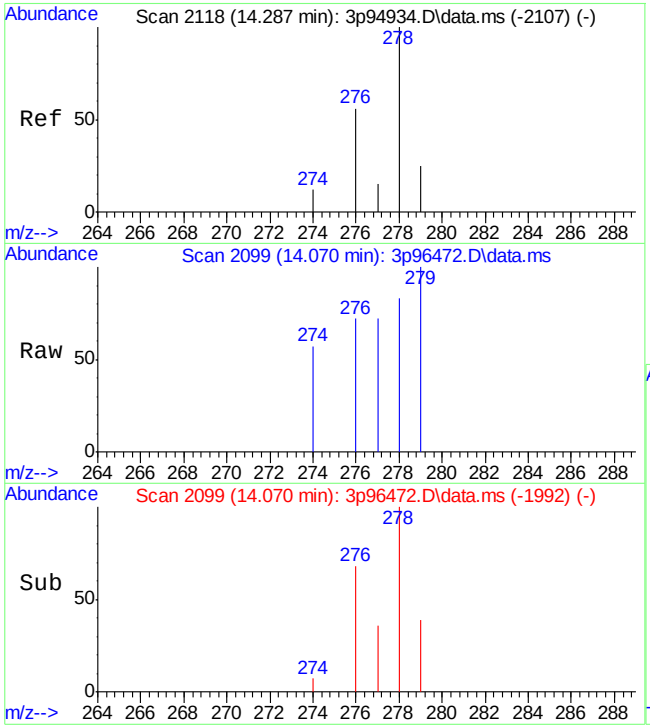


#33
Indeno[1,2,3-cd]pyrene
Concen: 0.75 ppb
RT: 14.052 min Scan# 2095
Delta R.T. -0.006 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:276 Resp: 69

Ion	Ratio	Lower	Upper
276	100		
274	13.6	0.0	45.2
277	25.4	0.0	52.4

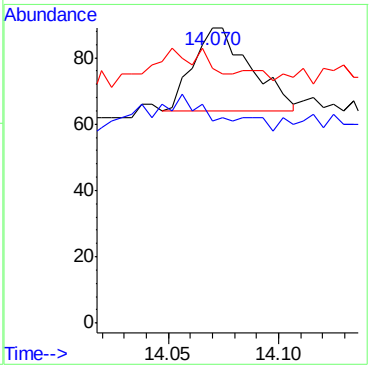


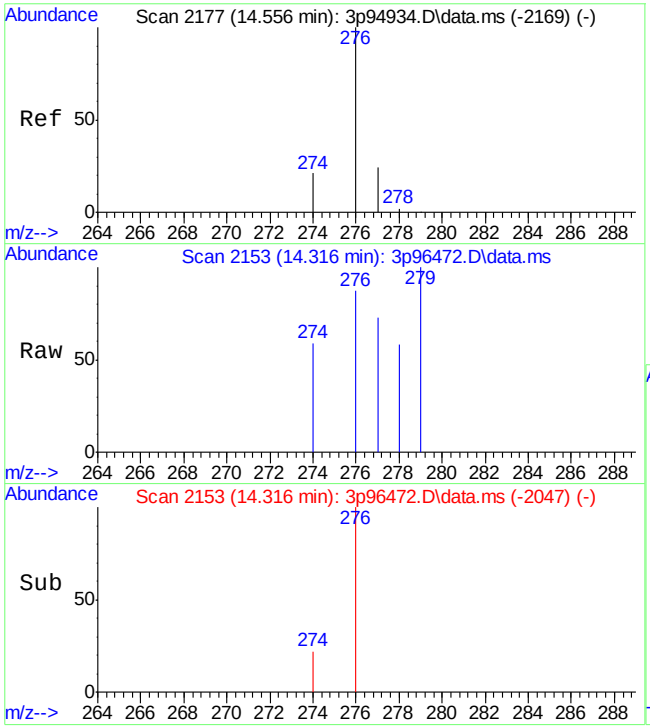


#34
Dibenz[a,h]anthracene
Concen: 0.60 ppb
RT: 14.070 min Scan# 2099
Delta R.T. -0.010 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:278 Resp: 45

Ion	Ratio	Lower	Upper
278	100		
274	0.0	0.0	40.3
277	2.1	0.0	40.0

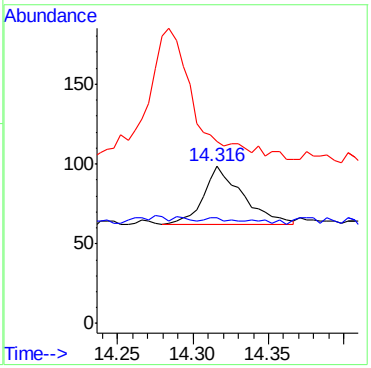




#35
Benzo[g,h,i]perylene
Concen: 0.77 ppb
RT: 14.316 min Scan# 2153
Delta R.T. -0.018 min
Lab File: 3p96472.D
Acq: 20 Apr 2022 3:21 am

Tgt Ion:276 Resp: 67

Ion	Ratio	Lower	Upper
276	100		
278	0.0	0.0	31.3
279	0.0	0.0	30.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\altheam\e4p2772\
Data File : 4p53066.d
Acq On : 21 Apr 2022 12:32 am
Operator : chriss2
Sample : op39192a-mb1 Inst : MS4P
Misc : op39192a,e4p2772,250,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Results File: M4P2764SIMLVI.RES
Quant Time: Apr 21 04:32:30 2022
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Apr 21 04:27:22 2022
Response via : Initial Calibration

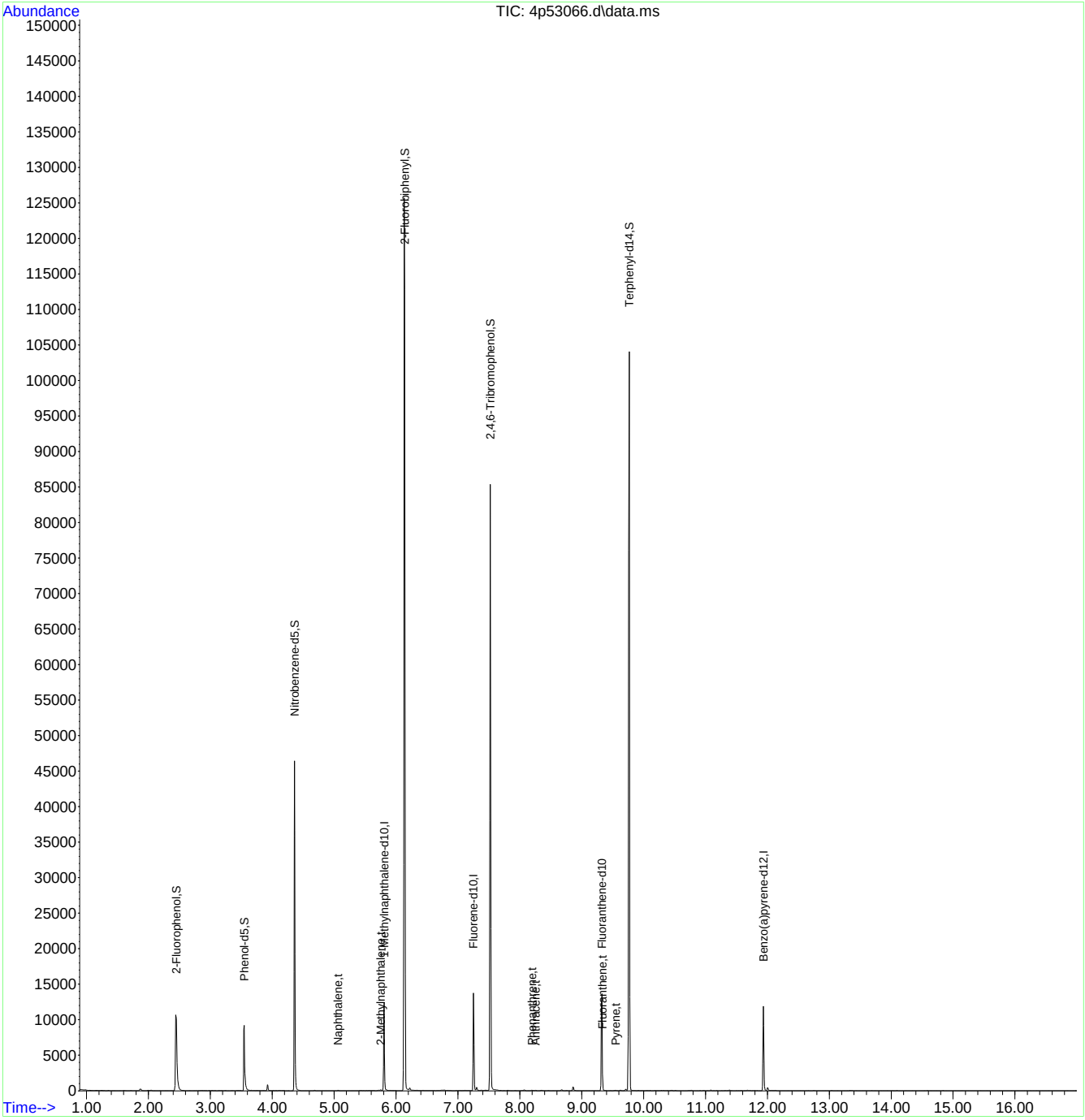
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	5.809	150	4133	800.00	ppm	0.00
13) Fluorene-d10	7.252	176	6735	800.00	ppm	0.00
20) Fluoranthene-d10	9.327	212	12579	800.00	ppm	0.00
30) Benzo(a)pyrene-d12	11.935	264	8624	800.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	2.452	112	8783	3722.38	ppm	0.01
Spiked Amount 50.000			Recovery = 7444.76%			
4) Phenol-d5	3.547	99	8913	2377.62	ppm	0.00
Spiked Amount 50.000			Recovery = 4755.24%			
7) Nitrobenzene-d5	4.360	82	29536	7136.95	ppm	0.00
Spiked Amount 50.000			Recovery = 14273.90%			
14) 2-Fluorobiphenyl	6.142	172	77323	6830.55	ppm	0.00
Spiked Amount 50.000			Recovery = 13661.10%			
19) 2,4,6-Tribromophenol	7.525	330	32830	8569.52	ppm	0.00
Spiked Amount 50.000			Recovery = 17139.04%			
27) Terphenyl-d14	9.769	244	80715	6215.00	ppm	0.00
Spiked Amount 50.000			Recovery = 12430.00%			
Target Compounds						Qvalue
8) Naphthalene	5.063	128	59	4.68	ppm	91
10) 2-Methylnaphthalene	5.755	141	50	7.39	ppm	95
23) Phenanthrene	8.198	178	64	3.37	ppm	73
24) Anthracene	8.253	178	55	3.03	ppm	87
25) Fluoranthene	9.337	202	94	4.31	ppm	86
26) Pyrene	9.548	202	58	2.50	ppm	70

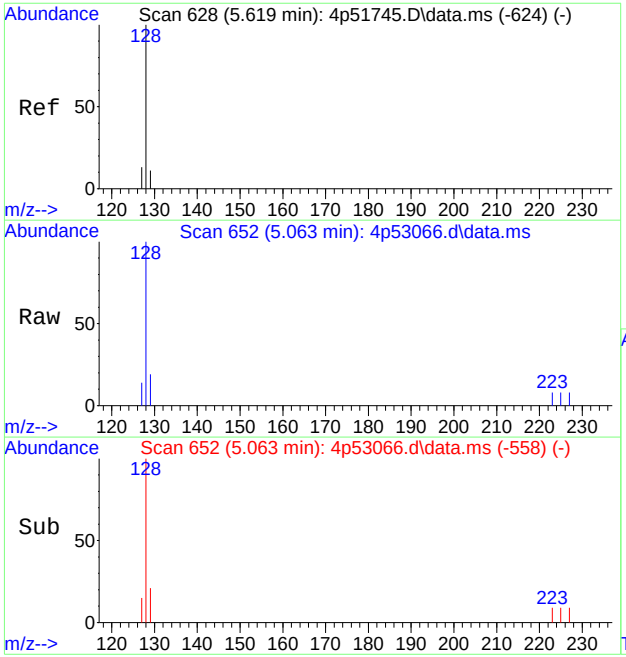
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\altheam\e4p2772\
Data File : 4p53066.d
Acq On : 21 Apr 2022 12:32 am
Operator : chriss2
Sample : op39192a-mb1 Inst : MS4P
Misc : op39192a,e4p2772,250,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M4P2764SIMLVI.M
Quant Results File: M4P2764SIMLVI.RES
Quant Time: Apr 21 04:32:30 2022
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Apr 21 04:27:22 2022
Response via : Initial Calibration

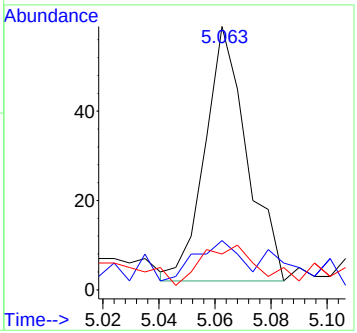


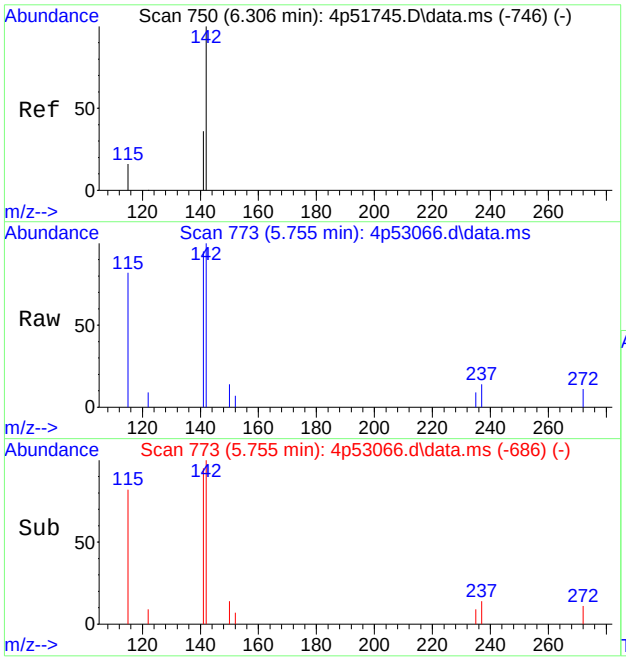


#8
Naphthalene
Concen: 4.68 ppm
RT: 5.063 min Scan# 652
Delta R.T. 0.000 min
Lab File: 4p53066.d
Acq: 21 Apr 2022 12:32 am

Tgt Ion:128 Resp: 59

Ion	Ratio	Lower	Upper
128	100		
129	12.5	0.0	41.9
127	5.4	0.0	42.1

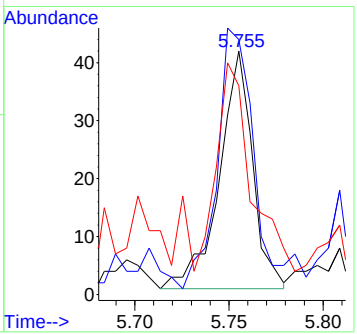


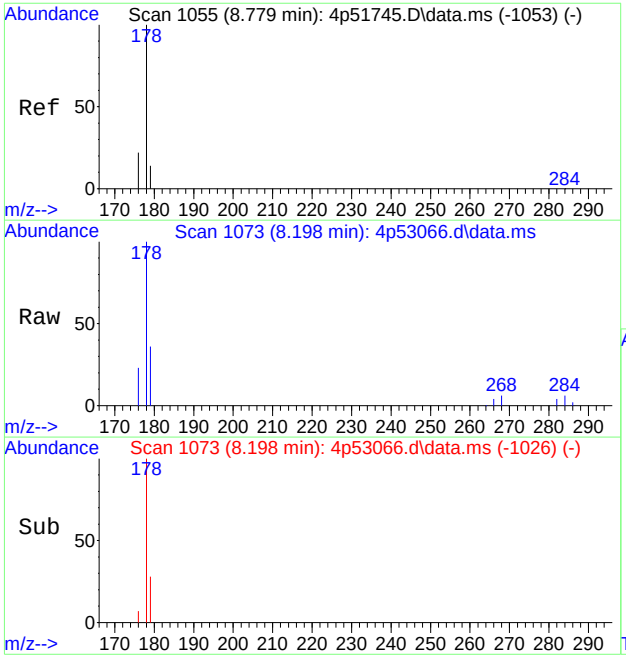


#10
2-Methylnaphthalene
Concen: 7.39 ppm
RT: 5.755 min Scan# 773
Delta R.T. 0.006 min
Lab File: 4p53066.d
Acq: 21 Apr 2022 12:32 am

Tgt Ion:141 Resp: 50

Ion	Ratio	Lower	Upper
141	100		
142	97.5	63.2	123.2
115	65.4	30.9	90.9

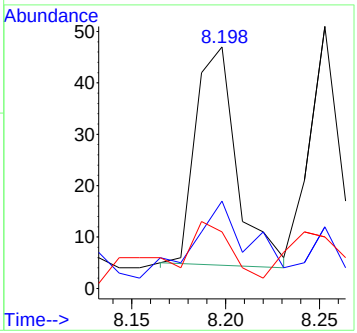


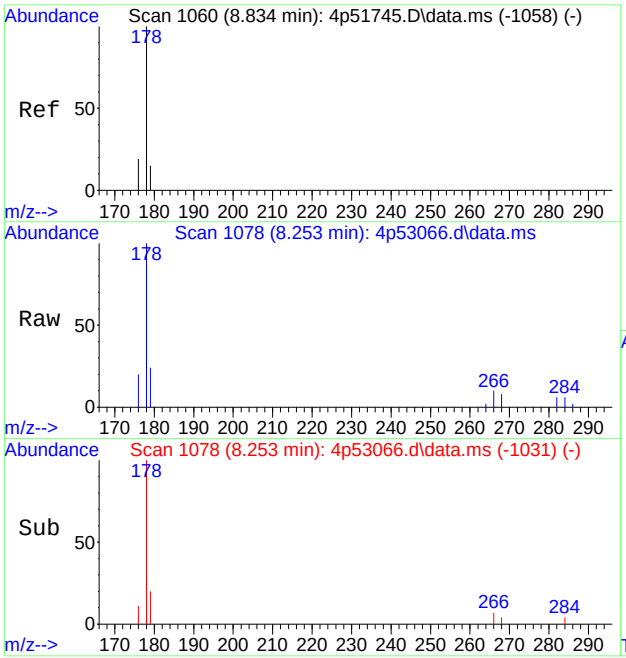


#23
Phenanthrene
Concen: 3.37 ppm
RT: 8.198 min Scan# 1073
Delta R.T. 0.011 min
Lab File: 4p53066.d
Acq: 21 Apr 2022 12:32 am

Tgt Ion:178 Resp: 64

Ion	Ratio	Lower	Upper
178	100		
179	28.9	0.0	44.2
176	10.8	0.0	50.8

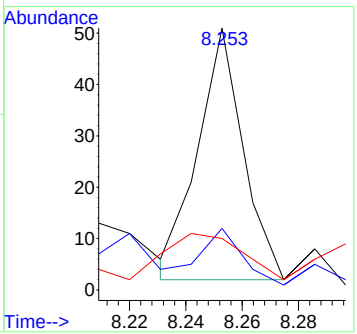


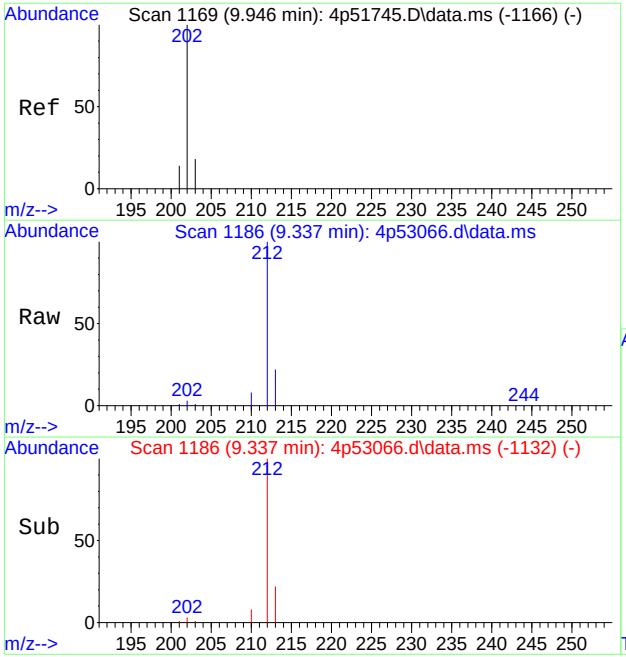


#24
Anthracene
Concen: 3.03 ppm
RT: 8.253 min Scan# 1078
Delta R.T. 0.011 min
Lab File: 4p53066.d
Acq: 21 Apr 2022 12:32 am

Tgt Ion:178 Resp: 55

Ion	Ratio	Lower	Upper
178	100		
179	20.2	0.0	45.1
176	11.7	0.0	47.8

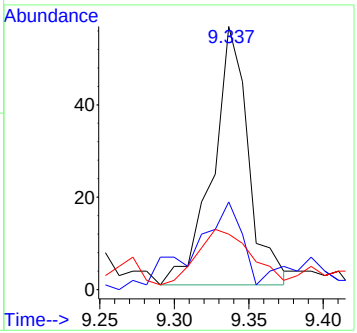


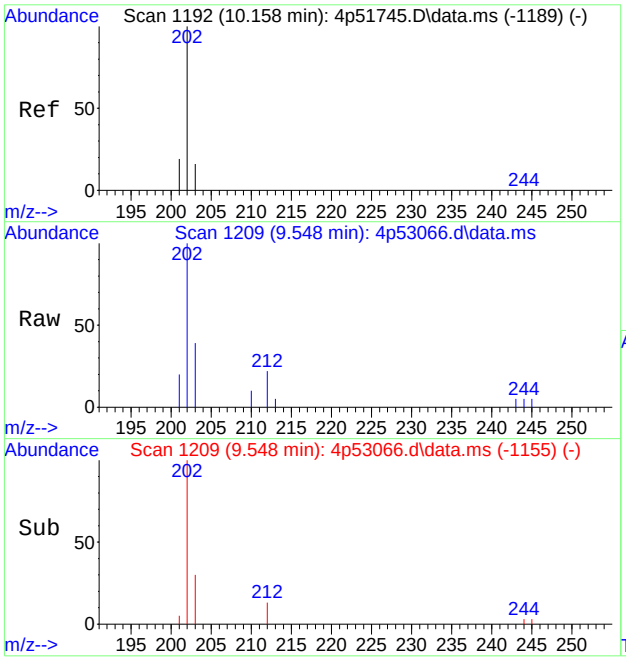


#25
Fluoranthene
Concen: 4.31 ppm
RT: 9.337 min Scan# 1186
Delta R.T. 0.000 min
Lab File: 4p53066.d
Acq: 21 Apr 2022 12:32 am

Tgt Ion:202 Resp: 94

Ion	Ratio	Lower	Upper
202	100		
203	23.9	0.0	47.1
201	19.3	0.0	44.4

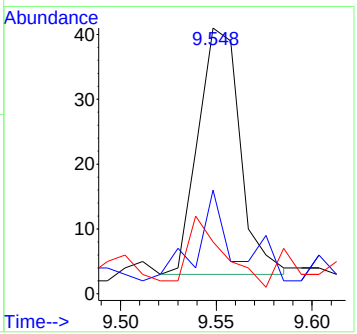




#26
Pyrene
Concen: 2.50 ppm
RT: 9.548 min Scan# 1209
Delta R.T. 0.000 min
Lab File: 4p53066.d
Acq: 21 Apr 2022 12:32 am

Tgt Ion:202 Resp: 58

Ion	Ratio	Lower	Upper
202	100		
203	36.0	0.0	48.0
201	9.3	0.0	47.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\jonkm\042622\e5p3929\
Data File : 5p82720.d
Acq On : 25 Apr 2022 3:21 pm
Operator : kristis
Sample : op39191a-mb1 Inst : MS5P
Misc : op39191a,e5p3929,250,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M
Quant Results File: M5P3881LVI.RES
Quant Time: Apr 25 16:06:37 2022
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Tue Apr 19 13:04:12 2022
Response via : Initial Calibration

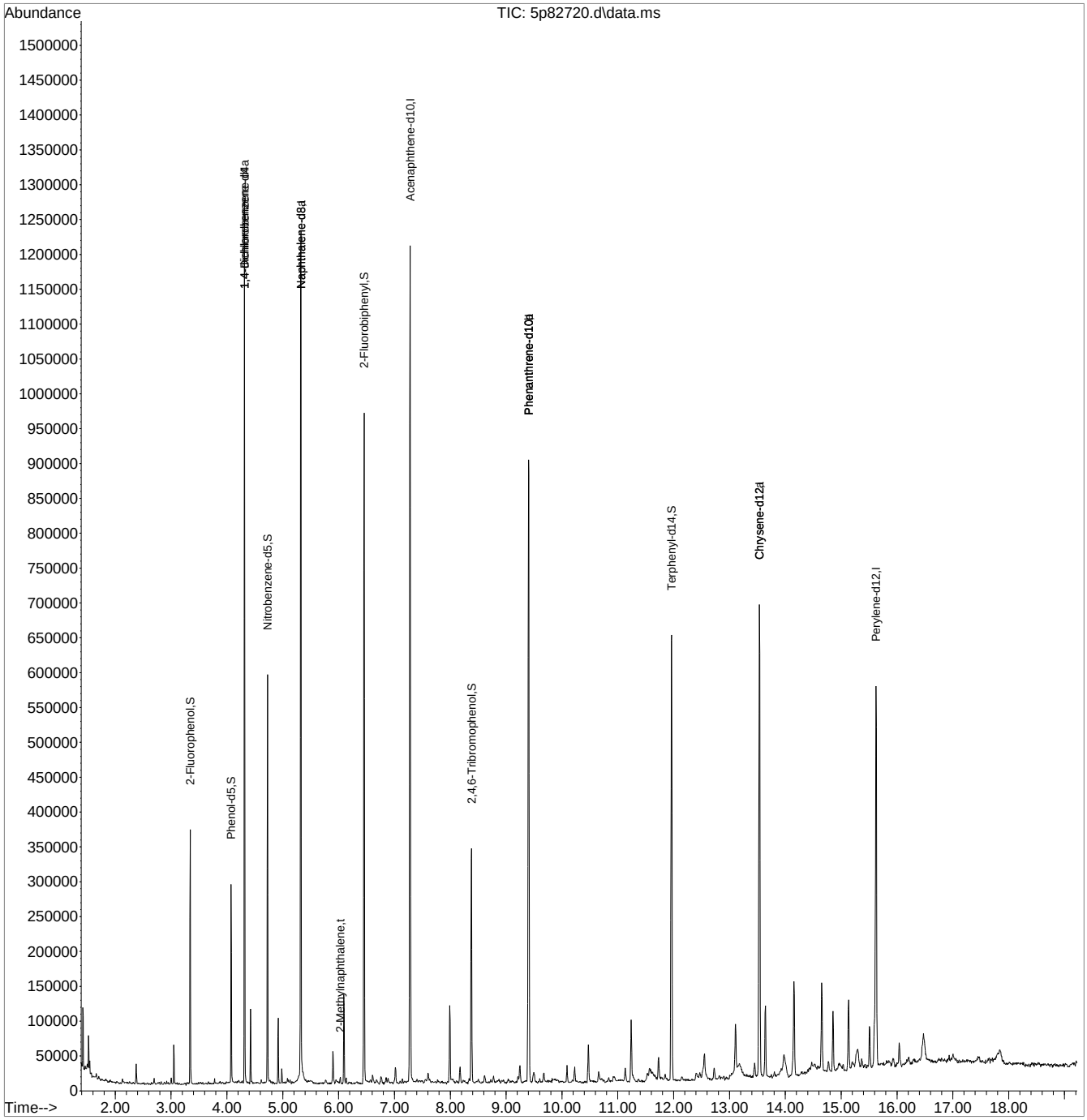
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-dichlorobenzene-d4	4.315	152	154332	8.00	ppm	-0.02
24) Naphthalene-d8	5.325	136	589486	8.00	ppm	-0.03
46) Acenaphthene-d10	7.280	164	301923	8.00	ppm	-0.04
69) Phenanthrene-d10	9.401	188	430244	8.00	ppm	-0.04
84) Chrysene-d12	13.536	240	272035	8.00	ppm	-0.05
93) Perylene-d12	15.625	264	217663	8.00	ppm	-0.05
103) 1,4-Dichlorobenzene-d4a	4.315	152	154332	8.00	ppm	-0.02
105) Phenanthrene-d10a	9.401	188	430244	8.00	ppm	-0.04
107) Naphthalene-d8a	5.325	136	589486	8.00	ppm	-0.03
109) Chrysene-d12a	13.536	240	272035	8.00	ppm	-0.05
111) Phenanthrene-d10b	9.401	188	430244	8.00	ppm	-0.04
System Monitoring Compounds						
5) 2-Fluorophenol	3.343	112	89682	3.01	ppm	-0.01
Spiked Amount 10.000			Recovery = 30.10%			
8) Phenol-d5	4.075	99	75998	2.03	ppm	-0.01
Spiked Amount 10.000			Recovery = 20.30%			
25) Nitrobenzene-d5	4.726	82	151612	5.65	ppm	-0.02
Spiked Amount 10.000			Recovery = 56.50%			
51) 2-Fluorobiphenyl	6.457	172	309339	6.10	ppm	-0.03
Spiked Amount 10.000			Recovery = 61.00%			
74) 2,4,6-Tribromophenol	8.380	330	39820	6.42	ppm	-0.04
Spiked Amount 10.000			Recovery = 64.20%			
87) Terphenyl-d14	11.965	244	263477	6.60	ppm	-0.04
Spiked Amount 10.000			Recovery = 66.00%			
112) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
113) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 10.000			Recovery = 0.00%			
Target Compounds						Qvalue
44) 2-Methylnaphthalene	6.030	141	2521	0.05	ppm	72

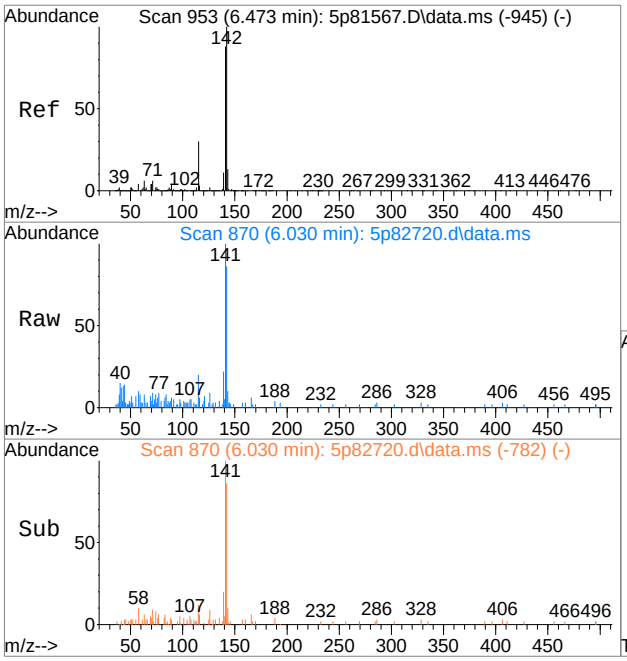
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\jonkm\042622\e5p3929\
Data File : 5p82720.d
Acq On : 25 Apr 2022 3:21 pm
Operator : kristis
Sample : op39191a-mb1 Inst : MS5P
Misc : op39191a,e5p3929,250,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\M5P3881LVI.M
Quant Results File: M5P3881LVI.RES
Quant Time: Apr 25 16:06:37 2022
Quant Title : Semi Volatile GC/MS,rxi 5sil ms 30m .25mm .25um
QLast Update : Tue Apr 19 13:04:12 2022
Response via : Initial Calibration

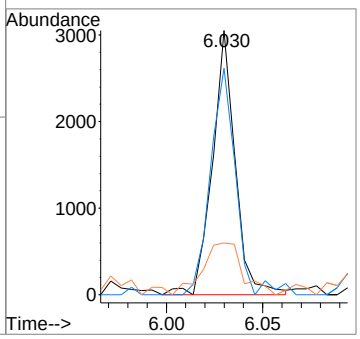




#44
2-Methylnaphthalene
Concen: 0.05 ppm
RT: 6.030 min Scan# 870
Delta R.T. -0.032 min
Lab File: 5p82720.d
Acq: 25 Apr 2022 3:21 pm

Tgt Ion:141 Resp: 2521

Ion	Ratio	Lower	Upper
141	100		
142	84.2	84.2	144.2
115	17.5	4.8	64.8



GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39197-MB1	7G43575.D	1	04/22/22	RK	04/19/22	OP39197	G7G1546

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
3017-95-6	2-Bromo-1-chloropropane	96%	52-154%
3017-95-6	2-Bromo-1-chloropropane	98%	52-154%

Method Blank Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39196-MB1	7G43518.D	1	04/21/22	RK	04/19/22	OP39196	G7G1544

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43215-1, JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-11, JD43215-12, JD43215-13, JD43215-14, JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
3017-95-6	2-Bromo-1-chloropropane	124%	52-154%
3017-95-6	2-Bromo-1-chloropropane	138%	52-154%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39197-BS1	7G43576.D	1	04/22/22	RK	04/19/22	OP39197	G7G1546
OP39197-BSD	7G43577.D	1	04/22/22	RK	04/19/22	OP39197	G7G1546

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	0.5	0.55	110	0.55	110	4	51-197/19

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3017-95-6	2-Bromo-1-chloropropane	95%	92%	52-154%
3017-95-6	2-Bromo-1-chloropropane	102%	101%	52-154%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39196-BS1	7G43519.D	1	04/21/22	RK	04/19/22	OP39196	G7G1544
OP39196-BSD	7G43520.D	1	04/21/22	RK	04/19/22	OP39196	G7G1544

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43215-1, JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-11, JD43215-12, JD43215-13, JD43215-14, JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	0.5	0.51	102	0.54	108	6	51-197/19

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3017-95-6	2-Bromo-1-chloropropane	96%	101%	52-154%
3017-95-6	2-Bromo-1-chloropropane	103%	108%	52-154%

10.2.2 10

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39197-MS	7G43579.D	1	04/22/22	RK	04/19/22	OP39197	G7G1546
JD43215-21	7G43594.D	1	04/22/22	RK	04/19/22	OP39197	G7G1546

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26

CAS No.	Compound	JD43215-21 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
106-93-4	1,2-Dibromoethane	ND		0.518	0.59	114	33-200

CAS No.	Surrogate Recoveries	MS	JD43215-21	Limits
3017-95-6	2-Bromo-1-chloropropane	106%	94%	52-154%
3017-95-6	2-Bromo-1-chloropropane	102%	97%	52-154%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39196-MS	7G43524.D	1	04/21/22	RK	04/19/22	OP39196	G7G1544
JD43215-1	7G43525.D	1	04/21/22	RK	04/19/22	OP39196	G7G1544

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43215-1, JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-11, JD43215-12, JD43215-13, JD43215-14, JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20

CAS No.	Compound	JD43215-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
106-93-4	1,2-Dibromoethane	ND		0.51	1.3	255* [a]	33-200

CAS No.	Surrogate Recoveries	MS	JD43215-1	Limits
3017-95-6	2-Bromo-1-chloropropane	109%	93%	52-154%
3017-95-6	2-Bromo-1-chloropropane	101%	94%	52-154%

(a) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39197-DUP	7G43578.D	1	04/22/22	RK	04/19/22	OP39197	G7G1546
JD43215-22	7G43595.D	1	04/22/22	RK	04/19/22	OP39197	G7G1546

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43215-21, JD43215-22, JD43215-23, JD43215-24, JD43215-25, JD43215-26

CAS No.	Compound	JD43215-22 ug/l	Q	DUP ug/l	Q	RPD	Limits
106-93-4	1,2-Dibromoethane	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JD43215-22	Limits
3017-95-6	2-Bromo-1-chloropropane	104%	186%* [a]	52-154%
3017-95-6	2-Bromo-1-chloropropane	98%	191%* [a]	52-154%

(a) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39196-DUP	7G43523.D	1	04/21/22	RK	04/19/22	OP39196	G7G1544
JD43215-2	7G43526.D	1	04/21/22	RK	04/19/22	OP39196	G7G1544

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43215-1, JD43215-2, JD43215-3, JD43215-4, JD43215-5, JD43215-6, JD43215-7, JD43215-8, JD43215-9, JD43215-10, JD43215-11, JD43215-12, JD43215-13, JD43215-14, JD43215-15, JD43215-16, JD43215-17, JD43215-18, JD43215-19, JD43215-20

CAS No.	Compound	JD43215-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
106-93-4	1,2-Dibromoethane	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JD43215-2	Limits
3017-95-6	2-Bromo-1-chloropropane	107%	104%	52-154%
3017-95-6	2-Bromo-1-chloropropane	105%	98%	52-154%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846-8011 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JD43215-1	7G43525.D	93	94
JD43215-2	7G43526.D	104	98
JD43215-3	7G43527.D	107	98
JD43215-4	7G43528.D	102	110
JD43215-5	7G43529.D	97	101
JD43215-6	7G43530.D	105	104
JD43215-7	7G43531.D	94	109
JD43215-8	7G43534.D	98	101
JD43215-9	7G43535.D	95	97
JD43215-10	7G43536.D	105	102
JD43215-11	7G43537.D	93	98
JD43215-12	7G43538.D	93	99
JD43215-13	7G43539.D	98	104
JD43215-14	7G43540.D	105	107
JD43215-15	7G43541.D	80	96
JD43215-16	7G43542.D	84	105
JD43215-17	7G43600.D	111	100
JD43215-18	7G43601.D	98	101
JD43215-19	7G43604.D	105	98
JD43215-20	7G43605.D	107	101
JD43215-21	7G43594.D	94	97
JD43215-22	7G43595.D	186* [c]	191* [c]
JD43215-23	7G43596.D	93	94
JD43215-24	7G43597.D	96	95
JD43215-25	7G43598.D	108	102
JD43215-26	7G43599.D	115	95
OP39196-BS1	7G43519.D	96	103
OP39196-BSD	7G43520.D	101	108
OP39196-DUP	7G43523.D	107	105
OP39196-MB1	7G43518.D	124	138
OP39196-MS	7G43524.D	109	101
OP39197-BS1	7G43576.D	95	102
OP39197-BSD	7G43577.D	92	101
OP39197-DUP	7G43578.D	104	98
OP39197-MB1	7G43575.D	96	98
OP39197-MS	7G43579.D	106	102

Surrogate Compounds	Recovery Limits

Surrogate Recovery Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846-8011 **Matrix:** AQ

Samples and QC shown here apply to the above method

Surrogate Compounds	Recovery Limits
S1 = 2-Bromo-1-chloropropane	52-154%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1
(c) Outside control limits due to matrix interference.

GC Surrogate Retention Time Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	G7G1544-CC1543	**Injection Date:**	04/20/22
Lab File ID:	7G43510.D	**Injection Time:**	23:57
Instrument ID:	GC7G	**Method:**	SW846-8011

	S1 [a] RT	S1 [b] RT
Check Std	2.66	3.07

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	7G43515.D	04/21/22	01:22	2.66	3.13
ZZZZZZ	7G43516.D	04/21/22	01:39	2.66	3.07
ZZZZZZ	7G43517.D	04/21/22	01:56	2.66	3.13
OP39196-MB1	7G43518.D	04/21/22	02:14	2.66	3.07
OP39196-BS1	7G43519.D	04/21/22	02:31	2.66	3.07
OP39196-BSD	7G43520.D	04/21/22	02:48	2.66	3.07

Surrogate Compounds

S1 = 2-Bromo-1-chloropropane

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	G7G1544-CC1543	**Injection Date:**	04/21/22
Lab File ID:	7G43521.D	**Injection Time:**	03:05
Instrument ID:	GC7G	**Method:**	SW846-8011

	S1 [a] RT	S1 [b] RT
Check Std	2.66	3.07

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
OP39196-DUP	7G43523.D	04/21/22	03:39	2.66	3.07
OP39196-MS	7G43524.D	04/21/22	03:57	2.66	3.07
JD43215-1	7G43525.D	04/21/22	04:14	2.66	3.07
JD43215-2	7G43526.D	04/21/22	04:31	2.66	3.07
JD43215-3	7G43527.D	04/21/22	04:48	2.66	3.07
JD43215-4	7G43528.D	04/21/22	05:05	2.66	3.07
JD43215-5	7G43529.D	04/21/22	05:23	2.66	3.07
JD43215-6	7G43530.D	04/21/22	05:40	2.66	3.07
JD43215-7	7G43531.D	04/21/22	05:57	2.66	3.07

Surrogate Compounds

S1 = 2-Bromo-1-chloropropane

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	G7G1544-CC1543	**Injection Date:**	04/21/22
Lab File ID:	7G43532.D	**Injection Time:**	06:14
Instrument ID:	GC7G	**Method:**	SW846-8011

	S1 [a] RT	S1 [b] RT
Check Std	2.66	3.08

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
JD43215-8	7G43534.D	04/21/22	06:48	2.66	3.07
JD43215-9	7G43535.D	04/21/22	07:05	2.66	3.07
JD43215-10	7G43536.D	04/21/22	07:22	2.66	3.07
JD43215-11	7G43537.D	04/21/22	07:40	2.66	3.07
JD43215-12	7G43538.D	04/21/22	07:57	2.66	3.07
JD43215-13	7G43539.D	04/21/22	08:14	2.66	3.07
JD43215-14	7G43540.D	04/21/22	08:31	2.66	3.07
JD43215-15	7G43541.D	04/21/22	08:48	2.66	3.07
JD43215-16	7G43542.D	04/21/22	09:06	2.66	3.07

Surrogate Compounds

S1 = 2-Bromo-1-chloropropane

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	G7G1546-CC1545	**Injection Date:**	04/22/22
Lab File ID:	7G43569.D	**Injection Time:**	02:59
Instrument ID:	GC7G	**Method:**	SW846-8011

	S1 [a] RT	S1 [b] RT
Check Std	2.66	3.07

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	7G43571.D	04/22/22	03:34	2.66	3.07
ZZZZZZ	7G43572.D	04/22/22	03:51	2.66	3.07
ZZZZZZ	7G43573.D	04/22/22	04:08	2.66	3.07
ZZZZZZ	7G43574.D	04/22/22	04:25	2.66	3.07
OP39197-MB1	7G43575.D	04/22/22	04:42	2.66	3.07
OP39197-BS1	7G43576.D	04/22/22	04:59	2.66	3.07
OP39197-BSD	7G43577.D	04/22/22	05:16	2.66	3.07
OP39197-DUP	7G43578.D	04/22/22	05:33	2.66	3.07
OP39197-MS	7G43579.D	04/22/22	05:50	2.66	3.07

Surrogate Compounds

S1 = 2-Bromo-1-chloropropane

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	G7G1546-CC1545	**Injection Date:**	04/22/22
Lab File ID:	7G43591.D	**Injection Time:**	09:15
Instrument ID:	GC7G	**Method:**	SW846-8011

	S1 [a] RT	S1 [b] RT
Check Std	2.66	3.07

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
ZZZZZZ	7G43593.D	04/22/22	09:49	2.66	3.07
JD43215-21	7G43594.D	04/22/22	10:06	2.66	3.07
JD43215-22	7G43595.D	04/22/22	10:23	2.65	3.07
JD43215-23	7G43596.D	04/22/22	10:40	2.66	3.07
JD43215-24	7G43597.D	04/22/22	10:57	2.66	3.07
JD43215-25	7G43598.D	04/22/22	11:15	2.66	3.07
JD43215-26	7G43599.D	04/22/22	11:32	2.66	3.07
JD43215-17	7G43600.D	04/22/22	11:49	2.66	3.07
JD43215-18	7G43601.D	04/22/22	12:06	2.66	3.07

Surrogate Compounds

S1 = 2-Bromo-1-chloropropane

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Check Std:	G7G1546-CC1545	**Injection Date:**	04/22/22
Lab File ID:	7G43602.D	**Injection Time:**	12:23
Instrument ID:	GC7G	**Method:**	SW846-8011

	S1 [a] RT	S1 [b] RT
Check Std	2.66	3.07

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT
JD43215-19	7G43604.D	04/22/22	12:57	2.66	3.07
JD43215-20	7G43605.D	04/22/22	13:14	2.66	3.07

Surrogate Compounds

S1 = 2-Bromo-1-chloropropane

(a) Retention time from GC signal #2
(b) Retention time from GC signal #1

Initial Calibration Summary

Job Number: JD43215 **Sample:** G7G1543-ICC1543
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43505.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report HP G1530A

Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration

Calibration Files
2 =7g43507.D 1 =7g43506.D 0.5 =7g43505.D 0.2 =7g43504.D
0.1 =7g43508.D 0.02 =7g43502.D

	Compound	2	1	0.5	0.2	0.1	0.02	Avg	%RSD
1) S	2-Bromo-1-Chloropro	2.831	2.967	3.121	3.240	3.439	3.529	3.188 E5	8.44
2)	1,2-Dibromoethane		1.614	1.640	1.646	1.648	1.802	1.670 E6	4.49
3)	1,2,3-Trichloroprop	2.078	2.166	2.197	2.298	2.481	2.202	2.237 E5	6.21
4)	1,2-Dibromo-3-Chlor	3.545	3.429	3.341	3.208	3.141	2.840	3.251 E6	7.65

Signal #2

1) S	2-Bromo-1-Chloropro	1.930	2.054	2.246	2.402	2.548	2.810	2.332 E6	13.92
2)	1,2-Dibromoethane		1.297	1.405	1.503	1.607	1.615	1.485 E7	9.15
3)	1,2,3-Trichloroprop	1.320	1.448	1.568	1.559	1.551	1.536	1.497 E6	6.47
4)	1,2-Dibromo-3-Chlor		2.708	2.879	3.057	3.635	3.339	3.124 E7	11.81

(#) = Out of Range

7GV8011M1543.M Thu Apr 21 07:35:38 2022

10.7.1 10

Initial Calibration Verification

Job Number: JD43215 **Sample:** G7G1543-ICV1543
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43509.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
 Signal #1 : C:\msdchem\1\data\7g1543\7g43509.d\ECD1A.CH  Vial: 8
 Signal #2 : C:\msdchem\1\data\7g1543\7g43509.d\ECD2B.CH
 Acq On    : 20 Apr 2022  11:35 pm                    Operator: rebeccak
 Sample    : icv1543-0.5                              Inst    : HP G1530A
 Misc      : op39147,g7g1543,35.0,,,2,1               Multiplr: 1.00
 IntFile Signal #1: autoint1.e   IntFile Signal #2: autoint2.e

 Method       : C:\MSDCHEM\1\METHODS\7GV8011M1543.M (ChemStation Integrator)
 Title        : GC/ECD- EDB
 Last Update  : Wed Apr 20 23:29:59 2022
 Response via : Multiple Level Calibration

 Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
 Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	318.781	319.490 E3	-0.2	102	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.670	1.793 E6	-7.4	109	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	223.697	227.349 E3	-1.6	103	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.251	3.282 E6	-1.0	98	0.00	5.36- 5.42
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.332	2.199 E6	5.7	98	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.853	13.857 E6	6.7	99	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.497	1.507 E6	-0.7	96	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.235	27.831 E6	10.9	97	0.00	4.80- 4.86

```
   (#) = Out of Range              SPCC's out = 0  CCC's out = 0
    7g43505.D  7GV8011M1543.M      Thu Apr 21 07:34:38 2022
```

10.7.2 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1544-CC1543
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43510.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\7g1544\7g43510.d\ECD1A.CH Vial: 6
Signal #2 : C:\msdchem\1\data\7g1544\7g43510.d\ECD2B.CH
Acq On : 20 Apr 2022 11:57 pm Operator: rebeccak
Sample : cc1543-1 Inst : HP G1530A
Misc : op39147,g7g1544,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Wed Apr 20 23:29:59 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	318.781	301.057 E3	5.6	101	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.670	1.701 E6	-1.9	105	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	223.697	214.765 E3	4.0	99	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.251	3.399 E6	-4.6	99	0.00	5.36- 5.42
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.332	2.013 E6	13.7	98	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.853	12.858 E6	13.4	99	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.497	1.388 E6	7.3	96	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.235	23.696 E6	24.1#	88	0.00	4.80- 4.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g43506.D 7GV8011M1543.M Thu Apr 21 07:47:10 2022

10.7.3 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1544-CC1543
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43521.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
 Signal #1 : C:\msdchem\1\data\7g1544\7g43521.d\ECD1A.CH  Vial: 5
 Signal #2 : C:\msdchem\1\data\7g1544\7g43521.d\ECD2B.CH
 Acq On    : 21 Apr 2022   3:05 am                    Operator: rebeccak
 Sample    : cc1543-0.5                               Inst    : HP G1530A
 Misc      : op39196,g7g1544,35.0,,,2,1               Multiplr: 1.00
 IntFile Signal #1: autoint1.e   IntFile Signal #2: autoint2.e

 Method       : C:\MSDCHEM\1\METHODS\7GV8011M1543.M (ChemStation Integrator)
 Title        : GC/ECD- EDB
 Last Update  : Wed Apr 20 23:29:59 2022
 Response via : Multiple Level Calibration

 Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
 Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	318.781	324.848 E3	-1.9	104	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.670	1.805 E6	-8.1	110	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	223.697	236.906 E3	-5.9	108	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.251	3.406 E6	-4.8	102	0.00	5.36- 5.42
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.332	2.224 E6	4.6	99	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.853	13.830 E6	6.9	98	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.497	1.601 E6	-6.9	102	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.235	28.006 E6	10.3	97	0.00	4.80- 4.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g43505.D 7GV8011M1543.M Thu Apr 21 07:47:29 2022

10.7.4 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1544-CC1543
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43532.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\7g1544\7g43532.d\ECD1A.CH Vial: 6
Signal #2 : C:\msdchem\1\data\7g1544\7g43532.d\ECD2B.CH
Acq On : 21 Apr 2022 6:14 am Operator: rebeccak
Sample : cc1543-1.0 Inst : HP G1530A
Misc : op39196,g7g1544,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Wed Apr 20 23:29:59 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	318.781	313.285 E3	1.7	106	0.00	3.05- 3.11
2	1,2-Dibromoethane	1.670	1.684 E6	-0.8	104	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	223.697	226.926 E3	-1.4	105	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.251	3.585 E6	-10.3	105	0.00	5.36- 5.42

***** Signal #2 *****

1 S	2-Bromo-1-Chloropropan	2.332	2.088 E6	10.5	102	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.853	13.221 E6	11.0	102	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.497	1.573 E6	-5.1	109	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.235	27.523 E6	11.9	102	0.00	4.80- 4.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g43506.D 7GV8011M1543.M Thu Apr 21 07:46:53 2022

10.7.5 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1544-CC1543
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43543.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\7g1544\7g43543.d\ECD1A.CH Vial: 5
Signal #2 : C:\msdchem\1\data\7g1544\7g43543.d\ECD2B.CH
Acq On : 21 Apr 2022 9:23 am Operator: rebeccak
Sample : cc1543-0.5 Inst : HP G1530A
Misc : op39196,g7g1544,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Wed Apr 20 23:29:59 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	318.781	295.119 E3	7.4	95	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.670	1.718 E6	-2.9	105	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	223.697	214.908 E3	3.9	98	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.251	3.258 E6	-0.2	98	0.00	5.36- 5.42

***** Signal #2 *****

1 S	2-Bromo-1-Chloropropan	2.332	2.152 E6	7.7	96	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.853	13.487 E6	9.2	96	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.497	1.488 E6	0.6	95	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.235	27.756 E6	11.1	96	0.00	4.80- 4.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g43505.D 7GV8011M1543.M Fri Apr 22 07:08:15 2022

10.7.6 10

Initial Calibration Summary

Job Number: JD43215 **Sample:** G7G1545-ICC1545
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43550.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Response Factor Report HP G1530A

Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M (Chemstation Integrator)
Title : GC/ECD- EDB
Last Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration

Calibration Files
2 =7g43553.D 1 =7g43552.D 0.5 =7g43551.D 0.2 =7g43550.D
0.1 =7g43549.D 0.02 =7g43554.D

	Compound	2	1	0.5	0.2	0.1	0.02	Avg	%RSD
1) S	2-Bromo-1-Chloropro	2.833	2.993	3.157	3.421	3.288	3.688	3.230 E5	9.48
2)	1,2-Dibromoethane		1.649	1.704	1.714	1.622	1.683	1.675 E6	2.29
3)	1,2,3-Trichloroprop	2.087	2.331	2.345	2.437	2.287	2.379	2.311 E5	5.21
4)	1,2-Dibromo-3-Chlor		3.609	3.530	3.358	3.024	3.072	3.319 E6	7.95

Signal #2

1) S	2-Bromo-1-Chloropro	1.940	2.082	2.216	2.434	2.518	2.530	2.287 E6	10.74
2)	1,2-Dibromoethane		1.300	1.389	1.482	1.559	1.592	1.465 E7	8.22
3)	1,2,3-Trichloroprop	1.351	1.603	1.668	1.814	1.745	1.718	1.650 E6	9.87
4)	1,2-Dibromo-3-Chlor		2.837	2.906	3.102	3.197	3.609	3.130 E7	9.71

(#) = Out of Range

7GV8011M1545.M Thu Apr 21 23:50:52 2022

10.7.7 10

Initial Calibration Verification

Job Number: JD43215 **Sample:** G7G1545-ICV1545
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43557.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
 Signal #1 : C:\msdchem\1\DATA\7G1545\7g43557.D\ECD1A.CH  Vial: 9
 Signal #2 : C:\msdchem\1\DATA\7G1545\7g43557.D\ECD2B.CH
 Acq On    : 21 Apr 2022  11:38 pm                    Operator: rebeccak
 Sample    : icv1545-0.2                              Inst    : HP G1530A
 Misc      : op39196,g7g1545,35.0,,,2,1               Multiplr: 1.00
 IntFile Signal #1: autoint1.e   IntFile Signal #2: autoint2.e

 Method       : C:\MSDCHEM\1\METHODS\7GV8011M1545.M (Chemstation Integrator)
 Title        : GC/ECD- EDB
 Last Update  : Thu Apr 21 23:02:31 2022
 Response via : Multiple Level Calibration

 Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
 Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	323.025	361.875 E3	-12.0	106	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.675	1.901 E6	-13.5	111	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	231.103	251.665 E3	-8.9	103	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.319	3.546 E6	-6.8	106	0.00	5.36- 5.42
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.287	2.581 E6	-12.9	106	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.645	16.457 E6	-12.4	111	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.650	1.828 E6	-10.8	101	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.303	32.621 E6	-4.2	105	0.00	4.80- 4.86

```
   (#) = Out of Range              SPCC's out = 0  CCC's out = 0
    7g43550.D  7GV8011M1545.M      Thu Apr 21 23:51:05 2022
```

10.7.8 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1546-CC1545
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43569.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\tr...46\7g43569.d\ECD1A.CH Vial: 5
Signal #2 : C:\msdchem\1\data\trude\...7g1546\7g43569.d\ECD2B.CH
Acq On : 22 Apr 2022 2:59 am Operator: rebeccak
Sample : cc1545-0.5 Inst : HP G1530A
Misc : op39198,g7g1546,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\msdchem\1\methods\7gv8011m1545.m (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Fri Apr 22 03:38:25 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	323.025	332.066 E3	-2.8	105	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.675	1.733 E6	-3.5	102	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	231.103	252.054 E3	-9.1	107	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.319	3.622 E6	-9.1	103	0.00	5.36- 5.42

***** Signal #2 *****

1 S	2-Bromo-1-Chloropropan	2.287	2.259 E6	1.2	102	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.645	13.879 E6	5.2	100	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.650	2.112 E6	-28.0#	127	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.303	30.115 E6	3.8	104	0.00	4.80- 4.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g43551.D 7gv8011m1545.m Fri Apr 22 03:44:12 2022

10.7.9 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1546-CC1545
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43580.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\7g1546\7g43580.d\ECD1A.CH Vial: 6
Signal #2 : C:\msdchem\1\data\7g1546\7g43580.d\ECD2B.CH
Acq On : 22 Apr 2022 6:07 am Operator: rebeccak
Sample : cc1545-1.0 Inst : HP G1530A
Misc : op39197,g7g1546,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Thu Apr 21 23:02:31 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	323.025	320.080 E3	0.9	107	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.675	1.778 E6	-6.1	108	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	231.103	271.212 E3	-17.4	116	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.319	3.687 E6	-11.1	102	0.00	5.36- 5.42
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.287	2.098 E6	8.3	101	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.645	14.354 E6	2.0	110	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.650	1.627 E6	1.4	102	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.303	29.077 E6	7.1	102	0.00	4.80- 4.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g43552.D 7GV8011M1545.M Fri Apr 22 07:20:19 2022

10.7.10 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1546-CC1545
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43591.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

```
 Signal #1 : C:\msdchem\1\data\7g1546\7g43591.d\ECD1A.CH  Vial: 5
 Signal #2 : C:\msdchem\1\data\7g1546\7g43591.d\ECD2B.CH
 Acq On    : 22 Apr 2022   9:15 am                    Operator: rebeccak
 Sample    : cc1545-0.5                               Inst    : HP G1530A
 Misc      : op39197,g7g1546,35.0,,,2,1               Multiplr: 1.00
 IntFile Signal #1: autoint1.e   IntFile Signal #2: autoint2.e

 Method       : C:\MSDCHEM\1\METHODS\7GV8011M1545.M (ChemStation Integrator)
 Title        : GC/ECD- EDB
 Last Update  : Thu Apr 21 23:02:31 2022
 Response via : Multiple Level Calibration

 Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
 Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	323.025	326.195 E3	-1.0	103	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.675	1.673 E6	0.1	98	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	231.103	244.359 E3	-5.7	104	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.319	3.473 E6	-4.6	98	0.00	5.36- 5.42

***** Signal #2 *****

1 S	2-Bromo-1-Chloropropan	2.287	2.211 E6	3.3	100	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.645	14.233 E6	2.8	102	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.650	1.611 E6	2.4	97	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.303	28.841 E6	7.9	99	0.00	4.80- 4.86

```
   (#) = Out of Range              SPCC's out = 0  CCC's out = 0
    7g43551.D  7GV8011M1545.M      Fri Apr 22 15:06:08 2022
```

10.7.11 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1546-CC1545
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43602.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\7g1546\7g43602.d\ECD1A.CH Vial: 6
Signal #2 : C:\msdchem\1\data\7g1546\7g43602.d\ECD2B.CH
Acq On : 22 Apr 2022 12:23 pm Operator: rebeccak
Sample : cc1545-1.0 Inst : HP G1530A
Misc : op39196,g7g1546,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Thu Apr 21 23:02:31 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	323.025	283.822 E3	12.1	95	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.675	1.687 E6	-0.7	102	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	231.103	226.992 E3	1.8	97	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.319	3.602 E6	-8.5	100	0.00	5.36- 5.42

***** Signal #2 *****

1 S	2-Bromo-1-Chloropropan	2.287	2.012 E6	12.0	97	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.645	13.476 E6	8.0	104	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.650	1.577 E6	4.4	98	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.303	27.725 E6	11.4	98	0.00	4.80- 4.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g43552.D 7GV8011M1545.M Fri Apr 22 15:08:31 2022

10.7.12 10

Continuing Calibration Summary

Job Number: JD43215 **Sample:** G7G1546-CC1545
Account: SUNOCOSS Sunoco/Evergreen **Lab FileID:** 7G43606.D
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Signal #1 : C:\msdchem\1\data\7g1546\7g43606.d\ECD1A.CH Vial: 5
Signal #2 : C:\msdchem\1\data\7g1546\7g43606.d\ECD2B.CH
Acq On : 22 Apr 2022 1:31 pm Operator: rebeccak
Sample : cc1545-0.5 Inst : HP G1530A
Misc : op39196,g7g1546,35.0,,,2,1 Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e

Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M (ChemStation Integrator)
Title : GC/ECD- EDB
Last Update : Thu Apr 21 23:02:31 2022
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	RT Window
1 S	2-Bromo-1-Chloropropan	323.025	302.646 E3	6.3	96	0.00	3.04- 3.10
2	1,2-Dibromoethane	1.675	1.615 E6	3.6	95	0.00	3.37- 3.43
3	1,2,3-Trichloropropane	231.103	260.628 E3	-12.8	111	0.00	4.32- 4.38
4	1,2-Dibromo-3-Chloropr	3.319	3.505 E6	-5.6	99	0.00	5.36- 5.42
*****	Signal #2 *****						
1 S	2-Bromo-1-Chloropropan	2.287	2.177 E6	4.8	98	0.00	2.63- 2.69
2	1,2-Dibromoethane	14.645	13.986 E6	4.5	101	0.00	2.79- 2.85
3	1,2,3-Trichloropropane	1.650	1.716 E6	-4.0	103	0.00	3.86- 3.92
4	1,2-Dibromo-3-Chloropr	31.303	28.946 E6	7.5	100	0.00	4.80- 4.86

(#) = Out of Range SPCC's out = 0 CCC's out = 0
7g43551.D 7GV8011M1545.M Fri Apr 22 15:23:31 2022

10.7.13 10

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: G7G1543	**Method:** SW846-8011	**Instrument ID:** GC7G

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
G7G1543-IC1543	7G43502.D	04/20/22 21:34	n/a	Initial cal 0.02
G7G1543-IC1543	7G43504.D	04/20/22 22:08	n/a	Initial cal 0.2
G7G1543-ICC1543	7G43505.D	04/20/22 22:25	n/a	Initial cal 0.5
G7G1543-IC1543	7G43506.D	04/20/22 22:42	n/a	Initial cal 1
G7G1543-IC1543	7G43507.D	04/20/22 22:59	n/a	Initial cal 2
G7G1543-IC1543	7G43508.D	04/20/22 23:18	n/a	Initial cal 0.1
G7G1543-ICV1543	7G43509.D	04/20/22 23:35	n/a	Initial cal verification 0.5

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: G7G1544	**Method:** SW846-8011	**Instrument ID:** GC7G

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
G7G1544-CC1543	7G43510.D	04/20/22 23:57	n/a	Continuing cal 1
ZZZZZZ	7G43515.D	04/21/22 01:22	OP39198	(unrelated sample)
ZZZZZZ	7G43516.D	04/21/22 01:39	OP39198	(unrelated sample)
ZZZZZZ	7G43517.D	04/21/22 01:56	OP39198	(unrelated sample)
OP39196-MB1	7G43518.D	04/21/22 02:14	OP39196	Method Blank
OP39196-BS1	7G43519.D	04/21/22 02:31	OP39196	Blank Spike
OP39196-BSD	7G43520.D	04/21/22 02:48	OP39196	Blank Spike Duplicate
G7G1544-CC1543	7G43521.D	04/21/22 03:05	n/a	Continuing cal 0.5
OP39196-DUP	7G43523.D	04/21/22 03:39	OP39196	Duplicate
OP39196-MS	7G43524.D	04/21/22 03:57	OP39196	Matrix Spike
JD43215-1	7G43525.D	04/21/22 04:14	OP39196	S-355_SL_20220413
JD43215-2	7G43526.D	04/21/22 04:31	OP39196	C-61_20220413
JD43215-3	7G43527.D	04/21/22 04:48	OP39196	C-129D_20220413
JD43215-4	7G43528.D	04/21/22 05:05	OP39196	A-4_20220413
JD43215-5	7G43529.D	04/21/22 05:23	OP39196	S-423_SL_20220413
JD43215-6	7G43530.D	04/21/22 05:40	OP39196	S-150SRTF_20220414
JD43215-7	7G43531.D	04/21/22 05:57	OP39196	N-152_20220414
G7G1544-CC1543	7G43532.D	04/21/22 06:14	n/a	Continuing cal 1.0
JD43215-8	7G43534.D	04/21/22 06:48	OP39196	S-357_SL_20220414
JD43215-9	7G43535.D	04/21/22 07:05	OP39196	S-149SRTF_20220414
JD43215-10	7G43536.D	04/21/22 07:22	OP39196	S-147SRTF_20220414
JD43215-11	7G43537.D	04/21/22 07:40	OP39196	S-337_SL_20220414
JD43215-12	7G43538.D	04/21/22 07:57	OP39196	N-85_20220414
JD43215-13	7G43539.D	04/21/22 08:14	OP39196	N-163_20220414
JD43215-14	7G43540.D	04/21/22 08:31	OP39196	S-480_SL_20220414
JD43215-15	7G43541.D	04/21/22 08:48	OP39196	DUP-7_20220414
JD43215-16	7G43542.D	04/21/22 09:06	OP39196	URS-5_20220414
G7G1544-CC1543	7G43543.D	04/21/22 09:23	n/a	Continuing cal 0.5

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: G7G1545	**Method:** SW846-8011	**Instrument ID:** GC7G

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
G7G1545-IC1545	7G43549.D	04/21/22 20:53	n/a	Initial cal 0.1
G7G1545-ICC1545	7G43550.D	04/21/22 21:10	n/a	Initial cal 0.2
G7G1545-IC1545	7G43551.D	04/21/22 21:27	n/a	Initial cal 0.5
G7G1545-IC1545	7G43552.D	04/21/22 21:44	n/a	Initial cal 1
G7G1545-IC1545	7G43553.D	04/21/22 22:02	n/a	Initial cal 2
G7G1545-IC1545	7G43554.D	04/21/22 22:19	n/a	Initial cal 0.02
G7G1545-ICV1545	7G43557.D	04/21/22 23:38	n/a	Initial cal verification 0.2

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: G7G1546 **Method:** SW846-8011 **Instrument ID:** GC7G

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
G7G1546-CC1545	7G43558.D	04/21/22 23:51	n/a	Continuing cal 1
OP39198-MB1	7G43560.D	04/22/22 00:25	OP39198	Method Blank
OP39198-BS1	7G43561.D	04/22/22 00:43	OP39198	Blank Spike
OP39198-BSD	7G43562.D	04/22/22 01:00	OP39198	Blank Spike Duplicate
OP39198-MS	7G43563.D	04/22/22 01:17	OP39198	Matrix Spike
OP39198-MSD	7G43564.D	04/22/22 01:34	OP39198	Matrix Spike Duplicate
ZZZZZZ	7G43565.D	04/22/22 01:51	OP39198	(unrelated sample)
ZZZZZZ	7G43566.D	04/22/22 02:08	OP39198	(unrelated sample)
ZZZZZZ	7G43567.D	04/22/22 02:25	OP39198	(unrelated sample)
JD43186-1	7G43568.D	04/22/22 02:42	OP39198	(used for QC only; not part of job JD43215)
G7G1546-CC1545	7G43569.D	04/22/22 02:59	n/a	Continuing cal 0.5
ZZZZZZ	7G43571.D	04/22/22 03:34	OP39198	(unrelated sample)
ZZZZZZ	7G43572.D	04/22/22 03:51	OP39198	(unrelated sample)
ZZZZZZ	7G43573.D	04/22/22 04:08	OP39198	(unrelated sample)
ZZZZZZ	7G43574.D	04/22/22 04:25	OP39198	(unrelated sample)
OP39197-MB1	7G43575.D	04/22/22 04:42	OP39197	Method Blank
OP39197-BS1	7G43576.D	04/22/22 04:59	OP39197	Blank Spike
OP39197-BSD	7G43577.D	04/22/22 05:16	OP39197	Blank Spike Duplicate
OP39197-DUP	7G43578.D	04/22/22 05:33	OP39197	Duplicate
OP39197-MS	7G43579.D	04/22/22 05:50	OP39197	Matrix Spike
G7G1546-CC1545	7G43580.D	04/22/22 06:07	n/a	Continuing cal 1.0
ZZZZZZ	7G43582.D	04/22/22 06:41	OP39197	(unrelated sample)
ZZZZZZ	7G43583.D	04/22/22 06:58	OP39197	(unrelated sample)
ZZZZZZ	7G43584.D	04/22/22 07:15	OP39197	(unrelated sample)
ZZZZZZ	7G43585.D	04/22/22 07:32	OP39197	(unrelated sample)
ZZZZZZ	7G43586.D	04/22/22 07:50	OP39197	(unrelated sample)
ZZZZZZ	7G43587.D	04/22/22 08:07	OP39197	(unrelated sample)
ZZZZZZ	7G43588.D	04/22/22 08:24	OP39197	(unrelated sample)
ZZZZZZ	7G43589.D	04/22/22 08:41	OP39197	(unrelated sample)
ZZZZZZ	7G43590.D	04/22/22 08:58	OP39197	(unrelated sample)
G7G1546-CC1545	7G43591.D	04/22/22 09:15	n/a	Continuing cal 0.5
ZZZZZZ	7G43593.D	04/22/22 09:49	OP39197	(unrelated sample)
JD43215-21	7G43594.D	04/22/22 10:06	OP39197	S-78SRTF_20220415
JD43215-22	7G43595.D	04/22/22 10:23	OP39197	W-31_SL_20220415
JD43215-23	7G43596.D	04/22/22 10:40	OP39197	W-32_SL_20220415
JD43215-24	7G43597.D	04/22/22 10:57	OP39197	S-118DSRTF_20220415
JD43215-25	7G43598.D	04/22/22 11:15	OP39197	C-175_20220413
JD43215-26	7G43599.D	04/22/22 11:32	OP39197	C-176_20220413
JD43215-17	7G43600.D	04/22/22 11:49	OP39196	W-1_SL_20220415
JD43215-18	7G43601.D	04/22/22 12:06	OP39196	S-110DSRTF_20220415
G7G1546-CC1545	7G43602.D	04/22/22 12:23	n/a	Continuing cal 1.0
JD43215-19	7G43604.D	04/22/22 12:57	OP39196	W-13_20220415
JD43215-20	7G43605.D	04/22/22 13:14	OP39196	W-32D_20220415
G7G1546-CC1545	7G43606.D	04/22/22 13:31	n/a	Continuing cal 0.5
OP39236-BS1	7G43609.D	04/22/22 14:23	OP39236	Blank Spike
OP39236-BSD	7G43610.D	04/22/22 14:40	OP39236	Blank Spike Duplicate

Run Sequence Report

Job Number: JD43215
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Run ID: G7G1546	**Method:** SW846-8011	**Instrument ID:** GC7G

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
OP39236-DUP	7G43611.D	04/22/22 14:57	OP39236	Duplicate
OP39236-MS	7G43612.D	04/22/22 15:15	OP39236	Matrix Spike
JD43227-2	7G43613.D	04/22/22 15:32	OP39236	(used for QC only; not part of job JD43215)
JD43227-4	7G43614.D	04/22/22 15:49	OP39236	(used for QC only; not part of job JD43215)
ZZZZZZ	7G43615.D	04/22/22 16:06	OP39236	(unrelated sample)
ZZZZZZ	7G43616.D	04/22/22 16:24	OP39236	(unrelated sample)
G7G1546-CC1545	7G43617.D	04/22/22 16:41	n/a	Continuing cal 1.0

GC Volatiles

Raw Data

Manual Integrations APPROVED
(compounds with "m" flag)
Gwendolyn Burns
04/21/22 17:59

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43525.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 4:14 am
Operator : rebeccak
Sample : jd43215-1
Misc : op39196,g7g1544,34.6,,,2,1
ALS Vial : 22 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:07:10 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.657	2989840	21681896	9.379m	9.298m
Spiked Amount 10.000			Recovery =		93.79%	92.98%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

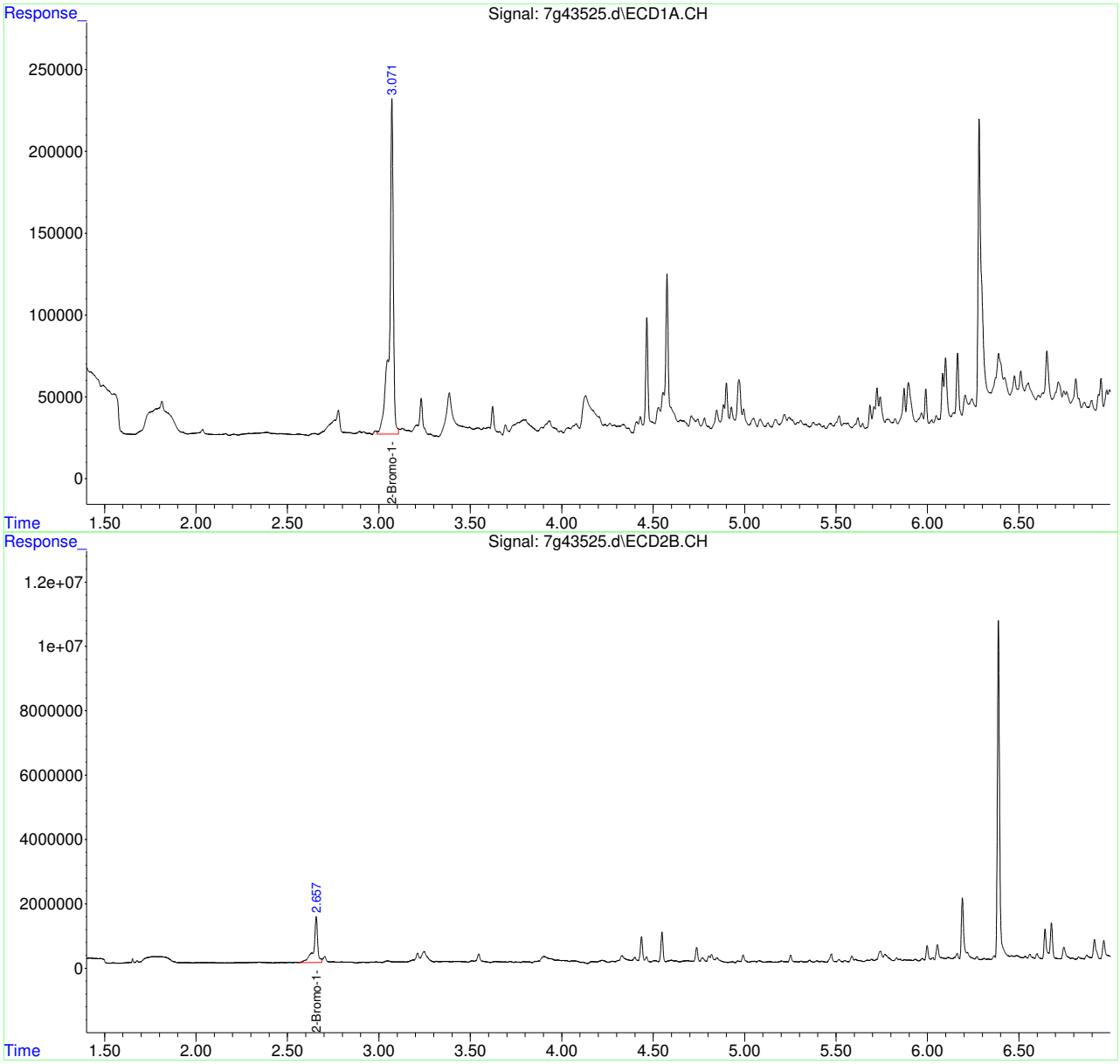
11.1.1 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43525.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 4:14 am
Operator : rebeccak
Sample : jd43215-1
Misc : op39196,g7g1544,34.6,,,2,1
ALS Vial : 22 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:07:10 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/21/22 17:59

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43526.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 4:31 am
Operator : rebeccak
Sample : jd43215-2
Misc : op39196,g7g1544,34.9,,,2,1
ALS Vial : 23 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:07:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.658	3128906	24329907	9.815m	10.434
Spiked Amount 10.000			Recovery =		98.15%	104.34%
Target Compounds						

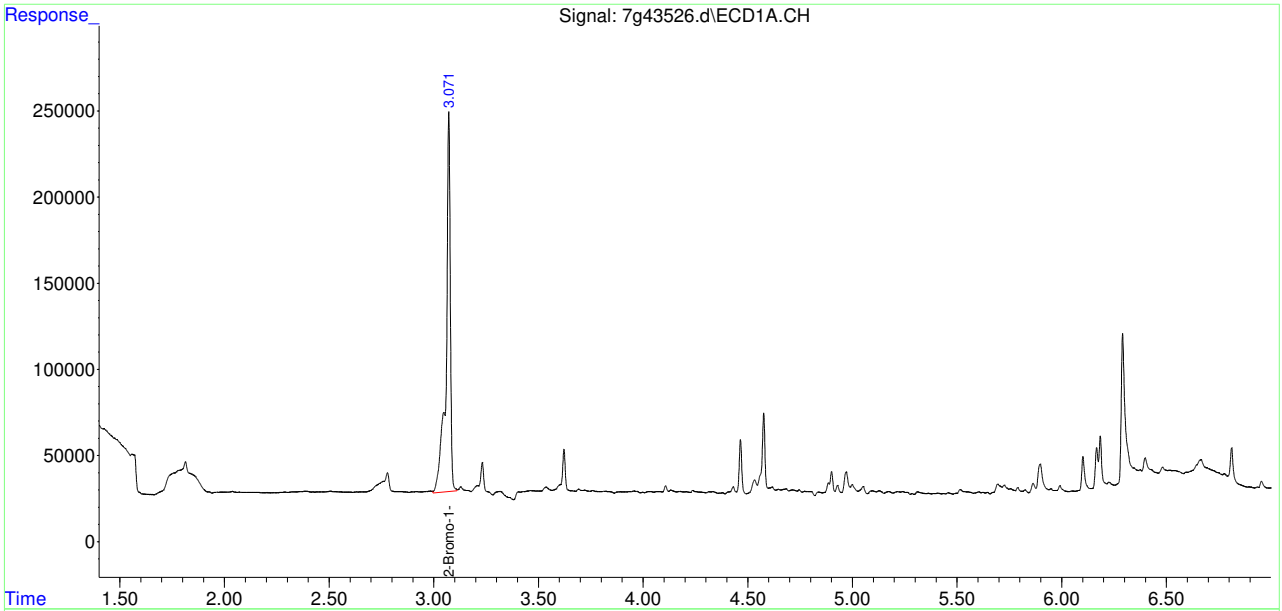
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

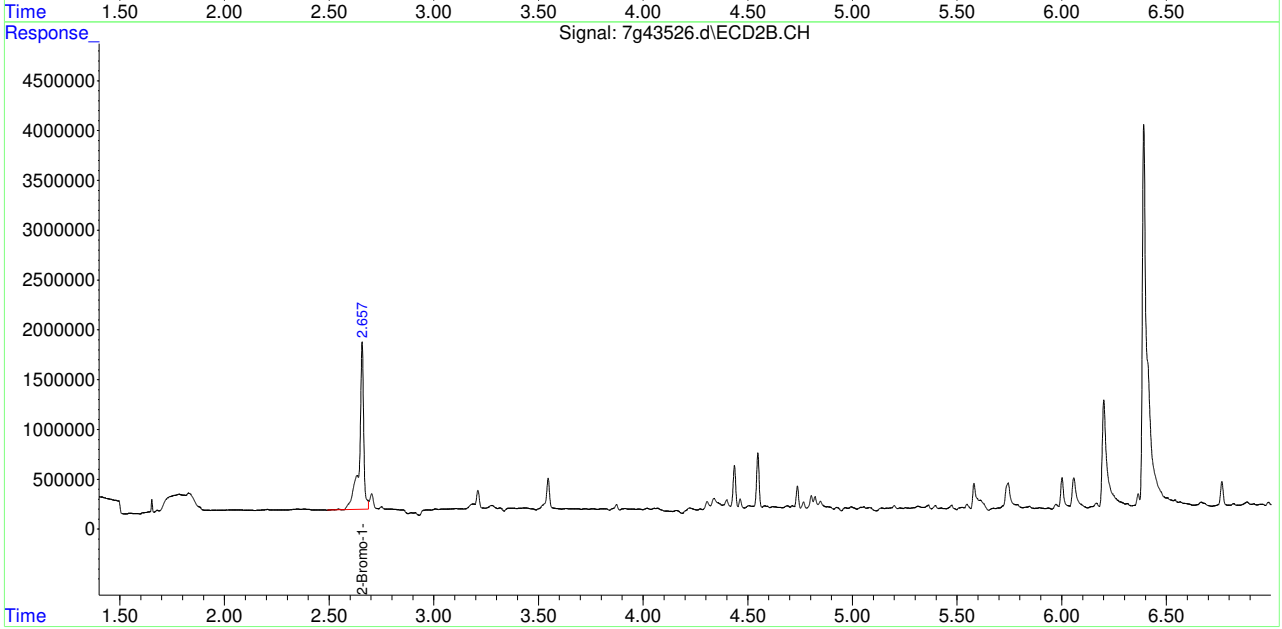
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43526.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 4:31 am
Operator : rebeccak
Sample : jd43215-2
Misc : op39196,g7g1544,34.9,,,2,1
ALS Vial : 23 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:07:46 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:02

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43527.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 4:48 am
Operator : rebeccak
Sample : jd43215-3
Misc : op39196,g7g1544,34.9,,,2,1
ALS Vial : 24 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 06:57:20 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) S	2-Bromo-1...	3.072	2.658	3108651	24933598	9.752	10.693
	Spiked Amount 10.000			Recovery =		97.52%	106.93%
	Target Compounds						
2)	1,2-Dibro...	3.420f	2.804f	89925	697534	0.054m	0.047m

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

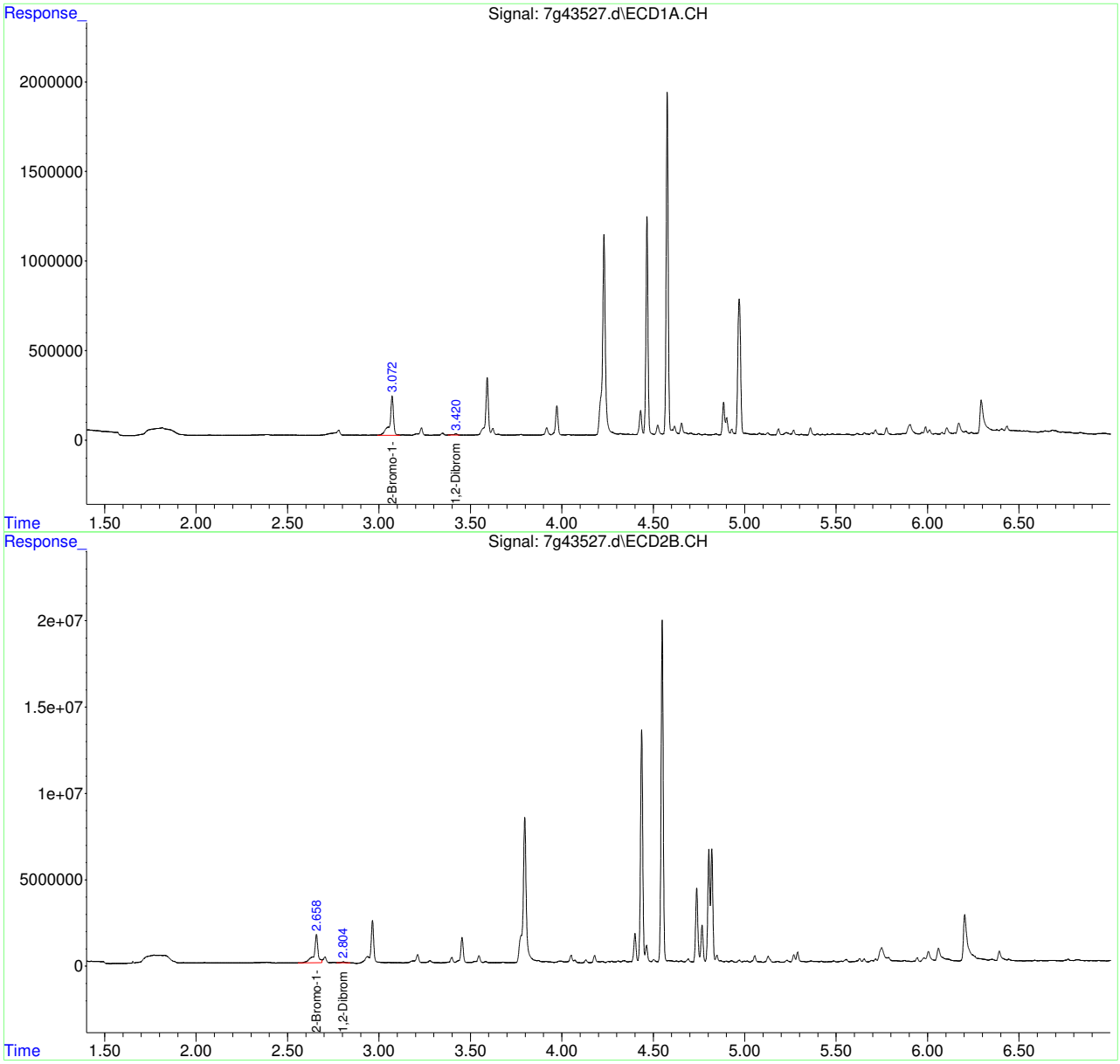
11.1.3 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43527.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 4:48 am
Operator : rebeccak
Sample : jd43215-3
Misc : op39196,g7g1544,34.9,,,2,1
ALS Vial : 24 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 06:57:20 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/21/22 17:59

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43528.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 5:05 am
Operator : rebeccak
Sample : jd43215-4
Misc : op39196,g7g1544,34.7,,,2,1
ALS Vial : 25 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:09:17 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	S 2-Bromo-1...	3.072	2.658	3504667	23762961	10.994	10.191m
	Spiked Amount	10.000		Recovery	=	109.94%	101.91%
	Target Compounds						

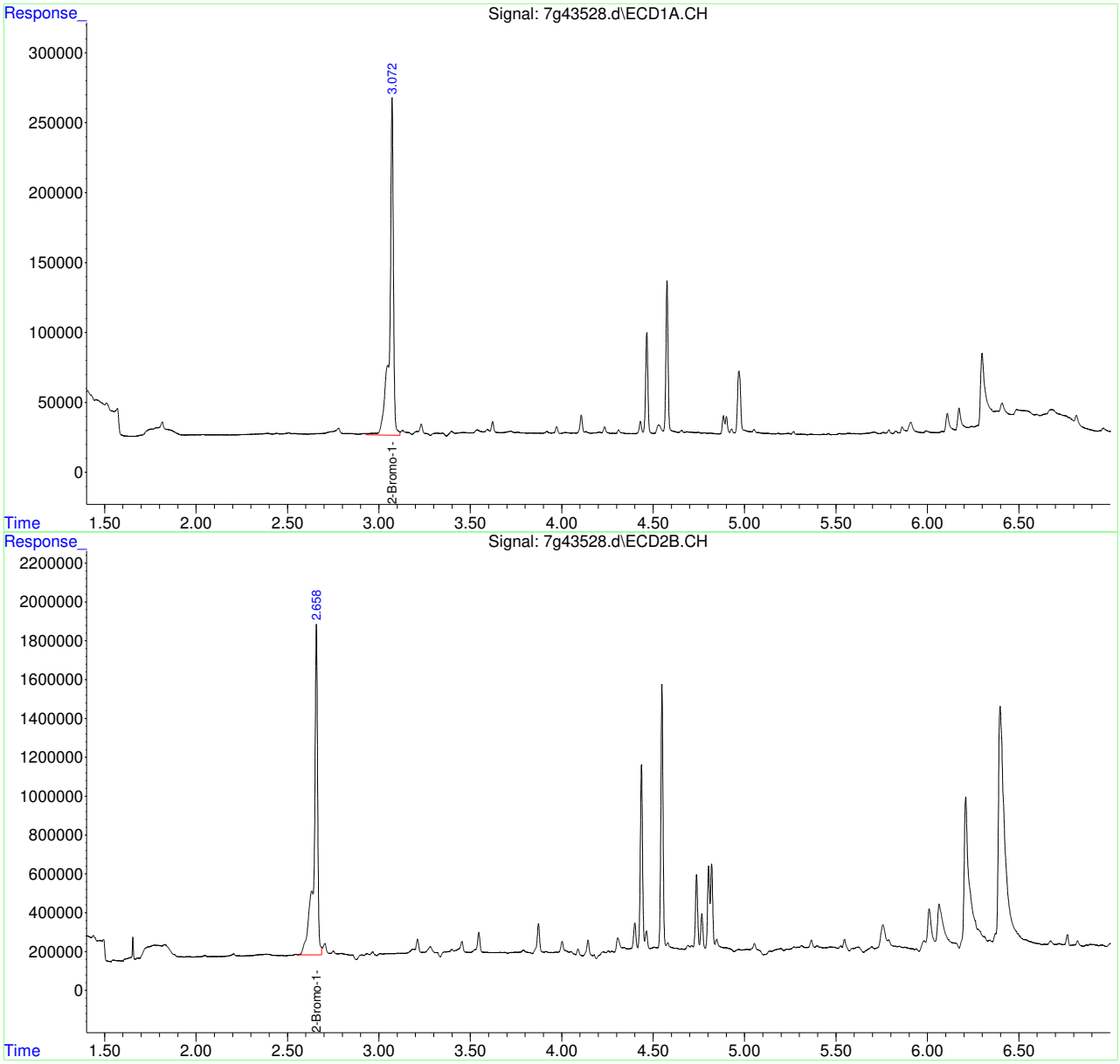
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43528.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 5:05 am
Operator : rebeccak
Sample : jd43215-4
Misc : op39196,g7g1544,34.7,,,2,1
ALS Vial : 25 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:09:17 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/21/22 17:59

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43529.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 5:23 am
Operator : rebeccak
Sample : jd43215-5
Misc : op39196,g7g1544,34.7,,,2,1
ALS Vial : 26 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:09:59 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.657	3220685	22601546	10.103m	9.693m
Spiked Amount 10.000			Recovery =		101.03%	96.93%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

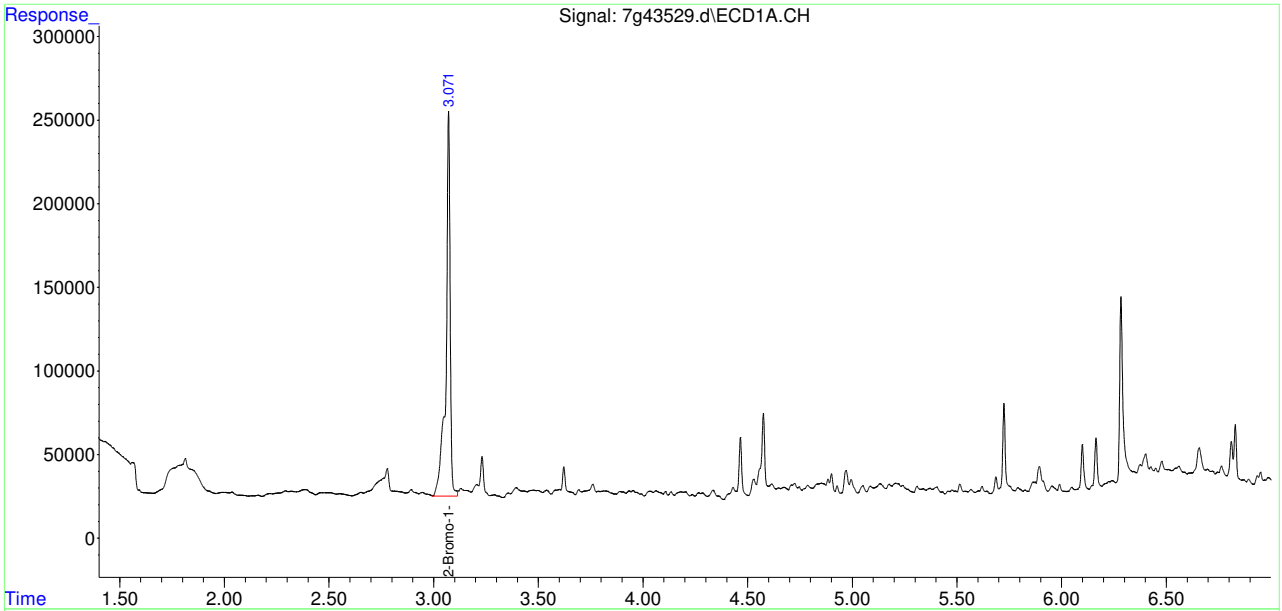
11.1.5 11

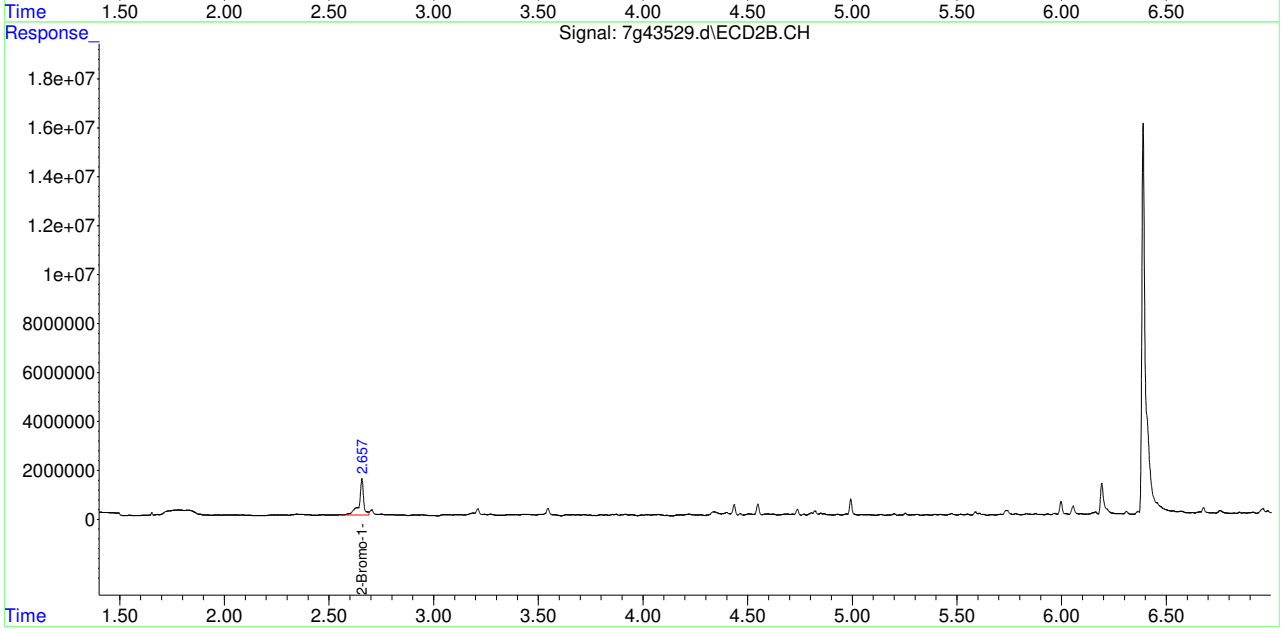
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43529.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 5:23 am
Operator : rebeccak
Sample : jd43215-5
Misc : op39196,g7g1544,34.7,,,2,1
ALS Vial : 26 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:09:59 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43530.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 5:40 am
Operator : rebeccak
Sample : jd43215-6
Misc : op39196,g7g1544,34.9,,,2,1
ALS Vial : 27 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:10:45 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.073	2.659	3310112	24555141	10.384	10.531
Spiked Amount 10.000			Recovery	=	103.84%	105.31%
Target Compounds						

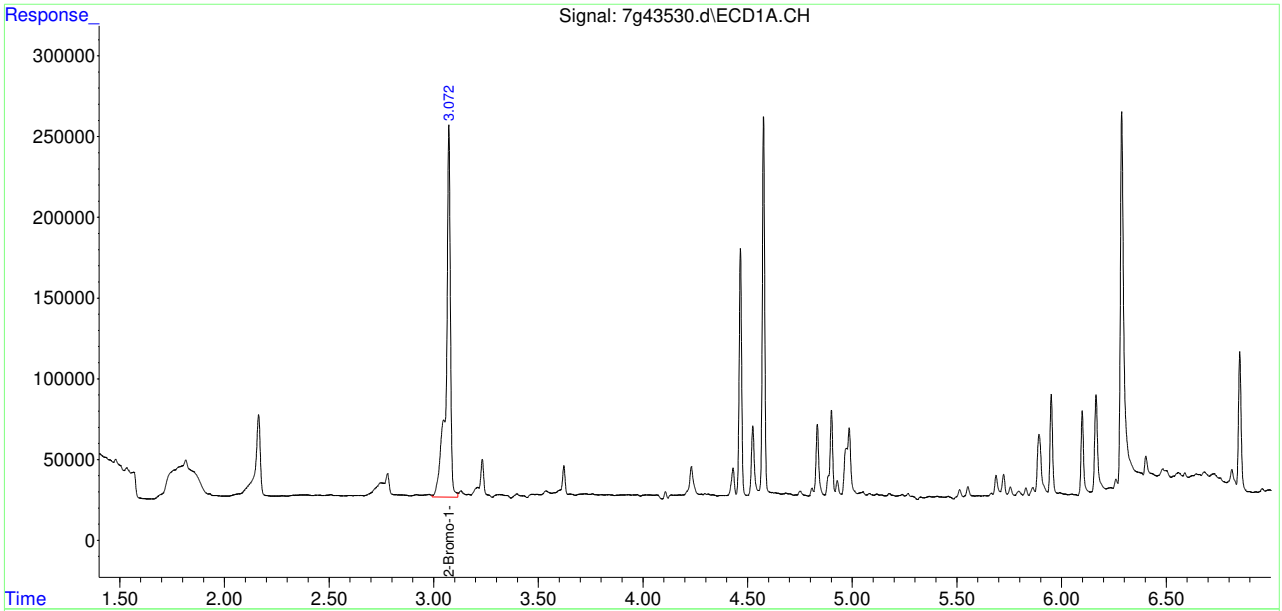
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

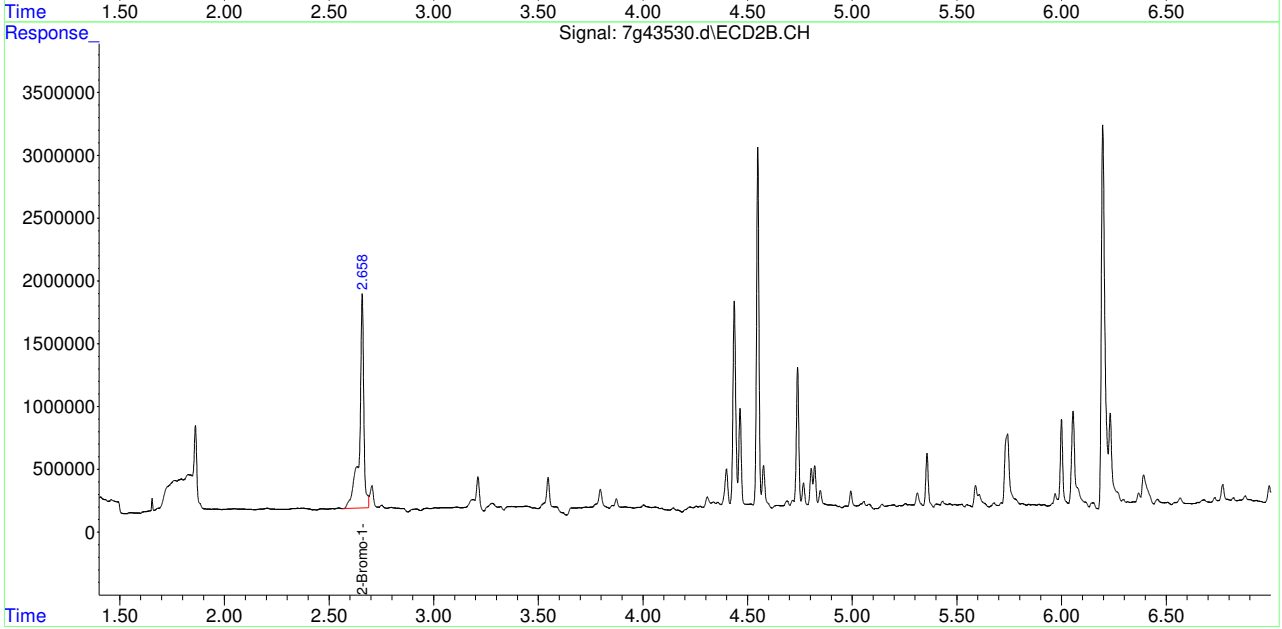
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43530.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 5:40 am
Operator : rebeccak
Sample : jd43215-6
Misc : op39196,g7g1544,34.9,,,2,1
ALS Vial : 27 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:10:45 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43531.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 5:57 am
Operator : rebeccak
Sample : jd43215-7
Misc : op39196,g7g1544,34.6,,,2,1
ALS Vial : 28 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:11:03 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.072	2.658	3480827	21950453	10.919	9.414
Spiked Amount	10.000		Recovery	=	109.19%	94.14%
Target Compounds						

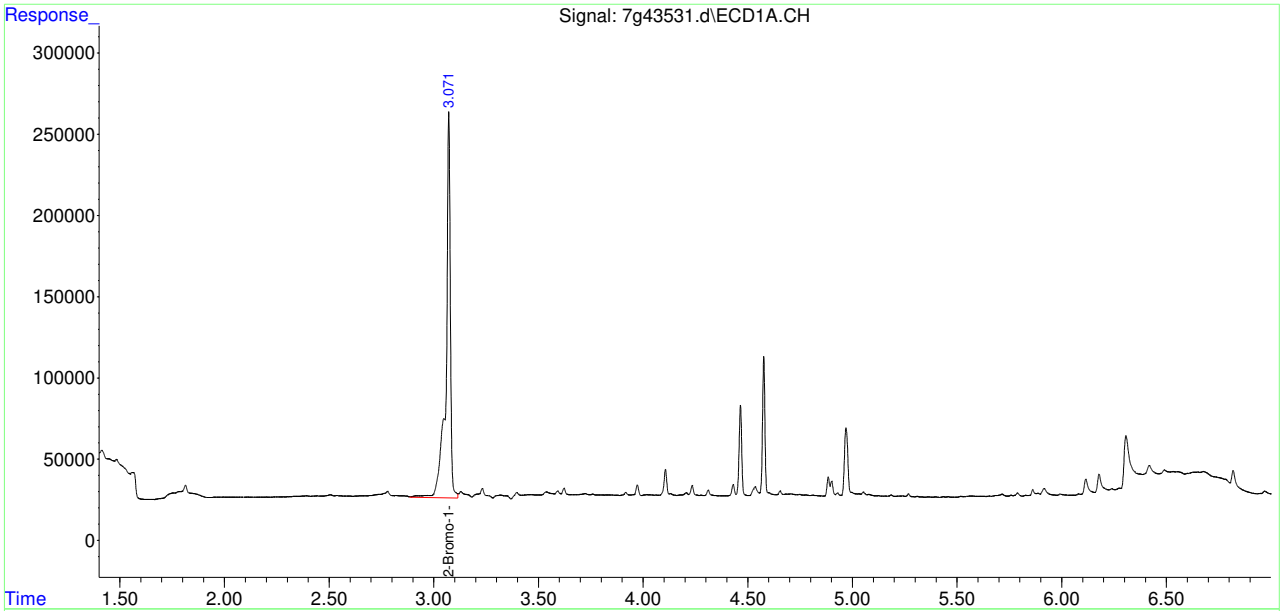
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

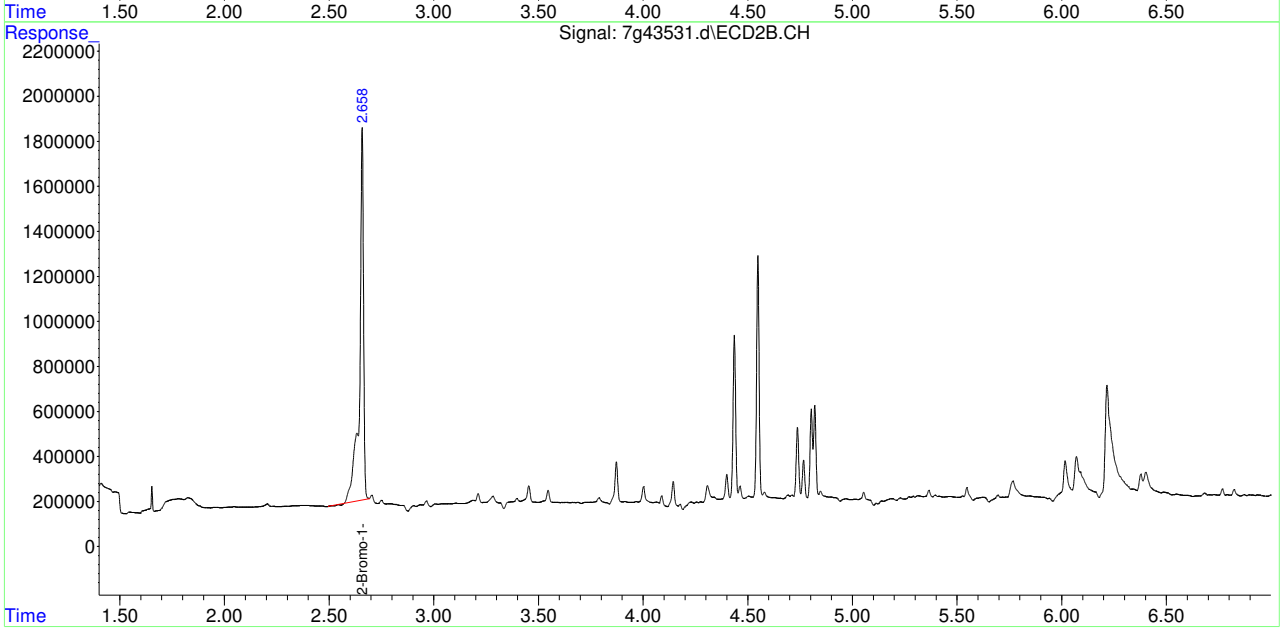
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43531.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 5:57 am
Operator : rebeccak
Sample : jd43215-7
Misc : op39196,g7g1544,34.6,,,2,1
ALS Vial : 28 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 15:11:03 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43534.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 6:48 am
Operator : rebeccak
Sample : jd43215-8
Misc : op39196,g7g1544,34.3,,,2,1
ALS Vial : 29 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 06:58:41 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.657	3221637	22905541	10.106m	9.823
Spiked Amount	10.000		Recovery	=	101.06%	98.23%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

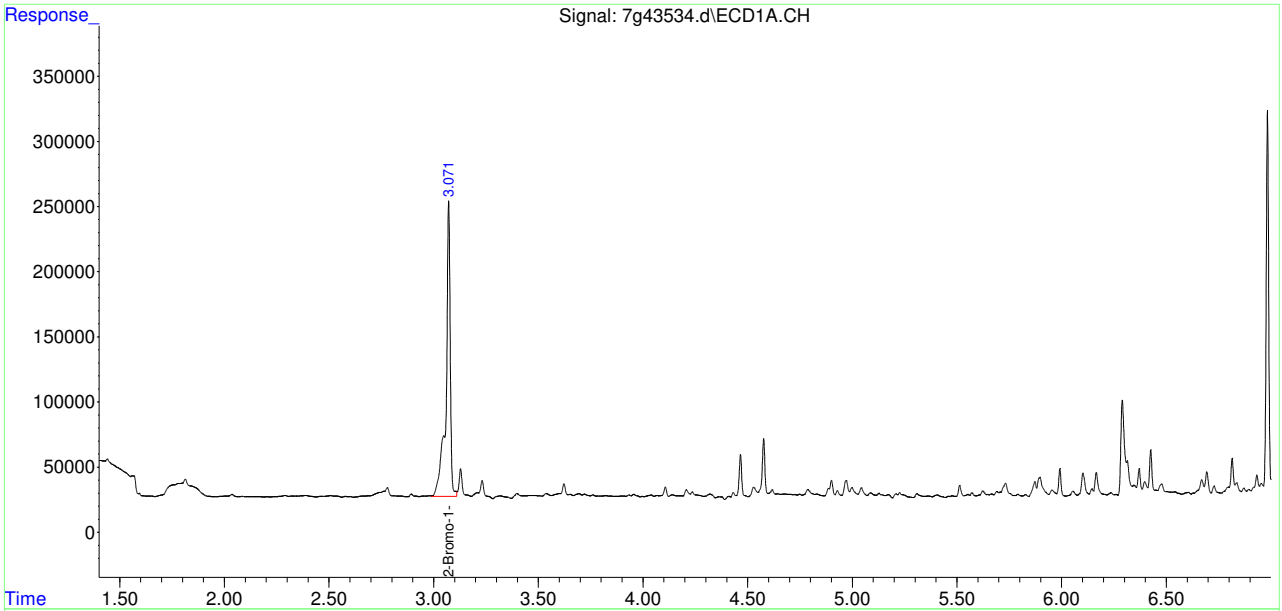
11.1.8 11

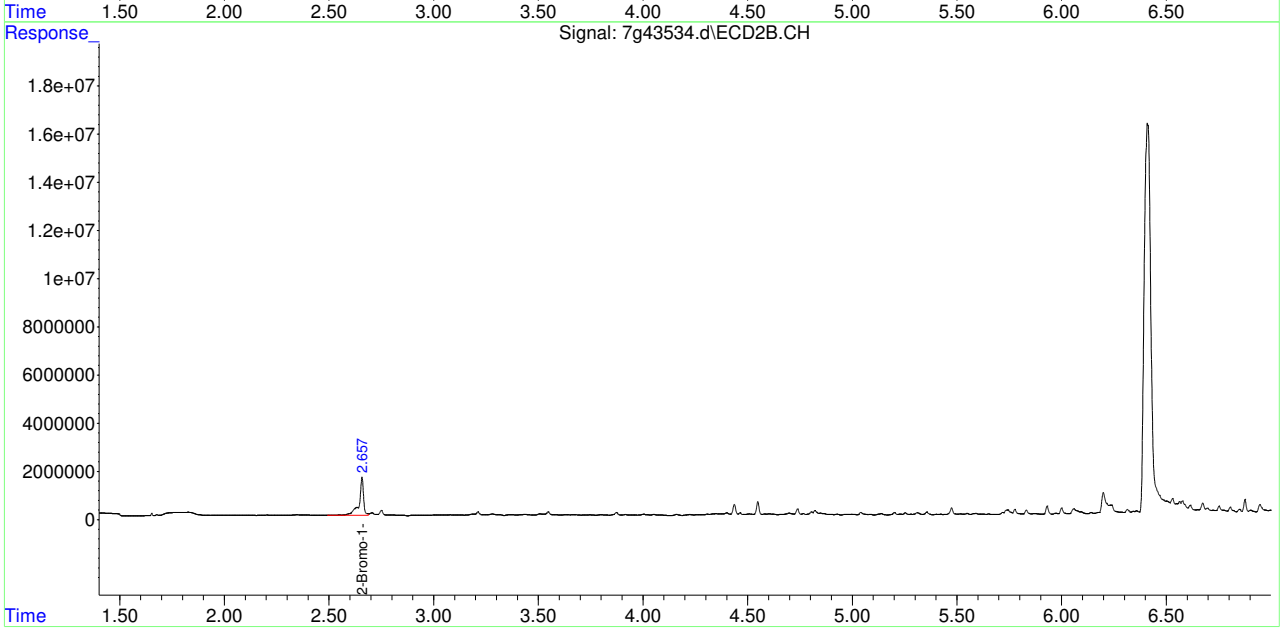
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43534.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 6:48 am
Operator : rebeccak
Sample : jd43215-8
Misc : op39196,g7g1544,34.3,,,2,1
ALS Vial : 29 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 06:58:41 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43535.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 7:05 am
Operator : rebeccak
Sample : jd43215-9
Misc : op39196,g7g1544,34.8,,,2,1
ALS Vial : 30 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 06:59:32 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1)	S 2-Bromo-1...	3.071	2.658	3078284	22248415	9.656m	9.541
	Spiked Amount	10.000		Recovery	=	96.56%	95.41%
	Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

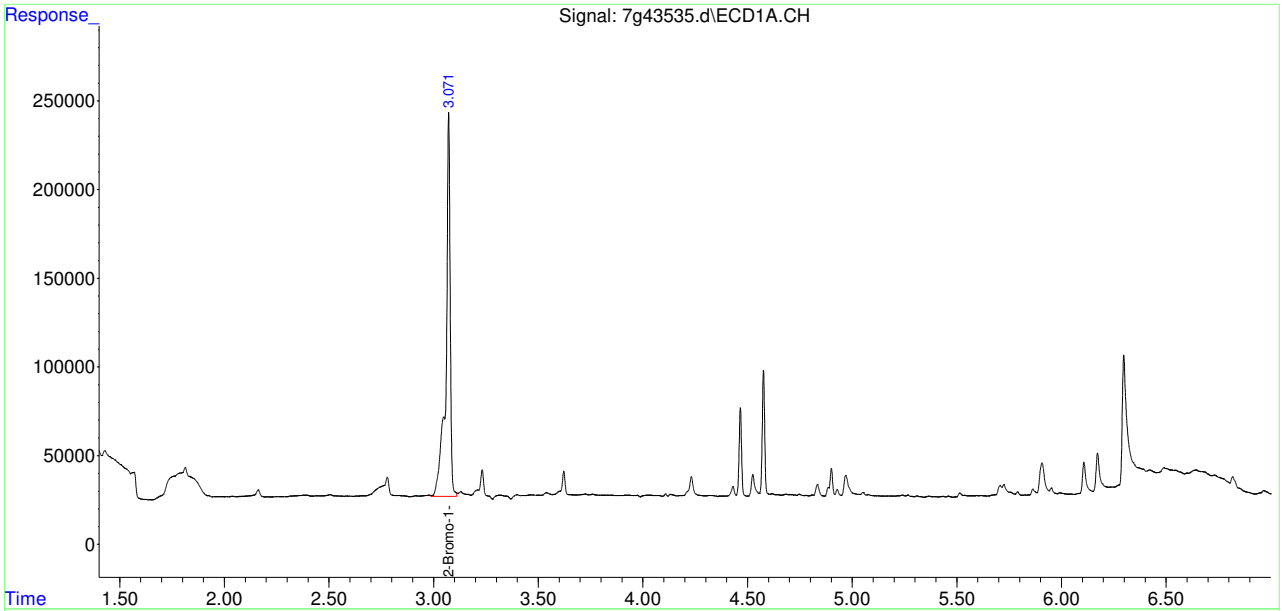
11.1.9 11

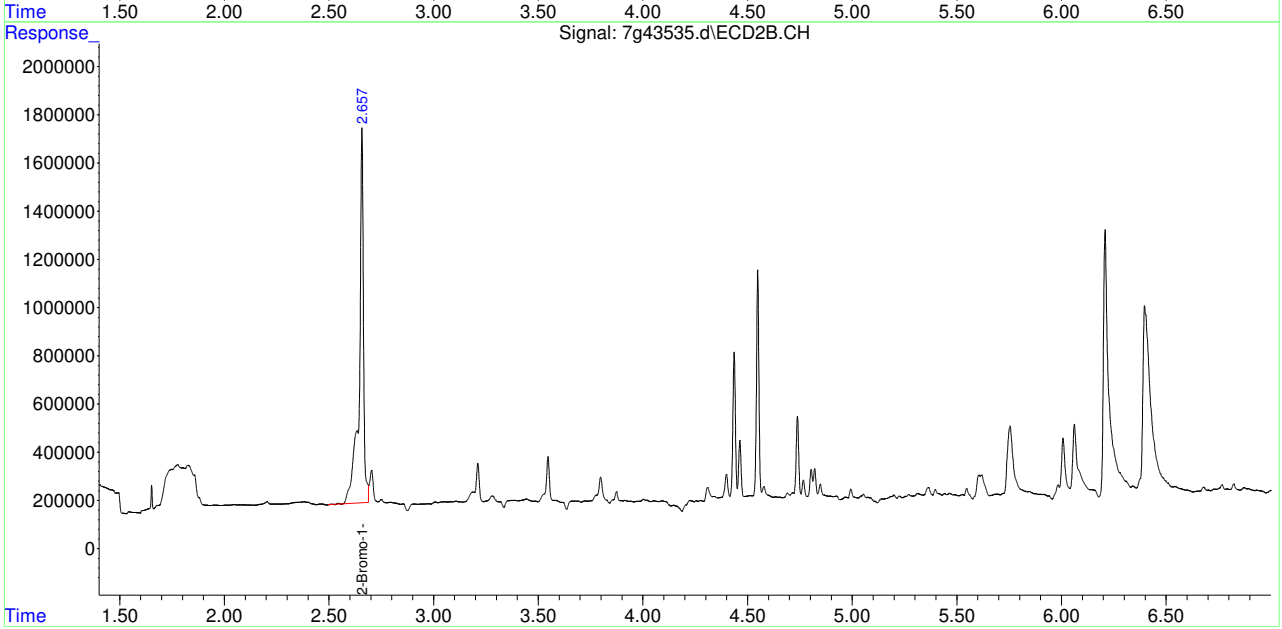
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43535.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 7:05 am
Operator : rebeccak
Sample : jd43215-9
Misc : op39196,g7g1544,34.8,,,2,1
ALS Vial : 30 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 06:59:32 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43536.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 7:22 am
Operator : rebeccak
Sample : jd43215-10
Misc : op39196,g7g1544,34.4,,,2,1
ALS Vial : 31 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:00:01 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.658	3264509	24384769	10.241m	10.458m
Spiked Amount	10.000		Recovery	=	102.41%	104.58%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

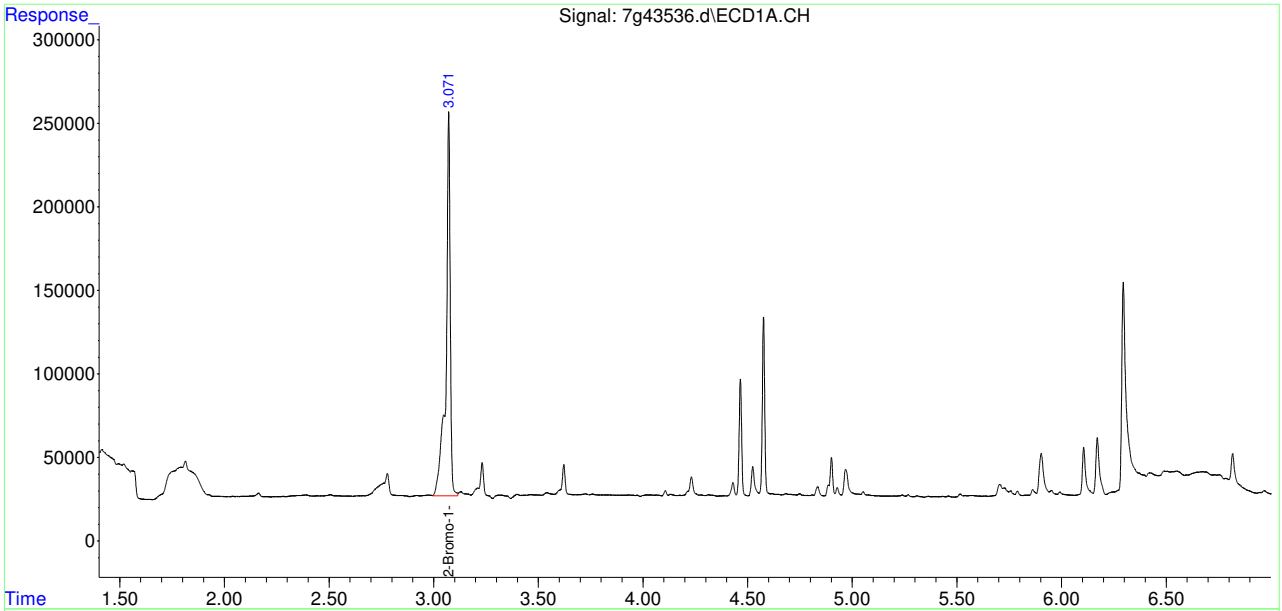
11.1.10 11

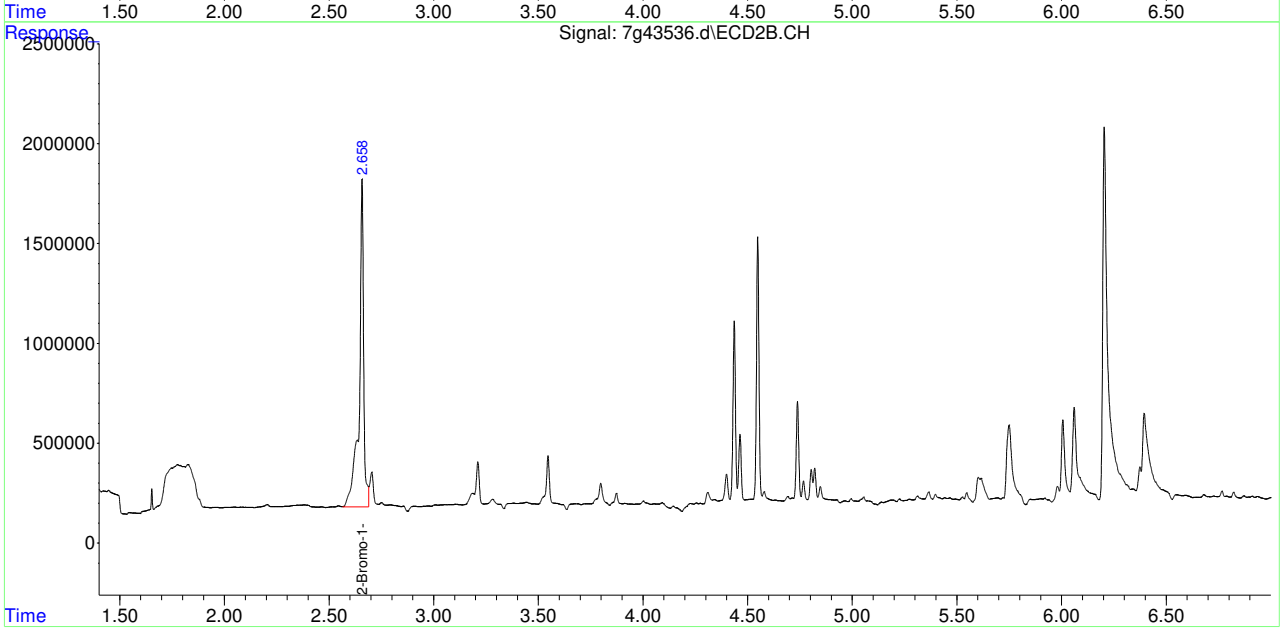
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43536.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 7:22 am
Operator : rebeccak
Sample : jd43215-10
Misc : op39196,g7g1544,34.4,,,2,1
ALS Vial : 31 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:00:01 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43537.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 7:40 am
Operator : rebeccak
Sample : jd43215-11
Misc : op39196,g7g1544,34.2,,,2,1
ALS Vial : 32 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:00:28 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.657	3121101	21621125	9.791m	9.272m
Spiked Amount	10.000		Recovery	=	97.91%	92.72%
Target Compounds						

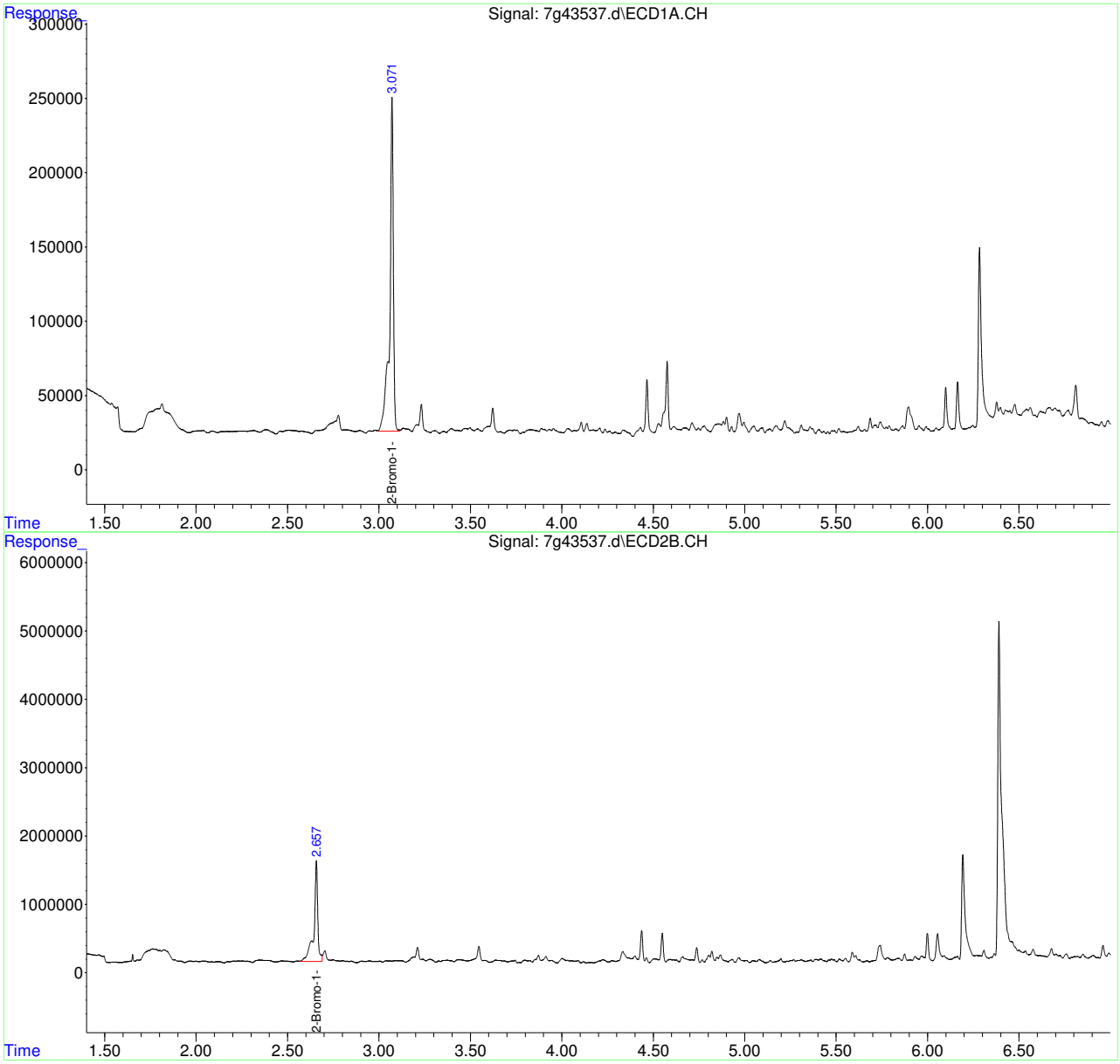
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43537.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 7:40 am
Operator : rebeccak
Sample : jd43215-11
Misc : op39196,g7g1544,34.2,,,2,1
ALS Vial : 32 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:00:28 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43538.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 7:57 am
Operator : rebeccak
Sample : jd43215-12
Misc : op39196,g7g1544,34.3,,,2,1
ALS Vial : 33 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:00:59 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.072	2.658	3164113	21726819	9.926m	9.318m
Spiked Amount 10.000			Recovery =		99.26%	93.18%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

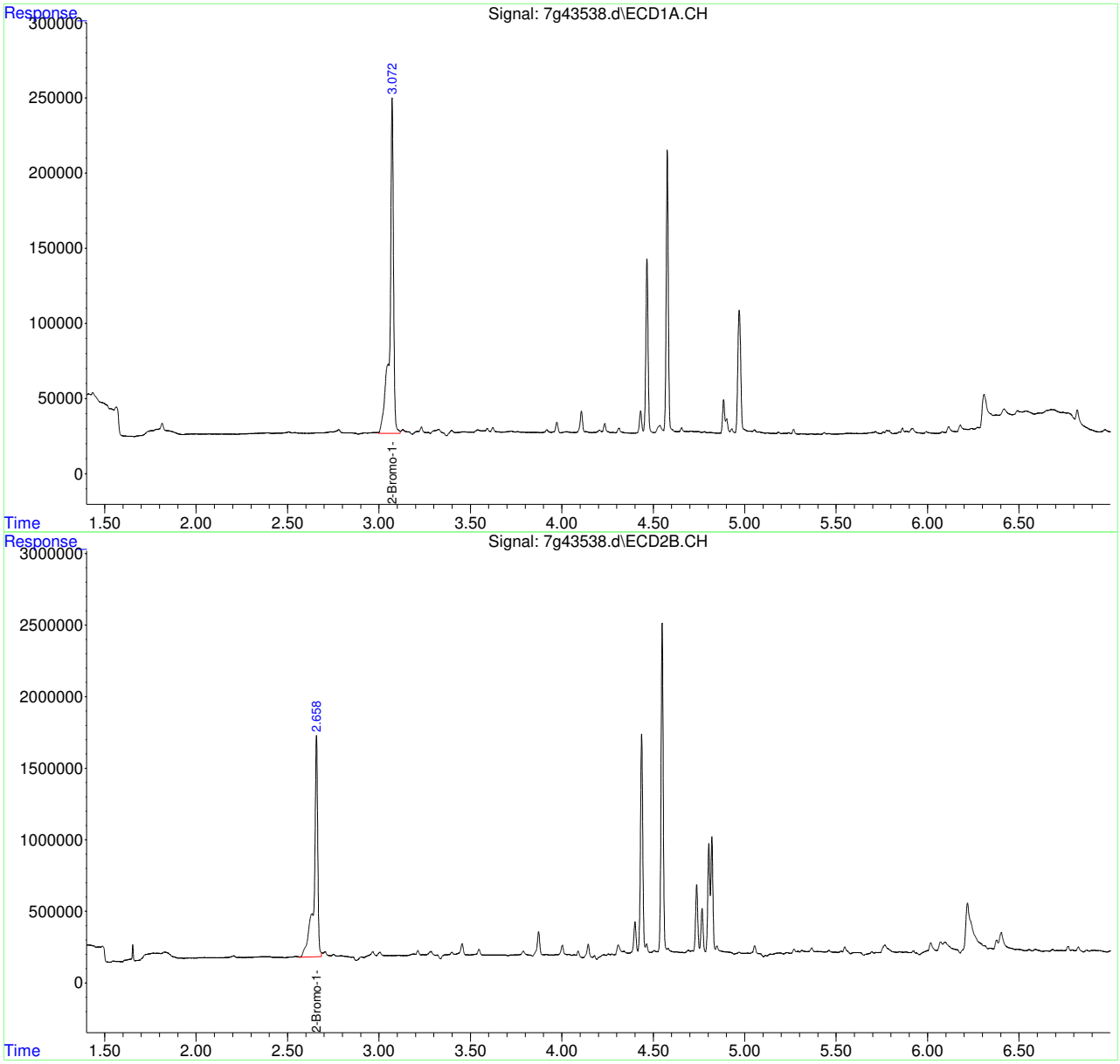
11.1.12 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43538.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 7:57 am
Operator : rebeccak
Sample : jd43215-12
Misc : op39196,g7g1544,34.3,,,2,1
ALS Vial : 33 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:00:59 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43539.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 8:14 am
Operator : rebeccak
Sample : jd43215-13
Misc : op39196,g7g1544,34.4,,,2,1
ALS Vial : 34 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:03:11 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.072	2.659	3318726	22902844	10.411m	9.822
Spiked Amount 10.000			Recovery =		104.11%	98.22%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

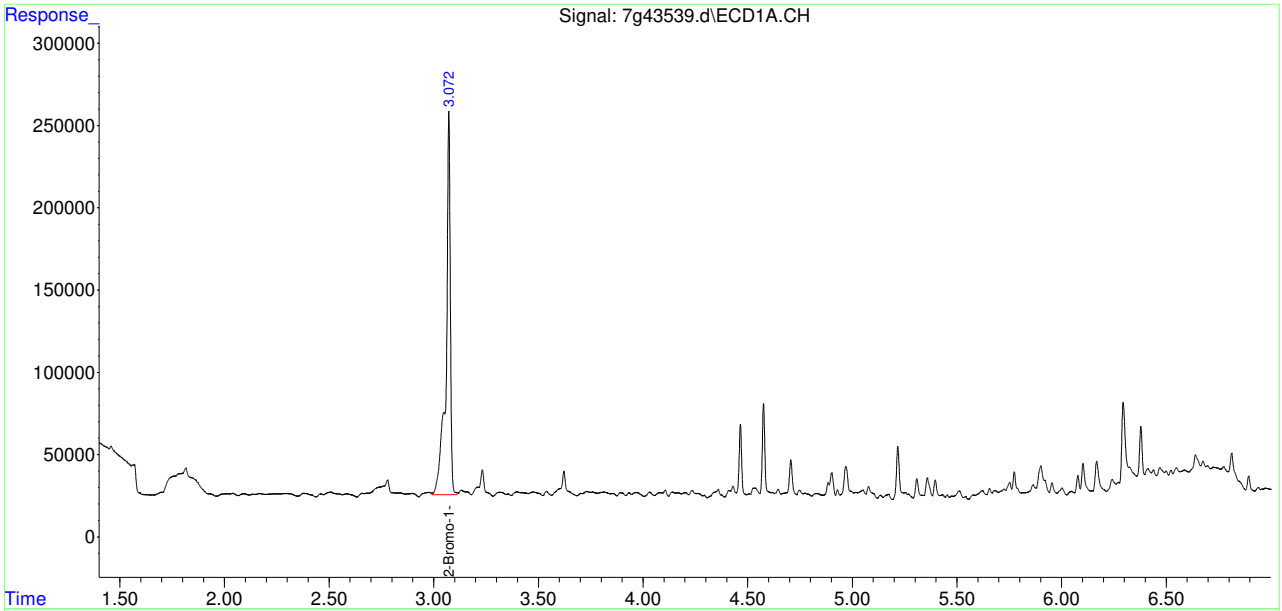
11.1.13 11

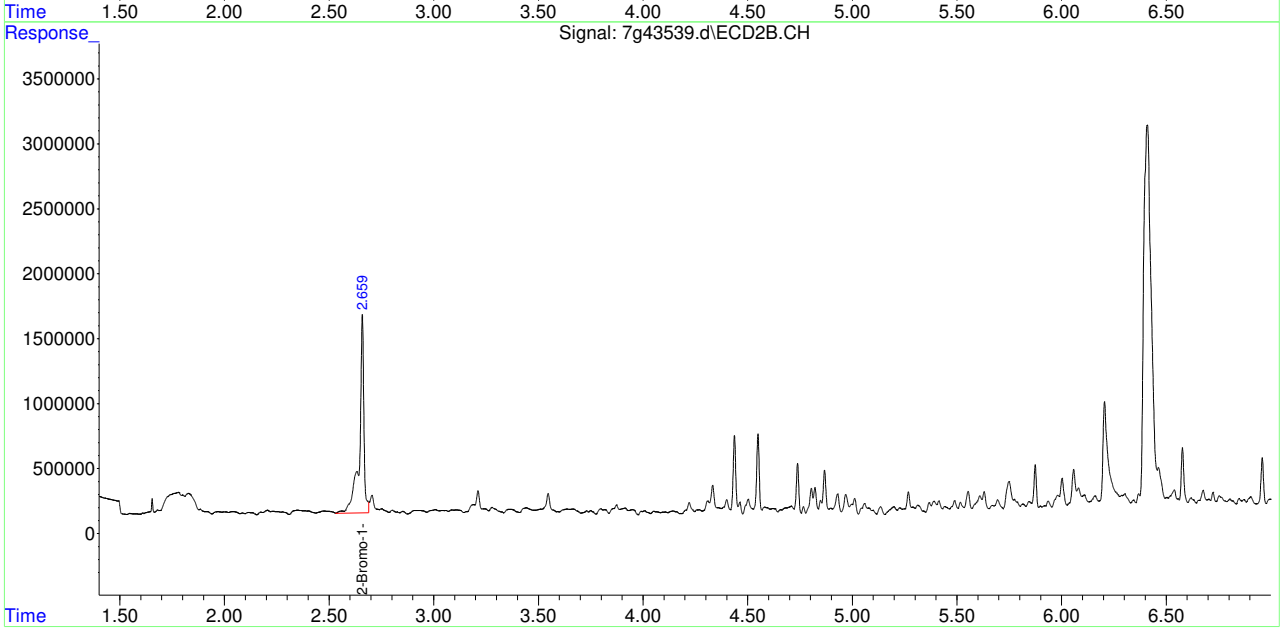
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43539.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 8:14 am
Operator : rebeccak
Sample : jd43215-13
Misc : op39196,g7g1544,34.4,,,2,1
ALS Vial : 34 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:03:11 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43540.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 8:31 am
Operator : rebeccak
Sample : jd43215-14
Misc : op39196,g7g1544,34.1,,,2,1
ALS Vial : 35 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:03:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.657	3414184	24367856	10.710m	10.450m
Spiked Amount 10.000			Recovery =		107.10%	104.50%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

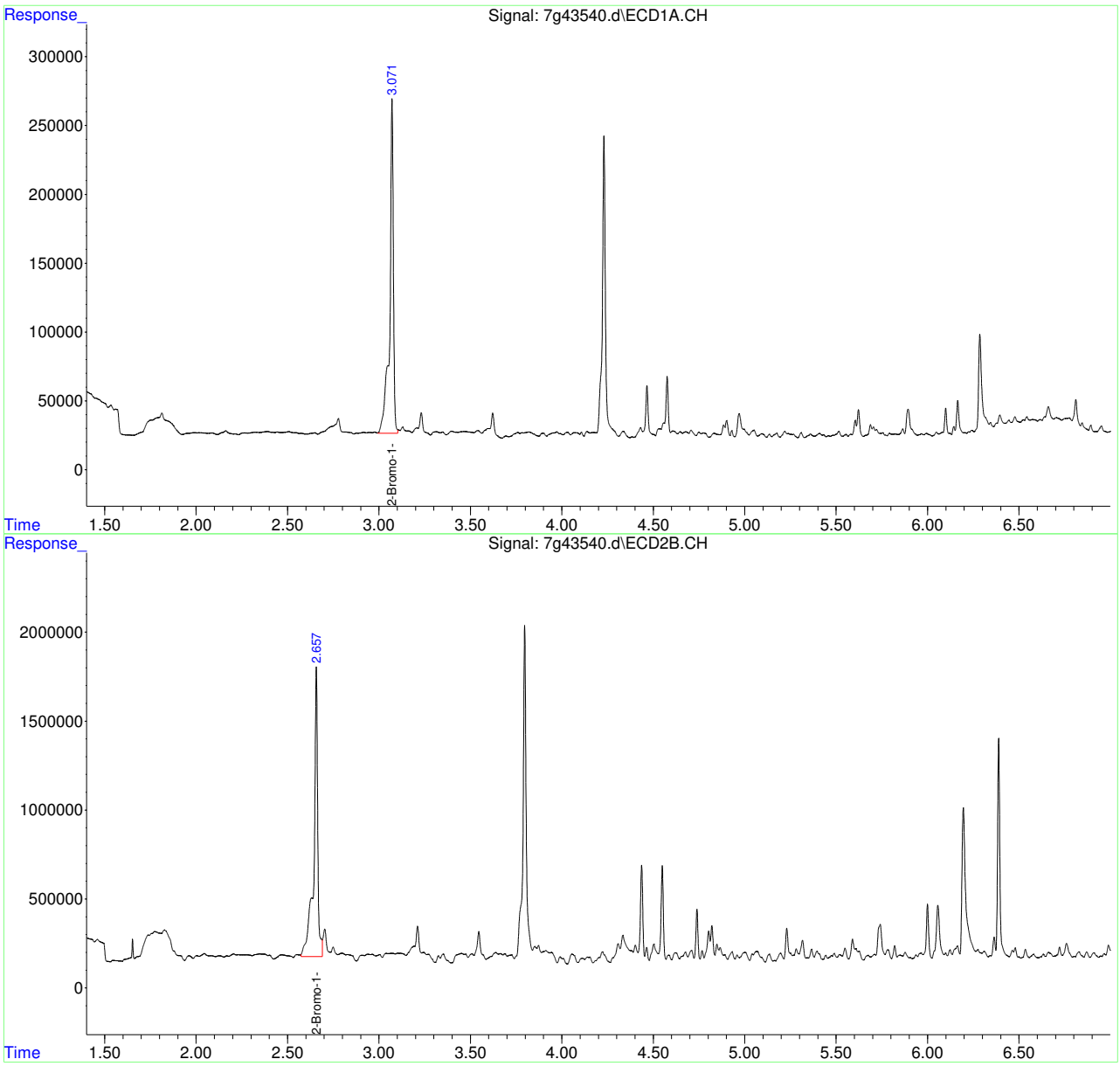
11.1.14 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43540.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 8:31 am
Operator : rebeccak
Sample : jd43215-14
Misc : op39196,g7g1544,34.1,,,2,1
ALS Vial : 35 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:03:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43541.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 8:48 am
Operator : rebeccak
Sample : jd43215-15
Misc : op39196,g7g1544,34.2,,,2,1
ALS Vial : 36 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:06:12 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) S	2-Bromo-1...	3.072	2.658	3070527	18637913	9.632m	7.993m
	Spiked Amount 10.000			Recovery =		96.32%	79.93%
	Target Compounds						
2)	1,2-Dibro...	3.396	2.846f	155336	737987	0.093m	0.050m#

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

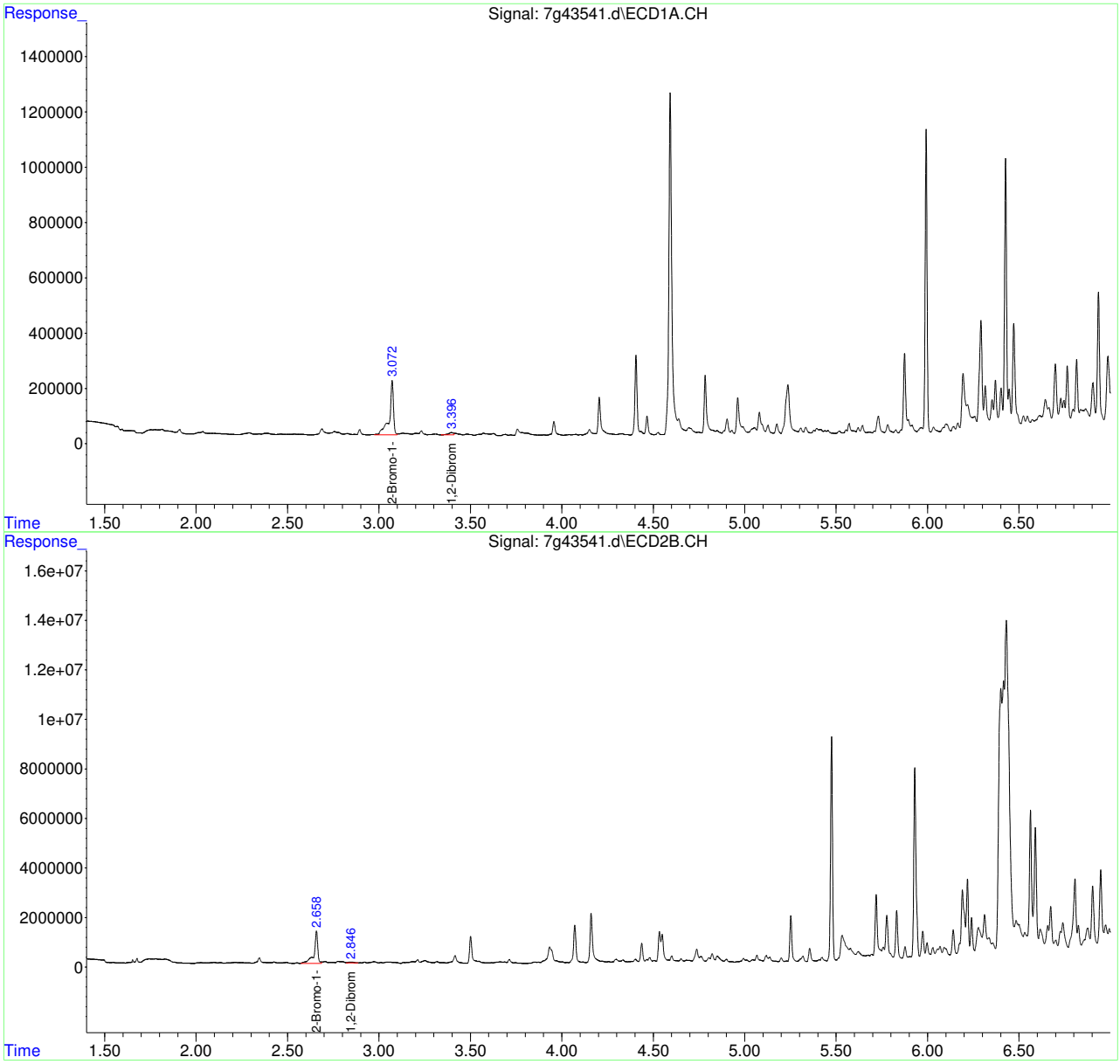
11.1.15 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43541.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 8:48 am
Operator : rebeccak
Sample : jd43215-15
Misc : op39196,g7g1544,34.2,,,2,1
ALS Vial : 36 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:06:12 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:01

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43542.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 9:06 am
Operator : rebeccak
Sample : jd43215-16
Misc : op39196,g7g1544,34.9,,,2,1
ALS Vial : 37 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:07:14 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) S	2-Bromo-1...	3.072	2.658	3362792	19608907	10.549	8.409m
	Spiked Amount 10.000			Recovery	= 105.49%		84.09%
	Target Compounds						
2)	1,2-Dibro...	3.397	2.845f	144687	982709	0.087m	0.066m

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

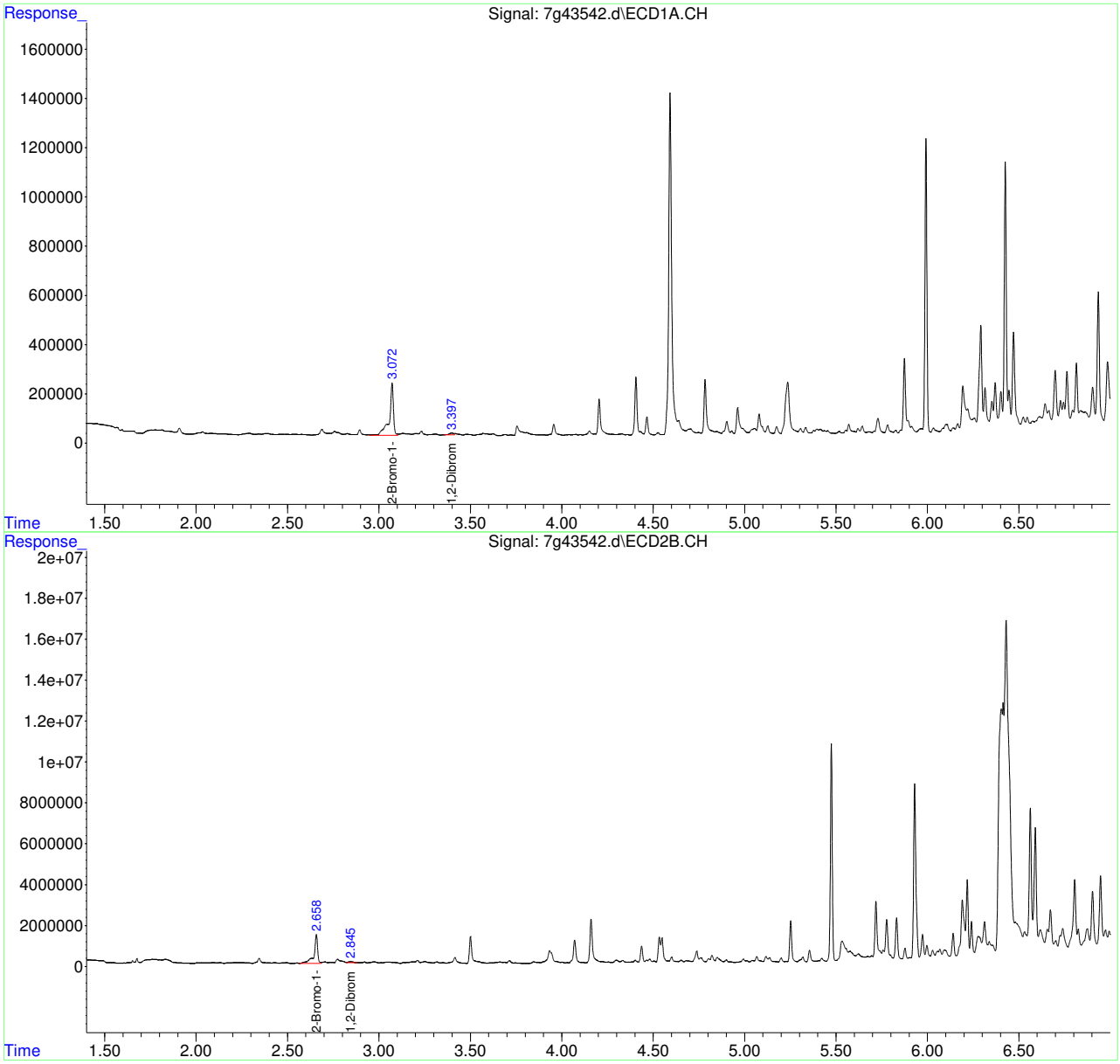
11.1.16 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43542.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 9:06 am
Operator : rebeccak
Sample : jd43215-16
Misc : op39196,g7g1544,34.9,,,2,1
ALS Vial : 37 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:07:14 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 17:20

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43600.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 11:49 am
Operator : rebeccak
Sample : jd43215-17
Misc : op39196,g7g1546,34.4,,,2,1
ALS Vial : 75 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:20:28 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

	Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
	System Monitoring Compounds						
1) S	2-Bromo-1...	3.071	2.656	3239974	25306115	10.030m	11.066
	Spiked Amount	10.000		Recovery	=	100.30%	110.66%
	Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

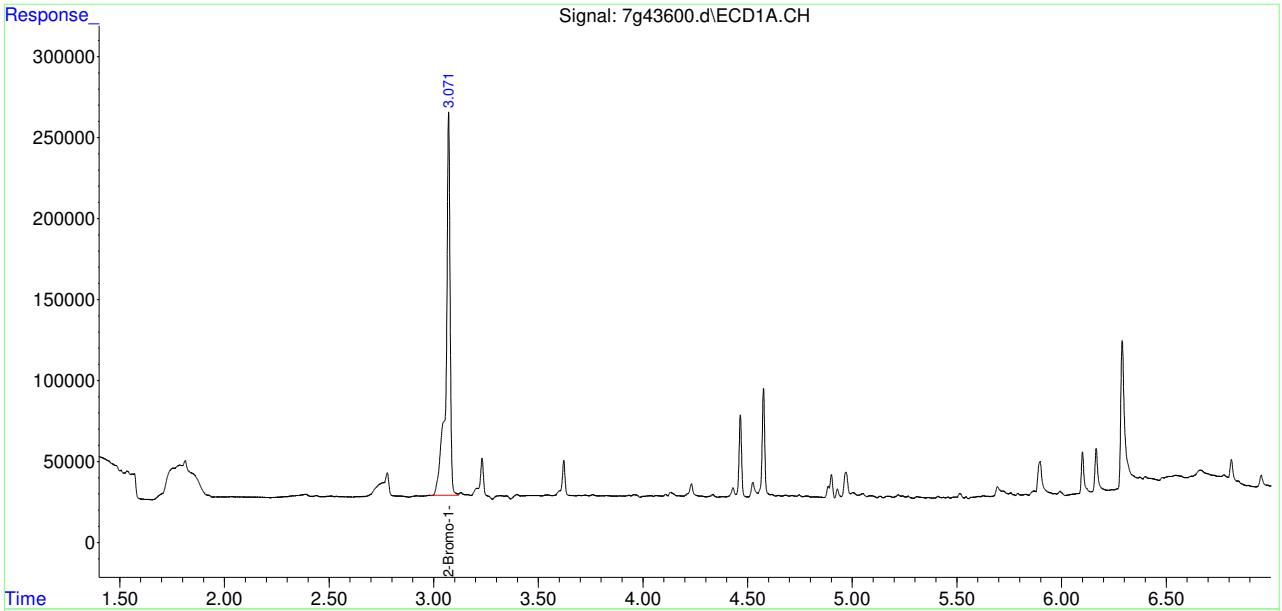
11.1.17 11

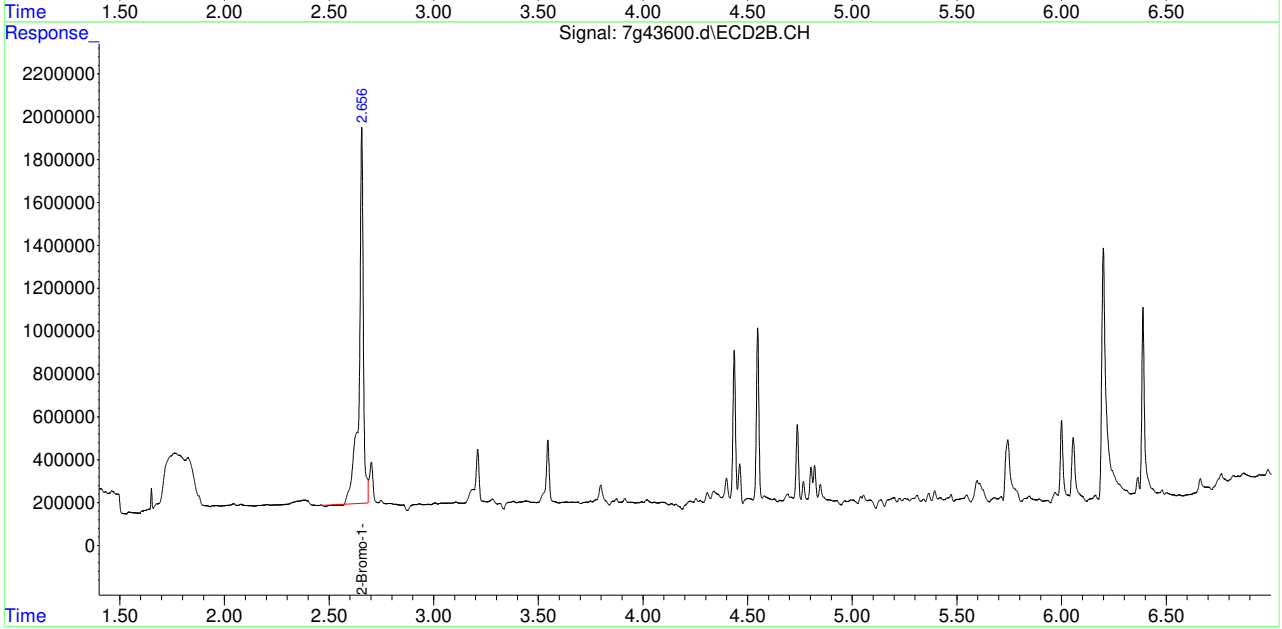
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43600.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 11:49 am
Operator : rebeccak
Sample : jd43215-17
Misc : op39196,g7g1546,34.4,,,2,1
ALS Vial : 75 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:20:28 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43601.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 12:06 pm
Operator : rebeccak
Sample : jd43215-18
Misc : op39196,g7g1546,34.6,,,2,1
ALS Vial : 76 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:21:01 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.656	3261116	22435890	10.096	9.811
Spiked Amount 10.000			Recovery =		100.96%	98.11%
Target Compounds						

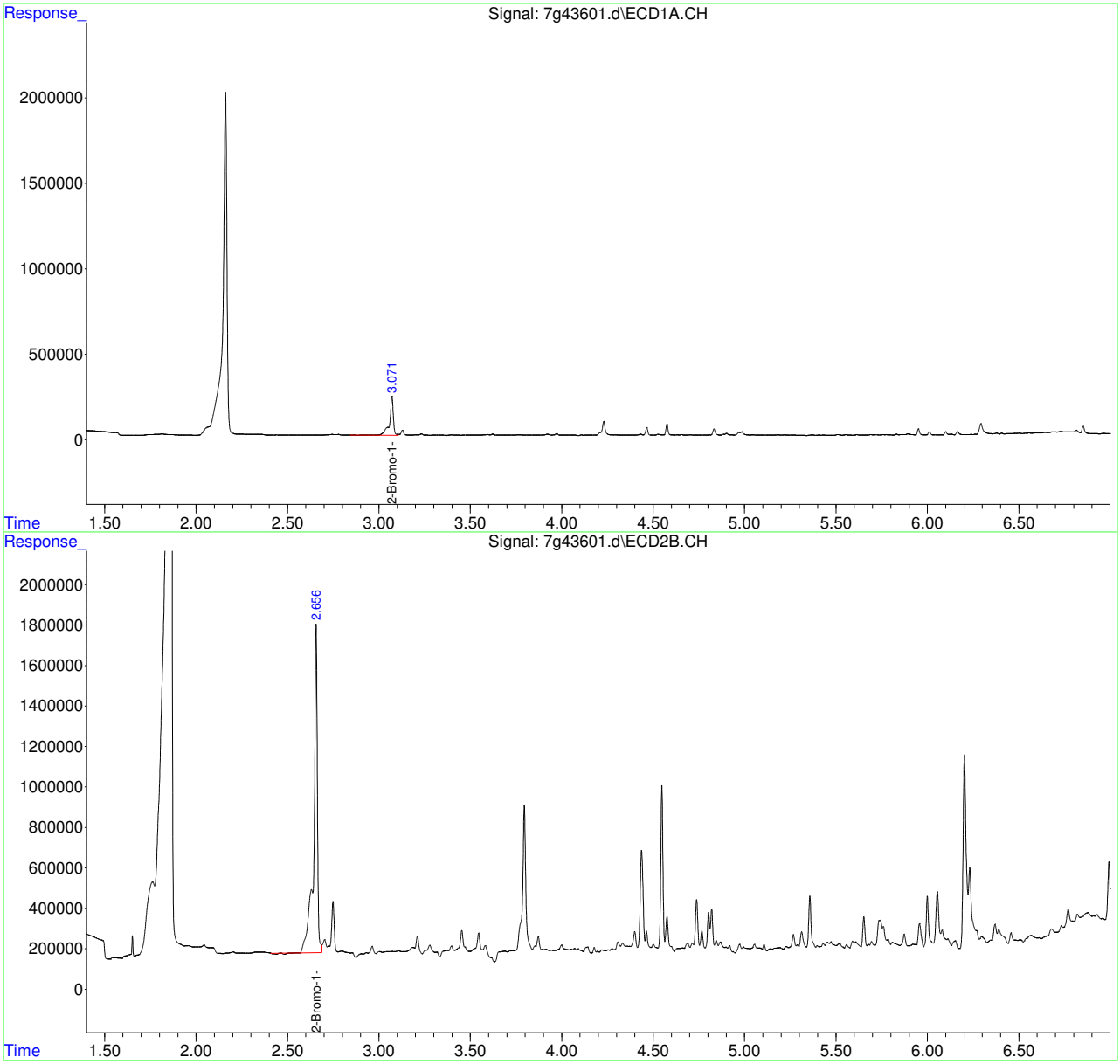
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43601.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 12:06 pm
Operator : rebeccak
Sample : jd43215-18
Misc : op39196,g7g1546,34.6,,,2,1
ALS Vial : 76 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:21:01 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 17:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43604.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 12:57 pm
Operator : rebeccak
Sample : jd43215-19
Misc : op39196,g7g1546,34.5,,,2,1
ALS Vial : 77 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:21:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.656	3155629	23950358	9.769m	10.473m
Spiked Amount 10.000			Recovery =		97.69%	104.73%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

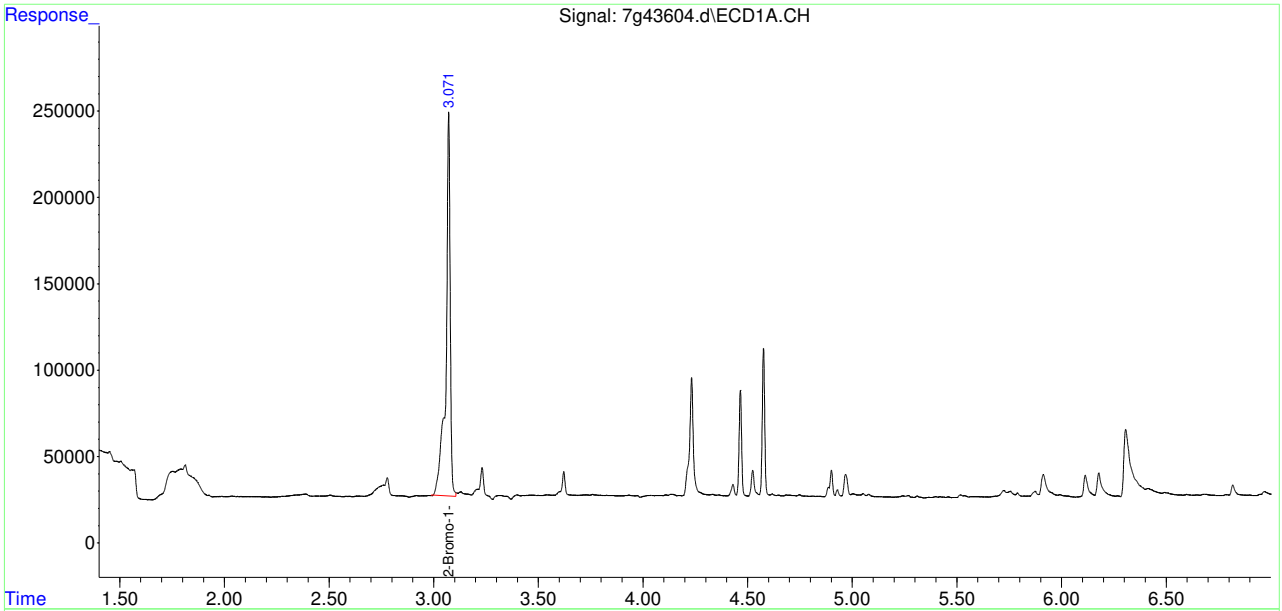
11.1.19 11

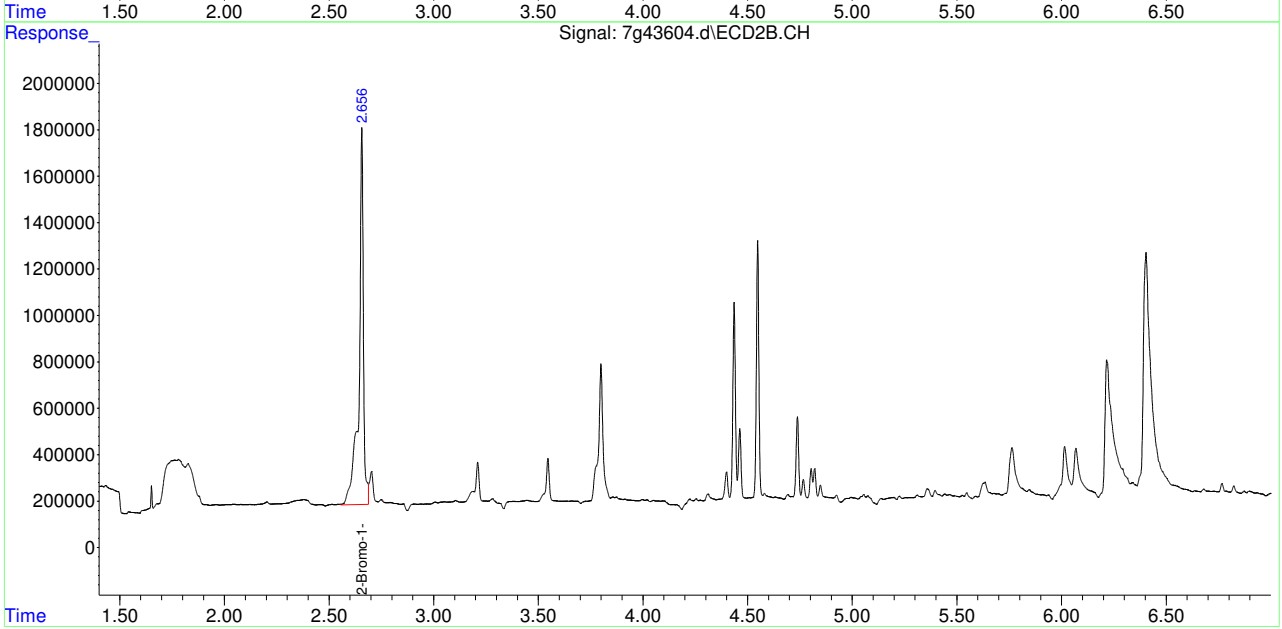
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43604.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 12:57 pm
Operator : rebeccak
Sample : jd43215-19
Misc : op39196,g7g1546,34.5,,,2,1
ALS Vial : 77 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:21:43 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43605.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 1:14 pm
Operator : rebeccak
Sample : jd43215-20
Misc : op39196,g7g1546,34.5,,,2,1
ALS Vial : 78 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:22:16 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.656	3250928	24548426	10.064	10.734
Spiked Amount 10.000			Recovery =		100.64%	107.34%
Target Compounds						

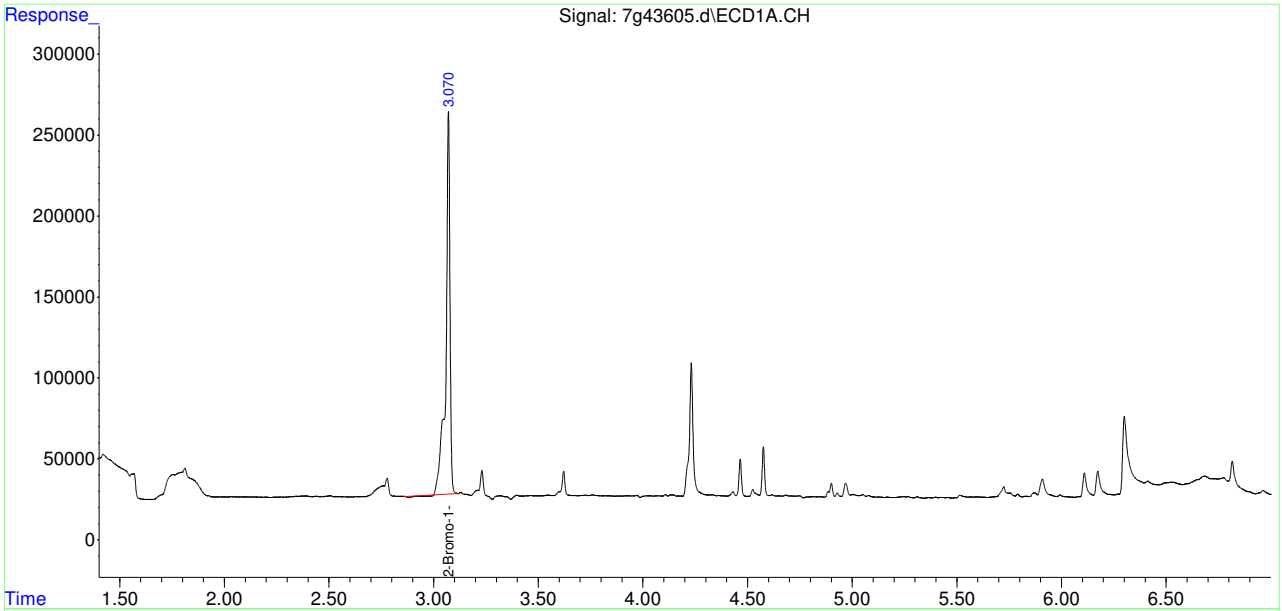
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

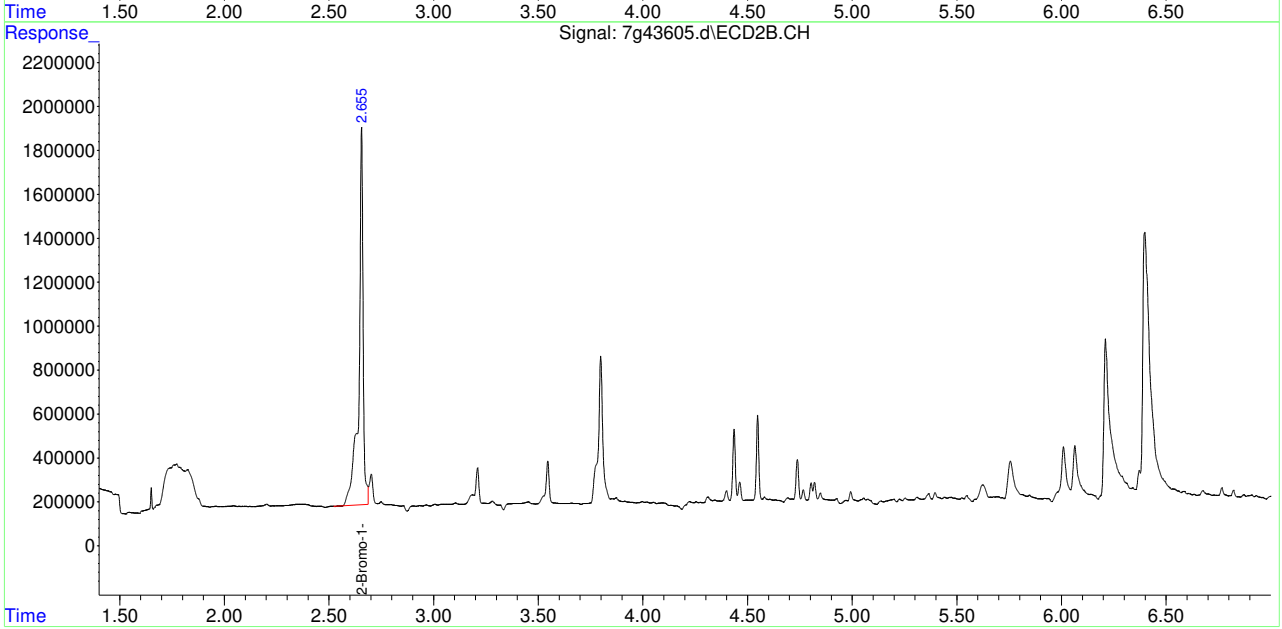
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43605.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 1:14 pm
Operator : rebeccak
Sample : jd43215-20
Misc : op39196,g7g1546,34.5,,,2,1
ALS Vial : 78 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:22:16 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 17:21

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43594.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 10:06 am
Operator : rebeccak
Sample : jd43215-21
Misc : op39197,g7g1546,33.5,,2,1
ALS Vial : 69 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:17:55 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.656	3145328	21442634	9.737m	9.376m
Spiked Amount 10.000			Recovery =		97.37%	93.76%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

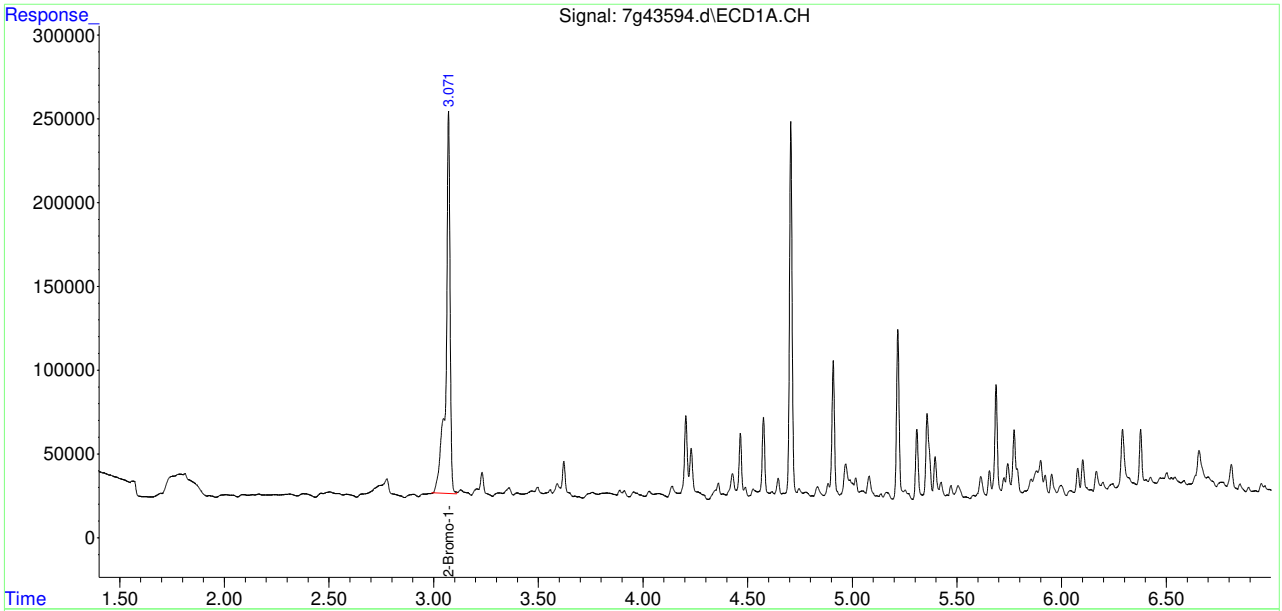
11.1.21
11

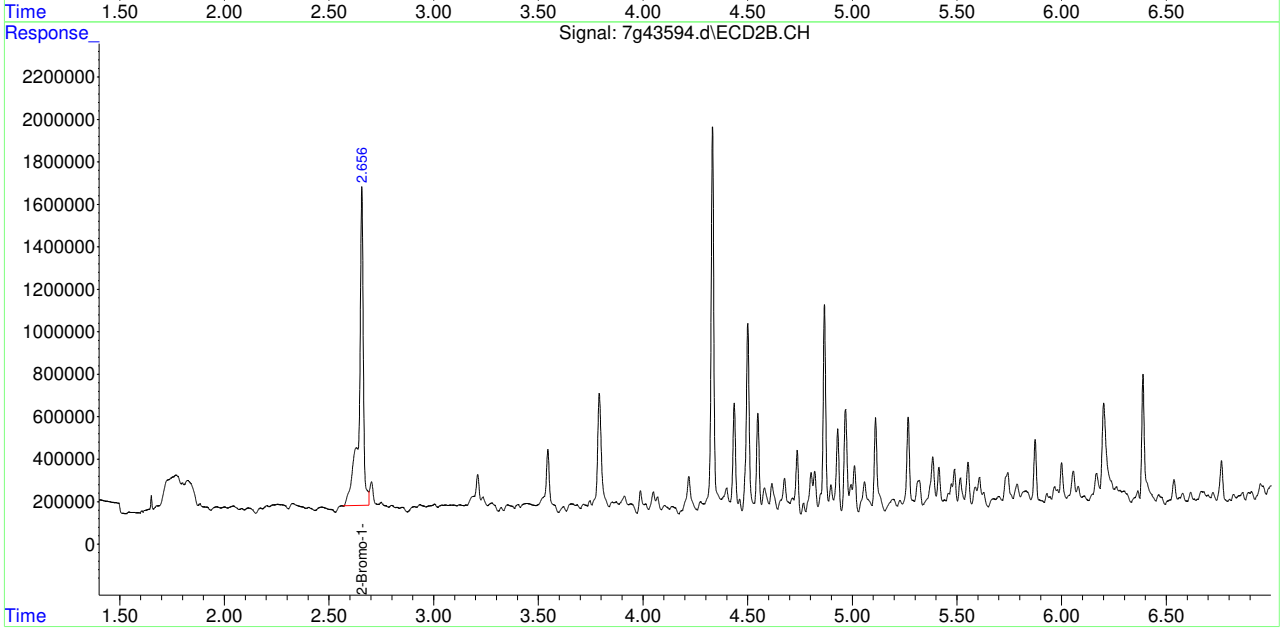
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43594.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 10:06 am
Operator : rebeccak
Sample : jd43215-21
Misc : op39197,g7g1546,33.5,,2,1
ALS Vial : 69 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:17:55 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 17:20

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43595.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 10:23 am
Operator : rebeccak
Sample : jd43215-22
Misc : op39197,g7g1546,33.9,,,2,1
ALS Vial : 70 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:18:28 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.655	6158970	42593376	19.067	18.625m
Spiked Amount 10.000			Recovery =		190.67%	186.25%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

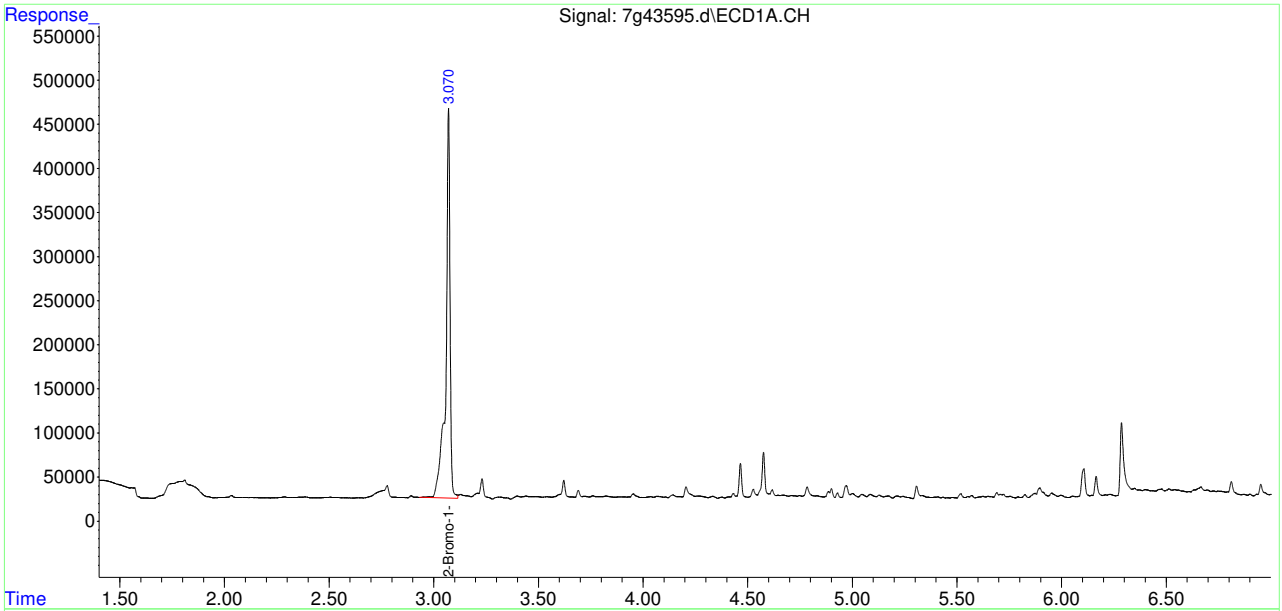
11.1.22 11

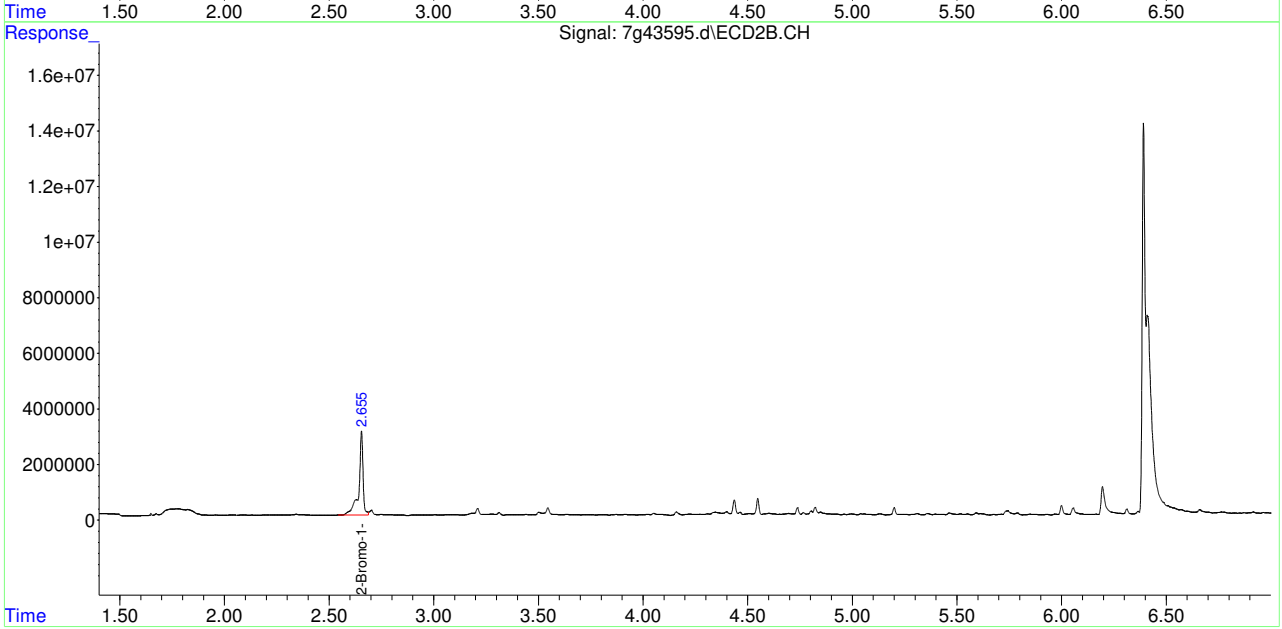
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43595.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 10:23 am
Operator : rebeccak
Sample : jd43215-22
Misc : op39197,g7g1546,33.9,,,2,1
ALS Vial : 70 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:18:28 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43596.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 10:40 am
Operator : rebeccak
Sample : jd43215-23
Misc : op39197,g7g1546,34.9,,,2,1
ALS Vial : 71 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:18:51 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.656	3048625	21314568	9.438	9.320
Spiked Amount 10.000			Recovery =		94.38%	93.20%
Target Compounds						

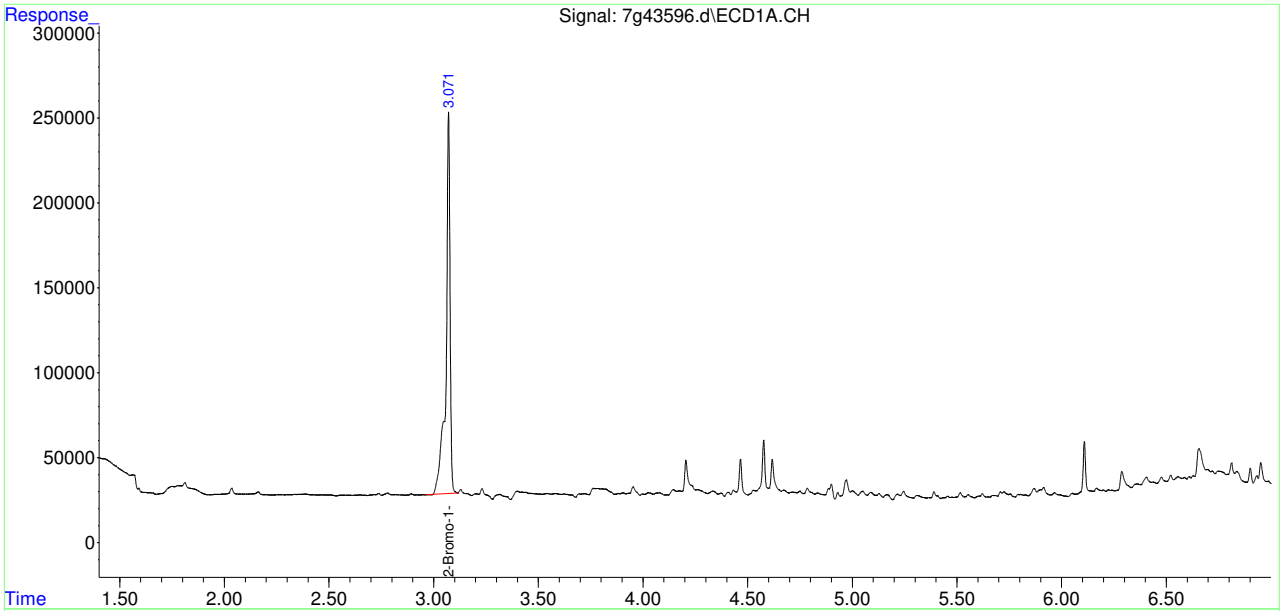
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

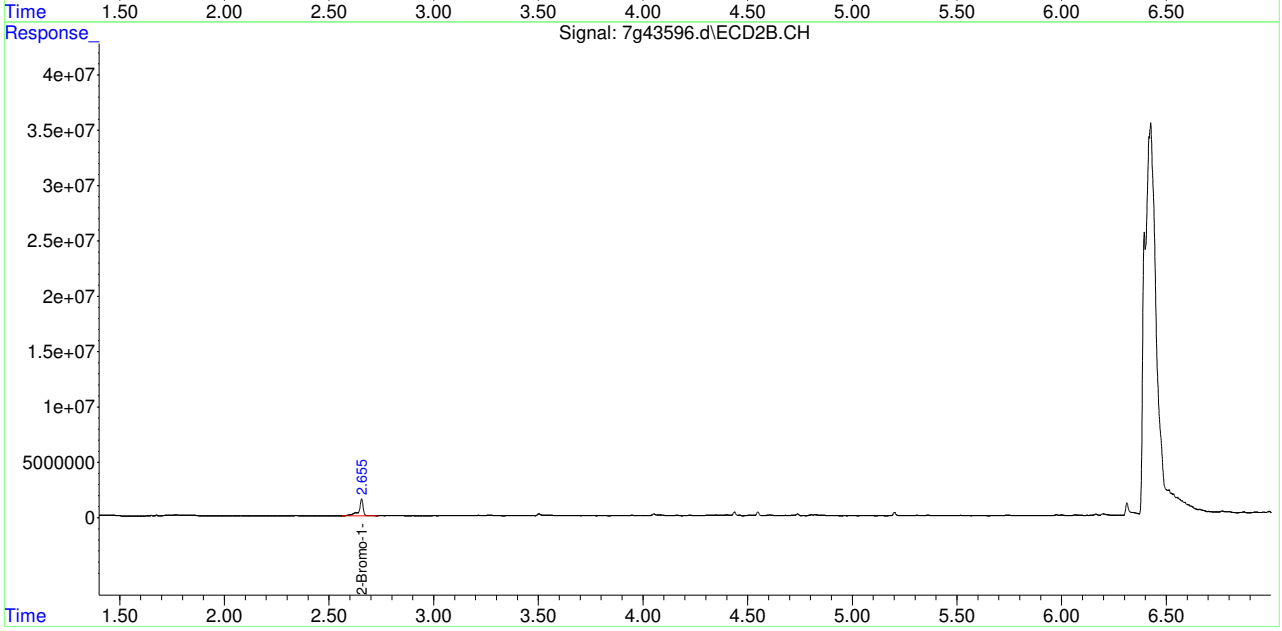
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43596.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 10:40 am
Operator : rebeccak
Sample : jd43215-23
Misc : op39197,g7g1546,34.9,,,2,1
ALS Vial : 71 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:18:51 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43597.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 10:57 am
Operator : rebeccak
Sample : jd43215-24
Misc : op39197,g7g1546,34.6,,,2,1
ALS Vial : 72 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:19:10 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.655	3057410	21843225	9.465	9.552
Spiked Amount 10.000			Recovery =		94.65%	95.52%
Target Compounds						

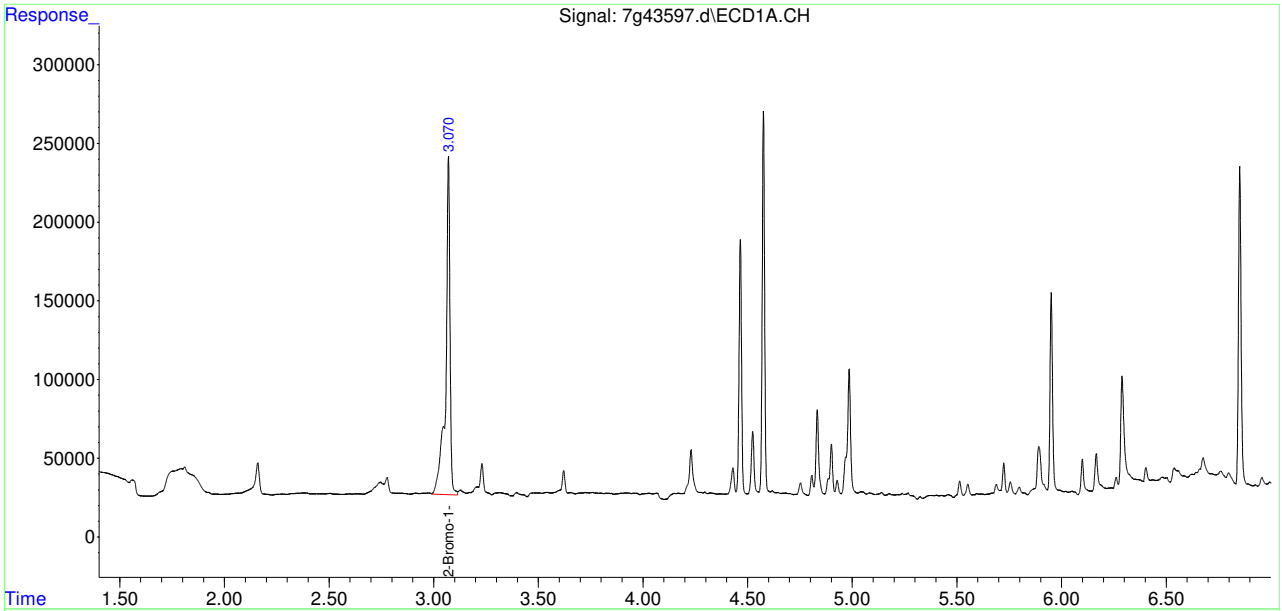
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

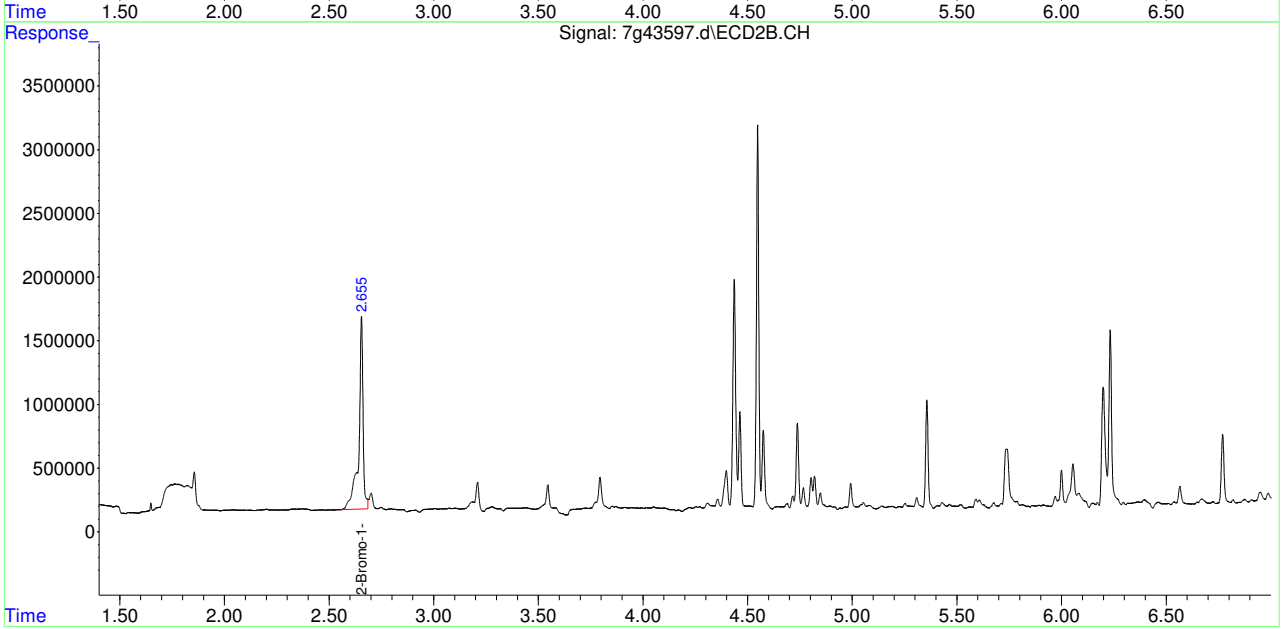
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43597.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 10:57 am
Operator : rebeccak
Sample : jd43215-24
Misc : op39197,g7g1546,34.6,,,2,1
ALS Vial : 72 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:19:10 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43598.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 11:15 am
Operator : rebeccak
Sample : jd43215-25
Misc : op39197,g7g1546,34.5,,,2,1
ALS Vial : 73 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:19:27 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.070	2.656	3308494	24663863	10.242	10.785
Spiked Amount	10.000		Recovery	=	102.42%	107.85%
Target Compounds						

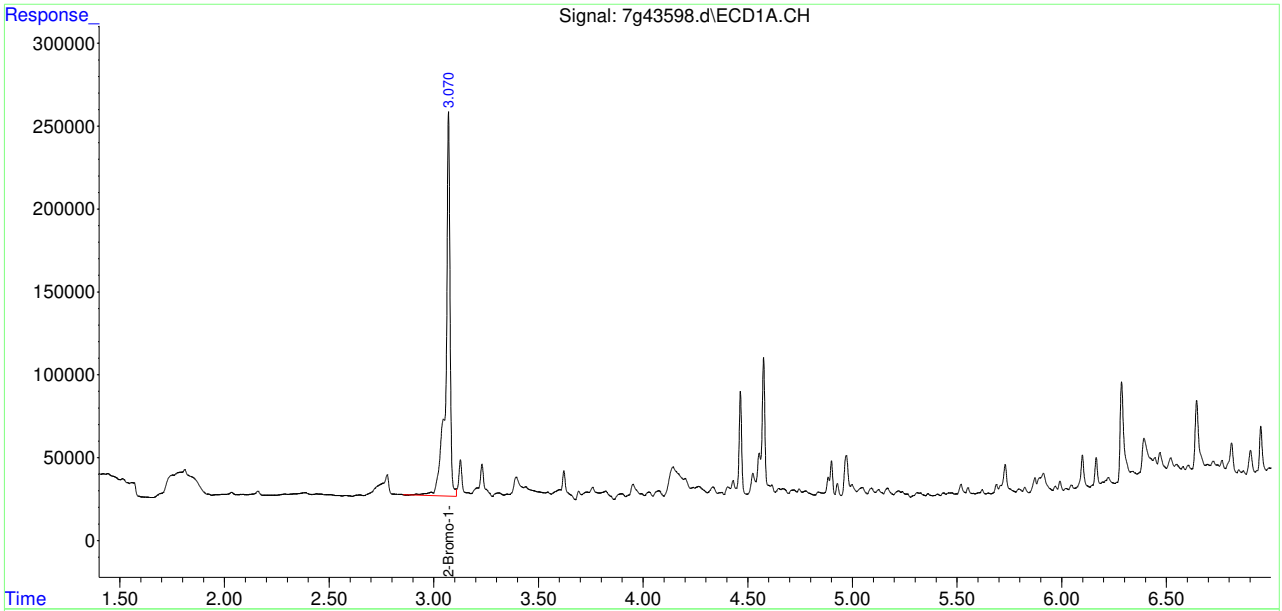
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

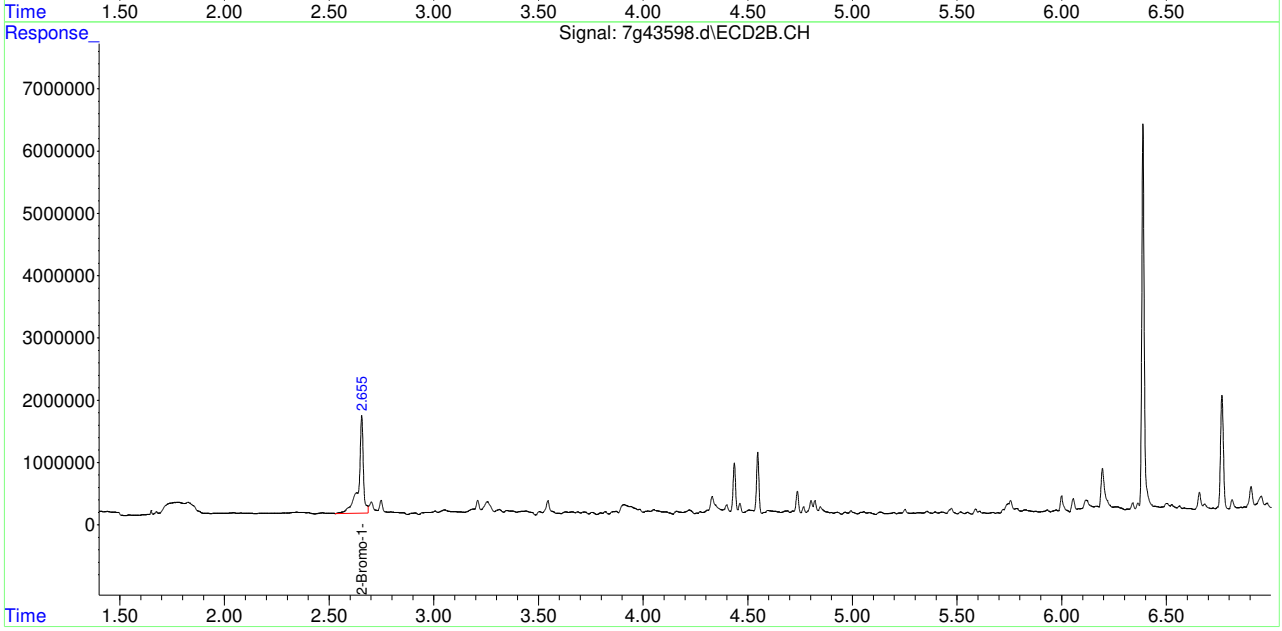
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43598.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 11:15 am
Operator : rebeccak
Sample : jd43215-25
Misc : op39197,g7g1546,34.5,,,2,1
ALS Vial : 73 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:19:27 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 17:20

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43599.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 11:32 am
Operator : rebeccak
Sample : jd43215-26
Misc : op39197,g7g1546,35.0,,,2,1
ALS Vial : 74 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:20:02 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.070	2.655	3071270	26233463	9.508m	11.471m
Spiked Amount 10.000			Recovery =		95.08%	114.71%
Target Compounds						

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

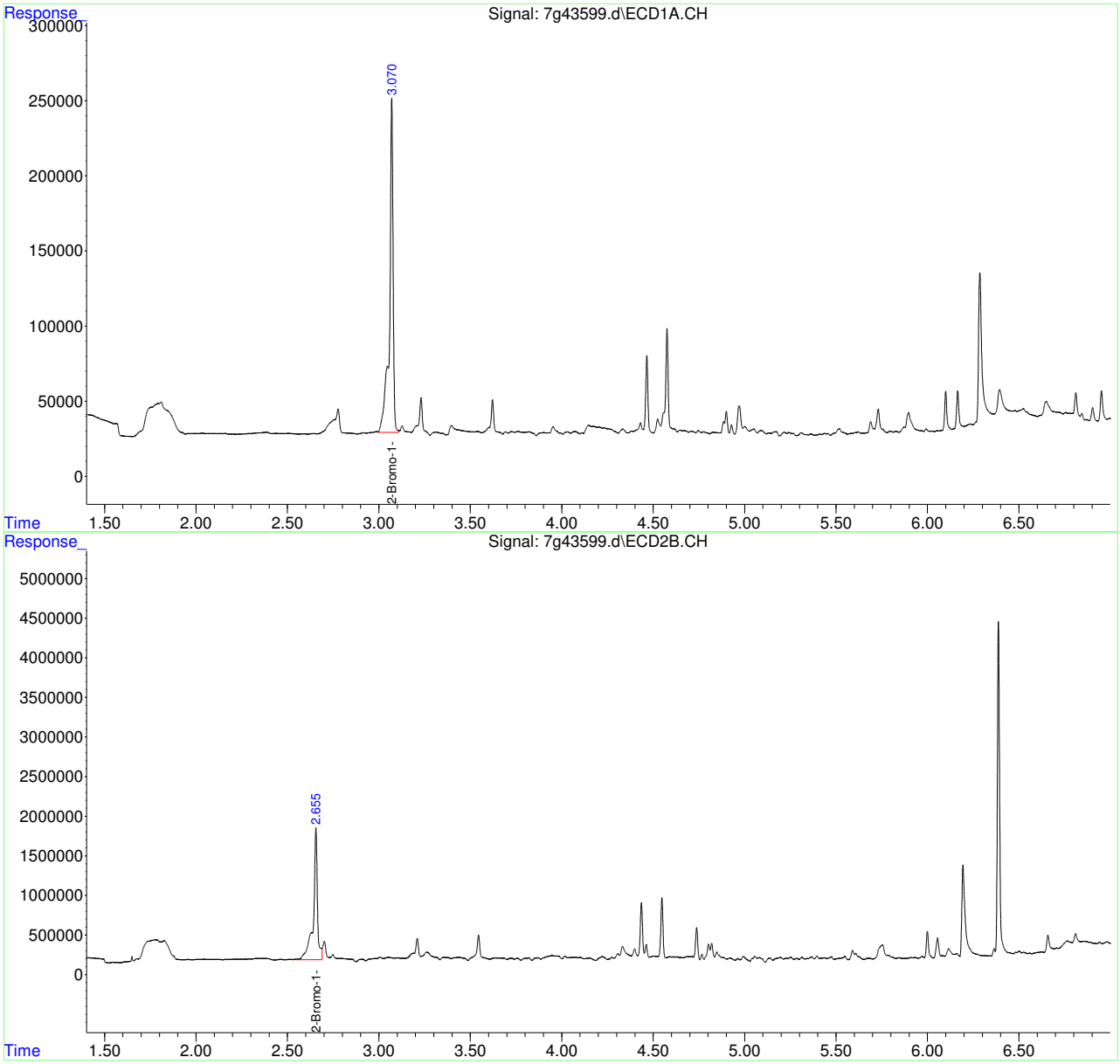
11.1.26 11

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43599.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 11:32 am
Operator : rebeccak
Sample : jd43215-26
Misc : op39197,g7g1546,35.0,,,2,1
ALS Vial : 74 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 15:20:02 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43518.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 2:14 am
Operator : rebeccak
Sample : op39196-mb1
Misc : op39196,g7g1544,35.0,,,2,1
ALS Vial : 17 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 07:55:03 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.072	2.658	4409805	28932853	13.833	12.408
Spiked Amount 10.000			Recovery =		138.33%	124.08%
Target Compounds						

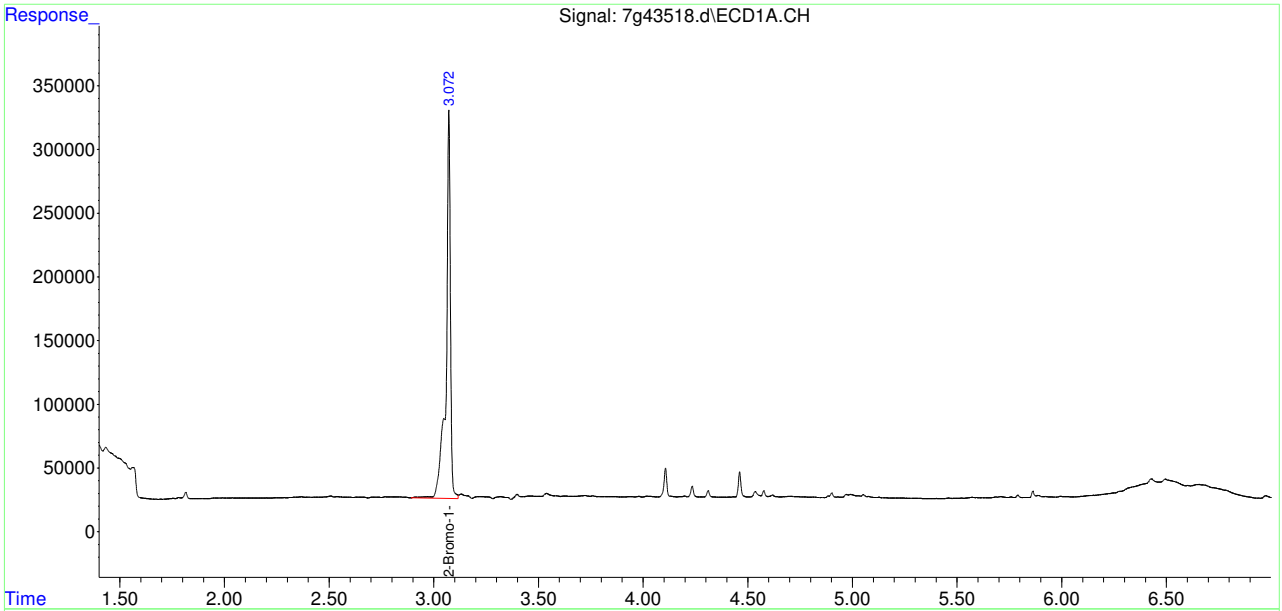
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

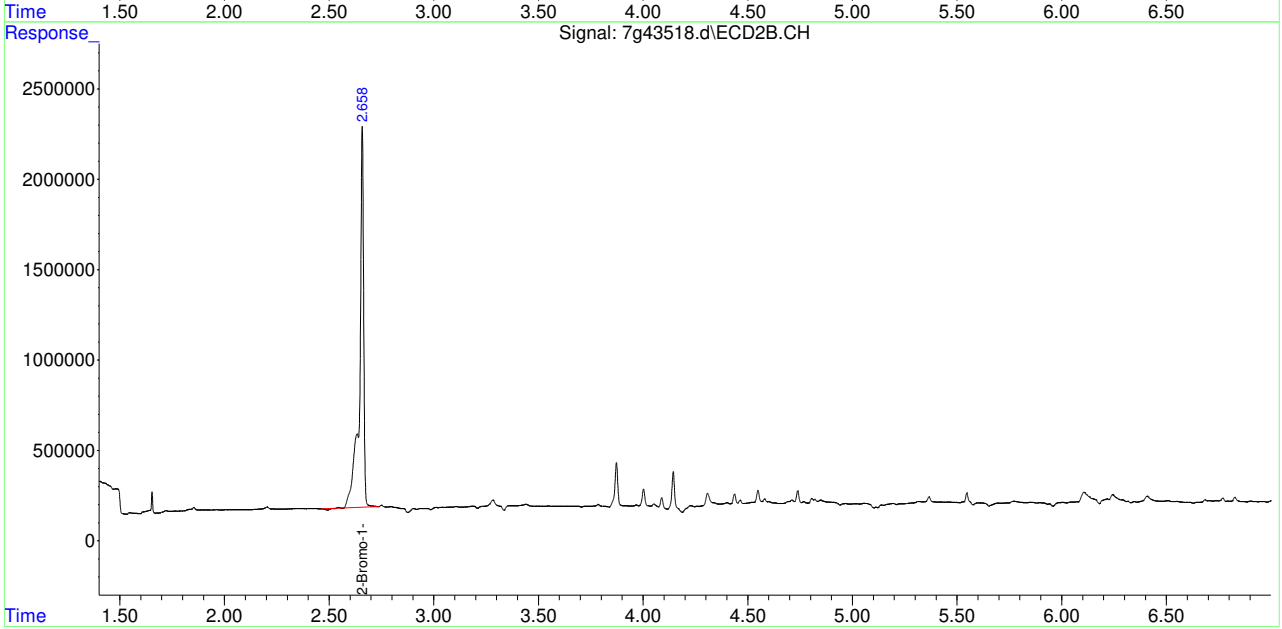
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1544\
Data File : 7g43518.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 21 Apr 2022 2:14 am
Operator : rebeccak
Sample : op39196-mb1
Misc : op39196,g7g1544,35.0,,,2,1
ALS Vial : 17 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 21 07:55:03 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1543.M
Quant Title : GC/ECD- EDB
QLast Update : Wed Apr 20 23:29:59 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Manual Integrations APPROVED (compounds with "m" flag)
Gwendolyn Burns 04/22/22 12:12

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43575.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 4:42 am
Operator : rebeccak
Sample : op39197-mb1
Misc : op39197,g7g1546,35.0,,,2,1
ALS Vial : 54 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:15:17 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um

Compound	RT#1	RT#2	Resp#1	Resp#2	PPB	PPB
System Monitoring Compounds						
1) S 2-Bromo-1...	3.071	2.656	3161365	21901898	9.787m	9.577m
Spiked Amount 10.000			Recovery =		97.87%	95.77%
Target Compounds						

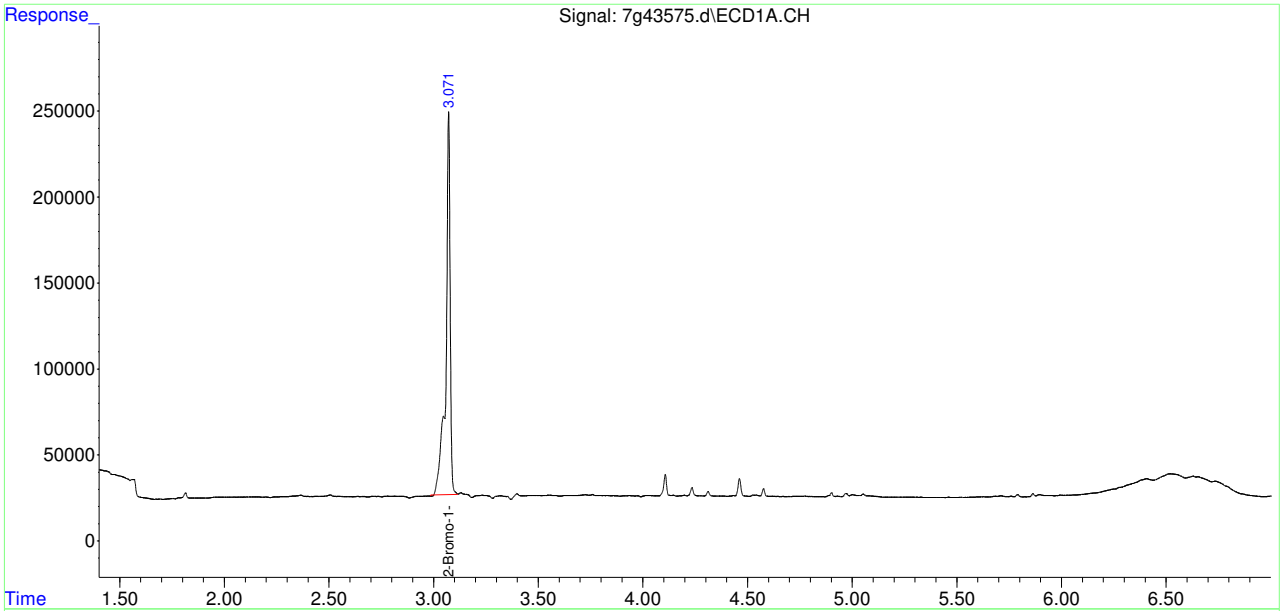
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.

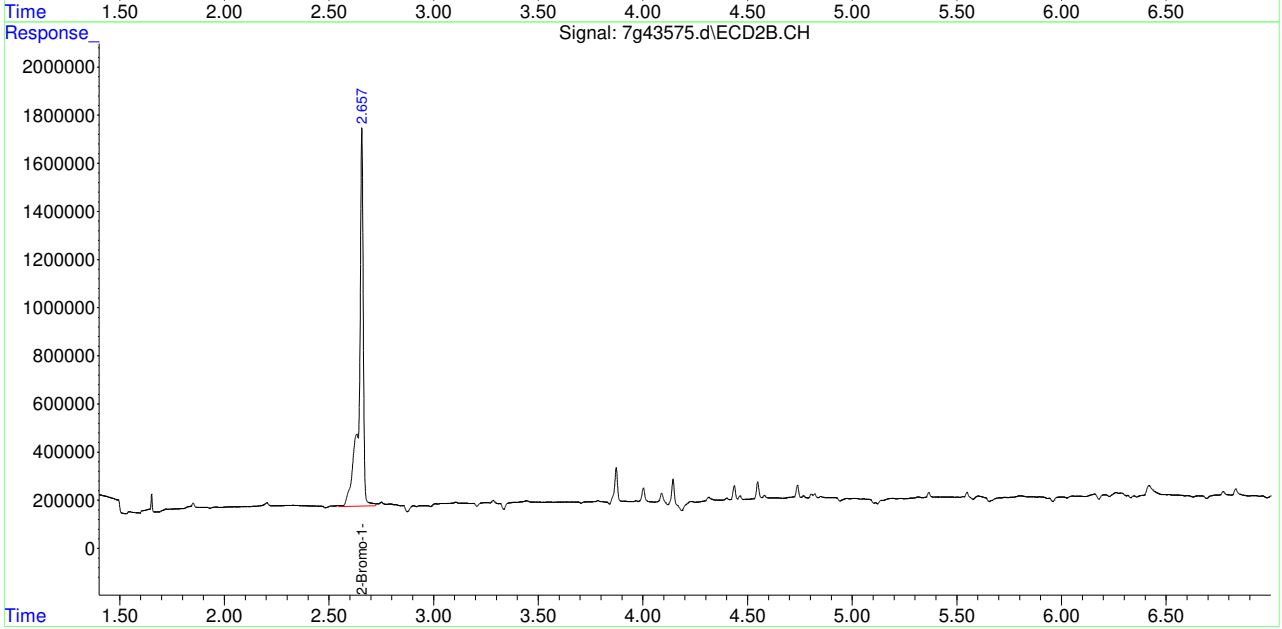
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\7g1546\
Data File : 7g43575.d
Signal(s) : Signal #1: ECD1A.CH Signal #2: ECD2B.CH
Acq On : 22 Apr 2022 4:42 am
Operator : rebeccak
Sample : op39197-mb1
Misc : op39197,g7g1546,35.0,,,2,1
ALS Vial : 54 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 22 07:15:17 2022
Quant Method : C:\MSDCHEM\1\METHODS\7GV8011M1545.M
Quant Title : GC/ECD- EDB
QLast Update : Thu Apr 21 23:02:31 2022
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. : 1UL/COLUMN
Signal #1 Phase : RTXCLP Signal #2 Phase: RTXCLPII
Signal #1 Info : 30mx0.32mmx0.50um Signal #2 Info : 30m x 0.32mm x 0.25um





Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:45	MA52261-STD1	1		Sample introduction not stable, see rerun.
10:51	MA52261-STD2	1		Sample introduction not stable, see rerun.
10:57	MA52261-STD3	1		STDA
11:02	MA52261-STD4	1		STDB
11:08	MA52261-STD5	1		STDC
11:13	MA52261-STD6	1		STDD
11:18	MA52261-STD7	1		STDE
11:24	MA52261-STD8	1		STDF
11:29	MA52261-STD9	1		STDG
11:35	MA52261-STD10	1		STDH
11:40	MA52261-STD11	1		STDI
11:45	MA52261-STD12	1		STDJ
11:51	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	MA52261-ICVA1	1		
12:08	MA52261-ICV1	1		
12:23	MA52261-ICB1	1		
12:29	MA52261-CCVA1	1		
12:34	MA52261-CCB1	1		
12:39	MA52261-CRI1	1		
12:45	MA52261-ICSA1	1		
12:50	MA52261-ICSAB1	1		
12:59	ZZZZZZ	1		
13:04	ZZZZZZ	1		
13:09	MA52261-CCVA2	1		
13:16	MA52261-CCB2	1		
13:22	MP32396-MB1	2		Batch to reanalyze for Zn, CRI out
13:27	MP32396-B1	2		
13:33	MP32396-S1	2		
13:38	MP32396-S2	2		
13:43	JD43215-21F	2		
13:49	MP32396-SD1	10		
13:54	JD43215-22F	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:59	JD43215-23F	2		
14:05	ZZZZZZ	1		
14:10	MA52261-CCVA3	1		
14:16	MA52261-CCB3	1		
14:21	JD43215-24F	2		
14:26	JD43215-25F	2		
14:32	JD43215-26F	2		
14:37	ZZZZZZ	1		
14:42	MP32378-MB1	2		
14:48	MP32378-B1	2		
14:53	MP32378-S1	2		
14:59	MP32378-S2	2		
15:04	JD43215-14F	2		
15:09	MP32378-SD1	10		
15:15	MA52261-CCVA4	1		
15:20	MA52261-CCB4	1		
15:26	MP32378-MB1	2		
15:31	MP32378-B1	2		
15:36	JD43215-1F	2		
15:42	JD43215-2F	2		CRI out for Zn
15:47	JD43215-3F	2		
15:53	JD43215-4F	2		
15:58	JD43215-5F	2		
16:03	JD43215-6F	2		
16:09	ZZZZZZ	1		
16:14	MA52261-CCVA5	1		
16:20	MA52261-CCB5	1		
16:25	JD43215-7F	2		
16:30	JD43215-8F	2		
16:36	JD43215-9F	2		
16:41	JD43215-10F	2		
16:47	JD43215-11F	2		
16:52	JD43215-12F	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:57	JD43215-13F	2		
17:03	JD43215-15F	2		
17:08	ZZZZZZ	1		
17:14	MA52261-CCVA6	1		
17:19	MA52261-CCB6	1		
17:24	JD43215-16F	2		
17:30	JD43215-17F	2		
17:35	JD43215-18F	2		
17:41	JD43215-19F	2		
17:46	JD43215-20F	2		
---------->	Last reportable sample/prep for job JD43215			
17:51	ZZZZZZ	1		
17:57	MA52261-CCVA7	1		
18:02	MA52261-CCB7	1		
18:07	MA52261-CRI2	1		
18:14	ZZZZZZ	1		
18:19	MA52261-ICSA2	1		
18:24	MA52261-ICSAB2	1		
18:32	ZZZZZZ	1		
18:37	MA52261-CCVA8	1		
18:42	MA52261-CCB8	1		
---------->	Last reportable CCB for job JD43215			
18:48	MP32409-MB1	2		
18:53	MP32409-B1	2		
18:59	MP32409-S1	2		
19:04	MP32409-S2	2		
19:09	JD43204-1F	2		(sample used for QC only; not part of login JD43215)
19:15	MP32409-SD1	10		
19:20	ZZZZZZ	2		
19:26	ZZZZZZ	2		
19:31	ZZZZZZ	2		
19:37	ZZZZZZ	1		
19:42	MA52261-CCVA9	1		
19:47	MA52261-CCB9	1		
19:53	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:58	ZZZZZZ	1		
20:04	ZZZZZZ	1		
20:09	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Element: Dilution	Co	Pb	Ni	V
11:51	ZZZZZZ	1				
11:57	ZZZZZZ	1				
12:02	MA52261-ICVA1	1	X	X	X	X
12:08	MA52261-ICV1	1	X	X	X	X
12:23	MA52261-ICB1	1	X	X	X	X
12:29	MA52261-CCVA1	1	X	X	X	X
12:34	MA52261-CCB1	1	X	X	X	X
12:39	MA52261-CRI1	1	X	X	X	X
12:45	MA52261-ICSA1	1	X	X	X	X
12:50	MA52261-ICSAB1	1	X	X	X	X
12:59	ZZZZZZ	1				
13:04	ZZZZZZ	1				
13:09	MA52261-CCVA2	1	X	X	X	X
13:16	MA52261-CCB2	1	X	X	X	X
13:22	MP32396-MB1	2	X	X	X	X
13:27	MP32396-B1	2	X	X	X	X
13:33	MP32396-S1	2	X	X	X	X
13:38	MP32396-S2	2	X	X	X	X
13:43	JD43215-21F	2		X		
13:49	MP32396-SD1	10	X	X	X	X
13:54	JD43215-22F	2		X		
13:59	JD43215-23F	2		X		
14:05	ZZZZZZ	1				
14:10	MA52261-CCVA3	1	X	X	X	X
14:16	MA52261-CCB3	1	X	X	X	X
14:21	JD43215-24F	2		X		
14:26	JD43215-25F	2	X	X	X	X
14:32	JD43215-26F	2	X	X	X	X
14:37	ZZZZZZ	1				
14:42	MP32378-MB1	2				
14:48	MP32378-B1	2				X
14:53	MP32378-S1	2	X	X	X	X
14:59	MP32378-S2	2	X	X	X	X
		Element:	Co	Pb	Ni	V

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Element: Dilution	Co	Pb	Ni	V
15:04	JD43215-14F	2		X		
15:09	MP32378-SD1	10	X	X	X	X
15:15	MA52261-CCVA4	1	X	X	X	X
15:20	MA52261-CCB4	1	X	X	X	X
15:26	MP32378-MB1	2	X	X	X	X
15:31	MP32378-B1	2	X	X	X	X
15:36	JD43215-1F	2		X		
15:42	JD43215-2F	2	X	X	X	X
15:47	JD43215-3F	2		X		
15:53	JD43215-4F	2		X		
15:58	JD43215-5F	2		X		
16:03	JD43215-6F	2		X		
16:09	ZZZZZZ	1				
16:14	MA52261-CCVA5	1	X	X	X	X
16:20	MA52261-CCB5	1	X	X	X	X
16:25	JD43215-7F	2		X		
16:30	JD43215-8F	2		X		
16:36	JD43215-9F	2		X		
16:41	JD43215-10F	2		X		
16:47	JD43215-11F	2		X		
16:52	JD43215-12F	2		X		
16:57	JD43215-13F	2		X		
17:03	JD43215-15F	2		X		
17:08	ZZZZZZ	1				
17:14	MA52261-CCVA6	1	X	X	X	X
17:19	MA52261-CCB6	1	X	X	X	X
17:24	JD43215-16F	2		X		
17:30	JD43215-17F	2		X		
17:35	JD43215-18F	2		X		
17:41	JD43215-19F	2		X		
17:46	JD43215-20F	2		X		
17:51	ZZZZZZ	1				
17:57	MA52261-CCVA7	1	X	X	X	X
		Element:	Co	Pb	Ni	V

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Element: Dilution	C o	P b	N i	V	
18:02	MA52261-CCB7	1	X	X	X	X	
18:07	MA52261-CRI2	1	X	X	X	X	
18:14	ZZZZZZ	1					
18:19	MA52261-ICSA2	1	X	X	X	X	
18:24	MA52261-ICSAB2	1	X	X	X	X	
18:32	ZZZZZZ	1					
18:37	MA52261-CCVA8	1	X	X	X	X	
18:42	MA52261-CCB8	1	X	X	X	X	
18:48	MP32409-MB1	2		X			
18:53	MP32409-B1	2		X			
18:59	MP32409-S1	2		X			
19:04	MP32409-S2	2		X			
19:09	JD43204-1F	2		X			(a)
19:15	MP32409-SD1	10		X			
19:20	ZZZZZZ	2					
19:26	ZZZZZZ	2					
19:31	ZZZZZZ	2					
19:37	ZZZZZZ	1					
19:42	MA52261-CCVA9	1	X	X	X	X	
19:47	MA52261-CCB9	1	X	X	X	X	
19:53	ZZZZZZ	1					
19:58	ZZZZZZ	1					
20:04	ZZZZZZ	1					
20:09	ZZZZZZ	1					

(a) Sample used for QC only; not part of login JD43215.

Element:	C o	P b	N i	V

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
10:45	MA52261-STD1	100	100	100	100	100	100	100	100
10:51	MA52261-STD2	100	100	100	100	100	100	100	100
10:57	MA52261-STD3	100	100	100	100	100	100	100	100
11:02	MA52261-STD4	107.509	104.186	104.128	101.542	105.53	102.809	101.727	105.904
11:08	MA52261-STD5	108.983	105.108	103.066	100.695	108.2	103.012	100.474	108.005
11:13	MA52261-STD6	102.541	97.639	101.306	100.961	101.381	103.618	100.936	101.666
11:18	MA52261-STD7	103.465	99.832	100.969	99.205	103.324	101.537	99.815	103.753
11:24	MA52261-STD8	100.916	97.311	100.441	97.773	100.871	100.829	97.548	102.424
11:29	MA52261-STD9	103.546	97.47	99.897	98.411	99.785	99.373	99.211	101.543
11:35	MA52261-STD10	106.388	101.783	98.675	101.139	103.229	99.224	102.49	104.918
11:40	MA52261-STD11	106.55	104.557	106.244	103.826	104.334	105.274	102.1	104.734
11:45	MA52261-STD12	111.293	106.59	109.012	103.589	107.117	106.219	100.926	107.28
11:51	ZZZZZZ	108.58	104.025	108.38	101.906	106.064	107.206	102.315	106.805
11:57	ZZZZZZ	109.82	104.115	108.322	102.893	106.008	107.96	102.947	106.42
12:02	MA52261-ICVA1	109.26	106.883	109.324	101.024	106.823	106.432	100.772	107.643
12:08	MA52261-ICV1	105.733	102.645	104.779	99.797	105.087	105.605	99.455	105.221
12:23	MA52261-ICB1	110.9	109.182	106.014	100.698	103.898	106.415	100.019	104.613
12:29	MA52261-CCVA1	107.963	108.185	110.762	102.657	103.018	107.718	100.661	103.796
12:34	MA52261-CCB1	107.445	103.496	105.721	100.019	102.555	105.54	100.088	103.435
12:39	MA52261-CRI1	110.823	109.332	108.368	100.545	107.103	108.59	101.142	107.374
12:45	MA52261-ICSA1	100.129	102.176	100.437	96.741	94.137	95.956	91.152	92.732
12:50	MA52261-ICSAB1	98.65	99.173	100.335	96.362	95.635	96.396	91.688	94.359
12:59	ZZZZZZ	92.548	95.971	93.733	92.525	95.408	95.167	93.849	96.297
13:04	ZZZZZZ	95.68	97.296	94.851	92.329	97.461	96.215	92.165	97.433
13:09	MA52261-CCVA2	97.348	99.615	99.519	98.327	97.771	99.155	96.583	99.057
13:16	MA52261-CCB2	98.236	99.184	97.64	99.961	99.192	99.572	98.756	98.975
13:22	MP32396-MB1	97.627	101.813	95.79	100.192	101.689	99.066	103.263	101.978
13:27	MP32396-B1	95.175	100.462	98.679	102.798	99.105	99.473	105.675	100.412
13:33	MP32396-S1	95.197	98.865	97.06	103.619	98.472	98.856	104.235	98.941
13:38	MP32396-S2	97.28	102.415	92.269	105.972	102.808	94.942	106.205	102.415
13:43	JD43215-21F	101.831	105.149	100.963	105.241	103.957	102.146	106.176	104.74
13:49	MP32396-SD1	113.106	109.87	109.275	106.197	109.981	110.177	105.529	110.554
13:54	JD43215-22F	105.376	108.994	105.757	113.817	107.275	107.895	113.987	106.793

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
13:59	JD43215-23F	110.333	113.152	105.923	111.019	108.078	102.251	105.507	107.423
14:05	ZZZZZZ	124.585	117.486	113.5	111.288	115.955	112.751	109.887	115.914
14:10	MA52261-CCVA3	112.642	108.572	104.982	102.031	106.152	104.179	100.458	106.724
14:16	MA52261-CCB3	109.022	102.647	105.183	100.919	104.238	104.88	101.436	104.392
14:21	JD43215-24F	100.963	104.012	101.553	105.154	100.412	100.91	104.5	99.294
14:26	JD43215-25F	100.437	105.332	100.448	103.835	102.486	101.24	101.818	103.155
14:32	JD43215-26F	104.744	109.362	103.316	96.556	105.836	102.913	94.854	106.39
14:37	ZZZZZZ	117.709	113.392	111.672	108.231	113.054	111.405	107.802	114.003
14:42	MP32378-MB1	No results reported for the elements associated with this internal standard.							
14:48	MP32378-B1	106.778	108.014	106.366	112.468	106.959	106.712	115.35	107.448
14:53	MP32378-S1	105.025	109.511	107.265	111.287	108.726	108.317	112.426	108.626
14:59	MP32378-S2	109.224	112.236	106.57	111.975	110.28	107.002	113.173	110.646
15:04	JD43215-14F	108.493	110.293	99.793	106.15	110.326	101.565	106.398	110.257
15:09	MP32378-SD1	121.214	114.397	116.482	109.083	112.822	115.6	107.509	113.658
15:15	MA52261-CCVA4	122.139	119.618	120.11	110.834	117.365	117.921	109.221	117.463
15:20	MA52261-CCB4	116.42	111.274	111.681	98.101	110.497	112.491	98.035	110.895
15:26	MP32378-MB1	111.32	111.121	107.476	108.468	110.663	109.63	113.04	110.221
15:31	MP32378-B1	113.325	113.658	110.25	109.385	112.564	111.321	113.415	112.464
15:36	JD43215-1F	106.072	108.004	97.643	105.651	105.014	98.179	105.726	105.257
15:42	JD43215-2F	106.813	107.292	105.742	106.598	105.749	106.359	108.967	105.484
15:47	JD43215-3F	108.097	108.933	106.361	108.135	108.126	107.789	109.964	108.882
15:53	JD43215-4F	109.948	110.889	102.444	109.169	112.926	106.708	113.491	112.776
15:58	JD43215-5F	104.82	107.567	105.702	107.601	104.075	104.814	107.993	104.547
16:03	JD43215-6F	107.754	109.446	107.439	108.462	106.603	106.913	108.366	107.069
16:09	ZZZZZZ	122.845	118.427	116.758	111.343	117.241	116.53	109.501	117.203
16:14	MA52261-CCVA5	116.776	113.441	114.226	97.658	111.158	113.133	96.118	111.966
16:20	MA52261-CCB5	116.413	112.276	111.466	104.731	111.65	111.741	104.173	111.525
16:25	JD43215-7F	111.376	111.014	108.968	109.369	109.262	111.721	114.2	109.198
16:30	JD43215-8F	107.708	108.957	108.342	108.957	105.741	108.703	110.71	106.089
16:36	JD43215-9F	93.631	95.033	99.499	99.417	94.301	99.801	100.85	93.247
16:41	JD43215-10F	101.513	102.99	101.783	101.208	100.182	101.869	101.773	100.528
16:47	JD43215-11F	106.67	105.45	103.914	102.15	105.332	104.548	104.412	105.433
16:52	JD43215-12F	102.815	104.102	104.188	104.77	103.309	106.951	109.672	104.151

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
16:57	JD43215-13F	100.513	101.943	99.548	101.065	101.297	100.929	104.135	100.902
17:03	JD43215-15F	106.541	108.425	103.543	102.641	105.069	102.631	103.199	105.525
17:08	ZZZZZZ	117.819	112.002	111.636	103.402	111.094	110.909	102.793	110.328
17:14	MA52261-CCVA6	108.175	105.972	104.031	97.596	103.345	103.293	96.397	104.523
17:19	MA52261-CCB6	108.045	104.002	104.668	97.83	103.193	104.765	98.609	105.074
17:24	JD43215-16F	99.061	100.871	98.623	99.755	96.599	98.263	100.668	96.901
17:30	JD43215-17F	93.821	98.225	94.538	96.12	95.407	94.982	97.892	95.283
17:35	JD43215-18F	99.157	100.718	99.189	99.281	98.906	99.374	101.118	99.117
17:41	JD43215-19F	94.314	95.939	94.982	95.991	94.591	96.679	98.718	94.164
17:46	JD43215-20F	89.219	93.726	96.053	99.538	92.097	99.636	102.288	91.4
17:51	ZZZZZZ	116.011	112.27	112.06	106.627	110.793	113.024	105.01	111.022
17:57	MA52261-CCVA7	113.731	112.118	108.689	103.103	109.475	108.273	100.614	109.73
18:02	MA52261-CCB7	109.416	105.764	106.326	101.341	105.788	107.423	101.309	106.311
18:07	MA52261-CRI2	115.746	112.08	112.41	105.169	110.65	112.431	104.824	111.358
18:14	ZZZZZZ	127.424	125.891	113.425	101.863	120.534	111.686	101.214	124.791
18:19	MA52261-ICSA2	102.078	102.029	99.02	93.4	94.121	94.961	87.197	92.933
18:24	MA52261-ICSAB2	94.045	95.55	93.632	90.166	92.39	90.5	86.077	90.495
18:32	ZZZZZZ	88.589	89.698	86.984	87.18	90.618	89.612	87.352	91.522
18:37	MA52261-CCVA8	91.772	93.057	95.832	94.483	92.241	96.006	91.952	93.164
18:42	MA52261-CCB8	92.566	94.781	90.441	91.258	93.284	92.066	90.272	94.366
18:48	MP32409-MB1	89.114	93.435	88.762	92.821	92.747	92.015	93.846	93.855
18:53	MP32409-B1	91.085	96.338	91.78	96.362	96.532	94.485	97.983	97.231
18:59	MP32409-S1	90.886	97.498	95.384	98.553	96.097	96.848	97.909	96.484
19:04	MP32409-S2	96.666	101.614	98.156	99.587	100.895	98.257	99.258	100.968
19:09	JD43204-1F	99.203	103.33	100.405	103.231	102.487	101.765	101.857	102.156
19:15	MP32409-SD1	110.316	106.531	104.681	98.068	106.624	104.806	97.545	107.468
19:20	ZZZZZZ	98.595	103.444	96.998	98.973	100.119	97.257	97.67	99.194
19:26	ZZZZZZ	99.314	101.403	97.78	94.458	96.808	95.163	92.106	95.922
19:31	ZZZZZZ	98.538	98.749	96.086	97.072	98.617	98.463	100.098	98.416
19:37	ZZZZZZ	105.85	99.293	99.553	88.696	98.8	99.927	89.563	100.315
19:42	MA52261-CCVA9	95.882	95.236	95.744	87.803	92.693	94.87	86.85	93.957
19:47	MA52261-CCB9	100.434	95.024	94.564	91.37	96.107	95.807	90.992	95.803
19:53	ZZZZZZ	101.515	99.045	94.471	89.627	98.408	96.711	90.024	99.172

INTERNAL STANDARD SUMMARY

Login Number: JD43215
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Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
19:58	ZZZZZZ	99.943	93.825	95.243	89.417	94.893	96.158	89.116	94.738
20:04	ZZZZZZ	99.942	97.779	93.912	88.803	95.82	95.239	88.881	96.303
20:09	ZZZZZZ	99.555	95.919	95.13	89.711	95.097	95.825	89.008	94.327

! = Outside limits.

LEGEND:

Istd#	Parameter	Limits	CCV/CCB Limits
Istd#1	Lithium	70-130 %	70-130 %
Istd#2	Scandium (45-1)	70-130 %	70-130 %
Istd#3	Scandium (45-2)	70-130 %	70-130 %
Istd#4	Scandium (45-3)	70-130 %	70-130 %
Istd#5	Germanium (72-1)	70-130 %	70-130 %
Istd#6	Germanium (72-2)	70-130 %	70-130 %
Istd#7	Germanium (72-3)	70-130 %	70-130 %
Istd#8	Germanium (74-1)	70-130 %	70-130 %

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
10:45	MA52261-STD1	100	100	100	100	100	100	100	100
10:51	MA52261-STD2	100	100	100	100	100	100	100	100
10:57	MA52261-STD3	100	100	100	100	100	100	100	100
11:02	MA52261-STD4	102.729	101.313	103.924	101.803	101.418	105.333	102.474	103.504
11:08	MA52261-STD5	103.736	101.168	105.881	101.416	99.642	105.989	102.187	104.811
11:13	MA52261-STD6	102.661	101.073	98.815	100.29	98.823	99.415	101.557	99.849
11:18	MA52261-STD7	101.355	100.573	101.492	99.455	100.542	101	101.435	101.838
11:24	MA52261-STD8	101.032	97.954	99.353	98.277	97.593	100.881	100.688	100.821
11:29	MA52261-STD9	99.904	99.952	98.847	98.435	97.188	100.938	100.156	100.661
11:35	MA52261-STD10	99.221	103.432	101.233	95.276	100.753	102.486	98.137	102.434
11:40	MA52261-STD11	104.517	102.238	100.858	100.81	99.93	102.847	103.572	102.718
11:45	MA52261-STD12	105.284	101.652	102.046	100.499	99.361	104.402	103.611	106.055
11:51	ZZZZZZ	107.205	102.534	104.195	106.218	101.721	104.65	106.505	102.708
11:57	ZZZZZZ	107.4	103.389	103.562	106.051	102.941	105.322	106.469	102.89
12:02	MA52261-ICVA1	106.609	100.446	101.382	101.051	96.141	104.574	105.322	104.365
12:08	MA52261-ICV1	104.87	100.222	103.508	103.407	101.664	104.965	104.686	104.117
12:23	MA52261-ICB1	105.601	99.825	112.014	112.865	109.787	113.11	105.258	113.127
12:29	MA52261-CCVA1	107.403	101.643	107.001	109.636	106.115	109.234	105.969	110.759
12:34	MA52261-CCB1	104.813	100.74	108.462	110.346	108.273	108.987	105.316	108.088
12:39	MA52261-CRI1	107.124	100.453	112.754	113.073	108.851	114.742	107.805	113.572
12:45	MA52261-ICSA1	94.418	89.156	93.494	92.924	91.287	96.152	85.043	105.378
12:50	MA52261-ICSAB1	94.989	91.148	95.128	93.924	91.132	97.969	86.407	107.557
12:59	ZZZZZZ	95.066	93.223	104.232	103.373	103.891	106.25	97.078	109.688
13:04	ZZZZZZ	96.185	92.513	104.832	104.073	101.908	109	97.988	112.276
13:09	MA52261-CCVA2	99.493	97.665	103.311	101.845	103.474	107.68	99.739	111.556
13:16	MA52261-CCB2	98.379	99.185	106.311	106.091	110.364	109.516	100.07	111.414
13:22	MP32396-MB1	98.832	102.609	108.419	105.093	109.344	111.778	97.447	116.843
13:27	MP32396-B1	100.364	105.896	103.027	104.065	107.733	108.191	99.803	112.709
13:33	MP32396-S1	98.481	103.879	98.465	97.568	101.158	105.426	95.3	114.194
13:38	MP32396-S2	94.513	106.714	101.994	93.784	105.529	108.174	90.078	115.841
13:43	JD43215-21F	101.422	106.416	103.354	101.692	104.305	110.511	98.245	117.054
13:49	MP32396-SD1	108.842	105.526	114.334	112.579	111.096	118.982	108.675	120.92
13:54	JD43215-22F	107.586	114.401	107.612	106.073	111.374	112.466	102.28	118.744

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
13:59	JD43215-23F	101.705	105.376	103.328	98.465	101.528	110.67	97.654	118.173
14:05	ZZZZZZ	111.748	109.773	121.043	115.872	117.148	123.376	110.848	124.037
14:10	MA52261-CCVA3	104.013	102.318	109.401	106.671	106.044	114.491	104.025	119.53
14:16	MA52261-CCB3	105.322	100.872	111.095	110.069	109.22	113.763	105.637	114.728
14:21	JD43215-24F	100.283	105.125	99.393	100.857	101.662	106.203	96.14	116.094
14:26	JD43215-25F	100.449	102.892	100.686	98.417	101.605	107.408	96.015	116.26
14:32	JD43215-26F	102.161	94.356	104.539	100.693	91.939	112.179	98.33	119.672
14:37	ZZZZZZ	111.803	108.481	119.349	116.565	116.142	122.467	111.384	123.475
14:42	MP32378-MB1	No results reported for the elements associated with this internal standard.							
14:48	MP32378-B1	106.22	115.4	111.124	110.38	114.876	115.626	105.253	119.085
14:53	MP32378-S1	107.435	111.77	106.262	104.825	107.298	113.119	102.98	119.457
14:59	MP32378-S2	107.873	112.189	107.649	104.85	109.028	114.745	102.073	120.552
15:04	JD43215-14F	100.671	106.024	107.718	97.617	104.655	113.751	94.983	120.042
15:09	MP32378-SD1	115.599	108.38	117.313	117.02	112.225	121.24	114.355	121.919
15:15	MA52261-CCVA4	117.409	108.982	118.671	116.868	111.474	121.923	115.626	123.709
15:20	MA52261-CCB4	111.254	97.746	115.208	114.638	104.489	118.304	110.532	118.026
15:26	MP32378-MB1	109.206	112.343	114.055	112.439	114.42	117.466	106.029	119.932
15:31	MP32378-B1	110.064	112.555	115.403	112.403	111.784	118.607	108.233	122.913
15:36	JD43215-1F	97.939	105.605	104.074	95.254	102.55	109.275	93.129	117.162
15:42	JD43215-2F	105.397	108.373	106.157	105.547	105.579	112.563	103.194	116.286
15:47	JD43215-3F	107.587	110.983	108.866	107.936	108.972	115.275	103.937	119.814
15:53	JD43215-4F	105.992	113.279	112.044	106.509	112.376	118.948	102.226	122.415
15:58	JD43215-5F	104.545	107.994	103.825	103.112	104.887	110.158	100.346	116.757
16:03	JD43215-6F	105.867	108.302	104.927	104.844	104.405	111.177	101.909	116.914
16:09	ZZZZZZ	117.592	109.828	120.381	120.885	118.046	125.148	116.142	123.096
16:14	MA52261-CCVA5	111.523	97.776	112.652	112.642	98.858	117.876	110.934	118.096
16:20	MA52261-CCB5	110.67	104.67	117.145	113.741	112.244	119.836	110.838	120.274
16:25	JD43215-7F	111.68	114.386	110.14	112.284	111.239	116.779	108.638	119.905
16:30	JD43215-8F	108.627	110.298	103.913	104.624	105.701	111.567	103.34	117.288
16:36	JD43215-9F	98.735	101.185	91.156	96.776	98.292	96.872	95.68	104.234
16:41	JD43215-10F	101.631	101.914	98.057	98.364	99.977	106.463	97.293	113.462
16:47	JD43215-11F	104.254	105.383	105.229	103.401	103.051	110.834	101.528	115.335
16:52	JD43215-12F	106.104	110.037	105.652	106.398	108.902	111.703	103.874	115.916

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
16:57	JD43215-13F	100.325	104.551	101.005	99.051	101.988	107.943	98.269	113.658
17:03	JD43215-15F	102.331	103.096	102.959	99.855	99.191	111.955	99.422	118.164
17:08	ZZZZZZ	111.326	103.462	115.6	114.927	108.838	118.951	111.389	118.223
17:14	MA52261-CCVA6	102.339	96.756	106.658	102.866	100.114	111.892	102.163	113.366
17:19	MA52261-CCB6	104.474	97.803	109.392	108.893	105.328	113.908	105.84	114.008
17:24	JD43215-16F	96.705	100.821	97.107	95.614	96.824	104.206	96.237	112.602
17:30	JD43215-17F	94.949	97.62	96.578	94.574	95.551	101.88	93.217	108.943
17:35	JD43215-18F	99.222	101.368	97.65	96.707	97.688	103.929	95.446	110.963
17:41	JD43215-19F	96.266	98.328	96.048	96.223	99.06	101.494	93.363	109.469
17:46	JD43215-20F	99.342	101.783	92.024	99.596	102.236	97.866	96.35	104.296
17:51	ZZZZZZ	112.169	105.142	116.671	117.386	113.422	119.879	112.417	119.208
17:57	MA52261-CCVA7	107.41	101.118	112.74	107.363	104.354	117.49	106.795	118.617
18:02	MA52261-CCB7	106.512	102.282	110.735	110.179	109.547	114.517	107.542	114.651
18:07	MA52261-CRI2	112.757	105.031	115.999	115.316	110.122	118.68	112.302	118.634
18:14	ZZZZZZ	111.149	100.973	129.426	116.011	107.717	132.523 !	112.246	131.921 !
18:19	MA52261-ICSA2	92.612	86.374	93.812	91.844	87.896	96.5	84.883	107.168
18:24	MA52261-ICSAB2	90.109	84.924	91.314	88.522	85.895	96.288	81.861	106.39
18:32	ZZZZZZ	89.691	87.658	99.677	96.391	97.34	103.145	93.444	107.933
18:37	MA52261-CCVA8	95.578	92.491	97.467	99.991	98.339	103.73	98.73	109.215
18:42	MA52261-CCB8	92.122	90.677	100.48	97.712	99.626	108.378	94.81	110.281
18:48	MP32409-MB1	92.312	94.722	100.249	97.779	100.502	105.788	93.9	113.588
18:53	MP32409-B1	93.609	98.341	102.021	99.433	101.048	107.691	94.203	114.279
18:59	MP32409-S1	96.518	98.395	96.075	93.379	95.066	104.646	94.272	112.289
19:04	MP32409-S2	99.295	99.404	97.694	95.533	94.911	106.056	95.399	113.274
19:09	JD43204-1F	101.316	102.669	100.198	98.115	100.02	109.124	97.982	115.686
19:15	MP32409-SD1	104.264	96.608	108.708	105.895	100.998	114.893	104.414	116.945
19:20	ZZZZZZ	97.384	97.685	99.223	94.993	94.924	107.545	94.676	114.112
19:26	ZZZZZZ	95.138	91.752	94.399	92.748	89.076	102.01	91.616	109.388
19:31	ZZZZZZ	97.359	100.079	102.355	101.039	103.69	106.294	97.417	108.792
19:37	ZZZZZZ	99.142	89.436	105.336	104.631	97.792	110.181	101.044	110.894
19:42	MA52261-CCVA9	94.198	87.282	97.758	97.343	90.717	103.669	95.929	107.671
19:47	MA52261-CCB9	95.22	91.268	102.442	100.788	100.719	108.402	97.663	110.059
19:53	ZZZZZZ	97.015	90.218	104.717	100.625	97.291	109.021	98.848	111.961

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
19:58	ZZZZZZ	95.589	88.874	99.988	99.929	97.136	104.937	97.721	106.993
20:04	ZZZZZZ	94.624	89.039	101.849	99.894	97.316	108.18	96.56	110.009
20:09	ZZZZZZ	94.462	89.366	100.587	100.685	98.235	105.797	97.184	108.403

! = Outside limits.

LEGEND:

Istd#	Parameter	Limits	CCV/CCB Limits
Istd#9	Germanium (74-2)	70-130 %	70-130 %
Istd#10	Germanium (74-3)	70-130 %	70-130 %
Istd#11	Rhodium (103-1)	70-130 %	70-130 %
Istd#12	Rhodium (103-2)	70-130 %	70-130 %
Istd#13	Rhodium (103-3)	70-130 %	70-130 %
Istd#14	Indium (115-1)	70-130 %	70-130 %
Istd#15	Indium (115-2)	70-130 %	70-130 %
Istd#16	Terbium (159-1)	70-130 %	70-130 %

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
10:45	MA52261-STD1	100	100	100	100	100	100
10:51	MA52261-STD2	100	100	100	100	100	100
10:57	MA52261-STD3	100	100	100	100	100	100
11:02	MA52261-STD4	102.473	101.735	103.72	102.628	105.807	102.07
11:08	MA52261-STD5	101.875	100.717	104.64	102.715	106.965	101.298
11:13	MA52261-STD6	100.827	100.282	98.118	101.755	101.101	99.809
11:18	MA52261-STD7	99.971	100.791	101.471	99.469	103.121	100.418
11:24	MA52261-STD8	99.973	99.461	102.109	100.338	103.676	100.408
11:29	MA52261-STD9	100.805	99.223	101.077	99.719	102.136	100.211
11:35	MA52261-STD10	96.936	101.384	103.608	96.644	103.192	95.637
11:40	MA52261-STD11	104.112	102.112	102.834	102.41	102.84	99.697
11:45	MA52261-STD12	103.915	102.018	105.495	104.261	103.679	99.586
11:51	ZZZZZZ	105.017	101.955	104.304	104.857	104.65	104.444
11:57	ZZZZZZ	105.06	101.774	103.78	104.367	105.77	104.074
12:02	MA52261-ICVA1	102.357	98.781	103.725	103.233	103.047	100.745
12:08	MA52261-ICV1	102.843	99.902	104.453	103.189	104.827	103.482
12:23	MA52261-ICB1	114.935	110.519	114.965	116.188	115.516	114.739
12:29	MA52261-CCVA1	114.564	109.669	111.505	114.058	110.153	111.482
12:34	MA52261-CCB1	112.674	109.319	109.85	112.842	113.151	112.221
12:39	MA52261-CRI1	114.199	110.355	114.071	115.558	115.858	114.869
12:45	MA52261-ICSA1	104.148	101.435	105.278	103.996	100.629	96.547
12:50	MA52261-ICSAB1	106.027	101.35	108.268	105.71	103.099	98.729
12:59	ZZZZZZ	109.033	106.8	109.587	109.272	112.863	110.256
13:04	ZZZZZZ	110.343	105.163	111.826	110.55	115.812	111.899
13:09	MA52261-CCVA2	110.757	109.402	113.355	112.201	114.023	110.811
13:16	MA52261-CCB2	111.444	111.055	111.158	110.362	115.706	113.511
13:22	MP32396-MB1	111.978	112.052	117.509	111.839	131.929	!a121.784
13:27	MP32396-B1	112.679	112.27	114.499	113.317	118.768	116.532
13:33	MP32396-S1	110.289	110.884	115.072	112.015	112.319	106.789
13:38	MP32396-S2	103.684	112.268	116.757	103.312	114.264	101.252
13:43	JD43215-21F	113.041	112.875	118.884	113.066	116.343	109.418
13:49	MP32396-SD1	118.098	113.637	121.891	119.943	121.27	118.395
13:54	JD43215-22F	116.771	117.834	119.445	114.897	118.188	111.24

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
13:59	JD43215-23F	112.95	110.175	119.033	113.009	109.71	101.965
14:05	ZZZZZZ	118.919	117.878	124.524	118.566	127.215	120.785
14:10	MA52261-CCVA3	114.735	111.474	120.037	114.772	121.079	113.296
14:16	MA52261-CCB3	114.576	111.989	116.482	114.675	119.444	116.579
14:21	JD43215-24F	112.278	111.898	116.809	113.784	111.68	106.07
14:26	JD43215-25F	111.482	111.451	117.619	112.989	110.425	104.3
14:32	JD43215-26F	115.151	100.561	121.347	113.799	114.179	105.611
14:37	ZZZZZZ	120.948	116.296	123.864	121.554	126.543	122.025
14:42	MP32378-MB1	No results reported for the elements associated with this internal standard.					
14:48	MP32378-B1	117.433	120.171	121.682	117.902	123.304	116.917
14:53	MP32378-S1	115.7	115.277	120.963	117.287	115.696	109.387
14:59	MP32378-S2	113.911	115.868	120.987	115.937	115.607	107.945
15:04	JD43215-14F	107.682	111.82	119.915	108.544	115.736	102.01
15:09	MP32378-SD1	122.563	116.017	122.619	123.6	122.264	121.485
15:15	MA52261-CCVA4	121.642	114.229	122.931	123.155	122.538	120.059
15:20	MA52261-CCB4	118.143	104.909	119.915	117.993	121.975	118.846
15:26	MP32378-MB1	117.71	116.61	122.761	116.952	123.693	120.299
15:31	MP32378-B1	118.527	115.699	123.692	117.97	123.864	118.307
15:36	JD43215-1F	107.147	111.197	117.85	106.576	111.934	99.89
15:42	JD43215-2F	115.2	113.729	117.692	115.374	116.614	110.934
15:47	JD43215-3F	116.544	114.844	120.828	116.784	120.35	113.585
15:53	JD43215-4F	113.218	117.992	121.48	111.92	123.659	112.589
15:58	JD43215-5F	115.485	113.052	117.817	113.792	113.236	108.535
16:03	JD43215-6F	116.279	112.118	119.053	116.154	112.31	106.123
16:09	ZZZZZZ	123.904	117.801	123.175	121.982	124.373	122.947
16:14	MA52261-CCVA5	118.112	102.658	118.664	117.802	120.266	117.389
16:20	MA52261-CCB5	117.608	113.678	121.121	118.309	123.662	120.562
16:25	JD43215-7F	118.722	115.64	121.09	118.56	121.579	119.487
16:30	JD43215-8F	117.128	113.657	116.841	116.854	111.021	110.46
16:36	JD43215-9F	111.267	107.73	105.416	110.781	101.03	104.032
16:41	JD43215-10F	111.56	108.589	114.743	112.187	107.875	104.893
16:47	JD43215-11F	113.095	110.658	117.614	113.714	113.261	109.472
16:52	JD43215-12F	116.215	114.705	116.914	114.736	118.118	117.104

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
16:57	JD43215-13F	111.051	110.585	114.227	111.741	112.925	109.198
17:03	JD43215-15F	111.287	108.446	119.081	111.734	112.897	105.363
17:08	ZZZZZZ	119.835	110.839	118.747	118.986	120.634	120.403
17:14	MA52261-CCVA6	110.263	106.012	116.215	111.465	115.876	110.332
17:19	MA52261-CCB6	113.473	107.754	113.658	114.484	117.748	115.701
17:24	JD43215-16F	110.545	106.953	112.771	110.201	108.538	104.956
17:30	JD43215-17F	107.546	106.719	110.373	107.57	108	104.745
17:35	JD43215-18F	109.987	107.162	112.103	110.221	107.696	102.921
17:41	JD43215-19F	108.381	106.836	109.666	107.813	107.743	105.848
17:46	JD43215-20F	109.859	109.653	104.792	111.344	105.215	108.551
17:51	ZZZZZZ	119.752	112.955	118.959	120.715	121.028	119.975
17:57	MA52261-CCVA7	115.258	108.243	118.177	114.681	118.54	113.157
18:02	MA52261-CCB7	115.577	108.605	114.804	116.248	117.98	115.948
18:07	MA52261-CRI2	118.325	112.08	117.795	118.035	119.247	119.084
18:14	ZZZZZZ	119.368	108.608	132.633 !	119.028	130.217 !	120.703
18:19	MA52261-ICSA2	104.946	97.397	107.024	103.264	101.546	96.621
18:24	MA52261-ICSAB2	101.224	97.009	106.165	101.64	101.153	95.087
18:32	ZZZZZZ	105.326	102.647	109.7	106.817	113.831	107.892
18:37	MA52261-CCVA8	110.728	105.282	109.455	111.311	112.081	110.367
18:42	MA52261-CCB8	106.545	104.326	111.385	106.444	115.195	109.263
18:48	MP32409-MB1	109.011	105.903	113.13	107.605	119.218	112.809
18:53	MP32409-B1	107.137	107.863	116.251	109.248	118.749	109.845
18:59	MP32409-S1	109.911	105.851	113.313	109.783	108.369	102.317
19:04	MP32409-S2	109.079	105.15	115.461	110.771	109.667	102.232
19:09	JD43204-1F	111.074	108.87	115.422	111.439	110.32	103.59
19:15	MP32409-SD1	113.221	106.022	117.999	113.858	116.975	112.858
19:20	ZZZZZZ	108.503	104.868	115.575	109.17	108.356	100.742
19:26	ZZZZZZ	105.44	98.597	109.228	107.642	101.699	96.523
19:31	ZZZZZZ	109.745	107.109	109.915	108.822	112.115	110.476
19:37	ZZZZZZ	110.402	100.833	111.517	110.897	114.84	112.33
19:42	MA52261-CCVA9	105.967	98.499	107.281	106.879	109.253	107.317
19:47	MA52261-CCB9	108.377	104.955	110.56	108.609	113.49	110.33
19:53	ZZZZZZ	107.446	102.28	112.491	107.054	115.888	110.677

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52261
Parameters: Co,Pb,Ni,V

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
19:58	ZZZZZZ	108.391	102.179	108.062	107.796	111.537	110.796
20:04	ZZZZZZ	107	101.484	111.002	106.732	114.391	108.4
20:09	ZZZZZZ	107.32	104.144	109.76	108.965	111.45	111.172

! = Outside limits.

LEGEND:			CCV/CCB
Istd#	Parameter	Limits	Limits
Istd#17	Terbium (159-2)	70-130 %	70-130 %
Istd#18	Terbium (159-3)	70-130 %	70-130 %
Istd#19	Holmium (165-1)	70-130 %	70-130 %
Istd#20	Holmium (165-2)	70-130 %	70-130 %
Istd#21	Bismuth (209-1)	70-130 %	70-130 %
Istd#22	Bismuth (209-2)	70-130 %	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: result < RL Run ID: MA52261 Units: ug/l

Time:			12:23		12:34		13:16		14:16	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.42								
Antimony	2.0	.085								
Arsenic	0.50	.025								
Barium	1.0	.009								
Beryllium	0.50	.005								
Boron	25	.85								
Cadmium	0.50	.01								
Calcium	250	3.6								
Chromium	1.0	.018								
Cobalt	0.50	.003	0.00177	<0.50	0.00213	<0.50	0.00128	<0.50	0.00701	<0.50
Copper	2.0	.024								
Iron	25	.24								
Lead	0.50	.008	-0.00566	<0.50	0.00695	<0.50	0.00185	<0.50	0.00835	<0.50
Magnesium	250	.19								
Manganese	1.0	.012								
Molybdenum	1.0	.017								
Nickel	1.0	.017	0.00880	<1.0	0.0199	<1.0	0.0187	<1.0	0.0219	<1.0
Potassium	250	.78								
Selenium	0.50	.044								
Silver	0.50	.004								
Sodium	250	1.5								
Strontium	5.0	.014								
Thallium	0.50	.002								
Tin	5.0	.041								
Titanium	1.0	.11								
Vanadium	1.0	.013	0.0181	<1.0	0.0228	<1.0	0.0181	<1.0	0.0248	<1.0
Zinc	5.0	.078	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: result < RL Run ID: MA52261 Units: ug/l

Time: / Sample ID:			15:20 CCB4		16:20 CCB5		17:19 CCB6		18:02 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.42								
Antimony	2.0	.085								
Arsenic	0.50	.025								
Barium	1.0	.009								
Beryllium	0.50	.005								
Boron	25	.85								
Cadmium	0.50	.01								
Calcium	250	3.6								
Chromium	1.0	.018								
Cobalt	0.50	.003	0.00308	<0.50	0.00725	<0.50	0.00802	<0.50	0.00530	<0.50
Copper	2.0	.024								
Iron	25	.24								
Lead	0.50	.008	0.00345	<0.50	0.00762	<0.50	0.0102	<0.50	0.00587	<0.50
Magnesium	250	.19								
Manganese	1.0	.012								
Molybdenum	1.0	.017								
Nickel	1.0	.017	0.00727	<1.0	0.0102	<1.0	0.0142	<1.0	0.00742	<1.0
Potassium	250	.78								
Selenium	0.50	.044								
Silver	0.50	.004								
Sodium	250	1.5								
Strontium	5.0	.014								
Thallium	0.50	.002								
Tin	5.0	.041								
Titanium	1.0	.11								
Vanadium	1.0	.013	0.00701	<1.0	0.00938	<1.0	0.0119	<1.0	-0.00196	<1.0
Zinc	5.0	.078	anr							

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: result < RL Run ID: MA52261 Units: ug/l

Time:			18:42	
Sample ID:			CCB8	
Metal	RL	IDL	raw	final
Aluminum	25	.42		
Antimony	2.0	.085		
Arsenic	0.50	.025		
Barium	1.0	.009		
Beryllium	0.50	.005		
Boron	25	.85		
Cadmium	0.50	.01		
Calcium	250	3.6		
Chromium	1.0	.018		
Cobalt	0.50	.003	0.00747	<0.50
Copper	2.0	.024		
Iron	25	.24		
Lead	0.50	.008	0.00752	<0.50
Magnesium	250	.19		
Manganese	1.0	.012		
Molybdenum	1.0	.017		
Nickel	1.0	.017	0.0176	<1.0
Potassium	250	.78		
Selenium	0.50	.044		
Silver	0.50	.004		
Sodium	250	1.5		
Strontium	5.0	.014		
Thallium	0.50	.002		
Tin	5.0	.041		
Titanium	1.0	.11		
Vanadium	1.0	.013	0.00293	<1.0
Zinc	5.0	.078	anr	

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52261 Units: ug/l

Time:		12:02			12:08			12:29	
Sample ID:	ICVA	ICVA1		ICV	ICV1		CCVA	CCVA1	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt	60	61.3	102.2				50	46.5	93.0
Copper									
Iron									
Lead	60	65.2	108.7				50	47.8	95.6
Magnesium									
Manganese									
Molybdenum									
Nickel	60	61.2	102.0				50	46.6	93.2
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium	60	62.6	104.3				50	48.3	96.6
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52261 Units: ug/l

Time:		13:09			14:10			15:15	
Sample ID:	CCVA	CCVA2		CCVA	CCVA3		CCVA	CCVA4	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt	50	47.6	95.2	50	47.4	94.8	50	47.1	94.2
Copper									
Iron									
Lead	50	47.1	94.2	50	46.4	92.8	50	47.5	95.0
Magnesium									
Manganese									
Molybdenum									
Nickel	50	47.4	94.8	50	46.9	93.8	50	46.9	93.8
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium	50	48.6	97.2	50	49.1	98.2	50	48.7	97.4
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52261 Units: ug/l

Time:		16:14			17:14			17:57	
Sample ID:	CCVA	CCVA5		CCVA	CCVA6		CCVA	CCVA7	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt	50	46.6	93.2	50	47.3	94.6	50	47.7	95.4
Copper									
Iron									
Lead	50	46.7	93.4	50	46.6	93.2	50	46.3	92.6
Magnesium									
Manganese									
Molybdenum									
Nickel	50	47.0	94.0	50	47.0	94.0	50	48.1	96.2
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium	50	48.5	97.0	50	48.5	97.0	50	49.3	98.6
Zinc	anr								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52261 Units: ug/l

Time:		18:37	
Sample ID:	CCVA	CCVA8	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt	50	46.2	92.4
Copper			
Iron			
Lead	50	46.9	93.8
Magnesium			
Manganese			
Molybdenum			
Nickel	50	45.8	91.6
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium	50	47.6	95.2
Zinc	anr		

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA52261 Units: ug/l

Time:			12:39		18:07	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	25	25				
Antimony	2.0	0.25				
Arsenic	0.50	0.50				
Barium	1.0	0.50				
Beryllium	0.50	0.25				
Boron	25	2.5				
Cadmium	0.50	0.25				
Calcium	250	125				
Chromium	1.0	2.0				
Cobalt	0.50	0.25	0.467	93.4	0.471	94.2
Copper	2.0	2.0				
Iron	25	25				
Lead	0.50	0.25	0.417	83.4	0.437	87.4
Magnesium	250	125				
Manganese	1.0	0.25				
Molybdenum	1.0	0.50				
Nickel	1.0	2.0	0.958	95.8	0.988	98.8
Potassium	250	125				
Selenium	0.50	0.50				
Silver	0.50	1.0				
Sodium	250	125				
Strontium	5.0	0.50				
Thallium	0.50	0.25				
Tin	5.0	0.50				
Titanium	1.0	0.50				
Vanadium	1.0	2.0	0.982	98.2	1.01	101.0
Zinc	5.0	2.0	anr			

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042022M1.CSV Date Analyzed: 04/20/22 Methods: SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA52261 Units: ug/l

Time:			12:45		12:50		18:19		18:24	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	100000	100000	91700HH	91.7	91800HH	91.8	92200HH	92.2	92300HH	92.3
Antimony			0.652		0.531		0.479		0.419	
Arsenic		20	0.0677		17.8	89.0	0.0537		17.9	89.5
Barium			0.0937		0.407		0.0824		0.288	
Beryllium			-0.00266		-0.00201		-0.00282		-0.00419	
Boron		50	4.18		55.2	110.4	7.05		56.7	113.4
Cadmium		20	-0.348		19.0	95.0	-0.291		18.8	94.0
Calcium	100000	100000	87300HH	87.3	90100HH	90.1	87000HH	87.0	89000HH	89.0
Chromium		20	0.865		19.8	99.0	0.817		19.6	98.0
Cobalt		20	0.116		18.2	91.0	0.0932		18.0	90.0
Copper		20	0.175		17.1	85.5	0.156		16.7	83.5
Iron	100000	100000	87700HH	87.7	86900HH	86.9	86500HH	86.5	87400HH	87.4
Lead			0.0323		0.0276		0.0265		0.0276	
Magnesium	100000	100000	89300HH	89.3	89300HH	89.3	88400HH	88.4	88900HH	88.9
Manganese		20	0.314		18.9	94.5	0.305		19.3	96.5
Molybdenum	2000	2000	2100HH	105.0	2090HH	104.5	2090HH	104.5	2070HH	103.5
Nickel		20	0.467		17.9	89.5	0.460		17.9	89.5
Potassium	100000	100000	91600HH	91.6	91200HH	91.2	91800HH	91.8	93500HH	93.5
Selenium		20	0.218		20.2	101.0	0.143		20.0	100.0
Silver		20	0.0190		17.3	86.5	0.0134		16.9	84.5
Sodium	100000	100000	89600HH	89.6	91000HH	91.0	90900HH	90.9	91600HH	91.6
Strontium	2000	2000	2030HH	101.5	2030HH	101.5	2060HH	103.0	2060HH	103.0
Thallium			0.0111		0.00593		0.00340		0.00161	
Tin	2000	2000	2320HH	116.0	2320HH	116.0	2320HH	116.0	2400HH	120.0
Titanium	2000	2000	1860HH	93.0	1850HH	92.5	1850HH	92.5	1860HH	93.0
Vanadium		20	0.0257		19.9	99.5	0.0256		20.1	100.5
Zinc		20	0.615		16.4	82.0	0.477		16.5	82.5

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:22	MA52271-STD1	1		Sample introduction not stable, see rerun.
10:27	MA52271-STD2	1		Sample introduction not stable, see rerun.
10:33	MA52271-STD3	1		STDA
10:38	MA52271-STD4	1		STDB
10:43	MA52271-STD5	1		STDC
10:49	MA52271-STD6	1		STDD
10:54	MA52271-STD7	1		STDE
10:59	MA52271-STD8	1		STDF
11:05	MA52271-STD9	1		STDG
11:10	MA52271-STD10	1		STDH
11:15	MA52271-STD11	1		STDI
11:21	MA52271-STD12	1		STDJ
11:26	MA52271-STD13	1		STDA
11:32	ZZZZZZ	1		
11:37	MA52271-ICVA1	1		
11:42	MA52271-ICV1	1		
11:50	MA52271-ICB1	1		
11:55	MA52271-CCVA1	1		
12:00	MA52271-CCB1	1		
12:06	MA52271-CRI1	1		
12:11	MA52271-ICSA1	1		
12:16	MA52271-ICSAB1	1		
12:23	ZZZZZZ	1		
12:29	MA52271-CRI2	1		
12:37	MA52271-CCVA2	1		
12:42	MA52271-CCB2	1		
12:48	ZZZZZZ	2		
12:53	ZZZZZZ	2		
12:58	ZZZZZZ	2		
13:04	MA52271-CCVA3	1		
13:09	MA52271-CCB3	1		
13:14	ZZZZZZ	2		
13:20	MP32396-B1	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:25	MP32396-MB1	2		
13:30	ZZZZZZ	1		
13:36	ZZZZZZ	1		
13:41	MA52271-CCVA4	1		
13:46	MA52271-CCB4	1		
13:52	MP32396-S1	2		
13:57	MP32396-S2	2		
14:02	JD43215-21F	2		
14:08	ZZZZZZ	10		
14:13	JD43215-25F	2		
14:18	JD43215-26F	2		
14:24	MP32396-SD1	10		
---------->	Last reportable sample/prep for job JD43215			
14:29	ZZZZZZ	2		
14:34	ZZZZZZ	1		
14:40	MA52271-CCVA5	1		
14:45	MA52271-CCB5	1		
14:50	MA52271-CRI3	1		
14:55	MA52271-ICSA2	1		
15:06	MA52271-ICSAB2	1		
15:16	ZZZZZZ	1		
15:21	MA52271-CCVA6	1		
15:27	MA52271-CCB6	1		
---------->	Last reportable CCB for job JD43215			
15:32	MP32408A-MB1	2		
15:37	MP32408A-MB2	2		
15:43	MP32408A-B2	2		
15:48	MP32408A-B3	25		
15:53	MP32408A-S3	2		
15:59	MP32408A-S4	2		
16:04	JD43272-1	2		(sample used for QC only; not part of login JD43215)
16:09	MP32408A-SD1	10		
16:15	ZZZZZZ	1		
16:20	MA52271-CCVA7	1		
16:25	MA52271-CCB7	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:31	ZZZZZZ	2		
16:36	ZZZZZZ	2		
16:41	MP32418-MB1	2		
16:47	MP32418-B2	2		
16:52	MP32418-S3	2		
16:57	MP32418-S4	2		
17:03	JD43348-2	2		(sample used for QC only; not part of login JD43215)
17:08	MP32418-SD1	10		
17:13	MA52271-CCVA8	1		
17:19	MA52271-CCB8	1		
17:24	ZZZZZZ	2		
17:29	ZZZZZZ	2		
17:34	ZZZZZZ	2		
17:40	ZZZZZZ	2		
17:45	ZZZZZZ	2		
17:50	ZZZZZZ	2		
17:56	ZZZZZZ	2		
18:01	ZZZZZZ	1		
18:06	MA52271-CCVA9	1		
18:12	MA52271-CCB9	1		
18:17	ZZZZZZ	2		
18:22	ZZZZZZ	2		
18:27	ZZZZZZ	2		
18:33	ZZZZZZ	5		
18:39	ZZZZZZ	2		
18:44	ZZZZZZ	2		
18:49	ZZZZZZ	2		
18:55	ZZZZZZ	1		
19:00	MA52271-CCVA10	1		
19:05	MA52271-CCB10	1		
19:10	ZZZZZZ	1		
19:16	ZZZZZZ	1		
19:21	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn
11:32	ZZZZZZ	1	
11:37	MA52271-ICVA1	1	X
11:42	MA52271-ICV1	1	X
11:50	MA52271-ICB1	1	X
11:55	MA52271-CCVA1	1	X
12:00	MA52271-CCB1	1	X
12:06	MA52271-CRI1	1	
12:11	MA52271-ICSA1	1	X
12:16	MA52271-ICSAB1	1	X
12:23	ZZZZZZ	1	
12:29	MA52271-CRI2	1	X
12:37	MA52271-CCVA2	1	X
12:42	MA52271-CCB2	1	X
12:48	ZZZZZZ	2	
12:53	ZZZZZZ	2	
12:58	ZZZZZZ	2	
13:04	MA52271-CCVA3	1	X
13:09	MA52271-CCB3	1	X
13:14	ZZZZZZ	2	
13:20	MP32396-B1	2	X
13:25	MP32396-MB1	2	X
13:30	ZZZZZZ	1	
13:36	ZZZZZZ	1	
13:41	MA52271-CCVA4	1	X
13:46	MA52271-CCB4	1	X
13:52	MP32396-S1	2	X
13:57	MP32396-S2	2	X
14:02	JD43215-21F	2	
14:08	ZZZZZZ	10	
14:13	JD43215-25F	2	X
14:18	JD43215-26F	2	X
14:24	MP32396-SD1	10	X
14:29	ZZZZZZ	2	
		Element:	Zn

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
14:34	ZZZZZZ	1		
14:40	MA52271-CCVA5	1	X	
14:45	MA52271-CCB5	1	X	
14:50	MA52271-CRI3	1	X	
14:55	MA52271-ICSA2	1	X	
15:06	MA52271-ICSAB2	1	X	
15:16	ZZZZZZ	1		
15:21	MA52271-CCVA6	1	X	
15:27	MA52271-CCB6	1	X	
15:32	MP32408A-MB1	2		
15:37	MP32408A-MB2	2		
15:43	MP32408A-B2	2		
15:48	MP32408A-B3	25		
15:53	MP32408A-S3	2		
15:59	MP32408A-S4	2		
16:04	JD43272-1	2		(a)
16:09	MP32408A-SD1	10	X	
16:15	ZZZZZZ	1		
16:20	MA52271-CCVA7	1	X	
16:25	MA52271-CCB7	1	X	
16:31	ZZZZZZ	2		
16:36	ZZZZZZ	2		
16:41	MP32418-MB1	2		
16:47	MP32418-B2	2		
16:52	MP32418-S3	2		
16:57	MP32418-S4	2		
17:03	JD43348-2	2		(a)
17:08	MP32418-SD1	10		
17:13	MA52271-CCVA8	1	X	
17:19	MA52271-CCB8	1	X	
17:24	ZZZZZZ	2		
17:29	ZZZZZZ	2		
17:34	ZZZZZZ	2		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn
17:40	ZZZZZZ	2	
17:45	ZZZZZZ	2	
17:50	ZZZZZZ	2	
17:56	ZZZZZZ	2	
18:01	ZZZZZZ	1	
18:06	MA52271-CCVA9	1	X
18:12	MA52271-CCB9	1	X
18:17	ZZZZZZ	2	
18:22	ZZZZZZ	2	
18:27	ZZZZZZ	2	
18:33	ZZZZZZ	5	
18:39	ZZZZZZ	2	
18:44	ZZZZZZ	2	
18:49	ZZZZZZ	2	
18:55	ZZZZZZ	1	
19:00	MA52271-CCVA10	1	X
19:05	MA52271-CCB10	1	X
19:10	ZZZZZZ	1	
19:16	ZZZZZZ	1	
19:21	ZZZZZZ	1	

(a) Sample used for QC only; not part of login JD43215.

Element: Zn

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
10:22	MA52271-STD1	100	100	100	100	100	100	100	100
10:27	MA52271-STD2	100	100	100	100	100	100	100	100
10:33	MA52271-STD3	100	100	100	100	100	100	100	100
10:38	MA52271-STD4	99.961	98.371	100.122	99.085	99.591	100.272	98.67	100.069
10:43	MA52271-STD5	99.204	98.145	100.82	101.662	100.377	100.393	100.72	100.244
10:49	MA52271-STD6	100.357	97.275	100.804	98.296	99.826	101.135	98.229	100.466
10:54	MA52271-STD7	94.324	94.674	98.085	96.69	96.51	98.478	96.349	96.886
10:59	MA52271-STD8	93.687	91.423	97.883	95.542	94.718	97.813	96.375	94.526
11:05	MA52271-STD9	93.841	92.215	96.857	99.133	94.601	97.501	98.402	95.342
11:10	MA52271-STD10	96.353	95.467	100.867	102.121	98.365	101.279	101.419	99.144
11:15	MA52271-STD11	99.611	98.977	104.504	103.454	99.013	102.603	101.751	99.037
11:21	MA52271-STD12	99.641	98.585	104.358	100.663	99.044	100.856	98.505	98.716
11:26	MA52271-STD13	100	100	100	100	100	100	100	100
11:32	ZZZZZZ	99.894	102.347	99.339	100.734	100.392	100.071	100.785	100.294
11:37	MA52271-ICVA1	100.233	103.449	98.424	99.237	101.251	98.451	98.338	101.937
11:42	MA52271-ICV1	95.517	96.555	96.478	100.49	96.948	97.609	100.565	97.515
11:50	MA52271-ICB1	99.408	101.457	95.801	100.806	101.221	94.708	100.769	101.357
11:55	MA52271-CCVA1	101.04	104.961	102.181	100.749	102.47	99.607	99.723	102.267
12:00	MA52271-CCB1	96.078	97.248	96.404	99.714	98.324	96.723	99.663	97.391
12:06	MA52271-CRI1	No results reported for the elements associated with this internal standard.							
12:11	MA52271-ICSA1	91.935	95.239	92.627	94.946	89.686	89.006	88.535	88.097
12:16	MA52271-ICSAB1	86.432	89.976	88.927	93.854	87.811	87.12	88.409	85.939
12:23	ZZZZZZ	81.832	85.722	84.078	90.657	87.703	86.289	90.053	87.557
12:29	MA52271-CRI2	84.02	87.327	86.815	91.819	87.966	88.341	91.017	88.104
12:37	MA52271-CCVA2	84.637	90.658	90.071	96.854	89.613	91.028	94.534	91.393
12:42	MA52271-CCB2	86.645	90.145	89.648	97.22	92.747	90.692	96.684	93.085
12:48	ZZZZZZ	165.927 !	160.927 !	220.75 !	231.082 !	175.314 !	220.301 !	229.96 !	176.275 !
12:53	ZZZZZZ	178.597 !	166.254 !	236.514 !	211.619 !	183.28 !	235.476 !	209.273 !	189.026 !
12:58	ZZZZZZ	201.395 !	185.613 !	258.883 !	221.316 !	205.286 !	257.199 !	218.541 !	210.308 !
13:04	MA52271-CCVA3	97.581	105.231	102.865	103.295	102.146	100.151	99.427	104.353
13:09	MA52271-CCB3	91.521	94.984	94.27	98.641	96.41	94.727	97.36	96.683
13:14	ZZZZZZ	89.263	97.661	92.729	101.606	98.071	96.027	103.321	98.209
13:20	MP32396-B1	89.729	93.065	92.848	103.91	94.824	94.251	105.633	94.558

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
13:25	MP32396-MB1	91.725	94.621	94.666	101.152	95.547	95.338	100.846	95.852
13:30	ZZZZZZ	98.54	92.728	97.686	99.059	100.36	99.935	98.689	99.581
13:36	ZZZZZZ	99.507	92.421	97.507	97.761	99.526	99.575	97.502	99.485
13:41	MA52271-CCVA4	96.007	101.4	99.424	102.154	98.828	98.37	99.076	98.609
13:46	MA52271-CCB4	91.738	94.873	95.96	98.666	96.007	96.74	97.575	96.195
13:52	MP32396-S1	86.896	93.645	91.269	99.926	92.263	92.307	100.985	92.29
13:57	MP32396-S2	89.2	94.362	92.896	101.335	95.209	94.093	102.322	95.386
14:02	JD43215-21F	89.66	95.755	93.959	103.674	96.788	94.525	104.103	95.328
14:08	ZZZZZZ	102.293	101.875	101	103.653	102.949	101.951	102.277	102.67
14:13	JD43215-25F	86.942	94.442	93.179	99.219	91.99	92.829	98.496	91.121
14:18	JD43215-26F	91.491	97.645	93.928	102.654	97.182	94.443	101.919	97.056
14:24	MP32396-SD1	103.103	103.852	104.813	105.74	104.14	104.568	104.022	103.925
14:29	ZZZZZZ	111.058	104.265	111.456	110.622	111.977	113.394	109.683	111.487
14:34	ZZZZZZ	107.779	108.077	105.995	109.594	107.417	106.404	107.556	106.872
14:40	MA52271-CCVA5	106.332	107.756	106.793	107.693	106.763	104.423	105.308	106.329
14:45	MA52271-CCB5	100.615	101.351	101.269	102.888	102.617	101.347	101.947	101.673
14:50	MA52271-CRI3	102.541	103.623	103.452	104.823	103.706	104.97	104.167	103.823
14:55	MA52271-ICSA2	94.573	99.637	96.199	98.548	94.673	92.784	92.258	92.799
15:06	MA52271-ICSAB2	88.476	94.37	91.801	97.719	89.658	88.669	90.316	88.758
15:16	ZZZZZZ	83.97	89.176	86.718	93.683	89.79	88.575	93.211	90.175
15:21	MA52271-CCVA6	85.396	91.227	90.847	96.492	91.767	91.428	93.715	92.542
15:27	MA52271-CCB6	84.514	90.163	90.106	98.461	92.657	91.196	98.082	92.172
15:32	MP32408A-MB1	82.412	90.943	86.474	99.92	93.325	90.899	101.639	93.257
15:37	MP32408A-MB2	85.338	91.188	88.296	100.805	94.349	92.963	102.144	93.735
15:43	MP32408A-B2	85.131	94.201	90.442	103.619	95.592	91.803	104.35	95.712
15:48	MP32408A-B3	94.595	96.4	98.52	101.385	101.107	100.829	100.323	101.5
15:53	MP32408A-S3	85.043	91.804	89.961	103.207	94.583	92.421	104.357	95.168
15:59	MP32408A-S4	85.186	92.016	90.839	106.293	96.901	95.168	106.339	97.33
16:04	JD43272-1	86.018	90.853	89.678	104.449	97.295	94.384	106.248	97.248
16:09	MP32408A-SD1	96.229	97.217	97.183	102.504	101.115	98.255	102.082	100.91
16:15	ZZZZZZ	94.815	96.987	95.63	101.573	98.994	96.248	99.778	98.682
16:20	MA52271-CCVA7	93.161	96.444	96.421	101.362	96.834	95.309	98.692	97.24
16:25	MA52271-CCB7	92.755	95.9	93.583	99.314	97.158	95.623	97.802	97.011

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
16:31	ZZZZZZ	89.26	95.892	91.292	102.351	97.053	95.115	104.587	96.395
16:36	ZZZZZZ	90.729	95.124	92.015	104.568	97.726	94.878	105.721	98.157
16:41	MP32418-MB1	89.689	94.929	91.835	104.106	97.605	95.656	106.297	97.486
16:47	MP32418-B2	88.994	93.776	91.751	104.41	95.708	93.842	105.131	95.152
16:52	MP32418-S3	84.501	92.301	90.158	100.522	91.78	90.296	98.46	91.949
16:57	MP32418-S4	85.323	92.55	90.374	97.866	91.211	90.603	95.454	91.422
17:03	JD43348-2	88.464	92.679	89.261	96.68	91.606	89.465	94.807	90.783
17:08	MP32418-SD1	94.679	93.924	96.289	97.765	95.144	96.38	95.614	94.751
17:13	MA52271-CCVA8	90.503	90.284	93.276	94.92	91.45	91.961	92.603	90.906
17:19	MA52271-CCB8	88.323	90.067	90.578	93.343	91.628	91.882	92.73	90.848
17:24	ZZZZZZ	81.694	86.573	82.832	90.845	85.508	84.443	91.407	85.356
17:29	ZZZZZZ	82.099	86.4	85.39	92.76	87.056	88.019	94.892	87.194
17:34	ZZZZZZ	84.547	89.842	87.764	97.429	90.87	92.138	100.427	89.798
17:40	ZZZZZZ	83.849	88.236	85.031	94.878	89.641	87.483	97.076	89.08
17:45	ZZZZZZ	81.544	85.769	84.834	94.617	88.223	86.969	96.903	87.523
17:50	ZZZZZZ	82.609	87.545	87.036	95.914	86.847	87.062	96.378	86.518
17:56	ZZZZZZ	84.197	89.125	86.756	96.482	87.411	86.713	94.512	86.639
18:01	ZZZZZZ	95.603	94.314	96.855	97.657	96.299	97.943	96.829	96.299
18:06	MA52271-CCVA9	93.674	96.293	94.693	97.962	94.847	94.359	95.353	95.165
18:12	MA52271-CCB9	94.597	92.482	93.655	95.254	94.121	94.035	94.128	93.922
18:17	ZZZZZZ	86.211	91.998	88.815	94.688	91.445	90.551	97.298	90.917
18:22	ZZZZZZ	84.296	89.811	87.599	94.524	88.656	88.236	95.511	88.434
18:27	ZZZZZZ	84.693	89.879	86.471	95.639	87.414	86.223	92.989	86.893
18:33	ZZZZZZ	90.75	92.777	91.589	94.611	90.834	90.917	92.46	90.873
18:39	ZZZZZZ	89.602	92.355	90.88	96.454	93.08	93.619	98.524	92.305
18:44	ZZZZZZ	86.487	91.388	88.718	92.762	90.999	89.642	94.313	90.316
18:49	ZZZZZZ	84.384	89.421	87.647	93.196	89.884	89.426	95.895	88.893
18:55	ZZZZZZ	93.969	93.373	93.547	93.862	94.339	95.086	92.952	94.662
19:00	MA52271-CCVA10	91.51	91.264	90.472	91.307	90.457	90.31	89.954	90.644
19:05	MA52271-CCB10	90.12	89.346	90.039	90.566	89.646	90.991	88.893	90.163
19:10	ZZZZZZ	93.563	91.822	91.269	90.484	91.179	91.743	89.633	91.306
19:16	ZZZZZZ	92.744	89.79	91.186	89.767	91.145	91.281	89.252	90.801
19:21	ZZZZZZ	91.452	91.912	89.823	88.921	90.363	90.03	88.939	90.056

! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8

LEGEND:

Istd#	Parameter	Limits	CCV/CCB Limits
Istd#1	Lithium	70-130 %	70-130 %
Istd#2	Scandium (45-1)	70-130 %	70-130 %
Istd#3	Scandium (45-2)	70-130 %	70-130 %
Istd#4	Scandium (45-3)	70-130 %	70-130 %
Istd#5	Germanium (72-1)	70-130 %	70-130 %
Istd#6	Germanium (72-2)	70-130 %	70-130 %
Istd#7	Germanium (72-3)	70-130 %	70-130 %
Istd#8	Germanium (74-1)	70-130 %	70-130 %

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
10:22	MA52271-STD1	100	100	100	100	100	100	100	100
10:27	MA52271-STD2	100	100	100	100	100	100	100	100
10:33	MA52271-STD3	100	100	100	100	100	100	100	100
10:38	MA52271-STD4	99.073	99.13	99.093	100.244	98.628	99.766	100.623	100.25
10:43	MA52271-STD5	99.766	99.71	98.749	99.143	100.419	99.436	100.773	100.857
10:49	MA52271-STD6	100.322	98.531	98.858	98.662	97.33	98.662	101.157	99.995
10:54	MA52271-STD7	98.489	96.902	96.04	96.136	96.982	96.018	99.048	99.282
10:59	MA52271-STD8	97.09	96.57	93.628	94.129	95.275	94.144	99.595	97.59
11:05	MA52271-STD9	97.11	98.417	94.96	95.179	97.827	95.565	99.562	98.069
11:10	MA52271-STD10	101.429	101.202	97.023	98.325	98.371	97.446	102.387	99.618
11:15	MA52271-STD11	101.939	100.716	96.631	98.694	98.024	97.489	102.761	100.317
11:21	MA52271-STD12	100.519	98.422	94.788	96.62	95.614	96.578	100.885	99.885
11:26	MA52271-STD13	100	100	100	100	100	100	100	100
11:32	ZZZZZZ	100.583	101.41	100.673	100.425	101.151	100.443	99.011	100.245
11:37	MA52271-ICVA1	97.799	98.643	97.6	94.668	93.475	99.741	96.754	100.703
11:42	MA52271-ICV1	98.797	99.989	96.888	97.554	98.959	97.092	97.98	97.806
11:50	MA52271-ICB1	94.628	100.755	101.08	96.524	100.7	102.404	95.115	101.991
11:55	MA52271-CCVA1	101.3	100.214	99.894	97.116	95.534	101.529	100.062	103.221
12:00	MA52271-CCB1	98.11	99.664	97.352	97.785	99.576	97.369	98.041	98.188
12:06	MA52271-CRI1	No results reported for the elements associated with this internal standard.							
12:11	MA52271-ICSA1	88.307	87.245	83.934	83.522	82.588	85.019	80.595	95.169
12:16	MA52271-ICSAB1	86.825	87.53	82.078	81.921	81.619	84.039	79.129	93.275
12:23	ZZZZZZ	86.992	90.184	89.543	89.567	91.926	93.219	89.777	96.213
12:29	MA52271-CRI2	89.765	92.041	90.628	91.845	93.707	93.612	91.948	97.9
12:37	MA52271-CCVA2	91.678	95.159	90.866	90.778	92.989	95.033	92.613	98.383
12:42	MA52271-CCB2	91.996	96.868	94.145	94.206	99.053	97.54	94.213	100.175
12:48	ZZZZZZ	221.289 !	229.367 !	178.124 !	226.116 !	225.685 !	188.84 !	257.861 !	196.323 !
12:53	ZZZZZZ	236.833 !	208.499 !	187.956 !	240.383 !	206.082 !	195.838 !	272.35 !	202.774 !
12:58	ZZZZZZ	258.761 !	218.011 !	209.241 !	263.254 !	213.738 !	219.893 !	293.484 !	231.56 !
13:04	MA52271-CCVA3	101.488	100.444	100.312	98.11	97.53	103.1	101.167	106.302
13:09	MA52271-CCB3	95.646	97.596	97.698	96.44	97.905	98.681	97.382	100.786
13:14	ZZZZZZ	95.333	104.209	98.344	96.294	100.276	100.487	94.811	106.188
13:20	MP32396-B1	95.982	105.282	94.02	93.628	98.137	96.469	94.798	101.289

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
13:25	MP32396-MB1	96.355	101.105	95.659	98.063	101.091	98.617	98.15	100.893
13:30	ZZZZZZ	101.376	99.015	99.822	101.143	98.573	100.482	101.052	102.813
13:36	ZZZZZZ	101.032	97.821	99.558	99.645	97.292	99.47	99.992	100.961
13:41	MA52271-CCVA4	99.16	99.592	97.265	95.837	96.22	100.586	99.227	102.928
13:46	MA52271-CCB4	96.605	97.77	96.774	97.805	97.88	98.439	98.287	100.508
13:52	MP32396-S1	92.42	101.757	88.556	87.373	91.301	92.745	90.31	101.511
13:57	MP32396-S2	93.701	101.7	90.207	87.87	91.78	95.604	91.591	101.821
14:02	JD43215-21F	95.94	104.25	90.737	90.462	94.422	95.997	93.133	102.995
14:08	ZZZZZZ	103.416	102.822	100.03	99.972	98.803	104.559	103.957	106.324
14:13	JD43215-25F	92.969	97.995	87.267	87.29	89.102	91.912	89.881	100.618
14:18	JD43215-26F	94.743	100.457	91.886	88.707	91.58	97.039	91.16	103.95
14:24	MP32396-SD1	105.382	104.348	101.626	102.509	100.519	105.922	105.278	107.652
14:29	ZZZZZZ	114.295	109.216	108.573	111.12	108.874	109.617	113.385	110.08
14:34	ZZZZZZ	107.355	107.195	107.044	106.351	106.892	108.601	107.584	107.712
14:40	MA52271-CCVA5	105.808	103.822	103.813	102.246	99.883	106.396	104.955	107.96
14:45	MA52271-CCB5	103.174	101.599	100.783	102.424	102.255	104.127	103.645	105.583
14:50	MA52271-CRI3	105.383	104.663	103.011	103.212	102.391	104.908	105.22	106.26
14:55	MA52271-ICSA2	92.101	90.573	88.265	86.996	84.676	90.609	84.051	99.124
15:06	MA52271-ICSAB2	89.318	88.81	86.653	84.331	84.309	89.217	81.32	99.64
15:16	ZZZZZZ	89.322	92.818	94.26	92.921	95.588	98.756	92.359	102.04
15:21	MA52271-CCVA6	91.92	94.025	93.172	92.67	92.605	96.488	93.918	102.135
15:27	MA52271-CCB6	92.459	97.791	94.343	94.111	98.404	98.293	94.76	102.283
15:32	MP32408A-MB1	91.631	100.723	94.86	93.101	99.319	99.254	93.506	106.163
15:37	MP32408A-MB2	93.347	101.877	94.9	94.961	100.983	98.452	93.034	104.88
15:43	MP32408A-B2	92.944	105.012	95.685	92.916	100.24	99.689	93.753	107.145
15:48	MP32408A-B3	101.667	100.392	100.222	99.249	97.756	106.383	105.247	107.835
15:53	MP32408A-S3	95.002	104.195	92.182	91.608	96.434	97.006	94.084	104.553
15:59	MP32408A-S4	95.26	106.628	92.538	91.444	98.709	97.938	94.086	105.089
16:04	JD43272-1	95.451	106.57	93.79	93.345	100.75	99.806	94.066	106.052
16:09	MP32408A-SD1	99.53	102.006	100.79	99.735	101.341	105.469	101.241	108.372
16:15	ZZZZZZ	97.627	99.674	100.469	98.443	101.479	103.705	99.071	107.326
16:20	MA52271-CCVA7	96.767	98.711	97.101	95.1	95.266	100.435	97.761	106.083
16:25	MA52271-CCB7	96.088	97.618	98.037	96.597	97.847	102.279	98.35	104.826

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
16:31	ZZZZZZ	95.792	104.498	97.458	96.421	101.095	100.836	94.789	107.88
16:36	ZZZZZZ	96.27	105.417	98.114	96.958	102.043	101.154	95.037	106.77
16:41	MP32418-MB1	97.066	105.452	97.859	96.852	102.559	100.778	94.805	106.441
16:47	MP32418-B2	94.986	104.885	95.228	93.553	98.761	98.699	93.967	105.703
16:52	MP32418-S3	90.451	97.725	84.005	83.299	86.703	92.829	88.335	101.633
16:57	MP32418-S4	90.936	96.044	83.551	82.755	83.393	91.325	88.017	99.607
17:03	JD43348-2	89.941	93.864	83.784	82.763	84.196	90.18	87.087	99.966
17:08	MP32418-SD1	96.164	95.622	92.43	93.528	91.952	98.122	97.854	102.471
17:13	MA52271-CCVA8	93.355	92.766	89.776	90.628	89.621	94.071	94.087	98.011
17:19	MA52271-CCB8	92.839	93.23	92.425	92.812	94.442	95.849	95.317	98.653
17:24	ZZZZZZ	85.166	91.708	83.237	82.286	84.783	88.758	85.062	97.094
17:29	ZZZZZZ	87.729	94.785	84.529	84.392	88.232	90.486	87.361	99
17:34	ZZZZZZ	93.437	100.376	88.722	87.749	92.032	93.545	90.786	100.437
17:40	ZZZZZZ	88.284	97.01	87.482	86.357	91.027	92.308	88.022	99.093
17:45	ZZZZZZ	87.648	97.48	85.679	84.622	89.889	91.535	87.34	98.474
17:50	ZZZZZZ	87.609	95.687	82.671	82.826	86.88	89.746	86.257	97.539
17:56	ZZZZZZ	86.832	93.571	82.289	83.364	84.854	89.964	85.759	99.738
18:01	ZZZZZZ	97.968	96.22	97.989	98.468	95.599	99.893	99.968	103.043
18:06	MA52271-CCVA9	95.333	96.212	93.502	92.407	92.4	97.329	97.05	101.882
18:12	MA52271-CCB9	94.585	93.867	94.579	95.256	93.862	98.125	97.363	99.896
18:17	ZZZZZZ	91.208	97.272	89.006	88.901	89.153	94.485	91.671	101.648
18:22	ZZZZZZ	89.057	95.004	84.413	84.492	85.606	90.037	87.791	99.134
18:27	ZZZZZZ	86.64	93.252	83.088	82.045	84.347	89.602	86.19	98.037
18:33	ZZZZZZ	91.689	92.267	89.115	88.469	87.333	95.433	93.029	99.287
18:39	ZZZZZZ	93.895	98.687	89.354	90.393	89.674	95.001	93.414	102.104
18:44	ZZZZZZ	91.153	94.877	85.761	84.626	84.295	92.116	89.872	99.66
18:49	ZZZZZZ	89.525	96.288	86.896	86.178	88.249	92.196	90.18	98.101
18:55	ZZZZZZ	95.507	92.75	95.392	94.262	93.204	98.799	97.603	101.686
19:00	MA52271-CCVA10	91.989	90.122	89.875	87.939	87.242	94.015	93.155	99.072
19:05	MA52271-CCB10	91.528	89.39	90.795	93.153	89.499	94.111	94.094	97.44
19:10	ZZZZZZ	92.478	89.399	92.657	91.748	90.574	96.217	95.004	98.646
19:16	ZZZZZZ	92.152	88.921	92.352	91.339	89.767	96.635	94.133	98.368
19:21	ZZZZZZ	91.445	88.67	91.316	92.69	88.736	93.919	93.935	98.08

! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16

LEGEND:

Istd#	Parameter	Limits	CCV/CCB Limits
Istd#9	Germanium (74-2)	70-130 %	70-130 %
Istd#10	Germanium (74-3)	70-130 %	70-130 %
Istd#11	Rhodium (103-1)	70-130 %	70-130 %
Istd#12	Rhodium (103-2)	70-130 %	70-130 %
Istd#13	Rhodium (103-3)	70-130 %	70-130 %
Istd#14	Indium (115-1)	70-130 %	70-130 %
Istd#15	Indium (115-2)	70-130 %	70-130 %
Istd#16	Terbium (159-1)	70-130 %	70-130 %

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
10:22	MA52271-STD1	100	100	100	100	100	100
10:27	MA52271-STD2	100	100	100	100	100	100
10:33	MA52271-STD3	100	100	100	100	100	100
10:38	MA52271-STD4	99.498	97.795	100.784	98.884	99.039	98.302
10:43	MA52271-STD5	100.203	100.848	100.208	99.702	99.635	99.62
10:49	MA52271-STD6	99.896	98.386	99.795	100.018	99.045	98.95
10:54	MA52271-STD7	97.537	97.646	98.154	97.922	98.195	96.894
10:59	MA52271-STD8	96.749	97.065	95.847	99.463	97.74	98.295
11:05	MA52271-STD9	98.382	99.573	97.12	98.731	97.88	98.829
11:10	MA52271-STD10	100.817	100.041	99.037	100.978	99.021	99.893
11:15	MA52271-STD11	101.625	100.276	99.363	101.953	96.451	98.35
11:21	MA52271-STD12	100.441	98.676	99.597	100.663	95.612	95.709
11:26	MA52271-STD13	100	100	100	100	100	100
11:32	ZZZZZZ	102.014	101.614	100.806	100.313	99.438	100.467
11:37	MA52271-ICVA1	98.399	98.517	101.869	96.533	99.68	95.832
11:42	MA52271-ICV1	98.132	101.324	98.413	96.6	97.628	98.914
11:50	MA52271-ICB1	96.547	100.867	102.304	95.057	101.421	96.811
11:55	MA52271-CCVA1	100.9	99.989	103.557	99.172	101.108	98.099
12:00	MA52271-CCB1	98.164	100.652	98.476	96.425	97.863	98.841
12:06	MA52271-CRI1	No results reported for the elements associated with this internal standard.					
12:11	MA52271-ICSA1	92.745	93.198	94.884	91.904	87.79	86.498
12:16	MA52271-ICSAB1	91.214	92.75	93.338	90.328	88.278	85.071
12:23	ZZZZZZ	94.852	97.178	97.759	94.042	98.21	95.538
12:29	MA52271-CRI2	97.244	98.753	97.527	95.674	98.73	97.751
12:37	MA52271-CCVA2	97.718	99.278	100.82	97.34	98.352	96.13
12:42	MA52271-CCB2	98.498	102.517	100.389	97.7	100.919	98.224
12:48	ZZZZZZ	250.509 !	248.308 !	198.751 !	249.734 !	184.058 !	248.274 !
12:53	ZZZZZZ	263.148 !	224.24 !	206.662 !	262.317 !	188.495 !	260.414 !
12:58	ZZZZZZ	284.969 !	233.429 !	231.45 !	284.675 !	209.241 !	279.016 !
13:04	MA52271-CCVA3	103.795	102.662	107.175	103.302	104.901	102.31
13:09	MA52271-CCB3	100.26	100.627	101.157	98.474	101.829	99.869
13:14	ZZZZZZ	100.985	104.035	106.64	99.469	117.767	110.866
13:20	MP32396-B1	100.183	103.704	103.175	99.188	104.686	101.638

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
13:25	MP32396-MB1	102.06	103.824	101.851	100.034	103.933	102.335
13:30	ZZZZZZ	103.214	101.66	101.953	101.647	70.581	90.192
13:36	ZZZZZZ	101.643	100.119	101.215	100.392	70.43	88.56
13:41	MA52271-CCVA4	101.689	102.227	103.106	100.303	101.969	99.246
13:46	MA52271-CCB4	100.339	100.719	101.471	99.339	101.631	100.188
13:52	MP32396-S1	98.311	100.668	101.793	97.491	99.246	96.24
13:57	MP32396-S2	98.103	99.851	101.789	98.172	97.006	95.119
14:02	JD43215-21F	100.867	104.482	104.213	98.905	99.148	96.256
14:08	ZZZZZZ	106.531	104.286	108.572	105.547	105.487	105.153
14:13	JD43215-25F	98.766	98.557	102.694	97.62	94.117	91.854
14:18	JD43215-26F	99.275	102.013	106.132	98.838	95.208	91.877
14:24	MP32396-SD1	107.146	104.396	107.337	105.447	105.35	105.144
14:29	ZZZZZZ	111.441	109.244	109.856	110.33	74.372	95.96
14:34	ZZZZZZ	107.989	108.476	108.426	106.25	109.444	107.365
14:40	MA52271-CCVA5	106.676	104.88	108.972	105.628	106.071	103.936
14:45	MA52271-CCB5	105.753	103.85	105.85	103.938	105.085	105.095
14:50	MA52271-CRI3	106.895	103.967	106.794	104.818	104.89	104.812
14:55	MA52271-ICSA2	96.354	95.782	99.965	95.725	92.257	88.807
15:06	MA52271-ICSAB2	95.607	96.564	100.607	95.006	92.093	88.573
15:16	ZZZZZZ	97.781	100.178	102.572	97.286	103.706	99.996
15:21	MA52271-CCVA6	99.889	99.994	103.786	99.755	101.491	98.557
15:27	MA52271-CCB6	99.99	103.76	102.852	99.229	103.791	100.731
15:32	MP32408A-MB1	100.682	105.547	107.028	99.842	110.99	104.18
15:37	MP32408A-MB2	100.945	106.106	105.419	100.113	107.718	104.309
15:43	MP32408A-B2	100.727	107.924	109.072	99.586	107.65	101.045
15:48	MP32408A-B3	105.759	103.178	109.611	104.328	96.276	103.235
15:53	MP32408A-S3	102.127	105.097	105.237	99.868	104.448	100.382
15:59	MP32408A-S4	101.493	107.586	107.2	100.68	104.7	99.087
16:04	JD43272-1	101.096	107.357	107.791	100.604	107.302	101.082
16:09	MP32408A-SD1	104.945	106.154	108.845	103.863	108.244	106.383
16:15	ZZZZZZ	103.625	105.584	108.055	101.301	107.482	103.918
16:20	MA52271-CCVA7	102.601	102.539	106.31	100.375	103.787	99.772
16:25	MA52271-CCB7	102.385	102.887	105.381	100.048	104.958	102.883

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
16:31	ZZZZZZ	102.079	106.461	107.401	100.128	109.144	103.73
16:36	ZZZZZZ	102.392	107.418	107.708	101.234	108.421	103.085
16:41	MP32418-MB1	103.631	107.511	107.743	102.504	108.687	104.301
16:47	MP32418-B2	102.038	106.083	106.535	100.639	106.175	101.65
16:52	MP32418-S3	96.092	98.886	102.802	96.539	92.776	87.775
16:57	MP32418-S4	94.749	96.861	100.853	94.884	90.464	87.067
17:03	JD43348-2	95.3	97.029	100.961	96.175	91.133	86.825
17:08	MP32418-SD1	102.274	101.107	102.93	100.558	97.771	99.541
17:13	MA52271-CCVA8	98.139	97.713	99.209	96.908	97.031	96.062
17:19	MA52271-CCB8	97.502	99.564	100.96	97	99.37	98.783
17:24	ZZZZZZ	94.389	96.85	98.188	93.015	93.508	90.059
17:29	ZZZZZZ	96.397	99.106	98.936	95.329	94.373	91.633
17:34	ZZZZZZ	98.917	102.114	100.598	96.366	99.565	97.635
17:40	ZZZZZZ	96.912	101.465	100.272	95.389	98.226	94.603
17:45	ZZZZZZ	95.382	100.833	99.667	95.001	97.362	93.914
17:50	ZZZZZZ	95.029	99.038	99.54	95.424	92.206	90.341
17:56	ZZZZZZ	95.474	97.053	99.384	94.142	92.293	88.091
18:01	ZZZZZZ	103.261	101.629	103.814	100.618	102.263	102.69
18:06	MA52271-CCVA9	100.036	101.112	103.074	98.785	101.225	98.179
18:12	MA52271-CCB9	100.042	100.381	102.067	98.835	101.942	101.259
18:17	ZZZZZZ	97.812	99.63	101.38	97.028	100.742	97.495
18:22	ZZZZZZ	96.261	97.747	100.513	95.647	93.95	90.329
18:27	ZZZZZZ	95.053	96.828	99.189	94.034	91.173	88.269
18:33	ZZZZZZ	99.394	97.575	100.613	98.137	96.928	95.886
18:39	ZZZZZZ	99.347	99.194	102.941	99.197	98.892	97.102
18:44	ZZZZZZ	97	96.25	100.716	95.862	94.017	91.891
18:49	ZZZZZZ	96.968	98.035	98.092	95.046	96.921	93.817
18:55	ZZZZZZ	100.124	97.953	102.158	99.998	102.112	99.895
19:00	MA52271-CCVA10	97.862	95.759	99.807	97.084	98.686	97.318
19:05	MA52271-CCB10	99.122	96.813	98.474	96.556	99.194	97.653
19:10	ZZZZZZ	98.547	96.63	99.42	97.596	99.794	98.441
19:16	ZZZZZZ	97.965	95.987	99.401	96.588	99.681	99.749
19:21	ZZZZZZ	97.956	95.674	98.533	97.17	99.127	98.07

! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
Analyst: FW Run ID: MA52271
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22

LEGEND:

Istd#	Parameter	Limits	CCV/CCB Limits
Istd#17	Terbium (159-2)	70-130 %	70-130 %
Istd#18	Terbium (159-3)	70-130 %	70-130 %
Istd#19	Holmium (165-1)	70-130 %	70-130 %
Istd#20	Holmium (165-2)	70-130 %	70-130 %
Istd#21	Bismuth (209-1)	70-130 %	70-130 %
Istd#22	Bismuth (209-2)	70-130 %	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
QC Limits: result < RL Run ID: MA52271 Units: ug/l

Time: / Sample ID:			11:50 ICB1		12:00 CCB1		12:42 CCB2		13:09 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.42								
Antimony	2.0	.085								
Arsenic	0.50	.025	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.005								
Boron	25	.85								
Cadmium	0.50	.01								
Calcium	250	3.6								
Chromium	1.0	.018								
Cobalt	0.50	.003								
Copper	2.0	.024								
Iron	25	.24								
Lead	0.50	.008	anr							
Magnesium	250	.19								
Manganese	1.0	.012								
Molybdenum	1.0	.017								
Nickel	1.0	.017								
Potassium	250	.78								
Selenium	0.50	.044								
Silver	0.50	.004								
Sodium	250	1.5								
Strontium	5.0	.014								
Thallium	0.50	.002	anr							
Tin	5.0	.041								
Titanium	1.0	.11								
Vanadium	1.0	.013								
Zinc	5.0	.078	0.0161	<5.0	0.0927	<5.0	0.0533	<5.0	0.0459	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
QC Limits: result < RL Run ID: MA52271 Units: ug/l

Time:			13:46		14:45		15:27	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	25	.42						
Antimony	2.0	.085						
Arsenic	0.50	.025	anr					
Barium	1.0	.009	anr					
Beryllium	0.50	.005						
Boron	25	.85						
Cadmium	0.50	.01						
Calcium	250	3.6						
Chromium	1.0	.018						
Cobalt	0.50	.003						
Copper	2.0	.024						
Iron	25	.24						
Lead	0.50	.008	anr					
Magnesium	250	.19						
Manganese	1.0	.012						
Molybdenum	1.0	.017						
Nickel	1.0	.017						
Potassium	250	.78						
Selenium	0.50	.044						
Silver	0.50	.004						
Sodium	250	1.5						
Strontium	5.0	.014						
Thallium	0.50	.002	anr					
Tin	5.0	.041						
Titanium	1.0	.11						
Vanadium	1.0	.013						
Zinc	5.0	.078	0.0949	<5.0	0.237	<5.0	0.343	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52271 Units: ug/l

Time:		11:37			11:42			11:55	
Sample ID:	ICVA	ICVA1		ICV	ICV1		CCVA	CCVA1	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead	anr								
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	60	60.6	101.0				50	47.3	94.6

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52271 Units: ug/l

Time:		12:37			13:04			13:41	
Sample ID:	CCVA	CCVA2		CCVA	CCVA3		CCVA	CCVA4	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead	anr								
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	50	49.8	99.6	50	47.4	94.8	50	47.8	95.6

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52271 Units: ug/l

Time:		14:40			15:21	
Sample ID:	CCVA	CCVA5		CCVA	CCVA6	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead	anr					
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium						
Zinc	50	47.8	95.6	50	49.6	99.2

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA52271 Units: ug/l

Time:			12:29		14:50	
Sample ID:	CRI	CRIA	CRI2		CRI3	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	25	25				
Antimony	2.0	0.25				
Arsenic	0.50	0.50	anr			
Barium	1.0	0.50	anr			
Beryllium	0.50	0.25				
Boron	25	2.5				
Cadmium	0.50	0.25				
Calcium	250	125				
Chromium	1.0	2.0				
Cobalt	0.50	0.25				
Copper	2.0	2.0				
Iron	25	25				
Lead	0.50	0.25	anr			
Magnesium	250	125				
Manganese	1.0	0.25				
Molybdenum	1.0	0.50				
Nickel	1.0	2.0				
Potassium	250	125				
Selenium	0.50	0.50				
Silver	0.50	1.0				
Sodium	250	125				
Strontium	5.0	0.50				
Thallium	0.50	0.25	anr			
Tin	5.0	0.50				
Titanium	1.0	0.50				
Vanadium	1.0	2.0				
Zinc	5.0	2.0	5.04	100.8	5.15	103.0

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XA042122M1.CSV Date Analyzed: 04/21/22 Methods: SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA52271 Units: ug/l

Time:			12:11		12:16		14:55		15:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	100000	100000	92600	92.6	94400	94.4	92200HH	92.2	92500HH	92.5
Antimony			0.192		0.0129		0.0857		-0.0561	
Arsenic		20	0.0653		18.3	91.5	0.0816		17.9	89.5
Barium			0.154		0.144		0.141		0.145	
Beryllium			-0.00110		-0.00361		0.00328		0.000443	
Boron		50	2.69		54.7	109.4	5.24		56.1	112.2
Cadmium		20	-0.358		19.3	96.5	-0.342		19.2	96.0
Calcium	100000	100000	89300	89.3	91700	91.7	88400HH	88.4	90500HH	90.5
Chromium		20	0.867		20.4	102.0	0.870		19.9	99.5
Cobalt		20	0.106		18.5	92.5	0.106		18.1	90.5
Copper		20	0.173		17.6	88.0	0.162		17.0	85.0
Iron	100000	100000	87100	87.1	89400	89.4	87200HH	87.2	88300HH	88.3
Lead			0.0337		0.0392		0.0322		0.0362	
Magnesium	100000	100000	85900	85.9	87500	87.5	85400HH	85.4	86300HH	86.3
Manganese		20	0.311		19.6	98.0	0.291		19.3	96.5
Molybdenum	2000	2000	2230	111.5	2220	111.0	2210HH	110.5	2200HH	110.0
Nickel		20	0.412		18.1	90.5	0.442		17.5	87.5
Potassium	100000	100000	88900	88.9	89900	89.9	90100HH	90.1	90100HH	90.1
Selenium		20	0.0773		19.8	99.0	0.0721		19.7	98.5
Silver		20	0.0103		18.9	94.5	0.0153		18.2	91.0
Sodium	100000	100000	87300	87.3	88900	88.9	87400HH	87.4	88900HH	88.9
Strontium	2000	2000	2150	107.5	2180	109.0	2140HH	107.0	2170HH	108.5
Thallium			0.0107		0.00535		0.00867		0.00371	
Tin	2000	2000	2340	117.0	2370	118.5	2300HH	115.0	2400HH	120.0
Titanium	2000	2000	1820	91.0	1850	92.5	1820HH	91.0	1810HH	90.5
Vanadium		20	-0.0157		20.6	103.0	-0.0118		20.4	102.0
Zinc		20	0.416		16.8	84.0	0.501		16.9	84.5

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:43	MA52339-STD1	1		Sample introduction not stable, see rerun.
11:47	MA52339-STD2	1		Sample introduction not stable, see rerun.
11:51	MA52339-STD3	1		STDA
11:54	MA52339-STD4	1		STDB
12:01	MA52339-STD5	1		STDC
12:05	MA52339-STD6	1		STDD
12:08	MA52339-STD7	1		STDE
12:11	MA52339-STD8	1		STDF
12:15	MA52339-STD9	1		STDG
12:18	MA52339-STD10	1		STDH
12:21	MA52339-STD11	1		STDI
12:25	MA52339-STD12	1		STDJ
12:40	MA52339-STD13	1		STDA
12:43	MA52339-STD14	1		STDA
12:46	ZZZZZZ	1		
12:50	ZZZZZZ	1		
12:57	MA52339-ICVA1	1		
13:10	MA52339-ICVA2	1		
13:13	MA52339-ICV1	1		
13:35	MA52339-ICB1	1		
13:38	MA52339-CCVA1	1		
13:41	MA52339-CCB1	1		
13:44	MA52339-CRI1	1		
13:51	MA52339-ICSA1	1		
13:55	MA52339-ICSAB1	1		
13:58	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:05	MA52339-CCVA2	1		
14:08	MA52339-CCB2	1		
14:12	MA52339-CCVA3	1		
14:15	MA52339-CCB3	1		
14:19	ZZZZZZ	5		
14:24	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:27	MP32610-S1	50		CRI out
14:30	MP32610-S2	50		CRI out
14:33	JD43962-1	50		(sample used for QC only; not part of login JD43215)
14:36	MP32610-SD1	250		CRI out
14:39	ZZZZZZ	5		
14:43	MA52339-CCVA4	1		
14:46	MA52339-CCB4	1		
14:49	MP32612-MB1	2		CRI out
14:52	MP32612-B1	2		CRI out
14:55	MP32612-S1	2		CRI out
14:59	MP32612-S2	2		CRI out
15:02	JD43851-12	2		(sample used for QC only; not part of login JD43215)
15:05	MP32612-SD1	10		CRI out
15:08	ZZZZZZ	2		
15:11	ZZZZZZ	1		
15:15	MA52339-CCVA5	1		
15:18	MA52339-CCB5	1		
15:28	ZZZZZZ	5		
15:31	ZZZZZZ	5		
15:34	ZZZZZZ	2		
15:37	ZZZZZZ	5		
15:41	ZZZZZZ	1		
15:44	ZZZZZZ	1		
15:47	ZZZZZZ	10		
15:50	ZZZZZZ	10		
15:53	MA52339-CCVA6	1		
15:56	MA52339-CCB6	2		
16:02	MP32378-MB1	2		
16:05	MP32378-B1	2		
16:09	ZZZZZZ	2		
16:13	ZZZZZZ	1		
16:16	ZZZZZZ	1		
16:19	MA52339-CCVA7	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:22	MA52339-CCB7	2		
16:25	MP32620-MB1	2		CRI out
16:29	MP32620-B1	2		CRI out
16:32	MP32620-S1	2		CRI out
16:35	MP32620-S2	2		CRI out
16:38	JD43905-1F	2		(sample used for QC only; not part of login JD43215)
16:41	MP32620-SD1	10		CRI out
16:44	ZZZZZZ	2		
16:48	ZZZZZZ	2		
16:51	MA52339-CCVA8	1		
16:54	MA52339-CCB8	2		
16:57	ZZZZZZ	2		
17:00	ZZZZZZ	2		
17:04	ZZZZZZ	2		
17:13	ZZZZZZ	2		
17:16	ZZZZZZ	2		
17:19	ZZZZZZ	2		
17:22	ZZZZZZ	2		
17:25	ZZZZZZ	2		
17:28	JD43215-2F	2		
---------->	Last reportable sample/prep for job JD43215			
17:32	MA52339-CCVA9	1		
17:35	MA52339-CCB9	2		
17:38	MA52339-CCVA10	1		
17:41	MA52339-CCB10	2		
17:44	MP32583-PS1	5		
17:47	MP32600-PS1	5		Cri out
17:50	ZZZZZZ	1		
17:54	MP32620-S1	10		CRI out
17:57	MP32620-S2	10		CRI out
18:00	JD43905-1F	10		(sample used for QC only; not part of login JD43215)
18:03	MP32620-SD1	50		CRI out
18:06	ZZZZZZ	5		
18:10	ZZZZZZ	10		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:13	MA52339-CCVA11	1		
18:16	MA52339-CCB11	2		
18:19	MA52339-CRI2	1		
18:22	MA52339-CRI3	1		
18:25	ZZZZZZ	1		
18:28	MA52339-ICSAB2	1		
18:32	MA52339-ICSA3	1		
18:36	ZZZZZZ	1		
18:39	ZZZZZZ	1		
18:42	MA52339-CCVA12	1		
18:45	MA52339-CCB12	2		
---------->	Last reportable CCB for job JD43215			
18:48	MA52339-CCVA13	1		
18:51	MA52339-CCB13	2		
19:00	ZZZZZZ	1		
19:04	ZZZZZZ	1		
19:07	ZZZZZZ	1		
19:10	MA52339-CCVA14	1		
19:13	MA52339-CCB14	2		
19:16	ZZZZZZ	2		
19:19	ZZZZZZ	2		
19:23	ZZZZZZ	2		
19:26	ZZZZZZ	2		
19:29	ZZZZZZ	2		
19:32	ZZZZZZ	2		
19:35	ZZZZZZ	2		
19:39	ZZZZZZ	2		
19:42	MA52339-CCVA15	1		
19:45	MA52339-CCB15	1		
20:17	ZZZZZZ	5		
20:20	ZZZZZZ	5		
20:24	ZZZZZZ	5		
20:27	ZZZZZZ	5		
20:30	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:33	ZZZZZZ	5		
20:36	ZZZZZZ	5		
20:40	ZZZZZZ	5		
20:43	MA52339-CCVA16	1		
20:46	MA52339-CCB16	1		
20:50	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:56	ZZZZZZ	2		
21:00	MP32564-S1	5		
21:03	MP32564-S2	5		
21:06	DA43510-1	2		(sample used for QC only; not part of login JD43215)
21:09	ZZZZZZ	1		
21:12	ZZZZZZ	1		
21:15	ZZZZZZ	5		
21:18	ZZZZZZ	1		
21:21	MA52339-CCVA17	1		
21:25	MA52339-CCB17	1		
21:39	MP32636-MB1	1		Batch to reanalyze for Al, ICCV out
21:42	MP32636-B1	1		
21:45	MP32636-S1	1		
21:48	MP32636-S2	1		
21:51	JD43966-1	1		(sample used for QC only; not part of login JD43215)
21:55	ZZZZZZ	1		
21:58	ZZZZZZ	1		
22:01	ZZZZZZ	1		
22:04	MA52339-CCVA18	1		
22:07	MA52339-CCB18	1		
22:10	ZZZZZZ	1		
22:16	ZZZZZZ	1		
22:19	ZZZZZZ	1		
22:22	ZZZZZZ	1		
22:26	MA52339-CCVA19	1		
22:29	MA52339-CCB19	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
22:32	ZZZZZZ	1		
22:36	ZZZZZZ	1		
22:39	ZZZZZZ	1		
22:42	ZZZZZZ	1		
22:46	ZZZZZZ	1		
22:49	ZZZZZZ	1		
22:52	ZZZZZZ	1		
22:55	ZZZZZZ	1		
22:58	MA52339-CCVA20	1		
23:01	MA52339-CCB20	1		
23:06	ZZZZZZ	1		
23:09	ZZZZZZ	1		
23:13	ZZZZZZ	1		
23:16	ZZZZZZ	1		
23:19	ZZZZZZ	50		
23:22	ZZZZZZ	10		
23:26	ZZZZZZ	2		
23:30	ZZZZZZ	2		
23:33	MA52339-CCVA21	1		
23:36	MA52339-CCB21	1		
23:39	MP32578-MB1	1		Batch to reanalyze for Al, ICCV out
23:42	MP32578-B1	1		
23:45	MP32578-S1	1		
23:48	MP32578-S2	1		
23:52	JD43737-4	1		(sample used for QC only; not part of login JD43215)
23:55	ZZZZZZ	1		
23:58	ZZZZZZ	1		
00:01	ZZZZZZ	1		
00:04	MA52339-CCVA22	1		
00:07	MA52339-CCB22	1		
00:10	ZZZZZZ	1		
00:13	ZZZZZZ	1		
00:16	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:19	ZZZZZZ	1		
00:23	ZZZZZZ	1		
00:26	ZZZZZZ	1		
00:29	ZZZZZZ	1		
00:33	ZZZZZZ	50		
00:36	ZZZZZZ	50		
00:39	MA52339-CCVA23	1		
00:42	MA52339-CCB23	1		
00:46	MP32578-S1	5		
00:49	MP32578-S2	5		
00:52	JD43737-4	5		(sample used for QC only; not part of login JD43215)
00:55	ZZZZZZ	2		
00:58	ZZZZZZ	2		
01:02	ZZZZZZ	5		
01:05	ZZZZZZ	10		
01:08	ZZZZZZ	2		
01:11	MA52339-CCVA24	1		
01:14	MA52339-CCB24	1		
01:17	ZZZZZZ	1		
01:21	ZZZZZZ	1		
01:24	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
12:46	ZZZZZZ	1		
12:50	ZZZZZZ	1		
12:57	MA52339-ICVA1	1		
13:10	MA52339-ICVA2	1	X	
13:13	MA52339-ICV1	1	X	
13:35	MA52339-ICB1	1	X	
13:38	MA52339-CCVA1	1	X	
13:41	MA52339-CCB1	1	X	
13:44	MA52339-CRI1	1	X	
13:51	MA52339-ICSA1	1	X	
13:55	MA52339-ICSAB1	1	X	
13:58	ZZZZZZ	1		
14:02	ZZZZZZ	1		
14:05	MA52339-CCVA2	1	X	
14:08	MA52339-CCB2	1	X	
14:12	MA52339-CCVA3	1	X	
14:15	MA52339-CCB3	1	X	
14:19	ZZZZZZ	5		
14:24	ZZZZZZ	5		
14:27	MP32610-S1	50		
14:30	MP32610-S2	50		
14:33	JD43962-1	50		(a)
14:36	MP32610-SD1	250		
14:39	ZZZZZZ	5		
14:43	MA52339-CCVA4	1	X	
14:46	MA52339-CCB4	1	X	
14:49	MP32612-MB1	2		
14:52	MP32612-B1	2		
14:55	MP32612-S1	2		
14:59	MP32612-S2	2		
15:02	JD43851-12	2		(a)
15:05	MP32612-SD1	10		
15:08	ZZZZZZ	2		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
15:11	ZZZZZZ	1		
15:15	MA52339-CCVA5	1	X	
15:18	MA52339-CCB5	1	X	
15:28	ZZZZZZ	5		
15:31	ZZZZZZ	5		
15:34	ZZZZZZ	2		
15:37	ZZZZZZ	5		
15:41	ZZZZZZ	1		
15:44	ZZZZZZ	1		
15:47	ZZZZZZ	10		
15:50	ZZZZZZ	10		
15:53	MA52339-CCVA6	1	X	
15:56	MA52339-CCB6	2	X	
16:02	MP32378-MB1	2	X	
16:05	MP32378-B1	2	X	
16:09	ZZZZZZ	2		
16:13	ZZZZZZ	1		
16:16	ZZZZZZ	1		
16:19	MA52339-CCVA7	1	X	
16:22	MA52339-CCB7	2	X	
16:25	MP32620-MB1	2	X	
16:29	MP32620-B1	2	X	
16:32	MP32620-S1	2	X	
16:35	MP32620-S2	2	X	
16:38	JD43905-1F	2		(a)
16:41	MP32620-SD1	10	X	
16:44	ZZZZZZ	2		
16:48	ZZZZZZ	2		
16:51	MA52339-CCVA8	1	X	
16:54	MA52339-CCB8	2	X	
16:57	ZZZZZZ	2		
17:00	ZZZZZZ	2		
17:04	ZZZZZZ	2		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
17:13	ZZZZZZ	2		
17:16	ZZZZZZ	2		
17:19	ZZZZZZ	2		
17:22	ZZZZZZ	2		
17:25	ZZZZZZ	2		
17:28	JD43215-2F	2	X	
17:32	MA52339-CCVA9	1	X	
17:35	MA52339-CCB9	2	X	
17:38	MA52339-CCVA10	1	X	
17:41	MA52339-CCB10	2	X	
17:44	MP32583-PS1	5		
17:47	MP32600-PS1	5		
17:50	ZZZZZZ	1		
17:54	MP32620-S1	10		
17:57	MP32620-S2	10		
18:00	JD43905-1F	10		(a)
18:03	MP32620-SD1	50		
18:06	ZZZZZZ	5		
18:10	ZZZZZZ	10		
18:13	MA52339-CCVA11	1	X	
18:16	MA52339-CCB11	2	X	
18:19	MA52339-CRI2	1	X	
18:22	MA52339-CRI3	1	X	
18:25	ZZZZZZ	1		
18:28	MA52339-ICSAB2	1	X	
18:32	MA52339-ICSA3	1	X	
18:36	ZZZZZZ	1		
18:39	ZZZZZZ	1		
18:42	MA52339-CCVA12	1	X	
18:45	MA52339-CCB12	2	X	
18:48	MA52339-CCVA13	1	X	
18:51	MA52339-CCB13	2	X	
19:00	ZZZZZZ	1		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
19:04	ZZZZZZ	1		
19:07	ZZZZZZ	1		
19:10	MA52339-CCVA14	1	X	
19:13	MA52339-CCB14	2	X	
19:16	ZZZZZZ	2		
19:19	ZZZZZZ	2		
19:23	ZZZZZZ	2		
19:26	ZZZZZZ	2		
19:29	ZZZZZZ	2		
19:32	ZZZZZZ	2		
19:35	ZZZZZZ	2		
19:39	ZZZZZZ	2		
19:42	MA52339-CCVA15	1	X	
19:45	MA52339-CCB15	1	X	
20:17	ZZZZZZ	5		
20:20	ZZZZZZ	5		
20:24	ZZZZZZ	5		
20:27	ZZZZZZ	5		
20:30	ZZZZZZ	5		
20:33	ZZZZZZ	5		
20:36	ZZZZZZ	5		
20:40	ZZZZZZ	5		
20:43	MA52339-CCVA16	1	X	
20:46	MA52339-CCB16	1	X	
20:50	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:56	ZZZZZZ	2		
21:00	MP32564-S1	5		
21:03	MP32564-S2	5		
21:06	DA43510-1	2		(a)
21:09	ZZZZZZ	1		
21:12	ZZZZZZ	1		
21:15	ZZZZZZ	5		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
21:18	ZZZZZZ	1		
21:21	MA52339-CCVA17	1	X	
21:25	MA52339-CCB17	1	X	
21:39	MP32636-MB1	1		
21:42	MP32636-B1	1		
21:45	MP32636-S1	1		
21:48	MP32636-S2	1		
21:51	JD43966-1	1		(a)
21:55	ZZZZZZ	1		
21:58	ZZZZZZ	1		
22:01	ZZZZZZ	1		
22:04	MA52339-CCVA18	1	X	
22:07	MA52339-CCB18	1	X	
22:10	ZZZZZZ	1		
22:16	ZZZZZZ	1		
22:19	ZZZZZZ	1		
22:22	ZZZZZZ	1		
22:26	MA52339-CCVA19	1	X	
22:29	MA52339-CCB19	1	X	
22:32	ZZZZZZ	1		
22:36	ZZZZZZ	1		
22:39	ZZZZZZ	1		
22:42	ZZZZZZ	1		
22:46	ZZZZZZ	1		
22:49	ZZZZZZ	1		
22:52	ZZZZZZ	1		
22:55	ZZZZZZ	1		
22:58	MA52339-CCVA20	1	X	
23:01	MA52339-CCB20	1	X	
23:06	ZZZZZZ	1		
23:09	ZZZZZZ	1		
23:13	ZZZZZZ	1		
23:16	ZZZZZZ	1		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
23:19	ZZZZZZ	50		
23:22	ZZZZZZ	10		
23:26	ZZZZZZ	2		
23:30	ZZZZZZ	2		
23:33	MA52339-CCVA21	1	X	
23:36	MA52339-CCB21	1	X	
23:39	MP32578-MB1	1		
23:42	MP32578-B1	1		
23:45	MP32578-S1	1		
23:48	MP32578-S2	1		
23:52	JD43737-4	1		(a)
23:55	ZZZZZZ	1		
23:58	ZZZZZZ	1		
00:01	ZZZZZZ	1		
00:04	MA52339-CCVA22	1	X	
00:07	MA52339-CCB22	1	X	
00:10	ZZZZZZ	1		
00:13	ZZZZZZ	1		
00:16	ZZZZZZ	1		
00:19	ZZZZZZ	1		
00:23	ZZZZZZ	1		
00:26	ZZZZZZ	1		
00:29	ZZZZZZ	1		
00:33	ZZZZZZ	50		
00:36	ZZZZZZ	50		
00:39	MA52339-CCVA23	1	X	
00:42	MA52339-CCB23	1	X	
00:46	MP32578-S1	5		
00:49	MP32578-S2	5		
00:52	JD43737-4	5		(a)
00:55	ZZZZZZ	2		
00:58	ZZZZZZ	2		
01:02	ZZZZZZ	5		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Element: Zn Dilution	
01:05	ZZZZZZ	10	
01:08	ZZZZZZ	2	
01:11	MA52339-CCVA24	1	X
01:14	MA52339-CCB24	1	X
01:17	ZZZZZZ	1	
01:21	ZZZZZZ	1	
01:24	ZZZZZZ	1	

(a) Sample used for QC only; not part of login JD43215.

Element: Zn

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
11:43	MA52339-STD1	100	100	100	100	100	100	100	100
11:47	MA52339-STD2	100	100	100	100	100	100	100	100
11:51	MA52339-STD3	100	100	100	100	100	100	100	100
11:54	MA52339-STD4	100.408	99.425	98.312	99.461	98.806	99.205	100.407	99.778
12:01	MA52339-STD5	103.753	98.215	97.758	92.308	101.283	103.12	99.432	101.864
12:05	MA52339-STD6	101.179	99.401	101.344	98.007	100.017	103.558	100.245	100.765
12:08	MA52339-STD7	99.762	100.33	103.23	100.28	98.144	104.441	102.114	99.424
12:11	MA52339-STD8	99.59	99.689	103.878	103.666	97.49	103.944	104.055	99.304
12:15	MA52339-STD9	99.986	100.794	104.813	104.038	99.979	105.124	104.408	100.517
12:18	MA52339-STD10	102.968	103.32	106.099	104.87	101.862	107.068	105.733	103.467
12:21	MA52339-STD11	103.302	105.26	107.677	106.49	102.657	108.004	104.897	102.761
12:25	MA52339-STD12	104.038	107.971	109.498	107.218	104.015	110.169	104.55	102.536
12:40	MA52339-STD13	100	100	100	100	100	100	100	100
12:43	MA52339-STD14	100	100	100	100	100	100	100	100
12:46	ZZZZZZ	100.598	102.022	104.15	102.738	99.499	105.696	100.891	98.566
12:50	ZZZZZZ	101.804	101.054	103.435	102.205	100.375	104.28	102.832	101.283
12:57	MA52339-ICVA1	No results reported for the elements associated with this internal standard.							
13:10	MA52339-ICVA2	100.467	102.439	107.033	106.093	99.854	106.142	102.808	98.795
13:13	MA52339-ICV1	101.412	99.9	101.745	100.362	99.503	103.993	102.911	100.55
13:35	MA52339-ICB1	102.835	101.57	100.218	99.96	99.084	98.007	98.067	99.406
13:38	MA52339-CCVA1	99.678	100.584	104.438	102.918	98.142	104.591	100.942	96.871
13:41	MA52339-CCB1	97.121	98.149	102.705	99.772	96.995	104.038	101.596	96.955
13:44	MA52339-CRI1	101.457	100.768	103.917	101.738	100.599	104.824	103.461	101.954
13:51	MA52339-ICSA1	97.15	106.972	107.782	103.526	110.592	128.323	91.315	91.632
13:55	MA52339-ICSAB1	90.917	96.413	97.356	93.948	107.158	125.477	90.168	89.224
13:58	ZZZZZZ	83.722	90.335	92.415	97.467	91.437	95.717	98.737	92.242
14:02	ZZZZZZ	87.833	91.938	93.202	96.788	94.756	97.008	99.167	94.814
14:05	MA52339-CCVA2	90.265	94.417	98.507	101.308	96.877	103.34	102.72	96.099
14:08	MA52339-CCB2	91.014	93.59	96.974	99.391	95.814	100.783	102.793	97.965
14:12	MA52339-CCVA3	91.463	95.778	100.977	102.868	97.576	105.742	104.3	96.635
14:15	MA52339-CCB3	93.069	96.033	97.902	100.476	96.891	102.048	103.634	98.219
14:19	ZZZZZZ	90.258	94.328	94.979	100.258	95.74	98.582	103.093	96.712
14:24	ZZZZZZ	91.544	95.824	99.984	103.808	96.743	103.592	106.276	97.097

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
14:27	MP32610-S1	95.765	95.998	101.634	99.334	99.025	107.442	104.064	98.638
14:30	MP32610-S2	96.691	97.028	101.643	99.42	99.895	107.619	104.202	99.936
14:33	JD43962-1	96.899	97.408	101.513	98.355	99.348	107.348	103.781	99.103
14:36	MP32610-SD1	96.408	95.768	99.351	96.093	98.835	105.121	102.561	99.663
14:39	ZZZZZZ	96.058	95.702	99.704	98.042	97.176	103.798	101.927	98.301
14:43	MA52339-CCVA4	95.297	98.516	104.087	104.782	98.419	106.56	104.79	97.903
14:46	MA52339-CCB4	95.97	98.022	100.244	101.393	98.463	102.891	104.076	98.806
14:49	MP32612-MB1	96.16	97.651	99.72	99.101	98.35	103.612	103.055	98.845
14:52	MP32612-B1	91.43	99.183	103.147	108.367	95.941	102.676	106.7	96.248
14:55	MP32612-S1	90.412	94.872	98.863	103.781	94.741	100.226	104.182	94.33
14:59	MP32612-S2	91.707	94.822	98.974	103.926	94.485	100.728	104.428	94.463
15:02	JD43851-12	90.688	94.787	98.49	104.334	94.228	100.354	105.866	94.768
15:05	MP32612-SD1	93.928	93.894	96.248	95.97	96.901	101.762	101.551	96.857
15:08	ZZZZZZ	93.36	94.145	97.077	95.406	95.433	101.117	99.077	95.983
15:11	ZZZZZZ	90.416	96.585	98.298	109.44	92.41	94.457	103.355	93.856
15:15	MA52339-CCVA5	94.718	95.575	99.357	96.778	96.699	104.528	100.79	96.171
15:18	MA52339-CCB5	95.292	95.76	99.406	97.52	95.909	101.144	100.434	96.15
15:28	ZZZZZZ	93.833	96.299	100.343	101.983	97.556	104.708	101.822	95.229
15:31	ZZZZZZ	94.492	97.143	100.48	100.503	98.43	105.562	103.397	97.077
15:34	ZZZZZZ	94.371	95.503	98.96	95.378	95.578	103.928	99.866	96.997
15:37	ZZZZZZ	95.377	93.85	98.737	94.225	96.935	103.983	100.373	95.886
15:41	ZZZZZZ	94.308	97.41	100.933	100.925	96.153	101.717	101.338	96.99
15:44	ZZZZZZ	96.109	98.328	104.523	102.616	97.278	107.702	104.54	97.664
15:47	ZZZZZZ	95.414	96.287	102.583	100.901	97.259	108.161	102.967	97.166
15:50	ZZZZZZ	97.844	95.716	100.859	98.14	97.702	105.41	103.298	97.106
15:53	MA52339-CCVA6	96.767	99.889	105.784	103.481	98.719	108.33	104.428	96.633
15:56	MA52339-CCB6	97.81	96.793	100.561	97.068	98.032	104.338	100.985	98.281
16:02	MP32378-MB1	93.701	98.148	99.9	105.257	96.612	97.292	102.87	97.12
16:05	MP32378-B1	95.075	97.789	102.502	104.947	97.689	104.721	105.79	97.042
16:09	ZZZZZZ	90.541	95.364	95.678	98.336	91.82	93.212	96.911	92.442
16:13	ZZZZZZ	92.858	93.783	95.379	94.074	95.826	99.644	98.257	95.607
16:16	ZZZZZZ	93.571	92.812	95.41	92.576	96.293	99.173	96.714	95.277
16:19	MA52339-CCVA7	92.845	97.429	104.039	102.478	96.391	105.998	101.648	94.887

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
16:22	MA52339-CCB7	94.968	95.348	98.773	94.971	95.975	102.826	99.67	97.055
16:25	MP32620-MB1	95.136	95.317	99.105	95.615	97.055	101.696	99.357	96.777
16:29	MP32620-B1	93.549	98.465	104.864	107.474	96.215	104.618	105.652	96.736
16:32	MP32620-S1	92.287	98.683	105.962	106.211	98.125	112.325	103.418	93.62
16:35	MP32620-S2	92.189	97.921	103.903	103.976	98.487	111.248	102.542	93.944
16:38	JD43905-1F	92.484	97.359	100.436	101.997	97.575	108.731	101.608	93.628
16:41	MP32620-SD1	93.881	93.884	98.663	93.156	96.088	105.773	98.993	96.195
16:44	ZZZZZZ	92.534	95.435	99.116	100.739	94.507	100.51	103.017	94.832
16:48	ZZZZZZ	90.982	94.395	96.98	99.011	91.869	97.167	99.718	92.655
16:51	MA52339-CCVA8	93.398	95.308	101.023	98.463	95.628	104.961	100.892	94.432
16:54	MA52339-CCB8	94.302	94.37	98.075	94.213	97.271	102.508	99.277	95.801
16:57	ZZZZZZ	92.588	96.288	99.027	102.82	95.007	99.386	103.112	95.257
17:00	ZZZZZZ	93.183	95.341	98.548	101.091	95.449	99.994	102.527	96.035
17:04	ZZZZZZ	90.893	97.821	102.052	103.29	96.895	104.703	100.836	93.79
17:13	ZZZZZZ	93.332	98.768	102.792	105.263	100.336	111.587	102.669	95.042
17:16	ZZZZZZ	95.411	100.729	101.785	104.058	102.034	111.492	103.735	97.884
17:19	ZZZZZZ	96.103	99.907	102.394	104.027	101.964	112.603	105.18	96.6
17:22	ZZZZZZ	94.45	98.781	100.569	100.29	97.808	104.696	100.727	95.631
17:25	ZZZZZZ	91.204	96.85	101.263	100.154	96.79	106.562	98.648	92.272
17:28	JD43215-2F	89.077	94.17	98.025	99.737	93.542	99.376	100.647	92.72
17:32	MA52339-CCVA9	93.219	94.896	101.674	97.607	96.763	106.336	100.806	95.385
17:35	MA52339-CCB9	94.936	92.948	97.487	92.13	95.307	101.88	96.922	95.182
17:38	MA52339-CCVA10	91.978	95.167	103.226	99.771	94.663	105.635	100.038	94.448
17:41	MA52339-CCB10	93.586	93.773	98.155	93.217	94.161	101.761	97.849	94.495
17:44	MP32583-PS1	92.942	101.11	108.791	105.026	102.432	123.6	99.912	92.782
17:47	MP32600-PS1	93.158	95.438	101.624	97.077	97.497	110.747	102.256	95.576
17:50	ZZZZZZ	90.88	93.452	98.7	97.407	93.577	100.901	99.343	94.645
17:54	MP32620-S1	90.802	93.171	99.498	95.029	94.534	103.783	98.118	93.864
17:57	MP32620-S2	91.52	93.924	99.518	95.95	95.57	104.668	99.696	93.095
18:00	JD43905-1F	91.578	94.464	99.343	95.561	95.095	104.509	99.092	94.217
18:03	MP32620-SD1	91.481	93.198	97.54	89.818	93.91	103.641	97.189	94.759
18:06	ZZZZZZ	90.302	93.549	97.87	96.298	93.6	100.967	99.997	93.668
18:10	ZZZZZZ	91.032	92.678	96.139	93.386	93.186	100.788	98.138	93.679

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
18:13	MA52339-CCVA11	90.946	96.432	102.196	100.211	94.647	105.114	100.687	94.531
18:16	MA52339-CCB11	91.842	93.122	97.948	93.884	95.078	102.332	98.621	95.604
18:19	MA52339-CRI2	92.953	94.922	99.075	97.612	95.435	100.447	99.87	95.463
18:22	MA52339-CRI3	92.924	94.634	98.321	96.843	96.357	100.12	99.802	96.139
18:25	ZZZZZZ	92.128	104.141	105.016	99.903	107.133	128.388 !	90.837	89.985
18:28	MA52339-ICSAB2	85.31	93.58	95.778	92.102	103.449	125.068	89.638	86.934
18:32	MA52339-ICSA3	81.27	91.315	91.674	90.693	102.079	121.427	88.995	85.943
18:36	ZZZZZZ	76.438	84.821	87.83	93.892	87.615	91.125	95.83	88.578
18:39	ZZZZZZ	79.411	86.924	88.774	94.125	90.072	94.189	97.759	90.888
18:42	MA52339-CCVA12	80.499	90.187	93.45	98.03	92.124	99.314	100.203	92.689
18:45	MA52339-CCB12	83.131	89.287	91.375	94.712	93.326	97.744	99.834	94.152
18:48	MA52339-CCVA13	82.781	91.443	97.269	101.331	93.428	102.22	103.099	93.129
18:51	MA52339-CCB13	84.97	91.558	92.646	95.938	95.952	99.698	101.008	95.371
19:00	ZZZZZZ	83.896	90.891	89.677	94.857	92.164	92.84	96.738	93.167
19:04	ZZZZZZ	83.561	90.713	91.196	95.64	92.758	93.518	97.754	93.283
19:07	ZZZZZZ	83.95	90.761	91.226	95.995	92.266	94.037	97.795	92.731
19:10	MA52339-CCVA14	86.534	92.476	96.676	98.879	93.578	99.412	98.567	92.874
19:13	MA52339-CCB14	86.78	91.215	92.636	93.317	93.783	97.642	97.965	93.464
19:16	ZZZZZZ	81.774	88.711	91.254	97.037	89.163	92.276	96.406	89.251
19:19	ZZZZZZ	81.163	87.055	89.362	96.337	87.412	90.862	96.936	87.222
19:23	ZZZZZZ	80.511	88.704	89.707	95.354	86.76	89.011	94.569	86.783
19:26	ZZZZZZ	80.617	87.491	88.826	94.698	86.186	88.47	94.033	86.46
19:29	ZZZZZZ	80.824	85.453	88.093	94.459	86.686	89.799	95.455	87.207
19:32	ZZZZZZ	80.956	85.615	88.12	94.294	86.94	89.84	95.369	86.027
19:35	ZZZZZZ	80.133	85.935	87.956	92.174	85.732	87.5	92.138	86.024
19:39	ZZZZZZ	80.724	86.971	88.48	92.991	84.8	86.861	91.196	84.663
19:42	MA52339-CCVA15	84.293	87.615	92.396	91.764	89.026	95.93	93.115	88.857
19:45	MA52339-CCB15	83.822	86.89	89.547	90.964	90.051	92.368	92.735	89.508
20:17	ZZZZZZ	84.105	87.287	84.793	87.369	88.916	86.659	89.066	88.657
20:20	ZZZZZZ	82.385	85.723	86.74	88.967	89.08	89.274	90.882	88.913
20:24	ZZZZZZ	82.019	87.108	88.371	89.317	87.259	89.572	90.256	88.088
20:27	ZZZZZZ	82.256	87.411	88.396	88.692	86.95	89.847	90.728	87.97
20:30	ZZZZZZ	82.327	87.159	88.109	88.899	88.194	90.628	91.568	88.922

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
20:33	ZZZZZZ	82.361	86.981	88.872	89.321	88.688	91.45	91.867	88.174
20:36	ZZZZZZ	83.342	87.763	89.85	89.671	88.803	91.038	91.821	88.684
20:40	ZZZZZZ	82.294	87.852	90.289	90.919	87.417	90.677	91.94	88.066
20:43	MA52339-CCVA16	84.254	89.464	94.544	93.387	90.831	96.996	93.328	90.255
20:46	MA52339-CCB16	85.692	89.726	92.513	92.408	90.296	94.973	95.186	90.61
20:50	ZZZZZZ	87.572	89.952	92.784	92.983	91.657	94.967	94.801	92.48
20:53	ZZZZZZ	87.483	91.397	97.648	96.356	91.533	100.112	98.182	92.318
20:56	ZZZZZZ	86.671	93.027	97.489	93.057	91.648	97.929	94.921	90.863
21:00	MP32564-S1	82.815	88.643	91.914	90.753	91.353	96.347	95.201	90.178
21:03	MP32564-S2	81.266	86.665	90.807	90.085	89.105	94.993	93.932	89.992
21:06	DA43510-1	79.961	86.357	87.295	85.872	86.061	88.875	87.404	86.631
21:09	ZZZZZZ	73.742	84.302	84.273	83.683	81.309	82.688	81.499	81.057
21:12	ZZZZZZ	74.938	83.27	86.924	84.582	79.521	83.347	83.044	79.863
21:15	ZZZZZZ	76.277	84.044	86.837	85.215	83.204	86.826	86.171	83.366
21:18	ZZZZZZ	85.958	96.809	100.634	92.669	83.013	86.918	83.003	81.947
21:21	MA52339-CCVA17	88.576	95.931	96.331	95.124	96.441	99.824	95.414	95.321
21:25	MA52339-CCB17	73.6	80.175	79.186	82.387	83.094	84.917	85.683	83.743
21:39	MP32636-MB1	66.773	72.578	72.076	76.851	76.466	76.449	78.955	77.326
21:42	MP32636-B1	67.391	73.894	77.179	81.388	77.418	81.956	83.748	77.828
21:45	MP32636-S1	64.818	72.949	76.815	79.957	74.346	80.317	81.143	75.384
21:48	MP32636-S2	65.005	74.199	77.186	80.85	75.79	81.61	83.172	76.338
21:51	JD43966-1	65.109	72.487	75.043	78.109	74.312	79.076	81.531	75.563
21:55	ZZZZZZ	65.221	72.931	74.801	79.074	74.652	79.319	81.09	75.449
21:58	ZZZZZZ	66.083	73.244	75.401	78.234	75.808	79.391	80.622	76.9
22:01	ZZZZZZ	65.935	73.709	74.658	78.486	75.699	78.466	80.782	76.221
22:04	MA52339-CCVA18	67.833	74.695	80.233	84.714	78.194	85.411	85.825	78.121
22:07	MA52339-CCB18	69.081	75.084	77.271	82.403	79.404	82.667	85.65	79.406
22:10	ZZZZZZ	66.586	74.804	75.731	79.78	76.88	80.51	83.277	77.09
22:16	ZZZZZZ	66.909	73.935	75.283	79.234	76.283	79.364	81.39	77.198
22:19	ZZZZZZ	67.271	74.757	77.585	80.418	77.751	81.421	83.344	78.781
22:22	ZZZZZZ	68.563	77.401	79.843	82.138	77.879	81.944	83.518	78.081
22:26	MA52339-CCVA19	68.275	76.661	80.765	85.583	78.568	85.534	86.234	79.128
22:29	MA52339-CCB19	69.354	75.991	78.221	82.552	80.177	83.166	85.944	81.147

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
22:32	ZZZZZZ	67.704	74.246	77.246	82.526	77.078	81.615	85.61	78.62
22:36	ZZZZZZ	67.835	74.007	76.728	80.1	77.827	81.748	84.705	78.134
22:39	ZZZZZZ	68.834	75.316	78.479	82.608	78.565	83.099	85.367	79.176
22:42	ZZZZZZ	68.757	75.481	77.803	82.499	78.46	82.871	85.157	78.667
22:46	ZZZZZZ	68.639	75.249	77.831	82.643	77.602	81.868	84.99	78.157
22:49	ZZZZZZ	69.079	77.53	79.165	79.152	77.862	80.63	80.016	78.136
22:52	ZZZZZZ	67.341	74.676	75.784	80.404	77.883	80.724	83.197	79.371
22:55	ZZZZZZ	68.35	74.431	80.518	84.594	77.92	85.462	86.077	78.614
22:58	MA52339-CCVA20	68.593	76.581	81.926	86.464	79.4	87.588	87.425	79.251
23:01	MA52339-CCB20	71.592	77.923	81.034	84.304	81.273	85.893	87.619	81.985
23:06	ZZZZZZ	0.201 !	0.335 !	0.317 !	0.277 !	0.092 !	0.061 !	0.043 !	0.061 !
23:09	ZZZZZZ	0.189 !	0.222 !	0.211 !	0.198 !	0.09 !	0.059 !	0.036 !	0.056 !
23:13	ZZZZZZ	72.287	79.773	79.807	84.234	81.735	81.583	84.181	82.557
23:16	ZZZZZZ	72.818	80.089	84.056	87.398	83.646	87.76	88.733	81.919
23:19	ZZZZZZ	0.214 !	0.579 !	0.442 !	0.352 !	0.106 !	0.062 !	0.045 !	0.07 !
23:22	ZZZZZZ	0.182 !	0.246 !	0.238 !	0.214 !	0.098 !	0.063 !	0.038 !	0.062 !
23:26	ZZZZZZ	74.055	79.482	80.169	82.722	82.809	83.454	84.838	83.575
23:30	ZZZZZZ	0.189 !	0.591 !	0.444 !	0.358 !	0.096 !	0.057 !	0.039 !	0.064 !
23:33	MA52339-CCVA21	74.385	81.169	85.44	90.223	82.243	88.077	88.59	81.787
23:36	MA52339-CCB21	76.736	80.803	82.57	86.342	83.881	86.809	88.834	84.134
23:39	MP32578-MB1	75.09	81.36	82.293	85.597	83.932	86.287	88.122	85.078
23:42	MP32578-B1	75.539	81.325	85.107	88.034	83.568	89.676	90.445	83.476
23:45	MP32578-S1	74.049	81.728	85.166	83.991	80.194	86.516	84.416	80.29
23:48	MP32578-S2	71.79	79.583	85.145	82.934	78.276	86.231	83.804	78.94
23:52	JD43737-4	70.427	78.794	82.835	81.015	78.36	84.009	82.157	78.99
23:55	ZZZZZZ	69.682	78.131	82.434	81.326	78.141	84.428	83.241	78.067
23:58	ZZZZZZ	70.933	77.725	81.531	79.835	77.307	82.115	80.68	77.711
00:01	ZZZZZZ	68.604	75.263	78.273	81.002	78.656	82.129	83.344	78.996
00:04	MA52339-CCVA22	70.096	77.454	84.29	86.046	79.88	88.047	86.269	79.352
00:07	MA52339-CCB22	73.435	77.881	81.319	84.069	81.791	85.487	87.025	82.172
00:10	ZZZZZZ	73.822	78.287	80.42	82.357	81.413	84.74	85.213	81.589
00:13	ZZZZZZ	75.359	81.588	82.947	79.075	78.356	80.917	78.43	78.689
00:16	ZZZZZZ	69.322	76.208	79.154	79.558	77.38	82.09	81.275	77.76

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
00:19	ZZZZZZ	69.359	76.996	81.201	81.956	77.666	83.537	82.525	77.237
00:23	ZZZZZZ	70.02	76.61	79.997	79.903	76.874	82.368	81.575	77.896
00:26	ZZZZZZ	69.722	78.446	81.287	77.93	75.098	78.902	76.66	75.264
00:29	ZZZZZZ	71.728	80.863	85.852	82.787	76.365	83.017	80.717	76.29
00:33	ZZZZZZ	68.346	72.716	74.956	74.874	78.518	82.477	81.315	79.075
00:36	ZZZZZZ	67.227	71.749	74.07	74.633	76.341	80.569	80.02	76.789
00:39	MA52339-CCVA23	66.053	74.102	80.569	83.617	75.245	82.91	82.516	74.784
00:42	MA52339-CCB23	68.552	73.408	76.914	79.902	77.548	81.401	82.608	77.517
00:46	MP32578-S1	70.545	74.273	78.644	78.069	78.833	84.577	83.462	78.831
00:49	MP32578-S2	69.762	75.749	78.98	78.233	79.13	84.242	82.603	78.594
00:52	JD43737-4	69.235	74.036	76.769	76.351	77.391	81.716	80.605	78.273
00:55	ZZZZZZ	68.555	74.839	78.748	78.116	76.22	82.483	80.577	77.214
00:58	ZZZZZZ	69.524	74.608	78.389	77.375	76.491	81.457	80.298	77.118
01:02	ZZZZZZ	70.345	74.21	78.912	81.228	78.576	84.374	85.804	78.967
01:05	ZZZZZZ	70.445	74.468	77.865	78.171	78.749	84.058	82.249	79.968
01:08	ZZZZZZ	67.86	74.916	77.438	78.072	76.25	80.78	80.701	76.759
01:11	MA52339-CCVA24	69.849	78.488	84.632	85.469	79.07	86.865	85.343	78.911
01:14	MA52339-CCB24	71.589	76.984	80.195	82.184	80.152	84.938	85.201	80.812
01:17	ZZZZZZ	72.004	77.479	79.494	82.164	80.092	83.062	84.364	80.947
01:21	ZZZZZZ	73.396	78.997	81.175	83.38	81.595	84.666	85.526	82.982
01:24	ZZZZZZ	72.679	78.115	80.65	82.866	80.376	83.666	84.616	81.13

! = Outside limits.

LEGEND:			CCV/CCB
Istd#	Parameter	Limits	Limits
Istd#1	Lithium	60-125 %	60-125 %
Istd#2	Scandium (45-1)	60-125 %	60-125 %
Istd#3	Scandium (45-2)	60-125 %	60-125 %
Istd#4	Scandium (45-3)	60-125 %	60-125 %
Istd#5	Germanium (72-1)	60-125 %	60-125 %
Istd#6	Germanium (72-2)	60-125 %	60-125 %
Istd#7	Germanium (72-3)	60-125 %	60-125 %
Istd#8	Germanium (74-1)	60-125 %	60-125 %

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
11:43	MA52339-STD1	100	100	100	100	100	100	100	100
11:47	MA52339-STD2	100	100	100	100	100	100	100	100
11:51	MA52339-STD3	100	100	100	100	100	100	100	100
11:54	MA52339-STD4	99.004	99.799	102.053	99.023	101.287	100.849	98.984	100.653
12:01	MA52339-STD5	102.755	98.562	101.97	101.481	100.733	100.745	104.52	100.07
12:05	MA52339-STD6	103.272	99.849	102.145	99.949	98.664	100.111	102.072	99.578
12:08	MA52339-STD7	104.336	101.393	100.943	100.329	99.882	100.025	101.602	99.956
12:11	MA52339-STD8	104.067	103.375	101.774	100.048	100.77	100.609	100.423	100.61
12:15	MA52339-STD9	105.448	104.14	102.573	102.823	102.054	101.337	103.891	102.482
12:18	MA52339-STD10	105.978	105.495	105.027	103.691	104.378	104.556	104.093	103.665
12:21	MA52339-STD11	105.189	104.851	103.359	101.425	102.657	103.639	103.521	105.745
12:25	MA52339-STD12	104.778	103.486	102.962	101.931	102.157	103.561	103.888	104.671
12:40	MA52339-STD13	100	100	100	100	100	100	100	100
12:43	MA52339-STD14	100	100	100	100	100	100	100	100
12:46	ZZZZZZ	100.685	99.829	95.157	97.258	96.022	96.894	96.346	99.089
12:50	ZZZZZZ	103.805	102.701	100.467	102.15	101.069	101.024	101.534	99.956
12:57	MA52339-ICVA1	No results reported for the elements associated with this internal standard.							
13:10	MA52339-ICVA2	103.488	102.449	96.063	97.832	96.602	97.677	97.68	98.675
13:13	MA52339-ICV1	103.621	101.883	99.37	100.744	99.343	99.134	100.248	99.737
13:35	MA52339-ICB1	97.775	97.556	99.278	100.476	99.256	99.357	100.228	98.481
13:38	MA52339-CCVA1	102.098	100.545	94.626	96.082	96.589	96.208	96.434	97.811
13:41	MA52339-CCB1	103.781	100.989	96.929	100.851	98.173	97.253	100.485	97.4
13:44	MA52339-CRI1	104.848	102.971	99.065	101.589	99.571	101.124	101.136	100.432
13:51	MA52339-ICSA1	90.563	88.265	86.863	85.299	84.747	91.412	88.91	98.459
13:55	MA52339-ICSAB1	90.046	87.546	85.171	83.885	83.2	89.535	87.163	96.066
13:58	ZZZZZZ	95.209	98.178	93.916	95.514	96.884	94.828	94.926	96.661
14:02	ZZZZZZ	96.648	99.09	97.603	97.624	98.296	98.153	96.447	98.612
14:05	MA52339-CCVA2	101.478	102.4	95.337	95.751	96.982	98.032	95.374	100.174
14:08	MA52339-CCB2	100.762	102.03	98.097	99.816	99.165	100.059	98.628	100.848
14:12	MA52339-CCVA3	102.663	104.081	96.103	97.38	96.014	98.558	96.867	100.159
14:15	MA52339-CCB3	101.869	103.005	99.281	100.349	100.329	100.394	99.126	101.28
14:19	ZZZZZZ	98.028	102.433	97.807	97.671	99.728	98.278	97.309	99.504
14:24	ZZZZZZ	103.043	105.309	97.711	97.943	98.74	99.315	97.202	101.551

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
14:27	MP32610-S1	106.005	103.066	96.632	98.727	97.702	98.696	99.484	98.784
14:30	MP32610-S2	106.299	103.268	96.742	99.243	97.631	97.324	99.259	97.217
14:33	JD43962-1	105.635	103.057	97.043	99.571	97.12	97.574	100.139	97.507
14:36	MP32610-SD1	104.781	101.608	97.785	98.89	97.201	97.451	100.057	97.652
14:39	ZZZZZZ	103.099	101.45	97.625	100.111	98.446	97.682	98.663	97.31
14:43	MA52339-CCVA4	104.688	104.68	96.834	98.02	97.299	98.341	97.541	100.894
14:46	MA52339-CCB4	102.819	103.058	99.46	101.325	100.141	99.731	98.434	100.124
14:49	MP32612-MB1	103.301	102.031	98.402	101.636	98.826	98.939	100.333	98.63
14:52	MP32612-B1	101.904	105.497	99.346	97.99	99.995	99.399	96.466	105.342
14:55	MP32612-S1	99.578	104.011	94.795	93.748	96.662	97.497	93.226	101.941
14:59	MP32612-S2	100.383	104.148	94.638	93.652	96.234	97.663	93.381	101.907
15:02	JD43851-12	100.396	104.735	95.146	94.605	97.908	98.619	94.178	100.993
15:05	MP32612-SD1	101.612	100.998	94.507	95.485	95.229	96.868	96.251	96.815
15:08	ZZZZZZ	100.776	98.781	94.781	96.177	95.741	96.121	96.877	95.348
15:11	ZZZZZZ	94.48	102.992	97.304	96.289	101.472	98.907	93.077	103.342
15:15	MA52339-CCVA5	102.548	100.297	94.076	95.262	93.873	96.76	95.317	97.973
15:18	MA52339-CCB5	101.168	99.768	95.979	97.458	97.302	96.104	97.886	96.907
15:28	ZZZZZZ	98.933	100.277	93.735	97.059	97.618	94.756	96.191	95.987
15:31	ZZZZZZ	103.101	103.116	96.108	98.224	98.372	97.994	97.249	98.062
15:34	ZZZZZZ	103.083	99.665	93.613	94.782	93.412	95.634	97.688	95.488
15:37	ZZZZZZ	103.25	99.612	93.603	95.46	94.9	93.986	97.625	94.415
15:41	ZZZZZZ	102.192	100.504	97.046	98.882	98.316	97.312	98.049	98.77
15:44	ZZZZZZ	106.1	103.614	96.739	97.702	96.52	98.283	96.724	98.611
15:47	ZZZZZZ	104.509	102.47	95.145	98.174	96.985	95.331	98.904	96.181
15:50	ZZZZZZ	104.539	102.469	96.044	99.362	97.212	96.789	98.011	96.46
15:53	MA52339-CCVA6	106.002	103.941	95.597	97.467	96.793	97.154	97.766	99.418
15:56	MA52339-CCB6	104.1	100.564	96.841	98.875	96.926	96.871	99.234	96.382
16:02	MP32378-MB1	97.432	102.032	100.318	99.067	102.124	100.328	97.711	103.799
16:05	MP32378-B1	103.744	104.821	97.804	98.624	99.035	99.218	98.129	101.297
16:09	ZZZZZZ	93.252	95.992	90.373	88.917	90.889	94.869	90.97	98.437
16:13	ZZZZZZ	99.187	97.968	96.29	97.72	96.921	97.395	97.077	96.395
16:16	ZZZZZZ	99.297	96.329	92.889	95.711	93.914	94.67	95.965	94.194
16:19	MA52339-CCVA7	102.802	100.638	92.953	95.691	94.384	94.853	96.162	96.581

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
16:22	MA52339-CCB7	102.571	98.903	95.298	98.221	97.205	96.067	99.393	95.186
16:25	MP32620-MB1	102.189	98.423	95.217	98.258	96.413	95.728	98.428	95.114
16:29	MP32620-B1	103.059	105.393	97.327	97.62	100.91	98.122	96.715	100.447
16:32	MP32620-S1	101.919	101.859	90.577	91.912	93.088	93.797	93.347	98.626
16:35	MP32620-S2	101.206	101.762	91.579	92.428	92.122	95.15	92.881	98.704
16:38	JD43905-1F	98.619	99.658	89.875	91.947	92.128	93.42	91.863	98.381
16:41	MP32620-SD1	103.234	98.398	91.618	93.63	91.583	93.615	96.047	93.87
16:44	ZZZZZZ	100.542	102.527	94.454	95.513	97.027	96.35	94.644	98.595
16:48	ZZZZZZ	96.649	99.464	91.951	92.49	95.011	95.232	92.073	98.281
16:51	MA52339-CCVA8	103.408	100.363	91.932	95.052	93.203	93.7	94.64	95.363
16:54	MA52339-CCB8	101.992	98.478	94.88	96.587	95.908	94.078	96.934	93.034
16:57	ZZZZZZ	99.211	102.481	95.557	94.967	97.608	97.05	94.576	98.326
17:00	ZZZZZZ	99.131	101.734	96.002	97.705	99.542	98.041	97.617	98.592
17:04	ZZZZZZ	98.01	99.781	90.869	93.206	93.744	94.339	93.555	97.41
17:13	ZZZZZZ	98.811	101.105	93.259	94.888	96.492	95.674	95.707	98.768
17:16	ZZZZZZ	101.064	102.522	95.86	96.228	96.29	98.758	94.754	102.062
17:19	ZZZZZZ	101.116	102.786	95.226	95.115	96.971	97.009	95.504	100.491
17:22	ZZZZZZ	99.14	99.462	92.087	92.205	91.836	95.524	92.713	99.168
17:25	ZZZZZZ	97.223	97.267	88.467	89.089	88.949	92.979	90.419	95.5
17:28	JD43215-2F	97.312	100.036	92.241	92.358	93.431	96.166	91.783	97.54
17:32	MA52339-CCVA9	103.783	100.275	93.14	95.338	94.277	94.702	95.599	94.873
17:35	MA52339-CCB9	101.146	96.341	94.651	96.673	93.322	93.635	96.831	91.755
17:38	MA52339-CCVA10	102.775	99.257	91.556	94.634	93.435	92.909	95.386	93.587
17:41	MA52339-CCB10	101.648	97.46	93.345	95.899	94.761	93.238	96.796	92.733
17:44	MP32583-PS1	101.27	97.41	89.417	92.041	90.311	91.687	92.697	95.022
17:47	MP32600-PS1	105.49	101.525	93.248	95.743	93.724	93.909	95.618	94.507
17:50	ZZZZZZ	100.644	98.939	93.715	96.648	95.657	93.955	96.703	93.385
17:54	MP32620-S1	101.843	97.794	90.187	93.311	91.451	91.576	95.245	91.697
17:57	MP32620-S2	102.897	98.764	91.211	94.099	92.441	92.602	96.301	92.388
18:00	JD43905-1F	102.958	98.721	91.186	93.856	93.501	92.378	95.614	92.167
18:03	MP32620-SD1	103.729	96.487	92.428	95.652	91.51	91.55	96.554	91.204
18:06	ZZZZZZ	100.79	99.306	93.002	94.549	94.167	93.544	95.152	93.593
18:10	ZZZZZZ	101.095	97.434	92.627	95.116	93.141	93.543	95.855	93.269

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
18:13	MA52339-CCVA11	102.786	100.04	92.085	94.412	93.112	93.922	94.853	94.912
18:16	MA52339-CCB11	102.228	97.833	94.295	96.879	94.822	95.448	98.254	94.577
18:19	MA52339-CRI2	100.82	99.442	94.275	96.296	95.408	95.906	96.99	95.957
18:22	MA52339-CRI3	100.382	99.234	96.08	97.955	96.078	95.63	96.565	95.936
18:25	ZZZZZZ	91.884	87.842	85.589	84.633	82.171	89.407	87.729	96.203
18:28	MA52339-ICSAB2	89.637	86.563	83.444	82.98	81.358	88.202	86.22	93.55
18:32	MA52339-ICSA3	87.559	85.462	83.526	81.105	80.534	87.419	84.535	93.784
18:36	ZZZZZZ	91.52	94.849	91.632	92.788	93.9	93.295	92.092	93.768
18:39	ZZZZZZ	93.654	96.876	94.343	94.232	95.851	96.531	94.043	95.534
18:42	MA52339-CCVA12	98.063	99.888	92.648	92.958	93.73	94.79	92.583	97.363
18:45	MA52339-CCB12	97.937	99.209	95.149	96.254	97.063	97.853	94.318	97.814
18:48	MA52339-CCVA13	99.997	102.148	93.322	95.26	96.031	96.685	95.084	98.205
18:51	MA52339-CCB13	99.451	100.305	97.241	97.039	96.778	98.3	96.949	98.251
19:00	ZZZZZZ	92.204	95.497	93.72	93.749	94.916	94.795	91.989	96.024
19:04	ZZZZZZ	93.566	96.717	93.084	94.783	95.028	93.958	92.347	95.782
19:07	ZZZZZZ	93.765	96.872	94.052	94.002	95.348	94.055	91.508	96.106
19:10	MA52339-CCVA14	97.069	98.446	91.593	90.697	91.703	92.649	90.217	96.251
19:13	MA52339-CCB14	97.609	97.254	93.937	94.586	93.379	94.202	91.606	94.962
19:16	ZZZZZZ	91.347	96.221	88.003	88.633	89.24	90.444	85.749	94.985
19:19	ZZZZZZ	91.026	96.15	86.884	86.511	90.097	89.194	85.26	94.331
19:23	ZZZZZZ	88.663	93.505	85.173	84.303	86.594	88.633	83.056	94.718
19:26	ZZZZZZ	88.238	93.824	84.26	82.71	86.243	87.345	81.983	93.236
19:29	ZZZZZZ	89.781	94.907	86.27	85.826	88.547	89.091	84.783	92.845
19:32	ZZZZZZ	89.479	94.543	85.515	85.566	88.693	88.913	84.355	92.44
19:35	ZZZZZZ	87.218	91.519	82.981	82.32	83.974	87.275	82.455	91.18
19:39	ZZZZZZ	86.878	90.802	83.192	82.475	83.96	86.793	81.773	91.82
19:42	MA52339-CCVA15	94.637	92.936	85.967	87.405	86.489	87.433	86.868	89.38
19:45	MA52339-CCB15	92.301	92.441	88.478	89.632	90.484	89.015	88.928	89.718
20:17	ZZZZZZ	86.705	88.798	86.384	88.436	88.755	87.816	87.6	90.126
20:20	ZZZZZZ	88.7	90.248	86.17	87.998	89.045	88.65	87.538	90.987
20:24	ZZZZZZ	88.994	90.127	85.029	85.843	86.424	87.088	86.957	91.259
20:27	ZZZZZZ	89.221	89.517	84.547	85.448	85.89	86.705	86.107	89.815
20:30	ZZZZZZ	90.552	90.986	85.752	86.476	87.809	87.295	86.978	89.396

INTERNAL STANDARD SUMMARY

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Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
20:33	ZZZZZZ	91.517	91.75	86.449	87.799	87.719	88.023	88.447	90.648
20:36	ZZZZZZ	91.014	90.764	84.885	86.322	86.345	87.539	86.99	89.72
20:40	ZZZZZZ	90.543	91.174	85.319	85.282	87.238	87.507	86.144	91.175
20:43	MA52339-CCVA16	95.01	93.179	87.16	88.479	87.669	88.423	88.262	91.277
20:46	MA52339-CCB16	94.941	94.154	91.599	92.651	91.865	90.701	91.007	92.618
20:50	ZZZZZZ	94.622	94.34	90.746	93.813	92.726	92.489	93.001	93.345
20:53	ZZZZZZ	99.454	97.235	89.953	92.382	91.114	91.66	91.502	92.137
20:56	ZZZZZZ	97.439	94.34	86.453	87.656	86.314	89.903	89.406	94.049
21:00	MP32564-S1	96.435	94.179	87.03	87.238	86.852	90.157	89.798	92.537
21:03	MP32564-S2	94.856	93.558	85.577	86.355	85.838	89.069	87.757	91.87
21:06	DA43510-1	88.763	87.236	83.093	82.861	81.933	87.408	84.933	91.635
21:09	ZZZZZZ	82.46	80.906	78.727	77.766	77.25	83.869	80.697	90.834
21:12	ZZZZZZ	83.195	82.193	75.769	76.008	76.293	80.829	79.519	85.678
21:15	ZZZZZZ	86.726	85.706	78.884	79.259	78.778	84.017	82.363	87.786
21:18	ZZZZZZ	86.752	82.205	76.347	75.988	75.412	82.05	81.923	87.516
21:21	MA52339-CCVA17	97.834	94.946	94.006	91.535	88.861	97.043	92.509	96.997
21:25	MA52339-CCB17	84.489	84.952	85.869	84.476	84.28	88.021	84.963	89.122
21:39	MP32636-MB1	76.314	78.88	80.095	80.655	81.399	82.204	81.717	83.855
21:42	MP32636-B1	81.491	83.42	79.358	80.169	80.857	81.716	81.46	85.254
21:45	MP32636-S1	80.015	81.53	74.239	75.565	75.573	78.665	77.766	83.044
21:48	MP32636-S2	81.785	82.707	75.072	76.268	76.397	79.875	78.706	83.96
21:51	JD43966-1	79.291	81.038	75.128	75.932	76.802	80.033	79.095	83.86
21:55	ZZZZZZ	78.74	80.792	74.594	75.588	76.574	79.982	79.042	83.899
21:58	ZZZZZZ	79.386	80.579	76.488	77.431	77.406	80.271	79.548	84.092
22:01	ZZZZZZ	78.549	80.643	75.72	76.272	76.647	80.767	78.543	84.049
22:04	MA52339-CCVA18	83.428	85.457	79.745	80.997	81.497	82.698	81.281	85.578
22:07	MA52339-CCB18	82.675	85.148	83.441	83.809	83.726	85.159	83.819	87.149
22:10	ZZZZZZ	80.024	82.427	77.234	78.307	78.827	82.392	80.278	84.81
22:16	ZZZZZZ	78.807	81.157	76.744	78.214	77.92	81.865	79.718	85.257
22:19	ZZZZZZ	81.417	83.119	78.207	79.51	79.523	82.457	82.248	85.925
22:22	ZZZZZZ	82.022	82.821	77.855	78.25	78.904	82.632	80.914	86.876
22:26	MA52339-CCVA19	83.859	86.132	80.519	81.23	82.032	84.519	82.183	87.202
22:29	MA52339-CCB19	83.09	85.446	83.466	83.945	85.427	86.956	85.003	87.936

INTERNAL STANDARD SUMMARY

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Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

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Analyst: NV Run ID: MA52339
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Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
22:32	ZZZZZZ	81.681	84.765	81.345	81.695	82.658	84.848	82.367	86.612
22:36	ZZZZZZ	81.993	84.284	78.463	78.67	79.755	83.444	81.951	86.872
22:39	ZZZZZZ	82.757	84.871	80.57	80.28	81.097	84.3	81.987	87.584
22:42	ZZZZZZ	82.669	84.849	79.795	79.587	80.101	84.075	82.476	86.927
22:46	ZZZZZZ	81.923	84.822	79.734	81.29	82.32	84.237	82.329	86.107
22:49	ZZZZZZ	80.56	79.528	76.203	76.377	75.078	81.653	79.005	86.081
22:52	ZZZZZZ	80.703	82.967	80.991	81.552	82.869	83.318	82.356	84.234
22:55	ZZZZZZ	84.652	86.124	79.597	81.742	81.971	82.781	82.63	84.686
22:58	MA52339-CCVA20	85.264	86.89	80.339	81.265	82.872	83.401	82.139	86.666
23:01	MA52339-CCB20	86.076	86.921	84.347	85.945	86.897	87.024	85.705	87.853
23:06	ZZZZZZ	0.062 !	0.034 !	0.121 !	0.105 !	0.089 !	0.02 !	0.02 !	0.211 !
23:09	ZZZZZZ	0.052 !	0.033 !	0.082 !	0.076 !	0.066 !	0.018 !	0.016 !	0.156 !
23:13	ZZZZZZ	81.706	84.121	84.686	85.533	85.376	87.227	84.981	87.847
23:16	ZZZZZZ	87.604	88.505	83.052	84.381	84.535	85.554	85.381	87.994
23:19	ZZZZZZ	0.06 !	0.038 !	0.16 !	0.133 !	0.109 !	0.051 !	0.029 !	0.275 !
23:22	ZZZZZZ	0.055 !	0.037 !	0.089 !	0.082 !	0.069 !	0.02 !	0.016 !	0.167 !
23:26	ZZZZZZ	83.744	84.192	84.537	86.158	85.108	86.454	85.664	87.548
23:30	ZZZZZZ	0.05 !	0.039 !	0.167 !	0.131 !	0.112 !	0.078 !	0.042 !	0.256 !
23:33	MA52339-CCVA21	85.96	88.398	81.978	83.429	84.986	84.824	84.007	87.949
23:36	MA52339-CCB21	86.796	88.213	86.696	87.153	87.632	88.17	86.579	89.611
23:39	MP32578-MB1	86.097	87.52	85.999	86.161	86.751	88.356	86.999	89.652
23:42	MP32578-B1	88.774	90.55	83.673	84.604	85.821	87.174	84.176	89.29
23:45	MP32578-S1	85.854	84.44	76.678	77.237	76.392	81.311	79.826	85.855
23:48	MP32578-S2	85.859	83.33	75.94	77.012	75.67	80.245	79.422	84.551
23:52	JD43737-4	84.274	81.755	75.976	77.113	75.951	80.784	79.994	83.853
23:55	ZZZZZZ	84.448	82.491	76.714	77.501	76.768	79.774	80.466	83.859
23:58	ZZZZZZ	82.208	80.088	74.774	76.498	74.348	79.698	79.278	82.653
00:01	ZZZZZZ	82.008	82.881	81.402	83.124	82.277	82.699	83.054	84.272
00:04	MA52339-CCVA22	86.151	86.182	79.563	81.862	81.952	81.802	83.086	85.038
00:07	MA52339-CCB22	85.99	86.811	83.619	85.306	84.776	86.114	85.456	87.772
00:10	ZZZZZZ	84.844	85.169	82.523	83.8	83.16	84.936	85.104	87.086
00:13	ZZZZZZ	80.734	77.533	74.4	73.959	72.427	78.48	77.201	83.126
00:16	ZZZZZZ	81.226	80.443	76.071	77.016	76.959	80.555	79.994	83.301

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
00:19	ZZZZZZ	82.755	82.227	75.955	77.417	76.676	80.116	80.077	83.339
00:23	ZZZZZZ	82.242	80.723	76.372	77.016	75.656	80.804	79.706	83.348
00:26	ZZZZZZ	78.878	76.348	71.278	72.112	70.585	76.993	75.011	81.814
00:29	ZZZZZZ	82.361	80.32	72.398	74.109	73.692	77.463	78.122	82.444
00:33	ZZZZZZ	82.907	80.456	78.526	80.791	77.842	81.438	82.494	80.831
00:36	ZZZZZZ	80.871	79.399	76.844	78.852	77.228	79.344	80.721	80.63
00:39	MA52339-CCVA23	81.484	81.913	76.299	78.742	78.202	79.003	79.435	82.375
00:42	MA52339-CCB23	81.713	82.518	79.59	82.202	81.129	82.437	81.926	83.019
00:46	MP32578-S1	83.903	82.998	77.549	79.207	77.693	80.278	81.251	82.232
00:49	MP32578-S2	84.314	82.323	77.32	78.51	77.508	79.834	81.255	81.9
00:52	JD43737-4	81.627	80.016	76.749	77.786	76.434	79.343	80.228	81.048
00:55	ZZZZZZ	81.885	80.11	75.21	77.292	75.836	78.733	79.069	81.585
00:58	ZZZZZZ	81.981	79.952	74.875	76.765	75.422	78.531	79.712	81.75
01:02	ZZZZZZ	84.933	85.172	77.89	81.76	81.22	81.04	84.265	81.957
01:05	ZZZZZZ	83.605	81.834	78.488	80.421	78.94	81.191	81.758	82.551
01:08	ZZZZZZ	80.963	80.578	75.073	76.801	75.816	78.861	79.439	82.06
01:11	MA52339-CCVA24	85.235	84.637	79.683	81.095	80.467	81.817	82.342	86.035
01:14	MA52339-CCB24	84.731	84.382	82.62	84.704	83.023	84.947	84.871	86.026
01:17	ZZZZZZ	83.437	83.543	82.946	83.644	83.834	84.184	84.2	86.157
01:21	ZZZZZZ	84.687	85.089	83.683	85.414	84.929	86.064	85.972	87.19
01:24	ZZZZZZ	84.066	84.392	82.974	85.414	84.302	85.07	85.307	86.565

! = Outside limits.

LEGEND: Istd#	Parameter	Limits	CCV/CCB Limits
Istd#9	Germanium (74-2)	60-125 %	60-125 %
Istd#10	Germanium (74-3)	60-125 %	60-125 %
Istd#11	Rhodium (103-1)	60-125 %	60-125 %
Istd#12	Rhodium (103-2)	60-125 %	60-125 %
Istd#13	Rhodium (103-3)	60-125 %	60-125 %
Istd#14	Indium (115-1)	60-125 %	60-125 %
Istd#15	Indium (115-2)	60-125 %	60-125 %
Istd#16	Terbium (159-1)	60-125 %	60-125 %

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
11:43	MA52339-STD1	100	100	100	100	100	100
11:47	MA52339-STD2	100	100	100	100	100	100
11:51	MA52339-STD3	100	100	100	100	100	100
11:54	MA52339-STD4	99.552	101.235	100.621	99.034	98.936	99.164
12:01	MA52339-STD5	101.493	100.07	99.175	100.845	98.793	102.102
12:05	MA52339-STD6	99.638	97.884	99.994	99.992	99.419	100.359
12:08	MA52339-STD7	99.744	98.765	100.694	98.699	98.857	99.857
12:11	MA52339-STD8	99.878	100.481	100.834	99.284	100.389	100.107
12:15	MA52339-STD9	102.293	101.793	102.075	102.442	99.328	101.393
12:18	MA52339-STD10	102.827	103.408	104.738	103.25	101.108	101.746
12:21	MA52339-STD11	104.21	103.322	104.743	102.956	98.701	99.708
12:25	MA52339-STD12	105.142	104.266	105.206	104.468	97.578	98.671
12:40	MA52339-STD13	100	100	100	100	100	100
12:43	MA52339-STD14	100	100	100	100	100	100
12:46	ZZZZZZ	99.535	100.886	99.14	99.53	95.041	94.535
12:50	ZZZZZZ	101.798	101.765	100.51	101.36	100.389	101.535
12:57	MA52339-ICVA1	No results reported for the elements associated with this internal standard.					
13:10	MA52339-ICVA2	100.25	101.348	97.74	99.369	96.078	96.2
13:13	MA52339-ICV1	99.989	99.799	99.098	99.375	99.814	100.003
13:35	MA52339-ICB1	100.507	100.501	97.821	99.729	98.496	99.851
13:38	MA52339-CCVA1	98.208	100.493	98.185	98.724	95.428	94.772
13:41	MA52339-CCB1	100.411	100.006	97.325	100.446	97.219	100.234
13:44	MA52339-CRI1	101.438	100.757	99.333	100.549	100.379	101.164
13:51	MA52339-ICSA1	96.404	96.979	98.242	96.791	85.2	83.264
13:55	MA52339-ICSAB1	94.633	95.515	97.376	93.996	84.799	81.364
13:58	ZZZZZZ	97.075	98.569	96.699	96.646	97.18	97.043
14:02	ZZZZZZ	98.788	99.345	99.334	97.967	99.038	99.07
14:05	MA52339-CCVA2	99.265	100.638	100.376	98.451	97.286	96.668
14:08	MA52339-CCB2	100.024	101.173	100.308	99.722	99.672	99.786
14:12	MA52339-CCVA3	99.98	101.695	99.462	98.903	97.66	96.982
14:15	MA52339-CCB3	100.3	101.041	100.862	99.337	100.667	99.722
14:19	ZZZZZZ	99.996	102.011	100.212	99.207	100.305	99.193
14:24	ZZZZZZ	99.852	101.614	100.88	98.753	98.76	97.719

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
14:27	MP32610-S1	100.008	98.996	98.81	100.272	98.83	99.886
14:30	MP32610-S2	99.669	99.836	97.189	99.048	98.043	99.623
14:33	JD43962-1	99.896	98.507	97.579	98.749	98.689	99.935
14:36	MP32610-SD1	98.764	98.84	96.723	98.009	97.047	99.362
14:39	ZZZZZZ	98.52	98.354	97.455	97.786	97.645	99.249
14:43	MA52339-CCVA4	100.403	101.66	100.604	99.637	97.964	96.8
14:46	MA52339-CCB4	100.518	100.686	100.201	99.478	101.417	99.879
14:49	MP32612-MB1	99.903	99.415	98.742	99.533	100.192	99.557
14:52	MP32612-B1	101.141	103.707	104.903	100.898	99.983	96.94
14:55	MP32612-S1	98.763	102.632	101.335	98.702	95.975	93.193
14:59	MP32612-S2	99.114	102.176	102.167	99.254	95.421	93.02
15:02	JD43851-12	98.083	102.821	102.005	98.055	97.016	94.652
15:05	MP32612-SD1	98.082	97.727	97.257	97.662	97.621	97.939
15:08	ZZZZZZ	97.548	97.672	95.258	96.919	96.296	97.03
15:11	ZZZZZZ	99.768	105.026	102.994	99.407	98.965	94.997
15:15	MA52339-CCVA5	97.915	98.558	97.422	96.848	95.329	94.621
15:18	MA52339-CCB5	98.134	98.367	96.137	98.296	97.923	98.486
15:28	ZZZZZZ	97.978	99.504	96.443	98.166	94.991	96.394
15:31	ZZZZZZ	99.665	100.898	98.668	99.574	97.937	98.689
15:34	ZZZZZZ	98.765	97.844	95.784	97.252	93.472	95.406
15:37	ZZZZZZ	96.8	96.507	93.94	96.566	93.617	95.696
15:41	ZZZZZZ	99.369	99.857	98.733	99.504	98.411	99.527
15:44	ZZZZZZ	99.6	99.225	98.634	99.072	97.052	97.495
15:47	ZZZZZZ	99.452	99.671	96.212	98.702	96.764	98.875
15:50	ZZZZZZ	98.821	98.864	96.724	98.474	97.072	98.49
15:53	MA52339-CCVA6	100.511	100.98	98.34	100.124	95.979	97.012
15:56	MA52339-CCB6	99.473	97.722	95.796	99.468	97.642	98.939
16:02	MP32378-MB1	101.615	104.418	102.994	101.317	100.157	98.235
16:05	MP32378-B1	100.237	103.356	101.33	99.973	97.637	97.386
16:09	ZZZZZZ	96.345	98.4	99.17	95.844	91.024	87.844
16:13	ZZZZZZ	97.824	98.047	96.868	98.444	97.884	97.618
16:16	ZZZZZZ	95.832	95.905	94.039	96.172	94.703	97.173
16:19	MA52339-CCVA7	99.344	99.121	96.594	98.527	93.763	96.19

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
16:22	MA52339-CCB7	98.842	97.554	95.169	98.277	96.165	98.328
16:25	MP32620-MB1	98.786	98.007	94.433	98.265	95.776	98.987
16:29	MP32620-B1	101.486	103.856	101.343	100.523	96.476	96.859
16:32	MP32620-S1	99.174	101.98	98.948	99.33	89.918	88.892
16:35	MP32620-S2	98.88	100.534	99.581	98.585	90.305	89.763
16:38	JD43905-1F	97.148	100.338	97.856	96.151	89.007	88.358
16:41	MP32620-SD1	96.815	95.786	93.701	97.002	91.966	94.213
16:44	ZZZZZZ	98.23	101.44	98.654	98.56	94.612	94.087
16:48	ZZZZZZ	98.512	99.675	99.384	98.018	91.809	91.324
16:51	MA52339-CCVA8	97.425	97.78	93.914	96.399	91.362	94.459
16:54	MA52339-CCB8	97.492	96.908	93.916	97.205	94.348	97.419
16:57	ZZZZZZ	98.648	101.909	98.973	98.011	96.463	94.846
17:00	ZZZZZZ	99.292	102.162	99.67	99.565	98.117	98.556
17:04	ZZZZZZ	98.562	100.419	97.318	98.04	89.69	90.063
17:13	ZZZZZZ	99.243	102.733	98.79	98.585	91.789	92.27
17:16	ZZZZZZ	99.894	101.184	101.457	98.987	95.245	92.989
17:19	ZZZZZZ	99.012	102.576	100.537	98.968	93.967	92.545
17:22	ZZZZZZ	97.436	99.379	99.52	96.437	89.649	87.99
17:25	ZZZZZZ	96.358	97.643	95.851	95.76	84.565	84.641
17:28	JD43215-2F	96.451	99.765	97.67	96.214	91.254	89.394
17:32	MA52339-CCVA9	97.457	96.602	95.911	96.702	92.161	93.974
17:35	MA52339-CCB9	96.349	93.354	92.436	96.287	92.298	95.097
17:38	MA52339-CCVA10	96.646	95.619	93.486	97.086	91.098	93.506
17:41	MA52339-CCB10	96.729	95.523	91.805	96.834	92.081	95.785
17:44	MP32583-PS1	96.647	97.774	94.829	96.261	88.201	90.365
17:47	MP32600-PS1	96.37	96.161	94.253	96.899	92.752	94.134
17:50	ZZZZZZ	97.239	96.04	93.293	95.37	93.738	95.257
17:54	MP32620-S1	95.325	94.373	91.856	94.83	89.425	92.945
17:57	MP32620-S2	95.482	95.494	92.762	95.113	91.489	93.525
18:00	JD43905-1F	95.815	95.16	92.279	96.127	90.496	93.835
18:03	MP32620-SD1	95.771	93.758	89.785	95.533	91.435	95.692
18:06	ZZZZZZ	96.236	95.948	93.043	95.65	92.217	95.123
18:10	ZZZZZZ	95.026	94.688	92.593	95.121	93.142	95.827

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
18:13	MA52339-CCVA11	97.132	97.622	94.546	96.79	92.428	93.727
18:16	MA52339-CCB11	97.751	95.651	93.489	96.629	94.441	97.606
18:19	MA52339-CRI2	98.034	98.118	95.314	97.263	95.457	97.263
18:22	MA52339-CRI3	96.893	96.227	95.908	96.728	96.361	96.79
18:25	ZZZZZZ	94.394	94.612	96.411	94.053	83.407	81.557
18:28	MA52339-ICSAB2	92.758	92.813	93.873	92.78	82.43	80.953
18:32	MA52339-ICSA3	91.561	92.495	93.569	91.283	82	80.407
18:36	ZZZZZZ	94.679	95.735	94.092	93.361	94.097	94.111
18:39	ZZZZZZ	96.143	97.185	96.123	94.631	96.998	95.355
18:42	MA52339-CCVA12	95.871	97.458	96.754	96.998	94.192	93.293
18:45	MA52339-CCB12	97.155	97.552	97.2	96.96	97.56	97.62
18:48	MA52339-CCVA13	98.062	99.549	97.697	97.586	94.946	95.499
18:51	MA52339-CCB13	97.742	99.189	98.503	98.023	99.79	98.676
19:00	ZZZZZZ	95.248	97.762	96.012	94.658	96.875	96.444
19:04	ZZZZZZ	96.083	98.71	95.87	94.667	97.409	96.292
19:07	ZZZZZZ	95.271	98.303	95.217	93.838	97.37	96.872
19:10	MA52339-CCVA14	94.276	97.138	96.819	94.553	95.439	93.386
19:13	MA52339-CCB14	94.598	96.633	94.491	94.885	97.921	96.983
19:16	ZZZZZZ	92.759	97.297	95.962	92.865	92.969	89.855
19:19	ZZZZZZ	91.716	98.553	93.758	92.785	91.946	88.761
19:23	ZZZZZZ	91.439	95.832	95.387	91.463	88.454	84.675
19:26	ZZZZZZ	89.902	96.68	93.605	90.417	87.494	83.8
19:29	ZZZZZZ	90.702	96.353	93.6	91.285	90.751	88.343
19:32	ZZZZZZ	90.582	96.203	93.199	90.199	90.735	88.437
19:35	ZZZZZZ	88.459	94.463	91.395	89.284	86.237	83.735
19:39	ZZZZZZ	89.504	94.724	92.429	89.108	85.966	82.819
19:42	MA52339-CCVA15	90.584	92.43	89.551	90.047	89.213	89.12
19:45	MA52339-CCB15	91.219	93.435	89.74	90.916	92.561	92.674
20:17	ZZZZZZ	91.435	94.419	91.009	90.241	91.554	90.64
20:20	ZZZZZZ	90.958	93.37	90.494	91.046	90.914	91.005
20:24	ZZZZZZ	91.054	93.739	89.922	90.504	89.295	87.602
20:27	ZZZZZZ	90.178	92.399	90.263	89.387	88.417	87.566
20:30	ZZZZZZ	91.129	92.658	90.537	90.476	90.704	89.814

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
20:33	ZZZZZZ	90.711	93.9	89.853	91.285	90.745	91.318
20:36	ZZZZZZ	90.34	93.014	91.381	90.376	88.417	88.864
20:40	ZZZZZZ	90.888	93.957	90.721	90.238	88.31	87.286
20:43	MA52339-CCVA16	91.38	93.482	90.702	91.908	89.761	89.782
20:46	MA52339-CCB16	93.233	93.934	92.245	92.964	93.26	93.582
20:50	ZZZZZZ	94.529	95.341	93.15	93.844	94.889	95.048
20:53	ZZZZZZ	94.176	94.994	92.738	93.402	92.384	92.564
20:56	ZZZZZZ	93.967	95.613	94.165	94.061	87.693	87.55
21:00	MP32564-S1	92.37	93.387	91.752	91.684	90.417	89.311
21:03	MP32564-S2	91.545	93.066	91.639	91.263	89.086	88.848
21:06	DA43510-1	90.347	91.68	92.107	89.826	85.834	84.832
21:09	ZZZZZZ	88.223	89.764	89.958	87.743	80.997	79.018
21:12	ZZZZZZ	85.888	88.068	86.672	85.841	74.535	75.403
21:15	ZZZZZZ	87.582	89.845	88.219	87.594	79.863	79.995
21:18	ZZZZZZ	84.953	86.957	87.874	84.216	69.346	67.752
21:21	MA52339-CCVA17	93.997	94.374	95.907	92.963	93.743	91.551
21:25	MA52339-CCB17	87.879	88.454	89.481	87.319	89.93	89.655
21:39	MP32636-MB1	85.01	86.375	83.895	85.09	86.191	87.165
21:42	MP32636-B1	85.696	86.786	85.361	84.872	85.866	85.858
21:45	MP32636-S1	83.4	85.769	83.802	83.766	80.703	80.074
21:48	MP32636-S2	84.108	85.823	84.191	84.21	80.818	81.406
21:51	JD43966-1	84.235	85.052	84.731	83.516	81.68	81.232
21:55	ZZZZZZ	83.907	85.985	84.196	85.11	81.323	81.742
21:58	ZZZZZZ	84.676	85.601	84.678	85.598	81.839	82.206
22:01	ZZZZZZ	83.88	85.468	84.536	84.64	81.531	81.678
22:04	MA52339-CCVA18	86.832	88.043	85.705	86.395	84.899	85.845
22:07	MA52339-CCB18	87.281	88.143	87.089	86.905	87.829	88.387
22:10	ZZZZZZ	85.991	86.694	85.3	84.864	83.011	83.12
22:16	ZZZZZZ	85.159	86.533	84.795	85.353	82.339	82.754
22:19	ZZZZZZ	86.121	86.636	85.604	86.451	83.461	83.949
22:22	ZZZZZZ	86.871	88.261	86.872	87.026	81.089	80.718
22:26	MA52339-CCVA19	87.116	88.518	86.05	86.89	85.632	86.531
22:29	MA52339-CCB19	87.966	88.5	87.446	87.798	88.947	88.969

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
22:32	ZZZZZZ	86.881	88.864	86.642	87.238	87.612	87.905
22:36	ZZZZZZ	86.065	87.948	86.561	86.64	84.138	83.734
22:39	ZZZZZZ	87.483	88.382	88.455	87.361	87.531	86.547
22:42	ZZZZZZ	86.252	88.187	87.102	86.61	87.288	85.916
22:46	ZZZZZZ	86.609	88.252	86.447	86.006	88.525	87.262
22:49	ZZZZZZ	84.463	85.058	85.735	84.8	80.436	79.591
22:52	ZZZZZZ	84.603	86.474	85.512	85.74	86.737	87.654
22:55	ZZZZZZ	86.19	87.618	85.028	86.295	85.493	86.522
22:58	MA52339-CCVA20	86.423	89.141	86.394	86.485	85.321	85.648
23:01	MA52339-CCB20	88.616	89.823	87.876	89.223	89.399	90.267
23:06	ZZZZZZ	0.194 !	0.174 !	0.208 !	0.189 !	0.113 !	0.091 !
23:09	ZZZZZZ	0.144 !	0.13 !	0.144 !	0.138 !	0.07 !	0.066 !
23:13	ZZZZZZ	88.198	89.209	88.06	88.213	89.709	89.794
23:16	ZZZZZZ	88.454	89.314	88.396	88.744	88.018	88.889
23:19	ZZZZZZ	0.231 !	0.195 !	0.27 !	0.225 !	0.164 !	0.119 !
23:22	ZZZZZZ	0.151 !	0.134 !	0.162 !	0.148 !	0.074 !	0.068 !
23:26	ZZZZZZ	87.861	88.646	86.253	87.272	90.163	89.848
23:30	ZZZZZZ	0.22 !	0.194 !	0.252 !	0.215 !	0.221 !	0.148 !
23:33	MA52339-CCVA21	88.829	90.96	87.923	88.779	86.8	87.446
23:36	MA52339-CCB21	89.55	90.92	89.372	88.954	91.746	92.134
23:39	MP32578-MB1	89.307	90.889	90.084	89.482	91.8	91.591
23:42	MP32578-B1	88.452	90.779	89.08	88.165	89.438	87.961
23:45	MP32578-S1	85.882	86.531	86.688	85.933	79.838	78.954
23:48	MP32578-S2	85.287	85.876	85.275	85.323	78.461	78.832
23:52	JD43737-4	86.017	85.483	84.813	85.859	78.23	79.627
23:55	ZZZZZZ	85.495	85.295	84.286	86.058	79.671	81.243
23:58	ZZZZZZ	84.333	84.386	82.404	85.05	77.293	78.375
00:01	ZZZZZZ	85.586	86.04	84.125	85.415	86.116	87.287
00:04	MA52339-CCVA22	87.076	88.658	85.083	87.408	83.807	85.695
00:07	MA52339-CCB22	88.395	89.512	87.39	88.062	88.852	89.311
00:10	ZZZZZZ	87.371	87.807	87.135	86.553	89.93	88.948
00:13	ZZZZZZ	83.209	82.75	83.883	83.48	74.14	74.371
00:16	ZZZZZZ	84.622	84.293	83.574	84.044	80.143	81.334

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
Analyst: NV Run ID: MA52339
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
00:19	ZZZZZZ	85.672	86.043	84.488	85.927	80.568	81.585
00:23	ZZZZZZ	84.678	85.239	84.452	84.746	80.005	80.519
00:26	ZZZZZZ	82.041	82.911	81.758	82.202	72.426	72.624
00:29	ZZZZZZ	83.799	85.315	82.554	83.53	71.751	73.227
00:33	ZZZZZZ	84.048	83.535	80.979	84.653	83.551	86.506
00:36	ZZZZZZ	83.834	82.175	80.666	83.181	82.578	85.16
00:39	MA52339-CCVA23	83.778	85.125	82.314	83.892	81.437	83.204
00:42	MA52339-CCB23	85.497	85.444	83.766	84.618	85.419	87.088
00:46	MP32578-S1	84.491	84.783	82.723	84.292	81.567	84.132
00:49	MP32578-S2	84.58	83.948	82.643	84.409	82.392	83.671
00:52	JD43737-4	82.99	82.961	81.431	83.25	81.681	82.788
00:55	ZZZZZZ	84.51	83.511	81.567	83.982	80.293	81.795
00:58	ZZZZZZ	84.346	83.88	81.897	83.971	78.934	81.279
01:02	ZZZZZZ	86.656	88.047	82.878	86.194	84.128	87.443
01:05	ZZZZZZ	84.353	84.088	81.997	84.163	84.538	85.964
01:08	ZZZZZZ	83.452	83.553	82.152	82.877	80.516	81.868
01:11	MA52339-CCVA24	87.381	87.903	86.73	87.371	84.549	85.613
01:14	MA52339-CCB24	87.894	86.429	85.964	86.934	86.808	89.12
01:17	ZZZZZZ	86.794	87.294	85.705	86.408	88.011	87.574
01:21	ZZZZZZ	88.4	88.641	87.244	88.205	89.106	89.956
01:24	ZZZZZZ	88.032	89.248	86.073	88.07	87.567	89.678

! = Outside limits.

LEGEND: Istd#	Parameter	Limits	CCV/CCB Limits
Istd#17	Terbium (159-2)	60-125 %	60-125 %
Istd#18	Terbium (159-3)	60-125 %	60-125 %
Istd#19	Holmium (165-1)	60-125 %	60-125 %
Istd#20	Holmium (165-2)	60-125 %	60-125 %
Istd#21	Bismuth (209-1)	60-125 %	60-125 %
Istd#22	Bismuth (209-2)	60-125 %	60-125 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52339 Units: ug/l

Time:			13:35		13:41		14:08		14:15	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022								
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6								
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37								
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2								
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53								
Strontium	5.0	.016								
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	-0.0422	<5.0	0.0473	<5.0	0.0675	<5.0	0.221	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52339 Units: ug/l

Time:			14:46		15:18		15:56		16:22	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022								
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6								
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37								
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2								
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53								
Strontium	5.0	.016								
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	0.173	<5.0	0.202	<5.0	0.205	<5.0	0.0968	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52339 Units: ug/l

Time:			16:54		17:35		17:41		18:16	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022								
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6								
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37								
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2								
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53								
Strontium	5.0	.016								
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	0.144	<5.0	0.174	<5.0	0.163	<5.0	0.199	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52339 Units: ug/l

Time:			18:45	
Sample ID:			CCB12	
Metal	RL	IDL	raw	final
Aluminum	25	.27	anr	
Antimony	2.0	.022		
Arsenic	0.50	.009	anr	
Barium	1.0	.009	anr	
Beryllium	0.50	.003	anr	
Boron	25	.87	anr	
Cadmium	0.50	.007	anr	
Calcium	250	7.6		
Chromium	1.0	.015	anr	
Cobalt	0.50	.002	anr	
Copper	2.0	.012	anr	
Iron	25	.56	anr	
Lead	0.50	.007	anr	
Magnesium	250	.37		
Manganese	1.0	.009	anr	
Molybdenum	1.0	.027	anr	
Nickel	1.0	.008	anr	
Potassium	250	1.2		
Selenium	0.50	.35	anr	
Silver	0.50	.002	anr	
Sodium	250	.53		
Strontium	5.0	.016		
Thallium	0.50	.009	anr	
Tin	5.0	.035		
Titanium	1.0	.045		
Vanadium	1.0	.017	anr	
Zinc	5.0	.048	0.212	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52339 Units: ug/l

Time:		13:10			13:13			13:38	
Sample ID:	ICVA	ICVA2		ICV	ICV1		CCVA	CCVA1	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	60	59.2	98.7				50	45.7	91.4

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52339 Units: ug/l

Time:		14:05			14:12			14:43	
Sample ID:	CCVA	CCVA2		CCVA	CCVA3		CCVA	CCVA4	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	47.2	94.4	50	47.3	94.6	50	46.0	92.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52339 Units: ug/l

Time:		15:15			15:53			16:19	
Sample ID:	CCVA	CCVA5		CCVA	CCVA6		CCVA	CCVA7	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	48.2	96.4	50	46.3	92.6	50	46.2	92.4

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52339 Units: ug/l

Time:		16:51			17:32			17:38	
Sample ID:	CCVA	CCVA8		CCVA	CCVA9		CCVA	CCVA10	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium									
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	48.3	96.6	50	46.8	93.6	50	46.1	92.2

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52339 Units: ug/l

Time:		18:13			18:42	
Sample ID:	CCVA	CCVA11		CCVA	CCVA12	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium	anr					
Zinc	50	46.6	93.2	50	49.3	98.6

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA52339 Units: ug/l

Time:			13:44		18:19		18:22	
Sample ID:	CRI	CRIA	CRI1		CRI2		CRI3	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	25	25	anr					
Antimony	2.0	0.25						
Arsenic	0.50	0.50	anr					
Barium	1.0	0.50	anr					
Beryllium	0.50	0.25	anr					
Boron	25	2.5	anr					
Cadmium	0.50	0.25	anr					
Calcium	250	125						
Chromium	1.0	2.0	anr					
Cobalt	0.50	0.25	anr					
Copper	2.0	2.0	anr					
Iron	25	25	anr					
Lead	0.50	0.25	anr					
Magnesium	250	125						
Manganese	1.0	0.25	anr					
Molybdenum	1.0	0.50	anr					
Nickel	1.0	2.0	anr					
Potassium	250	125						
Selenium	0.50	0.50	anr					
Silver	0.50	1.0	anr					
Sodium	250	125						
Strontium	5.0	0.50						
Thallium	0.50	0.25	anr					
Tin	5.0	0.50						
Titanium	1.0	0.50						
Vanadium	1.0	2.0	anr					
Zinc	5.0	2.0	4.68	93.6	5.07	101.4	5.08	101.6

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050522M2.CSV Date Analyzed: 05/05/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA52339 Units: ug/l

Time:			13:51		13:55		18:28		18:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSAB2		ICSA3	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	100000	100000	80700	80.7	81400	81.4	80200	80.2	81700	81.7
Antimony			0.0597		0.0292		0.0295		0.0333	
Arsenic		20	0.103		18.8	94.0	19.2	96.0	0.0925	
Barium			0.146		0.120		0.142		0.133	
Beryllium			-0.00168		-0.00799		-0.0102		-0.00876	
Boron		50	1.45		45.8	91.6	47.2	94.4	2.05	
Cadmium		20	0.0847		18.4	92.0	18.4	92.0	0.223	
Calcium	100000	100000	83500HH	83.5	85500HH	85.5	85000HH	85.0	85200HH	85.2
Chromium		20	0.824		20.7	103.5	20.5	102.5	0.834	
Cobalt		20	0.0864		18.8	94.0	19.0	95.0	0.102	
Copper		20	0.276		17.7	88.5	17.7	88.5	0.706	
Iron	100000	100000	81000	81.0	82800	82.8	81900	81.9	83900	83.9
Lead			0.0375		0.0339		0.0377		0.0405	
Magnesium	100000	100000	80500HH	80.5	82500HH	82.5	80300HH	80.3	82000HH	82.0
Manganese		20	0.242		19.5	97.5	19.6	98.0	0.286	
Molybdenum	2000	2000	2090	104.5	2030	101.5	2020	101.0	1990	99.5
Nickel		20	0.508		18.5	92.5	18.5	92.5	0.478	
Potassium	100000	100000	83000HH	83.0	84400HH	84.4	83100HH	83.1	85000HH	85.0
Selenium		20	0.161		19.6	98.0	19.9	99.5	0.169	
Silver		20	0.101		19.0	95.0	18.9	94.5	0.0253	
Sodium	100000	100000	82300HH	82.3	82500HH	82.5	81700HH	81.7	82700HH	82.7
Strontium	2000	2000	2210HH	110.5	2010HH	100.5	2000HH	100.0	1990HH	99.5
Thallium			0.0148		0.0120		0.00759		0.00976	
Tin	2000	2000	2100HH	105.0	1940HH	97.0	1930HH	96.5	1950HH	97.5
Titanium	2000	2000	1930HH	96.5	1860HH	93.0	1850HH	92.5	1840HH	92.0
Vanadium		20	0.0759		18.1	90.5	18.1	90.5	0.0823	
Zinc		20	0.631		17.8	89.0	16.7	83.5	0.772	

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:46	MA52355-STD1	1		Sample introduction not stable, see rerun.
11:51	MA52355-STD2	1		Sample introduction not stable, see rerun.
11:55	MA52355-STD3	1		STDA
11:58	MA52355-STD4	1		STDB
12:02	MA52355-STD5	1		STDC
12:05	MA52355-STD6	1		STDD
12:09	MA52355-STD7	1		STDE
12:12	MA52355-STD8	1		STDF
12:15	MA52355-STD9	1		STDG
12:19	MA52355-STD10	1		STDH
12:22	MA52355-STD11	1		STDI
12:26	MA52355-STD12	1		STDJ
12:30	MA52355-STD13	1		STDA
12:33	MA52355-STD14	1		STDA
12:36	ZZZZZZ	1		
12:39	ZZZZZZ	1		
12:49	ZZZZZZ	1		
13:05	ZZZZZZ	1		
13:22	ZZZZZZ	1		
13:33	ZZZZZZ	1		
13:36	MA52355-ICV1	1		
13:39	MA52355-ICVA1	1		
13:43	MA52355-ICB1	1		
13:46	MA52355-CCVA1	1		
13:49	MA52355-CCB1	1		
13:52	ZZZZZZ	1		
13:57	MA52355-CCVA2	1		
14:00	MA52355-CCB2	1		
14:03	ZZZZZZ	1		
14:06	MA52355-CRI1	1		
14:11	ZZZZZZ	1		
14:14	ZZZZZZ	1		
14:22	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:25	MA52355-ICSA1	1		
14:28	MA52355-ICSAB1	1		
14:35	ZZZZZZ	1		
14:38	ZZZZZZ	1		
14:41	MA52355-CCVA3	1		
14:44	MA52355-CCB3	1		
14:47	ZZZZZZ	2		
14:50	ZZZZZZ	2		
14:54	ZZZZZZ	2		
14:57	ZZZZZZ	1		
15:00	ZZZZZZ	25		
15:03	ZZZZZZ	1		
15:06	MA52355-CCVA4	1		
15:09	MA52355-CCB4	1		
15:12	ZZZZZZ	1		
15:15	MP32568-B1	1		
15:19	ZZZZZZ	25		
15:22	MP32568-S1	1		ICB out
15:25	MP32568-S2	1		ICB out
15:28	DA43930-1	1		(sample used for QC only; not part of login JD43215)
15:31	ZZZZZZ	5		
15:34	ZZZZZZ	5		
15:37	ZZZZZZ	5		
15:40	MA52355-CCVA5	1		
15:43	MA52355-CCB5	1		
15:47	MA52355-CCVA6	1		
15:50	MA52355-CCB6	1		
15:53	ZZZZZZ	5		
15:56	ZZZZZZ	50		
15:59	ZZZZZZ	5		
16:02	MP32568-S1	5		CCV out
16:06	MP32568-S2	5		CCV out
16:09	DA43930-1	5		(sample used for QC only; not part of login JD43215)

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:12	MA52355-CCVA7	1		
16:15	MA52355-CCB7	1		
16:18	MA52355-CCVA8	1		
16:21	MA52355-CCB8	1		
17:00	ZZZZZZ	1		
17:03	ZZZZZZ	1		
17:07	ZZZZZZ	25		
17:11	MP32565-S1	5		
17:14	MP32565-S2	5		
17:17	DA43444-1F	5		(sample used for QC only; not part of login JD43215)
17:20	MP32565-S1	1		
17:23	MP32565-S2	1		
17:26	DA43444-1F	1		(sample used for QC only; not part of login JD43215)
17:29	MA52355-CCVA9	1		
17:35	MA52355-CCB9	1		
17:40	ZZZZZZ	2		
17:44	ZZZZZZ	10		
17:47	ZZZZZZ	50		
17:50	ZZZZZZ	5		
17:53	ZZZZZZ	50		
17:56	ZZZZZZ	5		
18:00	ZZZZZZ	50		
18:03	ZZZZZZ	10		
18:06	MA52355-CCVA10	1		
18:09	MA52355-CCB10	1		
18:12	ZZZZZZ	20		
18:16	ZZZZZZ	1		
18:19	ZZZZZZ	2		
18:22	ZZZZZZ	5		
18:25	MP32565-S1	100		
18:28	MP32565-S2	100		
18:31	DA43444-1F	100		(sample used for QC only; not part of login JD43215)
18:35	MA52355-CCVA11	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:38	MA52355-CCB11	1		
18:42	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:49	ZZZZZZ	10		
18:52	ZZZZZZ	50		
18:56	ZZZZZZ	10		
18:59	ZZZZZZ	50		
19:02	ZZZZZZ	10		
19:05	MA52355-CCVA12	1		
19:08	MA52355-CCB12	1		
19:11	ZZZZZZ	100		
19:15	ZZZZZZ	5		
19:18	ZZZZZZ	20		
19:21	ZZZZZZ	100		
19:24	ZZZZZZ	10		
19:27	ZZZZZZ	50		
19:31	MA52355-CCVA13	1		
19:34	MA52355-CCB13	1		
19:37	MP32696A-MB1	2		
19:40	MP32696A-B2	2		
19:43	MP32696A-S3	2		
19:46	MP32696A-S4	2		
19:49	JD44282-1	2		(sample used for QC only; not part of login JD43215)
19:52	MP32696A-SD1	10		
19:56	ZZZZZZ	1		
19:58	ZZZZZZ	1		
20:02	MA52355-CCVA14	1		
20:05	MA52355-CCB14	1		
20:08	ZZZZZZ	2		
20:18	ZZZZZZ	2		
20:21	ZZZZZZ	20		
20:24	ZZZZZZ	20		
20:27	ZZZZZZ	20		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:30	ZZZZZZ	100		
20:34	ZZZZZZ	20		
20:37	ZZZZZZ	5		
20:40	MA52355-CCVA15	1		
20:43	MA52355-CCB15	1		
20:47	MP32679-MB1	2		
20:50	MP32679-LB1	2		
20:54	MP32679-B1	2		
20:57	MP32679-LS1	2		
21:00	MP32679-S1	2		
21:03	MP32679-S2	2		
21:06	JD44117-1A	2		(sample used for QC only; not part of login JD43215)
21:10	MP32679-SD1	10		
21:13	MA52355-CCVA16	1		
21:16	MA52355-CCB16	1		
21:19	ZZZZZZ	2		
21:22	ZZZZZZ	2		
21:25	ZZZZZZ	2		
21:28	MP32650-MB1	5		Batch to rerun for FE, MB> RL amd for Al, K, Na, spk blank failes low
21:32	MP32650-B1	5		
21:35	MP32650-S1	5		Needs post spike on SB, CR, na
21:38	MP32650-S2	5		
21:41	JD44120-1	5		(sample used for QC only; not part of login JD43215)
21:44	MP32650-SD1	25		
21:48	MA52355-CCVA17	1		
21:51	MA52355-CCB17	1		
21:54	ZZZZZZ	5		
21:57	ZZZZZZ	5		
22:00	ZZZZZZ	5		
22:03	ZZZZZZ	5		
22:06	ZZZZZZ	5		
22:09	ZZZZZZ	5		
22:12	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
22:16	ZZZZZZ	1		
22:19	ZZZZZZ	1		
22:22	ZZZZZZ	5		
22:25	MA52355-CCVA18	1		
22:28	MA52355-CCB18	1		
22:32	ZZZZZZ	5		
22:35	ZZZZZZ	5		
22:38	ZZZZZZ	5		
22:41	ZZZZZZ	5		
22:45	ZZZZZZ	5		
22:48	ZZZZZZ	5		
22:51	ZZZZZZ	5		
22:54	MA52355-CCVA19	1		
22:57	MA52355-CCB19	1		
23:00	MP32673-MB1	5		
23:03	MP32673-B1	5		
23:07	MP32673-S1	5		
23:10	MP32673-S2	5		
23:13	JD44217-5	5		(sample used for QC only; not part of login JD43215)
23:16	MP32673-SD1	25		
23:19	MP32673-PS1	5		
23:22	ZZZZZZ	5		
23:25	ZZZZZZ	1		
23:28	MA52355-CCVA20	1		
23:32	MA52355-CCB20	1		
23:35	ZZZZZZ	5		
23:38	ZZZZZZ	5		
23:41	ZZZZZZ	5		
23:44	ZZZZZZ	5		
23:47	ZZZZZZ	5		
23:50	ZZZZZZ	5		
23:53	ZZZZZZ	5		
23:57	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:01	MA52355-CCVA21	1		
00:04	MA52355-CCB21	1		
00:07	ZZZZZZ	2		
00:11	ZZZZZZ	2		
00:14	MP32378-S1	2		
00:17	MP32378-S2	2		
00:20	JD43215-14F	2		
00:23	MP32378-SD1	10		
---------->	Last reportable sample/prep for job JD43215			
00:26	ZZZZZZ	1		
00:29	MA52355-CCVA22	1		
00:33	MA52355-CCB22	1		
00:36	ZZZZZZ	1		
00:39	MA52355-CRI2	1		
00:42	MA52355-ICSA2	1		
00:45	MA52355-ICSAB2	1		
00:53	ZZZZZZ	1		
00:56	MA52355-CCVA23	1		
00:59	MA52355-CCB23	1		
---------->	Last reportable CCB for job JD43215			
01:02	MP32650-S1	50		
01:06	MP32650-S2	50		
01:09	JD44120-1	50		(sample used for QC only; not part of login JD43215)
01:12	MP32650-SD1	250		bad dilution
01:15	ZZZZZZ	10		
01:18	ZZZZZZ	10		
01:21	ZZZZZZ	10		
01:25	ZZZZZZ	20		
01:28	MA52355-CCVA24	1		
01:31	MA52355-CCB24	1		
01:34	ZZZZZZ	20		
01:37	ZZZZZZ	10		
01:40	ZZZZZZ	10		
01:44	ZZZZZZ	10		
01:47	ZZZZZZ	10		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Dilution Factor	PS Recov	Comments
01:50	ZZZZZZ	10		
01:53	ZZZZZZ	10		
01:56	ZZZZZZ	25		
01:59	ZZZZZZ	50		
02:03	MA52355-CCVA25	1		
02:06	MA52355-CCB25	1		
02:09	ZZZZZZ	20		
02:12	ZZZZZZ	50		
02:15	ZZZZZZ	10		
02:18	ZZZZZZ	20		
02:21	ZZZZZZ	50		
02:25	ZZZZZZ	50		
02:28	ZZZZZZ	20		
02:31	ZZZZZZ	50		
02:34	ZZZZZZ	20		
02:37	MA52355-CCVA26	1		
02:40	MA52355-CCB26	1		
02:44	ZZZZZZ	1		
02:47	ZZZZZZ	1		
02:50	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn
12:36	ZZZZZZ	1	
12:39	ZZZZZZ	1	
12:49	ZZZZZZ	1	
13:05	ZZZZZZ	1	
13:22	ZZZZZZ	1	
13:33	ZZZZZZ	1	
13:36	MA52355-ICV1	1	X
13:39	MA52355-ICVA1	1	X
13:43	MA52355-ICB1	1	X
13:46	MA52355-CCVA1	1	X
13:49	MA52355-CCB1	1	X
13:52	ZZZZZZ	1	
13:57	MA52355-CCVA2	1	X
14:00	MA52355-CCB2	1	X
14:03	ZZZZZZ	1	
14:06	MA52355-CRI1	1	X
14:11	ZZZZZZ	1	
14:14	ZZZZZZ	1	
14:22	ZZZZZZ	1	
14:25	MA52355-ICSA1	1	X
14:28	MA52355-ICSAB1	1	X
14:35	ZZZZZZ	1	
14:38	ZZZZZZ	1	
14:41	MA52355-CCVA3	1	X
14:44	MA52355-CCB3	1	X
14:47	ZZZZZZ	2	
14:50	ZZZZZZ	2	
14:54	ZZZZZZ	2	
14:57	ZZZZZZ	1	
15:00	ZZZZZZ	25	
15:03	ZZZZZZ	1	
15:06	MA52355-CCVA4	1	X
15:09	MA52355-CCB4	1	X
		Element:	Zn

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
15:12	ZZZZZZ	1		
15:15	MP32568-B1	1		
15:19	ZZZZZZ	25		
15:22	MP32568-S1	1		
15:25	MP32568-S2	1		
15:28	DA43930-1	1		(a)
15:31	ZZZZZZ	5		
15:34	ZZZZZZ	5		
15:37	ZZZZZZ	5		
15:40	MA52355-CCVA5	1	X	
15:43	MA52355-CCB5	1	X	
15:47	MA52355-CCVA6	1	X	
15:50	MA52355-CCB6	1	X	
15:53	ZZZZZZ	5		
15:56	ZZZZZZ	50		
15:59	ZZZZZZ	5		
16:02	MP32568-S1	5		
16:06	MP32568-S2	5		
16:09	DA43930-1	5		(a)
16:12	MA52355-CCVA7	1	X	
16:15	MA52355-CCB7	1	X	
16:18	MA52355-CCVA8	1	X	
16:21	MA52355-CCB8	1	X	
17:00	ZZZZZZ	1		
17:03	ZZZZZZ	1		
17:07	ZZZZZZ	25		
17:11	MP32565-S1	5		
17:14	MP32565-S2	5		
17:17	DA43444-1F	5		(a)
17:20	MP32565-S1	1		
17:23	MP32565-S2	1		
17:26	DA43444-1F	1		(a)
17:29	MA52355-CCVA9	1	X	
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
17:35	MA52355-CCB9	1	X	
17:40	ZZZZZZ	2		
17:44	ZZZZZZ	10		
17:47	ZZZZZZ	50		
17:50	ZZZZZZ	5		
17:53	ZZZZZZ	50		
17:56	ZZZZZZ	5		
18:00	ZZZZZZ	50		
18:03	ZZZZZZ	10		
18:06	MA52355-CCVA10	1	X	
18:09	MA52355-CCB10	1	X	
18:12	ZZZZZZ	20		
18:16	ZZZZZZ	1		
18:19	ZZZZZZ	2		
18:22	ZZZZZZ	5		
18:25	MP32565-S1	100		
18:28	MP32565-S2	100		
18:31	DA43444-1F	100		(a)
18:35	MA52355-CCVA11	1	X	
18:38	MA52355-CCB11	1	X	
18:42	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:49	ZZZZZZ	10		
18:52	ZZZZZZ	50		
18:56	ZZZZZZ	10		
18:59	ZZZZZZ	50		
19:02	ZZZZZZ	10		
19:05	MA52355-CCVA12	1	X	
19:08	MA52355-CCB12	1	X	
19:11	ZZZZZZ	100		
19:15	ZZZZZZ	5		
19:18	ZZZZZZ	20		
19:21	ZZZZZZ	100		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
19:24	ZZZZZZ	10		
19:27	ZZZZZZ	50		
19:31	MA52355-CCVA13	1	X	
19:34	MA52355-CCB13	1	X	
19:37	MP32696A-MB1	2		
19:40	MP32696A-B2	2		
19:43	MP32696A-S3	2		
19:46	MP32696A-S4	2		
19:49	JD44282-1	2		(a)
19:52	MP32696A-SD1	10		
19:56	ZZZZZZ	1		
19:58	ZZZZZZ	1		
20:02	MA52355-CCVA14	1	X	
20:05	MA52355-CCB14	1	X	
20:08	ZZZZZZ	2		
20:18	ZZZZZZ	2		
20:21	ZZZZZZ	20		
20:24	ZZZZZZ	20		
20:27	ZZZZZZ	20		
20:30	ZZZZZZ	100		
20:34	ZZZZZZ	20		
20:37	ZZZZZZ	5		
20:40	MA52355-CCVA15	1	X	
20:43	MA52355-CCB15	1	X	
20:47	MP32679-MB1	2		
20:50	MP32679-LB1	2		
20:54	MP32679-B1	2		
20:57	MP32679-LS1	2		
21:00	MP32679-S1	2		
21:03	MP32679-S2	2		
21:06	JD44117-1A	2		(a)
21:10	MP32679-SD1	10		
21:13	MA52355-CCVA16	1	X	
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
21:16	MA52355-CCB16	1	X	
21:19	ZZZZZZ	2		
21:22	ZZZZZZ	2		
21:25	ZZZZZZ	2		
21:28	MP32650-MB1	5	X	
21:32	MP32650-B1	5	X	
21:35	MP32650-S1	5		
21:38	MP32650-S2	5		
21:41	JD44120-1	5		(a)
21:44	MP32650-SD1	25		
21:48	MA52355-CCVA17	1	X	
21:51	MA52355-CCB17	1	X	
21:54	ZZZZZZ	5		
21:57	ZZZZZZ	5		
22:00	ZZZZZZ	5		
22:03	ZZZZZZ	5		
22:06	ZZZZZZ	5		
22:09	ZZZZZZ	5		
22:12	ZZZZZZ	5		
22:16	ZZZZZZ	1		
22:19	ZZZZZZ	1		
22:22	ZZZZZZ	5		
22:25	MA52355-CCVA18	1	X	
22:28	MA52355-CCB18	1	X	
22:32	ZZZZZZ	5		
22:35	ZZZZZZ	5		
22:38	ZZZZZZ	5		
22:41	ZZZZZZ	5		
22:45	ZZZZZZ	5		
22:48	ZZZZZZ	5		
22:51	ZZZZZZ	5		
22:54	MA52355-CCVA19	1	X	
22:57	MA52355-CCB19	1	X	
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
23:00	MP32673-MB1	5	X	
23:03	MP32673-B1	5	X	
23:07	MP32673-S1	5		
23:10	MP32673-S2	5		
23:13	JD44217-5	5		(a)
23:16	MP32673-SD1	25	X	
23:19	MP32673-PS1	5		
23:22	ZZZZZZ	5		
23:25	ZZZZZZ	1		
23:28	MA52355-CCVA20	1	X	
23:32	MA52355-CCB20	1	X	
23:35	ZZZZZZ	5		
23:38	ZZZZZZ	5		
23:41	ZZZZZZ	5		
23:44	ZZZZZZ	5		
23:47	ZZZZZZ	5		
23:50	ZZZZZZ	5		
23:53	ZZZZZZ	5		
23:57	ZZZZZZ	1		
00:01	MA52355-CCVA21	1	X	
00:04	MA52355-CCB21	1	X	
00:07	ZZZZZZ	2		
00:11	ZZZZZZ	2		
00:14	MP32378-S1	2	X	
00:17	MP32378-S2	2	X	
00:20	JD43215-14F	2		
00:23	MP32378-SD1	10	X	
00:26	ZZZZZZ	1		
00:29	MA52355-CCVA22	1	X	
00:33	MA52355-CCB22	1	X	
00:36	ZZZZZZ	1		
00:39	MA52355-CRI2	1	X	
00:42	MA52355-ICSA2	1	X	
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Element: Dilution	Zn	
00:45	MA52355-ICSAB2	1	X	
00:53	ZZZZZZ	1		
00:56	MA52355-CCVA23	1	X	
00:59	MA52355-CCB23	1	X	
01:02	MP32650-S1	50	X	
01:06	MP32650-S2	50	X	
01:09	JD44120-1	50		(a)
01:12	MP32650-SD1	250	bad dilution	
01:15	ZZZZZZ	10		
01:18	ZZZZZZ	10		
01:21	ZZZZZZ	10		
01:25	ZZZZZZ	20		
01:28	MA52355-CCVA24	1	X	
01:31	MA52355-CCB24	1	X	
01:34	ZZZZZZ	20		
01:37	ZZZZZZ	10		
01:40	ZZZZZZ	10		
01:44	ZZZZZZ	10		
01:47	ZZZZZZ	10		
01:50	ZZZZZZ	10		
01:53	ZZZZZZ	10		
01:56	ZZZZZZ	25		
01:59	ZZZZZZ	50		
02:03	MA52355-CCVA25	1	X	
02:06	MA52355-CCB25	1	X	
02:09	ZZZZZZ	20		
02:12	ZZZZZZ	50		
02:15	ZZZZZZ	10		
02:18	ZZZZZZ	20		
02:21	ZZZZZZ	50		
02:25	ZZZZZZ	50		
02:28	ZZZZZZ	20		
02:31	ZZZZZZ	50		
		Element:	Zn	

REPORTED ELEMENTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Element: Zn Dilution	Zn
02:34	ZZZZZZ	20	
02:37	MA52355-CCVA26	1	X
02:40	MA52355-CCB26	1	X
02:44	ZZZZZZ	1	
02:47	ZZZZZZ	1	
02:50	ZZZZZZ	1	

(a) Sample used for QC only; not part of login JD43215.

Element: Zn

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
11:46	MA52355-STD1	100	100	100	100	100	100	100	100
11:51	MA52355-STD2	100	100	100	100	100	100	100	100
11:55	MA52355-STD3	100	100	100	100	100	100	100	100
11:58	MA52355-STD4	101.762	101.185	101.287	100.091	101.231	101.537	100.008	101.212
12:02	MA52355-STD5	100.017	99.952	100.083	99.077	100.471	100.467	99.656	100.478
12:05	MA52355-STD6	99.521	99.966	99.29	98.09	101.903	99.967	97.711	99.837
12:09	MA52355-STD7	95.706	96.819	98.036	97.001	96.554	99.968	98.027	96.79
12:12	MA52355-STD8	92.204	92.782	96.006	95.598	94.015	97.557	96.347	93.383
12:15	MA52355-STD9	93.346	94.169	98.882	99.816	94.577	100.386	100.312	94.373
12:19	MA52355-STD10	98.414	100.592	103.26	102.569	100.226	103.643	102.53	100.955
12:22	MA52355-STD11	101.806	104.183	108.475	106.07	103.286	108.527	104.007	100.482
12:26	MA52355-STD12	101.739	105.98	109.119	106.355	104.034	110.126	103.335	102.038
12:30	MA52355-STD13	100	100	100	100	100	100	100	100
12:33	MA52355-STD14	100	100	100	100	100	100	100	100
12:36	ZZZZZZ	0.191 !	0.69 !	0.522 !	0.439 !	0.123 !	0.097 !	0.048 !	0.095 !
12:39	ZZZZZZ	101.283	100.105	100.289	100.969	97.855	98.963	98.344	98.656
12:49	ZZZZZZ	97.255	98.768	100.572	100.38	96.261	100.311	97.191	95.054
13:05	ZZZZZZ	93.685	95.67	97.634	97.883	93.195	97.107	95.502	93.254
13:22	ZZZZZZ	93.598	95.529	96.976	97.94	94.509	97.814	96.579	94.145
13:33	ZZZZZZ	90.746	93.99	96.574	97.321	93.049	98.197	96.038	92.588
13:36	MA52355-ICV1	96.037	94.639	95.575	98.353	96.294	98.795	99.575	96.763
13:39	MA52355-ICVA1	95.713	99.17	102.129	101.259	98.302	103.242	99.971	97.087
13:43	MA52355-ICB1	96.237	95.896	97.694	99.842	97.282	100.345	101.654	97.74
13:46	MA52355-CCVA1	88.034	90.384	98.662	98.939	89.702	101.01	98.612	88.997
13:49	MA52355-CCB1	95.436	95.68	98.181	100.029	95.879	100.066	101.253	95.708
13:52	ZZZZZZ	95.455	98.736	99.643	101.558	98.278	101.662	101.945	98.474
13:57	MA52355-CCVA2	95.42	100.032	102.425	102.815	98.208	103.721	101.809	97.546
14:00	MA52355-CCB2	97.714	98.363	100.263	101.65	98.818	102.218	102.773	99.077
14:03	ZZZZZZ	98.043	100.176	102.4	103.862	99.901	102.52	103.226	100.357
14:06	MA52355-CRI1	100.878	101.757	102.526	103.475	102.72	103.991	104.126	101.401
14:11	ZZZZZZ	88.205	97.146	95.503	94.4	103.562	116.314	84.864	85.409
14:14	ZZZZZZ	79.041	85.877	86.847	87.912	96.895	113.424	85.757	79.976
14:22	ZZZZZZ	76.168	81.453	81.742	89.64	84.105	84.21	90.532	84.582

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
14:25	MA52355-ICSA1	80.752	88.138	86.741	88.14	100.026	115.311	85.658	82.582
14:28	MA52355-ICSAB1	77.817	84.762	84.517	86.437	97.452	113.446	85.358	80.947
14:35	ZZZZZZ	71.959	79.122	79.229	87.573	83.049	83.319	89.279	84.291
14:38	ZZZZZZ	75.163	80.782	80.367	88.624	85.004	85.515	91.924	86.524
14:41	MA52355-CCVA3	77.743	84.871	87.465	94.609	88.145	93.535	96.539	87.376
14:44	MA52355-CCB3	82.64	89.451	90.091	98.482	93.241	94.94	101.261	94.217
14:47	ZZZZZZ	85.208	90.158	89.858	94.034	95.551	97.789	100.012	97.049
14:50	ZZZZZZ	84.495	90.977	91.656	97.038	94.977	97.837	100.179	95.253
14:54	ZZZZZZ	86.253	91.045	92.361	96.339	95.954	99.948	101.356	97.224
14:57	ZZZZZZ	89.901	96.278	98.545	105.061	98.238	101.775	105.676	99.821
15:00	ZZZZZZ	86.863	92.019	93.241	95.449	95.9	100.138	100.506	96.662
15:03	ZZZZZZ	82.839	91.617	92.022	97.301	88.399	91.702	96.685	89.903
15:06	MA52355-CCVA4	89.636	95.12	99.954	104.981	96.422	104.629	105.264	97.02
15:09	MA52355-CCB4	91.248	96.477	98.722	105.396	98.919	103.334	106.755	99.46
15:12	ZZZZZZ	96.876	101.3	102.447	108.46	103.223	106.078	109.522	104.035
15:15	MP32568-B1	97.638	103.55	103.97	107.12	104.22	108.066	108.461	104.265
15:19	ZZZZZZ	91.262	92.894	94.561	95.745	98.232	103.079	102.609	98.435
15:22	MP32568-S1	86.194	94.735	98.155	101.431	93.376	98.759	100.165	93.315
15:25	MP32568-S2	84.424	92.071	94.556	99.236	92.307	97.811	100.315	91.669
15:28	DA43930-1	89.634	95.317	96.896	101.015	96.079	99.512	102.595	96.653
15:31	ZZZZZZ	89.644	93.111	96.612	99.862	97.046	103.572	105.429	97.383
15:34	ZZZZZZ	91.37	95.535	99.07	102.532	98.433	105.49	106.947	99.41
15:37	ZZZZZZ	91.625	96.278	98.457	100.233	99.71	104.369	105.2	101.508
15:40	MA52355-CCVA5	92.931	99.98	103.135	107.472	98.734	105.665	105.429	99.424
15:43	MA52355-CCB5	92.974	97.094	99.549	106.546	99.648	103.566	108.277	100.251
15:47	MA52355-CCVA6	99.2	105.869	105.782	108.641	105.726	109.591	108.488	105.294
15:50	MA52355-CCB6	97.5	101.303	103.817	108.888	103.877	107.387	110.893	103.716
15:53	ZZZZZZ	98.407	99.486	97.967	97.754	101.949	103.275	101.948	103.376
15:56	ZZZZZZ	94.596	96.922	99.026	100.295	100.687	104.697	105.154	101.536
15:59	ZZZZZZ	94.618	98.482	97.974	98.302	99.043	100.971	100.772	99.545
16:02	MP32568-S1	91.38	94.961	97.664	100.202	97.936	103.26	104.222	98.023
16:06	MP32568-S2	93.715	96.512	99.664	100.844	99.212	105.051	104.966	99.447
16:09	DA43930-1	93.617	96.578	98.289	99.96	100.302	104.46	104.873	101.51

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
16:12	MA52355-CCVA7	92.295	100.162	104.45	108.439	98.323	105.693	105.435	99.159
16:15	MA52355-CCB7	95.417	99.036	100.786	106.712	100.044	103.905	108.191	100.646
16:18	MA52355-CCVA8	101.064	106.191	106.576	108.931	106.139	109.278	107.826	105.343
16:21	MA52355-CCB8	97.086	101.652	102.273	107.597	102.708	105.506	109.11	103.603
17:00	ZZZZZZ	98.081	98.837	95.846	103.385	100.884	97.641	103.888	102.92
17:03	ZZZZZZ	82.554	91.936	92.027	97.553	89.159	91.42	87.889	87.49
17:07	ZZZZZZ	81.582	81.776	83.489	86.823	88.326	92.607	94.569	88.91
17:11	MP32565-S1	85.257	85.361	88.161	90.516	88.148	93.541	95.568	89.938
17:14	MP32565-S2	85.053	86.396	88.899	91.136	89.701	93.567	95.852	90.207
17:17	DA43444-1F	83.304	86.043	86.554	88.925	88.641	91.147	92.816	89.319
17:20	MP32565-S1	78.473	81.663	86.574	89.901	80.643	84.336	87.42	78.266
17:23	MP32565-S2	90.383	90.986	98.542	101.389	86.333	95.203	99.412	86.857
17:26	DA43444-1F	104.588	104.345	107.286	108.027	97.821	102.879	105.911	98.495
17:29	MA52355-CCVA9	114.032	112.07	112.412	113.523	111.028	114.852	113.23	109.957
17:35	MA52355-CCB9	83.845	86.635	84.732	90.723	89.838	89.177	93.259	90.372
17:40	ZZZZZZ	79.216	82.042	84.511	87.225	84.624	87.83	89.428	84.717
17:44	ZZZZZZ	79.098	81.02	82.066	85.001	84.419	88.778	89.926	85.948
17:47	ZZZZZZ	79.783	81.161	82.241	84.71	85.603	88.692	89.589	86.936
17:50	ZZZZZZ	81.372	83.884	87.958	89.778	87.425	92.58	92.831	86.992
17:53	ZZZZZZ	84.509	84.416	85.993	87.63	88.671	93.03	93.059	90.416
17:56	ZZZZZZ	81.884	83.213	83.813	84.862	85.698	87.642	87.959	87.097
18:00	ZZZZZZ	79.152	80.406	81.834	84.283	86.088	87.87	88.811	86.46
18:03	ZZZZZZ	79.63	81.087	82.475	84.812	83.395	85.667	87.429	83.897
18:06	MA52355-CCVA10	79.15	83.952	90.047	96.836	84.848	92.645	94.729	84.64
18:09	MA52355-CCB10	86.264	88.342	90.932	95.973	90.503	94.858	97.769	91.099
18:12	ZZZZZZ	85.572	86.185	84.845	86.194	90.823	90.88	90.797	90.716
18:16	ZZZZZZ	91.25	96.708	99.474	97.755	83.908	88.394	89.175	84.381
18:19	ZZZZZZ	99.706	100.645	101.317	101.46	95.499	96.919	98.367	95.446
18:22	ZZZZZZ	98.56	99.445	99.319	99.817	98.149	100.958	101.298	98.934
18:25	MP32565-S1	97.281	95.557	90.712	91.888	100.874	97.823	97.213	102.679
18:28	MP32565-S2	84.113	84.041	82.821	85.872	90.76	89.219	90.792	90.495
18:31	DA43444-1F	79.131	79.563	78.388	81.617	85.834	85.607	86.626	85.59
18:35	MA52355-CCVA11	72.748	78.479	82.047	90.838	80.584	85.85	89.386	80.64

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
18:38	MA52355-CCB11	78.983	81.763	83.705	90.285	85.921	89.07	93.303	87.008
18:42	ZZZZZZ	85.369	86.654	85.6	90.704	90.78	90.169	92.847	91.394
18:46	ZZZZZZ	86.526	88.281	90.177	93.773	90.413	94.984	95.77	91.702
18:49	ZZZZZZ	85.569	86.328	86.803	86.541	90.928	93.418	92.472	91.989
18:52	ZZZZZZ	89.499	88.637	87.946	87.335	93.631	94.509	93.239	94.437
18:56	ZZZZZZ	85.025	85.609	85.098	85.817	88.343	89.639	89.401	89.115
18:59	ZZZZZZ	88.009	86.289	85.619	85.508	91.356	91.288	90.317	92.042
19:02	ZZZZZZ	84.324	84.744	83.481	83.228	86.786	87.83	86.764	88.086
19:05	MA52355-CCVA12	84.296	86.962	89.936	94.256	86.928	91.416	92.018	87.173
19:08	MA52355-CCB12	88.236	87.828	88.315	92.231	90.808	92.142	94.461	90.602
19:11	ZZZZZZ	95.496	92.72	91.24	88.967	96.178	98.565	95.498	97.221
19:15	ZZZZZZ	86.28	85.023	86.031	84.822	86.112	88.631	88.374	86.363
19:18	ZZZZZZ	81.801	79.925	78.849	79.95	84.842	85.388	85.308	85.387
19:21	ZZZZZZ	82.901	80.081	78.71	80.835	85.712	85.741	86.17	86.049
19:24	ZZZZZZ	82.737	82.786	82.475	84.073	86.32	86.966	87.586	86.678
19:27	ZZZZZZ	84.775	84.383	83.663	84.559	89.579	89.628	89.203	89.563
19:31	MA52355-CCVA13	84.38	88.219	91.328	95.314	87.563	91.519	92.842	87.086
19:34	MA52355-CCB13	89.094	89.366	88.671	91.975	90.799	92.994	94.545	91.619
19:37	MP32696A-MB1	94.782	95.625	93.953	100.879	92.486	91.754	98.061	92.903
19:40	MP32696A-B2	96.651	94.873	96.095	102.3	94.613	96.908	101.665	94.976
19:43	MP32696A-S3	97.955	98.134	97.553	97.208	91.377	93.817	92.712	91.862
19:46	MP32696A-S4	99.334	99.633	98.728	97.124	93.3	95.149	92.762	93.059
19:49	JD44282-1	100.079	101.982	97.918	94.844	95.067	94.242	91.486	94.849
19:52	MP32696A-SD1	104.816	101.05	98.813	93.266	102.188	103.49	98.293	102.674
19:56	ZZZZZZ	92.615	95.164	97.011	107.12	91.754	93.886	101.308	92.663
19:58	ZZZZZZ	102.176	99.113	96.176	95.303	102.614	102.348	102.077	103.631
20:02	MA52355-CCVA14	101.074	102.711	103.504	103.742	101.768	106.815	103.242	101.465
20:05	MA52355-CCB14	102.102	101.41	101.587	103.112	102.61	104.516	105.353	103.926
20:08	ZZZZZZ	75.59	81.597	20.029 !	13.416 !	74.728	2.68 !	0.419 !	75.64
20:18	ZZZZZZ	104.216	104.405	104.131	107.751	101.477	102.758	105.813	101.732
20:21	ZZZZZZ	109.137	106.071	103.702	101.31	108.281	110.443	107.262	107.578
20:24	ZZZZZZ	109.202	105.981	104.665	102.35	106.886	111.02	107.781	107.628
20:27	ZZZZZZ	108.582	105.243	104.115	101.794	108.3	111.069	107.67	107.497

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
20:30	ZZZZZZ	111.296	106.348	103.134	98.87	110.584	111.443	106.378	110.284
20:34	ZZZZZZ	107.505	104.194	104.012	101.401	106.119	108.976	106.134	106.445
20:37	ZZZZZZ	104.242	104.367	105.137	106.224	104.344	107.146	108.296	103.726
20:40	MA52355-CCVA15	105.473	104.656	106.635	106.443	104.272	110.476	108.371	104.383
20:43	MA52355-CCB15	108.712	107.417	104.818	105.89	106.656	108.264	107.761	107.259
20:47	MP32679-MB1	106.544	109.477	105.068	109.279	106.114	102.08	106.208	105.842
20:50	MP32679-LB1	106.687	104.956	101.326	107.227	104.433	101.112	106.673	104.14
20:54	MP32679-B1	107.756	105.39	105.143	110.885	102.862	104.819	109.328	104.141
20:57	MP32679-LS1	108.004	106.537	106.742	112.775	105.494	107.513	111.778	104.886
21:00	MP32679-S1	100.821	102.03	102.598	109.002	99.489	105.161	106.301	98.569
21:03	MP32679-S2	100.736	102.588	102.077	109.588	102.355	105.556	108.043	100.286
21:06	JD44117-1A	100.273	101.968	101.2	108.765	101.624	103.528	107.67	101.169
21:10	MP32679-SD1	107.398	102.467	99.685	100.76	105.89	105.422	106.279	106.411
21:13	MA52355-CCVA16	106.123	106.751	105.122	107.119	107.253	110.348	108.709	106.615
21:16	MA52355-CCB16	105.608	105.647	103.122	105.52	106.695	106.064	107.543	107.525
21:19	ZZZZZZ	99.688	100.933	98.812	107.627	98.549	98.592	105.817	99.321
21:22	ZZZZZZ	101.199	100.411	97.405	106.117	100.067	98.268	106.009	100.851
21:25	ZZZZZZ	101.278	99.832	96.504	106.096	99.562	97.013	105.356	100.675
21:28	MP32650-MB1	105.62	101.138	97.705	100.229	104.158	101.941	103.934	105.027
21:32	MP32650-B1	103.136	102.163	104.38	105.896	103.178	107.582	106.836	103.492
21:35	MP32650-S1	110.627	115.335	118.073	118.753	117.166	130.61 !	113.924	108.073
21:38	MP32650-S2	111.507	114.918	115.439	114.436	119.496	132.471 !	113.118	109.577
21:41	JD44120-1	115.223	117.163	116.385	114.763	121.138	133.496	!a114.608	113.042
21:44	MP32650-SD1	119.855	115.828	115.293	110.857	118.674	123.408	115.507	117.061
21:48	MA52355-CCVA17	115.611	114.912	114.433	114.349	114.252	118.277	114.218	113.456
21:51	MA52355-CCB17	118.499	116.74	113.333	115.157	115.884	116.407	116.779	117.71
21:54	ZZZZZZ	114.43	120.595	118.959	117.609	123.853	138.305	!a114.007	111.219
21:57	ZZZZZZ	113.394	119.685	117.539	114.16	126.607	140.231	!a112.471	112.411
22:00	ZZZZZZ	116.833	121.376	119.94	117.17	124.945	139.241	!a116.108	113.681
22:03	ZZZZZZ	107.762	109.843	107.798	104.97	111.961	121.18	101.939	102.071
22:06	ZZZZZZ	109.899	113.5	113.227	111.341	118.163	132.881	!a109.894	107.014
22:09	ZZZZZZ	113.671	117.957	118.034	114.222	120.898	131.347	!a114.575	113.471
22:12	ZZZZZZ	113.654	120.463	117.851	113.561	129.979	148.466	!a110.409	111.242

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
22:16	ZZZZZZ	117.052	117.565	119.592	117.329	119.151	124.663	118.689	117.59
22:19	ZZZZZZ	125.103	125.959	121.906	122.877	125.433	125.497	123.109	126.431
22:22	ZZZZZZ	120.46	124.862	122.461	118.423	124.93	133.948	!a116.239	116.6
22:25	MA52355-CCVA18	122.283	123.197	119.91	117.745	121.105	124.911	118.881	119.78
22:28	MA52355-CCB18	121.551	121.75	118.89	121.065	121.97	121.668	121.971	121.649
22:32	ZZZZZZ	119.249	122.185	120.457	117.991	123.859	131.851	!a114.782	115.901
22:35	ZZZZZZ	118.823	128.8	125.203	121.129	134.246	!a149.998	!a116.691	117.42
22:38	ZZZZZZ	112.898	116.21	114.321	113.702	125.509	137.451	!a114.04	112.166
22:41	ZZZZZZ	110.291	121.64	120.826	118.979	130.556	!a154.323	!a113.419	110.234
22:45	ZZZZZZ	110.802	119.201	119.99	117.711	132.447	!a154.421	!a117.564	113.746
22:48	ZZZZZZ	118.425	125.485	123.808	119.341	132.087	!a147.557	!a118.152	118.6
22:51	ZZZZZZ	112.587	113.399	107.987	107.477	115.422	123.158	103.602	105.573
22:54	MA52355-CCVA19	113.558	112.718	110.424	111.54	114.88	116.461	113.656	114.92
22:57	MA52355-CCB19	109.33	108.69	107.122	112.681	111.263	111.433	115.184	112.534
23:00	MP32673-MB1	113.586	114.143	109.55	114.176	115.414	113.241	115.259	116.54
23:03	MP32673-B1	115.451	116.132	112.514	115.718	116.044	116.334	117.219	115.185
23:07	MP32673-S1	119.5	131.609 !	127.409	128.286	137.811 !	157.368	!a121.117	119.055
23:10	MP32673-S2	117.964	129.123	125.319	125.354	139.113 !	158.65	!a 121.041	119.895
23:13	JD44217-5	115.955	127.864	124.8	128.024	138.091 !	159.274	!a123.783	116.984
23:16	MP32673-SD1	118.107	121.328	118.764	116.184	124.971	130.892	!a119.422	121.55
23:19	MP32673-PS1	111.165	123.329	119.357	118.041	131.526 !	150.237 !	115.097	113.97
23:22	ZZZZZZ	114.382	125.442	123.408	124.969	134.115 !	150.057 !	124.489	120.208
23:25	ZZZZZZ	100.413	103.291	99.769	106.416	107.215	104.537	108.197	107.891
23:28	MA52355-CCVA20	104.285	106.703	105.217	108.99	108.358	110.786	110.429	108.462
23:32	MA52355-CCB20	112.071	111.886	107.871	114.423	115.131	111.205	114.403	114.882
23:35	ZZZZZZ	112.217	123.652	121.032	126.182	130.736 !	145.933 !	122.231	116.318
23:38	ZZZZZZ	100.747	107.415	108.054	112.739	114.444	130.026 !	110.533	103.13
23:41	ZZZZZZ	104.575	116.703	114.21	116.433	129.271	150.594 !	112.86	109.139
23:44	ZZZZZZ	105.289	113.854	111.091	113.544	123.022	133.98 !	112.619	111.136
23:47	ZZZZZZ	108.755	119.972	117.329	118.658	125.949	139.578 !	114.171	112.033
23:50	ZZZZZZ	112.891	125.511	119.64	119.055	135.679 !	152.413 !	116.522	116.862
23:53	ZZZZZZ	111.614	121.31	117.992	118.264	127.079	138.394 !	117.355	117.635
23:57	ZZZZZZ	118.069	123.109	117.394	121.44	123.916	121.184	116.459	124.134

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
00:01	MA52355-CCVA21	114.499	118.551	112.833	114.043	119.009	118.533	115.98	118.534
00:04	MA52355-CCB21	117.871	122.558	116.747	120.784	124.334	121.143	115.56	124.245
00:07	ZZZZZZ	119.926	122.527	114.372	116.56	124.011	119.327	113.352	124.233
00:11	ZZZZZZ	114.955	122.01	115.603	122.504	118.843	115.349	120.338	118.452
00:14	MP32378-S1	107.718	114.5	109.913	116.743	115.127	118.451	113.757	111.067
00:17	MP32378-S2	106.413	112.185	106.716	113.739	113.446	116.175	112.247	109.22
00:20	JD43215-14F	106.481	111.702	105.537	112.308	113.148	113.887	111.015	108.454
00:23	MP32378-SD1	113.482	113.68	109.209	107.366	116.894	116.232	112.04	116.603
00:26	ZZZZZZ	113.949	116.012	110.255	113.508	117.282	113.497	113.007	117.57
00:29	MA52355-CCVA22	114.706	119.11	114.374	112.192	119.26	118.397	112.589	118.055
00:33	MA52355-CCB22	113.172	115.889	111.712	114.174	117.048	114.393	113.057	117.814
00:36	ZZZZZZ	117.26	118.374	112.071	115.086	117.386	114.787	112.995	117.853
00:39	MA52355-CRI2	117.948	120.279	114.352	117.237	120.46	117.187	115.223	121.244
00:42	MA52355-ICSA2	97.03	108.921	99.544	98.012	114.683	124.228	89.053	95.607
00:45	MA52355-ICSAB2	89.91	96.893	91.134	91.235	108.646	120.137	88.638	91.638
00:53	ZZZZZZ	88.785	95.422	91.457	102.852	98.67	95.213	103.41	99.706
00:56	MA52355-CCVA23	93.47	99.691	96.175	104.106	105.015	102.861	106.41	103.061
00:59	MA52355-CCB23	95.169	102.285	97.238	107.774	106.227	102.587	109.465	106.91
01:02	MP32650-S1	102.306	106.42	102.647	107.216	111.863	110.304	110.606	111.705
01:06	MP32650-S2	102.603	107.306	101.705	105.63	112.468	109.908	109.677	110.974
01:09	JD44120-1	102.503	107.446	103.603	106.811	113.445	111.752	111.476	113.504
01:12	MP32650-SD1	No results reported for the elements associated with this internal standard.							
01:15	ZZZZZZ	101.667	111.506	109.361	111.88	114.588	120.585	111.653	109.095
01:18	ZZZZZZ	103.377	113.892	109.252	110.396	118.802	122.498	110.804	112.463
01:21	ZZZZZZ	104.061	111.528	109.717	111.822	116.948	122.024	112.981	112.926
01:25	ZZZZZZ	101.324	106.708	102.348	102.621	109.973	110.43	104.969	107.973
01:28	MA52355-CCVA24	99.242	104.698	102.468	108.066	106.779	107.771	109.401	106.941
01:31	MA52355-CCB24	99.984	104.381	98.179	106.905	107.079	103.969	108.654	107.527
01:34	ZZZZZZ	104.253	108.949	105.628	106.837	112.531	113.191	107.819	108.925
01:37	ZZZZZZ	107.106	116.703	112.956	112.886	122.155	128.384	111.428	113.59
01:40	ZZZZZZ	107.831	114.644	109.648	110.604	116.618	119.3	111.451	113.614
01:44	ZZZZZZ	108.714	118.51	113.824	113.787	123.348	127.607	112.735	116.002
01:47	ZZZZZZ	105.446	112.213	106.332	106.254	118.794	120.613	107.721	113.35

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	Istd#5	Istd#6	Istd#7	Istd#8
01:50	ZZZZZZ	104.489	115.786	111.307	111.14	120.952	129.05	109.658	112.178
01:53	ZZZZZZ	100.606	108.803	107.268	109.841	116.52	124.932	110.443	109.388
01:56	ZZZZZZ	108.669	114.663	113.673	113.9	118.562	122.673	117.238	116.568
01:59	ZZZZZZ	107.338	110.032	104.821	103.399	113.095	112.379	107.732	112.807
02:03	MA52355-CCVA25	105.396	109.106	107.215	110.237	111.458	112.296	111.493	110.702
02:06	MA52355-CCB25	105.593	107.653	101.618	109.777	109.345	105.993	111.222	110.344
02:09	ZZZZZZ	115.855	122.325	119.512	120.701	123.977	126.654	119.396	121.512
02:12	ZZZZZZ	117.499	122.365	115.651	116.719	125.159	123.946	116.228	124.348
02:15	ZZZZZZ	116.202	124.758	118.981	119.406	128.313	133.371 !	118.806	121.642
02:18	ZZZZZZ	113.258	118.869	114.686	114.681	122.205	124.295	117.132	119.482
02:21	ZZZZZZ	113.149	118.057	114.236	115.318	121.552	123.088	117.734	119.661
02:25	ZZZZZZ	115.409	119.364	113.927	115.413	122.908	121.898	116.633	121.836
02:28	ZZZZZZ	110.464	120.209	116.633	116.035	122.838	125.075	116.506	119.217
02:31	ZZZZZZ	117.921	120.563	115.636	116.853	123.452	123.811	117.695	123.045
02:34	ZZZZZZ	113.693	119.732	116.972	117.3	122.034	126.149	118.993	120.275
02:37	MA52355-CCVA26	110.413	118.171	112.384	114.004	117.312	116.95	114.466	117.767
02:40	MA52355-CCB26	112.003	118.711	113.056	119.538	120.335	116.519	115.895	120.896
02:44	ZZZZZZ	114.824	121.955	114.101	121.623	121.964	117.118	116.668	122.218
02:47	ZZZZZZ	116.505	122.881	116.139	123.518	124.229	118.645	117.435	123.915
02:50	ZZZZZZ	117.216	124.531	115.992	123.766	124.823	117.543	116.481	125.53

! = Outside limits.

LEGEND:			CCV/CCB
Istd#	Parameter	Limits	Limits
Istd#1	Lithium	60-125 %	60-125 %
Istd#2	Scandium (45-1)	60-125 %	60-125 %
Istd#3	Scandium (45-2)	60-125 %	60-125 %
Istd#4	Scandium (45-3)	60-125 %	60-125 %
Istd#5	Germanium (72-1)	60-125 %	60-125 %
Istd#6	Germanium (72-2)	60-125 %	60-125 %
Istd#7	Germanium (72-3)	60-125 %	60-125 %
Istd#8	Germanium (74-1)	60-125 %	60-125 %

(a) No samples reported for the elements associated with this internal standard.

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
11:46	MA52355-STD1	100	100	100	100	100	100	100	100
11:51	MA52355-STD2	100	100	100	100	100	100	100	100
11:55	MA52355-STD3	100	100	100	100	100	100	100	100
11:58	MA52355-STD4	100.745	99.951	100.545	100.091	99.435	101.414	101.555	101.751
12:02	MA52355-STD5	100.638	99.739	100.477	99.862	99.873	99.77	99.782	99.469
12:05	MA52355-STD6	99.816	98.436	100.713	97.618	96.978	99.245	97.488	98.763
12:09	MA52355-STD7	99.471	98.54	97.307	96.007	95.849	96.809	97.581	96.559
12:12	MA52355-STD8	97.534	96.328	93.277	92.915	94.807	93.529	93.859	94.542
12:15	MA52355-STD9	99.544	100.962	94.507	96.244	97.72	95.209	96.917	95.667
12:19	MA52355-STD10	102.842	103.061	99.023	99.521	100.402	99.163	99.865	99.634
12:22	MA52355-STD11	105.548	104.088	98.788	99.115	100.294	98.734	100.091	100.567
12:26	MA52355-STD12	104.584	102.673	97.517	99.721	99.803	97.253	100.87	100.313
12:30	MA52355-STD13	100	100	100	100	100	100	100	100
12:33	MA52355-STD14	100	100	100	100	100	100	100	100
12:36	ZZZZZZ	0.082 !	0.058 !	0.212 !	0.169 !	0.146 !	0.041 !	0.026 !	0.306 !
12:39	ZZZZZZ	98.322	98.776	100.017	99.511	98.242	99.519	99.29	100.895
12:49	ZZZZZZ	97.702	97.77	93.373	93.547	94.389	95.475	95.207	97.992
13:05	ZZZZZZ	95.325	95.854	91.864	91.782	93.653	93.735	94.42	96.263
13:22	ZZZZZZ	95.941	96.633	92.605	92.346	94.673	96.192	95.023	97.223
13:33	ZZZZZZ	95.451	96.492	91.509	92.719	95.614	94.818	95.74	96.949
13:36	MA52355-ICV1	98.92	100.472	98.235	98.431	99.805	100.222	100.37	100.248
13:39	MA52355-ICVA1	100.593	100.001	97.001	95.88	96.222	99.39	97.545	101.937
13:43	MA52355-ICB1	100.486	102.072	98.846	99.484	100.091	100.638	100.058	100.533
13:46	MA52355-CCVA1	98.875	99.294	88.22	93.24	95.004	90.138	95.24	93.679
13:49	MA52355-CCB1	99.799	101.163	97.419	98.289	99.684	98.982	100.166	99.427
13:52	ZZZZZZ	101.673	102.189	100.801	100.622	100.292	101.618	101.249	103.047
13:57	MA52355-CCVA2	102.066	101.228	96.788	96.801	98.313	99.4	99.852	102.071
14:00	MA52355-CCB2	101.519	102.591	101.385	100.839	101.781	101.042	102.518	102.177
14:03	ZZZZZZ	103.076	103.541	101.747	102.604	102.754	104.351	103.47	104.424
14:06	MA52355-CRI1	103.994	104.559	103.371	103.228	103.903	105.734	104.63	104.949
14:11	ZZZZZZ	83.115	83.043	84.766	80.107	81.587	90.9	84.522	100.209
14:14	ZZZZZZ	82.161	83.275	79.667	77.614	80.862	86.071	82.566	95.717
14:22	ZZZZZZ	84.529	90.637	88.638	89.075	94.259	92.571	90.162	94.427

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
14:25	MA52355-ICSA1	81.64	83.794	82.063	78.966	81.578	88.876	83.706	98.354
14:28	MA52355-ICSAB1	81.366	83.256	80.923	77.81	81.019	87.904	81.904	96.485
14:35	ZZZZZZ	83.699	89.59	88.868	88.359	93.168	93.362	89.348	95.256
14:38	ZZZZZZ	85.936	91.963	91.552	89.864	93.765	95.484	90.838	98.035
14:41	MA52355-CCVA3	91.885	96.926	90.527	89.91	94.061	96.018	91.592	99.454
14:44	MA52355-CCB3	95.442	102.083	98.749	97.853	103.02	102.856	99.085	104.453
14:47	ZZZZZZ	98.297	99.975	100.398	99.061	100.335	101.878	99.754	104.024
14:50	ZZZZZZ	97.508	100.268	98.854	99.046	100.56	102.507	100.023	100.783
14:54	ZZZZZZ	99.694	101.776	99.581	100.07	100.589	101.288	101.669	101.563
14:57	ZZZZZZ	101.713	105.962	103.856	103.653	105.968	105.398	104.797	106.803
15:00	ZZZZZZ	99.914	100.564	99.163	97.056	97.557	101.326	99.379	103.142
15:03	ZZZZZZ	91.801	96.853	91.385	89.27	93.948	96.694	91.275	103.756
15:06	MA52355-CCVA4	102.625	105.849	98.35	98.923	101.507	102.478	101.232	105.94
15:09	MA52355-CCB4	103.219	107.351	103.754	103.301	106.203	106.558	104.495	106.432
15:12	ZZZZZZ	106.615	110.41	108.309	106.862	109.456	110.293	107.965	111.996
15:15	MP32568-B1	107.453	108.857	107.24	103.199	104.024	109.91	104.38	111.668
15:19	ZZZZZZ	103.554	102.828	100.693	98.119	98.738	103.623	100.029	105.358
15:22	MP32568-S1	98.269	100.676	94.144	92.312	94.038	99.287	95.413	105.22
15:25	MP32568-S2	97.607	100.834	92.943	90.948	94.678	99.079	93.991	103.98
15:28	DA43930-1	99.66	103.48	96.053	94.265	97.706	104.183	98.305	106.943
15:31	ZZZZZZ	104.006	105.809	98.425	98.419	100.339	102.226	101.685	104.494
15:34	ZZZZZZ	105.461	107.201	100.389	99.557	102.56	104.401	102.564	105.803
15:37	ZZZZZZ	104.497	105.147	101.169	100.496	101.612	105.079	104.355	106.304
15:40	MA52355-CCVA5	103.628	105.83	101.528	99.82	102.996	104.923	101.339	109.2
15:43	MA52355-CCB5	104.341	108.808	104.518	104.243	107.284	107.372	105.822	109.145
15:47	MA52355-CCVA6	107.592	108.35	107.033	102.87	104.037	109.503	105.005	112.872
15:50	MA52355-CCB6	107.065	111.037	107.254	106.545	109.879	111.159	108.047	111.975
15:53	ZZZZZZ	102.987	102.905	101.672	99.372	100.032	105.393	102.588	108.512
15:56	ZZZZZZ	105.044	105.418	102.201	102.622	103.539	104.748	106.126	105.148
15:59	ZZZZZZ	101.307	101.372	98.847	97.208	99.019	103.824	101.422	106.032
16:02	MP32568-S1	103.4	104.835	98.425	98.881	100.556	103.058	101.837	104.167
16:06	MP32568-S2	105.038	105.608	100.068	100.004	101.659	103.932	102.758	105.113
16:09	DA43930-1	104.778	104.55	101.013	101.083	100.996	104.831	102.472	105.773

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
16:12	MA52355-CCVA7	103.676	105.673	101.225	100.241	103.451	104.518	100.957	108.753
16:15	MA52355-CCB7	104.306	108.418	103.846	104.864	109.878	106.999	106.568	108.301
16:18	MA52355-CCVA8	107.07	108.24	106.912	102.467	104.251	109.497	105.09	112.091
16:21	MA52355-CCB8	105.251	108.849	106.729	106.723	109.033	109.435	106.593	109.691
17:00	ZZZZZZ	97.757	104.107	104.642	105.577	109.682	108.874	107.006	108.106
17:03	ZZZZZZ	84.559	88.644	87.512	84.338	87.919	93.179	87.441	100.897
17:07	ZZZZZZ	92.956	95.124	91.256	91.827	95.467	95.918	94.486	98.468
17:11	MP32565-S1	93.602	96.182	87.629	88.642	92.454	93.913	93.499	98.327
17:14	MP32565-S2	93.618	95.989	88.583	88.666	91.761	95.188	93.245	99.261
17:17	DA43444-1F	91.401	93.921	88.195	87.545	90.84	94.75	92.475	99.329
17:20	MP32565-S1	83.949	87.816	77.504	78.252	83.657	86.402	82.754	95.637
17:23	MP32565-S2	95.275	99.718	84.649	86.136	93.318	95.387	92.667	103.189
17:26	DA43444-1F	102.802	106.169	95.451	93.305	99.494	105.609	100.09	111.71
17:29	MA52355-CCVA9	112.731	113.476	110.703	106.585	109.066	117.354	109.065	120.887
17:35	MA52355-CCB9	89.236	93.395	95.181	92.701	96.297	100.527	95.003	101.489
17:40	ZZZZZZ	87.707	90.345	84.706	85.659	88.671	91.698	90.665	97.191
17:44	ZZZZZZ	88.688	90.062	87.115	87.738	89.875	92.871	92.276	96.149
17:47	ZZZZZZ	88.888	89.699	89.059	89.711	91.84	93.708	93.198	96.591
17:50	ZZZZZZ	92.185	92.832	87.316	89.113	90.66	92.921	94.014	96.93
17:53	ZZZZZZ	93.25	94.042	92.045	92.284	93.734	95.958	95.974	98.55
17:56	ZZZZZZ	87.871	88.259	86.662	86.691	89.4	92.513	91.503	96.383
18:00	ZZZZZZ	88.373	89.36	88.212	89.159	91.349	92.69	92.415	95.706
18:03	ZZZZZZ	86.047	87.654	83.584	84.182	86.115	90.157	88.92	94.75
18:06	MA52355-CCVA10	91.161	95.466	88.951	90.027	94.335	93.432	93.429	99.351
18:09	MA52355-CCB10	95.097	98.502	95.529	96.526	100.559	99.967	99.549	102.409
18:12	ZZZZZZ	91.708	91.514	90.753	89.219	90.865	96.319	93.651	99.241
18:16	ZZZZZZ	88.663	89.818	84.623	83.697	87.419	93.31	91.53	105.333
18:19	ZZZZZZ	97.124	98.852	92.728	91.312	95.44	103.605	98.807	110.55
18:22	ZZZZZZ	100.358	101.897	97.356	95.151	97.179	106.388	101.975	112.423
18:25	MP32565-S1	98.117	97.884	104.389	98.013	98.203	109.47	102.7	110.667
18:28	MP32565-S2	90.06	91.41	93.867	90.686	93.09	100.353	94.583	102.931
18:31	DA43444-1F	85.685	87.222	89.31	88.254	89.544	95.728	91.613	98.333
18:35	MA52355-CCVA11	84.486	89.901	85.641	85.019	90.703	92.454	88.854	98.873

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
18:38	MA52355-CCB11	89.212	93.741	92.943	92.878	96.992	98.275	94.397	102.866
18:42	ZZZZZZ	90.273	93.757	97.518	94.477	97.715	101.706	97.953	105.292
18:46	ZZZZZZ	94.304	96.441	94.896	93.517	95.694	101.071	97.536	105.43
18:49	ZZZZZZ	94.196	92.918	91.864	90.769	90.569	98.683	95.623	103.453
18:52	ZZZZZZ	94.761	93.73	95.627	94.33	93.69	100.513	97.893	104.577
18:56	ZZZZZZ	89.879	90.334	89.962	88.908	88.688	95.702	92.708	100.818
18:59	ZZZZZZ	91.879	91.07	93.498	91.446	91.275	99.189	94.679	102.78
19:02	ZZZZZZ	87.625	86.768	87.809	85.998	86.27	94.248	89.925	100.246
19:05	MA52355-CCVA12	90.725	92.951	90.011	89.246	92.048	95.712	92.162	103.614
19:08	MA52355-CCB12	92.063	95.167	95.07	94.997	97.22	99.472	96.374	104.364
19:11	ZZZZZZ	98.359	95.713	98.493	97.478	96.916	102.425	101.261	106.953
19:15	ZZZZZZ	88.525	88.613	86.656	85.671	87.247	92.058	88.909	100.899
19:18	ZZZZZZ	85.102	86.128	86.617	84.861	89.857	92.079	87.964	98.408
19:21	ZZZZZZ	86.06	87.198	88.832	88.184	88.617	93.782	90.207	98.341
19:24	ZZZZZZ	87.526	88.298	87.324	86.597	88.125	93.927	91.286	100.108
19:27	ZZZZZZ	89.981	89.72	91.159	90.096	90.887	96.43	93.393	101.526
19:31	MA52355-CCVA13	90.416	92.7	90.043	89.59	92.413	96.257	92.076	104.2
19:34	MA52355-CCB13	93.087	95.297	96.447	95.418	98.443	100.816	97.401	106.084
19:37	MP32696A-MB1	91.808	98.396	99.666	97.515	102.474	102.602	96.512	113.439
19:40	MP32696A-B2	96.309	102.211	100.033	96.755	101.995	105.037	97.077	112.451
19:43	MP32696A-S3	91.857	93.124	90.153	86.292	89.393	98.078	90.681	109.107
19:46	MP32696A-S4	92.527	93.203	91.509	86.625	89.369	99.29	91.21	108.635
19:49	JD44282-1	92.602	91.906	93.265	88.676	89.223	100.865	93.386	108.41
19:52	MP32696A-SD1	102.679	98.787	100.602	98.644	96.292	106.15	102.393	109.659
19:56	ZZZZZZ	93.924	101.809	98.133	95.441	100.439	102.934	96.305	109.464
19:58	ZZZZZZ	102.332	102.44	105.59	104.512	103.822	109.544	105.367	111.881
20:02	MA52355-CCVA14	104.665	103.545	102.462	101.006	101.62	108.097	103.901	112.114
20:05	MA52355-CCB14	104.544	105.499	106.612	105.47	106.97	110.408	108.06	112.72
20:08	ZZZZZZ	2.648 !	0.449 !	78.006	4.215 !	1.252 !	79.806	3.763 !	81.594
20:18	ZZZZZZ	102.21	106.237	107.312	103.521	105.556	110.319	103.995	117.294
20:21	ZZZZZZ	109.875	107.522	108.828	106.082	105.144	112.36	108.639	114.615
20:24	ZZZZZZ	110.059	108.385	108.351	106.85	106.541	111.056	109.309	113.824
20:27	ZZZZZZ	110.153	107.804	108.726	107.069	106.237	111.689	109.612	113.615

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
20:30	ZZZZZZ	110.668	106.713	110.259	109.203	106.189	113.084	111.676	114.485
20:34	ZZZZZZ	108.699	106.528	107.728	105.583	105.032	110.698	108.304	112.257
20:37	ZZZZZZ	107.221	108.528	108.046	105.715	107.42	110.981	106.399	115.371
20:40	MA52355-CCVA15	108.979	108.229	106.006	104.217	105.041	110.333	107.152	113.681
20:43	MA52355-CCB15	107.507	108.116	109.423	109.188	109.042	113.865	110.747	115.544
20:47	MP32679-MB1	102.657	106.835	112.041	108.551	111.929	115.424	108.266	121.753
20:50	MP32679-LB1	101.442	107.17	109.274	105.757	110.483	113.216	105.699	118.647
20:54	MP32679-B1	104.315	109.139	108.026	103.62	108.488	112.664	104.593	118.732
20:57	MP32679-LS1	107.165	112.118	109.539	105.64	109.981	114.055	105.235	120.019
21:00	MP32679-S1	100.96	106.439	101.416	99.051	103.052	108.086	100.428	114.924
21:03	MP32679-S2	101.174	108.206	102.636	98.471	105.025	109.212	100.111	115.411
21:06	JD44117-1A	100.524	107.851	103.445	99.783	104.97	109.732	100.442	115.908
21:10	MP32679-SD1	105.717	106.66	108.251	104.359	105.747	113.847	107.237	116.376
21:13	MA52355-CCVA16	107.796	109.625	107.999	104.748	106.567	113.547	107.185	117.613
21:16	MA52355-CCB16	106.442	108.664	110.121	107.906	110.128	114.508	109.748	116.103
21:19	ZZZZZZ	98.279	106.164	103.604	99.616	105.514	109.563	101.447	115.567
21:22	ZZZZZZ	97.906	106.127	105.31	101.14	106.956	110.766	103.081	117.742
21:25	ZZZZZZ	97.534	106.06	104.969	100.317	107.223	111.333	102.361	117.635
21:28	MP32650-MB1	102.357	104.168	108.027	104.168	106.163	112.62	105.995	114.579
21:32	MP32650-B1	107.008	107.87	105.531	103.718	106.44	111.098	106.886	113.139
21:35	MP32650-S1	112.728	112.403	110.459	107.766	110.152	115.424	110.592	120.188
21:38	MP32650-S2	113.273	112.124	110.12	107.192	108.952	115.434	109.371	119.774
21:41	JD44120-1	115.307	112.779	111.496	108.559	109.498	118.146	111.165	120.404
21:44	MP32650-SD1	119.974	116.019	116.761	115.048	113.406	120.768	117.882	120.523
21:48	MA52355-CCVA17	115.188	115.418	114.14	111.138	111.91	119.841	114.024	120.676
21:51	MA52355-CCB17	116.296	117.452	120.71	116.997	117.903	124.263	119.306	123.191
21:54	ZZZZZZ	113.959	112.568	112.421	109.527	110.053	116.981	111.823	119.837
21:57	ZZZZZZ	115.204	110.961	111.82	108.931	108.018	117.022	113.454	119.001
22:00	ZZZZZZ	117.215	114.642	114.24	111.655	112.239	118.807	114.915	123.064
22:03	ZZZZZZ	102.372	100.602	101.78	97.297	97.509	108.74	102.621	116.891
22:06	ZZZZZZ	109.387	108.124	105.164	103.418	104.643	112.096	107.13	116.684
22:09	ZZZZZZ	116.875	113.659	113.001	110.747	110.15	117.519	114.467	119.367
22:12	ZZZZZZ	112.092	108.431	110.181	106.653	105.227	115.529	110.582	119.724

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
22:16	ZZZZZZ	121.955	119.618	118.328	116.917	115.297	123.024	120.203	122.403
22:19	ZZZZZZ	124.789	123.392	127.81	124.14	118.511	131.125 !	125.633	129.586
22:22	ZZZZZZ	118.209	114.857	116.593	112.874	111.702	120.885	116.366	123.651
22:25	MA52355-CCVA18	121.84	119.179	120.315	116.403	114.816	124.732	119.456	125.581
22:28	MA52355-CCB18	122.149	121.799	124.84	122.455	120.081	128.312	123.068	126.554
22:32	ZZZZZZ	116.521	113.928	115.863	112.077	111.955	120.29	115.45	124.324
22:35	ZZZZZZ	118.455	114.352	115.078	111.384	111.177	119.992	116.193	123.479
22:38	ZZZZZZ	112.383	111.68	111.015	107.974	110.062	114.518	111.719	118.751
22:41	ZZZZZZ	112.867	110.391	109.277	107.006	106.532	114.664	112.518	117.755
22:45	ZZZZZZ	118.634	115.145	114.175	113.327	111.734	119.069	116.867	122.171
22:48	ZZZZZZ	119.594	116.161	116.45	114.251	112.077	121.3	118.33	125.755
22:51	ZZZZZZ	103.837	102.544	104.285	97.772	99.799	114.552	104.055	119.392
22:54	MA52355-CCVA19	114.251	114.083	115.936	110.389	111.186	123.209	113.453	124.851
22:57	MA52355-CCB19	111.778	114.635	115.104	113.155	115.018	121.228	113.619	121.206
23:00	MP32673-MB1	113.359	115.961	119.098	116.328	115.979	124.411	115.72	124.136
23:03	MP32673-B1	115.53	117.326	118.989	114.073	114.568	123.127	115.006	125.523
23:07	MP32673-S1	118.821	117.921	118.636	113.085	113.295	124.249	115.546	129.994
23:10	MP32673-S2	119.061	118.065	118.805	112.866	113.507	125.564	115.945	129.606
23:13	JD44217-5	118.756	120.085	116.985	112.21	115.363	123.179	115.262	126.645
23:16	MP32673-SD1	122.919	118.656	121.375	117.592	114.524	124.816	120.184	124.701
23:19	MP32673-PS1	113.625	112.274	113.499	108.291	107.506	120.127	111.749	122.603
23:22	ZZZZZZ	122.096	122.491	120.742	116.738	118.302	125.124	118.281	127.674
23:25	ZZZZZZ	104.351	108.585	112.023	107.55	109.412	117.138	107.191	118.762
23:28	MA52355-CCVA20	108.821	111.408	110.415	106.902	109.242	116.625	109.047	119.511
23:32	MA52355-CCB20	111.356	114.193	119.129	115.218	111.184	122.2	114.767	123.641
23:35	ZZZZZZ	116.395	119.989	117.789	114.462	116.635	122.912	115.42	127.497
23:38	ZZZZZZ	105.48	108.4	104.222	102.6	107.038	111.563	104.915	117.474
23:41	ZZZZZZ	108.002	108.766	108.741	103.563	106.135	115.908	107.242	121.103
23:44	ZZZZZZ	109.795	110.432	111.502	107.546	107.919	118.508	110.385	122.026
23:47	ZZZZZZ	112.212	112.177	111.982	107.967	109.08	117.828	111.737	122.38
23:50	ZZZZZZ	115.05	113.517	116.018	110.446	110.509	122.132	112.134	125.464
23:53	ZZZZZZ	116.224	115.651	117.019	113.263	111.657	122.569	115.545	125.354
23:57	ZZZZZZ	121.098	116.667	127.098	123.823	109.263	130.808 !	123.494	129.901

INTERNAL STANDARD SUMMARY

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Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
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Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
00:01	MA52355-CCVA21	116.283	116.325	119.16	114.915	113.231	124.523	115.843	124.812
00:04	MA52355-CCB21	120.944	115.648	126.731	123.74	109.984	130.386 !a	124.005	130.265 !a
00:07	ZZZZZZ	119.614	113.174	125.175	121.63	106.745	128.598	122.136	127.412
00:11	ZZZZZZ	115.286	120.444	123.418	116.227	120.286	126.439	114.88	132.397 !
00:14	MP32378-S1	107.48	113.234	112.136	106.178	109.723	120.635	107.053	127.394
00:17	MP32378-S2	105.572	111.956	110.102	104.002	108.436	118.026	106.113	124.578
00:20	JD43215-14F	103.779	111.052	109.833	105.104	109.258	117.866	105.497	123.692
00:23	MP32378-SD1	113.629	112.317	116.364	111.959	110.782	122.386	115.866	123.128
00:26	ZZZZZZ	113.969	113.04	118.734	115.551	110.441	123.188	118.13	122.79
00:29	MA52355-CCVA22	115.92	112.779	118.75	113.199	110.784	122.805	115.205	123.067
00:33	MA52355-CCB22	114.635	112.989	119.877	116.976	109.945	124.563	117.747	124.371
00:36	ZZZZZZ	114.774	112.355	121.881	116.726	109.707	124.16	118.202	123.534
00:39	MA52355-CRI2	117.66	114.972	122.691	119.426	111.823	126.082	120.344	125.309
00:42	MA52355-ICSA2	88.25	86.54	94.994	87.147	86.916	102.811	92.203	114.88
00:45	MA52355-ICSAB2	86.572	87.05	90.982	85.661	86.755	101.572	90.449	110.603
00:53	ZZZZZZ	94.95	103.545	105.542	104.048	108.254	112.927	103.455	115.533
00:56	MA52355-CCVA23	100.94	106.866	106.828	101.518	105.882	116.078	105.28	119.714
00:59	MA52355-CCB23	103.358	110.085	112.466	109.246	111.138	119.405	108.854	121.011
01:02	MP32650-S1	109.268	110.54	114.947	110.115	110.289	119.782	112.195	123.586
01:06	MP32650-S2	108.52	109.78	113.663	109.812	108.799	119.383	111.416	121.642
01:09	JD44120-1	110.922	111.426	115.845	111.608	111.186	119.887	113.486	121.62
01:12	MP32650-SD1	No results reported for the elements associated with this internal standard.							
01:15	ZZZZZZ	110.703	110.992	112.681	110.449	110.207	118.416	112.026	122.018
01:18	ZZZZZZ	111.119	110.073	114.74	109.062	109.357	120.322	110.952	124.247
01:21	ZZZZZZ	112.125	112.462	114.097	109.376	110.624	119.18	111.903	122.748
01:25	ZZZZZZ	106.372	105.466	108.809	103.862	104.378	115.97	107.631	120.51
01:28	MA52355-CCVA24	106.087	109.445	110.062	105.68	107.726	116.691	106.166	120.594
01:31	MA52355-CCB24	103.55	109.079	113.47	108.298	111.029	119.406	108.759	122.11
01:34	ZZZZZZ	107.858	107.734	111.111	106.452	106.3	117.487	109.406	120.558
01:37	ZZZZZZ	111.891	110.144	114.742	108.781	108.081	120.415	111.282	125.476
01:40	ZZZZZZ	111.9	111.528	114.432	109.315	110.686	120.848	113.033	123.145
01:44	ZZZZZZ	113.821	112.157	116.245	111.487	110.056	121.809	113.577	124.828
01:47	ZZZZZZ	108.682	107.059	113.772	107.383	106.122	119.9	110.282	122.04

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#9	Istd#10	Istd#11	Istd#12	Istd#13	Istd#14	Istd#15	Istd#16
01:50	ZZZZZZ	109.504	108.216	112.115	107.477	107.089	118.718	110.591	121.871
01:53	ZZZZZZ	109.84	109.879	110.624	108.378	108.49	116.102	110.973	119.755
01:56	ZZZZZZ	118.017	117.241	117.823	115.545	114.545	123.389	117.656	123.869
01:59	ZZZZZZ	110.703	108.502	113.36	108.413	107.208	119.276	111.901	120.24
02:03	MA52355-CCVA25	110.37	112.117	112.895	108.883	110.553	119.739	110.599	123.304
02:06	MA52355-CCB25	106.335	111.194	115.063	110.53	111.969	120.315	110.321	122.081
02:09	ZZZZZZ	120.764	119.298	122.283	118.052	115.316	125.18	119.194	127.355
02:12	ZZZZZZ	121.67	115.78	124.961	120.184	109.62	128.293	121.568	127.84
02:15	ZZZZZZ	119.015	118.103	122.194	116.598	116.097	124.771	117.739	128.381
02:18	ZZZZZZ	118.137	117.125	118.797	116.131	115.322	124.55	117.78	126.08
02:21	ZZZZZZ	119.626	117.66	120.715	117.865	114.131	124.76	120.322	124.808
02:25	ZZZZZZ	119.565	116.391	122.942	119.577	111.477	126.221	120.131	125.888
02:28	ZZZZZZ	117.492	115.9	118.683	116.136	114.823	124.362	118.02	126.13
02:31	ZZZZZZ	121.258	117.471	124.026	118.299	111.598	125.942	120.521	125.94
02:34	ZZZZZZ	121.021	119.121	121.613	117.299	116.823	125.182	119.656	126.463
02:37	MA52355-CCVA26	114.903	115.02	118.447	112.46	112.155	123.746	113.896	127.266
02:40	MA52355-CCB26	117.019	115.633	123.184	119.684	110.514	128.76	121.13	128.828
02:44	ZZZZZZ	117.652	115.901	126.943	121.328	110.494	130.029 !	120.141	131.228 !
02:47	ZZZZZZ	118.975	117.286	127.63	123.52	111.856	131.948 !	123.191	132.86 !
02:50	ZZZZZZ	117.934	116.201	128.032	122.083	110.542	133.011 !	123.182	133.913 !

! = Outside limits.

LEGEND:			CCV/CCB
Istd#	Parameter	Limits	Limits
Istd#9	Germanium (74-2)	60-125 %	60-125 %
Istd#10	Germanium (74-3)	60-125 %	60-125 %
Istd#11	Rhodium (103-1)	60-125 %	60-125 %
Istd#12	Rhodium (103-2)	60-125 %	60-125 %
Istd#13	Rhodium (103-3)	60-125 %	60-125 %
Istd#14	Indium (115-1)	60-125 %	60-125 %
Istd#15	Indium (115-2)	60-125 %	60-125 %
Istd#16	Terbium (159-1)	60-125 %	60-125 %

(a) No samples reported for the elements associated with this internal standard.

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
11:46	MA52355-STD1	100	100	100	100	100	100
11:51	MA52355-STD2	100	100	100	100	100	100
11:55	MA52355-STD3	100	100	100	100	100	100
11:58	MA52355-STD4	99.413	99.888	102.27	100.654	100.663	99.298
12:02	MA52355-STD5	99.433	99.585	99.474	99.283	99.703	98.67
12:05	MA52355-STD6	97.953	96.576	99.638	96.943	100.292	97.16
12:09	MA52355-STD7	97.032	96.777	98.233	96.348	98.05	97.607
12:12	MA52355-STD8	95.343	95.516	95.052	94.262	95.977	95.066
12:15	MA52355-STD9	96.851	98.632	96.146	97.082	95.714	96.798
12:19	MA52355-STD10	99.637	100.357	99.975	99.548	98.669	98.311
12:22	MA52355-STD11	101.454	101.642	100.249	100.063	97.657	97.357
12:26	MA52355-STD12	101.329	102.853	100.294	101.27	94.787	96.363
12:30	MA52355-STD13	100	100	100	100	100	100
12:33	MA52355-STD14	100	100	100	100	100	100
12:36	ZZZZZZ	0.259 !	0.233 !	0.3 !	0.258 !	0.267 !	0.199 !
12:39	ZZZZZZ	99.704	98.554	100.64	101.484	100.398	100.118
12:49	ZZZZZZ	97.033	98.105	97.077	97.641	95.131	94.492
13:05	ZZZZZZ	95.374	97.026	95.541	96.304	93.25	92.982
13:22	ZZZZZZ	95.303	97.105	97.17	97.816	94.061	93.898
13:33	ZZZZZZ	96.115	96.845	96.14	98.352	92.759	93.095
13:36	MA52355-ICV1	98.59	97.965	99.645	100.305	97.916	98.12
13:39	MA52355-ICVA1	99.557	99.93	102.106	101.125	97.183	96.107
13:43	MA52355-ICB1	98.945	99.411	100.284	100.617	99.678	99.789
13:46	MA52355-CCVA1	96.42	98.422	93.071	97.17	89.1	93.627
13:49	MA52355-CCB1	99.012	99.269	98.463	99.849	98.362	98.915
13:52	ZZZZZZ	100.506	97.484	101.781	101.772	100.198	99.369
13:57	MA52355-CCVA2	99.599	99.746	101.155	100.656	96.552	96.068
14:00	MA52355-CCB2	101.111	100.27	102.149	102.012	99.833	100.091
14:03	ZZZZZZ	103.532	100.628	102.726	103.062	100.555	101.275
14:06	MA52355-CRI1	102.457	100.494	103.868	103.252	102.143	101.079
14:11	ZZZZZZ	93.316	95.07	99.962	94.373	85.238	81.408
14:14	ZZZZZZ	90.63	93.325	94.351	91.632	81.46	80.501
14:22	ZZZZZZ	92.681	95.43	93.952	93.624	93.372	93.226

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
14:25	MA52355-ICSA1	91.897	94.758	97.537	93.106	83.81	81.185
14:28	MA52355-ICSAB1	90.692	93.687	96.464	92.517	82.855	80.132
14:35	ZZZZZZ	91.739	93.903	94.243	93.192	93.444	93.496
14:38	ZZZZZZ	93.299	95.231	97.292	94.934	95.661	94.152
14:41	MA52355-CCVA3	95.337	98.569	99.034	97.205	94.733	92.504
14:44	MA52355-CCB3	99.403	103.077	102.88	101.185	101.836	100.344
14:47	ZZZZZZ	99.48	98.945	102.015	100.503	100.516	100.076
14:50	ZZZZZZ	99.244	98.374	101.491	100.582	100.147	100.432
14:54	ZZZZZZ	101.335	98.954	101.373	102.28	99.41	101.22
14:57	ZZZZZZ	104.629	104.715	105.64	106.247	104.32	104.97
15:00	ZZZZZZ	98.603	98.117	102.165	100.31	100.999	99.703
15:03	ZZZZZZ	98.249	101.495	103.572	99.625	92.669	90.727
15:06	MA52355-CCVA4	102.962	104.005	104.855	103.554	100.575	98.926
15:09	MA52355-CCB4	104.111	104.242	105.544	105.454	103.847	103.578
15:12	ZZZZZZ	106.613	107.156	109.652	107.573	107.447	106.313
15:15	MP32568-B1	105.344	106.034	110.586	106.977	107.698	102.881
15:19	ZZZZZZ	99.832	100.58	104.251	101.488	103.411	99.801
15:22	MP32568-S1	99.832	101.345	104.906	101.204	95.366	92.96
15:25	MP32568-S2	98.504	101.548	104.154	100.666	95.059	92.297
15:28	DA43930-1	101.216	103.674	106.618	103.431	97.899	96.148
15:31	ZZZZZZ	102.285	102.941	104.538	103.163	100.976	99.637
15:34	ZZZZZZ	102.585	104.025	105.199	104.013	101.992	101.836
15:37	ZZZZZZ	103.54	102.99	105.825	103.826	102.436	102.24
15:40	MA52355-CCVA5	104.141	104.908	108.963	105.019	102.635	100.118
15:43	MA52355-CCB5	104.78	106.863	108.54	106.003	106.199	104.484
15:47	MA52355-CCVA6	106.351	106.675	112.601	106.88	105.152	101.875
15:50	MA52355-CCB6	107.023	107.773	110.466	109.16	107.854	107.23
15:53	ZZZZZZ	103.093	102.962	107.448	104.906	100.636	99.561
15:56	ZZZZZZ	103.754	102.981	104.746	104.992	103.046	103.783
15:59	ZZZZZZ	101.882	101.547	104.948	103.096	100.105	98.895
16:02	MP32568-S1	101.201	102.878	103.967	103.049	101.067	100.252
16:06	MP32568-S2	102.057	102.795	105.3	104.041	102.192	101.046
16:09	DA43930-1	102.396	102.936	105.17	104.023	102.429	102.295

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
16:12	MA52355-CCVA7	103.937	105.39	108.029	105.735	102.213	99.669
16:15	MA52355-CCB7	105.741	106.273	107.762	107.034	105.875	105.029
16:18	MA52355-CCVA8	107.208	105.773	111.311	107.926	105.228	102.092
16:21	MA52355-CCB8	105.984	107.033	108.81	107.371	106.674	105.741
17:00	ZZZZZZ	105.331	108.202	107.44	107.623	106.342	106.605
17:03	ZZZZZZ	93.744	97.327	100.004	95.422	92.042	86.912
17:07	ZZZZZZ	94.752	96.094	97.541	96.594	96.768	96.354
17:11	MP32565-S1	96.733	99.834	98.812	98.585	92.52	93.179
17:14	MP32565-S2	96.663	99.671	99.886	99.335	93.53	92.54
17:17	DA43444-1F	95.55	97.664	99.052	97.965	93.027	92.845
17:20	MP32565-S1	92.908	97.495	96.509	95.247	83.394	83.209
17:23	MP32565-S2	99.791	105.354	103.561	102.743	89.95	88.034
17:26	DA43444-1F	105.455	110.488	112.031	107.596	96.297	92.923
17:29	MA52355-CCVA9	110.901	112.506	119.254	113.258	113.411	107.356
17:35	MA52355-CCB9	97.022	99.588	101.322	98.134	100.934	98.113
17:40	ZZZZZZ	95.435	97.758	97.21	97.5	90.044	90.823
17:44	ZZZZZZ	94.173	94.304	95.846	96.119	93.842	94.118
17:47	ZZZZZZ	93.989	93.71	96.534	96.377	96.029	97.09
17:50	ZZZZZZ	96.498	96.329	97.522	97.951	92.498	93.793
17:53	ZZZZZZ	96.222	96.055	98.4	97.499	97.802	99.039
17:56	ZZZZZZ	93.36	94.064	96.047	95.15	92.847	92.188
18:00	ZZZZZZ	94.009	93.904	95.445	96.018	95.612	97.251
18:03	ZZZZZZ	93.169	93.773	94.32	94.6	89.274	89.791
18:06	MA52355-CCVA10	96.655	99.721	99.234	98.744	94.806	95.146
18:09	MA52355-CCB10	100.248	101.676	101.472	101.79	100.973	101.036
18:12	ZZZZZZ	95.997	95.969	99.108	97.223	95.644	95.305
18:16	ZZZZZZ	98.931	102.856	105.112	100.563	83.905	81.758
18:19	ZZZZZZ	104.035	107.398	110.737	106.888	94.762	91.821
18:22	ZZZZZZ	104.308	107.308	110.657	106.632	99.828	97.234
18:25	MP32565-S1	102.63	101.965	110.837	105.07	110.212	106.19
18:28	MP32565-S2	97.191	97.127	103.226	99.394	104.271	100.807
18:31	DA43444-1F	94.68	94.785	98.043	96.172	99.583	98.147
18:35	MA52355-CCVA11	93.753	98.262	99.124	96.484	96.034	93.961

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
18:38	MA52355-CCB11	97.604	100.488	102.169	100.413	101.274	100.238
18:42	ZZZZZZ	99.602	100.616	105.262	102.371	104.83	102.179
18:46	ZZZZZZ	101.408	102.789	105.537	102.53	103.203	100.896
18:49	ZZZZZZ	99.798	98.457	102.898	101.635	100.201	99.453
18:52	ZZZZZZ	99.955	99.508	103.224	102.756	104.254	103.408
18:56	ZZZZZZ	96.58	98.139	101.269	98.568	99.013	97.337
18:59	ZZZZZZ	98.217	98.998	103.103	100.326	104.609	101.379
19:02	ZZZZZZ	96.448	96.567	100.753	97.772	97.894	94.881
19:05	MA52355-CCVA12	98.245	101.852	103.614	100.231	100.431	97.016
19:08	MA52355-CCB12	100.991	102.408	104.112	101.345	104.949	102.297
19:11	ZZZZZZ	103.525	102.758	105.844	104.153	106.98	105.475
19:15	ZZZZZZ	97.129	100.243	101.501	99.032	94.106	91.773
19:18	ZZZZZZ	94.084	97.082	99.059	95.893	97.08	94.378
19:21	ZZZZZZ	94.595	96.306	100.084	96.436	101.724	98.764
19:24	ZZZZZZ	95.539	97.477	100.083	97.465	99.574	96.353
19:27	ZZZZZZ	96.656	98.533	102.434	98.985	103.49	100.363
19:31	MA52355-CCVA13	98.59	102.594	104.352	101.591	101.886	97.902
19:34	MA52355-CCB13	101.013	103.829	105.607	103.136	106.985	103.106
19:37	MP32696A-MB1	104.142	110.206	113.687	106.591	107.679	102.841
19:40	MP32696A-B2	104.81	111.264	113.081	106.387	107.837	101.291
19:43	MP32696A-S3	99.744	103.818	109.474	101.686	91.34	85.989
19:46	MP32696A-S4	99.186	103.046	108.786	101.675	91.244	85.881
19:49	JD44282-1	100.287	102.675	108.355	102.696	91.85	86.981
19:52	MP32696A-SD1	106.32	104.326	110.671	109.185	102.337	99.982
19:56	ZZZZZZ	101.887	109.388	109.706	103.694	102.419	98.701
19:58	ZZZZZZ	105.454	108.37	112.329	108.216	110.646	106.647
20:02	MA52355-CCVA14	105.534	108.53	110.796	107.614	107.319	103.487
20:05	MA52355-CCB14	108.771	110.503	113.642	110.079	110.899	108.315
20:08	ZZZZZZ	4.14 !	1.291 !	80.369	4.223 !	79.241	3.564 !
20:18	ZZZZZZ	108.426	111.649	117.019	109.649	109.357	104.696
20:21	ZZZZZZ	108.703	108.777	112.94	110.471	112.887	108.686
20:24	ZZZZZZ	108.659	109.264	112.47	109.953	111.517	109.929
20:27	ZZZZZZ	109.535	108.729	113.103	110.452	111.85	110.297

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
20:30	ZZZZZZ	109.626	106.875	113.635	110.755	111.914	110.502
20:34	ZZZZZZ	108.023	107.115	112.604	109.965	111.1	108.752
20:37	ZZZZZZ	108.442	111.357	114.239	110.519	111.831	108.996
20:40	MA52355-CCVA15	108.665	111.098	113.504	111.728	107.529	106.077
20:43	MA52355-CCB15	109.906	110.443	114.457	112.886	112.944	110.264
20:47	MP32679-MB1	111.196	115.368	120.66	112.787	114.349	108.403
20:50	MP32679-LB1	108.953	112.039	117.527	110.26	112.399	107.909
20:54	MP32679-B1	108.683	114.792	117.743	110.671	110.706	105.078
20:57	MP32679-LS1	109.123	114.114	118.407	111.869	110.851	105.51
21:00	MP32679-S1	105.586	111.323	114.926	107.853	105.261	99.837
21:03	MP32679-S2	104.983	113.019	114.953	107.213	105.797	99.601
21:06	JD44117-1A	105.733	111.905	115.416	108.506	106.663	101.15
21:10	MP32679-SD1	107.505	108.644	114.148	109.754	111.552	107.17
21:13	MA52355-CCVA16	108.886	111.034	116.435	110.808	109.835	106.034
21:16	MA52355-CCB16	109.052	110.175	114.996	111.203	112.538	109.456
21:19	ZZZZZZ	106.953	112.432	116.172	108.619	108.091	101.776
21:22	ZZZZZZ	107.265	112.857	115.839	108.865	109.669	103.685
21:25	ZZZZZZ	106.725	112.164	116.767	108.515	110.504	103.482
21:28	MP32650-MB1	107.161	108.577	114.065	108.193	111.98	107.723
21:32	MP32650-B1	108.196	109.155	112.751	109.886	109.423	106.388
21:35	MP32650-S1	113.889	114.693	119.69	114.237	110.199	105.994
21:38	MP32650-S2	113.845	114.863	118.548	114.458	109.621	105.489
21:41	JD44120-1	113.106	113.425	119.859	114.609	110.979	107.96
21:44	MP32650-SD1	116.012	112.49	119.489	116.489	115.536	113.104
21:48	MA52355-CCVA17	114.065	114.199	119.713	115.765	112.365	110.025
21:51	MA52355-CCB17	115.974	116.399	122.476	117.096	119.101	115.104
21:54	ZZZZZZ	113.351	113.453	119.219	115.045	110.562	107.644
21:57	ZZZZZZ	112.914	111.686	118.995	115.531	108.969	107.03
22:00	ZZZZZZ	117.262	117.889	121.087	118.798	111.033	108.255
22:03	ZZZZZZ	106.923	109.275	115.602	109.311	103.085	97.345
22:06	ZZZZZZ	110.259	111.203	115.795	111.918	104.844	102.01
22:09	ZZZZZZ	113.539	114.352	118.485	115.456	110.288	108.79
22:12	ZZZZZZ	112.635	112.137	117.952	113.731	107.307	105.156

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
22:16	ZZZZZZ	118.637	116.977	122.775	119.258	115.204	113.295
22:19	ZZZZZZ	121.006	114.937	127.098	122.837	122.731	118.924
22:22	ZZZZZZ	116.695	117.09	123.845	117.567	113.024	109.323
22:25	MA52355-CCVA18	117.44	116.799	123.37	119.129	116.843	112.676
22:28	MA52355-CCB18	120.208	116.401	126.562	122.367	121.347	118.348
22:32	ZZZZZZ	117.194	116.616	123.249	118.184	113.947	110.121
22:35	ZZZZZZ	115.489	115.772	121.6	117.281	111.848	108.437
22:38	ZZZZZZ	112.82	114.765	118.125	114.6	109.226	105.93
22:41	ZZZZZZ	111.766	113.028	116.971	113.476	107.581	105.259
22:45	ZZZZZZ	116.552	115.929	120.567	118.648	111.194	110.271
22:48	ZZZZZZ	118.419	117.276	124.261	120.63	112.294	109.833
22:51	ZZZZZZ	105.869	110.84	117.823	107.776	102.843	95.541
22:54	MA52355-CCVA19	114.473	114.364	122.95	115.754	117.079	110.99
22:57	MA52355-CCB19	113.929	114.116	120.532	115.881	117.541	113.674
23:00	MP32673-MB1	115.056	113.706	124.26	117.138	120.183	114.848
23:03	MP32673-B1	114.832	115.639	125.399	116.673	118.693	112.137
23:07	MP32673-S1	117.041	118.807	128.392	118.638	113.635	107.134
23:10	MP32673-S2	116.816	118.926	128.113	119.156	114.361	107.934
23:13	JD44217-5	116.508	122.238	125.412	117.899	112.096	106.961
23:16	MP32673-SD1	117.759	114.801	123.794	119.038	117.733	114.068
23:19	MP32673-PS1	111.962	114.241	122.138	114.715	109.237	103.791
23:22	ZZZZZZ	119.487	121.134	125.826	120.98	115.649	112.305
23:25	ZZZZZZ	108.401	109.792	118.018	109.861	114.287	107.772
23:28	MA52355-CCVA20	110.093	112.184	117.447	113.508	112.761	107.399
23:32	MA52355-CCB20	113.843	110.054	122.436	115.052	118.858	112.901
23:35	ZZZZZZ	117.059	120.175	126.139	120.588	115.69	110.94
23:38	ZZZZZZ	108.03	113.288	116.418	110.282	107.573	102.883
23:41	ZZZZZZ	109.487	113.782	119.184	111.345	108.747	102.232
23:44	ZZZZZZ	110.744	113.228	120.838	113.342	110.643	105.436
23:47	ZZZZZZ	112.443	116.079	121.596	114.961	110.285	104.498
23:50	ZZZZZZ	114.611	116.08	124.858	117.245	113.137	106.886
23:53	ZZZZZZ	115.47	116.912	124.099	117.248	113.865	109.065
23:57	ZZZZZZ	120.299	101.716	127.735	121.332	123.176	118.177

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
00:01	MA52355-CCVA21	114.993	114.67	123.804	116.693	116.058	111.826
00:04	MA52355-CCB21	120.792	102.186	128.557	121.999	123.114	118.636
00:07	ZZZZZZ	118.283	99.425	125.972	119.119	122.695	116.638
00:11	ZZZZZZ	117.849	120.441	130.849 !	120.307	120.317	112.362
00:14	MP32378-S1	113.119	118.896	127.056	114.411	111.041	102.41
00:17	MP32378-S2	110.966	117.96	125.305	113.123	109.342	100.516
00:20	JD43215-14F	110.907	117.075	124.089	113.676	108.993	101.359
00:23	MP32378-SD1	114.942	112.516	121.66	115.47	115.451	110.628
00:26	ZZZZZZ	115.103	106.584	121.46	116.833	116.905	112.716
00:29	MA52355-CCVA22	114.829	113.283	122.129	117.169	114.599	110.174
00:33	MA52355-CCB22	114.793	105.93	122.215	117.153	117.822	113.451
00:36	ZZZZZZ	114.621	105.918	122.507	116.619	117.877	113.328
00:39	MA52355-CRI2	116.826	108.217	124.317	118.45	119.576	115.846
00:42	MA52355-ICSA2	100.331	101.703	113.608	102.455	95.367	88.111
00:45	MA52355-ICSAB2	98.78	101.608	109.812	101.382	93.916	87.274
00:53	ZZZZZZ	105.788	109.922	114.073	108.355	112.109	107.083
00:56	MA52355-CCVA23	108.316	111.747	119.105	110.108	112.885	105.656
00:59	MA52355-CCB23	110.003	111.598	120.209	111.603	117.091	110.654
01:02	MP32650-S1	112.59	111.916	121.485	113.845	119.317	113.138
01:06	MP32650-S2	111.04	110.209	120.791	112.186	116.913	111.005
01:09	JD44120-1	113.127	112.709	121.154	114.276	118.378	112.661
01:12	MP32650-SD1	No results reported for the elements associated with this internal standard.					
01:15	ZZZZZZ	113.44	115.177	120.838	114.708	114.743	110.474
01:18	ZZZZZZ	113.794	113.843	123.336	115.568	116.064	108.896
01:21	ZZZZZZ	113.03	114.69	122.088	115.57	115.077	109.499
01:25	ZZZZZZ	108.852	109.685	119.879	111.693	112.2	105.801
01:28	MA52355-CCVA24	109.516	112.208	120.506	111.283	114.06	106.351
01:31	MA52355-CCB24	109.975	111.145	122.582	112.599	118.67	111.24
01:34	ZZZZZZ	109.735	110.153	121.127	112.322	114.574	107.491
01:37	ZZZZZZ	112.8	113.82	124.385	115.683	115.855	109.719
01:40	ZZZZZZ	111.984	113.913	122.63	114.578	116.081	110.725
01:44	ZZZZZZ	114.203	113.924	123.39	116.2	115.992	110.127
01:47	ZZZZZZ	111.254	110.611	121.609	112.211	115.03	108.01

INTERNAL STANDARD SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
Analyst: FW Run ID: MA52355
Parameters: Zn

Time	Sample Description	Istd#17	Istd#18	Istd#19	Istd#20	Istd#21	Istd#22
01:50	ZZZZZZ	110.51	112.643	120.12	112.481	113.225	106.99
01:53	ZZZZZZ	110.956	112.211	119.119	114.114	113.178	108.731
01:56	ZZZZZZ	116.033	115.136	122.731	117.717	118.659	115.112
01:59	ZZZZZZ	110.905	111.557	119.208	113.5	115.174	109.23
02:03	MA52355-CCVA25	112.394	113.814	122.063	114.274	115.64	109.861
02:06	MA52355-CCB25	110.475	110.861	121.369	111.745	118.748	110.899
02:09	ZZZZZZ	117.15	115.023	124.809	119.278	120.835	115.393
02:12	ZZZZZZ	118.439	103.879	125.537	119.92	122.526	117.303
02:15	ZZZZZZ	117.395	117.342	126.86	118.605	118.656	113.976
02:18	ZZZZZZ	116.489	115.375	124.864	118.921	119.596	113.928
02:21	ZZZZZZ	116.833	111.369	122.872	117.684	119.122	115.337
02:25	ZZZZZZ	117.342	108.15	123.918	119.107	120.62	116.59
02:28	ZZZZZZ	117.778	117.043	124.438	119.277	117.822	113.019
02:31	ZZZZZZ	117.716	108.532	125.59	118.894	121.539	115.21
02:34	ZZZZZZ	117.636	116.779	125.06	119.027	119.077	115.744
02:37	MA52355-CCVA26	114.064	116.907	127.121	116.822	117.936	110.344
02:40	MA52355-CCB26	118.294	105.043	129.101	120.388	123.81	116.428
02:44	ZZZZZZ	119.414	104.366	129.518	120.162	124.951	118.219
02:47	ZZZZZZ	120.418	105.603	130.478 !	121.986	125.682	119.121
02:50	ZZZZZZ	120.914	102.59	131.511 !	121.797	126.041	117.895

! = Outside limits.

Istd#	Parameter	Limits	CCV/CCB Limits
Istd#17	Terbium (159-2)	60-125 %	60-125 %
Istd#18	Terbium (159-3)	60-125 %	60-125 %
Istd#19	Holmium (165-1)	60-125 %	60-125 %
Istd#20	Holmium (165-2)	60-125 %	60-125 %
Istd#21	Bismuth (209-1)	60-125 %	60-125 %
Istd#22	Bismuth (209-2)	60-125 %	60-125 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52355 Units: ug/l

Time:			13:43		13:49		14:00		14:44	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022	anr							
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6	anr							
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37	anr							
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2	anr							
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53	anr							
Strontium	5.0	.016	anr							
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	0.0119	<5.0	-0.0174	<5.0	0.0417	<5.0	0.0135	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52355 Units: ug/l

Time:			15:09		15:43		15:50		16:15	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022	anr							
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6	anr							
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37	anr							
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2	anr							
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53	anr							
Strontium	5.0	.016	anr							
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	0.0245	<5.0	0.0835	<5.0	0.0580	<5.0	0.0370	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52355 Units: ug/l

Time:			16:21		17:35		18:09		18:38	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022	anr							
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6	anr							
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37	anr							
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2	anr							
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53	anr							
Strontium	5.0	.016	anr							
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	0.0532	<5.0	0.134	<5.0	0.118	<5.0	0.0509	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52355 Units: ug/l

Time:			19:08		19:34		20:05		20:43	
Sample ID:			CCB12		CCB13		CCB14		CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022	anr							
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6	anr							
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37	anr							
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2	anr							
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53	anr							
Strontium	5.0	.016	anr							
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	0.142	<5.0	0.0822	<5.0	0.0844	<5.0	0.0789	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52355 Units: ug/l

Time:			21:16		21:51		22:28		22:57	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022	anr							
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6	anr							
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37	anr							
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2	anr							
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53	anr							
Strontium	5.0	.016	anr							
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	0.124	<5.0	0.0927	<5.0	0.121	<5.0	0.173	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: result < RL Run ID: MA52355 Units: ug/l

Time:			23:32		00:04		00:33		00:59	
Sample ID:			CCB20		CCB21		CCB22		CCB23	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	25	.27	anr							
Antimony	2.0	.022	anr							
Arsenic	0.50	.009	anr							
Barium	1.0	.009	anr							
Beryllium	0.50	.003	anr							
Boron	25	.87	anr							
Cadmium	0.50	.007	anr							
Calcium	250	7.6	anr							
Chromium	1.0	.015	anr							
Cobalt	0.50	.002	anr							
Copper	2.0	.012	anr							
Iron	25	.56	anr							
Lead	0.50	.007	anr							
Magnesium	250	.37	anr							
Manganese	1.0	.009	anr							
Molybdenum	1.0	.027	anr							
Nickel	1.0	.008	anr							
Potassium	250	1.2	anr							
Selenium	0.50	.35	anr							
Silver	0.50	.002	anr							
Sodium	250	.53	anr							
Strontium	5.0	.016	anr							
Thallium	0.50	.009	anr							
Tin	5.0	.035								
Titanium	1.0	.045								
Vanadium	1.0	.017	anr							
Zinc	5.0	.048	0.107	<5.0	0.123	<5.0	0.102	<5.0	0.135	<5.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		13:36			13:39			13:46	
Sample ID:	ICV	ICV1		ICVA	ICVA1		CCVA	CCVA1	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc				60	54.6	91.0	50	50.7	101.4

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		13:57			14:41			15:06	
Sample ID:	CCVA	CCVA2		CCVA	CCVA3		CCVA	CCVA4	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	46.1	92.2	50	48.4	96.8	50	47.4	94.8

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		15:40			15:47			16:12	
Sample ID:	CCVA	CCVA5		CCVA	CCVA6		CCVA	CCVA7	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	47.5	95.0	50	46.9	93.8	50	46.0	92.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		16:18			17:29			18:06	
Sample ID:	CCVA	CCVA8		CCVA	CCVA9		CCVA	CCVA10	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	46.6	93.2	50	47.3	94.6	50	46.8	93.6

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		18:35			19:05			19:31	
Sample ID:	CCVA	CCVA11		CCVA	CCVA12		CCVA	CCVA13	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	48.3	96.6	50	46.4	92.8	50	45.6	91.2

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		20:02			20:40			21:13	
Sample ID:	CCVA	CCVA14		CCVA	CCVA15		CCVA	CCVA16	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	46.8	93.6	50	47.4	94.8	50	47.5	95.0

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		21:48			22:25			22:54	
Sample ID:	CCVA	CCVA17		CCVA	CCVA18		CCVA	CCVA19	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	46.9	93.8	50	46.8	93.6	50	48.4	96.8

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		23:28			00:01			00:29	
Sample ID:	CCVA	CCVA20		CCVA	CCVA21		CCVA	CCVA22	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin									
Titanium									
Vanadium	anr								
Zinc	50	47.9	95.8	50	48.1	96.2	50	46.8	93.6

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 90 to 110 % Recovery Run ID: MA52355 Units: ug/l

Time:		00:56	
Sample ID:	CCVA	CCVA23	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Potassium	anr		
Selenium	anr		
Silver	anr		
Sodium	anr		
Strontium	anr		
Thallium	anr		
Tin			
Titanium			
Vanadium	anr		
Zinc	50	48.6	97.2

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA52355 Units: ug/l

Time:			14:06		00:39	
Sample ID:	CRI	CRIA	CRI1		CRI2	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	25	25	anr			
Antimony	2.0	0.25	anr			
Arsenic	0.50	0.50	anr			
Barium	1.0	0.50	anr			
Beryllium	0.50	0.25	anr			
Boron	25	2.5	anr			
Cadmium	0.50	0.25	anr			
Calcium	250	125	anr			
Chromium	1.0	2.0	anr			
Cobalt	0.50	0.25	anr			
Copper	2.0	2.0	anr			
Iron	25	25	anr			
Lead	0.50	0.25	anr			
Magnesium	250	125	anr			
Manganese	1.0	0.25	anr			
Molybdenum	1.0	0.50	anr			
Nickel	1.0	2.0	anr			
Potassium	250	125	anr			
Selenium	0.50	0.50	anr			
Silver	0.50	1.0	anr			
Sodium	250	125	anr			
Strontium	5.0	0.50	anr			
Thallium	0.50	0.25	anr			
Tin	5.0	0.50				
Titanium	1.0	0.50				
Vanadium	1.0	2.0	anr			
Zinc	5.0	2.0	5.91	118.2	5.75	115.0

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

File ID: XB050922M2.CSV Date Analyzed: 05/09/22 Methods: EPA 200.8, SW846 6020B
QC Limits: 80 to 120 % Recovery Run ID: MA52355 Units: ug/l

Time:			14:25		14:28		00:42		00:45	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	100000	100000	85600	85.6	83800	83.8	82900	82.9	83200	83.2
Antimony			0.0159		0.0180		0.0111		0.00723	
Arsenic		20	0.0579		19.7	98.5	0.111		19.1	95.5
Barium			0.128		0.130		0.153		0.199	
Beryllium			0.00165		0.000506		-0.000499		0.00535	
Boron		50	0.858		48.1	96.2	1.43		46.0	92.0
Cadmium		20	0.0521		19.4	97.0	-0.295		18.7	93.5
Calcium	100000	100000	86100	86.1	85800	85.8	82300	82.3	84000	84.0
Chromium		20	0.907		21.3	106.5	0.852		20.8	104.0
Cobalt		20	0.102		19.7	98.5	0.0958		19.0	95.0
Copper		20	0.753		18.4	92.0	0.850		17.9	89.5
Iron	100000	100000	87200	87.2	85800	85.8	83700	83.7	85900	85.9
Lead			0.0408		0.0470		0.0647		0.0712	
Magnesium	100000	100000	85300	85.3	83600	83.6	83200	83.2	83600	83.6
Manganese		20	0.288		20.3	101.5	0.349		19.9	99.5
Molybdenum	2000	2000	2160	108.0	2120	106.0	2150	107.5	2080	104.0
Nickel		20	0.501		19.0	95.0	0.470		18.4	92.0
Potassium	100000	100000	86800	86.8	85200	85.2	85500	85.5	85300	85.3
Selenium		20	0.0246		21.0	105.0	0.165		20.9	104.5
Silver		20	0.0190		18.9	94.5	0.0211		17.7	88.5
Sodium	100000	100000	87000	87.0	85800	85.8	86000	86.0	87300	87.3
Strontium	2000	2000	1980	99.0	1980	99.0	2020	101.0	2010	100.5
Thallium			0.00645		0.00877		0.0203		0.0175	
Tin	2000	2000	1950HH	97.5	2000HH	100.0	1960HH	98.0	1960HH	98.0
Titanium	2000	2000	1960HH	98.0	1950HH	97.5	1920HH	96.0	1830HH	91.5
Vanadium		20	0.0316		18.9	94.5	0.0742		18.4	92.0
Zinc		20	2.20		18.0	90.0	2.91		17.8	89.0

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32378
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.54	32		
Antimony	4.0	.044	1.7		
Arsenic	1.0	.018	.39		
Barium	2.0	.018	.73		
Beryllium	1.0	.006	.15		
Boron	50	1.7	14		
Cadmium	1.0	.014	.17		
Calcium	500	7.2	200		
Chromium	2.0	.03	.62		
Cobalt	1.0	.004	.17	0.0053	<1.0
Copper	4.0	.024	1.9		
Iron	50	.47	19		
Lead	1.0	.014	.52	0.015	<1.0
Magnesium	500	.38	46		
Manganese	2.0	.018	.63		
Molybdenum	2.0	.034	.45		
Nickel	2.0	.016	.95	0.058	<2.0
Potassium	500	1.6	68		
Selenium	1.0	.088	.55		
Silver	1.0	.004	.16		
Sodium	500	1.1	470		
Strontium	10	.028	2.4		
Thallium	1.0	.004	.17		
Tin	10	.07	2.6		
Titanium	2.0	.09	1.6		
Vanadium	2.0	.026	1.8	0.19	<2.0
Zinc	10	.096	5.4	0.57	<10

Associated samples MP32378: JD43215-1F, JD43215-2F, JD43215-3F, JD43215-4F, JD43215-5F, JD43215-6F, JD43215-7F, JD43215-8F, JD43215-9F, JD43215-10F, JD43215-11F, JD43215-12F, JD43215-13F, JD43215-14F, JD43215-15F, JD43215-16F, JD43215-17F, JD43215-18F, JD43215-19F, JD43215-20F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32378
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	JD43215-14F Original	MS	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt	4.8	79.0	80	92.8	75-125
Copper					
Iron					
Lead	0.23	74.6	80	93.1	75-125
Magnesium					
Manganese					
Molybdenum					
Nickel	2.3	75.4	80	91.4	75-125
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium	0.25	79.1	80	98.6	75-125
Zinc	4.2	68.1	80	79.9	75-125

Associated samples MP32378: JD43215-1F, JD43215-2F, JD43215-3F, JD43215-4F, JD43215-5F, JD43215-6F, JD43215-7F, JD43215-8F, JD43215-9F, JD43215-10F, JD43215-11F, JD43215-12F, JD43215-13F, JD43215-14F, JD43215-15F, JD43215-16F, JD43215-17F, JD43215-18F, JD43215-19F, JD43215-20F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32378
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	JD43215-14F Original	MSD	Spikelot MP6020AQ3%	Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt	4.8	80.4	80	94.5	1.8	20
Copper						
Iron						
Lead	0.23	75.4	80	94.1	1.1	20
Magnesium						
Manganese						
Molybdenum						
Nickel	2.3	75.9	80	92.0	0.7	20
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium	0.25	80.3	80	100.1	1.5	20
Zinc	4.2	67.8	80	79.5	0.4	20

Associated samples MP32378: JD43215-1F, JD43215-2F, JD43215-3F, JD43215-4F, JD43215-5F, JD43215-6F, JD43215-7F, JD43215-8F, JD43215-9F, JD43215-10F, JD43215-11F, JD43215-12F, JD43215-13F, JD43215-14F, JD43215-15F, JD43215-16F, JD43215-17F, JD43215-18F, JD43215-19F, JD43215-20F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32378
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	BSP Result	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt	75.9	80	94.9	80-120
Copper				
Iron				
Lead	73.7	80	92.1	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel	76.2	80	95.3	80-120
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium	78.1	80	97.6	80-120
Zinc	70.2	80	87.8	80-120

Associated samples MP32378: JD43215-1F, JD43215-2F, JD43215-3F, JD43215-4F, JD43215-5F, JD43215-6F, JD43215-7F, JD43215-8F, JD43215-9F, JD43215-10F, JD43215-11F, JD43215-12F, JD43215-13F, JD43215-14F, JD43215-15F, JD43215-16F, JD43215-17F, JD43215-18F, JD43215-19F, JD43215-20F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32378 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/19/22

	JD43215-14F			QC
Metal	Original	SDL 2:10	%DIF	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt	4.81	4.56	5.2	0-10
Copper				
Iron				
Lead	0.230	0.00	100.0(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	2.30	2.36	2.5	0-10
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium	0.249	0.00	100.0(a)	0-10
Zinc	4.18	4.07	2.6	0-10

Associated samples MP32378: JD43215-1F, JD43215-2F, JD43215-3F, JD43215-4F, JD43215-5F, JD43215-6F, JD43215-7F, JD43215-8F, JD43215-9F, JD43215-10F, JD43215-11F, JD43215-12F, JD43215-13F, JD43215-14F, JD43215-15F, JD43215-16F, JD43215-17F, JD43215-18F, JD43215-19F, JD43215-20F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32396
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.83	32		
Antimony	4.0	.17	1.7		
Arsenic	1.0	.05	.39		
Barium	2.0	.018	.73		
Beryllium	1.0	.01	.15		
Boron	50	1.7	14		
Cadmium	1.0	.02	.17		
Calcium	500	7.2	200		
Chromium	2.0	.036	.62		
Cobalt	1.0	.006	.17	0.0088	<1.0
Copper	4.0	.048	1.9		
Iron	50	.47	19		
Lead	1.0	.016	.52	0.053	<1.0
Magnesium	500	.38	46		
Manganese	2.0	.024	.63		
Molybdenum	2.0	.034	.45		
Nickel	2.0	.034	.95	0.12	<2.0
Potassium	500	1.6	68		
Selenium	1.0	.088	.55		
Silver	1.0	.008	.16		
Sodium	500	3	470		
Strontium	10	.028	2.4		
Thallium	1.0	.004	.17		
Tin	10	.082	2.6		
Titanium	2.0	.22	1.6		
Vanadium	2.0	.026	1.8	0.23	<2.0
Zinc	10	.16	5.4	1.2	<10

Associated samples MP32396: JD43215-21F, JD43215-22F, JD43215-23F, JD43215-24F, JD43215-25F, JD43215-26F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32396
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	JD43215-21F Original	MS	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt	0.27	76.2	80	94.9	75-125
Copper					
Iron					
Lead	1.7	74.4	80	90.9	75-125
Magnesium					
Manganese					
Molybdenum					
Nickel	0.70	75.0	80	92.9	75-125
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium	0.47	79.8	80	99.2	75-125
Zinc	2.6	69.3	80	83.4	75-125

Associated samples MP32396: JD43215-21F, JD43215-22F, JD43215-23F, JD43215-24F, JD43215-25F, JD43215-26F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32396
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	JD43215-21F Original	MSD	Spikelot MP6020AQ3%	Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt	0.27	83.6	80	104.2	9.3	20
Copper						
Iron						
Lead	1.7	75.8	80	92.6	1.9	20
Magnesium						
Manganese						
Molybdenum						
Nickel	0.70	82.6	80	102.4	9.6	20
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium	0.47	87.2	80	108.4	8.9	20
Zinc	2.6	68.5	80	82.4	1.2	20

Associated samples MP32396: JD43215-21F, JD43215-22F, JD43215-23F, JD43215-24F, JD43215-25F, JD43215-26F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32396
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	BSP Result	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt	78.0	80	97.5	80-120
Copper				
Iron				
Lead	72.7	80	90.9	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel	78.2	80	97.8	80-120
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium	78.8	80	98.5	80-120
Zinc	74.6	80	93.3	80-120

Associated samples MP32396: JD43215-21F, JD43215-22F, JD43215-23F, JD43215-24F, JD43215-25F, JD43215-26F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD43215
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32396
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/19/22

Metal	JD43215-21F Original	SDL 2:10	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt	0.266	0.263	1.1	0-10
Copper				
Iron				
Lead	1.73	1.75	1.1	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	0.699	0.638	8.7	0-10
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium	0.466	0.215	53.7 (a)	0-10
Zinc	2.55	4.85	89.8 (a)	0-10

Associated samples MP32396: JD43215-21F, JD43215-22F, JD43215-23F, JD43215-24F, JD43215-25F, JD43215-26F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

213403363

SGS Job Number: JD43429

Sampling Dates: 04/18/22 - 04/19/22



Report to:

Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380
Jennifer.Menges@stantec.com; Andrew.klingbeil@stantec.com;
Andrew.Bradley@stantec.com; Jenny.Kachel@stantec.com;
ATTN: Jennifer Menges

Total number of pages in report: **105**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD43429

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
JD43429-1	04/18/22	09:35	MV	04/20/22	AQ	Ground Water	N-165_20220418
JD43429-1F	04/18/22	09:35	MV	04/20/22	AQ	Groundwater Filtered	N-165_20220418
JD43429-2	04/18/22	09:45	DC	04/20/22	AQ	Ground Water	N-164_SL_20220418
JD43429-2F	04/18/22	09:45	DC	04/20/22	AQ	Groundwater Filtered	N-164_SL_20220418
JD43429-3	04/18/22	11:15	MV	04/20/22	AQ	Ground Water	N-166_20220418
JD43429-3F	04/18/22	11:15	MV	04/20/22	AQ	Groundwater Filtered	N-166_20220418
JD43429-4	04/18/22	12:25	DC	04/20/22	AQ	Ground Water	N-157_SL_20220418
JD43429-4F	04/18/22	12:25	DC	04/20/22	AQ	Groundwater Filtered	N-157_SL_20220418
JD43429-5	04/18/22	13:00	MV	04/20/22	AQ	Ground Water	N-167_20220418
JD43429-5F	04/18/22	13:00	MV	04/20/22	AQ	Groundwater Filtered	N-167_20220418
JD43429-6	04/18/22	14:00	MV	04/20/22	AQ	Ground Water	N-168_20220418
JD43429-6F	04/18/22	14:00	MV	04/20/22	AQ	Groundwater Filtered	N-168_20220418

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD43429

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD43429-7	04/18/22	14:20	DC	04/20/22	AQ	Ground Water	N-112_SL_20220418
JD43429-7F	04/18/22	14:20	DC	04/20/22	AQ	Groundwater Filtered	N-112_SL_20220418
JD43429-8	04/19/22	09:50	DC	04/20/22	AQ	Ground Water	RW-502_20220419
JD43429-8F	04/19/22	09:50	DC	04/20/22	AQ	Groundwater Filtered	RW-502_20220419
JD43429-9	04/19/22	12:00	DC	04/20/22	AQ	Ground Water	N-74_SL_20220419
JD43429-9F	04/19/22	12:00	DC	04/20/22	AQ	Groundwater Filtered	N-74_SL_20220419
JD43429-10	04/19/22	14:15		04/20/22	AQ	Trip Blank Water	TRIP BLANK
JD43429-11	04/19/22	14:15	DC	04/20/22	AQ	Ground Water	N-82_SL_20220419
JD43429-11F	04/19/22	14:15	DC	04/20/22	AQ	Groundwater Filtered	N-82_SL_20220419

Summary of Hits

Job Number: JD43429
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/18/22 thru 04/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43429-1	**N-165_20220418**					
Benzene		67.2	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		11.9	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		71.0	1.0	0.65	ug/l	SW846 8260D
Toluene		1.2	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		135	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		58.8	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		89.2	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.691	0.080	0.040	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.149	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0673	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0739	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0532 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Chrysene		0.120	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		1.79	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		1.96	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		2.88	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.711	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43429-1F	**N-165_20220418**					
No hits reported in this sample.						
JD43429-2	**N-164_SL_20220418**					
Benzene		1150	5.0	4.3	ug/l	SW846 8260D
Ethylbenzene [a]		377	4.0	2.4	ug/l	SW846 8260D
Isopropylbenzene [a]		109	4.0	2.6	ug/l	SW846 8260D
Toluene [a]		70.4	4.0	2.1	ug/l	SW846 8260D
1,2,4-Trimethylbenzene [a]		285	8.0	4.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene [a]		90.3	8.0	4.0	ug/l	SW846 8260D
Xylene (total) [a]		484	4.0	2.4	ug/l	SW846 8260D
Anthracene		0.249	0.080	0.040	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0505	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0247 J	0.040	0.024	ug/l	SW846 8270E BY SIM
Chrysene		0.0425 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		0.822	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		134	1.6	0.080	ug/l	SW846 8270E BY SIM
Phenanthrene		1.14	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.198	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43429-2F	**N-164_SL_20220418**					
No hits reported in this sample.						

Summary of Hits

Job Number: JD43429
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/18/22 thru 04/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43429-3	**N-166_20220418**					
Benzene [a]		899	2.5	2.1	ug/l	SW846 8260D
Ethylbenzene [a]		5.2	5.0	3.0	ug/l	SW846 8260D
Isopropylbenzene [a]		142	5.0	3.2	ug/l	SW846 8260D
Toluene [a]		33.3	5.0	2.7	ug/l	SW846 8260D
Xylene (total) [a]		25.4	5.0	3.0	ug/l	SW846 8260D
Anthracene		1.14	0.080	0.040	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.357	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.182	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.218	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.124	0.080	0.040	ug/l	SW846 8270E BY SIM
Chrysene		0.254	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		2.37	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		7.92	0.80	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		4.48	0.80	0.040	ug/l	SW846 8270E BY SIM
Pyrene		1.03	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43429-3F	**N-166_20220418**					
No hits reported in this sample.						
JD43429-4	**N-157_SL_20220418**					
Benzene		240	2.5	2.1	ug/l	SW846 8260D
Ethylbenzene		35.3	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		15.9	1.0	0.65	ug/l	SW846 8260D
Toluene		34.7	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		1.4 J	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		7.1	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		80.2	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.0702 J	0.074	0.037	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0220 J	0.037	0.022	ug/l	SW846 8270E BY SIM
Fluorene		0.226	0.074	0.037	ug/l	SW846 8270E BY SIM
Naphthalene		37.8	0.74	0.037	ug/l	SW846 8270E BY SIM
Phenanthrene		0.162	0.074	0.037	ug/l	SW846 8270E BY SIM
Pyrene		0.0436 J	0.074	0.037	ug/l	SW846 8270E BY SIM
JD43429-4F	**N-157_SL_20220418**					
No hits reported in this sample.						

Summary of Hits

Job Number: JD43429
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/18/22 thru 04/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43429-5	**N-167_20220418**					
Benzene		2.5	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		45.8	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		72.8	1.0	0.65	ug/l	SW846 8260D
Toluene		0.71 J	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		4.6	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		20.6	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		8.9	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.458	0.080	0.040	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.127	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0567	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0694	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0424 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Chrysene		0.0972	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		1.18	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		7.88	0.80	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		2.19	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.535	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43429-5F	**N-167_20220418**					
Lead		11.7	1.0		ug/l	SW846 6020B
JD43429-6	**N-168_20220418**					
Ethylbenzene		1.6	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		65.2	1.0	0.65	ug/l	SW846 8260D
Toluene		0.71 J	1.0	0.53	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		1.5 J	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		2.0	1.0	0.59	ug/l	SW846 8260D
Anthracene		1.28	0.083	0.042	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.288	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.144	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.128	0.042	0.025	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0901	0.083	0.042	ug/l	SW846 8270E BY SIM
Chrysene		0.240	0.083	0.042	ug/l	SW846 8270E BY SIM
Fluorene		2.61	0.083	0.042	ug/l	SW846 8270E BY SIM
Phenanthrene		4.64	0.83	0.042	ug/l	SW846 8270E BY SIM
Pyrene		1.22	0.083	0.042	ug/l	SW846 8270E BY SIM
JD43429-6F	**N-168_20220418**					

No hits reported in this sample.

Summary of Hits

Job Number: JD43429
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/18/22 thru 04/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43429-7	**N-112_SL_20220418**					
Isopropylbenzene		1.2	1.0	0.65	ug/l	SW846 8260D
Anthracene		0.403	0.074	0.037	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.814	0.037	0.022	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.252	0.037	0.022	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.229	0.037	0.022	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.165	0.074	0.037	ug/l	SW846 8270E BY SIM
Chrysene		0.812	0.074	0.037	ug/l	SW846 8270E BY SIM
Fluorene		0.198	0.074	0.037	ug/l	SW846 8270E BY SIM
Naphthalene		0.235	0.074	0.037	ug/l	SW846 8270E BY SIM
Phenanthrene		0.463	0.074	0.037	ug/l	SW846 8270E BY SIM
Pyrene		1.97	0.074	0.037	ug/l	SW846 8270E BY SIM
JD43429-7F	**N-112_SL_20220418**					
No hits reported in this sample.						
JD43429-8	**RW-502_20220419**					
Benzene		48.0	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		0.70 J	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		41.7	1.0	0.65	ug/l	SW846 8260D
Tert Butyl Alcohol		26.0	10	5.8	ug/l	SW846 8260D
Toluene		3.9	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		1.0 J	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		1.1 J	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		10	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.592	0.075	0.038	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.243	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.184	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.169	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.133	0.075	0.038	ug/l	SW846 8270E BY SIM
Chrysene		0.283	0.075	0.038	ug/l	SW846 8270E BY SIM
Fluorene		2.64	0.075	0.038	ug/l	SW846 8270E BY SIM
Naphthalene		6.90	0.75	0.038	ug/l	SW846 8270E BY SIM
Phenanthrene		5.16	0.75	0.038	ug/l	SW846 8270E BY SIM
Pyrene		0.647	0.075	0.038	ug/l	SW846 8270E BY SIM
JD43429-8F	**RW-502_20220419**					
No hits reported in this sample.						

Summary of Hits

Job Number: JD43429
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/18/22 thru 04/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43429-9	**N-74_SL_20220419**					
Benzene		186	2.5	2.1	ug/l	SW846 8260D
Tert Butyl Alcohol		16.9	10	5.8	ug/l	SW846 8260D
Xylene (total)		0.68 J	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.180	0.080	0.040	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.143	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0645	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0997	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0511 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Chrysene		0.145	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		0.251	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		0.139	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		0.318	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.401	0.080	0.040	ug/l	SW846 8270E BY SIM
JD43429-9F	**N-74_SL_20220419**					
No hits reported in this sample.						
JD43429-10	**TRIP BLANK**					
No hits reported in this sample.						
JD43429-11	**N-82_SL_20220419**					
Benzene [a]		14500	50	43	ug/l	SW846 8260D
Ethylbenzene [a]		2850	100	60	ug/l	SW846 8260D
Isopropylbenzene [a]		90.1 J	100	65	ug/l	SW846 8260D
Toluene [a]		5620	100	53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene [a]		298	200	100	ug/l	SW846 8260D
Xylene (total) [a]		2610	100	59	ug/l	SW846 8260D
Anthracene		1.30	0.078	0.039	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.234	0.039	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.148	0.039	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.238	0.039	0.024	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.0963	0.078	0.039	ug/l	SW846 8270E BY SIM
Chrysene		0.164	0.078	0.039	ug/l	SW846 8270E BY SIM
Fluorene		10.4	0.78	0.039	ug/l	SW846 8270E BY SIM
Phenanthrene		8.66	0.78	0.039	ug/l	SW846 8270E BY SIM
Pyrene		0.774	0.078	0.039	ug/l	SW846 8270E BY SIM
JD43429-11F	**N-82_SL_20220419**					
No hits reported in this sample.						

Summary of Hits

Job Number: JD43429
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/18/22 thru 04/19/22

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

(a) Dilution required due to high concentration of target compound.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	N-165_20220418		
Lab Sample ID:	JD43429-1	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L341018.D	1	04/23/22 00:29	NH	n/a	n/a	VL10285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	67.2	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	11.9	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	71.0	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	1.2	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	135	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	58.8	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	89.2	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	109%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-165_20220418		
Lab Sample ID:	JD43429-1	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96572.D	1	04/22/22 20:20	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.691	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.149	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	0.0673	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0739	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0532	0.080	0.040	ug/l	J
218-01-9	Chrysene	0.120	0.080	0.040	ug/l	
86-73-7	Fluorene	1.79	0.080	0.040	ug/l	
91-20-3	Naphthalene	1.96	0.080	0.040	ug/l	
85-01-8	Phenanthrene	2.88	0.080	0.040	ug/l	
129-00-0	Pyrene	0.711	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		29-124%
321-60-8	2-Fluorobiphenyl	49%		23-122%
1718-51-0	Terphenyl-d14	63%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-165_20220418		
Lab Sample ID:	JD43429-1	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43624.D	1	04/22/22 21:08	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	110%		52-154%
3017-95-6	2-Bromo-1-chloropropane	93%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-165_20220418		
Lab Sample ID:	JD43429-1F	**Date Sampled:**	04/18/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-164_SL_20220418		
Lab Sample ID:	JD43429-2	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1A221567.D	4	04/25/22 15:10	NW	n/a	n/a	V1A9523
Run #2	L341034.D	10	04/23/22 06:44	NH	n/a	n/a	VL10285

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1150 [b]	5.0	4.3	ug/l	
107-06-2	1,2-Dichloroethane	ND	4.0	2.4	ug/l	
100-41-4	Ethylbenzene	377	4.0	2.4	ug/l	
98-82-8	Isopropylbenzene	109	4.0	2.6	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	4.0	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	40	23	ug/l	
108-88-3	Toluene	70.4	4.0	2.1	ug/l	
95-63-6	1,2,4-Trimethylbenzene	285	8.0	4.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	90.3	8.0	4.0	ug/l	
1330-20-7	Xylene (total)	484	4.0	2.4	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	95%	104%	80-120%
2037-26-5	Toluene-D8	94%	98%	80-120%
460-00-4	4-Bromofluorobenzene	93%	111%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-164_SL_20220418		
Lab Sample ID:	JD43429-2	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96573.D	1	04/22/22 20:42	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2	2M123498.D	2	04/26/22 11:53	KLS	04/22/22 08:30	OP39250A	E2M5558

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2	250 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.249	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.0505	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0247	0.040	0.024	ug/l	J
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	0.0425	0.080	0.040	ug/l	J
86-73-7	Fluorene	0.822	0.080	0.040	ug/l	
91-20-3	Naphthalene	134 [a]	1.6	0.080	ug/l	
85-01-8	Phenanthrene	1.14	0.080	0.040	ug/l	
129-00-0	Pyrene	0.198	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	47%	59%	29-124%
321-60-8	2-Fluorobiphenyl	39%	58%	23-122%
1718-51-0	Terphenyl-d14	51%	64%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-164_SL_20220418
Lab Sample ID: JD43429-2 **Date Sampled:** 04/18/22
Matrix: AQ - Ground Water **Date Received:** 04/20/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43625.D	1	04/22/22 21:25	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	34 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0072	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	92%		52-154%
3017-95-6	2-Bromo-1-chloropropane	90%		52-154%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-164_SL_20220418		
Lab Sample ID:	JD43429-2F	**Date Sampled:**	04/18/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-166_20220418		
Lab Sample ID:	JD43429-3	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L341035.D	5	04/23/22 07:08	NH	n/a	n/a	VL10285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	899	2.5	2.1	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	3.0	ug/l	
100-41-4	Ethylbenzene	5.2	5.0	3.0	ug/l	
98-82-8	Isopropylbenzene	142	5.0	3.2	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	5.0	2.5	ug/l	
75-65-0	Tert Butyl Alcohol	ND	50	29	ug/l	
108-88-3	Toluene	33.3	5.0	2.7	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	10	5.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	10	5.0	ug/l	
1330-20-7	Xylene (total)	25.4	5.0	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

(a) Dilution required due to high concentration of target compound.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-166_20220418		
Lab Sample ID:	JD43429-3	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96576.D	1	04/22/22 21:50	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2	2M123475.D	1	04/25/22 16:29	KLS	04/22/22 08:30	OP39250A	E2M5557

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2	250 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	1.14	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.357	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	0.182	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.218	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.124	0.080	0.040	ug/l	
218-01-9	Chrysene	0.254	0.080	0.040	ug/l	
86-73-7	Fluorene	2.37	0.080	0.040	ug/l	
91-20-3	Naphthalene	7.92 [a]	0.80	0.040	ug/l	
85-01-8	Phenanthrene	4.48 [a]	0.80	0.040	ug/l	
129-00-0	Pyrene	1.03	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	49%	53%	29-124%
321-60-8	2-Fluorobiphenyl	36%	53%	23-122%
1718-51-0	Terphenyl-d14	64%	67%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-166_20220418
Lab Sample ID: JD43429-3 **Date Sampled:** 04/18/22
Matrix: AQ - Ground Water **Date Received:** 04/20/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43626.D	1	04/22/22 21:43	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	33 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.021	0.0074	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	92%		52-154%
3017-95-6	2-Bromo-1-chloropropane	87%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-166_20220418		
Lab Sample ID:	JD43429-3F	**Date Sampled:**	04/18/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-157_SL_20220418		
Lab Sample ID:	JD43429-4	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A221564.D	1	04/25/22 13:59	NW	n/a	n/a	V1A9523
Run #2	L341036.D	5	04/23/22 07:31	NH	n/a	n/a	VL10285

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	240 [a]	2.5	2.1	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	35.3	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	15.9	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	34.7	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	1.4	2.0	1.0	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	7.1	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	80.2	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%	95%	80-120%
17060-07-0	1,2-Dichloroethane-D4	97%	105%	80-120%
2037-26-5	Toluene-D8	95%	99%	80-120%
460-00-4	4-Bromofluorobenzene	94%	110%	82-114%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-157_SL_20220418		
Lab Sample ID:	JD43429-4	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96574.D	1	04/22/22 21:05	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2	2M123473.D	1	04/25/22 15:35	KLS	04/22/22 08:30	OP39250A	E2M5557

	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2	270 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.0702	0.074	0.037	ug/l	J
56-55-3	Benzo(a)anthracene	0.0220	0.037	0.022	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.037	0.022	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.037	0.022	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.074	0.037	ug/l	
218-01-9	Chrysene	ND	0.074	0.037	ug/l	
86-73-7	Fluorene	0.226	0.074	0.037	ug/l	
91-20-3	Naphthalene	37.8 [a]	0.74	0.037	ug/l	
85-01-8	Phenanthrene	0.162	0.074	0.037	ug/l	
129-00-0	Pyrene	0.0436	0.074	0.037	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	59%	66%	29-124%
321-60-8	2-Fluorobiphenyl	54%	69%	23-122%
1718-51-0	Terphenyl-d14	66%	74%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-157_SL_20220418
Lab Sample ID: JD43429-4 **Date Sampled:** 04/18/22
Matrix: AQ - Ground Water **Date Received:** 04/20/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43627.D	1	04/22/22 22:00	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	33 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.021	0.0074	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	84%		52-154%
3017-95-6	2-Bromo-1-chloropropane	92%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-157_SL_20220418		
Lab Sample ID:	JD43429-4F	**Date Sampled:**	04/18/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-167_20220418		
Lab Sample ID:	JD43429-5	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A221566.D	1	04/25/22 14:46	NW	n/a	n/a	V1A9523
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2.5	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	45.8	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	72.8	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	0.71	1.0	0.53	ug/l	J
95-63-6	1,2,4-Trimethylbenzene	4.6	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	20.6	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	8.9	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		80-120%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	101%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-167_20220418		
Lab Sample ID:	JD43429-5	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96575.D	1	04/22/22 21:27	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2	2M123474.D	1	04/25/22 16:02	KLS	04/22/22 08:30	OP39250A	E2M5557

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2	250 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.458	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.127	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	0.0567	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0694	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0424	0.080	0.040	ug/l	J
218-01-9	Chrysene	0.0972	0.080	0.040	ug/l	
86-73-7	Fluorene	1.18	0.080	0.040	ug/l	
91-20-3	Naphthalene	7.88 [a]	0.80	0.040	ug/l	
85-01-8	Phenanthrene	2.19	0.080	0.040	ug/l	
129-00-0	Pyrene	0.535	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	37%	45%	29-124%
321-60-8	2-Fluorobiphenyl	33%	43%	23-122%
1718-51-0	Terphenyl-d14	51%	60%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-167_20220418		
Lab Sample ID:	JD43429-5	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43659.D	1	04/27/22 01:36	RK	04/26/22 14:20	OP39325	G7G1548
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	100%		52-154%
3017-95-6	2-Bromo-1-chloropropane	105%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-167_20220418		
Lab Sample ID:	JD43429-5F	**Date Sampled:**	04/18/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	11.7	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-168_20220418		
Lab Sample ID:	JD43429-6	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A221565.D	1	04/25/22 14:23	NW	n/a	n/a	V1A9523
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	1.6	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	65.2	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	0.71	1.0	0.53	ug/l	J
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.5	2.0	1.0	ug/l	J
1330-20-7	Xylene (total)	2.0	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	100%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-168_20220418		
Lab Sample ID:	JD43429-6	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96577.D	1	04/22/22 22:12	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2	2M123476.D	1	04/25/22 16:56	KLS	04/22/22 08:30	OP39250A	E2M5557

	Initial Volume	Final Volume
Run #1	240 ml	1.0 ml
Run #2	240 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	1.28	0.083	0.042	ug/l	
56-55-3	Benzo(a)anthracene	0.288	0.042	0.025	ug/l	
50-32-8	Benzo(a)pyrene	0.144	0.042	0.025	ug/l	
205-99-2	Benzo(b)fluoranthene	0.128	0.042	0.025	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0901	0.083	0.042	ug/l	
218-01-9	Chrysene	0.240	0.083	0.042	ug/l	
86-73-7	Fluorene	2.61	0.083	0.042	ug/l	
91-20-3	Naphthalene	ND	0.083	0.042	ug/l	
85-01-8	Phenanthrene	4.64 [a]	0.83	0.042	ug/l	
129-00-0	Pyrene	1.22	0.083	0.042	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%	74%	29-124%
321-60-8	2-Fluorobiphenyl	54%	66%	23-122%
1718-51-0	Terphenyl-d14	68%	72%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-168_20220418
Lab Sample ID: JD43429-6 **Date Sampled:** 04/18/22
Matrix: AQ - Ground Water **Date Received:** 04/20/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43631.D	1	04/22/22 23:25	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	85%		52-154%
3017-95-6	2-Bromo-1-chloropropane	87%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-168_20220418		
Lab Sample ID:	JD43429-6F	**Date Sampled:**	04/18/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-112_SL_20220418		
Lab Sample ID:	JD43429-7	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A221577.D	1	04/25/22 19:20	NW	n/a	n/a	V1A9523
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	1.2	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	91%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-112_SL_20220418		
Lab Sample ID:	JD43429-7	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96578.D	1	04/22/22 22:35	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2							

	Initial Volume	Final Volume
Run #1	270 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.403	0.074	0.037	ug/l	
56-55-3	Benzo(a)anthracene	0.814	0.037	0.022	ug/l	
50-32-8	Benzo(a)pyrene	0.252	0.037	0.022	ug/l	
205-99-2	Benzo(b)fluoranthene	0.229	0.037	0.022	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.165	0.074	0.037	ug/l	
218-01-9	Chrysene	0.812	0.074	0.037	ug/l	
86-73-7	Fluorene	0.198	0.074	0.037	ug/l	
91-20-3	Naphthalene	0.235	0.074	0.037	ug/l	
85-01-8	Phenanthrene	0.463	0.074	0.037	ug/l	
129-00-0	Pyrene	1.97	0.074	0.037	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	53%		29-124%
321-60-8	2-Fluorobiphenyl	42%		23-122%
1718-51-0	Terphenyl-d14	49%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-112_SL_20220418		
Lab Sample ID:	JD43429-7	**Date Sampled:**	04/18/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43632.D	1	04/22/22 23:42	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	114%		52-154%
3017-95-6	2-Bromo-1-chloropropane	95%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-112_SL_20220418		
Lab Sample ID:	JD43429-7F	**Date Sampled:**	04/18/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RW-502_20220419		
Lab Sample ID:	JD43429-8	**Date Sampled:**	04/19/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A221578.D	1	04/25/22 19:44	NW	n/a	n/a	V1A9523
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	48.0	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	0.70	1.0	0.60	ug/l	J
98-82-8	Isopropylbenzene	41.7	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	26.0	10	5.8	ug/l	
108-88-3	Toluene	3.9	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	1.0	2.0	1.0	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	1.1	2.0	1.0	ug/l	J
1330-20-7	Xylene (total)	10	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	96%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	92%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-502_20220419		
Lab Sample ID:	JD43429-8	**Date Sampled:**	04/19/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96581.D	1	04/22/22 23:42	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2	2M123478.D	1	04/25/22 18:01	KLS	04/22/22 08:30	OP39250A	E2M5557

	Initial Volume	Final Volume
Run #1	265 ml	1.0 ml
Run #2	265 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.592	0.075	0.038	ug/l	
56-55-3	Benzo(a)anthracene	0.243	0.038	0.023	ug/l	
50-32-8	Benzo(a)pyrene	0.184	0.038	0.023	ug/l	
205-99-2	Benzo(b)fluoranthene	0.169	0.038	0.023	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.133	0.075	0.038	ug/l	
218-01-9	Chrysene	0.283	0.075	0.038	ug/l	
86-73-7	Fluorene	2.64	0.075	0.038	ug/l	
91-20-3	Naphthalene	6.90 [a]	0.75	0.038	ug/l	
85-01-8	Phenanthrene	5.16 [a]	0.75	0.038	ug/l	
129-00-0	Pyrene	0.647	0.075	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%	70%	29-124%
321-60-8	2-Fluorobiphenyl	42%	57%	23-122%
1718-51-0	Terphenyl-d14	34%	39%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-502_20220419
Lab Sample ID: JD43429-8 **Date Sampled:** 04/19/22
Matrix: AQ - Ground Water **Date Received:** 04/20/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43635.D	1	04/23/22 00:33	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	89%		52-154%
3017-95-6	2-Bromo-1-chloropropane	92%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-502_20220419		
Lab Sample ID:	JD43429-8F	**Date Sampled:**	04/19/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-74_SL_20220419		
Lab Sample ID:	JD43429-9	**Date Sampled:**	04/19/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V86922.D	1	04/26/22 16:25	TS	n/a	n/a	V2V3563
Run #2	1A221575.D	5	04/25/22 18:33	NW	n/a	n/a	V1A9523

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	186 [a]	2.5	2.1	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	16.9	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	0.68	1.0	0.59	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%	104%	80-120%
17060-07-0	1,2-Dichloroethane-D4	109%	99%	80-120%
2037-26-5	Toluene-D8	97%	98%	80-120%
460-00-4	4-Bromofluorobenzene	101%	95%	82-114%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-74_SL_20220419		
Lab Sample ID:	JD43429-9	**Date Sampled:**	04/19/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96579.D	1	04/22/22 22:57	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.180	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.143	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	0.0645	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0997	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0511	0.080	0.040	ug/l	J
218-01-9	Chrysene	0.145	0.080	0.040	ug/l	
86-73-7	Fluorene	0.251	0.080	0.040	ug/l	
91-20-3	Naphthalene	0.139	0.080	0.040	ug/l	
85-01-8	Phenanthrene	0.318	0.080	0.040	ug/l	
129-00-0	Pyrene	0.401	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	40%		29-124%
321-60-8	2-Fluorobiphenyl	37%		23-122%
1718-51-0	Terphenyl-d14	46%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-74_SL_20220419
Lab Sample ID: JD43429-9 **Date Sampled:** 04/19/22
Matrix: AQ - Ground Water **Date Received:** 04/20/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43636.D	1	04/23/22 00:50	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	33 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.021	0.0074	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	90%		52-154%
3017-95-6	2-Bromo-1-chloropropane	90%		52-154%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-74_SL_20220419		
Lab Sample ID:	JD43429-9F	**Date Sampled:**	04/19/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JD43429-10	**Date Sampled:**	04/19/22
Matrix:	AQ - Trip Blank Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L341022.D	1	04/23/22 02:03	NH	n/a	n/a	VL10285
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	109%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-82_SL_20220419		
Lab Sample ID:	JD43429-11	**Date Sampled:**	04/19/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1A221576.D	100	04/25/22 18:57	NW	n/a	n/a	V1A9523
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	14500	50	43	ug/l	
107-06-2	1,2-Dichloroethane	ND	100	60	ug/l	
100-41-4	Ethylbenzene	2850	100	60	ug/l	
98-82-8	Isopropylbenzene	90.1	100	65	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	100	51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	1000	580	ug/l	
108-88-3	Toluene	5620	100	53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	298	200	100	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	200	100	ug/l	
1330-20-7	Xylene (total)	2610	100	59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	94%		82-114%

(a) Dilution required due to high concentration of target compound.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-82_SL_20220419		
Lab Sample ID:	JD43429-11	**Date Sampled:**	04/19/22
Matrix:	AQ - Ground Water	**Date Received:**	04/20/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96580.D	1	04/22/22 23:19	KLS	04/22/22 08:30	OP39250A	E3P4585
Run #2	2M123477A.D	1	04/25/22 17:34	KLS	04/22/22 08:30	OP39250A	E2M5557
Run #3	2M123499.D	100	04/26/22 12:20	KLS	04/22/22 08:30	OP39250A	E2M5558

	Initial Volume	Final Volume
Run #1	255 ml	1.0 ml
Run #2	255 ml	1.0 ml
Run #3	255 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	1.30	0.078	0.039	ug/l	
56-55-3	Benzo(a)anthracene	0.234	0.039	0.024	ug/l	
50-32-8	Benzo(a)pyrene	0.148	0.039	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.238	0.039	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.0963	0.078	0.039	ug/l	
218-01-9	Chrysene	0.164	0.078	0.039	ug/l	
86-73-7	Fluorene	10.4 [a]	0.78	0.039	ug/l	
91-20-3	Naphthalene	34.5 [b]	78	3.9	ug/l	
85-01-8	Phenanthrene	8.66 [a]	0.78	0.039	ug/l	
129-00-0	Pyrene	0.774	0.078	0.039	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
4165-60-0	Nitrobenzene-d5	40%	83%	92%	29-124%
321-60-8	2-Fluorobiphenyl	42%	59%	88%	23-122%
1718-51-0	Terphenyl-d14	40%	52%	69%	22-130%

(a) Result is from Run# 2
(b) Result is from Run# 3

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-82_SL_20220419
Lab Sample ID: JD43429-11 **Date Sampled:** 04/19/22
Matrix: AQ - Ground Water **Date Received:** 04/20/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43637.D	1	04/23/22 01:07	RK	04/22/22 14:40	OP39261	G7G1547
Run #2							

	Initial Volume	Final Volume
Run #1	33 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.021	0.0074	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	77%		52-154%
3017-95-6	2-Bromo-1-chloropropane	80%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-82_SL_20220419		
Lab Sample ID:	JD43429-11F	**Date Sampled:**	04/19/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/20/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/22/22	04/22/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52280
(2) Prep QC Batch: MP32467

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

GW TB

Page 1 of 1

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #:
SGS Quote #:
Bottle Order Control #: VP-033022-132
SGS Job #: JD 43429

Client / Reporting Information

Company Name: Evergreen c/o Stantec
Street Address: 1060 Andrew Drive Suite 140
City / State / Zip: West Chester PA 19380
Project Contact / E-mail: Andrew Bradley andrew.bradley@stantec.com; Jenny Kachel jenny.kachel@stantec.com
Phone #: 610-425-7820, 484-757-7890
Sampler(s) Name(s) / Phone #: D. Campbell, M. Vitale

Project Information

Project Name: Evergreen Former Philadelphia Refinery Annual GWS
Street: 3144 Passyunk Avenue
City / State: Philadelphia PA
Project #: 213403363
Client Purchase Order #:
Project Manager: Andrew Bradley, Jenny Kachel

Billing Information (if different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB - Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Evergreen Petroleum Short List + TBA VOCs by 8260	Evergreen Petroleum Short List SVOCs by 8270	Evergreen Petroleum Short List EDB by 8011	Dissolved Lead (field filtered)	pH Check (Lab Use Only)	LAB USE ONLY
1F	N-165_20220418		4/18/22	9:35	MV	G	N	GW	8	5		1	2					X	X	X	X		F36
2F	N-164_SL_20220418		4/18/22	9:45	DC	G	N	GW	8	5		1	2					X	X	X	X		A34
3F	N-166_20220418		4/18/22	11:15	MV	G	N	GW	8	5		1	2					X	X	X	X		V680
4F	N-157_SL_20220418		4/18/22	12:25	DC	G	N	GW	8	5		1	2					X	X	X	X		
5F	N-167_20220418		4/18/22	13:00	MV	G	N	GW	8	5		1	2					X	X	X	X		
6F	N-168_20220418		4/18/22	14:00	MV	G	N	GW	8	5		1	2					X	X	X	X		
7F	N-112_SL_20220418		4/18/22	14:20	DC	G	N	GW	8	5		1	2					X	X	X	X		
8F	RW-502_20220419		4/19/22	9:50	DC	G	N	GW	8	5		1	2					X	X	X	X		
9F	N-74_SL_20220419		4/19/22	12:00	DC	G	N	GW	8	5		1	2					X	X	X	X		
10	TRIP BLANK		--	--	--	--	--	TB	2	2								X					
11F	N-82-SL-20220419		4/19/22	14:15	DC	G	N	GW	8	5		1	2					X	X	X	X		

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format Evergreen/Sunoco EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Lead has been field filtered. Naphthalene to be analyzed by 8270. Evergreen Petroleum Short List attached.

Initial Assessment AR3A

Label Verification

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:
1	Dawn Campbell	4/20/22 1416	
2			
3			
4			
5			

Relinquished By: 2 — Date / Time: 4/20/22 1912 — Received By: 2 Jeemit Patel

Custody Seal #: Intact / Not Intact / Absent

Therm ID: See Sample Receipt Summary — On Ice: ☑ — Cooler Temp. °C: 3.2, 3.1, C-1P

• 2x250mL NP EPT

SGS Sample Receipt Summary

Job Number: JD43429 **Client:** STANTEC **Project:** EVERGREEN FORMER PHILADELPHIA R

Date / Time Received: 4/20/2022 7:12:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.2); Cooler 2: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (2.9); Cooler 2: (2.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

JD43429: Chain of Custody
Page 2 of 2

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10285-MB	L341016.D	1	04/22/22	NH	n/a	n/a	VL10285

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-10

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	96%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	80-120%
2037-26-5	Toluene-D8	101%	80-120%
460-00-4	4-Bromofluorobenzene	110%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A9523-MB	1A221561.D	1	04/25/22	NW	n/a	n/a	V1A9523

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-2, JD43429-4, JD43429-5, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	97%	80-120%
2037-26-5	Toluene-D8	99%	80-120%
460-00-4	4-Bromofluorobenzene	96%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V3563-MB	2V86915.D	1	04/26/22	TS	n/a	n/a	V2V3563

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-9

CAS No.	Compound	Result	RL	MDL	Units	Q
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	90%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	80-120%
2037-26-5	Toluene-D8	98%	80-120%
460-00-4	4-Bromofluorobenzene	102%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1073-06-9	Benzene, 1-bromo-3-fluoro-	4.68	49	ug/l	JN
3855-82-1	1,4-Dichlorobenzene-D4	7.41	53	ug/l	JN
	Total TIC, Volatile		102	ug/l	J

Blank Spike Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL10285-BS	L341014.D	1	04/22/22	NH	n/a	n/a	VL10285

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	47.5	95	80-115
106-93-4	1,2-Dibromoethane	50	49.6	99	67-138
107-06-2	1,2-Dichloroethane	50	44.0	88	73-117
100-41-4	Ethylbenzene	50	45.3	91	78-116
98-82-8	Isopropylbenzene	50	48.7	97	78-121
1634-04-4	Methyl Tert Butyl Ether	50	45.5	91	76-123
75-65-0	Tert Butyl Alcohol	250	297	119	75-123
108-88-3	Toluene	50	44.8	90	79-116
95-63-6	1,2,4-Trimethylbenzene	50	50.0	100	78-120
108-67-8	1,3,5-Trimethylbenzene	50	50.8	102	77-120
1330-20-7	Xylene (total)	150	139	93	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	80-120%
17060-07-0	1,2-Dichloroethane-D4	100%	80-120%
2037-26-5	Toluene-D8	91%	80-120%
460-00-4	4-Bromofluorobenzene	114%	82-114%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A9523-BS	1A221559.D	1	04/25/22	NW	n/a	n/a	V1A9523

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-2, JD43429-4, JD43429-5, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	47.5	95	80-115
107-06-2	1,2-Dichloroethane	50	44.4	89	73-117
100-41-4	Ethylbenzene	50	45.6	91	78-116
98-82-8	Isopropylbenzene	50	47.8	96	78-121
1634-04-4	Methyl Tert Butyl Ether	50	45.1	90	76-123
75-65-0	Tert Butyl Alcohol	250	229	92	75-123
108-88-3	Toluene	50	46.0	92	79-116
95-63-6	1,2,4-Trimethylbenzene	50	45.9	92	78-120
108-67-8	1,3,5-Trimethylbenzene	50	46.2	92	77-120
1330-20-7	Xylene (total)	150	141	94	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	91%	80-120%
2037-26-5	Toluene-D8	95%	80-120%
460-00-4	4-Bromofluorobenzene	97%	82-114%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V3563-BS	2V86912.D	1	04/26/22	TS	n/a	n/a	V2V3563

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
107-06-2	1,2-Dichloroethane	50	49.3	99	73-117
100-41-4	Ethylbenzene	50	43.5	87	78-116
98-82-8	Isopropylbenzene	50	44.0	88	78-121
1634-04-4	Methyl Tert Butyl Ether	50	44.3	89	76-123
75-65-0	Tert Butyl Alcohol	250	209	84	75-123
108-88-3	Toluene	50	43.3	87	79-116
95-63-6	1,2,4-Trimethylbenzene	50	43.3	87	78-120
108-67-8	1,3,5-Trimethylbenzene	50	43.0	86	77-120
1330-20-7	Xylene (total)	150	130	87	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	90%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	80-120%
2037-26-5	Toluene-D8	96%	80-120%
460-00-4	4-Bromofluorobenzene	101%	82-114%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43449-6MS	2V86925.D	1	04/26/22	TS	n/a	n/a	V2V3563
JD43449-6 [a]	2V86918.D	1	04/26/22	TS	n/a	n/a	V2V3563

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-9

CAS No.	Compound	JD43449-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
107-06-2	1,2-Dichloroethane	1.0 U		50	56.9	114	66-120
100-41-4	Ethylbenzene	1.0 U		50	52.0	104	37-144
98-82-8	Isopropylbenzene	1.0 U		50	52.3	105	71-126
1634-04-4	Methyl Tert Butyl Ether	1.0 U		50	50.5	101	66-124
75-65-0	Tert Butyl Alcohol	10 U		250	234	94	63-133
108-88-3	Toluene	1.0 U		50	52.0	104	46-139
95-63-6	1,2,4-Trimethylbenzene	2.0 U		50	50.7	101	39-147
108-67-8	1,3,5-Trimethylbenzene	2.0 U		50	50.5	101	56-136
1330-20-7	Xylene (total)	ND		150	154	102	38-147

CAS No.	Surrogate Recoveries	MS	JD43449-6	Limits
1868-53-7	Dibromofluoromethane	90%	89%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	104%	80-120%
2037-26-5	Toluene-D8	96%	98%	80-120%
460-00-4	4-Bromofluorobenzene	102%	103%	82-114%

(a) Results reported from the HCl preserved sample. The reported result for acrolein is for screening only and cannot be used for compliance purposes.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43347-11MS	L341019.D	5	04/23/22	NH	n/a	n/a	VL10285
JD43347-11MSD	L341020.D	5	04/23/22	NH	n/a	n/a	VL10285
JD43347-11 [a]	L341017.D	5	04/23/22	NH	n/a	n/a	VL10285

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-10

CAS No.	Compound	JD43347-11 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	14.5		250	263	99	250	256	97	3	49-137/12
106-93-4	1,2-Dibromoethane	ND		250	247	99	250	239	96	3	63-134/12
107-06-2	1,2-Dichloroethane	ND		250	227	91	250	219	88	4	66-120/13
100-41-4	Ethylbenzene	442		250	539	39	250	525	33* [b]	3	37-144/12
98-82-8	Isopropylbenzene	293		250	451	63* [b]	250	438	58* [b]	3	71-126/13
1634-04-4	Methyl Tert Butyl Ether	ND		250	243	97	250	240	96	1	66-124/12
75-65-0	Tert Butyl Alcohol	ND		1250	1300	104	1250	1280	102	2	63-133/15
108-88-3	Toluene	ND		250	232	93	250	222	89	4	46-139/12
95-63-6	1,2,4-Trimethylbenzene	1430	E	250	1490	24* [c]	250	1480	20* [c]	1	39-147/13
108-67-8	1,3,5-Trimethylbenzene	330		250	517	75	250	512	73	1	56-136/14
1330-20-7	Xylene (total)	600		750	1150	73	750	1120	69	3	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD43347-11	Limits
1868-53-7	Dibromofluoromethane	98%	99%	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	100%	101%	104%	80-120%
2037-26-5	Toluene-D8	93%	91%	98%	80-120%
460-00-4	4-Bromofluorobenzene	116%* [b]	118%* [b]	112%	82-114%

(a) Dilution required due to high concentrations of target and non-target compounds.
(b) Outside control limits due to matrix interference.
(c) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43429-9MS	1A221569.D	5	04/25/22	NW	n/a	n/a	V1A9523
JD43429-9MSD	1A221570.D	5	04/25/22	NW	n/a	n/a	V1A9523
JD43429-9	1A221575.D	5	04/25/22	NW	n/a	n/a	V1A9523

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-2, JD43429-4, JD43429-5, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	JD43429-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	186		250	391	82	250	402	86	3	49-137/12
107-06-2	1,2-Dichloroethane	ND		250	226	90	250	233	93	3	66-120/13
100-41-4	Ethylbenzene	ND		250	232	93	250	233	93	0	37-144/12
98-82-8	Isopropylbenzene	ND		250	243	97	250	246	98	1	71-126/13
1634-04-4	Methyl Tert Butyl Ether	ND		250	240	96	250	251	100	4	66-124/12
75-65-0	Tert Butyl Alcohol	ND		1250	1190	95	1250	1190	95	0	63-133/15
108-88-3	Toluene	ND		250	235	94	250	234	94	0	46-139/12
95-63-6	1,2,4-Trimethylbenzene	ND		250	234	94	250	236	94	1	39-147/13
108-67-8	1,3,5-Trimethylbenzene	ND		250	233	93	250	237	95	2	56-136/14
1330-20-7	Xylene (total)	ND		750	720	96	750	725	97	1	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD43429-9	Limits
1868-53-7	Dibromofluoromethane	102%	105%	104%	80-120%
17060-07-0	1,2-Dichloroethane-D4	90%	91%	99%	80-120%
2037-26-5	Toluene-D8	95%	93%	98%	80-120%
460-00-4	4-Bromofluorobenzene	97%	96%	95%	82-114%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43449-9DUP	2V86927.D	1	04/26/22	TS	n/a	n/a	V2V3563
JD43449-9 [a]	2V86919.D	1	04/26/22	TS	n/a	n/a	V2V3563

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43429-9

CAS No.	Compound	JD43449-9 ug/l	Q	DUP ug/l	Q	RPD	Limits
107-06-2	1,2-Dichloroethane	1.0 U		ND		nc	10
100-41-4	Ethylbenzene	1.0 U		ND		nc	20
98-82-8	Isopropylbenzene	1.0 U		ND		nc	15
1634-04-4	Methyl Tert Butyl Ether	1.0 U		ND		nc	12
75-65-0	Tert Butyl Alcohol	10 U		ND		nc	11
108-88-3	Toluene	1.0 U		ND		nc	16
95-63-6	1,2,4-Trimethylbenzene	2.0 U		ND		nc	22
108-67-8	1,3,5-Trimethylbenzene	2.0 U		ND		nc	16
1330-20-7	Xylene (total)	ND		ND		nc	22

CAS No.	Surrogate Recoveries	DUP	JD43449-9	Limits
1868-53-7	Dibromofluoromethane	91%	90%	80-120%
17060-07-0	1,2-Dichloroethane-D4	110%	108%	80-120%
2037-26-5	Toluene-D8	97%	96%	80-120%
460-00-4	4-Bromofluorobenzene	101%	102%	82-114%

(a) Results reported from the HCl preserved sample. The reported result for acrolein is for screening only and cannot be used for compliance purposes.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V1A9510-BFB
Lab File ID: 1A221230.D
Instrument ID: GCMS1A
Injection Date: 04/14/22
Injection Time: 17:02

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	26552	18.2		Pass
75	30.0 - 60.0% of mass 95	71368	48.8		Pass
95	Base peak, 100% relative abundance	146197	100.0		Pass
96	5.0 - 9.0% of mass 95	9509	6.50		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	116675	79.8		Pass
175	5.0 - 9.0% of mass 174	8434	5.77	(7.23) [a]	Pass
176	95.0 - 101.0% of mass 174	113008	77.3	(96.9) [a]	Pass
177	5.0 - 9.0% of mass 176	7221	4.94	(6.39) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A9510-IC9510	1A221231.D	04/14/22	17:35	00:33	Initial cal 0.2
V1A9510-IC9510	1A221232.D	04/14/22	17:59	00:57	Initial cal 0.5
V1A9510-IC9510	1A221233.D	04/14/22	18:23	01:21	Initial cal 1
V1A9510-IC9510	1A221234.D	04/14/22	18:47	01:45	Initial cal 2
V1A9510-IC9510	1A221235.D	04/14/22	19:11	02:09	Initial cal 4
V1A9510-IC9510	1A221236.D	04/14/22	19:35	02:33	Initial cal 8
V1A9510-IC9510	1A221237.D	04/14/22	19:59	02:57	Initial cal 20
V1A9510-ICC9510	1A221238.D	04/14/22	20:23	03:21	Initial cal 50
V1A9510-IC9510	1A221239.D	04/14/22	20:47	03:45	Initial cal 100
V1A9510-IC9510	1A221240.D	04/14/22	21:10	04:08	Initial cal 200
V1A9510-ICV9510	1A221243.D	04/14/22	22:22	05:20	Initial cal verification 50
V1A9510-ICV9510	1A221244.D	04/14/22	22:46	05:44	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V1A9523-BFB
Lab File ID: 1A221557.D
Instrument ID: GCMS1A
Injection Date: 04/25/22
Injection Time: 10:42

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	31947	17.1		Pass
75	30.0 - 60.0% of mass 95	88117	47.2		Pass
95	Base peak, 100% relative abundance	186496	100.0		Pass
96	5.0 - 9.0% of mass 95	12489	6.70		Pass
173	Less than 2.0% of mass 174	376	0.20	(0.25) [a]	Pass
174	50.0 - 120.0% of mass 95	152509	81.8		Pass
175	5.0 - 9.0% of mass 174	11547	6.19	(7.57) [a]	Pass
176	95.0 - 101.0% of mass 174	147685	79.2	(96.8) [a]	Pass
177	5.0 - 9.0% of mass 176	10418	5.59	(7.05) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A9523-CC9510	1A221557.D	04/25/22	10:42	00:00	Continuing cal 20
V1A9523-BS	1A221559.D	04/25/22	11:42	01:00	Blank Spike
V1A9523-MB	1A221561.D	04/25/22	12:32	01:50	Method Blank
ZZZZZZ	1A221562.D	04/25/22	13:11	02:29	(unrelated sample)
ZZZZZZ	1A221563.D	04/25/22	13:35	02:53	(unrelated sample)
JD43429-4	1A221564.D	04/25/22	13:59	03:17	N-157_SL_20220418
JD43429-6	1A221565.D	04/25/22	14:23	03:41	N-168_20220418
JD43429-5	1A221566.D	04/25/22	14:46	04:04	N-167_20220418
JD43429-2	1A221567.D	04/25/22	15:10	04:28	N-164_SL_20220418
ZZZZZZ	1A221568.D	04/25/22	15:34	04:52	(unrelated sample)
JD43429-9MS	1A221569.D	04/25/22	16:02	05:20	Matrix Spike
JD43429-9MSD	1A221570.D	04/25/22	16:26	05:44	Matrix Spike Duplicate
ZZZZZZ	1A221571.D	04/25/22	16:57	06:15	(unrelated sample)
ZZZZZZ	1A221572.D	04/25/22	17:21	06:39	(unrelated sample)
ZZZZZZ	1A221573.D	04/25/22	17:45	07:03	(unrelated sample)
JD43429-9	1A221575.D	04/25/22	18:33	07:51	N-74_SL_20220419
JD43429-11	1A221576.D	04/25/22	18:57	08:15	N-82_SL_20220419
JD43429-7	1A221577.D	04/25/22	19:20	08:38	N-112_SL_20220418
JD43429-8	1A221578.D	04/25/22	19:44	09:02	RW-502_20220419
ZZZZZZ	1A221579.D	04/25/22	20:08	09:26	(unrelated sample)
ZZZZZZ	1A221580.D	04/25/22	20:32	09:50	(unrelated sample)
ZZZZZZ	1A221581.D	04/25/22	20:55	10:13	(unrelated sample)
ZZZZZZ	1A221582.D	04/25/22	21:19	10:37	(unrelated sample)
ZZZZZZ	1A221583.D	04/25/22	21:43	11:01	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V2V3532-BFB
Lab File ID: 2V85957.D
Instrument ID: GCMS2V
Injection Date: 03/31/22
Injection Time: 17:33

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12863	15.6		Pass
75	30.0 - 60.0% of mass 95	40051	48.6		Pass
95	Base peak, 100% relative abundance	82448	100.0		Pass
96	5.0 - 9.0% of mass 95	5424	6.58		Pass
173	Less than 2.0% of mass 174	529	0.64	(0.68) [a]	Pass
174	50.0 - 120.0% of mass 95	78187	94.8		Pass
175	5.0 - 9.0% of mass 174	5797	7.03	(7.41) [a]	Pass
176	95.0 - 101.0% of mass 174	76864	93.2	(98.3) [a]	Pass
177	5.0 - 9.0% of mass 176	5123	6.21	(6.67) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3532-IC3532	2V85959.D	03/31/22	18:14	00:41	Initial cal 0.2
V2V3532-IC3532	2V85961.D	03/31/22	18:55	01:22	Initial cal 0.5
V2V3532-IC3532	2V85963.D	03/31/22	19:35	02:02	Initial cal 1
V2V3532-IC3532	2V85965.D	03/31/22	20:16	02:43	Initial cal 2
V2V3532-IC3532	2V85967.D	03/31/22	20:57	03:24	Initial cal 4
V2V3532-IC3532	2V85969.D	03/31/22	21:38	04:05	Initial cal 8
V2V3532-IC3532	2V85971.D	03/31/22	22:19	04:46	Initial cal 20
V2V3532-ICC3532	2V85973.D	03/31/22	22:59	05:26	Initial cal 50
V2V3532-IC3532	2V85975.D	03/31/22	23:40	06:07	Initial cal 100
V2V3532-IC3532	2V85977.D	04/01/22	00:21	06:48	Initial cal 200
V2V3532-ICV3532	2V85983.D	04/01/22	02:23	08:50	Initial cal verification 50
V2V3532-ICV3532	2V85985.D	04/01/22	03:04	09:31	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V2V3532-BFB2
Lab File ID: 2V85991.D
Instrument ID: GCMS2V
Injection Date: 04/04/22
Injection Time: 16:08

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12904	15.3		Pass
75	30.0 - 60.0% of mass 95	40659	48.2		Pass
95	Base peak, 100% relative abundance	84328	100.0		Pass
96	5.0 - 9.0% of mass 95	5723	6.79		Pass
173	Less than 2.0% of mass 174	555	0.66	(0.66) [a]	Pass
174	50.0 - 120.0% of mass 95	83781	99.4		Pass
175	5.0 - 9.0% of mass 174	5986	7.10	(7.14) [a]	Pass
176	95.0 - 101.0% of mass 174	80155	95.1	(95.7) [a]	Pass
177	5.0 - 9.0% of mass 176	5274	6.25	(6.58) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3532-ICV3532	2V85993.D	04/04/22	16:48	00:40	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V2V3563-BFB
Lab File ID: 2V86910.D
Instrument ID: GCMS2V
Injection Date: 04/26/22
Injection Time: 11:05

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	18032	19.7		Pass
75	30.0 - 60.0% of mass 95	47088	51.4		Pass
95	Base peak, 100% relative abundance	91563	100.0		Pass
96	5.0 - 9.0% of mass 95	6195	6.77		Pass
173	Less than 2.0% of mass 174	636	0.69	(0.73) [a]	Pass
174	50.0 - 120.0% of mass 95	86976	95.0		Pass
175	5.0 - 9.0% of mass 174	6293	6.87	(7.24) [a]	Pass
176	95.0 - 101.0% of mass 174	84587	92.4	(97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	5464	5.97	(6.46) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3563-CC3532	2V86910.D	04/26/22	11:05	00:00	Continuing cal 20
V2V3563-BS	2V86912.D	04/26/22	12:06	01:01	Blank Spike
V2V3563-MB	2V86915.D	04/26/22	13:37	02:32	Method Blank
ZZZZZZ	2V86916.D	04/26/22	14:07	03:02	(unrelated sample)
JD43449-6	2V86918.D	04/26/22	14:53	03:48	(used for QC only; not part of job JD43429)
JD43449-9	2V86919.D	04/26/22	15:16	04:11	(used for QC only; not part of job JD43429)
ZZZZZZ	2V86920.D	04/26/22	15:39	04:34	(unrelated sample)
ZZZZZZ	2V86921.D	04/26/22	16:02	04:57	(unrelated sample)
JD43429-9	2V86922.D	04/26/22	16:25	05:20	N-74_SL_20220419
ZZZZZZ	2V86923.D	04/26/22	16:49	05:44	(unrelated sample)
JD43449-6MS	2V86925.D	04/26/22	17:35	06:30	Matrix Spike
JD43449-9DUP	2V86927.D	04/26/22	18:21	07:16	Duplicate
ZZZZZZ	2V86928.D	04/26/22	18:44	07:39	(unrelated sample)
ZZZZZZ	2V86929.D	04/26/22	19:08	08:03	(unrelated sample)
ZZZZZZ	2V86930.D	04/26/22	19:31	08:26	(unrelated sample)
ZZZZZZ	2V86931.D	04/26/22	19:54	08:49	(unrelated sample)
ZZZZZZ	2V86932.D	04/26/22	20:17	09:12	(unrelated sample)
ZZZZZZ	2V86933.D	04/26/22	20:40	09:35	(unrelated sample)
ZZZZZZ	2V86934.D	04/26/22	21:03	09:58	(unrelated sample)
ZZZZZZ	2V86935.D	04/26/22	21:26	10:21	(unrelated sample)
ZZZZZZ	2V86936.D	04/26/22	21:49	10:44	(unrelated sample)
ZZZZZZ	2V86937.D	04/26/22	22:13	11:08	(unrelated sample)
ZZZZZZ	2V86938.D	04/26/22	22:36	11:31	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10152-BFB
Lab File ID: L337225.D
Instrument ID: GCMSL
Injection Date: 01/26/22
Injection Time: 20:56

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12563	17.8		Pass
75	30.0 - 60.0% of mass 95	35485	50.2		Pass
95	Base peak, 100% relative abundance	70691	100.0		Pass
96	5.0 - 9.0% of mass 95	4334	6.13		Pass
173	Less than 2.0% of mass 174	500	0.71	(0.76) [a]	Pass
174	50.0 - 120.0% of mass 95	65509	92.7		Pass
175	5.0 - 9.0% of mass 174	5372	7.60	(8.20) [a]	Pass
176	95.0 - 101.0% of mass 174	62744	88.8	(95.8) [a]	Pass
177	5.0 - 9.0% of mass 176	4392	6.21	(7.00) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10152-IC10152	L337226.D	01/26/22	21:33	00:37	Initial cal 0.2
VL10152-IC10152	L337227.D	01/26/22	21:56	01:00	Initial cal 0.5
VL10152-IC10152	L337228.D	01/26/22	22:20	01:24	Initial cal 1
VL10152-IC10152	L337229.D	01/26/22	22:43	01:47	Initial cal 2
VL10152-IC10152	L337230.D	01/26/22	23:07	02:11	Initial cal 4
VL10152-IC10152	L337231.D	01/26/22	23:30	02:34	Initial cal 8
VL10152-IC10152	L337232.D	01/26/22	23:53	02:57	Initial cal 20
VL10152-ICC10152	L337233.D	01/27/22	00:17	03:21	Initial cal 50
VL10152-IC10152	L337234.D	01/27/22	00:40	03:44	Initial cal 100
VL10152-IC10152	L337235.D	01/27/22	01:04	04:08	Initial cal 200
VL10152-ICV10152	L337239.D	01/27/22	02:37	05:41	Initial cal verification 50
VL10152-ICV10152	L337240.D	01/27/22	03:01	06:05	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VL10285-BFB
Lab File ID: L341012.D
Instrument ID: GCMSL
Injection Date: 04/22/22
Injection Time: 22:09

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	13652	17.1		Pass
75	30.0 - 60.0% of mass 95	38307	47.9		Pass
95	Base peak, 100% relative abundance	80043	100.0		Pass
96	5.0 - 9.0% of mass 95	5773	7.21		Pass
173	Less than 2.0% of mass 174	77	0.10	(0.12) [a]	Pass
174	50.0 - 120.0% of mass 95	66627	83.2		Pass
175	5.0 - 9.0% of mass 174	5279	6.60	(7.92) [a]	Pass
176	95.0 - 101.0% of mass 174	63525	79.4	(95.3) [a]	Pass
177	5.0 - 9.0% of mass 176	4406	5.50	(6.94) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VL10285-CC10152	L341012.D	04/22/22	22:09	00:00	Continuing cal 50
VL10285-BS	L341014.D	04/22/22	22:56	00:47	Blank Spike
VL10285-MB	L341016.D	04/22/22	23:42	01:33	Method Blank
JD43347-11	L341017.D	04/23/22	00:06	01:57	(used for QC only; not part of job JD43429)
JD43429-1	L341018.D	04/23/22	00:29	02:20	N-165_20220418
JD43347-11MS	L341019.D	04/23/22	00:53	02:44	Matrix Spike
JD43347-11MSD	L341020.D	04/23/22	01:16	03:07	Matrix Spike Duplicate
JD43429-10	L341022.D	04/23/22	02:03	03:54	TRIP BLANK
ZZZZZZ	L341023.D	04/23/22	02:27	04:18	(unrelated sample)
ZZZZZZ	L341024.D	04/23/22	02:50	04:41	(unrelated sample)
ZZZZZZ	L341025.D	04/23/22	03:13	05:04	(unrelated sample)
ZZZZZZ	L341026.D	04/23/22	03:37	05:28	(unrelated sample)
ZZZZZZ	L341027.D	04/23/22	04:00	05:51	(unrelated sample)
ZZZZZZ	L341028.D	04/23/22	04:24	06:15	(unrelated sample)
ZZZZZZ	L341029.D	04/23/22	04:47	06:38	(unrelated sample)
ZZZZZZ	L341030.D	04/23/22	05:11	07:02	(unrelated sample)
ZZZZZZ	L341031.D	04/23/22	05:34	07:25	(unrelated sample)
ZZZZZZ	L341032.D	04/23/22	05:58	07:49	(unrelated sample)
JD43429-2	L341034.D	04/23/22	06:44	08:35	N-164_SL_20220418
JD43429-3	L341035.D	04/23/22	07:08	08:59	N-166_20220418
JD43429-4	L341036.D	04/23/22	07:31	09:22	N-157_SL_20220418

Surrogate Recovery Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD43429-1	L341018.D	96	105	102	109
JD43429-2	L341034.D	97	104	98	111
JD43429-2	1A221567.D	105	95	94	93
JD43429-3	L341035.D	97	104	97	106
JD43429-4	1A221564.D	104	97	95	94
JD43429-4	L341036.D	95	105	99	110
JD43429-5	1A221566.D	103	98	96	101
JD43429-6	1A221565.D	103	95	98	100
JD43429-7	1A221577.D	105	98	97	91
JD43429-8	1A221578.D	103	96	97	92
JD43429-9	2V86922.D	89	109	97	101
JD43429-9	1A221575.D	104	99	98	95
JD43429-10	L341022.D	95	106	101	109
JD43429-11	1A221576.D	102	99	96	94
JD43347-11MS	L341019.D	98	100	93	116* [a]
JD43347-11MSD	L341020.D	99	101	91	118* [a]
JD43429-9MS	1A221569.D	102	90	95	97
JD43429-9MSD	1A221570.D	105	91	93	96
JD43449-6MS	2V86925.D	90	107	96	102
JD43449-9DUP	2V86927.D	91	110	97	101
V1A9523-BS	1A221559.D	99	91	95	97
V1A9523-MB	1A221561.D	101	97	99	96
V2V3563-BS	2V86912.D	90	107	96	101
V2V3563-MB	2V86915.D	90	106	98	102
VL10285-BS	L341014.D	102	100	91	114
VL10285-MB	L341016.D	96	106	101	110

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

(a) Outside control limits due to matrix interference.

MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39250A-MB1	3P96562.D	1	04/22/22	KLS	04/22/22	OP39250A	E3P4585

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-5, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.080	0.040	ug/l	
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	50%	29-124%
321-60-8	2-Fluorobiphenyl	50%	23-122%
1718-51-0	Terphenyl-d14	68%	22-130%

Method Blank Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39250A-MB1	2M123471.D	1	04/25/22	KLS	04/22/22	OP39250A	E2M5557

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-5, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.080	0.040	ug/l	
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	53%	29-124%
321-60-8	2-Fluorobiphenyl	56%	23-122%
1718-51-0	Terphenyl-d14	72%	22-130%

Blank Spike Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39250A-BS12	3P96565.D	1	04/22/22	KLS	04/22/22	OP39250A	E3P4585

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-5, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
120-12-7	Anthracene	0.8	0.547	68	40-125
56-55-3	Benzo(a)anthracene	0.8	0.467	58	38-132
50-32-8	Benzo(a)pyrene	0.8	0.263	33	31-110
205-99-2	Benzo(b)fluoranthene	0.8	0.325	41	31-113
191-24-2	Benzo(g,h,i)perylene	0.8	0.139	17* [a]	18-110
218-01-9	Chrysene	0.8	0.364	46	43-119
86-73-7	Fluorene	0.8	0.570	71	42-123
91-20-3	Naphthalene	0.8	0.529	66	30-114
85-01-8	Phenanthrene	0.8	0.566	71	45-125
129-00-0	Pyrene	0.8	0.455	57	48-125

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	62%	29-124%
321-60-8	2-Fluorobiphenyl	58%	23-122%
1718-51-0	Terphenyl-d14	63%	22-130%

(a) Outside of in house control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39250A-MSA	3P96570.D	1	04/22/22	KLS	04/22/22	OP39250A	E3P4585
OP39250A-MSDA	3P96571.D	1	04/22/22	KLS	04/22/22	OP39250A	E3P4585
JD43436-2	3P96569.D	1	04/22/22	KLS	04/22/22	OP39250A	E3P4585

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-5, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	JD43436-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
120-12-7	Anthracene	ND		0.769	0.584	76	0.8	0.530	66	10	28-144/32
56-55-3	Benzo(a)anthracene	ND		0.769	0.641	83	0.8	0.631	79	2	27-144/36
50-32-8	Benzo(a)pyrene	ND		0.769	0.587	76	0.8	0.563	70	4	21-113/41
205-99-2	Benzo(b)fluoranthene	ND		0.769	0.700	91	0.8	0.698	87	0	21-123/41
191-24-2	Benzo(g,h,i)perylene	ND		0.769	0.766	100	0.8	0.708	89	8	10-113/48
218-01-9	Chrysene	ND		0.769	0.546	71	0.8	0.507	63	7	31-128/34
86-73-7	Fluorene	ND		0.769	0.512	67	0.8	0.443	55	14	32-138/33
91-20-3	Naphthalene	ND		0.769	0.427	56	0.8	0.373	47	14	13-141/33
85-01-8	Phenanthrene	ND		0.769	0.588	76	0.8	0.536	67	9	33-139/31
129-00-0	Pyrene	ND		0.769	0.628	82	0.8	0.578	72	8	35-142/33

CAS No.	Surrogate Recoveries	MS	MSD	JD43436-2	Limits
4165-60-0	Nitrobenzene-d5	55%	49%	40%	29-124%
321-60-8	2-Fluorobiphenyl	54%	47%	38%	23-122%
1718-51-0	Terphenyl-d14	65%	60%	52%	22-130%

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5549-DFTPP
Lab File ID: 2M123312.D
Instrument ID: GCMS2M
Injection Date: 04/19/22
Injection Time: 17:53

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	250511	45.8		Pass
68	Less than 2.0% of mass 69	3794	0.69	(1.94) [a]	Pass
69	Mass 69 relative abundance	195883	35.8		Pass
70	Less than 2.0% of mass 69	788	0.14	(0.40) [a]	Pass
127	40.0 - 60.0% of mass 198	269717	49.3		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	546573	100.0		Pass
199	5.0 - 9.0% of mass 198	36912	6.75		Pass
275	10.0 - 30.0% of mass 198	161362	29.5		Pass
365	1.0 - 100.0% of mass 198	21295	3.90		Pass
441	Present, but less than mass 443	93342	17.1	(86.6) [b]	Pass
442	40.0 - 100.0% of mass 198	530970	97.1		Pass
443	17.0 - 23.0% of mass 442	107741	19.7	(20.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5549-IC5549	2M123313.D	04/19/22	18:10	00:17	Initial cal 20
E2M5549-IC5549	2M123314.D	04/19/22	18:37	00:44	Initial cal 0.4
E2M5549-IC5549	2M123315.D	04/19/22	19:03	01:10	Initial cal 16
E2M5549-IC5549	2M123316.D	04/19/22	19:30	01:37	Initial cal 0.2
E2M5549-ICC5549	2M123317.D	04/19/22	19:57	02:04	Initial cal 10
E2M5549-IC5549	2M123318.D	04/19/22	20:23	02:30	Initial cal 1
E2M5549-IC5549	2M123319.D	04/19/22	20:50	02:57	Initial cal 5
E2M5549-IC5549	2M123320.D	04/19/22	21:17	03:24	Initial cal 2
E2M5549-ICV5549	2M123321.D	04/19/22	21:43	03:50	Initial cal verification 10
E2M5549-ICV5549	2M123322.D	04/19/22	22:10	04:17	Initial cal verification 10
E2M5549-ICV5549	2M123323.D	04/19/22	22:36	04:43	Initial cal verification 10
E2M5549-ICV5549	2M123324.D	04/19/22	23:03	05:10	Initial cal verification 10

Instrument Performance Check (DFTPP)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5550-DFTPP
Lab File ID: 2M123326.D
Instrument ID: GCMS2M
Injection Date: 04/20/22
Injection Time: 01:29

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	230762	45.5		Pass
68	Less than 2.0% of mass 69	2381	0.47	(1.33) [a]	Pass
69	Mass 69 relative abundance	178901	35.3		Pass
70	Less than 2.0% of mass 69	546	0.11	(0.31) [a]	Pass
127	40.0 - 60.0% of mass 198	241238	47.6		Pass
197	Less than 1.0% of mass 198	832	0.16		Pass
198	Base peak, 100% relative abundance	507178	100.0		Pass
199	5.0 - 9.0% of mass 198	32984	6.50		Pass
275	10.0 - 30.0% of mass 198	145450	28.7		Pass
365	1.0 - 100.0% of mass 198	21481	4.24		Pass
441	Present, but less than mass 443	80477	15.9	(81.1) [b]	Pass
442	40.0 - 100.0% of mass 198	493440	97.3		Pass
443	17.0 - 23.0% of mass 442	99264	19.6	(20.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5550-IC5550	2M123337.D	04/20/22	02:36	01:07	Initial cal 20
E2M5550-IC5550	2M123338.D	04/20/22	03:02	01:33	Initial cal 16
E2M5550-ICC5550	2M123339.D	04/20/22	03:29	02:00	Initial cal 10
E2M5550-IC5550	2M123340.D	04/20/22	03:55	02:26	Initial cal 5
E2M5550-IC5550	2M123341.D	04/20/22	04:22	02:53	Initial cal 2
E2M5550-IC5550	2M123342.D	04/20/22	04:49	03:20	Initial cal 1
E2M5550-IC5550	2M123343.D	04/20/22	06:03	04:34	Initial cal 0.4
E2M5550-IC5550	2M123344.D	04/20/22	06:30	05:01	Initial cal 0.2
E2M5550-ICV5550	2M123345.D	04/20/22	06:56	05:27	Initial cal verification 10
E2M5550-ICV5549	2M123346.D	04/20/22	07:23	05:54	Initial cal verification 10

Instrument Performance Check (DFTPP)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5557-DFTPP
Lab File ID: 2M123469.D
Instrument ID: GCMS2M
Injection Date: 04/25/22
Injection Time: 14:02

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	153357	46.2		Pass
68	Less than 2.0% of mass 69	1300	0.39	(1.10) [a]	Pass
69	Mass 69 relative abundance	117663	35.4		Pass
70	Less than 2.0% of mass 69	288	0.09	(0.24) [a]	Pass
127	40.0 - 60.0% of mass 198	161877	48.7		Pass
197	Less than 1.0% of mass 198	750	0.23		Pass
198	Base peak, 100% relative abundance	332117	100.0		Pass
199	5.0 - 9.0% of mass 198	21990	6.62		Pass
275	10.0 - 30.0% of mass 198	87981	26.5		Pass
365	1.0 - 100.0% of mass 198	13216	3.98		Pass
441	Present, but less than mass 443	51181	15.4	(82.0) [b]	Pass
442	40.0 - 100.0% of mass 198	323794	97.5		Pass
443	17.0 - 23.0% of mass 442	62400	18.8	(19.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5557-CC5549	2M123470.D	04/25/22	14:13	00:11	Continuing cal 10
OP39250A-MB1	2M123471.D	04/25/22	14:42	00:40	Method Blank
JD43429-4	2M123473.D	04/25/22	15:35	01:33	N-157_SL_20220418
JD43429-5	2M123474.D	04/25/22	16:02	02:00	N-167_20220418
JD43429-3	2M123475.D	04/25/22	16:29	02:27	N-166_20220418
JD43429-6	2M123476.D	04/25/22	16:56	02:54	N-168_20220418
JD43429-11	2M123477A.D	04/25/22	17:34	03:32	N-82_SL_20220419
JD43429-8	2M123478.D	04/25/22	18:01	03:59	RW-502_20220419

Instrument Performance Check (DFTPP)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5558-DFTPP
Lab File ID: 2M123494.D
Instrument ID: GCMS2M
Injection Date: 04/26/22
Injection Time: 10:02

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	140698	47.0		Pass
68	Less than 2.0% of mass 69	1589	0.53	(1.45) [a]	Pass
69	Mass 69 relative abundance	109260	36.5		Pass
70	Less than 2.0% of mass 69	518	0.17	(0.47) [a]	Pass
127	40.0 - 60.0% of mass 198	150013	50.1		Pass
197	Less than 1.0% of mass 198	610	0.20		Pass
198	Base peak, 100% relative abundance	299349	100.0		Pass
199	5.0 - 9.0% of mass 198	19547	6.53		Pass
275	10.0 - 30.0% of mass 198	80693	27.0		Pass
365	1.0 - 100.0% of mass 198	10818	3.61		Pass
441	Present, but less than mass 443	39232	13.1	(86.2) [b]	Pass
442	40.0 - 100.0% of mass 198	236376	79.0		Pass
443	17.0 - 23.0% of mass 442	45501	15.2	(19.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5558-CC5549	2M123495.D	04/26/22	10:22	00:20	Continuing cal 5
E2M5558-CC5550	2M123496.D	04/26/22	10:49	00:47	Continuing cal 5
JD43429-2	2M123498.D	04/26/22	11:53	01:51	N-164_SL_20220418
JD43429-11	2M123499.D	04/26/22	12:20	02:18	N-82_SL_20220419

Instrument Performance Check (DFTPP)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P4567-DFTPP
Lab File ID: 3P96182.D
Instrument ID: GCMS3P
Injection Date: 04/07/22
Injection Time: 13:02

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	33414	42.5		Pass
68	Less than 2.0% of mass 69	475	0.60	(1.05) [a]	Pass
69	Mass 69 relative abundance	45053	57.3		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	45392	57.7		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	78664	100.0		Pass
199	5.0 - 9.0% of mass 198	5405	6.87		Pass
275	10.0 - 30.0% of mass 198	17859	22.7		Pass
365	1.0 - 100.0% of mass 198	2688	3.42		Pass
441	Present, but less than mass 443	11088	14.1	(83.3) [b]	Pass
442	40.0 - 100.0% of mass 198	70008	89.0		Pass
443	17.0 - 23.0% of mass 442	13311	16.9	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P4567-ICC4567	3P96183.D	04/07/22	13:26	00:24	Initial cal 0.2
E3P4567-IC4567	3P96184.D	04/07/22	13:49	00:47	Initial cal 0.02
E3P4567-IC4567	3P96185.D	04/07/22	14:24	01:22	Initial cal 1
E3P4567-IC4567	3P96186.D	04/07/22	14:48	01:46	Initial cal 0.01
E3P4567-IC4567	3P96187.D	04/07/22	15:11	02:09	Initial cal 0.5
E3P4567-IC4567	3P96188.D	04/07/22	15:34	02:32	Initial cal 0.04
E3P4567-IC4567	3P96189.D	04/07/22	15:57	02:55	Initial cal 0.1
E3P4567-IC4567	3P96190.D	04/07/22	16:21	03:19	Initial cal 0.004
E3P4567-IC4567	3P96191.D	04/07/22	16:44	03:42	Initial cal 0.002
E3P4567-ICV4567	3P96192.D	04/07/22	17:10	04:08	Initial cal verification 0.2
E3P4567-ICV4567	3P96193.D	04/07/22	17:33	04:31	Initial cal verification 0.2
OP38957A-MB1	3P96194.D	04/07/22	18:09	05:07	Method Blank
OP38957A-BS12	3P96195.D	04/07/22	18:32	05:30	Blank Spike
ZZZZZZ	3P96196.D	04/07/22	18:55	05:53	(unrelated sample)
ZZZZZZ	3P96197.D	04/07/22	19:19	06:17	(unrelated sample)
ZZZZZZ	3P96198.D	04/07/22	19:42	06:40	(unrelated sample)
ZZZZZZ	3P96199.D	04/07/22	20:06	07:04	(unrelated sample)
ZZZZZZ	3P96200.D	04/07/22	20:29	07:27	(unrelated sample)
ZZZZZZ	3P96201.D	04/07/22	20:52	07:50	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E3P4567-DFTPP	**Injection Date:**	04/07/22
Lab File ID:	3P96182.D	**Injection Time:**	13:02
Instrument ID:	GCMS3P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3P96202.D	04/07/22	21:16	08:14	(unrelated sample)
JD42309-10	3P96203.D	04/07/22	21:39	08:37	(used for QC only; not part of job JD43429)
OP38957A-MSA	3P96204.D	04/07/22	22:03	09:01	Matrix Spike
OP38957A-MSDA	3P96205.D	04/07/22	22:26	09:24	Matrix Spike Duplicate
ZZZZZZ	3P96206.D	04/07/22	22:50	09:48	(unrelated sample)
ZZZZZZ	3P96207.D	04/07/22	23:13	10:11	(unrelated sample)
ZZZZZZ	3P96208.D	04/07/22	23:36	10:34	(unrelated sample)
ZZZZZZ	3P96209.D	04/08/22	00:00	10:58	(unrelated sample)
ZZZZZZ	3P96210.D	04/08/22	00:23	11:21	(unrelated sample)
ZZZZZZ	3P96211.D	04/08/22	00:46	11:44	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P4585-DFTPP
Lab File ID: 3P96560.D
Instrument ID: GCMS3P
Injection Date: 04/22/22
Injection Time: 15:54

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	34410	40.0		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	46651	54.2		Pass
70	Less than 2.0% of mass 69	201	0.23	(0.43) [a]	Pass
127	40.0 - 60.0% of mass 198	48216	56.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	86032	100.0		Pass
199	5.0 - 9.0% of mass 198	5512	6.41		Pass
275	10.0 - 30.0% of mass 198	19648	22.8		Pass
365	1.0 - 100.0% of mass 198	2876	3.34		Pass
441	Present, but less than mass 443	12532	14.6	(87.2) [b]	Pass
442	40.0 - 100.0% of mass 198	76621	89.1		Pass
443	17.0 - 23.0% of mass 442	14368	16.7	(18.8) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P4585-CC4567	3P96561.D	04/22/22	16:10	00:16	Continuing cal 0.2
OP39250A-MB1	3P96562.D	04/22/22	16:33	00:39	Method Blank
ZZZZZZ	3P96563.D	04/22/22	16:58	01:04	(unrelated sample)
ZZZZZZ	3P96564.D	04/22/22	17:20	01:26	(unrelated sample)
OP39250A-BS12	3P96565.D	04/22/22	17:43	01:49	Blank Spike
ZZZZZZ	3P96566.D	04/22/22	18:05	02:11	(unrelated sample)
ZZZZZZ	3P96567.D	04/22/22	18:28	02:34	(unrelated sample)
ZZZZZZ	3P96568.D	04/22/22	18:50	02:56	(unrelated sample)
JD43436-2	3P96569.D	04/22/22	19:13	03:19	(used for QC only; not part of job JD43429)
OP39250A-MSA	3P96570.D	04/22/22	19:35	03:41	Matrix Spike
OP39250A-MSDA	3P96571.D	04/22/22	19:58	04:04	Matrix Spike Duplicate
JD43429-1	3P96572.D	04/22/22	20:20	04:26	N-165_20220418
JD43429-2	3P96573.D	04/22/22	20:42	04:48	N-164_SL_20220418
JD43429-4	3P96574.D	04/22/22	21:05	05:11	N-157_SL_20220418
JD43429-5	3P96575.D	04/22/22	21:27	05:33	N-167_20220418
JD43429-3	3P96576.D	04/22/22	21:50	05:56	N-166_20220418
JD43429-6	3P96577.D	04/22/22	22:12	06:18	N-168_20220418
JD43429-7	3P96578.D	04/22/22	22:35	06:41	N-112_SL_20220418
JD43429-9	3P96579.D	04/22/22	22:57	07:03	N-74_SL_20220419

Instrument Performance Check (DFTPP)

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E3P4585-DFTPP	**Injection Date:**	04/22/22
Lab File ID:	3P96560.D	**Injection Time:**	15:54
Instrument ID:	GCMS3P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JD43429-11	3P96580.D	04/22/22	23:19	07:25	N-82_SL_20220419
JD43429-8	3P96581.D	04/22/22	23:42	07:48	RW-502_20220419

Surrogate Recovery Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270E BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD43429-1	3P96572.D	54	49	63
JD43429-2	2M123498.D	59	58	64
JD43429-2	3P96573.D	47	39	51
JD43429-3	2M123475.D	53	53	67
JD43429-3	3P96576.D	49	36	64
JD43429-4	3P96574.D	59	54	66
JD43429-4	2M123473.D	66	69	74
JD43429-5	2M123474.D	45	43	60
JD43429-5	3P96575.D	37	33	51
JD43429-6	2M123476.D	74	66	72
JD43429-6	3P96577.D	68	54	68
JD43429-7	3P96578.D	53	42	49
JD43429-8	2M123478.D	70	57	39
JD43429-8	3P96581.D	58	42	34
JD43429-9	3P96579.D	40	37	46
JD43429-11	3P96580.D	40	42	40
JD43429-11	2M123477A.D	83	59	52
JD43429-11	2M123499.D	92	88	69
OP39250A-BS12	3P96565.D	62	58	63
OP39250A-MB1	3P96562.D	50	50	68
OP39250A-MB1	2M123471.D	53	56	72
OP39250A-MSA	3P96570.D	55	54	65
OP39250A-MSDA	3P96571.D	49	47	60

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	29-124%
S2 = 2-Fluorobiphenyl	23-122%
S3 = Terphenyl-d14	22-130%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39261-MB1	7G43619.D	1	04/22/22	RK	04/22/22	OP39261	G7G1547

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
3017-95-6	2-Bromo-1-chloropropane	92%	52-154%
3017-95-6	2-Bromo-1-chloropropane	90%	52-154%

Method Blank Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39325-MB1	7G43654.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43429-5

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
3017-95-6	2-Bromo-1-chloropropane	104%	52-154%
3017-95-6	2-Bromo-1-chloropropane	102%	52-154%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39261-BS1	7G43620.D	1	04/22/22	RK	04/22/22	OP39261	G7G1547
OP39261-BSD	7G43621.D	1	04/22/22	RK	04/22/22	OP39261	G7G1547

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	0.5	0.50	100	0.51	102	2	51-197/19

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3017-95-6	2-Bromo-1-chloropropane	92%	89%	52-154%
3017-95-6	2-Bromo-1-chloropropane	92%	90%	52-154%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39325-BS1	7G43655.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548
OP39325-BSD	7G43656.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43429-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	0.5	0.52	104	0.47	94	14	51-197/19

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3017-95-6	2-Bromo-1-chloropropane	106%	99%	52-154%
3017-95-6	2-Bromo-1-chloropropane	104%	97%	52-154%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39261-MS	7G43623.D	1	04/22/22	RK	04/22/22	OP39261	G7G1547
JD43429-1	7G43624.D	1	04/22/22	RK	04/22/22	OP39261	G7G1547

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	JD43429-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
106-93-4	1,2-Dibromoethane	ND		0.512	0.51	100	33-200

CAS No.	Surrogate Recoveries	MS	JD43429-1	Limits
3017-95-6	2-Bromo-1-chloropropane	87%	110%	52-154%
3017-95-6	2-Bromo-1-chloropropane	87%	93%	52-154%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39325-MS	7G43658.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548
JD43591-1	7G43665.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43429-5

CAS No.	Compound	JD43591-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
106-93-4	1,2-Dibromoethane	ND		0.49	0.51	104	33-200

CAS No.	Surrogate Recoveries	MS	JD43591-1	Limits
3017-95-6	2-Bromo-1-chloropropane	123%	126%	52-154%
3017-95-6	2-Bromo-1-chloropropane	105%	103%	52-154%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39261-DUP	7G43622.D	1	04/22/22	RK	04/22/22	OP39261	G7G1547
JD43327-3	7G43634.D	1	04/23/22	RK	04/22/22	OP39261	G7G1547

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43429-1, JD43429-2, JD43429-3, JD43429-4, JD43429-6, JD43429-7, JD43429-8, JD43429-9, JD43429-11

CAS No.	Compound	JD43327-3 ug/l	Q	DUP ug/l	Q	RPD	Limits
106-93-4	1,2-Dibromoethane	0.58		0.61		5	10

CAS No.	Surrogate Recoveries	DUP	JD43327-3	Limits
3017-95-6	2-Bromo-1-chloropropane	91%	92%	52-154%
3017-95-6	2-Bromo-1-chloropropane	88%	90%	52-154%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39325-DUP	7G43657.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548
JD43617-1	7G43662.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43429-5

CAS No.	Compound	JD43617-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
106-93-4	1,2-Dibromoethane	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JD43617-1	Limits
3017-95-6	2-Bromo-1-chloropropane	101%	104%	52-154%
3017-95-6	2-Bromo-1-chloropropane	98%	97%	52-154%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD43429
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846-8011 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JD43429-1	7G43624.D	110	93
JD43429-2	7G43625.D	92	90
JD43429-3	7G43626.D	92	87
JD43429-4	7G43627.D	84	92
JD43429-5	7G43659.D	100	105
JD43429-6	7G43631.D	85	87
JD43429-7	7G43632.D	114	95
JD43429-8	7G43635.D	89	92
JD43429-9	7G43636.D	90	90
JD43429-11	7G43637.D	77	80
OP39261-BS1	7G43620.D	92	92
OP39261-BSD	7G43621.D	89	90
OP39261-DUP	7G43622.D	91	88
OP39261-MB1	7G43619.D	92	90
OP39261-MS	7G43623.D	87	87
OP39325-BS1	7G43655.D	106	104
OP39325-BSD	7G43656.D	99	97
OP39325-DUP	7G43657.D	101	98
OP39325-MB1	7G43654.D	104	102
OP39325-MS	7G43658.D	123	105

Surrogate Compounds	Recovery Limits
S1 = 2-Bromo-1-chloropropane	52-154%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD43429
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32467
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/22/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.54	32		
Antimony	4.0	.044	1.7		
Arsenic	1.0	.018	.39		
Barium	2.0	.018	.73		
Beryllium	1.0	.006	.15		
Boron	50	1.7	14		
Cadmium	1.0	.014	.17		
Calcium	500	15	200		
Chromium	2.0	.03	.62		
Cobalt	1.0	.004	.17		
Copper	4.0	.024	1.9		
Iron	50	1.1	19		
Lead	1.0	.014	.52	0.023	<1.0
Magnesium	500	.74	46		
Manganese	2.0	.018	.63		
Molybdenum	2.0	.054	.45		
Nickel	2.0	.016	.95		
Potassium	500	2.4	68		
Selenium	1.0	.7	.55		
Silver	1.0	.004	.16		
Sodium	500	1.1	470		
Strontium	10	.032	2.4		
Thallium	1.0	.018	.17		
Tin	10	.07	2.6		
Titanium	2.0	.09	1.6		
Vanadium	2.0	.034	1.8		
Zinc	10	.096	5.4		

Associated samples MP32467: JD43429-1F, JD43429-2F, JD43429-3F, JD43429-4F, JD43429-5F, JD43429-6F, JD43429-7F, JD43429-8F, JD43429-9F, JD43429-11F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43429
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32467 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/22/22

Metal	JD43429-1F Original	MS	Spikelot MP6020AQ3	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	0.16	79.7	80	99.4	75-125
Magnesium					
Manganese	anr				
Molybdenum					
Nickel	anr				
Potassium					
Selenium	anr				
Silver	anr				
Sodium					
Strontium					
Thallium	anr				
Tin					
Titanium					
Vanadium					
Zinc	anr				

Associated samples MP32467: JD43429-1F, JD43429-2F, JD43429-3F, JD43429-4F, JD43429-5F, JD43429-6F, JD43429-7F, JD43429-8F, JD43429-9F, JD43429-11F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43429
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32467 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/22/22

Metal	JD43429-1F Original	MSD	Spikelot MP6020AQ3%	Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	0.16	80.8	80	100.8	1.4	20
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium						
Zinc	anr					

Associated samples MP32467: JD43429-1F, JD43429-2F, JD43429-3F, JD43429-4F, JD43429-5F, JD43429-6F, JD43429-7F, JD43429-8F, JD43429-9F, JD43429-11F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD43429
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32467 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/22/22

Metal	BSP Result	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	77.5	80	96.9	80-120
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP32467: JD43429-1F, JD43429-2F, JD43429-3F, JD43429-4F, JD43429-5F, JD43429-6F, JD43429-7F, JD43429-8F, JD43429-9F, JD43429-11F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD43429
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32467 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/22/22

	JD43429-1F			QC
Metal	Original	SDL 2:10	%DIF	Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	0.159	0.167	5.2	0-10
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP32467: JD43429-1F, JD43429-2F, JD43429-3F, JD43429-4F, JD43429-5F, JD43429-6F, JD43429-7F, JD43429-8F, JD43429-9F, JD43429-11F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

213403363

SGS Job Number: JD43617

Sampling Dates: 04/20/22 - 04/22/22



Report to:

Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380
Jennifer.Menges@stantec.com; Andrew.klingbeil@stantec.com;
Andrew.Bradley@stantec.com; Jenny.Kachel@stantec.com;
ATTN: Jennifer Menges

Total number of pages in report: **110**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD43617

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
JD43617-1	04/20/22	13:15	DC	04/22/22	AQ	Ground Water	WP-A_SL_20220420
JD43617-1F	04/20/22	13:15	DC	04/22/22	AQ	Groundwater Filtered	WP-A_SL_20220420
JD43617-2	04/20/22	09:50	DC	04/22/22	AQ	Ground Water	S-376_SL_20220420
JD43617-2F	04/20/22	09:50	DC	04/22/22	AQ	Groundwater Filtered	S-376_SL_20220420
JD43617-3	04/21/22	12:30	DC	04/22/22	AQ	Ground Water	N-170_SL_20220421
JD43617-3F	04/21/22	12:30	DC	04/22/22	AQ	Groundwater Filtered	N-170_SL_20220421
JD43617-4	04/21/22	15:20	DC	04/22/22	AQ	Ground Water	N-151_SL_20220421
JD43617-4F	04/21/22	15:20	DC	04/22/22	AQ	Groundwater Filtered	N-151_SL_20220421
JD43617-5	04/21/22	09:20	DC	04/22/22	AQ	Ground Water	N-169_20220421
JD43617-5F	04/21/22	09:20	DC	04/22/22	AQ	Groundwater Filtered	N-169_20220421
JD43617-6	04/21/22	00:00	DC	04/22/22	AQ	Ground Water	DUP-8_20220421
JD43617-6F	04/21/22	00:00	DC	04/22/22	AQ	Groundwater Filtered	DUP-8_20220421

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD43617

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Project No: 213403363

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD43617-7	04/22/22	09:30		04/22/22	AQ	Trip Blank Water	TRIP BLANK
JD43617-8	04/22/22	09:30	DC	04/22/22	AQ	Ground Water	N-161_SL_20220422
JD43617-8F	04/22/22	09:30	DC	04/22/22	AQ	Groundwater Filtered	N-161_SL_20220422

Summary of Hits

Job Number: JD43617
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/20/22 thru 04/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD43617-1	**WP-A_SL_20220420**					
Xylene (total)		0.89 J	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.371	0.069	0.034	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		1.18	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		1.02	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		1.49	0.034	0.021	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.552	0.069	0.034	ug/l	SW846 8270E BY SIM
Chrysene		1.28	0.069	0.034	ug/l	SW846 8270E BY SIM
Pyrene		4.65	0.69	0.034	ug/l	SW846 8270E BY SIM
JD43617-1F	**WP-A_SL_20220420**					
No hits reported in this sample.						
JD43617-2	**S-376_SL_20220420**					
Benzene [a]		124	2.5	2.1	ug/l	SW846 8260D
Ethylbenzene [a]		869	5.0	3.0	ug/l	SW846 8260D
Isopropylbenzene [a]		17.5	5.0	3.2	ug/l	SW846 8260D
Tert Butyl Alcohol [a]		100	50	29	ug/l	SW846 8260D
Toluene		1780	20	11	ug/l	SW846 8260D
1,2,4-Trimethylbenzene [a]		927	10	5.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene [a]		274	10	5.0	ug/l	SW846 8260D
Xylene (total)		5100	20	12	ug/l	SW846 8260D
Naphthalene		140	3.8	0.19	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0746 J	0.077	0.038	ug/l	SW846 8270E BY SIM
JD43617-2F	**S-376_SL_20220420**					
No hits reported in this sample.						
JD43617-3	**N-170_SL_20220421**					
Benzene		219	5.0	4.3	ug/l	SW846 8260D
Ethylbenzene		37.9	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		103	1.0	0.65	ug/l	SW846 8260D
Toluene		21.2	1.0	0.53	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		3.0	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		48.4	1.0	0.59	ug/l	SW846 8260D
Anthracene		8.88	0.77	0.038	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		1.56	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.937	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.940	0.038	0.023	ug/l	SW846 8270E BY SIM
Benzo(g,h,i)perylene		0.926	0.077	0.038	ug/l	SW846 8270E BY SIM

Summary of Hits

Job Number: JD43617
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/20/22 thru 04/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Chrysene		1.41	0.077	0.038	ug/l	SW846 8270E BY SIM
Fluorene		20.7	0.77	0.038	ug/l	SW846 8270E BY SIM
Phenanthrene		28.5	0.77	0.038	ug/l	SW846 8270E BY SIM
Pyrene		6.80	0.77	0.038	ug/l	SW846 8270E BY SIM
JD43617-3F	**N-170_SL_20220421**					
No hits reported in this sample.						
JD43617-4	**N-151_SL_20220421**					
Isopropylbenzene		2.5	1.0	0.65	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		3.5	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		1.8 J	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		12.4	1.0	0.59	ug/l	SW846 8260D
Benzo(a)anthracene		0.209	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(a)pyrene		0.0705	0.040	0.024	ug/l	SW846 8270E BY SIM
Benzo(b)fluoranthene		0.0890	0.040	0.024	ug/l	SW846 8270E BY SIM
Chrysene		0.383	0.080	0.040	ug/l	SW846 8270E BY SIM
Fluorene		0.170	0.080	0.040	ug/l	SW846 8270E BY SIM
Naphthalene		0.0572 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Phenanthrene		0.0598 J	0.080	0.040	ug/l	SW846 8270E BY SIM
Pyrene		0.326	0.080	0.040	ug/l	SW846 8270E BY SIM
Methane		3080	5.5	4.0	ug/l	RSK-175
Calcium		64300	5000		ug/l	SW846 6010D
Iron		20600	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [b]		189	5.0		mg/l	SM2320 B-11
Inorganic Carbon [c]		24.6	6.0		mg/l	SM5310 B-11
Nitrogen, Total Kjeldahl		3.3	0.20		mg/l	EPA 351.2/LACHAT
Sulfate		3.5	2.0		mg/l	EPA 300/SW846 9056A
Total Carbon		64.5	5.0		mg/l	SM5310 B-11
Total Organic Carbon		39.9	1.0		mg/l	SM5310 B-11
JD43617-4F	**N-151_SL_20220421**					
Lead		2.5	1.0		ug/l	SW846 6020B
JD43617-5	**N-169_20220421**					
Benzene		42.4	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		54.3	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		104	1.0	0.65	ug/l	SW846 8260D
Toluene		23.4	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		1.6 J	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		3.0	2.0	1.0	ug/l	SW846 8260D

Summary of Hits

Job Number: JD43617
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/20/22 thru 04/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Xylene (total)		47.7	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.106	0.069	0.034	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0213 J	0.034	0.021	ug/l	SW846 8270E BY SIM
Fluorene		0.490	0.069	0.034	ug/l	SW846 8270E BY SIM
Naphthalene		3.16	0.069	0.034	ug/l	SW846 8270E BY SIM
Phenanthrene		0.132	0.069	0.034	ug/l	SW846 8270E BY SIM
Pyrene		0.0908	0.069	0.034	ug/l	SW846 8270E BY SIM
JD43617-5F	**N-169_20220421**					
No hits reported in this sample.						
JD43617-6	**DUP-8_20220421**					
Benzene		40.5	0.50	0.43	ug/l	SW846 8260D
Ethylbenzene		51.5	1.0	0.60	ug/l	SW846 8260D
Isopropylbenzene		100	1.0	0.65	ug/l	SW846 8260D
Toluene		22.9	1.0	0.53	ug/l	SW846 8260D
1,2,4-Trimethylbenzene		1.5 J	2.0	1.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene		2.7	2.0	1.0	ug/l	SW846 8260D
Xylene (total)		46.4	1.0	0.59	ug/l	SW846 8260D
Anthracene		0.149	0.069	0.034	ug/l	SW846 8270E BY SIM
Benzo(a)anthracene		0.0229 J	0.034	0.021	ug/l	SW846 8270E BY SIM
Fluorene		0.684	0.069	0.034	ug/l	SW846 8270E BY SIM
Naphthalene		11.5	0.69	0.034	ug/l	SW846 8270E BY SIM
Phenanthrene		0.531	0.069	0.034	ug/l	SW846 8270E BY SIM
Pyrene		0.0899	0.069	0.034	ug/l	SW846 8270E BY SIM
JD43617-6F	**DUP-8_20220421**					
No hits reported in this sample.						
JD43617-7	**TRIP BLANK**					
No hits reported in this sample.						
JD43617-8	**N-161_SL_20220422**					
Benzene		538	2.5	2.1	ug/l	SW846 8260D
Ethylbenzene [a]		159	2.0	1.2	ug/l	SW846 8260D
Isopropylbenzene [a]		29.9	2.0	1.3	ug/l	SW846 8260D
Toluene [a]		178	2.0	1.1	ug/l	SW846 8260D
1,2,4-Trimethylbenzene [a]		52.0	4.0	2.0	ug/l	SW846 8260D
1,3,5-Trimethylbenzene [a]		139	4.0	2.0	ug/l	SW846 8260D
Xylene (total) [a]		375	2.0	1.2	ug/l	SW846 8260D

Summary of Hits

Job Number: JD43617
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 04/20/22 thru 04/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Fluorene		0.113	0.069	0.034	ug/l	SW846 8270E BY SIM
Naphthalene		31.3	0.69	0.034	ug/l	SW846 8270E BY SIM
Pyrene		0.0348 J	0.069	0.034	ug/l	SW846 8270E BY SIM
Methane		5750	11	8.0	ug/l	RSK-175
Ethane		0.71	0.23	0.14	ug/l	RSK-175
Ethene		0.54	0.31	0.16	ug/l	RSK-175
Calcium		84500	5000		ug/l	SW846 6010D
Iron		10500	100		ug/l	SW846 6010D
Alkalinity, Total as CaCO3 [b]		423	5.0		mg/l	SM2320 B-11
Nitrogen, Total Kjeldahl		9.3	0.60		mg/l	EPA 351.2/LACHAT
Total Carbon		33.3	10		mg/l	SM5310 B-11
Total Organic Carbon		36.4	1.0		mg/l	SM5310 B-11

JD43617-8F N-161_SL_20220422

No hits reported in this sample.

(a) Dilution required due to high concentration of target compound.
(b) Sample was titrated to a final pH of 4.5.Sample receieved with head space.
(c) Calculated as: Total Carbon - Total Organic Carbon

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WP-A_SL_20220420		
Lab Sample ID:	JD43617-1	**Date Sampled:**	04/20/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A221668.D	1	04/27/22 18:43	NW	n/a	n/a	V1A9527
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	0.89	1.0	0.59	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	95%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WP-A_SL_20220420		
Lab Sample ID:	JD43617-1	**Date Sampled:**	04/20/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96681.D	1	04/28/22 01:53	KLS	04/26/22 12:20	OP39308A	E3P4592
Run #2	2M123578.D	1	04/28/22 17:14	KLS	04/26/22 12:20	OP39308A	E2M5561

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2	290 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.371	0.069	0.034	ug/l	
56-55-3	Benzo(a)anthracene	1.18	0.034	0.021	ug/l	
50-32-8	Benzo(a)pyrene	1.02	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	1.49	0.034	0.021	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.552	0.069	0.034	ug/l	
218-01-9	Chrysene	1.28	0.069	0.034	ug/l	
86-73-7	Fluorene	ND	0.069	0.034	ug/l	
91-20-3	Naphthalene	ND	0.069	0.034	ug/l	
85-01-8	Phenanthrene	ND	0.069	0.034	ug/l	
129-00-0	Pyrene	4.65 [a]	0.69	0.034	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%	58%	29-124%
321-60-8	2-Fluorobiphenyl	57%	63%	23-122%
1718-51-0	Terphenyl-d14	54%	56%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WP-A_SL_20220420
Lab Sample ID: JD43617-1 **Date Sampled:** 04/20/22
Matrix: AQ - Ground Water **Date Received:** 04/22/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43662.D	1	04/27/22 02:28	RK	04/26/22 14:20	OP39325	G7G1548
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	104%		52-154%
3017-95-6	2-Bromo-1-chloropropane	97%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WP-A_SL_20220420		
Lab Sample ID:	JD43617-1F	**Date Sampled:**	04/20/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/26/22	04/26/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52306
(2) Prep QC Batch: MP32517

RL = Reporting Limit

Report of Analysis

Client Sample ID:	S-376_SL_20220420		
Lab Sample ID:	JD43617-2	**Date Sampled:**	04/20/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2V87015.D	5	04/29/22 13:46	TS	n/a	n/a	V2V3567
Run #2	1A221669.D	20	04/27/22 19:06	NW	n/a	n/a	V1A9527

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	124	2.5	2.1	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	3.0	ug/l	
100-41-4	Ethylbenzene	869	5.0	3.0	ug/l	
98-82-8	Isopropylbenzene	17.5	5.0	3.2	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	5.0	2.5	ug/l	
75-65-0	Tert Butyl Alcohol	100	50	29	ug/l	
108-88-3	Toluene	1780 [b]	20	11	ug/l	
95-63-6	1,2,4-Trimethylbenzene	927	10	5.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	274	10	5.0	ug/l	
1330-20-7	Xylene (total)	5100 [b]	20	12	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	99%	80-120%
2037-26-5	Toluene-D8	101%	95%	80-120%
460-00-4	4-Bromofluorobenzene	101%	97%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-376_SL_20220420		
Lab Sample ID:	JD43617-2	**Date Sampled:**	04/20/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96675.D	1	04/27/22 23:40	KLS	04/26/22 12:20	OP39308A	E3P4592
Run #2	2M123581.D	5	04/28/22 18:34	KLS	04/26/22 12:20	OP39308A	E2M5561

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2	260 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.077	0.038	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.038	0.023	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.038	0.023	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.038	0.023	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.077	0.038	ug/l	
218-01-9	Chrysene	ND	0.077	0.038	ug/l	
86-73-7	Fluorene	ND	0.077	0.038	ug/l	
91-20-3	Naphthalene	140 [a]	3.8	0.19	ug/l	
85-01-8	Phenanthrene	0.0746	0.077	0.038	ug/l	J
129-00-0	Pyrene	ND	0.077	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	43%	48%	29-124%
321-60-8	2-Fluorobiphenyl	43%	55%	23-122%
1718-51-0	Terphenyl-d14	52%	61%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-376_SL_20220420		
Lab Sample ID:	JD43617-2	**Date Sampled:**	04/20/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43666.D	1	04/27/22 03:37	RK	04/26/22 14:20	OP39325	G7G1548
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	87%		52-154%
3017-95-6	2-Bromo-1-chloropropane	85%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S-376_SL_20220420		
Lab Sample ID:	JD43617-2F	**Date Sampled:**	04/20/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/26/22	04/26/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52306
(2) Prep QC Batch: MP32517

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-170_SL_20220421		
Lab Sample ID:	JD43617-3	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V179294.D	1	04/28/22 18:44	BK	n/a	n/a	VV7581
Run #2	1A221670.D	10	04/27/22 19:30	NW	n/a	n/a	V1A9527

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	219 [a]	5.0	4.3	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	37.9	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	103	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	21.2	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	3.0	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	48.4	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	96%	80-120%
2037-26-5	Toluene-D8	93%	96%	80-120%
460-00-4	4-Bromofluorobenzene	87%	94%	82-114%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-170_SL_20220421		
Lab Sample ID:	JD43617-3	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96680.D	1	04/28/22 01:31	KLS	04/26/22 12:20	OP39308A	E3P4592
Run #2	2M123570.D	1	04/28/22 13:17	KLS	04/26/22 12:20	OP39308A	E2M5561

	Initial Volume	Final Volume
Run #1	260 ml	1.0 ml
Run #2	260 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	8.88 [a]	0.77	0.038	ug/l	
56-55-3	Benzo(a)anthracene	1.56	0.038	0.023	ug/l	
50-32-8	Benzo(a)pyrene	0.937	0.038	0.023	ug/l	
205-99-2	Benzo(b)fluoranthene	0.940	0.038	0.023	ug/l	
191-24-2	Benzo(g,h,i)perylene	0.926	0.077	0.038	ug/l	
218-01-9	Chrysene	1.41	0.077	0.038	ug/l	
86-73-7	Fluorene	20.7 [a]	0.77	0.038	ug/l	
91-20-3	Naphthalene	ND	0.077	0.038	ug/l	
85-01-8	Phenanthrene	28.5 [a]	0.77	0.038	ug/l	
129-00-0	Pyrene	6.80 [a]	0.77	0.038	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%	85%	29-124%
321-60-8	2-Fluorobiphenyl	47%	65%	23-122%
1718-51-0	Terphenyl-d14	51%	50%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-170_SL_20220421
Lab Sample ID: JD43617-3 **Date Sampled:** 04/21/22
Matrix: AQ - Ground Water **Date Received:** 04/22/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43667.D	1	04/27/22 03:54	RK	04/26/22 14:20	OP39325	G7G1548
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	97%		52-154%
3017-95-6	2-Bromo-1-chloropropane	93%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-170_SL_20220421		
Lab Sample ID:	JD43617-3F	**Date Sampled:**	04/21/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/26/22	04/26/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52306
(2) Prep QC Batch: MP32517

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-151_SL_20220421		
Lab Sample ID:	JD43617-4	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1A221671.D	1	04/27/22 19:54	NW	n/a	n/a	V1A9527
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	2.5	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	3.5	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.8	2.0	1.0	ug/l	J
1330-20-7	Xylene (total)	12.4	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	97%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	96%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-151_SL_20220421		
Lab Sample ID:	JD43617-4	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96676.D	1	04/28/22 00:02	KLS	04/26/22 12:20	OP39308A	E3P4592
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	0.209	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	0.0705	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	0.0890	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	0.383	0.080	0.040	ug/l	
86-73-7	Fluorene	0.170	0.080	0.040	ug/l	
91-20-3	Naphthalene	0.0572	0.080	0.040	ug/l	J
85-01-8	Phenanthrene	0.0598	0.080	0.040	ug/l	J
129-00-0	Pyrene	0.326	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	46%		29-124%
321-60-8	2-Fluorobiphenyl	45%		23-122%
1718-51-0	Terphenyl-d14	43%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: N-151_SL_20220421
Lab Sample ID: JD43617-4 **Date Sampled:** 04/21/22
Matrix: AQ - Ground Water **Date Received:** 04/22/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43668.D	1	04/27/22 04:11	RK	04/26/22 14:20	OP39325	G7G1548
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	106%		52-154%
3017-95-6	2-Bromo-1-chloropropane	97%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-151_SL_20220421		
Lab Sample ID:	JD43617-4	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA94526.D	1	04/26/22 12:14	WC	n/a	n/a	GAA2543
Run #2	AA94527.D	50	04/26/22 12:27	WC	n/a	n/a	GAA2543

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	3080 [a]	5.5	4.0	ug/l	
74-84-0	Ethane	ND	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-151_SL_20220421		
Lab Sample ID:	JD43617-4	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	64300	5000	ug/l	1	04/26/22	04/27/22	FW	SW846 6010D [1]	SW846 3010A [2]
Iron	20600	100	ug/l	1	04/26/22	04/27/22	FW	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52309
(2) Prep QC Batch: MP32518

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-151_SL_20220421		
Lab Sample ID:	JD43617-4	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	189	5.0	mg/l	1	04/27/22 16:32	MP	SM2320 B-11
Inorganic Carbon [b]	24.6	6.0	mg/l	1	04/30/22 01:02	MB	SM5310 B-11
Nitrogen, Total Kjeldahl	3.3	0.20	mg/l	1	04/26/22 13:16	MM	EPA 351.2/LACHAT
Sulfate	3.5	2.0	mg/l	1	04/26/22 19:29	JD	EPA 300/SW846 9056A
Total Carbon	64.5	5.0	mg/l	5	04/30/22 01:02	MB	SM5310 B-11
Total Organic Carbon	39.9	1.0	mg/l	1	04/26/22 22:41	MB	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.Sample receieved with head space.
(b) Calculated as: Total Carbon - Total Organic Carbon

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-151_SL_20220421		
Lab Sample ID:	JD43617-4F	**Date Sampled:**	04/21/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	2.5	1.0	ug/l	2	04/26/22	04/26/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52306
(2) Prep QC Batch: MP32517

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-169_20220421		
Lab Sample ID:	JD43617-5	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V179292.D	1	04/28/22 17:47	BK	n/a	n/a	VV7581
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	42.4	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	54.3	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	104	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	23.4	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	1.6	2.0	1.0	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	3.0	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	47.7	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		80-120%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	88%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-169_20220421		
Lab Sample ID:	JD43617-5	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96677.D	1	04/28/22 00:24	KLS	04/26/22 12:20	OP39308A	E3P4592
Run #2							

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2		

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.106	0.069	0.034	ug/l	
56-55-3	Benzo(a)anthracene	0.0213	0.034	0.021	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.034	0.021	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.069	0.034	ug/l	
218-01-9	Chrysene	ND	0.069	0.034	ug/l	
86-73-7	Fluorene	0.490	0.069	0.034	ug/l	
91-20-3	Naphthalene	3.16	0.069	0.034	ug/l	
85-01-8	Phenanthrene	0.132	0.069	0.034	ug/l	
129-00-0	Pyrene	0.0908	0.069	0.034	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	46%		29-124%
321-60-8	2-Fluorobiphenyl	43%		23-122%
1718-51-0	Terphenyl-d14	52%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-169_20220421		
Lab Sample ID:	JD43617-5	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43669.D	1	04/27/22 04:28	RK	04/26/22 14:20	OP39325	G7G1548
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	99%		52-154%
3017-95-6	2-Bromo-1-chloropropane	97%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-169_20220421		
Lab Sample ID:	JD43617-5F	**Date Sampled:**	04/21/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/26/22	04/26/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52306
(2) Prep QC Batch: MP32517

RL = Reporting Limit

Report of Analysis

Client Sample ID:	DUP-8_20220421		
Lab Sample ID:	JD43617-6	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V179293.D	1	04/28/22 18:15	BK	n/a	n/a	VV7581
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	40.5	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	51.5	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	100	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	22.9	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	1.5	2.0	1.0	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	2.7	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	46.4	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	88%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-8_20220421		
Lab Sample ID:	JD43617-6	**Date Sampled:**	04/21/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96678.D	1	04/28/22 00:47	KLS	04/26/22 12:20	OP39308A	E3P4592
Run #2	2M123579.D	1	04/28/22 17:40	KLS	04/26/22 12:20	OP39308A	E2M5561

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2	290 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.149	0.069	0.034	ug/l	
56-55-3	Benzo(a)anthracene	0.0229	0.034	0.021	ug/l	J
50-32-8	Benzo(a)pyrene	ND	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.034	0.021	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.069	0.034	ug/l	
218-01-9	Chrysene	ND	0.069	0.034	ug/l	
86-73-7	Fluorene	0.684	0.069	0.034	ug/l	
91-20-3	Naphthalene	11.5 [a]	0.69	0.034	ug/l	
85-01-8	Phenanthrene	0.531	0.069	0.034	ug/l	
129-00-0	Pyrene	0.0899	0.069	0.034	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	55%	60%	29-124%
321-60-8	2-Fluorobiphenyl	49%	64%	23-122%
1718-51-0	Terphenyl-d14	52%	64%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DUP-8_20220421
Lab Sample ID: JD43617-6 **Date Sampled:** 04/21/22
Matrix: AQ - Ground Water **Date Received:** 04/22/22
Method: SW846-8011 SW846 8011 **Percent Solids:** n/a
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43670.D	1	04/27/22 04:45	RK	04/26/22 14:20	OP39325	G7G1548
Run #2							

	Initial Volume	Final Volume
Run #1	35 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0071	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	96%		52-154%
3017-95-6	2-Bromo-1-chloropropane	96%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-8_20220421		
Lab Sample ID:	JD43617-6F	**Date Sampled:**	04/21/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/26/22	04/26/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52306
(2) Prep QC Batch: MP32517

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JD43617-7	**Date Sampled:**	04/22/22
Matrix:	AQ - Trip Blank Water	**Date Received:**	04/22/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V179289.D	1	04/28/22 16:24	BK	n/a	n/a	VV7581
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		80-120%
17060-07-0	1,2-Dichloroethane-D4	113%		80-120%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	88%		82-114%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-161_SL_20220422		
Lab Sample ID:	JD43617-8	**Date Sampled:**	04/22/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8260D	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	2V87011.D	2	04/29/22 12:13	TS	n/a	n/a	V2V3567
Run #2	1A221674.D	5	04/27/22 21:06	NW	n/a	n/a	V1A9527

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	538 [b]	2.5	2.1	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	1.2	ug/l	
100-41-4	Ethylbenzene	159	2.0	1.2	ug/l	
98-82-8	Isopropylbenzene	29.9	2.0	1.3	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	1.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	20	12	ug/l	
108-88-3	Toluene	178	2.0	1.1	ug/l	
95-63-6	1,2,4-Trimethylbenzene	52.0	4.0	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	139	4.0	2.0	ug/l	
1330-20-7	Xylene (total)	375	2.0	1.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	89%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	109%	98%	80-120%
2037-26-5	Toluene-D8	100%	95%	80-120%
460-00-4	4-Bromofluorobenzene	102%	94%	82-114%

(a) Dilution required due to high concentration of target compound.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-161_SL_20220422		
Lab Sample ID:	JD43617-8	**Date Sampled:**	04/22/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846 8270E BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3P96679.D	1	04/28/22 01:09	KLS	04/26/22 12:20	OP39308A	E3P4592
Run #2	2M123580.D	1	04/28/22 18:07	KLS	04/26/22 12:20	OP39308A	E2M5561

	Initial Volume	Final Volume
Run #1	290 ml	1.0 ml
Run #2	290 ml	1.0 ml

BN PAH Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.069	0.034	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.034	0.021	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.034	0.021	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.034	0.021	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.069	0.034	ug/l	
218-01-9	Chrysene	ND	0.069	0.034	ug/l	
86-73-7	Fluorene	0.113	0.069	0.034	ug/l	
91-20-3	Naphthalene	31.3 [a]	0.69	0.034	ug/l	
85-01-8	Phenanthrene	ND	0.069	0.034	ug/l	
129-00-0	Pyrene	0.0348	0.069	0.034	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	55%	59%	29-124%
321-60-8	2-Fluorobiphenyl	43%	53%	23-122%
1718-51-0	Terphenyl-d14	52%	53%	22-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-161_SL_20220422		
Lab Sample ID:	JD43617-8	**Date Sampled:**	04/22/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	SW846-8011 SW846 8011	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G43671.D	1	04/27/22 05:02	RK	04/26/22 14:20	OP39325	G7G1548
Run #2							

	Initial Volume	Final Volume
Run #1	36 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0069	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	142%		52-154%
3017-95-6	2-Bromo-1-chloropropane	142%		52-154%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-161_SL_20220422		
Lab Sample ID:	JD43617-8	**Date Sampled:**	04/22/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
Method:	RSK-175	**Percent Solids:**	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA94528.D	1	04/26/22 12:40	WC	n/a	n/a	GAA2543
Run #2	AA94529.D	100	04/26/22 12:52	WC	n/a	n/a	GAA2543

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	5750 [a]	11	8.0	ug/l	
74-84-0	Ethane	0.71	0.23	0.14	ug/l	
74-85-1	Ethene	0.54	0.31	0.16	ug/l	

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	N-161_SL_20220422		
Lab Sample ID:	JD43617-8	**Date Sampled:**	04/22/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	84500	5000	ug/l	1	04/26/22	04/27/22	FW	SW846 6010D [1]	SW846 3010A [2]
Iron	10500	100	ug/l	1	04/26/22	04/27/22	FW	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52309
(2) Prep QC Batch: MP32518

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-161_SL_20220422		
Lab Sample ID:	JD43617-8	**Date Sampled:**	04/22/22
Matrix:	AQ - Ground Water	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 [a]	423	5.0	mg/l	1	04/27/22 16:32	MP	SM2320 B-11
Inorganic Carbon [b]	< 11	11	mg/l	1	05/02/22 15:29	MB	SM5310 B-11
Nitrogen, Total Kjeldahl	9.3	0.60	mg/l	3	04/26/22 13:23	MM	EPA 351.2/LACHAT
Sulfate	< 2.0	2.0	mg/l	1	04/26/22 19:42	JD	EPA 300/SW846 9056A
Total Carbon	33.3	10	mg/l	10	05/02/22 15:29	MB	SM5310 B-11
Total Organic Carbon	36.4	1.0	mg/l	1	04/26/22 22:52	MB	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5.Sample receieved with head space.
(b) Calculated as: Total Carbon - Total Organic Carbon

RL = Reporting Limit

Report of Analysis

Client Sample ID:	N-161_SL_20220422		
Lab Sample ID:	JD43617-8F	**Date Sampled:**	04/22/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	04/22/22
		Percent Solids:	n/a
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	< 1.0	1.0	ug/l	2	04/26/22	04/26/22	NV	SW846 6020B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52306
(2) Prep QC Batch: MP32517

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

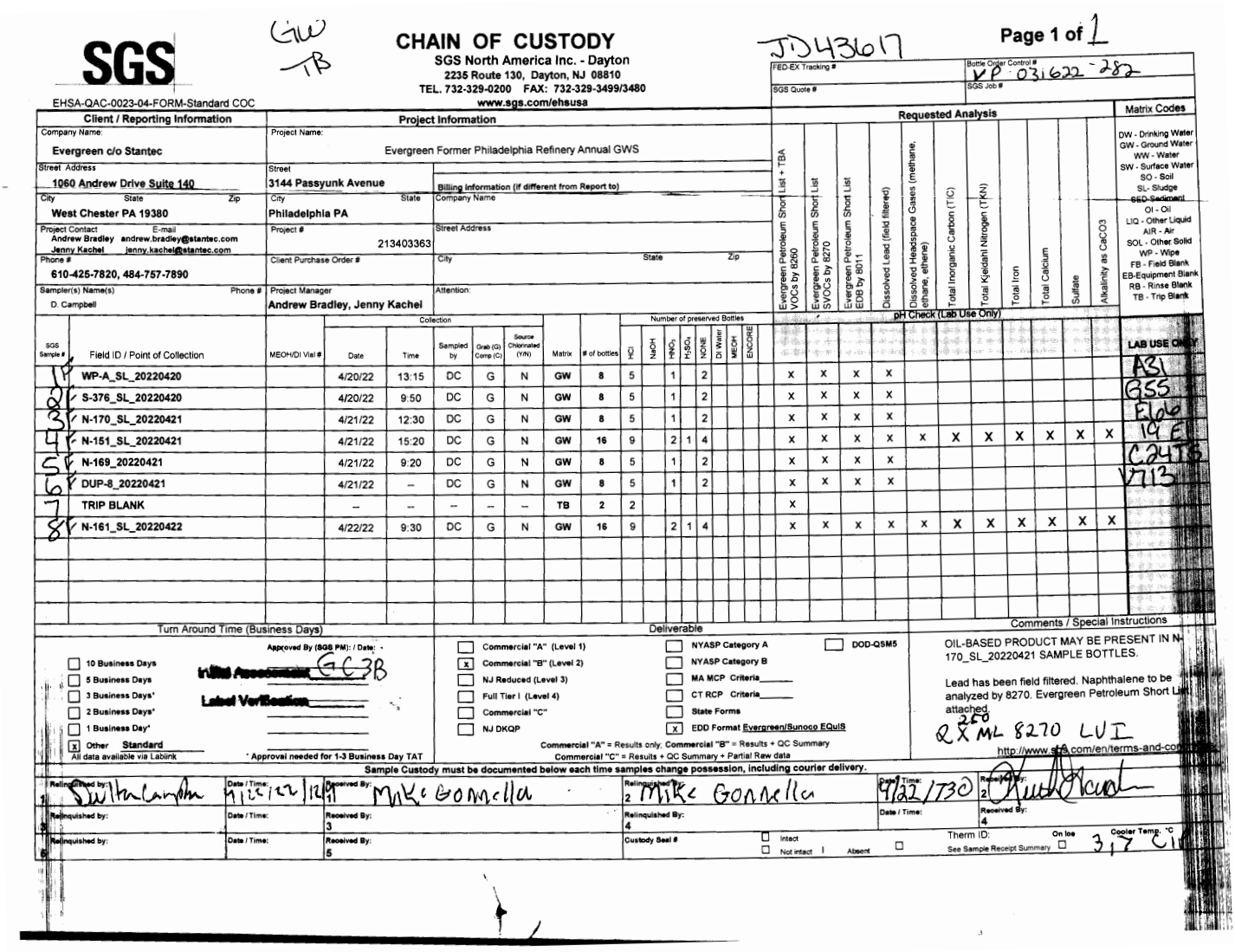
Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Inorganic Carbon		**SM5310 B-11**	AQ	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

GW
TB

JD43617

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FED-EX Tracking #

Bottle Order Control # VP 031622-282

SGS Quote #

SGS Job #

Client / Reporting Information

Company Name: Evergreen c/o Stantec

Street Address: 1060 Andrew Drive Suite 140

City State Zip: West Chester PA 19380

Project Contact E-mail: Andrew Bradley andrew.bradley@stantec.com; Jenny Kachel jenny.kachel@stantec.com

Phone #: 610-425-7820, 484-757-7890

Sampler(s) Name(s): D. Campbell

Phone #

Project Information

Project Name: Evergreen Former Philadelphia Refinery Annual GWS

Street: 3144 Passyunk Avenue

City State: Philadelphia PA

Project #: 213403363

Client Purchase Order #

Project Manager: Andrew Bradley, Jenny Kachel

Billing Information (if different from Report to)

Company Name

Street Address

City State Zip

Attention:

Requested Analysis

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Evergreen Petroleum Short List + TBA VOCs by 8260	Evergreen Petroleum Short List SVOCs by 8270	Evergreen Petroleum Short List EDB by 8011	Dissolved Lead (field filtered)	Dissolved Headspace Gases (methane, ethane, ethene)	Total Inorganic Carbon (TIC)	Total Kjeldahl Nitrogen (TKN)	Total Iron	Total Calcium	Sulfate	Alkalinity as $CaCO_3$	LAB USE ONLY
1	WP-A_SL_20220420		4/20/22	13:15	DC	G	N	GW	8	5		1		2				x	x	x	x							ABJ
2	S-376_SL_20220420		4/20/22	9:50	DC	G	N	GW	8	5		1		2				x	x	x	x							G55
3	N-170_SL_20220421		4/21/22	12:30	DC	G	N	GW	8	5		1		2				x	x	x	x							EL66
4	N-151_SL_20220421		4/21/22	15:20	DC	G	N	GW	16	9		2	1	4				x	x	x	x	x	x	x	x	x	x	10 F
5	N-169_20220421		4/21/22	9:20	DC	G	N	GW	8	5		1		2				x	x	x	x							C24TS
6	DUP-8_20220421		4/21/22	--	DC	G	N	GW	8	5		1		2				x	x	x	x							V713
7	TRIP BLANK		--	--	--	--	--	TB	2	2								x										
8	N-161_SL_20220422		4/22/22	9:30	DC	G	N	GW	16	9		2	1	4				x	x	x	x	x	x	x	x	x	x	

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

pH Check (Lab Use Only)

Turn Around Time (Business Days)

Approved By (SGS PM): / Date: GC 3B

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

All data available via Labiink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [x] EDD Format Evergreen/Sunoco EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

OIL-BASED PRODUCT MAY BE PRESENT IN N-170_SL_20220421 SAMPLE BOTTLES.

Lead has been field filtered. Naphthalene to be analyzed by 8270. Evergreen Petroleum Short List attached.

250 mL 8270 LUI

http://www.sgs.com/en/terms-and-co

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	Stantec	4/22/22 12:41	Mike Gonnella	2 Mike Gonnella	4/22/22 1730	2
3			3	4		4
5			5	Custody Seal #	Intact / Not intact / Absent	Therm ID: On Ice: See Sample Receipt Summary: Cooler Temp. °C: 3.7 C

SGS Sample Receipt Summary

Job Number: JD43617 **Client:** STANTEC **Project:** EVERGREEN FORMER PHILADELPHIA R

Date / Time Received: 4/22/2022 5:30:00 PM **Delivery Method:** SGS **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.7);

Cooler Temps (Corrected) °C: Cooler 1: (3.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

JD43617: Chain of Custody
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MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A9527-MB	1A221652.D	1	04/27/22	NW	n/a	n/a	V1A9527

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	80-120%
2037-26-5	Toluene-D8	97%	80-120%
460-00-4	4-Bromofluorobenzene	95%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV7581-MB	V179285.D	1	04/28/22	BK	n/a	n/a	VV7581

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-3, JD43617-5, JD43617-6, JD43617-7

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.48	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	118%	80-120%
17060-07-0	1,2-Dichloroethane-D4	111%	80-120%
2037-26-5	Toluene-D8	93%	80-120%
460-00-4	4-Bromofluorobenzene	91%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V3567-MB	2V87009.D	1	04/29/22	TS	n/a	n/a	V2V3567

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-2, JD43617-8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.43	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.65	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	5.8	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	92%	80-120%
17060-07-0	1,2-Dichloroethane-D4	109%	80-120%
2037-26-5	Toluene-D8	102%	80-120%
460-00-4	4-Bromofluorobenzene	103%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1A9527-BS	1A221650.D	1	04/27/22	NW	n/a	n/a	V1A9527

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	44.9	90	80-115
107-06-2	1,2-Dichloroethane	50	45.1	90	73-117
100-41-4	Ethylbenzene	50	41.9	84	78-116
98-82-8	Isopropylbenzene	50	44.1	88	78-121
1634-04-4	Methyl Tert Butyl Ether	50	44.8	90	76-123
75-65-0	Tert Butyl Alcohol	250	221	88	75-123
108-88-3	Toluene	50	42.6	85	79-116
95-63-6	1,2,4-Trimethylbenzene	50	42.4	85	78-120
108-67-8	1,3,5-Trimethylbenzene	50	42.2	84	77-120
1330-20-7	Xylene (total)	150	129	86	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	94%	80-120%
2037-26-5	Toluene-D8	92%	80-120%
460-00-4	4-Bromofluorobenzene	98%	82-114%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VV7581-BS	V179283.D	1	04/28/22	BK	n/a	n/a	VV7581

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-3, JD43617-5, JD43617-6, JD43617-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	51.4	103	80-115
106-93-4	1,2-Dibromoethane	50	52.2	104	67-138
107-06-2	1,2-Dichloroethane	50	51.7	103	73-117
100-41-4	Ethylbenzene	50	45.4	91	78-116
98-82-8	Isopropylbenzene	50	46.3	93	78-121
1634-04-4	Methyl Tert Butyl Ether	50	53.5	107	76-123
75-65-0	Tert Butyl Alcohol	250	246	98	75-123
108-88-3	Toluene	50	47.4	95	79-116
95-63-6	1,2,4-Trimethylbenzene	50	46.7	93	78-120
108-67-8	1,3,5-Trimethylbenzene	50	43.9	88	77-120
1330-20-7	Xylene (total)	150	150	100	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	111%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	80-120%
2037-26-5	Toluene-D8	88%	80-120%
460-00-4	4-Bromofluorobenzene	93%	82-114%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V3567-BS	2V87006.D	1	04/29/22	TS	n/a	n/a	V2V3567
V2V3567-BSD	2V87007.D	1	04/29/22	TS	n/a	n/a	V2V3567

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-2, JD43617-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	50	47.4	95	47.1	94	1	80-115/11
107-06-2	1,2-Dichloroethane	50	50.6	101	50.0	100	1	73-117/10
100-41-4	Ethylbenzene	50	46.8	94	46.6	93	0	78-116/10
98-82-8	Isopropylbenzene	50	47.5	95	47.5	95	0	78-121/11
1634-04-4	Methyl Tert Butyl Ether	50	45.6	91	45.5	91	0	76-123/12
75-65-0	Tert Butyl Alcohol	250	214	86	223	89	4	75-123/12
108-88-3	Toluene	50	47.1	94	47.0	94	0	79-116/12
95-63-6	1,2,4-Trimethylbenzene	50	47.6	95	48.5	97	2	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	47.2	94	48.2	96	2	77-120/11
1330-20-7	Xylene (total)	150	140	93	141	94	1	80-119/10

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	91%	90%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	104%	80-120%
2037-26-5	Toluene-D8	101%	99%	80-120%
460-00-4	4-Bromofluorobenzene	100%	101%	82-114%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43621-5MS	V179295.D	1	04/28/22	BK	n/a	n/a	VV7581
JD43621-5	V179290.D	1	04/28/22	BK	n/a	n/a	VV7581

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-3, JD43617-5, JD43617-6, JD43617-7

CAS No.	Compound	JD43621-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
71-43-2	Benzene	ND		50	50.2	100	49-137
106-93-4	1,2-Dibromoethane	ND		50	52.4	105	63-134
107-06-2	1,2-Dichloroethane	ND		50	49.3	99	66-120
100-41-4	Ethylbenzene	ND		50	47.6	95	37-144
98-82-8	Isopropylbenzene	ND		50	49.7	99	71-126
1634-04-4	Methyl Tert Butyl Ether	ND		50	48.7	97	66-124
75-65-0	Tert Butyl Alcohol	ND		250	261	104	63-133
108-88-3	Toluene	ND		50	49.2	98	46-139
95-63-6	1,2,4-Trimethylbenzene	ND		50	48.3	97	39-147
108-67-8	1,3,5-Trimethylbenzene	ND		50	45.9	92	56-136
1330-20-7	Xylene (total)	ND		150	156	104	38-147

CAS No.	Surrogate Recoveries	MS	JD43621-5	Limits
1868-53-7	Dibromofluoromethane	107%	115%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	110%	80-120%
2037-26-5	Toluene-D8	91%	94%	80-120%
460-00-4	4-Bromofluorobenzene	93%	88%	82-114%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43617-2MS	1A221660.D	20	04/27/22	NW	n/a	n/a	V1A9527
JD43617-2MSD	1A221661.D	20	04/27/22	NW	n/a	n/a	V1A9527
JD43617-2	1A221669.D	20	04/27/22	NW	n/a	n/a	V1A9527

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-8

CAS No.	Compound	JD43617-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	132		1000	1100	97	1000	1120	99	2	49-137/12
107-06-2	1,2-Dichloroethane	ND		1000	1020	102	1000	1020	102	0	66-120/13
100-41-4	Ethylbenzene	876		1000	1680	80	1000	1700	82	1	37-144/12
98-82-8	Isopropylbenzene	17.5	J	1000	1050	103	1000	1080	106	3	71-126/13
1634-04-4	Methyl Tert Butyl Ether	ND		1000	960	96	1000	984	98	2	66-124/12
75-65-0	Tert Butyl Alcohol	ND		5000	4700	94	5000	4850	97	3	63-133/15
108-88-3	Toluene	1780		1000	2480	70	1000	2510	73	1	46-139/12
95-63-6	1,2,4-Trimethylbenzene	866		1000	1740	87	1000	1780	91	2	39-147/13
108-67-8	1,3,5-Trimethylbenzene	252		1000	1210	96	1000	1240	99	2	56-136/14
1330-20-7	Xylene (total)	5100		3000	7390	76	3000	7450	78	1	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD43617-2	Limits
1868-53-7	Dibromofluoromethane	100%	100%	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	93%	92%	99%	80-120%
2037-26-5	Toluene-D8	93%	92%	95%	80-120%
460-00-4	4-Bromofluorobenzene	99%	98%	97%	82-114%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43832-4MS	2V87021.D	10	04/29/22	TS	n/a	n/a	V2V3567
JD43832-4MSD	2V87022.D	10	04/29/22	TS	n/a	n/a	V2V3567
JD43832-4 [a]	2V87017.D	10	04/29/22	TS	n/a	n/a	V2V3567
JD43832-4 [b]	2V87016.D	100	04/29/22	TS	n/a	n/a	V2V3567

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-2, JD43617-8

CAS No.	Compound	JD43832-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	15.5		500	485	94	500	485	94	0	49-137/12
107-06-2	1,2-Dichloroethane	ND		500	508	102	500	498	100	2	66-120/13
100-41-4	Ethylbenzene	ND		500	463	93	500	467	93	1	37-144/12
98-82-8	Isopropylbenzene	ND		500	473	95	500	477	95	1	71-126/13
1634-04-4	Methyl Tert Butyl Ether	ND		500	459	92	500	455	91	1	66-124/12
75-65-0	Tert Butyl Alcohol	ND		2500	2330	93	2500	2220	89	5	63-133/15
108-88-3	Toluene	6.9		500	472	93	500	475	94	1	46-139/12
95-63-6	1,2,4-Trimethylbenzene	ND		500	478	96	500	483	97	1	39-147/13
108-67-8	1,3,5-Trimethylbenzene	ND		500	474	95	500	479	96	1	56-136/14
1330-20-7	Xylene (total)	ND		1500	1400	93	1500	1400	93	0	38-147/12

CAS No.	Surrogate Recoveries	MS	MSD	JD43832-4	JD43832-4	Limits
1868-53-7	Dibromofluoromethane	92%	90%	91%	89%	80-120%
17060-07-0	1,2-Dichloroethane-D4	108%	107%	109%	108%	80-120%
2037-26-5	Toluene-D8	98%	98%	101%	102%	80-120%
460-00-4	4-Bromofluorobenzene	102%	101%	103%	104%	82-114%

(a) Preliminary data. (pH= 7) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time. Dilution required due to high concentration of target compound.
(b) (pH= 7) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43621-7DUP	V179297.D	1	04/28/22	BK	n/a	n/a	VV7581
JD43621-7	V179291.D	1	04/28/22	BK	n/a	n/a	VV7581

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD43617-3, JD43617-5, JD43617-6, JD43617-7

CAS No.	Compound	JD43621-7 ug/l	Q	DUP ug/l	Q	RPD	Limits
71-43-2	Benzene	ND		ND		nc	14
106-93-4	1,2-Dibromoethane	ND		ND		nc	20
107-06-2	1,2-Dichloroethane	ND		ND		nc	10
100-41-4	Ethylbenzene	ND		ND		nc	20
98-82-8	Isopropylbenzene	ND		ND		nc	15
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	12
75-65-0	Tert Butyl Alcohol	ND		ND		nc	11
108-88-3	Toluene	ND		ND		nc	16
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	22
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	16
1330-20-7	Xylene (total)	ND		ND		nc	22

CAS No.	Surrogate Recoveries	DUP	JD43621-7	Limits
1868-53-7	Dibromofluoromethane	113%	115%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	110%	80-120%
2037-26-5	Toluene-D8	92%	91%	80-120%
460-00-4	4-Bromofluorobenzene	86%	89%	82-114%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V1A9510-BFB
Lab File ID: 1A221230.D
Instrument ID: GCMS1A
Injection Date: 04/14/22
Injection Time: 17:02

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	26552	18.2		Pass
75	30.0 - 60.0% of mass 95	71368	48.8		Pass
95	Base peak, 100% relative abundance	146197	100.0		Pass
96	5.0 - 9.0% of mass 95	9509	6.50		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	116675	79.8		Pass
175	5.0 - 9.0% of mass 174	8434	5.77	(7.23) [a]	Pass
176	95.0 - 101.0% of mass 174	113008	77.3	(96.9) [a]	Pass
177	5.0 - 9.0% of mass 176	7221	4.94	(6.39) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A9510-IC9510	1A221231.D	04/14/22	17:35	00:33	Initial cal 0.2
V1A9510-IC9510	1A221232.D	04/14/22	17:59	00:57	Initial cal 0.5
V1A9510-IC9510	1A221233.D	04/14/22	18:23	01:21	Initial cal 1
V1A9510-IC9510	1A221234.D	04/14/22	18:47	01:45	Initial cal 2
V1A9510-IC9510	1A221235.D	04/14/22	19:11	02:09	Initial cal 4
V1A9510-IC9510	1A221236.D	04/14/22	19:35	02:33	Initial cal 8
V1A9510-IC9510	1A221237.D	04/14/22	19:59	02:57	Initial cal 20
V1A9510-ICC9510	1A221238.D	04/14/22	20:23	03:21	Initial cal 50
V1A9510-IC9510	1A221239.D	04/14/22	20:47	03:45	Initial cal 100
V1A9510-IC9510	1A221240.D	04/14/22	21:10	04:08	Initial cal 200
V1A9510-ICV9510	1A221243.D	04/14/22	22:22	05:20	Initial cal verification 50
V1A9510-ICV9510	1A221244.D	04/14/22	22:46	05:44	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V1A9527-BFB
Lab File ID: 1A221648.D
Instrument ID: GCMS1A
Injection Date: 04/27/22
Injection Time: 09:42

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	38069	18.2		Pass
75	30.0 - 60.0% of mass 95	101528	48.4		Pass
95	Base peak, 100% relative abundance	209685	100.0		Pass
96	5.0 - 9.0% of mass 95	13796	6.58		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	176789	84.3		Pass
175	5.0 - 9.0% of mass 174	12569	5.99	(7.11) [a]	Pass
176	95.0 - 101.0% of mass 174	171200	81.6	(96.8) [a]	Pass
177	5.0 - 9.0% of mass 176	10711	5.11	(6.26) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1A9527-CC9510	1A221648.D	04/27/22	09:42	00:00	Continuing cal 20
V1A9527-BS	1A221650.D	04/27/22	10:52	01:10	Blank Spike
V1A9527-MB	1A221652.D	04/27/22	11:58	02:16	Method Blank
ZZZZZZ	1A221653.D	04/27/22	12:32	02:50	(unrelated sample)
ZZZZZZ	1A221654.D	04/27/22	12:56	03:14	(unrelated sample)
ZZZZZZ	1A221655.D	04/27/22	13:20	03:38	(unrelated sample)
ZZZZZZ	1A221656.D	04/27/22	13:49	04:07	(unrelated sample)
ZZZZZZ	1A221657.D	04/27/22	14:13	04:31	(unrelated sample)
ZZZZZZ	1A221658.D	04/27/22	14:36	04:54	(unrelated sample)
ZZZZZZ	1A221659.D	04/27/22	15:00	05:18	(unrelated sample)
JD43617-2MS	1A221660.D	04/27/22	15:32	05:50	Matrix Spike
JD43617-2MSD	1A221661.D	04/27/22	15:56	06:14	Matrix Spike Duplicate
ZZZZZZ	1A221662.D	04/27/22	16:19	06:37	(unrelated sample)
ZZZZZZ	1A221663.D	04/27/22	16:43	07:01	(unrelated sample)
ZZZZZZ	1A221664.D	04/27/22	17:07	07:25	(unrelated sample)
ZZZZZZ	1A221666.D	04/27/22	17:55	08:13	(unrelated sample)
ZZZZZZ	1A221667.D	04/27/22	18:19	08:37	(unrelated sample)
JD43617-1	1A221668.D	04/27/22	18:43	09:01	WP-A_SL_20220420
JD43617-2	1A221669.D	04/27/22	19:06	09:24	S-376_SL_20220420
JD43617-3	1A221670.D	04/27/22	19:30	09:48	N-170_SL_20220421
JD43617-4	1A221671.D	04/27/22	19:54	10:12	N-151_SL_20220421
JD43617-8	1A221674.D	04/27/22	21:06	11:24	N-161_SL_20220422
ZZZZZZ	1A221675.D	04/27/22	21:29	11:47	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V2V3532-BFB
Lab File ID: 2V85957.D
Instrument ID: GCMS2V
Injection Date: 03/31/22
Injection Time: 17:33

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12863	15.6		Pass
75	30.0 - 60.0% of mass 95	40051	48.6		Pass
95	Base peak, 100% relative abundance	82448	100.0		Pass
96	5.0 - 9.0% of mass 95	5424	6.58		Pass
173	Less than 2.0% of mass 174	529	0.64	(0.68) [a]	Pass
174	50.0 - 120.0% of mass 95	78187	94.8		Pass
175	5.0 - 9.0% of mass 174	5797	7.03	(7.41) [a]	Pass
176	95.0 - 101.0% of mass 174	76864	93.2	(98.3) [a]	Pass
177	5.0 - 9.0% of mass 176	5123	6.21	(6.67) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3532-IC3532	2V85959.D	03/31/22	18:14	00:41	Initial cal 0.2
V2V3532-IC3532	2V85961.D	03/31/22	18:55	01:22	Initial cal 0.5
V2V3532-IC3532	2V85963.D	03/31/22	19:35	02:02	Initial cal 1
V2V3532-IC3532	2V85965.D	03/31/22	20:16	02:43	Initial cal 2
V2V3532-IC3532	2V85967.D	03/31/22	20:57	03:24	Initial cal 4
V2V3532-IC3532	2V85969.D	03/31/22	21:38	04:05	Initial cal 8
V2V3532-IC3532	2V85971.D	03/31/22	22:19	04:46	Initial cal 20
V2V3532-ICC3532	2V85973.D	03/31/22	22:59	05:26	Initial cal 50
V2V3532-IC3532	2V85975.D	03/31/22	23:40	06:07	Initial cal 100
V2V3532-IC3532	2V85977.D	04/01/22	00:21	06:48	Initial cal 200
V2V3532-ICV3532	2V85983.D	04/01/22	02:23	08:50	Initial cal verification 50
V2V3532-ICV3532	2V85985.D	04/01/22	03:04	09:31	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V2V3532-BFB2
Lab File ID: 2V85991.D
Instrument ID: GCMS2V
Injection Date: 04/04/22
Injection Time: 16:08

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12904	15.3		Pass
75	30.0 - 60.0% of mass 95	40659	48.2		Pass
95	Base peak, 100% relative abundance	84328	100.0		Pass
96	5.0 - 9.0% of mass 95	5723	6.79		Pass
173	Less than 2.0% of mass 174	555	0.66	(0.66) [a]	Pass
174	50.0 - 120.0% of mass 95	83781	99.4		Pass
175	5.0 - 9.0% of mass 174	5986	7.10	(7.14) [a]	Pass
176	95.0 - 101.0% of mass 174	80155	95.1	(95.7) [a]	Pass
177	5.0 - 9.0% of mass 176	5274	6.25	(6.58) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3532-ICV3532	2V85993.D	04/04/22	16:48	00:40	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V2V3567-BFB
Lab File ID: 2V87004.D
Instrument ID: GCMS2V
Injection Date: 04/29/22
Injection Time: 09:10

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	17352	19.5		Pass
75	30.0 - 60.0% of mass 95	45805	51.3		Pass
95	Base peak, 100% relative abundance	89203	100.0		Pass
96	5.0 - 9.0% of mass 95	6170	6.92		Pass
173	Less than 2.0% of mass 174	562	0.63	(0.66) [a]	Pass
174	50.0 - 120.0% of mass 95	85392	95.7		Pass
175	5.0 - 9.0% of mass 174	6215	6.97	(7.28) [a]	Pass
176	95.0 - 101.0% of mass 174	83184	93.3	(97.4) [a]	Pass
177	5.0 - 9.0% of mass 176	5578	6.25	(6.71) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2V3567-CC3532	2V87004.D	04/29/22	09:10	00:00	Continuing cal 20
V2V3567-BS	2V87006.D	04/29/22	10:17	01:07	Blank Spike
V2V3567-BSD	2V87007.D	04/29/22	10:40	01:30	Blank Spike Duplicate
V2V3567-MB	2V87009.D	04/29/22	11:27	02:17	Method Blank
ZZZZZZ	2V87010.D	04/29/22	11:50	02:40	(unrelated sample)
JD43617-8	2V87011.D	04/29/22	12:13	03:03	N-161_SL_20220422
ZZZZZZ	2V87012.D	04/29/22	12:36	03:26	(unrelated sample)
ZZZZZZ	2V87013.D	04/29/22	12:59	03:49	(unrelated sample)
ZZZZZZ	2V87014.D	04/29/22	13:22	04:12	(unrelated sample)
JD43617-2	2V87015.D	04/29/22	13:46	04:36	S-376_SL_20220420
JD43832-4	2V87016.D	04/29/22	14:09	04:59	(used for QC only; not part of job JD43617)
JD43832-4	2V87017.D	04/29/22	14:32	05:22	(used for QC only; not part of job JD43617)
ZZZZZZ	2V87018.D	04/29/22	14:55	05:45	(unrelated sample)
ZZZZZZ	2V87019.D	04/29/22	15:18	06:08	(unrelated sample)
ZZZZZZ	2V87020.D	04/29/22	15:41	06:31	(unrelated sample)
JD43832-4MS	2V87021.D	04/29/22	16:05	06:55	Matrix Spike
JD43832-4MSD	2V87022.D	04/29/22	16:28	07:18	Matrix Spike Duplicate
ZZZZZZ	2V87023.D	04/29/22	16:51	07:41	(unrelated sample)
ZZZZZZ	2V87026.D	04/29/22	18:00	08:50	(unrelated sample)
ZZZZZZ	2V87027.D	04/29/22	18:23	09:13	(unrelated sample)
ZZZZZZ	2V87028.D	04/29/22	18:47	09:37	(unrelated sample)
ZZZZZZ	2V87029.D	04/29/22	19:10	10:00	(unrelated sample)
ZZZZZZ	2V87032.D	04/29/22	20:19	11:09	(unrelated sample)
V2V3568-BS	2V87039.D	04/29/22	23:02	13:52	Blank Spike

Instrument Performance Check (BFB)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VV7570-BFB
Lab File ID: V179050.D
Instrument ID: GCMSV
Injection Date: 04/14/22
Injection Time: 17:03

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12057	26.7		Pass
75	30.0 - 60.0% of mass 95	22947	50.9		Pass
95	Base peak, 100% relative abundance	45080	100.0		Pass
96	5.0 - 9.0% of mass 95	2987	6.63		Pass
173	Less than 2.0% of mass 174	190	0.42	(0.45) [a]	Pass
174	50.0 - 150.0% of mass 95	42565	94.4		Pass
175	5.0 - 9.0% of mass 174	3329	7.38	(7.82) [a]	Pass
176	95.0 - 101.0% of mass 174	42373	94.0	(99.5) [a]	Pass
177	5.0 - 9.0% of mass 176	2901	6.44	(6.85) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VV7570-IC7570	V179051.D	04/14/22	17:36	00:33	Initial cal 0.2
VV7570-IC7570	V179052.D	04/14/22	18:03	01:00	Initial cal 0.5
VV7570-IC7570	V179053.D	04/14/22	18:32	01:29	Initial cal 1
VV7570-IC7570	V179054.D	04/14/22	19:00	01:57	Initial cal 2
VV7570-IC7570	V179055.D	04/14/22	19:27	02:24	Initial cal 4
VV7570-IC7570	V179056.D	04/14/22	19:55	02:52	Initial cal 8
VV7570-IC7570	V179057.D	04/14/22	20:23	03:20	Initial cal 20
VV7570-ICC7570	V179058.D	04/14/22	20:52	03:49	Initial cal 50
VV7570-IC7570	V179059.D	04/14/22	21:21	04:18	Initial cal 100
VV7570-IC7570	V179060.D	04/14/22	21:49	04:46	Initial cal 200
VV7570-ICV7570	V179063.D	04/14/22	23:13	06:10	Initial cal verification 50
VV7570-ICV7570	V179064.D	04/14/22	23:41	06:38	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VV7570-BFB2
Lab File ID: V179067.D
Instrument ID: GCMSV
Injection Date: 04/20/22
Injection Time: 09:27

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	8307	26.5		Pass
75	30.0 - 60.0% of mass 95	16488	52.6		Pass
95	Base peak, 100% relative abundance	31339	100.0		Pass
96	5.0 - 9.0% of mass 95	2128	6.79		Pass
173	Less than 2.0% of mass 174	44	0.14	(0.15) [a]	Pass
174	50.0 - 150.0% of mass 95	30019	95.8		Pass
175	5.0 - 9.0% of mass 174	2495	7.96	(8.31) [a]	Pass
176	95.0 - 101.0% of mass 174	30092	96.0	(100.2) [a]	Pass
177	5.0 - 9.0% of mass 176	2190	6.99	(7.28) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VV7570-ICV7570	V179068.D	04/20/22	10:01	00:34	Initial cal verification 50
VV7570-ICV7570	V179070.D	04/20/22	11:24	01:57	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: VV7581-BFB
Lab File ID: V179281.D
Instrument ID: GCMSV
Injection Date: 04/28/22
Injection Time: 12:30

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	10736	21.9		Pass
75	30.0 - 60.0% of mass 95	24091	49.0		Pass
95	Base peak, 100% relative abundance	49131	100.0		Pass
96	5.0 - 9.0% of mass 95	3672	7.47		Pass
173	Less than 2.0% of mass 174	356	0.72	(0.63) [a]	Pass
174	50.0 - 150.0% of mass 95	56315	114.6		Pass
175	5.0 - 9.0% of mass 174	4278	8.71	(7.60) [a]	Pass
176	95.0 - 101.0% of mass 174	56840	115.7	(100.9) [a]	Pass
177	5.0 - 9.0% of mass 176	3378	6.88	(5.94) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VV7581-CC7570	V179281.D	04/28/22	12:30	00:00	Continuing cal 20
VV7581-BS	V179283.D	04/28/22	13:35	01:05	Blank Spike
VV7580-BS2	V179283A.D	04/28/22	13:35	01:05	Blank Spike
VV7580-MB2	V179285A.D	04/28/22	14:31	02:01	Method Blank
VV7581-MB	V179285.D	04/28/22	14:31	02:01	Method Blank
JD43713-3DUP	V179286.D	04/28/22	14:59	02:29	Duplicate
ZZZZZZ	V179287.D	04/28/22	15:27	02:57	(unrelated sample)
ZZZZZZ	V179288.D	04/28/22	15:55	03:25	(unrelated sample)
JD43617-7	V179289.D	04/28/22	16:24	03:54	TRIP BLANK
JD43621-5	V179290.D	04/28/22	16:51	04:21	(used for QC only; not part of job JD43617)
JD43621-7	V179291.D	04/28/22	17:19	04:49	(used for QC only; not part of job JD43617)
JD43617-5	V179292.D	04/28/22	17:47	05:17	N-169_20220421
JD43617-6	V179293.D	04/28/22	18:15	05:45	DUP-8_20220421
JD43617-3	V179294.D	04/28/22	18:44	06:14	N-170_SL_20220421
JD43621-5MS	V179295.D	04/28/22	19:11	06:41	Matrix Spike
JD43621-7DUP	V179297.D	04/28/22	20:08	07:38	Duplicate
ZZZZZZ	V179298.D	04/28/22	20:35	08:05	(unrelated sample)
ZZZZZZ	V179299.D	04/28/22	21:04	08:34	(unrelated sample)
ZZZZZZ	V179300.D	04/28/22	21:32	09:02	(unrelated sample)
ZZZZZZ	V179301.D	04/28/22	22:00	09:30	(unrelated sample)
ZZZZZZ	V179302.D	04/28/22	22:28	09:58	(unrelated sample)
ZZZZZZ	V179303.D	04/28/22	22:56	10:26	(unrelated sample)
ZZZZZZ	V179304.D	04/28/22	23:25	10:55	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD43617-1	1A221668.D	99	100	98	95
JD43617-2	2V87015.D	89	107	101	101
JD43617-2	1A221669.D	97	99	95	97
JD43617-3	V179294.D	110	102	93	87
JD43617-3	1A221670.D	100	96	96	94
JD43617-4	1A221671.D	98	97	97	96
JD43617-5	V179292.D	114	108	94	88
JD43617-6	V179293.D	111	105	94	88
JD43617-7	V179289.D	115	113	91	88
JD43617-8	2V87011.D	89	109	100	102
JD43617-8	1A221674.D	100	98	95	94
JD43617-2MS	1A221660.D	100	93	93	99
JD43617-2MSD	1A221661.D	100	92	92	98
JD43621-5MS	V179295.D	107	102	91	93
JD43621-7DUP	V179297.D	113	106	92	86
JD43832-4MS	2V87021.D	92	108	98	102
JD43832-4MSD	2V87022.D	90	107	98	101
V1A9527-BS	1A221650.D	99	94	92	98
V1A9527-MB	1A221652.D	99	101	97	95
V2V3567-BS	2V87006.D	91	107	101	100
V2V3567-BSD	2V87007.D	90	104	99	101
V2V3567-MB	2V87009.D	92	109	102	103
VV7581-BS	V179283.D	111	105	88	93
VV7581-MB	V179285.D	118	111	93	91

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39308A-MB1	3P96665.D	1	04/27/22	KLS	04/26/22	OP39308A	E3P4592

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-5, JD43617-6, JD43617-8

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.040	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.040	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.040	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.080	0.040	ug/l	
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	37%	15-110%
4165-62-2	Phenol-d5	28%	12-110%
118-79-6	2,4,6-Tribromophenol	71%	32-143%
4165-60-0	Nitrobenzene-d5	53%	29-124%
321-60-8	2-Fluorobiphenyl	49%	23-122%
1718-51-0	Terphenyl-d14	53%	22-130%

Method Blank Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39308A-MB1	2M123569.D	1	04/28/22	KLS	04/26/22	OP39308A	E2M5561

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-5, JD43617-6, JD43617-8

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.080	0.040	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.40	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.40	0.024	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.40	0.024	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.080	0.040	ug/l	
218-01-9	Chrysene	ND	0.080	0.040	ug/l	
86-73-7	Fluorene	ND	0.080	0.040	ug/l	
91-20-3	Naphthalene	ND	0.080	0.040	ug/l	
85-01-8	Phenanthrene	ND	0.080	0.040	ug/l	
129-00-0	Pyrene	ND	0.080	0.040	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	45%	15-110%
4165-62-2	Phenol-d5	31%	12-110%
118-79-6	2,4,6-Tribromophenol	63%	32-143%
4165-60-0	Nitrobenzene-d5	63%	29-124%
321-60-8	2-Fluorobiphenyl	67%	23-122%
1718-51-0	Terphenyl-d14	71%	22-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39308A-BS12	3P96666.D	1	04/27/22	KLS	04/26/22	OP39308A	E3P4592
OP39308A-BSD12	3P96667.D	1	04/27/22	KLS	04/26/22	OP39308A	E3P4592

The QC reported here applies to the following samples: **Method:** SW846 8270E BY SIM

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-5, JD43617-6, JD43617-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
120-12-7	Anthracene	0.8	0.541	68	0.433	54	22	40-125/32
56-55-3	Benzo(a)anthracene	0.8	0.555	69	0.452	57	20	38-132/31
50-32-8	Benzo(a)pyrene	0.8	0.536	67	0.414	52	26	31-110/37
205-99-2	Benzo(b)fluoranthene	0.8	0.771	96	0.587	73	27	31-113/37
191-24-2	Benzo(g,h,i)perylene	0.8	0.532	67	0.391	49	31	18-110/54
218-01-9	Chrysene	0.8	0.458	57	0.385	48	17	43-119/33
86-73-7	Fluorene	0.8	0.507	63	0.423	53	18	42-123/34
91-20-3	Naphthalene	0.8	0.493	62	0.394	49	22	30-114/40
85-01-8	Phenanthrene	0.8	0.557	70	0.453	57	21	45-125/31
129-00-0	Pyrene	0.8	0.499	62	0.408	51	20	48-125/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	52%	37%	15-110%
4165-62-2	Phenol-d5	41%	27%	12-110%
118-79-6	2,4,6-Tribromophenol	96%	76%	32-143%
4165-60-0	Nitrobenzene-d5	66%	53%	29-124%
321-60-8	2-Fluorobiphenyl	66%	53%	23-122%
1718-51-0	Terphenyl-d14	67%	55%	22-130%

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5549-DFTPP
Lab File ID: 2M123312.D
Instrument ID: GCMS2M
Injection Date: 04/19/22
Injection Time: 17:53

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	250511	45.8		Pass
68	Less than 2.0% of mass 69	3794	0.69	(1.94) [a]	Pass
69	Mass 69 relative abundance	195883	35.8		Pass
70	Less than 2.0% of mass 69	788	0.14	(0.40) [a]	Pass
127	40.0 - 60.0% of mass 198	269717	49.3		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	546573	100.0		Pass
199	5.0 - 9.0% of mass 198	36912	6.75		Pass
275	10.0 - 30.0% of mass 198	161362	29.5		Pass
365	1.0 - 100.0% of mass 198	21295	3.90		Pass
441	Present, but less than mass 443	93342	17.1	(86.6) [b]	Pass
442	40.0 - 100.0% of mass 198	530970	97.1		Pass
443	17.0 - 23.0% of mass 442	107741	19.7	(20.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5549-IC5549	2M123313.D	04/19/22	18:10	00:17	Initial cal 20
E2M5549-IC5549	2M123314.D	04/19/22	18:37	00:44	Initial cal 0.4
E2M5549-IC5549	2M123315.D	04/19/22	19:03	01:10	Initial cal 16
E2M5549-IC5549	2M123316.D	04/19/22	19:30	01:37	Initial cal 0.2
E2M5549-ICC5549	2M123317.D	04/19/22	19:57	02:04	Initial cal 10
E2M5549-IC5549	2M123318.D	04/19/22	20:23	02:30	Initial cal 1
E2M5549-IC5549	2M123319.D	04/19/22	20:50	02:57	Initial cal 5
E2M5549-IC5549	2M123320.D	04/19/22	21:17	03:24	Initial cal 2
E2M5549-ICV5549	2M123321.D	04/19/22	21:43	03:50	Initial cal verification 10
E2M5549-ICV5549	2M123322.D	04/19/22	22:10	04:17	Initial cal verification 10
E2M5549-ICV5549	2M123323.D	04/19/22	22:36	04:43	Initial cal verification 10
E2M5549-ICV5549	2M123324.D	04/19/22	23:03	05:10	Initial cal verification 10

Instrument Performance Check (DFTPP)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5550-DFTPP
Lab File ID: 2M123326.D
Instrument ID: GCMS2M
Injection Date: 04/20/22
Injection Time: 01:29

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	230762	45.5		Pass
68	Less than 2.0% of mass 69	2381	0.47	(1.33) [a]	Pass
69	Mass 69 relative abundance	178901	35.3		Pass
70	Less than 2.0% of mass 69	546	0.11	(0.31) [a]	Pass
127	40.0 - 60.0% of mass 198	241238	47.6		Pass
197	Less than 1.0% of mass 198	832	0.16		Pass
198	Base peak, 100% relative abundance	507178	100.0		Pass
199	5.0 - 9.0% of mass 198	32984	6.50		Pass
275	10.0 - 30.0% of mass 198	145450	28.7		Pass
365	1.0 - 100.0% of mass 198	21481	4.24		Pass
441	Present, but less than mass 443	80477	15.9	(81.1) [b]	Pass
442	40.0 - 100.0% of mass 198	493440	97.3		Pass
443	17.0 - 23.0% of mass 442	99264	19.6	(20.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5550-IC5550	2M123337.D	04/20/22	02:36	01:07	Initial cal 20
E2M5550-IC5550	2M123338.D	04/20/22	03:02	01:33	Initial cal 16
E2M5550-ICC5550	2M123339.D	04/20/22	03:29	02:00	Initial cal 10
E2M5550-IC5550	2M123340.D	04/20/22	03:55	02:26	Initial cal 5
E2M5550-IC5550	2M123341.D	04/20/22	04:22	02:53	Initial cal 2
E2M5550-IC5550	2M123342.D	04/20/22	04:49	03:20	Initial cal 1
E2M5550-IC5550	2M123343.D	04/20/22	06:03	04:34	Initial cal 0.4
E2M5550-IC5550	2M123344.D	04/20/22	06:30	05:01	Initial cal 0.2
E2M5550-ICV5550	2M123345.D	04/20/22	06:56	05:27	Initial cal verification 10
E2M5550-ICV5549	2M123346.D	04/20/22	07:23	05:54	Initial cal verification 10

Instrument Performance Check (DFTPP)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E2M5561-DFTPP
Lab File ID: 2M123566.D
Instrument ID: GCMS2M
Injection Date: 04/28/22
Injection Time: 11:29

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	91325	41.3		Pass
68	Less than 2.0% of mass 69	1241	0.56	(1.64) [a]	Pass
69	Mass 69 relative abundance	75882	34.3		Pass
70	Less than 2.0% of mass 69	110	0.05	(0.14) [a]	Pass
127	40.0 - 60.0% of mass 198	109037	49.3		Pass
197	Less than 1.0% of mass 198	249	0.11		Pass
198	Base peak, 100% relative abundance	220954	100.0		Pass
199	5.0 - 9.0% of mass 198	14853	6.72		Pass
275	10.0 - 30.0% of mass 198	59888	27.1		Pass
365	1.0 - 100.0% of mass 198	8485	3.84		Pass
441	Present, but less than mass 443	30773	13.9	(83.2) [b]	Pass
442	40.0 - 100.0% of mass 198	192898	87.3		Pass
443	17.0 - 23.0% of mass 442	36989	16.7	(19.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E2M5561-CC5549	2M123567.D	04/28/22	11:42	00:13	Continuing cal 10
E2M5561-CC5550	2M123568.D	04/28/22	12:09	00:40	Continuing cal 10
OP39308A-MB1	2M123569.D	04/28/22	12:51	01:22	Method Blank
JD43617-3	2M123570.D	04/28/22	13:17	01:48	N-170_SL_20220421
JD43617-1	2M123578.D	04/28/22	17:14	05:45	WP-A_SL_20220420
JD43617-6	2M123579.D	04/28/22	17:40	06:11	DUP-8_20220421
JD43617-8	2M123580.D	04/28/22	18:07	06:38	N-161_SL_20220422
JD43617-2	2M123581.D	04/28/22	18:34	07:05	S-376_SL_20220420

Instrument Performance Check (DFTPP)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P4567-DFTPP
Lab File ID: 3P96182.D
Instrument ID: GCMS3P
Injection Date: 04/07/22
Injection Time: 13:02

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	33414	42.5		Pass
68	Less than 2.0% of mass 69	475	0.60	(1.05) [a]	Pass
69	Mass 69 relative abundance	45053	57.3		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	45392	57.7		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	78664	100.0		Pass
199	5.0 - 9.0% of mass 198	5405	6.87		Pass
275	10.0 - 30.0% of mass 198	17859	22.7		Pass
365	1.0 - 100.0% of mass 198	2688	3.42		Pass
441	Present, but less than mass 443	11088	14.1	(83.3) [b]	Pass
442	40.0 - 100.0% of mass 198	70008	89.0		Pass
443	17.0 - 23.0% of mass 442	13311	16.9	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P4567-ICC4567	3P96183.D	04/07/22	13:26	00:24	Initial cal 0.2
E3P4567-IC4567	3P96184.D	04/07/22	13:49	00:47	Initial cal 0.02
E3P4567-IC4567	3P96185.D	04/07/22	14:24	01:22	Initial cal 1
E3P4567-IC4567	3P96186.D	04/07/22	14:48	01:46	Initial cal 0.01
E3P4567-IC4567	3P96187.D	04/07/22	15:11	02:09	Initial cal 0.5
E3P4567-IC4567	3P96188.D	04/07/22	15:34	02:32	Initial cal 0.04
E3P4567-IC4567	3P96189.D	04/07/22	15:57	02:55	Initial cal 0.1
E3P4567-IC4567	3P96190.D	04/07/22	16:21	03:19	Initial cal 0.004
E3P4567-IC4567	3P96191.D	04/07/22	16:44	03:42	Initial cal 0.002
E3P4567-ICV4567	3P96192.D	04/07/22	17:10	04:08	Initial cal verification 0.2
E3P4567-ICV4567	3P96193.D	04/07/22	17:33	04:31	Initial cal verification 0.2
OP38957A-MB1	3P96194.D	04/07/22	18:09	05:07	Method Blank
OP38957A-BS12	3P96195.D	04/07/22	18:32	05:30	Blank Spike
ZZZZZZ	3P96196.D	04/07/22	18:55	05:53	(unrelated sample)
ZZZZZZ	3P96197.D	04/07/22	19:19	06:17	(unrelated sample)
ZZZZZZ	3P96198.D	04/07/22	19:42	06:40	(unrelated sample)
ZZZZZZ	3P96199.D	04/07/22	20:06	07:04	(unrelated sample)
ZZZZZZ	3P96200.D	04/07/22	20:29	07:27	(unrelated sample)
ZZZZZZ	3P96201.D	04/07/22	20:52	07:50	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E3P4567-DFTPP	**Injection Date:**	04/07/22
Lab File ID:	3P96182.D	**Injection Time:**	13:02
Instrument ID:	GCMS3P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3P96202.D	04/07/22	21:16	08:14	(unrelated sample)
JD42309-10	3P96203.D	04/07/22	21:39	08:37	(used for QC only; not part of job JD43617)
OP38957A-MSA	3P96204.D	04/07/22	22:03	09:01	Matrix Spike
OP38957A-MSDA	3P96205.D	04/07/22	22:26	09:24	Matrix Spike Duplicate
ZZZZZZ	3P96206.D	04/07/22	22:50	09:48	(unrelated sample)
ZZZZZZ	3P96207.D	04/07/22	23:13	10:11	(unrelated sample)
ZZZZZZ	3P96208.D	04/07/22	23:36	10:34	(unrelated sample)
ZZZZZZ	3P96209.D	04/08/22	00:00	10:58	(unrelated sample)
ZZZZZZ	3P96210.D	04/08/22	00:23	11:21	(unrelated sample)
ZZZZZZ	3P96211.D	04/08/22	00:46	11:44	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E3P4592-DFTPP
Lab File ID: 3P96662.D
Instrument ID: GCMS3P
Injection Date: 04/27/22
Injection Time: 16:40

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	22789	41.5		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	30390	55.3		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	31667	57.6		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	54976	100.0		Pass
199	5.0 - 9.0% of mass 198	3640	6.62		Pass
275	10.0 - 30.0% of mass 198	13384	24.3		Pass
365	1.0 - 100.0% of mass 198	2151	3.91		Pass
441	Present, but less than mass 443	7847	14.3	(86.6) [b]	Pass
442	40.0 - 100.0% of mass 198	48981	89.1		Pass
443	17.0 - 23.0% of mass 442	9065	16.5	(18.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P4592-CC4567	3P96663.D	04/27/22	16:57	00:17	Continuing cal 0.1
OP39308A-MB1	3P96665.D	04/27/22	17:46	01:06	Method Blank
OP39308A-BS12	3P96666.D	04/27/22	18:08	01:28	Blank Spike
OP39308A-BSD12	3P96667.D	04/27/22	18:30	01:50	Blank Spike Duplicate
ZZZZZZ	3P96668.D	04/27/22	21:04	04:24	(unrelated sample)
ZZZZZZ	3P96669.D	04/27/22	21:26	04:46	(unrelated sample)
ZZZZZZ	3P96670.D	04/27/22	21:48	05:08	(unrelated sample)
ZZZZZZ	3P96671.D	04/27/22	22:11	05:31	(unrelated sample)
ZZZZZZ	3P96672.D	04/27/22	22:33	05:53	(unrelated sample)
ZZZZZZ	3P96673.D	04/27/22	22:55	06:15	(unrelated sample)
ZZZZZZ	3P96674.D	04/27/22	23:18	06:38	(unrelated sample)
JD43617-2	3P96675.D	04/27/22	23:40	07:00	S-376_SL_20220420
JD43617-4	3P96676.D	04/28/22	00:02	07:22	N-151_SL_20220421
JD43617-5	3P96677.D	04/28/22	00:24	07:44	N-169_20220421
JD43617-6	3P96678.D	04/28/22	00:47	08:07	DUP-8_20220421
JD43617-8	3P96679.D	04/28/22	01:09	08:29	N-161_SL_20220422
JD43617-3	3P96680.D	04/28/22	01:31	08:51	N-170_SL_20220421
JD43617-1	3P96681.D	04/28/22	01:53	09:13	WP-A_SL_20220420

Surrogate Recovery Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270E BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JD43617-1	2M123578.D	58	63	56
JD43617-1	3P96681.D	58	57	54
JD43617-2	2M123581.D	48	55	61
JD43617-2	3P96675.D	43	43	52
JD43617-3	2M123570.D	85	65	50
JD43617-3	3P96680.D	68	47	51
JD43617-4	3P96676.D	46	45	43
JD43617-5	3P96677.D	46	43	52
JD43617-6	2M123579.D	60	64	64
JD43617-6	3P96678.D	55	49	52
JD43617-8	2M123580.D	59	53	53
JD43617-8	3P96679.D	55	43	52
OP39308A-BS12	3P96666.D	66	66	67
OP39308A-BSD12	3P96667.D	53	53	55
OP39308A-MB1	3P96665.D	53	49	53
OP39308A-MB1	2M123569.D	63	67	71

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	29-124%
S2 = 2-Fluorobiphenyl	23-122%
S3 = Terphenyl-d14	22-130%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39325-MB1	7G43654.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-5, JD43617-6, JD43617-8

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	0.0070	ug/l	

CAS No.	Surrogate Recoveries		Limits
3017-95-6	2-Bromo-1-chloropropane	104%	52-154%
3017-95-6	2-Bromo-1-chloropropane	102%	52-154%

Method Blank Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2543-MB	AA94511.D	1	04/26/22	WC	n/a	n/a	GAA2543

The QC reported here applies to the following samples: **Method:** RSK-175

JD43617-4, JD43617-8

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.11	0.080	ug/l	
74-84-0	Ethane	ND	0.23	0.14	ug/l	
74-85-1	Ethene	ND	0.31	0.16	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39325-BS1	7G43655.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548
OP39325-BSD	7G43656.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-5, JD43617-6, JD43617-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	0.5	0.52	104	0.47	94	14	51-197/19

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3017-95-6	2-Bromo-1-chloropropane	106%	99%	52-154%
3017-95-6	2-Bromo-1-chloropropane	104%	97%	52-154%

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2543-LCS	AA94509.D	1	04/26/22	WC	n/a	n/a	GAA2543

The QC reported here applies to the following samples: **Method:** RSK-175

JD43617-4, JD43617-8

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
74-82-8	Methane	11	11.4	104	59-134
74-84-0	Ethane	23	24.8	108	63-135
74-85-1	Ethene	31	33.2	107	62-133

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39325-MS	7G43658.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548
JD43591-1	7G43665.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-5, JD43617-6, JD43617-8

CAS No.	Compound	JD43591-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
106-93-4	1,2-Dibromoethane	ND		0.49	0.51	104	33-200

CAS No.	Surrogate Recoveries	MS	JD43591-1	Limits
3017-95-6	2-Bromo-1-chloropropane	123%	126%	52-154%
3017-95-6	2-Bromo-1-chloropropane	105%	103%	52-154%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39325-DUP	7G43657.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548
JD43617-1	7G43662.D	1	04/27/22	RK	04/26/22	OP39325	G7G1548

The QC reported here applies to the following samples: **Method:** SW846-8011

JD43617-1, JD43617-2, JD43617-3, JD43617-4, JD43617-5, JD43617-6, JD43617-8

CAS No.	Compound	JD43617-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
106-93-4	1,2-Dibromoethane	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JD43617-1	Limits
3017-95-6	2-Bromo-1-chloropropane	101%	104%	52-154%
3017-95-6	2-Bromo-1-chloropropane	98%	97%	52-154%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD43485-8DUP	AA94513.D	1	04/26/22	WC	n/a	n/a	GAA2543
JD43485-8	AA94512.D	1	04/26/22	WC	n/a	n/a	GAA2543

The QC reported here applies to the following samples: **Method:** RSK-175

JD43617-4, JD43617-8

CAS No.	Compound	JD43485-8 ug/l	Q	DUP ug/l	Q	RPD	Limits
74-82-8	Methane	58.2		53.1		9	20
74-84-0	Ethane	ND		ND		nc	20
74-85-1	Ethene	ND		ND		nc	20

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD43617
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846-8011 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JD43617-1	7G43662.D	104	97
JD43617-2	7G43666.D	87	85
JD43617-3	7G43667.D	97	93
JD43617-4	7G43668.D	106	97
JD43617-5	7G43669.D	99	97
JD43617-6	7G43670.D	96	96
JD43617-8	7G43671.D	142	142
OP39325-BS1	7G43655.D	106	104
OP39325-BSD	7G43656.D	99	97
OP39325-DUP	7G43657.D	101	98
OP39325-MB1	7G43654.D	104	102
OP39325-MS	7G43658.D	123	105

Surrogate Compounds	Recovery Limits
S1 = 2-Bromo-1-chloropropane	52-154%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32517
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/26/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.54	32		
Antimony	4.0	.044	1.7		
Arsenic	1.0	.018	.39		
Barium	2.0	.018	.73		
Beryllium	1.0	.006	.15		
Boron	50	1.7	14		
Cadmium	1.0	.014	.17		
Calcium	500	15	200		
Chromium	2.0	.03	.62		
Cobalt	1.0	.004	.17		
Copper	4.0	.024	1.9		
Iron	50	1.1	19		
Lead	1.0	.014	.52	0.00081	<1.0
Magnesium	500	.74	46		
Manganese	2.0	.018	.63		
Molybdenum	2.0	.054	.45		
Nickel	2.0	.016	.95		
Potassium	500	2.4	68		
Selenium	1.0	.7	.55		
Silver	1.0	.004	.16		
Sodium	500	1.1	470		
Strontium	10	.032	2.4		
Thallium	1.0	.018	.17		
Tin	10	.07	2.6		
Titanium	2.0	.09	1.6		
Vanadium	2.0	.034	1.8		
Zinc	10	.096	5.4		

Associated samples MP32517: JD43617-1F, JD43617-2F, JD43617-3F, JD43617-4F, JD43617-5F, JD43617-6F, JD43617-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32517
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/26/22

Metal	JD43639-1F Original	MS	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	0.10	85.3	80	106.5	75-125
Magnesium					
Manganese	anr				
Molybdenum					
Nickel	anr				
Potassium					
Selenium	anr				
Silver	anr				
Sodium					
Strontium					
Thallium	anr				
Tin					
Titanium					
Vanadium					
Zinc	anr				

Associated samples MP32517: JD43617-1F, JD43617-2F, JD43617-3F, JD43617-4F, JD43617-5F, JD43617-6F, JD43617-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32517 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/26/22

Metal	JD43639-1F Original	MSD	Spikelot MP6020AQ3%	Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	0.10	83.6	80	104.4	2.0	20
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium						
Zinc	anr					

Associated samples MP32517: JD43617-1F, JD43617-2F, JD43617-3F, JD43617-4F, JD43617-5F, JD43617-6F, JD43617-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32517
Matrix Type: AQUEOUS

Methods: SW846 6020B
Units: ug/l

Prep Date: 04/26/22

Metal	BSP Result	Spikelot MP6020AQ3%	Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	80.0	80	100.0	80-120
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP32517: JD43617-1F, JD43617-2F, JD43617-3F, JD43617-4F, JD43617-5F, JD43617-6F, JD43617-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32517 Methods: SW846 6020B
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/26/22

Metal	JD43639-1F Original	SDL 2:10	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	0.103	0.117	28.0 (a)	0-10
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP32517: JD43617-1F, JD43617-2F, JD43617-3F, JD43617-4F, JD43617-5F, JD43617-6F, JD43617-8F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/26/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	27	150		
Antimony	6.0	2.2	4.7		
Arsenic	3.0	1.3	2.8		
Barium	200	1	13		
Beryllium	1.0	.2	.5		
Bismuth	20	2.1	8.6		
Boron	100	1	10		
Cadmium	3.0	.2	1		
Calcium	5000	7.7	99	4.8	<5000
Cerium	100				
Chromium	10	.5	2		
Cobalt	50	.4	2.6		
Copper	10	6.8	5.9		
Iron	100	15	32	-0.40	<100
Lead	3.0	1.6	1.8		
Lithium	50	3.7	7.3		
Magnesium	5000	54	140		
Manganese	15	.1	1.4		
Molybdenum	20	.5	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	1.8	18		
Potassium	10000	77	200		
Selenium	10	2	4.9		
Silicon	200	1.3	32		
Silver	10	.9	6.1		
Sodium	10000	23	570		
Strontium	10	.4	2.7		
Sulfur	50	4.1	45		
Thallium	10	1.6	1.8		
Tin	10	.9	3.7		
Titanium	10	.9	2.5		
Tungsten	50	2	40		
Vanadium	50	.8	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/26/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.2	6.9		
Zirconium	10	.5	4.1		

Associated samples MP32518: JD43617-4, JD43617-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/26/22

Metal	JD43617-8 Original MS		Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony	anr				
Arsenic	anr				
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium	84500	106000	25000	86.0	75-125
Cerium					
Chromium					
Cobalt					
Copper	anr				
Iron	10300	35200	25000	98.8	75-125
Lead	anr				
Lithium					
Magnesium					
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/26/22

Metal	JD43617-8 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP32518: JD43617-4, JD43617-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/26/22

Metal	JD43617-8 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium	84500	106000	25000	86.0	0.0	20
Cerium						
Chromium						
Cobalt						
Copper	anr					
Iron	10300	35000	25000	98.0	0.6	20
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/26/22

Metal	JD43617-8 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP32518: JD43617-4, JD43617-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/26/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium	26300	25000	105.2	80-120
Cerium				
Chromium				
Cobalt				
Copper	anr			
Iron	26400	25000	105.6	80-120
Lead	anr			
Lithium				
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/26/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP32518: JD43617-4, JD43617-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/26/22

Metal	JD43617-8 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium	84500	85900	1.6	0-10
Cerium				
Chromium				
Cobalt				
Copper	anr			
Iron	10300	10800	2.1	0-10
Lead	anr			
Lithium				
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP32518 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/26/22

Metal	JD43617-8 Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP32518: JD43617-4, JD43617-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN28568			mg/l	250	249	99.6	90-110%
Alkalinity, Total as CaCO3	GN28568	5.0	0.0	mg/l	50	48.5	97.0	90-110%
Chloride	GP39693/GN28543	2.0	0.0	mg/l	80	82.0	102.5	90-110%
Nitrogen, Total Kjeldahl	GP39680/GN28545	0.20	0.0	mg/l	3	3.01	100.3	90-110%
Sulfate	GP39693/GN28543	2.0	0.0	mg/l	80	80.2	100.3	90-110%
Total Carbon	GP39784/GN28714	1.0	0.81	mg/l	10	9.68	96.8	90-110%
Total Carbon	GP39784/GN28734	1.0	0.54	mg/l	10	10.8	108.0	90-110%
Total Organic Carbon	GP39700/GN28557	1.0	0.0	mg/l	10	10.9	109.0	90-110%

Associated Samples:
Batch GN28568: JD43617-4, JD43617-8
Batch GP39680: JD43617-4, JD43617-8
Batch GP39693: JD43617-4, JD43617-8
Batch GP39700: JD43617-4, JD43617-8
Batch GP39784: JD43617-4, JD43617-8
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN28568	JD43523-1	mg/l	33.0	33.0	0.0	0-10%
Chloride	GP39693/GN28543	JD43604-8	mg/l	81.2	81.2	0.0	0-20%
Nitrogen, Total Kjeldahl	GP39680/GN28545	JD43530-1	mg/l	0.77	0.76	1.3	0-43%
Sulfate	GP39693/GN28543	JD43604-8	mg/l	1.4	1.4	0.0	0-20%

Associated Samples:
Batch GN28568: JD43617-4, JD43617-8
Batch GP39680: JD43617-4, JD43617-8
Batch GP39693: JD43617-4, JD43617-8
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP39693/GN28543	JD43604-8	mg/l	81.2	80	163	102.3	80-120%
Nitrogen, Total Kjeldahl	GP39680/GN28545	JD43530-1	mg/l	0.77	3	3.3	84.3N(a)	90-110%
Sulfate	GP39693/GN28543	JD43604-8	mg/l	1.4	80	80.8	99.3	80-120%
Total Carbon	GP39784/GN28714	JD43617-4	mg/l	64.5	50	152	175.0N(a)	10-152%
Total Organic Carbon	GP39700/GN28557	JD43629-1	mg/l	2.8	10	14.7	119.0	71-132%

Associated Samples:
Batch GP39680: JD43617-4, JD43617-8
Batch GP39693: JD43617-4, JD43617-8
Batch GP39700: JD43617-4, JD43617-8
Batch GP39784: JD43617-4, JD43617-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD43617
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Total Carbon	GP39784/GN28714	JD43617-4	mg/l	64.5	50	157	3.2	10%
Total Organic Carbon	GP39700/GN28557	JD43629-1	mg/l	2.8	10	15.2	3.3	10%

Associated Samples:
Batch GP39700: JD43617-4, JD43617-8
Batch GP39784: JD43617-4, JD43617-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

SGS Job Number: JD45192

Sampling Date: 05/19/22



Report to:

Stantec
1060 Andrew Drive Suite 140
West Chester, PA 19380
Jennifer.Menges@stantec.com; Andrew.klingbeil@stantec.com;
Andrew.Bradley@stantec.com; Jenny.Kachel@stantec.com;
ATTN: Jennifer Menges

Total number of pages in report: **48**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

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SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD45192

SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies: Organics ND = Not detected above the MDL							
JD45192-1	05/19/22	10:00	TL	05/19/22	SO	Soil	AOI8-BH-22-08-6-8
JD45192-2	05/19/22	11:00	TL	05/19/22	SO	Soil	AOI8-BH-22-09-6-8
JD45192-3	05/19/22	12:35	TL	05/19/22	SO	Soil	AOI8-BH-22-10-6-8

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: JD45192
Account: Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA
Collected: 05/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD45192-1	**AOI8-BH-22-08-6-8**					
Anthracene		0.500	0.046	0.028	mg/kg	SW846 8270E
Benzo(a)anthracene		1.68	0.046	0.013	mg/kg	SW846 8270E
Benzo(a)pyrene		2.04	0.046	0.021	mg/kg	SW846 8270E
Benzo(b)fluoranthene		3.07	0.046	0.020	mg/kg	SW846 8270E
Benzo(g,h,i)perylene		2.33	0.046	0.023	mg/kg	SW846 8270E
Chrysene		2.33	0.046	0.014	mg/kg	SW846 8270E
Fluorene		0.185	0.046	0.021	mg/kg	SW846 8270E
Naphthalene		2.70	0.046	0.013	mg/kg	SW846 8270E
Phenanthrene		3.09	0.046	0.015	mg/kg	SW846 8270E
Pyrene		3.18	0.046	0.015	mg/kg	SW846 8270E
Lead		84000	280		mg/kg	SW846 6010D
JD45192-2	**AOI8-BH-22-09-6-8**					
Anthracene		0.889	0.038	0.023	mg/kg	SW846 8270E
Benzo(a)anthracene		2.16	0.038	0.011	mg/kg	SW846 8270E
Benzo(a)pyrene		1.84	0.038	0.017	mg/kg	SW846 8270E
Benzo(b)fluoranthene		2.08	0.038	0.017	mg/kg	SW846 8270E
Benzo(g,h,i)perylene		0.856	0.038	0.019	mg/kg	SW846 8270E
Chrysene		1.75	0.038	0.012	mg/kg	SW846 8270E
Fluorene		0.226	0.038	0.018	mg/kg	SW846 8270E
Naphthalene		0.381	0.038	0.011	mg/kg	SW846 8270E
Phenanthrene		2.83	0.038	0.013	mg/kg	SW846 8270E
Pyrene		3.00	0.038	0.012	mg/kg	SW846 8270E
Lead		214	2.3		mg/kg	SW846 6010D
JD45192-3	**AOI8-BH-22-10-6-8**					
Benzo(a)anthracene		0.0725	0.040	0.011	mg/kg	SW846 8270E
Benzo(a)pyrene		0.0695	0.040	0.018	mg/kg	SW846 8270E
Benzo(b)fluoranthene		0.0897	0.040	0.017	mg/kg	SW846 8270E
Benzo(g,h,i)perylene		0.0557	0.040	0.020	mg/kg	SW846 8270E
Chrysene		0.0679	0.040	0.012	mg/kg	SW846 8270E
Naphthalene		0.0176 J	0.040	0.011	mg/kg	SW846 8270E
Phenanthrene		0.0739	0.040	0.013	mg/kg	SW846 8270E
Pyrene		0.0991	0.040	0.013	mg/kg	SW846 8270E
Lead		733	2.4		mg/kg	SW846 6010D

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AOI8-BH-22-08-6-8		
Lab Sample ID:	JD45192-1	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
Method:	SW846 8260D	**Percent Solids:**	70.3
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C175943.D	1	05/31/22 22:20	PS	n/a	n/a	V3C7730
Run #2							

	Initial Weight
Run #1	5.0 g
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.00071	0.00065	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0014	0.00060	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0014	0.00067	mg/kg	
100-41-4	Ethylbenzene	ND	0.0014	0.00064	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0028	0.0020	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0014	0.00067	mg/kg	
108-88-3	Toluene	ND	0.0014	0.00075	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0028	0.00071	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0028	0.00061	mg/kg	
1330-20-7	Xylene (total)	ND	0.0014	0.00065	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-124%
17060-07-0	1,2-Dichloroethane-D4	110%		75-133%
2037-26-5	Toluene-D8	99%		79-125%
460-00-4	4-Bromofluorobenzene	95%		58-148%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AOI8-BH-22-08-6-8		
Lab Sample ID:	JD45192-1	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
Method:	SW846 8270E SW846 3546	**Percent Solids:**	70.3
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P503573.D	1	05/28/22 00:36	JY	05/25/22 15:30	OP39822	E6P3603
Run #2							

	Initial Weight	Final Volume
Run #1	31.0 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.500	0.046	0.028	mg/kg	
56-55-3	Benzo(a)anthracene	1.68	0.046	0.013	mg/kg	
50-32-8	Benzo(a)pyrene	2.04	0.046	0.021	mg/kg	
205-99-2	Benzo(b)fluoranthene	3.07	0.046	0.020	mg/kg	
191-24-2	Benzo(g,h,i)perylene	2.33	0.046	0.023	mg/kg	
218-01-9	Chrysene	2.33	0.046	0.014	mg/kg	
86-73-7	Fluorene	0.185	0.046	0.021	mg/kg	
91-20-3	Naphthalene	2.70	0.046	0.013	mg/kg	
85-01-8	Phenanthrene	3.09	0.046	0.015	mg/kg	
129-00-0	Pyrene	3.18	0.046	0.015	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	34%		10-99%
4165-62-2	Phenol-d5	28%		10-96%
118-79-6	2,4,6-Tribromophenol	6% [a]		10-123%
4165-60-0	Nitrobenzene-d5	35%		10-109%
321-60-8	2-Fluorobiphenyl	47%		11-109%
1718-51-0	Terphenyl-d14	38%		10-120%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AOI8-BH-22-08-6-8		
Lab Sample ID:	JD45192-1	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
		Percent Solids:	70.3
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	84000	280	mg/kg	100	05/23/22	05/24/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52443
(2) Prep QC Batch: MP33010

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI8-BH-22-09-6-8		
Lab Sample ID:	JD45192-2	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
Method:	SW846 8260D	**Percent Solids:**	85.6
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C175944.D	1	05/31/22 22:45	PS	n/a	n/a	V3C7730
Run #2							

	Initial Weight
Run #1	6.3 g
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.00046	0.00042	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.00093	0.00039	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.00093	0.00044	mg/kg	
100-41-4	Ethylbenzene	ND	0.00093	0.00042	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0019	0.0013	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.00093	0.00043	mg/kg	
108-88-3	Toluene	ND	0.00093	0.00049	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0019	0.00046	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0019	0.00040	mg/kg	
1330-20-7	Xylene (total)	ND	0.00093	0.00042	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-124%
17060-07-0	1,2-Dichloroethane-D4	111%		75-133%
2037-26-5	Toluene-D8	99%		79-125%
460-00-4	4-Bromofluorobenzene	97%		58-148%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AOI8-BH-22-09-6-8		
Lab Sample ID:	JD45192-2	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
Method:	SW846 8270E SW846 3546	**Percent Solids:**	85.6
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P503574.D	1	05/28/22 01:00	JY	05/25/22 15:30	OP39822	E6P3603
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	0.889	0.038	0.023	mg/kg	
56-55-3	Benzo(a)anthracene	2.16	0.038	0.011	mg/kg	
50-32-8	Benzo(a)pyrene	1.84	0.038	0.017	mg/kg	
205-99-2	Benzo(b)fluoranthene	2.08	0.038	0.017	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.856	0.038	0.019	mg/kg	
218-01-9	Chrysene	1.75	0.038	0.012	mg/kg	
86-73-7	Fluorene	0.226	0.038	0.018	mg/kg	
91-20-3	Naphthalene	0.381	0.038	0.011	mg/kg	
85-01-8	Phenanthrene	2.83	0.038	0.013	mg/kg	
129-00-0	Pyrene	3.00	0.038	0.012	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		10-99%
4165-62-2	Phenol-d5	39%		10-96%
118-79-6	2,4,6-Tribromophenol	43%		10-123%
4165-60-0	Nitrobenzene-d5	42%		10-109%
321-60-8	2-Fluorobiphenyl	43%		11-109%
1718-51-0	Terphenyl-d14	43%		10-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AOI8-BH-22-09-6-8		
Lab Sample ID:	JD45192-2	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
		Percent Solids:	85.6
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	214	2.3	mg/kg	1	05/23/22	05/24/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52443
(2) Prep QC Batch: MP33010

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI8-BH-22-10-6-8		
Lab Sample ID:	JD45192-3	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
Method:	SW846 8260D	**Percent Solids:**	83.7
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3C175945.D	1	05/31/22 23:11	PS	n/a	n/a	V3C7730
Run #2							

	Initial Weight
Run #1	6.6 g
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.00045	0.00041	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.00091	0.00038	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.00091	0.00043	mg/kg	
100-41-4	Ethylbenzene	ND	0.00091	0.00041	mg/kg	
98-82-8	Isopropylbenzene	ND	0.0018	0.0013	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.00091	0.00042	mg/kg	
108-88-3	Toluene	ND	0.00091	0.00048	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	0.0018	0.00045	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	0.0018	0.00039	mg/kg	
1330-20-7	Xylene (total)	ND	0.00091	0.00041	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		80-124%
17060-07-0	1,2-Dichloroethane-D4	110%		75-133%
2037-26-5	Toluene-D8	98%		79-125%
460-00-4	4-Bromofluorobenzene	96%		58-148%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AOI8-BH-22-10-6-8		
Lab Sample ID:	JD45192-3	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
Method:	SW846 8270E SW846 3546	**Percent Solids:**	83.7
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P503575.D	1	05/28/22 01:23	JY	05/25/22 15:30	OP39822	E6P3603
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

BN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	0.040	0.024	mg/kg	
56-55-3	Benzo(a)anthracene	0.0725	0.040	0.011	mg/kg	
50-32-8	Benzo(a)pyrene	0.0695	0.040	0.018	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.0897	0.040	0.017	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.0557	0.040	0.020	mg/kg	
218-01-9	Chrysene	0.0679	0.040	0.012	mg/kg	
86-73-7	Fluorene	ND	0.040	0.018	mg/kg	
91-20-3	Naphthalene	0.0176	0.040	0.011	mg/kg	J
85-01-8	Phenanthrene	0.0739	0.040	0.013	mg/kg	
129-00-0	Pyrene	0.0991	0.040	0.013	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		10-99%
4165-62-2	Phenol-d5	45%		10-96%
118-79-6	2,4,6-Tribromophenol	50%		10-123%
4165-60-0	Nitrobenzene-d5	49%		10-109%
321-60-8	2-Fluorobiphenyl	48%		11-109%
1718-51-0	Terphenyl-d14	50%		10-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AOI8-BH-22-10-6-8		
Lab Sample ID:	JD45192-3	**Date Sampled:**	05/19/22
Matrix:	SO - Soil	**Date Received:**	05/19/22
		Percent Solids:	83.7
Project:	SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	733	2.4	mg/kg	1	05/23/22	05/24/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52443
(2) Prep QC Batch: MP33010

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

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SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

Page __ of __

FED-EX Tracking #	Bottle Order Control # VP 05922 47
SGS Quote #	SGS Job # JD45192

Client / Reporting Information

Company Name: Evergreen c/o Stantec
Street Address: 1060 Andrew Drive Suite 140
City / State / Zip: West Chester PA 19380
Project Contact / E-mail: Andrew Klingbeil andrew.klingbeil@stantec.com
Phone #: 610 425-8311
Sampler(s) Name(s) / Phone #: Tabitha Lee, Andrea Wright

Project Information

Project Name: Evergreen Former PES Ball Field Soil Borings
Street: 3144 Passyunk Ave
City / State: Philadelphia PA
Project #:
Client Purchase Order #:
Project Manager: Andrew Klingbeil, Jenny Kachel

Billing Information (if different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis

Evergreen Petroleum Short List (attached)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
1	AOI8-BH-22-08-6-8		5/19/22	10:00	TL	G	N	SO	5					2	2	1		X	
2	AOI8-BH-22-09-6-8		5/19/22	11:00	TL	G	N	SO	5					2	2	1		X	
3	AOI8-BH-22-10-6-8		5/19/22	12:35	TL	G	N	SO	5					2	2	1		X	

D22
060
1485
4484

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [x] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Ctrl + Standard

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [x] EDD Format Evergreen/Sunoco EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Analyze for all Evergreen ~~[illegible]~~ SPOCT List compounds (attached). Naphthalene to be analyzed by 8270.

Initial Assessment 3A
Label Verification____

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 Charles Murva	5/19/22 2:13	1 Joe Rodriguez 5-19-22 1413	2 Joe Rodriguez	5-19-22 10:00	2 [signature]
3		3	4		4
5		5	Custody Seal #	Therm ID: 40 Cooler Temp. °C 4.2 3.8	

Intact / Not intact / Absent / See Sample Receipt Summary

JD45192: Chain of Custody
Page 1 of 3

JD45192

Evergreen Petroleum Short List (June 2016)

VOCs by EPA Method 8260	CAS No.
Benzene	71-43-2
Cumene	98-82-8
Dichloroethane, 1,2-	107-06-2
Ethylbenzene	100-41-4
Ethylene Dibromide*	106-93-4
Methyl tert butyl ether	1634-04-4
Toluene	108-88-3
Trimethylbenzene, 1,2,4-	95-63-6
Trimethylbenzene, 1,3,5-	108-67-8
Xylenes	1330-20-7

SVOCs by EPA Method 8270	CAS No.
Anthracene	120-12-7
Benzo(a)anthracene	56-55-3
Benzo(a)pyrene	50-32-8
Benzo(b)fluoranthene	205-99-2
Benzo(g,h,i)perylene	191-24-2
Chrysene	218-01-9
Fluorene	86-73-7
Naphthalene**	91-20-3
Phenanthrene	85-01-8
Pyrene	129-00-0

Metals by Method 6010/6020	CAS No.
Lead***	7439-92-1

*Ethylene Dibromide (EDB) should be analyzed by Method 8011 instead of 8260 in soil for tank investigations and in **all groundwater samples**. EDB in all trip blank samples should be analyzed by 8260 regardless of method used for primary samples.

**Naphthalene should be analyzed by EPA Method 8260 instead of 8270 for tank investigations.

***Metals analysis should be total in soil and dissolved in groundwater.

This list is comprised of the combined PADEP Short List of Petroleum Products (leaded and unleaded gasoline and No. 1, 2, 4, 5, 6 Fuel Oils).

SGS Sample Receipt Summary

Job Number: JD45192 **Client:** STANTEC **Project:** SECORPAE:EVERGREEN MARCUS HOO

Date / Time Received: 5/19/2022 10:00:00 AM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (4.2); Cooler 2: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (3.9); Cooler 2: (3.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	2		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

JD45192: Chain of Custody
Page 3 of 3

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C7730-MB	3C175931.D	1	05/31/22	PS	n/a	n/a	V3C7730

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD45192-1, JD45192-2, JD45192-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.46	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.42	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.45	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	1.4	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.47	ug/kg	
108-88-3	Toluene	ND	1.0	0.53	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.50	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.43	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.46	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	80-124%
17060-07-0	1,2-Dichloroethane-D4	98%	75-133%
2037-26-5	Toluene-D8	97%	79-125%
460-00-4	4-Bromofluorobenzene	95%	58-148%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Blank Spike Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3C7730-BS	3C175929.D	1	05/31/22	PS	n/a	n/a	V3C7730

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD45192-1, JD45192-2, JD45192-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.7	97	82-119
106-93-4	1,2-Dibromoethane	50	57.2	114	58-145
107-06-2	1,2-Dichloroethane	50	49.6	99	76-118
100-41-4	Ethylbenzene	50	49.6	99	83-115
98-82-8	Isopropylbenzene	50	53.0	106	81-122
1634-04-4	Methyl Tert Butyl Ether	50	48.7	97	75-126
108-88-3	Toluene	50	48.9	98	82-118
95-63-6	1,2,4-Trimethylbenzene	50	43.1	86	80-119
108-67-8	1,3,5-Trimethylbenzene	50	43.1	86	79-120
1330-20-7	Xylene (total)	150	149	99	83-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	80-124%
17060-07-0	1,2-Dichloroethane-D4	105%	75-133%
2037-26-5	Toluene-D8	98%	79-125%
460-00-4	4-Bromofluorobenzene	85%	58-148%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD45469-3MS	3C175940.D	1	05/31/22	PS	n/a	n/a	V3C7730
JD45469-3	3C175932.D	1	05/31/22	PS	n/a	n/a	V3C7730

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD45192-1, JD45192-2, JD45192-3

CAS No.	Compound	JD45469-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits
71-43-2	Benzene	ND		67.3	67.4	100	61-132
106-93-4	1,2-Dibromoethane	ND		67.3	68.5	102	45-141
107-06-2	1,2-Dichloroethane	ND		67.3	64.1	95	64-119
100-41-4	Ethylbenzene	ND		67.3	67.3	100	51-133
98-82-8	Isopropylbenzene	ND		67.3	72.1	107	44-142
1634-04-4	Methyl Tert Butyl Ether	ND		67.3	64.6	96	62-125
108-88-3	Toluene	ND		67.3	64.3	96	56-135
95-63-6	1,2,4-Trimethylbenzene	ND		67.3	57.8	86	30-149
108-67-8	1,3,5-Trimethylbenzene	ND		67.3	56.4	84	36-145
1330-20-7	Xylene (total)	ND		202	200	99	50-138

CAS No.	Surrogate Recoveries	MS	JD45469-3	Limits
1868-53-7	Dibromofluoromethane	104%	103%	80-124%
17060-07-0	1,2-Dichloroethane-D4	103%	103%	75-133%
2037-26-5	Toluene-D8	97%	97%	79-125%
460-00-4	4-Bromofluorobenzene	85%	91%	58-148%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD45469-4DUP	3C175942.D	1	05/31/22	PS	n/a	n/a	V3C7730
JD45469-4	3C175933.D	1	05/31/22	PS	n/a	n/a	V3C7730

The QC reported here applies to the following samples: **Method:** SW846 8260D

JD45192-1, JD45192-2, JD45192-3

CAS No.	Compound	JD45469-4 ug/kg	Q	DUP ug/kg	Q	RPD	Limits
71-43-2	Benzene	ND		ND		nc	44
106-93-4	1,2-Dibromoethane	ND		ND		nc	30
107-06-2	1,2-Dichloroethane	ND		ND		nc	10
100-41-4	Ethylbenzene	ND		ND		nc	35
98-82-8	Isopropylbenzene	ND		ND		nc	28
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	21
108-88-3	Toluene	ND		ND		nc	37
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	32
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	33
1330-20-7	Xylene (total)	ND		ND		nc	60

CAS No.	Surrogate Recoveries	DUP	JD45469-4	Limits
1868-53-7	Dibromofluoromethane	105%	105%	80-124%
17060-07-0	1,2-Dichloroethane-D4	104%	110%	75-133%
2037-26-5	Toluene-D8	98%	98%	79-125%
460-00-4	4-Bromofluorobenzene	94%	92%	58-148%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V3C7690-BFB
Lab File ID: 3C174845.D
Instrument ID: GCMS3C
Injection Date: 04/11/22
Injection Time: 19:45

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	54240	23.4		Pass
75	30.0 - 60.0% of mass 95	107816	46.5		Pass
95	Base peak, 100% relative abundance	232106	100.0		Pass
96	5.0 - 9.0% of mass 95	15250	6.57		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	197632	85.1		Pass
175	5.0 - 9.0% of mass 174	14917	6.43	(7.55) [a]	Pass
176	95.0 - 101.0% of mass 174	189461	81.6	(95.9) [a]	Pass
177	5.0 - 9.0% of mass 176	12402	5.34	(6.55) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3C7690-IC7690	3C174846.D	04/11/22	20:14	00:29	Initial cal 0.2
V3C7690-IC7690	3C174847.D	04/11/22	20:39	00:54	Initial cal 0.5
V3C7690-IC7690	3C174848.D	04/11/22	21:04	01:19	Initial cal 1
V3C7690-IC7690	3C174849.D	04/11/22	21:30	01:45	Initial cal 2
V3C7690-IC7690	3C174850.D	04/11/22	21:55	02:10	Initial cal 4
V3C7690-IC7690	3C174851.D	04/11/22	22:20	02:35	Initial cal 8
V3C7690-IC7690	3C174852.D	04/11/22	22:46	03:01	Initial cal 20
V3C7690-ICC7690	3C174853.D	04/11/22	23:11	03:26	Initial cal 50
V3C7690-IC7690	3C174854.D	04/11/22	23:36	03:51	Initial cal 100
V3C7690-IC7690	3C174855.D	04/12/22	00:02	04:17	Initial cal 200
V3C7690-ICV7690	3C174858.D	04/12/22	01:17	05:32	Initial cal verification 50
V3C7690-ICV7690	3C174859.D	04/12/22	01:42	05:57	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: V3C7730-BFB
Lab File ID: 3C175927.D
Instrument ID: GCMS3C
Injection Date: 05/31/22
Injection Time: 15:17

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	36755	26.9		Pass
75	30.0 - 60.0% of mass 95	70661	51.6		Pass
95	Base peak, 100% relative abundance	136834	100.0		Pass
96	5.0 - 9.0% of mass 95	9269	6.77		Pass
173	Less than 2.0% of mass 174	155	0.11	(0.12) [a]	Pass
174	50.0 - 120.0% of mass 95	127882	93.5		Pass
175	5.0 - 9.0% of mass 174	9630	7.04	(7.53) [a]	Pass
176	95.0 - 101.0% of mass 174	121832	89.0	(95.3) [a]	Pass
177	5.0 - 9.0% of mass 176	8237	6.02	(6.76) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3C7730-CC7690	3C175927.D	05/31/22	15:17	00:00	Continuing cal 50
V3C7730-BS	3C175929.D	05/31/22	16:14	00:57	Blank Spike
V3C7730-MB	3C175931.D	05/31/22	17:11	01:54	Method Blank
JD45469-3	3C175932.D	05/31/22	17:37	02:20	(used for QC only; not part of job JD45192)
JD45469-4	3C175933.D	05/31/22	18:03	02:46	(used for QC only; not part of job JD45192)
ZZZZZZ	3C175934.D	05/31/22	18:28	03:11	(unrelated sample)
ZZZZZZ	3C175935.D	05/31/22	18:54	03:37	(unrelated sample)
ZZZZZZ	3C175936.D	05/31/22	19:20	04:03	(unrelated sample)
ZZZZZZ	3C175937.D	05/31/22	19:46	04:29	(unrelated sample)
ZZZZZZ	3C175938.D	05/31/22	20:11	04:54	(unrelated sample)
ZZZZZZ	3C175939.D	05/31/22	20:37	05:20	(unrelated sample)
JD45469-3MS	3C175940.D	05/31/22	21:03	05:46	Matrix Spike
JD45469-4DUP	3C175942.D	05/31/22	21:54	06:37	Duplicate
JD45192-1	3C175943.D	05/31/22	22:20	07:03	AOI8-BH-22-08-6-8
JD45192-2	3C175944.D	05/31/22	22:45	07:28	AOI8-BH-22-09-6-8
JD45192-3	3C175945.D	05/31/22	23:11	07:54	AOI8-BH-22-10-6-8
ZZZZZZ	3C175946.D	05/31/22	23:36	08:19	(unrelated sample)
ZZZZZZ	3C175947.D	06/01/22	00:02	08:45	(unrelated sample)
ZZZZZZ	3C175948.D	06/01/22	00:27	09:10	(unrelated sample)
ZZZZZZ	3C175949.D	06/01/22	00:53	09:36	(unrelated sample)
ZZZZZZ	3C175950.D	06/01/22	01:18	10:01	(unrelated sample)
ZZZZZZ	3C175951.D	06/01/22	01:44	10:27	(unrelated sample)
ZZZZZZ	3C175952.D	06/01/22	02:09	10:52	(unrelated sample)
ZZZZZZ	3C175953.D	06/01/22	02:35	11:18	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8260D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD45192-1	3C175943.D	107	110	99	95
JD45192-2	3C175944.D	104	111	99	97
JD45192-3	3C175945.D	109	110	98	96
JD45469-3MS	3C175940.D	104	103	97	85
JD45469-4DUP	3C175942.D	105	104	98	94
V3C7730-BS	3C175929.D	102	105	98	85
V3C7730-MB	3C175931.D	100	98	97	95

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-124%
S2 = 1,2-Dichloroethane-D4	75-133%
S3 = Toluene-D8	79-125%
S4 = 4-Bromofluorobenzene	58-148%

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39822-MB1	6P503556.D	1	05/27/22	JY	05/25/22	OP39822	E6P3603

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD45192-1, JD45192-2, JD45192-3

CAS No.	Compound	Result	RL	MDL	Units	Q
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	50%	10-99%
4165-62-2	Phenol-d5	48%	10-96%
118-79-6	2,4,6-Tribromophenol	47%	10-123%
4165-60-0	Nitrobenzene-d5	49%	10-109%
321-60-8	2-Fluorobiphenyl	52%	11-109%
1718-51-0	Terphenyl-d14	53%	10-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact	3.10	140	ug/kg	J
	System artifact	3.16	680	ug/kg	J
	System artifact	3.34	300	ug/kg	J
791-28-6	Triphenylphosphine oxide	12.23	1000	ug/kg	JN
	Total TIC, Semi-Volatile		1000	ug/kg	J

Blank Spike Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39822-BS1	6P503557.D	1	05/27/22	JY	05/25/22	OP39822	E6P3603

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD45192-1, JD45192-2, JD45192-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
120-12-7	Anthracene	1670	802	48	10-144
56-55-3	Benzo(a)anthracene	1670	777	47	11-139
50-32-8	Benzo(a)pyrene	1670	786	47	13-141
205-99-2	Benzo(b)fluoranthene	1670	791	47	14-140
191-24-2	Benzo(g,h,i)perylene	1670	742	45	13-138
218-01-9	Chrysene	1670	800	48	11-139
86-73-7	Fluorene	1670	805	48	12-139
91-20-3	Naphthalene	1670	802	48	10-141
85-01-8	Phenanthrene	1670	795	48	10-142
129-00-0	Pyrene	1670	803	48	13-141

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	45%	10-99%
4165-62-2	Phenol-d5	45%	10-96%
118-79-6	2,4,6-Tribromophenol	50%	10-123%
4165-60-0	Nitrobenzene-d5	46%	10-109%
321-60-8	2-Fluorobiphenyl	48%	11-109%
1718-51-0	Terphenyl-d14	49%	10-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP39822-MS	6P503569.D	1	05/27/22	JY	05/25/22	OP39822	E6P3603
OP39822-MSD	6P503570.D	1	05/27/22	JY	05/25/22	OP39822	E6P3603
JD45109-1	6P503561.D	1	05/27/22	JY	05/25/22	OP39822	E6P3603

The QC reported here applies to the following samples: **Method:** SW846 8270E

JD45192-1, JD45192-2, JD45192-3

CAS No.	Compound	JD45109-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
120-12-7	Anthracene	ND		1870	1030	55	1860	1140	61	10	10-166/88
56-55-3	Benzo(a)anthracene	68.7		1870	1150	58	1860	1730	89	40	10-163/88
50-32-8	Benzo(a)pyrene	68.3		1870	1150	58	1860	2460	128	73	10-163/89
205-99-2	Benzo(b)fluoranthene	81.4		1870	1110	55	1860	2430	126	75	10-156/91
191-24-2	Benzo(g,h,i)perylene	52.0		1870	1050	53	1860	2140	112	68	10-158/89
218-01-9	Chrysene	71.8		1870	1100	55	1860	1720	88	44	10-164/87
86-73-7	Fluorene	ND		1870	1020	55	1860	1070	57	5	10-158/87
91-20-3	Naphthalene	23.8	J	1870	1010	53	1860	956	50	5	10-146/87
85-01-8	Phenanthrene	56.5		1870	1040	53	1860	1370	70	27	10-158/95
129-00-0	Pyrene	126		1870	1210	58	1860	1910	96	45	10-176/90

CAS No.	Surrogate Recoveries	MS	MSD	JD45109-1	Limits
367-12-4	2-Fluorophenol	51%	45%	32%	10-99%
4165-62-2	Phenol-d5	53%	48%	32%	10-96%
118-79-6	2,4,6-Tribromophenol	42%	38%	16%	10-123%
4165-60-0	Nitrobenzene-d5	55%	50%	33%	10-109%
321-60-8	2-Fluorobiphenyl	57%	54%	36%	11-109%
1718-51-0	Terphenyl-d14	61%	61%	37%	10-120%

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E6P3601-DFTPP
Lab File ID: 6P503529.D
Instrument ID: GCMS6P
Injection Date: 05/27/22
Injection Time: 01:11

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	124652	30.3		Pass
68	Less than 2.0% of mass 69	2104	0.51	(1.34) [a]	Pass
69	Mass 69 relative abundance	157118	38.1		Pass
70	Less than 2.0% of mass 69	604	0.15	(0.38) [a]	Pass
127	40.0 - 60.0% of mass 198	222618	54.0		Pass
197	Less than 1.0% of mass 198	1892	0.46		Pass
198	Base peak, 100% relative abundance	412010	100.0		Pass
199	5.0 - 9.0% of mass 198	28123	6.83		Pass
275	10.0 - 30.0% of mass 198	103429	25.1		Pass
365	1.0 - 100.0% of mass 198	15544	3.77		Pass
441	Present, but less than mass 443	49760	12.1	(76.6) [b]	Pass
442	40.0 - 100.0% of mass 198	336234	81.6		Pass
443	17.0 - 23.0% of mass 442	64970	15.8	(19.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3601-IC3601	6P503530.D	05/27/22	01:23	00:12	Initial cal 100
E6P3601-IC3601	6P503531.D	05/27/22	01:49	00:38	Initial cal 1
E6P3601-IC3601	6P503532.D	05/27/22	02:12	01:01	Initial cal 80
E6P3601-IC3601	6P503533.D	05/27/22	02:36	01:25	Initial cal 2
E6P3601-ICC3601	6P503534.D	05/27/22	02:59	01:48	Initial cal 50
E6P3601-IC3601	6P503535.D	05/27/22	03:23	02:12	Initial cal 5
E6P3601-IC3601	6P503536.D	05/27/22	03:47	02:36	Initial cal 25
E6P3601-IC3601	6P503537.D	05/27/22	04:10	02:59	Initial cal 10
E6P3601-ICV3601	6P503538.D	05/27/22	04:34	03:23	Initial cal verification 50
E6P3601-ICV3601	6P503539.D	05/27/22	04:57	03:46	Initial cal verification 50
E6P3601-ICV3601	6P503540.D	05/27/22	05:21	04:10	Initial cal verification 50
E6P3601-ICV3601	6P503541.D	05/27/22	05:45	04:34	Initial cal verification 50
E6P3601-ICV3601	6P503542.D	05/27/22	06:08	04:57	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E6P3602-DFTPP
Lab File ID: 6P503543.D
Instrument ID: GCMS6P
Injection Date: 05/27/22
Injection Time: 09:16

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	122128	30.0		Pass
68	Less than 2.0% of mass 69	2403	0.59	(1.54) [a]	Pass
69	Mass 69 relative abundance	155907	38.4		Pass
70	Less than 2.0% of mass 69	1412	0.35	(0.91) [a]	Pass
127	40.0 - 60.0% of mass 198	218669	53.8		Pass
197	Less than 1.0% of mass 198	2318	0.57		Pass
198	Base peak, 100% relative abundance	406421	100.0		Pass
199	5.0 - 9.0% of mass 198	26685	6.57		Pass
275	10.0 - 30.0% of mass 198	103642	25.5		Pass
365	1.0 - 100.0% of mass 198	14637	3.60		Pass
441	Present, but less than mass 443	49368	12.1	(77.6) [b]	Pass
442	40.0 - 100.0% of mass 198	339349	83.5		Pass
443	17.0 - 23.0% of mass 442	63597	15.6	(18.7) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3602-IC362	6P503544.D	05/27/22	09:27	00:11	Initial cal 100
E6P3602-IC3602	6P503545.D	05/27/22	10:01	00:45	Initial cal 80
E6P3602-ICC3602	6P503546.D	05/27/22	10:25	01:09	Initial cal 50
E6P3602-IC3602	6P503547.D	05/27/22	10:48	01:32	Initial cal 25
E6P3602-IC3602	6P503548.D	05/27/22	11:12	01:56	Initial cal 10
E6P3602-IC3602	6P503549.D	05/27/22	11:35	02:19	Initial cal 5
E6P3602-IC3602	6P503550.D	05/27/22	11:59	02:43	Initial cal 2
E6P3602-IC3602	6P503551.D	05/27/22	12:22	03:06	Initial cal 1
E6P3602-ICV3602	6P503552.D	05/27/22	12:46	03:30	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample: E6P3603-DFTPP
Lab File ID: 6P503553.D
Instrument ID: GCMS6P
Injection Date: 05/27/22
Injection Time: 16:50

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	129222	32.2		Pass
68	Less than 2.0% of mass 69	2507	0.62	(1.55) [a]	Pass
69	Mass 69 relative abundance	161456	40.2		Pass
70	Less than 2.0% of mass 69	1289	0.32	(0.80) [a]	Pass
127	40.0 - 60.0% of mass 198	228291	56.9		Pass
197	Less than 1.0% of mass 198	2038	0.51		Pass
198	Base peak, 100% relative abundance	401387	100.0		Pass
199	5.0 - 9.0% of mass 198	27893	6.95		Pass
275	10.0 - 30.0% of mass 198	100752	25.1		Pass
365	1.0 - 100.0% of mass 198	14855	3.70		Pass
441	Present, but less than mass 443	43436	10.8	(75.3) [b]	Pass
442	40.0 - 100.0% of mass 198	305597	76.1		Pass
443	17.0 - 23.0% of mass 442	57668	14.4	(18.9) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E6P3603-CC3601	6P503554.D	05/27/22	17:02	00:12	Continuing cal 50
E6P3603-CC3602	6P503555.D	05/27/22	17:25	00:35	Continuing cal 50
OP39822-MB1	6P503556.D	05/27/22	17:58	01:08	Method Blank
OP39822-BS1	6P503557.D	05/27/22	18:21	01:31	Blank Spike
ZZZZZZ	6P503558.D	05/27/22	18:45	01:55	(unrelated sample)
ZZZZZZ	6P503559.D	05/27/22	19:08	02:18	(unrelated sample)
ZZZZZZ	6P503560.D	05/27/22	19:32	02:42	(unrelated sample)
JD45109-1	6P503561.D	05/27/22	19:55	03:05	(used for QC only; not part of job JD45192)
ZZZZZZ	6P503562.D	05/27/22	20:19	03:29	(unrelated sample)
ZZZZZZ	6P503563.D	05/27/22	20:42	03:52	(unrelated sample)
ZZZZZZ	6P503564.D	05/27/22	21:05	04:15	(unrelated sample)
ZZZZZZ	6P503565.D	05/27/22	21:29	04:39	(unrelated sample)
ZZZZZZ	6P503566.D	05/27/22	21:52	05:02	(unrelated sample)
ZZZZZZ	6P503567.D	05/27/22	22:16	05:26	(unrelated sample)
ZZZZZZ	6P503568.D	05/27/22	22:39	05:49	(unrelated sample)
OP39822-MS	6P503569.D	05/27/22	23:02	06:12	Matrix Spike
OP39822-MSD	6P503570.D	05/27/22	23:26	06:36	Matrix Spike Duplicate
ZZZZZZ	6P503571.D	05/27/22	23:49	06:59	(unrelated sample)
ZZZZZZ	6P503572.D	05/28/22	00:13	07:23	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Sample:	E6P3603-DFTPP	**Injection Date:**	05/27/22
Lab File ID:	6P503553.D	**Injection Time:**	16:50
Instrument ID:	GCMS6P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JD45192-1	6P503573.D	05/28/22	00:36	07:46	AOI8-BH-22-08-6-8
JD45192-2	6P503574.D	05/28/22	01:00	08:10	AOI8-BH-22-09-6-8
JD45192-3	6P503575.D	05/28/22	01:23	08:33	AOI8-BH-22-10-6-8
ZZZZZZ	6P503576.D	05/28/22	01:46	08:56	(unrelated sample)
ZZZZZZ	6P503577.D	05/28/22	02:10	09:20	(unrelated sample)
ZZZZZZ	6P503578.D	05/28/22	02:33	09:43	(unrelated sample)

Surrogate Recovery Summary

Job Number: JD45192
Account: SUNOCOSS Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

Method: SW846 8270E **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JD45192-1	6P503573.D	34	28	6* [a]	35	47	38
JD45192-2	6P503574.D	38	39	43	42	43	43
JD45192-3	6P503575.D	44	45	50	49	48	50
OP39822-BS1	6P503557.D	45	45	50	46	48	49
OP39822-MB1	6P503556.D	50	48	47	49	52	53
OP39822-MS	6P503569.D	51	53	42	55	57	61
OP39822-MSD	6P503570.D	45	48	38	50	54	61

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	10-99%
S2 = Phenol-d5	10-96%
S3 = 2,4,6-Tribromophenol	10-123%
S4 = Nitrobenzene-d5	10-109%
S5 = 2-Fluorobiphenyl	11-109%
S6 = Terphenyl-d14	10-120%

(a) Outside control limits due to matrix interference.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 05/23/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.7	8.1		
Antimony	2.0	.17	.41		
Arsenic	2.0	.21	.28		
Barium	20	.08	1.9		
Beryllium	0.20	.03	.08		
Bismuth	2.0	.23	.52		
Boron	10	.23	3.7		
Cadmium	0.50	.03	.07		
Calcium	500	.66	21		
Chromium	1.0	.03	.37		
Cobalt	5.0	.04	.28		
Copper	2.5	.08	.84		
Iron	50	.53	19		
Lead	2.0	.11	.41	0.38	<2.0
Lithium	5.0	.48	.92		
Magnesium	500	3.2	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.06	.32		
Nickel	4.0	.04	.35		
Phosphorus	20	.12	3.3		
Potassium	1000	7.7	32		
Selenium	2.0	.32	.65		
Silicon	20	.17	11		
Silver	0.50	.1	.17		
Sodium	1000	3.4	78		
Strontium	5.0	.03	.18		
Sulfur	10	.3	3.9		
Thallium	1.0	.18	.58		
Tin	20	.08	3.8		
Titanium	1.0	.05	.34		
Tungsten	5.0	.26	1.8		
Vanadium	5.0	.06	.19		
Zinc	5.0	.01	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 05/23/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.03	.54		

Associated samples MP33010: JD45192-1, JD45192-2, JD45192-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 05/23/22

Metal	JD45192-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	84000	74100	287	-3445.1a	75-125
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Titanium					
Vanadium	anr				
Zinc	anr				
Zirconium					

Associated samples MP33010: JD45192-1, JD45192-2, JD45192-3

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 05/23/22

Metal	JD45192-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 05/23/22

Metal	JD45192-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	84000	93900	290		3410.3(a	23.6 (b) 20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Titanium						
Vanadium	anr					
Zinc	anr					
Zirconium						

Associated samples MP33010: JD45192-1, JD45192-2, JD45192-3

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 05/23/22

	JD45192-1	Spikelot		MSD	QC
Metal	Original MSD	MPSPK2	% Rec	RPD	Limit

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(b) High rpd due to possible sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 05/23/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	199	200	99.5	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 05/23/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP33010: JD45192-1, JD45192-2, JD45192-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 05/23/22

Metal	JD45192-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	590000	602000	2.0	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 05/23/22

Metal	JD45192-1 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP33010: JD45192-1, JD45192-2, JD45192-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

POST DIGESTATE SPIKE SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 05/23/22

Metal	Sample ml	Final ml	JD45192-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

POST DIGESTATE SPIKE SUMMARY

Login Number: JD45192
Account: SUNOCOSS - Sunoco/Evergreen
Project: SECORPAE:Former Philadelphia Refinery, 3144 Passyunk Avenue, Philadelphia, PA

QC Batch ID: MP33010
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 05/23/22

Metal	Sample ml	Final ml	JD45192-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zirconium										

Associated samples MP33010: JD45192-1, JD45192-2, JD45192-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

ATTACHMENT E

Evergreen Field Procedures Manual

Evergreen
Field Procedures Manual

Sunoco Partners Marcus Hook Industrial Complex and Philadelphia Energy Solutions (PES) Philadelphia Refinery Complex

Evergreen Resources Management Operations

May 20, 2016

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1.0 INTRODUCTION

This Field Procedures Manual outlines the standard operating procedures developed to ensure the collection and analysis of quality data for investigations completed under the United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) program, Pennsylvania Department of Environmental Protection (PADEP) Act 2 program and Pennsylvania and Delaware's Tank programs at the Sunoco Partners Marketing and Terminals, LP (Sunoco Partners) Marcus Hook Industrial Complex (MHIC) and the Philadelphia Energy Solutions Refining and Marketing, LLC (PES) Philadelphia Refinery Complex (PRC) on behalf of Evergreen Resources Management Operations (Evergreen). The MHIC and PRC are herein referred to as facility or site.

Evergreen's consultants collect data in pursuit of site characterization and remediation that will meet the expectations of the appropriate regulatory agencies. This document shall be used in conjunction with the site-specific work plans developed for each site and the QA/QC Plan of which this manual was incorporated as Appendix A.

1.1 Training Qualifications

All field personnel involved in field work at MHIC and the PRC shall have completed and where applicable, be current with OSHA 40-hour HAZWOPER training, annual OSHA 8-hour HAZWOPER refresher, Process Safety Management (PSM) training, site-specific safety module training for current facility badges (including fire watch and hole watch, if required), TWIC Card, annual drug screening, and annual respirator fit testing. All field personnel new to the facility should be provided with onsite health and safety (H&S) orientation by an experienced member of the project team. The onsite orientation should include review of the facility's emergency action plan and training on Evergreen and site-specific H&S requirements. Appropriately qualified personnel should perform field work, based on the work scope and experience level required by the task to be executed.

1.2 Health and Safety Requirements

All consultants performing work at the referenced sites on behalf of Evergreen shall comply with the *Evergreen Resources Management Operations Health and Safety Requirements* dated June 1, 2014. This includes contractors, sub-contractors, and third party companies performing

work for Evergreen at MHIC and the PES PRC. Each consultant must also have their own site-specific health and safety plan (HASP) submitted to and approved by Evergreen prior to performing any work. A site-specific HASP must be reviewed and signed by all field personnel prior to commencement of field activities.

1.3 PPE Requirements

The minimum standard PPE at the facilities includes fire resistant clothing (FRC; coveralls may be Nomex or other FRC, 6 ounce minimum, orange in color) with the name of the company displayed on the back of the garment, hard hat, sturdy safety-toe boots, safety glasses, long-gauntlet leather gloves, and personal H_2S monitors. Nitrile gloves for chemical protection and hearing protection may also be required depending on the location and type of work. Workers are to be trained on these PPE requirements before being permitted onsite. An appropriate respirator may be required if site-specific air monitoring action levels are met, in accordance with the site-specific HASP. If a worker has a particular sensitivity or concern, a respirator may be worn regardless of OSHA action levels. During winter weather conditions, slip prevention footwear such as crampons or overshoes should be worn for traction. Task-specific PPE will be further identified in following sections.

1.4 Site Controls

Safety cones and/or caution tape should be used in high traffic areas. The "Buddy System" may also be employed in high traffic areas, in areas where other contractors are working, and in remote areas. Additional task-specific site controls will be detailed in following sections.

1.5 Equipment and Decontamination

Numerous practices are employed throughout the processes of site investigation and sampling to assure the integrity of the resulting data. The risk in use of non-dedicated equipment at multiple sampling locations lies in the potential for cross-contamination. While the threat of cross-contamination is always present, it can be minimized through the implementation of a consistent decontamination program during sensitive site measurement and data collection activities.

All site equipment to be used in multiple locations (non-dedicated) for sampling of soil, sediment, and/or groundwater will be decontaminated immediately prior to initial use and between uses at each location according to the following steps:

- Remove particulates with a sorbent pad or towel and/or initial rinse with clean potable tap water;
- Wash equipment with clean sponge, soft cloth, or scrub brush as necessary in a solution of tap water/laboratory grade detergent (Alconox®, Liquinox®, or equivalent);
- Rinse with tap water;
- Rinse with deionized or distilled water; and
- Air dry for as long as possible.

Rinse water generated during decontamination procedures will be treated onsite by passing the water through a bucket or tube filled with activated carbon prior to discharge to the ground surface. Additional decontamination procedures may be appropriate depending on the task, and will be identified in the following sections, as applicable.

1.6 Documentation

All site activities and conditions for characterization activities should be recorded by field personnel in a field computer (e.g., YUMA) using the EQuIS Data Gathering Engine (EDGE) application, or if necessary, a field book may be used. The entry shall include at a minimum, the date, time, weather conditions, location, personnel present onsite, field readings, sampling methodology, as well as additional comments or observations. Task specific observations which should also be recorded will be identified in the following applicable sections.

2.0 LIQUID LEVEL ACQUISITION (WELL GAUGING) PROCEDURES

2.1 Potential Hazards

Traffic, pinch points, chemical (airborne and physical contact), and biological are all likely hazards to be encountered as well as slip/trip/fall potential during onsite well gauging activities. Additional hazards may be mentioned in the site-specific HASP and/or the daily job safety analysis (JSA).

2.2 Materials and Equipment Necessary for Task Completion

Optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy, decontamination supplies (laboratory-grade detergent, deionized or distilled water, appropriate containers, scrub brush, and sorbent pads or paper towels), socket set, flathead screwdriver (or pry bar or manhole cover lifter), clear bailers with string for confirmation of light non-aqueous phase liquids (LNAPL), if necessary, and air monitoring instruments (optional, based on previous site visits).

2.3 Methodology

This task involves the deployment of an optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy into a well (in most cases), recording the measurement, and decontaminating the probe. The recorded field measurements may then be utilized for one of several applications including: well sampling, water table gradient mapping, LNAPL occurrence, LNAPL thickness, and/or gradient mapping, and various testing procedures. Wells should be gauged in order of least to most contaminated, based on existing sampling data or LNAPL occurrence, to minimize the potential for cross-contamination between wells. If LNAPL is detected in a well that does not typically have LNAPL, it should be confirmed with a clear bailer.

The proper procedure for liquid level acquisition is as follows:

1) Decontaminate the optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy prior to initial deployment, and again after each well measurement to prevent cross-contamination between wells.

2) If warranted, mark off a work area surrounding the well(s) to be gauged with safety cones and/or caution tape in order to protect personnel from auto traffic; the "Buddy System" may also be employed.

3) Where applicable, lift the manhole cover off of the well head (a screwdriver, pry bar, or manhole cover lifter may be used to lift the cover depending on the size of the manhole) or open protective well casing (stickup) and remove the well plug, if present.

4) Most wells should contain a mark or notch in the top edge of the casing from which normalized readings are to be measured (reference point elevation). Slowly lower the optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy into the well until the instrument signals contact with liquid. Note whether or not the instrument's tone is indicative of the presence of free-phase LNAPL (commonly a solid tone), or water (commonly an oscillating or beeping tone). If LNAPL is present, record the depth at which LNAPL was first indicated to the nearest hundredth of a foot, as measured from the top of well casing mark/notch. Slowly lower the probe through the LNAPL until the instrument's tone changes to indicate the presence of water. Record the depth at which water was first indicated to the nearest hundredth of a foot. A clear bailer may be used to verify the existence or approximate amount and appearance of LNAPL. If no LNAPL is apparent, record the depth to water.

5) Retract the probe from the well and secure the well appropriately.

6) Note the date and time of measurement for gauging and record all measurements and observations in the field computer or, if necessary, in a field book for subsequent electronic data entry.

7) Decontaminate the probe in accordance with the decontamination procedure outlined in Section 1.5.

8) Clean up the work area, remove gauging equipment, and remove any traffic control devices.

3.0 GROUNDWATER MONITORING PROCEDURES

3.1 Potential Hazards

Traffic, pinch points, chemical (airborne and physical contact), and biological are all likely hazards to be encountered as well as slip/trip/fall potential during onsite well gauging activities. Additional hazards may be mentioned in the site-specific HASP and/or the daily JSA.

3.2 Materials and Equipment Necessary for Task Completion

A list of equipment required to access, gauge, purge, and sample site monitoring wells is presented below. Also listed are materials necessary to store, label, preserve, and transport groundwater samples.

- Current site map detailing well locations;
- Field book and/or field computer for recording site data;
- Graduated, optical oil/water interface probe;
- Keys and tools to provide well access;
- Appropriate, laboratory prepared sample containers and labels;
- Appropriate well purging apparatus as determined by volume of groundwater to be purged and compounds to be analyzed;
- Water quality meter for monitoring indicator field parameters (DO, pH, specific conductance, redox potential, and turbidity if available);
- Dedicated polyethylene bottom-loading bailer or well pump and disposable tubing for groundwater sample collection;
- Clean nylon or polypropylene bailer cord;
- Disposable nitrile sampling gloves;
- Decontamination supplies;
- Calibrated five-gallon bucket and watch or stopwatch to determine discharge rate during purging;
- Blank chain-of-custody forms; and

- Cooler(s) and ice for sample preservation.

3.3 Methodology for Three Well Volume Sampling

Prior to site visitation for the groundwater sampling event, the following data will be reviewed to ensure proper preparation for field activities:

- Most recent liquid level data from all wells;
- Most recent analytical data from all wells to determine gauging and sampling sequence; and
- Well construction characteristics.

Each monitoring well to be sampled will be gauged to obtain liquid level data immediately prior to initiation of the sampling process (refer to well gauging procedures above). Liquid level data should be recorded in a field computer or if necessary, a field book. Should free-phase LNAPL be detected by the gauging process, routine groundwater sampling will not be conducted at that location. If groundwater sampling under LNAPL is warranted, refer to the sub-LNAPL sampling section and methodology in Section 3.6.

Groundwater sampling will be initiated by purging from the well a minimum of three well volumes, except in cases where the well is pumped dry, as referenced below. Well purging is performed to remove stagnant water and to draw representative water from the aquifer into the well for subsequent sampling and analysis. In extreme cases where a well is pumped dry and/or shows little recharge capacity, the well should be evacuated once prior to sampling. Wellbore storage volume should be estimated using as-built information stored in the field computer or as indicated on the well log, and the depth to water measurement obtained immediately prior to sampling.

Water quality should be monitored and readings recorded in the field computer or field book while purging, typically through use of a multi-parameter water quality meter with a flow through cell or cord for down-well measurements. Water quality readings should be recorded a minimum of three times (pre-purge, during purge, and post-purge/sample collection) or four times (pre-purge and following each well volume). The parameters to be monitored and recorded are

dissolved oxygen, pH, specific conductance, redox potential, temperature, and turbidity if available.

Well purging can be performed with various equipment including: a dedicated bailer for hand bailing low volumes of water; a surface mounted electric centrifugal pump with dedicated polyethylene tubing; and/or submersible pump (particularly when the depth to water is greater than 20 feet) with dedicated polyethylene tubing. During pumping, the intake will be placed directly below the static water surface and slowly lowered during the purging process. This procedure may not be necessary in low-yielding wells but is important in high-yielding, permeable strata where an intake initially placed deep in a well may draw laterally and have little influence in exchanging water from shallower depths within the well bore.

Flow rate during well purging will be approximated by the bucket and stop watch method. The duration of pumping required to remove three well volumes will be calculated directly from this flow rate. All fluids removed during purging will be treated onsite with activated carbon or in accordance with an approved work plan.

The sequence of obtaining groundwater samples will be based upon available historical site data for existing wells and photoionization detector (PID) readings for newly installed wells. Monitoring wells will be sampled in order of those having the lowest to highest concentration of constituents of concern (or PID readings for new wells), based upon the most recent available set of laboratory analyses, to reduce the potential for cross-contamination. For general monitoring events, groundwater samples will not be obtained for analysis from any well containing measurable free product. If groundwater sampling under LNAPL is warranted, refer to the sub-LNAPL sampling section and methodology in Section 3.6.

The following sequence of procedures will be implemented for the collection of groundwater samples from monitoring wells.

1) Establish a clean work area where sampling equipment will not come in contact with the ground or any potentially contaminated surfaces.
2) Use a dedicated polyethylene sampling bailer for each well.
3) Use a clean pair of nitrile gloves.

4) Attach an appropriate length of unused, clean nylon or polypropylene cord to the designated sampling bailer.

5) Select appropriate laboratory-provided sample containers.

6) Slowly lower sampling bailer into well until water surface is encountered; continue to lower the sampling bailer into the standing water column to one foot below the water surface.

7) Retrieve bailer at a steady rate to avoid excess agitation.

8) Visually inspect bailed sample to ensure that no free product or organic detritus has been collected.

9) Uncap first designated sample vial and fill from bailer as rapidly as possible but minimizing agitation; secure septum and lid.

10) Inspect sealed sample for entrapped air; if air is present, remove the lid and gently top off sample in vial, seal and inspect. Repeat until no air is apparent.

11) Repeat Steps 9 and 10 for the remaining sample vials based on the laboratory and/or regulatory protocol.

12) Complete and attach labels to sample containers noting sample collector, date, time, and location of sample; record same data in field computer or field book.

13) Place samples in ice-filled cooler in such a manner as to avoid breakage. Samples will be maintained at a temperature of approximately 4°C.

14) Dispose of gloves, bailer, and bailer cord as solid waste and move to next sample location.

3.4 Methodology for Low-Flow Purging and Sampling

For wells that will be purged and sampled via low-flow methodology, the USEPA Region III Bulletin QAD023: *Procedure for Low-Flow Purging and Sampling of Groundwater Monitoring Wells* will be followed. The following data will be reviewed for each well in order to set the pump intake for the low-flow sampling:

- Soil boring lithologic log;
- Well construction log showing the screened interval;
- Identification of the most permeable zone screened by the well;
- Approximate depth to static water;

- Proposed pump intake setting; and
- Technical rationale for the pump intake setting, preferably across from the most impacted/contaminated subsurface interval.

Adjustable rate, submersible, bladder pumps in conjunction with polyethylene tubing for purging and sampling will be used. An alternate set up could include a stainless steel submersible pump, such as a Hurricane® pump or a Monsoon® pump with dedicated polyethylene tubing. The tubing diameter will be between 3/16-inch and ½-inch inner diameter and the length of the tubing extended outside of the well should be minimized. Flow-through cells will be used to monitor groundwater quality parameters during sampling. Monitoring well information, equipment specifications, water level measurements, parameter readings, and other pertinent information will be recorded during well purging and sampling.

The following sequence of procedures will be implemented for the collection of groundwater samples from monitoring wells by the low-flow methodology.

1) PID Screening of Well: A PID measurement may be collected at the rim of the well immediately after the well cap is removed and recorded in the field computer or field book, if historic data is not available.
2) Depth to Water Measurement: A depth to water measurement will be collected and recorded. To avoid disturbing accumulated sediment and to prevent the inadvertent mixing of stagnant water, measuring the total depth of the well should be done at the completion of sampling.
3) Low Stress Purging Startup: Water pumping will commence at a rate of 100 to 400 milliliters per minute (mL/min). This pumping should cause very little drawdown in the well (less than 0.2-0.3 feet) and the water level should stabilize. Water level measurements are made frequently, and flow rate will be recorded in mL/min on the sampling form or field computer.
4) Low Stress Purging and Sampling: The water level and pumping rate will be monitored and recorded every five minutes during purging, and any pumping rate adjustments will be recorded. During the early phase of purging, emphasis will be placed on minimizing and stabilizing pumping stress, and recording any necessary adjustments. Adjustments, when necessary, will be made in the first 15 minutes of purging. If necessary, pumping rates will

be reduced to the minimum capabilities of the pump to avoid well dewatering. If the minimal drawdown exceeds 0.3 feet, but the water level stabilizes above the pump intake setting, purging will continue until indicator field parameters stabilize, as detailed in Step 5 below. If the water level drops below the pump intake setting at the absolute minimum purge rate, the pump will remain in place and the water level will be allowed to recover repeatedly until there will be sufficient water volume in the well to permit the collection of samples.

5) Indicator Field Parameter Monitoring: During well purging, indicator field parameters (DO, pH, specific conductance, redox potential, and turbidity if available) will be monitored every five minutes (or less frequently, if appropriate). Purging will be considered complete and sampling can commence when all the indicator field parameters have stabilized. Stabilization will be achieved when three consecutive readings, taken at five minute intervals (or less frequently, if appropriate), are within the following limits:
    - DO (±10 percent);
    - turbidity (±10 percent);
    - specific conductance (±3 percent);
    - pH (± 0.1 unit); and
    - redox potential ([Eh] ±10 mv).

    Temperature and depth to water will be also monitored during purging. Should any of the parameter-specific components of the water quality meter fail during monitoring, the sampling team will attempt to locate a replacement multi-meter or individual criteria meter. If none are available, the sampling team will continue recording the parameters that are operational, and proceed with the sampling. Any other field observations relating to sample quality, such as odor, foaming, effervescence, and sheens, will also be recorded in the field computer or on the sampling form.
6) Collection of Ground Water Samples: Water samples for laboratory analyses will be collected prior to the flow-through cell by either using a bypass assembly or by temporarily disconnecting the flow-through cell. All sample containers will be filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence. During purging and sampling, the tubing should remain filled with water in order to minimize possible changes in water chemistry upon contact with the atmosphere. Methods employed to ensure that the outlet tubing will be filled include adjusting the tubing angle upward to

completely fill the tubing and restricting the diameter of the tubing near the outlet of the tubing.

The order in which samples will be collected is as follows:

- Volatile organics;
- Gas sensitive (e.g., Fe^{+2}, CH_4, H_2S/HS);
- Base neutrals or PAHs;
- Total petroleum hydrocarbons;
- Total metals;
- Dissolved metals;
- Cyanide;
- Sulfate and chloride;
- Nitrate and ammonia;
- Preserved inorganic;
- Non-preserved inorganic; and
- Bacteria.

After the appropriate laboratory-provided glassware is filled and labeled, the samples shall be placed in an ice-filled cooler and maintained at approximate 4°C for submittal to the laboratory. Upon completion of sampling at the well, decontaminate non-dedicated equipment in accordance with the decontamination procedure outlined in Section 1.5, and dispose of all dedicated equipment (gloves, tubing, etc.) as solid waste before moving to the next location.

3.5 Methodology for Passive (No-Purge) Sampling for Groundwater Collection

There are many passive groundwater sampling devices that allow for accurate sample collection without purging. Each device has specific uses and conditions for which they are more applicable. This methodology presents details for the use of HydraSleeve samplers.

The HydraSleeve is a disposable, single use device for the collection of representative groundwater samples for laboratory analysis of physical and chemical parameters.

HydraSleeves are placed within the screened interval (or other defined interval) of the well and activated after an equilibrium period. When used according to the manufacturer's instruction, the HydraSleeve will collect a groundwater sample without purging, thus causing no drawdown, agitation, or water column mixing. The HydraSleeve collects a sample from the screened interval only, and excludes water (or other fluids) from other parts of the well by use of check valve that seals when the sampler is full. The HydraSleeve takes advantage of the continuous natural movement of groundwater, which produces an equilibrium condition between the water in a well screen and the adjacent formation. HydraSleeves produce reliable data from low yield wells where other sample methods cannot due to well screen dewatering and associated alteration in water chemistry.

The HydraSleeve consists of the following components:

1) A long (usually 3 to 5 feet), flexible, lay-flat polyethylene sample sleeve, which is sealed at the bottom, and is equipped with a reed valve at the top allowing water to enter the HydraSleeve only during active sample retrieval.
2) A reusable, stainless steel weight attached with a clip to the bottom of the sleeve. The weight is used to carry the sample sleeve down the well to the specified depth (usually the bottom of the well screen). An optional top weight is also available to compress the sleeve in wells with short well screens.
3) A tether line attached to a spring clip at the top of the sample sleeve to deploy the device within the well and later retrieve it for sample collection.
4) A discharge tube is supplied with the device, which is used to puncture the wall of the sleeve after it is recovered to allow direct filling of sample bottles.

Deployment

Upon retrieval, the HydraSleeve is designed to effectively collect a "core" of water from within the well screen, which is equivalent in length and diameter to the sample sleeve. The upward motion opens the valve at the top, which then allows the device to fill with water. The Hydrasleeve should be installed with the top of the sample sleeve as close to the desired sample interval as possible. This will allow the sampler to fill and the check valve to close before the top of the device is pulled past the top of the sample interval.

To assemble and deploy the HydraSleeve:

1) Remove the Hydrasleeve from its package and hold it by the top, pinching the top at the holes.
2) Attach the spring clip and tether in the holes.
3) Slide the clip and bottom weight assembly into the holes at the bottom of the sleeve.
4) Lower the Hydrasleeve by the tether to the bottom or to the specified depth and secure the tether at the wellhead (Note: do not pull the HydraSleeve upward at any time during deployment, as this could cause the check valve to open and water to fill the sleeve inadvertently).

Sample Collection

Although the HydraSleeve only displaces approximately 100 milliliters (ml) of water during deployment, the well should be allowed to stabilize prior to sample collection so that natural flow conditions and contaminant distribution can return to equilibrium conditions. In certain jurisdictions, regulatory directives may prescribe a minimum equilibration period. When used for periodic monitoring programs, such as quarterly or semi-annual sampling, the HydraSleeve can be installed and remain in the well until the next sampling event, thus providing ample time for the well to equilibrate.

To collect a sample:

1) Be sure the tether is secured to the top of the well.
2) In one smooth motion, pull the tether upward at a rate of approximately 1 foot per second. The weight of the sampler will be felt when the valve closes. Continue pulling upward until the HydraSleeve is clear of the well.
3) Discard the water trapped at the top of the HydraSleeve above the reed valve.
4) Hold the HydraSleeve at the reed valve, and puncture the sleeve with the discharge tube just below the reed valve.
5) Decant the water into sample containers.
6) Discard the HydraSleeve as solid waste and process the excess water through activated carbon prior to discharge to the ground surface.

The weight and clips should be decontaminated prior to deploying a replacement HydraSleeve in the well. Tethers can be dedicated to individual wells or decontaminated and reused.

3.6 Methodology for Sub-LNAPL Sampling

The following section describes the methodology used for obtaining groundwater samples from the water column beneath LNAPL. Wells for sub-LNAPL sampling are not purged of three well volumes prior to sampling. This will prevent the potential of drawing LNAPL into the sample and to be representative of steady-state groundwater conditions beneath the LNAPL.

The following data will be reviewed for each well in order determine the appropriate equipment necessary:

- Well construction log showing diameter and total depth of the well;
- Approximate depth to LNAPL; and
- Approximate depth to static water.

A list of equipment for sub-LNAPL sampling is presented below:

- Field book or field computer for recording site data;
- Optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy;
- Keys and tools to provide well access;
- Peristaltic pump;
- Polyethylene tubing specifications of 0.25-inch outer diameter x 0.17-inch inner diameter is preferable as this small diameter assists in achieving lower flow rates;
- Silicone tubing of appropriate diameter to operate peristaltic pump;
- Polyvinyl chloride (PVC) drop tube (1.5-inch or other appropriate diameter);
- PVC rod (0.5-inch or other appropriate diameter);
- PVC end cap for drop tube;
- Tether for end cap;
- Clamps for securing drop tube to well casing;
- Appropriate sample containers and labels;

- Decontamination supplies;
- Blank chain-of-custody forms; and
- Cooler and ice for sample preservation.

The following sequence of procedures will be implemented for the collection of sub-LNAPL groundwater samples.

1) Determine LNAPL Thickness: Use an optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy to collect depth to LNAPL and depth to water measurements.
2) Installing Sampling Equipment: Deploy a 1.5-inch (or other appropriate diameter) PVC pipe (drop tube), with an attached end cap, through the LNAPL layer in the well. The end cap should be tethered to the drop tube so it is not lost in the well when removed and in a way that allows the drop tube to be sealed during installation. Lower the drop tube until the bottom of the tube is approximately two feet into the water column below the bottom of the LNAPL. Secure the drop tube to the well, and allow the system to equilibrate, approximately one half hour. The end cap is then removed by inserting a 0.5-inch (or other appropriate diameter) PVC rod into the drop tube and pushing on the cap until the lid is removed. The cap will be removed along with the tube upon completion of sampling.
3) Collection of Groundwater Samples: Lower polyethylene tubing through the 1.5-inch drop tube into the water column. Connect the polyethylene tubing to silicon tubing and engage the peristaltic pump for groundwater retrieval. Set the flow rate to the lowest pumping rate that can be sustained so that the LNAPL is not drawn into the tubing. Begin collecting groundwater in the sample container and continue until enough volume is obtained for all bottleware required by the laboratory for the requested analyses.

3.7 Decontamination Requirements

Of particular significance to the procedures of groundwater measurement and sampling is the limitation, whenever possible, of materials inserted into a well bore and, even more importantly, of materials transferred from well to well.

Many items can be discarded between well sampling and/or gauging locations without significantly impacting project costs. Dedicated sampling equipment which can be discarded

between well sampling locations, will be used whenever possible to preclude decontamination requirements. Sampling equipment included in this category are polyethylene bailers, bailer cord, nitrile gloves, and sampling tubing. However, other monitoring and sampling equipment, such as oil/water interface probes and submersible sampling pumps, must be reused from well to well.

All site equipment to be used in multiple locations (non-dedicated) for gauging and/or sampling of groundwater will be decontaminated immediately prior to initial use and between uses at each location according to the following steps:

- Remove particulates with a sorbent pad or towel and/or initial rinse with clean potable tap water;
- Wash equipment with clean sponge, soft cloth, or scrub brush as necessary in a solution of tap water/laboratory grade detergent (Alconox®, Liquinox®, or equivalent);
- Rinse with tap water;
- Rinse with deionized or distilled water; and
- Air dry for as long as possible.

Rinse water generated during decontamination procedures will be treated onsite by passing the water through a bucket filled with activated carbon prior to disposal.

3.8 Documentation

All site activities and conditions at the time of purging and groundwater sampling should be recorded by field personnel in a field computer via the EDGE application or, if necessary, a field book may be used. The entry shall include the date, time, weather conditions, location (well name), personnel present onsite, PID readings, sampling methodology, purge rate, purge volume, and the aforementioned groundwater indicator parameters. A field qualifier “SL” shall be applied to each sub-LNAPL sample entry to denote sample collection as sub-LNAPL. Additional comments or observations (e.g., well damage, nearby pumping, LNAPL sheen) should also be recorded.

4.0 SOIL SAMPLING & WELL INSTALLATION PROCEDURES

4.1 Site Controls

Prior to hand augering, hydroexcavation, utilizing a backhoe, or deploying any drilling apparatus to the site, an underground utility line protection request must be made (i.e., Pennsylvania One Call) for mark-out of known subsurface utilities and associated laterals proximal to the drilling location. Site plans, if available, should be reviewed to document and avoid the location of onsite utilities.

After review of all known mapped and marked utilities, a site reconnaissance will be performed to document the location of utility meters and storm sewer drains. In addition, the location of overhead utilities must be documented. After completing the subsurface and overhead utility review, the area to drill may be considered clear of utilities, or the location may be adjusted to a nearby location, which must also be cleared.

Lastly, any drilling activities must be preceeded by clearing of the borehole, prior to advancement of augers or split spoons. To ensure the safety of workers, the borehole will be cleared by hand, hydroexcavator, or backhoe to a depth of approximately 8 feet below ground surface.

4.2 Potential Hazards

Traffic, pinch points, chemical (airborne and physical contact), and biological are all likely hazards to be encountered during soil sampling and well installation, as well as slip/trip/fall potential. Drilling is considered a high risk activity which requires facility approval prior to implementation. Additional hazards are identified in the site-specific HASP and/or the daily JSA.

4.3 Materials and Equipment Necessary for Task Completion

A list of equipment required to oversee test boring advancement and, where applicable, sample soil is presented below. Also listed are materials necessary to store, label, preserve, and transport soil samples.

- Current site map detailing well locations;
- Field computer and/or field book for recording site data;

- Appropriate, laboratory prepared sample containers and labels;
- PID;
- Single-use, disposable plastic scoops or stainless steel scoop for collecting soil samples;
- Single-use, disposable, laboratory-supplied syringes for soil sample collection (if applicable);
- Scale for weighing samples (e.g., methanol kits, if necessary);
- Disposable nitrile sampling gloves;
- Measuring tape (for measuring core recovery);
- Munsell soil color chart/book (recommended);
- Decontamination equipment (if applicable);
- Blank chain-of-custody forms; and
- Cooler(s) and ice for sample preservation.

4.4 Decontamination Requirements

All down-hole drilling equipment must be steam cleaned prior to drilling at each soil boring or well location. All soil sampling equipment must be cleaned with detergent and rinsed with deionized or distilled water prior to deployment into the borehole. All well construction materials (i.e. PVC well casing, PVC well screen, sand pack, bentonite) should be clean and dedicated to each borehole.

4.5 Methodology for Soil Boring Installation

4.5.1. Borehole Advancement

During test drilling activities, a borehole is advanced into the subsurface via a rotary or direct-push drilling technique. Various types of drilling methods could be deployed at these facilities to advance the borehole and gain access to the subsurface for characterization and sampling. A description of the most commonly utilized drilling methods is included below:

4.5.1.1 Hollow Stem Auger

A hollow, steel pipe (available diameters vary) with welded, exterior steel "flights" is used to convey subsurface material to the surface when rotated clockwise. A bit at the bottom of the lead auger cuts into the subsurface material, and the rotation conveys the loosened material (cuttings) up the flights, allowing the hole to be advanced (cuttings may not always return to the surface, such as when drilling in soft, saturated materials). The hollow center of the auger allows the driller to access the subsurface for soil sample collection and, where applicable, well installation during borehole advancement. During borehole advancement, a center stem of steel rods connected to an auger plug prevent soil cuttings from entering the drill column. Once a desired drilling depth is reached, the center plug and rods can be pulled out, leaving the auger stem in place to prevent borehole collapse. A split-spoon sampler can be threaded onto the rods in place of the plug and driven via a hammer to obtain a sample (Standard Penetration Test), or if terminal depth has been reached a monitoring well could be installed through the augers.

4.5.1.2 Air and Mud Rotary

Rotary drilling methods are similar to hollow stem auger drilling, however specialized drilling bits at the bottom of rods are used to cut into the subsurface material using compressed air, vibration, and/or pressurized drilling mud. Compressed air or mud is forced through the drilling rods via an air compressor or pump, and escapes through small holes in the drill bit. The circulation of drilling mud, or air combined with introduced water or formation water, conveys the soil cuttings to the surface (while also cooling the drilling bit and preventing borehole collapse).

4.5.1.3 Geoprobe®

A direct-push drilling method, Geoprobe® sampling utilizes a hydraulic hammer to drive steel rods into the subsurface for soil sampling. This method advances a core barrel lined with a plastic Macro-Core® sleeve into the soil column for continuous soil core collection.

4.5.1.4 Hand Auger

A stainless steel or aluminum hand auger is physically advanced to a desired soil sampling depth through rotation of the auger and head.

4.5.2 Soil Sampling

Soil samples will be obtained for lithologic logging and where appropriate, for laboratory analysis with one of three different sampling devices: Split barrel spoon sampler, hand auger, or Geoprobe® soil sampler. For either method, the sampling devices are lowered through the hollow-stem augers or open borehole to allow sampling of undisturbed sediments below the bit or drive shoe. Soil samples will be collected at regular intervals for subsurface characterization and selection of appropriate well screen interval(s). Soils which appear to be visually impacted or from intervals which exhibit the highest deflections on the screening device (PID or similar) will be sampled for laboratory analysis in accordance with an approved sampling plan.

4.5.2.1. Split barrel spoon sampler (split spoon)

The split spoon sampler will be driven into the soil column in accordance with ASTM Standard Method D1586 (Reference A6, Appendix E). Soil sampling by split spoon is characterized by drilling a borehole with a hollow-stem auger to the desired sampling depth (the standard calls for one sample per five foot depth interval). The split spoon sampler is attached to the drilling rods after removal of the auger plug. The drill operator will drive the sampler into the undisturbed soil by repeatedly striking the drilling rods with a 140 pound safety hammer over a 30 inch drop. Field personnel will record the number of blows required to drive the split spoon sampler for each successive six-inch interval. After the sampler has been filled, the driller will remove the rods and sampler from the borehole and should provide the intact sampler to field personnel for opening (the drive shoe and head can be loosened). Field personnel should split the spoon, scan with PID, measure sample recovery, thoroughly describe the soil lithology, note visual observations and odors, note degree of saturation, and where applicable collect soil sample(s) utilizing a stainless steel or disposable scoop. An approved, retractable knife may be used to trim the top and edges of the sample, and once prepared the sample should be containerized in appropriate sample containers.

4.5.2.2. Geoprobe®

The Geoprobe® operator will advance the drilling rods into the subsurface using a truck or track-mounted drill with a hydraulic hammer. A dedicated Geoprobe® Macro-Core® liner is

inserted into the core barrel to collect continuous core samples, usually one per 4 foot interval. The Geoprobe® operator will remove the soil filled liner from the core barrel, cut the liner, and provide field personnel with the intact cores. After retrieval of the sample, the liner may be removed by field personnel and the soil core should be scanned with a PID and logged, including documentation of core recovery, soil lithology, visual observations and odors, and degree of saturation. Where applicable, field staff should remove the soil sample utilizing a stainless steel or disposable scoop and containerize in an appropriate sample container.

4.5.2.3. Hand Auger

The self-powered hand auger allows for soil from the desired interval to be collected directly through removal of the soil sample that is collected in the auger head for every six inches of advancement.

4.6 Methodology for Leaded Tank Bottoms Soil Sampling

Leaded tank bottom material is described as containing materials distinguished by distinctive rust/red to black, metallic, mostly oxidized scale materials, sometimes in a matrix of petroleum wax sludge. The approach for identifying leaded tank bottom materials is summarized below:

- If materials are encountered within the previously designated leaded tank bottom areas, matching the physical description given above for leaded tank bottoms, then samples should be collected for lead analysis.
- If total lead results are above the site-specific standard (SSS) for lead of 2,240 milligrams per kilogram (mg/kg) then samples should be analyzed for lead via Toxicity Characteristic Leaching Procedure (TCLP), EPA Test Method 1311.
- Delineated areas that exhibit soils that physically resemble leaded tank bottoms, exhibit lead concentrations greater than 2,240 mg/kg, and exceed 5 milligrams per liter (mg/l) for lead in the TCLP leachate (which is characteristically hazardous for lead) will retain the leaded tank bottom designation. If no soils are encountered that meet all three of these criteria, then the area will no longer be classified as a leaded tank bottom area.

4.7 Methodology for Monitoring Well or Recovery Well Installation

4.7.1 Well Construction

After drilling to a desired terminal depth via any of the drilling methods referenced above, permanent monitoring wells can be installed to allow access to groundwater for future monitoring and groundwater sampling. In general, monitoring wells are constructed of pipe with a slotted interval(s) (screen) through which groundwater can flow into the well from a desired water-bearing stratum. In most cases, PVC materials are utilized for monitoring well construction.

- For applications where LNAPL thickness measurement is necessary, the screened interval should extend above the presumed highest groundwater level.
- For applications where the shallowest groundwater interval is to be monitored (e.g., water-table aquifer), a single well casing is installed.
- For applications where multiple water bearing strata will be penetrated and where deep groundwater conditions are selected for monitoring, a double-cased well may be installed to prevent the vertical migration of contaminants to the deeper water bearing zone from shallower zone(s).

Each well construction type and considerations for field staff regarding how many casings are needed have been provided below.

4.7.1.1 Single Casing Construction

The most commonly installed monitoring well at the facilities have single casings and are constructed of PVC. To determine the length of screen used, seasonal groundwater table or tidal fluctuations should be considered to allow the water table to intercept the well screen throughout the year. Field personnel should advise the driller on the required well diameter, total well depth, screen interval, screen length, and slot size based on available subsurface information prior to drilling. Once the borehole is completed and the drilling crew has been advised on the desired construction, the drilling crew will thread the well screen onto an end cap at the wellhead and will lower the well into the borehole, adding lengths of casing until the terminal depth is reached.

While the well is held near the center of the borehole, the annular space between the well screen and formation is carefully backfilled with a sand filter pack, which consists of clean,

sorted quartz sand sized to the formation grain size (typically #1 or #2 sand). The sand pack establishes continuity with the formation and acts as a filter to prevent soil from entering the well (the well screen slot size should be sized according to the formation median grain size to mitigate sediment intrusion, however is most commonly available from suppliers as 0.01 or 0.02-inch diameter slot size).

The sand pack should extend one to two feet above the top of well screen, and care must be taken by the driller to not bridge the sand or overshoot the top of sand target depth (particularly when installing wells through the auger stem). Above the sand pack, a seal (grout) is installed in the annular space between the well casing and the soil. The seal is comprised of hydrated bentonite, sometimes amended with pellets or a grout consisting of hydrated Portland cement, bentonite powder, or a blend of the two. A conventional grout blend is 95% Portland cement and 5% bentonite powder. The purpose of the seal is to prevent surface water from infiltrating the well screen. It is installed from the top of the sand to one to two feet below ground surface.

In circumstances where the top of well sand terminates below the water table (e.g., deeper groundwater or submerged screen), grout should be mixed into a slurry at the ground surface and pumped via tremmie pipe or hose to prevent bridging. Above the well seal, the annular space can be backfilled with granular bentonite or concrete. A cement cap or well pad is placed at the surface to further mitigate potential infiltration of surface water. A locking, steel protective casing (stand pipe) or a locking, flush-mounted curb box should be installed to protect the well.

4.7.1.2 Double Casing Construction

Construction of a double cased well is similar to that of a single case well; however, to prevent groundwater infiltration from shallower water bearing zones, a second casing is installed through a surface casing. This type of construction requires drilling two different diameter boreholes.

During drilling through the shallower groundwater bearing zone(s), a larger diameter borehole is drilled and should be sized according to the desired well and/or outer casing diameter. This may require reaming of the borehole depending on the conditions and

drilling equipment. An outer (surface) casing is installed and the annulus is grouted. After the outer casing is installed and the grout has set, the borehole is advanced through the surface casing with a smaller diameter drill stem and bit. When the desired terminal depth is reached, a monitoring well is installed through the inner casing using the above-referenced single casing construction procedure (the annular space between the outer and inner casings above the well filter sand should be pressure grouted).

4.7.2 Handling of Soil Cuttings

Soil cuttings generated during drilling will be containerized or stockpiled on plastic until sampling and analytical data can be obtained. Soil cutting final placement (onsite soil reuse or offsite disposal) will be performed in accordance with Pennsylvania Department of Environmental Protection (PADEP) approved onsite soil reuse plans for each facility.

4.7.3 Well Development

After installation, monitoring wells will be developed to remove residual soil from within the well and filter media and to establish communication between the well and formation. Pump and surge methodology, either through use of a ditch pump or air compressor connected to black polyethylene pipe and surge block, should be utilized to successively agitate relatively clear groundwater from the well. Surging should begin from the bottom of the screened interval and continue iteratively to the top of the well screen in approximately 2 to 4-foot intervals (i.e., pump and surge each 2 to 4 foot interval of well screen several times until relatively clear discharge water is maintained, then move up to the next screen interval until all of the screen has been developed).

Alternately, a submersible pump may be used to pump water from the screened interval of shallow wells, with the screen of the well surged to evacuate silt that remains in the sand pack. The well should be alternately surged and purged until groundwater flowing from the well appears relatively free of sediments. A vacuum truck may be used for development for wells that contains product. Well development water should be managed/treated in accordance with the site-specific work plan.

4.8 Documentation

All site activities and conditions at the time of soil sampling, well installation, and well development should be recorded by field personnel in a field computer via the EDGE application or, if necessary, a field book may be used. The entry shall include the date, time, weather conditions, location (well or boring name), personnel present onsite, and the aforementioned lithologic data and well construction information. The entry shall include detailed data required to create representative soil boring lithologic logs and well as-built logs (if a well is constructed). This data should include but not be limited to soil type, soil texture (e.g., USCS), soil color, relative moisture content, depth of apparent water table, PID readings, blow counts (if split spoon samples are collected), sample recovery, total depth of borehole, length of well screen, length of well casing, sand pack interval, filter sand size, grout materials used, well seal interval, and all well construction materials. Notes should also include well development pumping rate, duration, and observations. Additional comments or observations should also be recorded, as appropriate.

5.0 LIGHT NON-AQUEOUS PHASE LIQUID (LNAPL) SAMPLING PROCEDURES

5.1 Potential Hazards

Traffic, pinch points, chemical (airborne and physical contact), and biological are all likely hazards to be encountered during LNAPL sampling, as well as slip/trip/fall potential. Additional hazards may be mentioned in the site-specific HASP and/or the daily JSA. If significant amounts of LNAPL are being handled, a Tyvek suit should also be worn.

5.2 Materials and Equipment Necessary for Task Completion

A list of equipment required to sample LNAPL from a monitoring well is presented below:

- Current site map detailing well locations;
- Field book or field computer for recording site data;
- Optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy;
- Keys and tools to provide well access;
- Appropriate sample containers and labels. LNAPL samples will be collected in laboratory provided glassware with appropriate preservative, if applicable. A minimum of 10 ml is required for most laboratory analyses. In the case that sufficient volume is not obtained, a swabbing technique (described below) could be used;
- Sorbent pads (required for swabbing technique);
- Stainless steel or clear bottom-loading or top-loading bailer, depending on product thickness;
- Clean nylon or polypropylene bailer cord;
- Decontamination supplies;
- Blank chain-of-custody forms; and
- Cooler and ice for sample preservation.

5.3 Decontamination Requirements

During LNAPL sampling activities, dedicated sampling equipment (i.e., clear bailers, nitrile gloves, and bailer cord) may be utilized; thereby, minimizing decontamination requirements. However, a stainless steel bailer may be used and decontaminated between LNAPL sampling locations. The optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy used to record the presence or absence and approximate thickness of LNAPL prior to sampling also requires decontamination between sampling locations. Decontamination procedures are detailed in Section 1.5.

5.4 Sampling Procedure

Immediately prior to sampling, each monitoring well should be gauged to obtain liquid levels (i.e., depth to LNAPL and depth to water) for estimation of current LNAPL thickness. Refer to Section 3.0 for appropriate well gauging procedures. Liquid level data should be recorded in a field book or field computer through the EDGE application or, if necessary, a field book.

LNAPL sampling may be performed via two different methods, based upon the LNAPL thickness/availability at the time of sampling: direct sample or swabbing. As indicated above, a minimum LNAPL volume of 10 mL is typically required by the analytical laboratory for most LNAPL characterization.

The following sequence of procedures will be implemented for the collection of LNAPL samples from monitoring wells:

1) A clean work area will be established so that sampling equipment will not come in contact with the ground surface or any other potentially contaminated surfaces near the wellhead.
2) A pre-cleaned stainless steel bailer or dedicated disposable bailer will be used for each well.
3) A new pair of nitrile gloves will be worn during sampling and replaced for each well.
4) Based on the gauged depth to LNAPL, an appropriate length of dedicated nylon or polypropylene cord will be tied to the sampling bailer.
5) An appropriately sized (i.e., 40 ml glass vial with plastic cap fitted with Teflon® lined septum) laboratory-provided sample container will be used to containerize the LNAPL sample.

6) The sampling bailer will be slowly lowered into the well until the liquid level is encountered. Once encountered, the sampling bailer should be lowered into the standing liquid column to a depth of approximately 1 foot, or other appropriate depth based on product thickness.

7) The bailer should be retrieved at a steady rate to avoid excess agitation.

8) The bailed sample should be visually evaluated for the presence or absence of LNAPL. If sufficient LNAPL volume is present (>10 ml), a direct sample of the LNAPL will be collected into the laboratory vial. If less than 10 ml of LNAPL is apparent, a sorbent pad may be used to absorb the LNAPL from the surface of the groundwater sample and the swab placed in the laboratory vial. The site-specific work plan should dictate whether a swab sample should be analyzed, or if the well should be monitored at a later date for re-sampling.

9) Labels will be completed and attached to the sample vials, indicating the sample collector's name, date, time, and location of sample; record same data in field computer or field notebook.

10) Store samples in a secure location until possession is transferred to the laboratory.

11) Nitrile gloves, bailer, bailer cord, and any other trash will be disposed of as solid waste.

5.5 Documentation

All site activities and conditions at the time of sampling should be recorded by field personnel in a field computer via the EDGE application or, if necessary, a field book may be used. The entry shall include the date, time, weather conditions, location (well name), personnel present onsite, and the aforementioned well gauging parameters. Additional comments or observations (e.g., color or apparent viscosity of LNAPL) should be recorded.

6.0 INDOOR AND AMBIENT AIR SAMPLING PROCEDURES

In preparation for indoor and/or ambient air sampling, appropriate facility personnel should be notified of intended sampling prior to mobilization. The purpose of this would be to confirm that there are not any non-routine activities occurring in the building, such as painting of indoor walls, which would cause incidental contamination of the samples.

6.1 Materials and Equipment Necessary for Task Completion

A list of equipment required to collect indoor and/or ambient air samples is presented below:

- Field data book or field computer for recording site data;
- Laboratory certified Summa canisters (standard size is 6 liters);
- Flow controllers (standard duration is 8-hours) with integrated vacuum gauge;
- Equipment for elevating sample intake height (examples: extended sampling inlets, zip ties to attach units to fencing, tables, etc);
- Camera; and
- Blank chain-of-custody forms.

6.2 Precautions to Avoid Incidental Contamination

EPA Method TO-15 is the most common method used for analysis of air samples at these sites. This method is highly sensitive to trace concentrations of volatile organic compounds (VOCs). To avoid incidental contamination:

- Do not wear cologne or fragrance on day of sampling;
- Do not use hand sanitizers or lotions;
- Do not store canisters near containers of gasoline, or any fuel; and
- Make sure there are no sources of VOCs in the vehicle used to transport the canisters.

6.3 Sampling Procedure

1) Set Up Summa Canister. Inlets of the flow controllers are to be placed in the breathing zone, approximately 4 to 6 feet above the ground surface. Elevate Summa canisters using appropriate materials available onsite or use laboratory-provided extended inlets (approximately 3 ft long sampling canes). Indoor air samples should be representative of air

in the buildings and should be placed away from obvious ventilation to outdoor air or sources of VOCs. Securely attach flow controller and extended sampling inlet if applicable.

2) Start Air Sample Collection. Open the valve. Document the initial vacuum (should be between approximately -30 inHg and -26 inHg) and the start time of the test. If the vacuum is significantly outside of the range or has a high rate of change, consider using an alternate canister or flow controller as there may be leakage.
3) Monitoring Summa Condition During Sampling Period. Several times during the sampling period, verify that the Summa is in good condition and that the vacuum is decreasing at an appropriate rate several times during the sampling period. An example of a reasonable frequency would be every two hours during an 8-hour event. During these checks, record the time, remaining vacuum, and canister condition. If necessary, obtain a permit to operate a camera, and take a least one photo of each sampling location.
4) Completing Air Sample Collection. Near the end of the sampling period, monitor the gauge more frequently. The sample collection should be stopped when the gauge reads approximately -5 inHg. At this point, close the canister valve. Record the sample end time and sample end vacuum. Ensure that the canister is labeled with the sample ID. Remove all of the attached equipment from the canister. Pack the canisters, flow controller wrapped in bubble wrap, chain of custody (additional information in the following section), and any other laboratory provided equipment back into the original packaging.

6.4 Documentation

All site activities and conditions at the time of air sampling should be recorded by field personnel. The entry shall include the date, time, weather conditions (including wind direction and start/end barometric pressure), sample locations and IDs, and personnel present onsite. Any observation that could influence the level of VOCs in the samples should be noted.

7.0 SURFACE WATER SAMPLING PROCEDURES

7.1 Field Procedures for Surface Water Sampling

7.1.1 General

Surface water sampling is performed to obtain samples for surface water bodies that are representative of existing surface water conditions. Surface water sampling (or gauging) within 3 feet of a bulkhead at certain facilities will require field personnel to wear a life vest.

Surface water sampling locations for surface water quality and groundwater interaction studies are selected based on the following:

1) Study objectives
2) Location of point surface discharges
3) Non-point source discharges and tributaries
4) Presence of structures (e.g., bridge, dam)
5) Accessibility

During surface water sampling it is important to obtain samples that are not impacted by the re-suspension of sediment produced because of improper or poor surface water sampling techniques.

7.1.2 Surface Water Sample Location Selection

Prior to conducting surface water sampling activities, the first requirement is the consideration and development of surface water sampling locations. It is important that all surface water sampling locations be selected in accordance with the work plan.

Wading for surface water samples increases the chances of disturbance of sediments from the floor of the surface water body. When wading for surface water samples be aware of potential safety and health risks. A life vest and safety line must be worn at all times where footing is unstable or when sampling in fast moving or more than 3 feet (0.9 m) deep. A two-person team is required for most surface water sampling activities. If the site conditions require the use of the life vest and safety line, the two people involved in the sampling must be competent swimmers.

Surface water samples must be collected with no suspended sediments. Surface water samples are collected commencing with the furthest downstream location to avoid sediment interference with upstream locations.

7.1.2.1 Rivers, Streams, and Creeks

Surface water samples are generally collected in areas of surface water bodies that are representative of the surface water body conditions. Representative surface water samples will usually be collected in sections of surface water bodies that have a uniform cross section and flow rate. Mixing is influenced by turbulence and water velocity, therefore the selection of surface water sampling locations immediately downstream of a riffle area (i.e., fast flow zone) will ensure good vertical mixing. These locations are also likely areas for deposition of sediment since this occurs in areas of decreased flow velocity.

Surface water sampling locations should not be established in areas near point source discharges. Surface water sampling of these source discharge points can be performed to assess the impact of these source areas on overall surface water quality. Sample tributaries as close to the mouth as possible. It is important to select surface water sample locations considering the impact downstream, including tributary flow and sediment.

In all instances, properly document all surface water sampling locations. Documentation may include photographs and tie-ins to known structures.

7.1.2.2. Sampling Equipment and Techniques

When collecting surface water samples, direct dipping of the sample container into the stream or water is acceptable unless the sample container contains preservatives. If preserved, a pre-cleaned unpreserved sample container should be used to collect the surface water sample. The surface water sample is then transferred to the appropriate preserved sample container. When collecting surface water samples, submerse the inverted bottle to the desired sample depth and tilt the opening of the sample container upstream to fill. During surface water sample collection, wading or movement may cause sediment deposits to be re-suspended and can result in biased samples. Wading is acceptable if the stream has a noticeable current and the samples are collected directly in

the sample container when faced upstream. If the stream is too deep to wade in or if addition samples must be collected at various depths, additional sampling equipment will be required. Surface water samples should be collected about 6 inches (15 cm) below the surface, with the sample bottles being completely submerged. Taking the surface water sample at this depth eliminates the collection of floating debris in the sample container.

Surface water sample collection where the flow depth is less than 1 inch (<2.5 cm) requires the use of special equipment to eliminate sediment disturbance. Surface water sampling may be conducted with a container then transferred to the appropriate sample container, or collection may be performed using a peristaltic pump. A small excavation in the stream bed to create a sump for sample collection can also be considered but should be prepared in advance to allow all the sediment to settle prior to surface water sampling activities.

Teflon™ bailers can be used for surface water sampling if it is not necessary to collect surface water samples at specific depths. A bottom loading bailer with a check ball is sufficient. When the bailer is lowered through the water, the water is continually displaced through the bailer until the desired depth is reached. The bailer is retrieved and the check ball prohibits the release of the collected surface water sample. Bailers are not suitable in surface water bodies with strong currents, or where depth-specific sampling is required. For discrete and specified depth surface water sampling, and the parameters to be monitored do not require a Teflon™ coated sampling device, a standard Kemmerer or Van Dorn sampler can be used. The Kemmerer sampler is a brass cylinder with rubber stoppers that leave the sampler ends open while the sampler is being lowered. The sampler is lowered in a vertical position to allow water to pass through. The Van Dorn sampler is plastic and is lowered in a horizontal position. For both samplers, a messenger is sent down a rope when the sampler has reached the required depth. The messenger causes the stopper on the sampler to close. The sampler is then retrieved and the surface water sample can be collected through a valve. DO sample bottles can be filled by allowing overflow using a rubber tube attached to the valve. During depth-specific surface water sampling, take care not to disturb bottom sediments.

Glass beakers or stainless steel cups may also be used to collect surface water samples if

parameter interference does not occur. The beaker or cup must be rinsed at least three times with the surface water sample prior to sample collection.

All equipment must be thoroughly decontaminated.

7.1.2.3 Field Notes for Surface Water Sampling

Record daily surface sampling activities, describe surface water sampling locations, sampling techniques, and, if applicable, provide a description of photographs taken. Visual observations are important and provide valuable information when interpreting surface water quality results. Observations include:

1) Weather conditions
2) Stream flow directions
3) Stream physical conditions (width, depth, etc.)
4) Tributaries
5) Effluent discharges
6) Impoundments
7) Bridges
8) Railway trestles
9) Oil sheens
10) Odors
11) Buried debris
12) Vegetation
13) Algae
14) Fish and other aquatic life
15) Surrounding industrial areas

The following factors should be considered for surface water sampling:

1) Predominant Surrounding Land Use: Observe the prevalent land use type in the vicinity and note any other land uses in the area which, although not dominant, may potentially affect surface water quality.

2) Local Watershed Erosion: Note the existing or potential erosion of soil in the local watershed and its movement into the stream. Erosion can be rated through visual observation of watershed stream characteristics including increases or decreases in turbidity.

3) Local Watershed Non-Point Source Pollution: This refers to problems or potential problems other than erosion and sedimentation. Nonpoint source pollution can be diffuse agricultural and urban runoff. Other factors may include feed lots, wetlands, septic systems, dams, impoundments, and mine seepage.

4) Estimated Stream Width: The estimated distance from shore at a transect representative of the stream width in the area.

5) Estimated Stream Depth: Riffle (rocky area), run (steady flow area), and pool (still area). Estimate the vertical distance from the water surface to the bottom of the surface water body at a representative depth at three locations.

6) High Water Mark: Estimate the vertical distance from the bank of the surface water body to the peak overflow level, as indicated by debris hanging in bank or flood plain vegetation, and deposition of silt. In instances where bank flow is rare, high water marks may not be evident.

7) Velocity: Record or measure the stream velocity in a representative run area.

8) Dam Present: Indicate the presence or absence of a dam upstream or downstream of the surface water sampling location. If a dam is present, include specific information detailing the alteration of the surface water flow.

9) Channelized: Indicate if the area surrounding the surface water sampling location is channelized.

10) Canopy Cover: Note the general proportion of open to shaded areas which best describes the amount of cover at the surface water sampling location.

7.2 References

For additional information pertaining to surface water sampling, the user of this manual may reference the following:

ASTM D5358 Practice for Sampling with a Dipper or Pond Sampler

ASTM D4489 Practices for Sampling of Waterborne Oils

ASTM D3325 Practice for the Preservation of Waterborne Oil Samples

ASTM D4841 Practice for Estimation of Holding Time for Water Samples Containing Organic and Inorganic Constituents

ASTM D4411 Guide for Sampling Fluvial Sediment in Motion

ASTM D4823 Guide for Core-Sampling Submerged, Unconsolidated Sediments

ASTM D3213 Practice for Handling, Storing, and Preparing Soft Undisturbed Marine Soil

ASTM D3976 Practice for Preparation of Sediment Samples for Chemical Analysis

ASTM E1391 Guide for Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Testing

ASTM D4581 Guide for Measurement of Morphologic Characteristics of Surface Water Bodies

ASTM D5906 Guide for Measuring Horizontal Positioning During Measurements of Surface Water Depths

ASTM D5073 Practice for Depth Measurement of surface water

8.0 SEDIMENT SAMPLING PROCEDURES

8.1. Introduction

Sediment sampling is conducted to obtain samples that are representative of existing chemical and/or physical conditions of sediment.

8.2 Equipment Decontamination

On environmental sites, sediment sampling equipment (e.g., split spoons, trowel, spoons, shovels, bowls, dredges, corers, scoops) are typically cleaned as follows:

1) Wash with clean potable water and laboratory detergent, using a brush as necessary to remove particulates.
2) Rinse with tap water.
3) Rinse with deionized water.
4) Air dry for as long as possible.

Additional or different decontamination procedures may be necessary if sampling for some parameters, including VOCs and metals.

8.3 Sample Site Selection

Before any sampling is conducted, the first requirement is to consider suitable sampling locations. Sampling locations should be selected in accordance with the work plan. Wading for sediment samples in lagoons, lakes, ponds, and slow-moving rivers and streams must be done with caution since bottom deposits are easily disturbed. Sampling must only be attempted where safe conditions exist and samples must be collected from undisturbed sediments. All sediment samples are to be collected commencing with the most downstream sample to avoid sediment interference with other downstream samples. A life vest and safety line should be worn in all cases where footing is unstable or where water is fast moving or over 3 feet (0.85 m) in depth. A second person may also be required for most of the sampling scenarios.

8.3.1. Rivers, Streams, and Creeks

Sediment samples may be collected along a cross-section of a river or stream in order to adequately characterize the bed material, or from specific sediment deposits as described in the work plan. A common procedure is to sample at quarter points along the cross-section of the sampling site selected. Samples may be composited as described in the work plan. Samples of dissimilar composition (e.g., grain size, organic content) should not be combined. Representative samples can usually be collected in portions of the surface water body that have a uniform cross-section and flow rate. Since mixing is influenced by turbulence and water velocity, the selection of a site immediately downstream of a riffle area (e.g., fast flow zone) are likely areas for deposition of sediment since the greatest deposition occurs where stream velocity slows.

A site that is clear of immediate point sources (e.g., tributaries and industrial and municipal effluents) is preferred for the collection of sediment samples unless the sampling is being performed to assess these sources.

8.4 Sampling Equipment and Techniques

8.4.1. General

Any equipment or sampling technique(s) [e.g., stainless steel, polyvinyl chloride (PVC)] used to collect a sample is acceptable so long as it provides a sample which is representative of the area being sampled and is consistent with the work plan.

8.4.2. Sediment Sampling Equipment and Techniques

A variety of methods may be used to collect sediment samples from a stream, river, or lake bed. Dredging (Peterson, Ponar, Van Veen), coring and scooping are acceptable sediment sample collection techniques. Precautions shall be taken to ensure that a representative sample of the targeted sediment is collected. Caution should be exercised when wading in shallow water so as not to disturb the area to be sampled. Samplers should be selected based on the interval to be sampled, type of sediment/sludge (silt, sand, gravel), and required sample volume. More than one sampler is often required to implement a sampling program at a site. The following

describes some of these methods. Manufacturer's information should be consulted to determine the limitations of each type of sampling equipment.

8.4.3 Dredging

The Peterson dredge is best used for rocky bottoms, in very deep water, or when the stream velocity is rapid. The dredge should be lowered slowly as it approaches the bottom, so as to not disturb the lighter sediments.

The Ponar dredge is similar to the Peterson dredge in size and weight. The Ponar dredge is a "clam-shell" type unit that closes on contact with the river/lake bottom. Depending on the size of the unit, a winch is required for larger units, whereas smaller units are available for lowering by a hand line. Once retrieved, the unit is opened and the sample extracted using a sample scoop or spoon. The unit has been modified by the addition of side plates and a screen on top of the sample compartment. This permits water to pass through the sampler as it descends.

The Ponar grab sampler functions by the use of a spring-latch-messenger arrangement. The sampler is lowered to the bottom of the water body by means of a rope, then the messenger is sent down to trip the latch causing the sampler to close on the sediments. The sampler is then raised slowly to minimize the disturbance of the lighter sediments. Sediment is then placed into a stainless steel bowl, homogenized, and placed into the appropriate sample container (if collecting for VOC parameters, fill the VOC jars before homogenization).

8.4.4. Corers

Core samplers are used to obtain vertical columns of sediment. Many types of coring devices are available, depending on the depth of water from which the sample is to be collected, the type of bottom material, and the length of core to be obtained. They vary from hand-push tubes to weight or gravity-driven devices to vibrating penetration devices.

Coring devices are useful in contaminant monitoring due to the minimal disturbance created during descent. The sample is withdrawn intact, allowing the removal of only those layers of interest. Core liners consisting of plastic or Teflon may also be added, thereby reducing the potential for sample contamination and maintaining a stratified sample. The samples may be shipped to the lab in the tubes in which they were collected. The disadvantage of coring devices

is that only a small sampling surface area and sample size is obtained, often necessitating repetitive sampling in order to collect the required amount of sediment for analysis. It is also often difficult to extract the sediment sample back out through the water column without losing the sample.

The core tube is pushed/driven into the sediment until only 4 inches (10 cm) or less of tube is above the sediment-water interface. When sampling hard or coarse sediments, a slight rotation of the tube while it is pushed will create greater penetration and reduce compaction. Cap the tube with a Teflon plug or a sheet of Teflon. The tube is then slowly withdrawn, keeping the sample in the tube. Before pulling the bottom part of the core above the water surface, it must be capped.

8.4.5 Scooping

The easiest way to collect a sediment sample is to scoop the sediment using a stainless steel spoon or scoop. This may be done by wading into the stream or pond and, while facing upstream (into the current), scooping the sample from along the bottom in an upstream direction. This method is only practical in very shallow water.

8.4.6 Mixing

Sediment samples collected for chemical analysis should be thoroughly mixed (except for VOCs) in a stainless steel bowl prior to placement in the appropriate sample container. Standard procedures exist for preparation of sediment samples (ASTM D3976). These should be followed or the laboratory informed of applicable procedures.

8.4.7 Air Monitoring

Prior to sediment/sludge sampling, measure the breathing space above the sample location with a PID, should the potential for volatiles be present, and use a hydrogen sulfide meter should hydrogen sulfide be present. Repeat these measurements during sampling. If either of these measurements exceed any of the air quality criteria established in the HASP, air purifying respirators (APRs) or supplied air systems will be required.

8.4.8 Sample Location Tie-In/Surveying

The recording of the sample locations and depth on the site plan is extremely important. This may be accomplished by manual measurement (i.e., swing ties), global positioning system (GPS) survey, or stadia methods. Manual measurements for each sample location should be tied into three permanent features (e.g., buildings, utility poles, hydrants). Diagrams with measurements should be included in the field book.

8.5 Field Notes

A bound field book is used to record daily activities, describe sampling locations and techniques, and describe photographs (if taken). Visual observations are important, as they may prove invaluable in interpreting water or sediment quality results. Observations shall include (as applicable) weather, stream flow conditions, stream physical conditions (width, depth, etc.), tributaries, effluent discharges, impoundments, bridges, railroad trestles, oil sheens, odors, buried debris, vegetation, algae, fish or other aquatic life, and surrounding industrial areas. The following observations should be considered:

- Predominant Surrounding Land Use: Observe the prevalent land use type in the vicinity (noting any other land uses in the area which, although not predominant, may potentially affect water quality).
- Local Watershed Erosion: The existing or potential erosion of soil within the local watershed (the portion of the watershed that drains directly into the stream) and its movement into a stream is noted. Erosion can be rated through visual observation of watershed and stream characteristics. (Note any turbidity observed during water quality assessment.)
- Local Watershed Non-point Source Pollution: This item refers to problems and potential problems other than siltation. Non-point source pollution is defined as diffuse agricultural and urban runoff (e.g., stormwater runoff). Other compromising factors in a watershed that may affect water quality are feedlots, wetlands, septic systems, dams and impoundments, and/or mine seepage.
- Estimated Stream Width: Estimate the distance from shore at a transect representative of the stream width in the area.

- Estimated Stream Depth: Riffle (rocky area), run (steady flow area), and pool (still area). Estimate the vertical distance from water surface to stream bottom at a representative depth at each of the three locations.
- High Water Mark: Estimate the vertical distance from the stream bank to the peak overflow level, as indicated by debris hanging in bank or floodplain vegetation, and deposition of silt or soil. In instances where bank overflow is rare, a high water mark may not be evident.
- Velocity: Record an estimate of stream velocity in a representative run area (see Section 12.0).
- Dam Present: Indicate the presence or absence of a dam upstream or downstream of the sampling station. If a dam is present, include specific information relating to alteration of flow.
- Channelized: Indicate whether the area around the sampling station is channelized.
- Canopy Cover: Note the general proportion of open to shaded area which best describes the amount of cover at the sampling station.
- Sediment Odors: Disturb sediment and note any odors described (or include any other odors not listed) which are associated with sediment in the area of the sampling station.
- Sediment Oils: Note the term which best describes the relative amount of any sediment oils observed in the sampling area.
- Sediment Characteristics: Note the grain size, color, consistency, layering, presence of biological organisms, man-made debris, etc. in accordance with standard ASTM soil description protocols.
- Sediment Deposits: Note those deposits described (or include any other deposits not listed) which are present in the sampling area. Also indicate whether the undersides of rocks not deeply embedded are black (which generally indicates low dissolved oxygen or anaerobic conditions).

8.6 References

For additional information pertaining to this topic, the user of this manual may reference the following:

ASTM D5358 Practice for Sampling with a Dipper or Pond Sampler

ASTM D4489 Practices for Sampling of Waterborne Oils

ASTM D3325 Practice for the Preservation of Waterborne Oil Samples

ASTM D4841 Practice for Estimation of Holding Time for Water Samples Containing Organic and Inorganic Constituents

ASTM D4416 Guide for Sampling Fluvial Sediment in Motion

ASTM D4823 Guide for Core-Sampling Submerged, Unconsolidated Sediments

ASTM D3213 Practice for Handling, Storing, and Preparing Soft Undisturbed Marine Soil

ASTM D3976 Practice for Preparation of Sediment Samples for Chemical Analysis

ASTM E1391 Guide for Collection, Storage, Characterization, and Manipulation of Sediments for Toxicological Testing

ASTM D4581 Guide for Measurement of Morphologic Characteristics of Surface Water Bodies

ASTM D5906 Guide for Measuring Horizontal Positioning During Measurements of Surface Water Depths

ASTM D5073 Practice for Depth Measurement of Surface Water

ASTM D5413 Test Methods for Measurement of Water Levels in Open-Water Bodies

9.0 SLUG TEST PROCEDURES

9.1 Materials and Equipment Necessary for Task Completion

Water level (data) logger capable of recording pressure and/or depth at sub-second time intervals (preferably a vented logger capable of advanced logging modes); vented, direct-read cable of sufficient length (with dessicant); interface tape/probe or water level meter; solid (mechanical) slug, pneumatic slug, or packer system [the introduction or removal of water is not recommended (e.g., bailer or bucket)]; 5 gallon bucket, traffic cones and/or barricades, deionized or distilled water and Alconox®; decontamination bucket and brush; and laptop computer or rugged reader.

9.2 Decontamination Requirements

Equipment utilized during slug testing must be thoroughly decontaminated with Alconox® and deionized/distilled water prior to and between uses at each test well to prevent cross contamination between wells. Any groundwater removed from the well during testing must be containerized and either treated and discharged to ground surface, or disposed of in an approved manner, preferably in a properly installed, onsite holding tank. If LNAPL is encountered/recovered, it should be containerized and properly disposed onsite. However, the preferred test initiation methods (solid and/or pneumatic slug) do not generate any groundwater.

9.3 Methodology for Slug Testing

Slug tests are utilized to provide in-situ estimations of hydraulic conductivity (k) in saturated media, most often in geologic formations that exhibit aquifer properties (low k media can also be tested with special consideration). Slug tests involve rapidly displacing the static water level in a well, and analyzing the well's rate and pattern of recovery back to near-static conditions. Falling head or slug-in tests involve analysis of displacement due to the addition of volume, and rising head or slug-out tests involve the analysis of displacement due to the removal of volume. Displacement is initiated using either a solid or pneumatic slug. Water level response is monitored immediately following the initial displacement and for the ensuing time period until the water level has returned to near-static level (generally within 5% of static). Water level response should be recorded using a water level (data) logger capable of recording pressure and/or depth at sub-second time intervals (preferably a vented logger). Logarithmic logging modes are preferred to shorten the data file while still providing high resolution data just after test initiation.

9.4 Field Procedures

1) Test Well Construction and Configuration - Well construction details are needed to perform slug test calculations and are important considerations when selecting appropriate wells for testing. Important as-built details include: total well depth, well screened interval(s), depth to (static) water, casing diameter, screen diameter, filter pack diameter, filter pack size, and filter pack interval. While these details should be documented on the well log, static water level and total well depth should be field-confirmed before the test. Of particular importance to the testing procedure is the relationship between static water level and well screened interval, and the degree of well development. Test results for poorly or insufficiently-developed wells may be strongly affected by drilling debris/disturbance in the formation that can create skin effects, lowering the apparent formation k. Analysis of testing data for wells screened across the water-table should consider drainage of the filter pack media. In addition, a pneumatic slug assembly should not be utilized unless the test well is screened below the water table and the water level remains above the screen throughout the test.

2) Test Setup and Initiation - Upon arrival, the test well should be gauged for static depth to water and total well depth so that the total water column length can be estimated. Well gauging data should be recorded in a rugged reader using an EDGE file, if available, or field form or book.

   a. Solid Slug

      The displacement volume of the slug is needed. It is suggested that the slug be prefabricated and calibrated for displacement volume prior to site use. Calculate the expected initial well displacement, using the slug volume and well casing radius, and deploy the data logger/cable to a depth just below that level while considering the slug length (to avoid conflict and tangling of the slug and transducer). Also consider the submergence depth limit of the data logger (usually indicated on the logger body). Generally, placing the data logger a foot or two below the bottom of the slug is good practice. Once submerged, allow the

data logger temperature to equilibrate with groundwater prior to initiating the test (up to 30 minutes).

While the data logger temperature equilibrates, secure the slug to an adequate length of disposable string or rope and hang in the well to a depth just above the water surface. Mark the string/rope to accommodate the slug length and tie off. Using the rugged reader or field computer, set up a new test (logarithmic mode or sub-second recording interval) in the data logger supplied software and start the test. Indicate in the file name the type of test and test number (e.g., rising or falling head; test 1 or 2). Once logging is initiated, quickly and smoothly lower the slug (slug-in or falling head test) to the submerged depth and tie off the string/rope (displacement should be instantaneous). Monitor the data logger data until the water level has returned to near-static level. Stop the falling head test.

Without moving the slug or data logger, set up a new test in the data logger supplied software with the same settings and indicate in the file name the type of test being performed (rising head or slug out). Start the test and once the data logger is running, instantaneously lift the slug and tie off the string/rope to its pre-test position (just above static). Monitor the data being recorded by the data logger and stop the test when the water level has returned to near-static.

b. Pneumatic Slug

If a high formation k is anticipated, solid slug removal is found to be too slow to capture well recovery, or to minimize equipment decontamination for wells with submerged screens, a pneumatic slug assembly should be utilized.

Open air release valve, secure pneumatic slug assembly to well casing and tighten coupling to provide an air tight seal. Insert the data logger/cable and deploy to the target submergence depth [it is generally best to keep the data logger shallow (~1-2 feet below static water level) and use small initial displacements to avoid dynamic recovery effects in high k formations]. Close the air release valve and attach the air pump or compressor. Pressurize the well and

use the pressure gauge to set initial displacement. Check for air leaks using a soapy water mixture and sprayer (assembly must be air tight). Allow the water level to return to static and remove the air pump. Using the rugged reader or field computer, set up a new test (logarithmic mode or sub-second recording interval) in the data logger supplied software and start the test. Indicate in the file name the type of test and test number (e.g., rising head; test number). Once logging is initiated, open the air release valve and monitor the test data. Stop the test when the water level has returned to near-static.

3) Test Monitoring and Guidelines - The following are general guidelines for slug testing performance as published by Midwest Geosciences Group in "Field Guide for Slug Testing and Data Analysis:"

- Conduct at least three or more tests per well and if possible conduct both rising and falling head test data.
- Use two or more initial displacement values (2 slug sizes or air pressures applied) that vary by an order of magnitude or more.
- Final slug test initial displacement should be nearly equivalent to the first test's displacement.
- Allow tests to run until near-static conditions are achieved (+/- 5% of static)
- Digital slug test data files collected with the data loggers and/or EDGE files should be backed up to either a thumb drive, corporate email server, and/or corporate file server immediately after collection.

4) Test Data Reduction and Processing - Prior to slug test analyses, digital data logger files should be normalized so that multiple tests conducted on the same test well can be compared for the assessment of test validity and well conditions. Reducing the data as follows:

- From each raw data file, estimate the time of test initiation and the head (depth or pressure) under static conditions.

- In each slug test data file, subtract the time of test initiation from the elapsed time and save to a new field (normalized time or test time; start of test should be time zero).
- In each slug test data file, subtract the static pressure head from the test period pressure head values and save to a new field (deviation from static).
- To normalize the deviation from static values, divide that field by the displacement expected based upon the slug volume or air pressure head applied.
- Create a graphical plot of the normalized head data versus test time for each test performed on the test well. Review the data plots and confirm that the testing data for each repeat test roughly concur. Also confirm that the actual and expected initial displacements are nearly equal.
- If repeat testing data and/or expected versus actual initial displacements vary widely, review well completion details and testing methods prior to performing further analysis (step 5 below) as the results may not be valid (e.g., the well screen interval may be poorly developed or fouled, the data logger may have moved or placed too deep in the well, slug was removed too slowly). The well may need to be retested.

5) Test Data Analysis - For the purposes of this standard operating procedural document, it is assumed that slug test analysis software will be used to apply standard solution methods to the testing data. Various computer programs are available, such as AQTESOLV Professional. Choose an appropriate test solution method by considering the following well configurations (in AQTESOLV, use the Solution Expert):

a. Submerged Screen and/or Confined Aquifer Well - If the well screen fully penetrates the intersecting aquifer, utilize the Cooper et al. Model or Hvorslev Model and analyze the curve match and/or best fit. If well is partially penetrating a confined formation, utilize the KGS Model or Hvorslev Model. If well screen is submerged in an unconfined formation, utilize the KGS Model or Bouwer and Rice Model.

b. Water-Table Intersects Well Screen - If the well screen is intersected by the water table, utilize the Bouwer and Rice Model (double straight line effect) or KGS Model.

c. Rapid Well Recovery in High k Formations - If well response to displacement is extremely rapid and normalized head plots display an oscillatory or concave-downward form, utilize the Butler and Zhan Model (most comprehensive solution available) or High-k Hvorslev Model for confined wells, or the High-k Bouwer and Rice Model.

9.5 Limitations

In general, results of slug test data analyses provide an initial estimate of formation k and have a small scale of relevance (particularly in high k settings). Slug tests can be strongly affected by the degree of well development and can be used diagnostically to assess the degree of well development. In most cases, slug testing should be performed on several wells in an area of interest to develop an understanding of the formation characteristics (e.g., heterogeneous or homogeneous formations).

10.0 PUMP TEST PROCEDURES

10.1 Materials and Equipment Necessary for Task Completion

Water-level (data) loggers (transducers) capable of recording pressure and/or depth at sub-second time intervals (preferably a vented logger capable of advanced logging modes for at least the pumping well); vented, direct-read cables of sufficient length (with dessicant packs); interface tape/probe or water-level meter; well pump (preferably a submersible pump), drop pipe and layflat or comparable discharge line of sufficient length, totalizing flow meter (recommended) and 5 gallon bucket, stop watch, rain gauge or nearby weather station; materials needed to monitor surface water bodies near the test site (e.g., staff gauge, weir, stakes, data logger, camera with permission from refinery personnel); traffic cones and/or barricades, deionized or distilled water and Alconox®; decontamination bucket and brush; laptop computer or rugged reader; portable generator or other power supply appropriate for the submersible pump; and containment (e.g., frac tank) or activated carbon filtration for the temporary staging or filtering of discharge water.

10.2 Decontamination Requirements

Equipment utilized during pumping tests must be thoroughly decontaminated with Alconox® and deionized/distilled water prior to and between uses at each test well to prevent cross contamination between wells. Any groundwater removed from the tested well must be containerized and either treated (filtered as appropriate) and discharged to ground surface, or disposed of in an approved manner, preferably in a properly installed, onsite holding tank. If LNAPL is encountered/recovered, it should be containerized and properly disposed of on or off-site.

10.3 Methodology for Pump Testing

10.3.1 Pre-test Considerations

In general, pumping tests are performed to estimate large-scale in-situ hydraulic properties of water-bearing strata in the subsurface (i.e., transmissivity and storativity) and average out local-scale heterogeneity that can limit the applicability of smaller-scale testing methods, such as slug tests. The geographical area influenced by a pumping test will be determined by the hydraulic properties of the strata being tested (including hydraulic properties of other strata supplying recharge to the pumped formation), boundary conditions, and on the duration of the test.

Pumping tests are also commonly performed to generate drawdown data from which hydraulic boundary conditions, hydraulic flow regime (e.g., anisotropy), and aquifer type (i.e., unconfined or confined, leaky confined) may be estimated. Smaller-scale pumping tests may also be utilized to address pumping efficiency and/or signal to noise ratio (pumping rate) at the pumping well, or to assist in remedial system design. However at this scale, the assumptions of some data analysis methods may not be applicable and should be considered prior to testing.

Appropriate design of a pumping test should include review of site-specific information regarding the geology and hydrogeology of the test area. Pumping test design should also consider the goal(s) of the test (i.e., scale of application of derived aquifer properties, identification of boundary influences, sources of recharge, well efficiency). This should include review of available lithologic well logs or test boring logs, geologic maps, cross sections, structure contour maps, isopach maps, and any other available information so that a conceptual model relating geologic units to hydrostratigraphic units or water-bearing strata can be developed. Additional pre-test considerations should include identification of any potential positive or negative hydraulic barriers, tidal effects, and/or influence from other wells that may be pumping in the test area. Without sufficient knowledge of factors influencing water-levels and hydrology of the test area, test results could be misinterpreted.

Often times, budget considerations and/or time limitations will necessitate the use of an existing monitoring well as the pumping well and/or existing wells as observation points. While this is generally acceptable, the wells must be screened appropriately with respect to the goals of the test and knowledge of well construction is critical to applying test solutions. Wells should also be redeveloped prior to testing if they are relatively old or if records of sufficient well development at the time of installation are not readily available.

Pumping tests can be divided into two general classifications: step-drawdown tests and constant rate tests. Step tests typically involve pumping a well at progressively higher rates or “steps” at intervals of one or two hours per step (typically up to 3 steps). They are often used to estimate the yield a well will sustain during a constant rate pumping test and to evaluate well efficiency (frictional head losses between the screen/gravel pack and the formation). Constant rate pumping tests are used primarily to evaluate hydraulic properties of water-bearing strata for design of groundwater treatment systems and/or water supply purposes (e.g., groundwater

allocation). Where budgets permit, the best pumping test approach is to first perform a step-drawdown test on the pumping well to evaluate well efficiency and sustainable yield (and to gauge whether or not the pumping well needs additional development), allow recovery to near-static conditions, and then initiate a constant rate test.

The test duration is subject to goals of the test and to budget considerations. Optimally, a constant rate test should be run until all drawdowns have stabilized or boundary conditions are identified, and gravity drainage effects are curtailed; however, this is seldom practical due to time limitations. In most instances, an 8 hour constant rate test will be adequate, and a 24 hour test will be sufficient for higher sensitivity sites. Occasionally a 72 hour pumping test is warranted, though this is usually reserved for large scale water supply work. If there are any unexplained water level anomalies observed toward the scheduled end of a test, the test should be continued if at all possible.

The approximate test flow rate needs to be determined in advance for proper pump and discharge design selection, and sizing of discharge containment. If it is not appropriate to perform a step test, sustainable yield can be estimated from slug test data or a brief (<30 minutes) pumping episode the day before the actual test. Generally, it is best to pump the test well at a rate that maximizes the signal to noise ratio (a higher pumping rate does not influence test scale and should not be used as a means to shorten the test duration).

If testing must be performed in an area where contamination is known to be present, careful consideration of the impacts of the test scale should be considered prior to testing so that the spread of subsurface contamination is not increased. If floating product (LNAPL) is present at or near the pumping well, drawdown should be limited so as to not impact uncontaminated soils below the static water table (i.e., create a “smear” zone or allow for the significant migration of free-phase product). Discharge water must be either 1) treated prior to discharge or 2) containerized for on or off-site disposal. If it is to be discharged directly on-site and allowed to infiltrate, it must be routed sufficiently far enough from the test area as to avoid any artificial recharge effects. All appropriate withdrawal and discharge permits must be obtained and complied with. If discharge water is to be treated on-site, proper contaminant loading calculations for the test flow rate, approximate contaminant loading and test duration must be performed in advance to insure treatment is sufficient. Any on-site treatment should also

include at least one discharge effluent sample analysis by an approved laboratory to document treatment effectiveness.

10.3.2 Pre-Test Water Level Monitoring

Water-level conditions in the test area should be monitored for at least one week prior to initiation of testing to identify background trends and factors influencing groundwater levels in the test area. Data loggers should be deployed in all wells to be utilized in the pumping test and set to record depth or pressure at a resolution that is high enough to identify any potential trends (generally a 15 minute recording interval is sufficient for background monitoring). A manual water level should be measured with a water-level meter or interface probe and referenced to the top of casing mark to calibrate the data logger data at the time of deployment and at sufficient intervals throughout the recording period to validate the data and provide backup data in the event that a data logger was to fail.

Ideally, groundwater levels should be static prior to starting a pumping test so that pumping influences alone can be readily evaluated. Any significant precipitation events within the previous several days (documented through use of a site rain gauge or nearby weather station) will usually result in noticeable water level changes. If there are any major water level changes observed that cannot be explained prior to testing, additional investigation into possible area influences (e.g., local well pumping or construction de-watering) should be conducted.

10.3.3 Pumping Test Set Up

Prior to starting the test, all well measuring points (i.e. top of casing) should be clearly marked and preferably surveyed to the nearest 0.01 feet in elevation. The horizontal distance between all wells utilized should be measured and illustrated on a base map. If there are any surface water bodies in the vicinity, a staff gauge (or similar measuring device) should be set up and surveyed to evaluate possible test influences on water levels or stream flow.

The preferred pump to be used for a pumping test is a submersible centrifugal pump powered by either existing site power or a portable generator. These pumps are not explosion proof, so a conductivity probe must be tied into the pump controls to alleviate any possibility of product coming into contact with the pump (if product is anticipated). If the test pump is designed to pump total fluids (e.g. air operated double diaphragm pump, jack pump, etc.) discharge must

either be containerized, or treatment must include an oil/water separator to handle any floating product. The submersible pump should be set deep enough to maintain flow during the test period or at a maximum of just above the screened interval, using a handling line to support the pump's weight [**NOTE:** extreme care must be taken that the power cord is neither bearing any of the pumps weight, nor damaged during installation due to the potential for severe electric shock]. A check valve (or two check valves) should be installed above the pump in the discharge line to prevent backflow into the well after testing.

Discharge piping from the pump should include a flow meter (preferably with totalizer), followed by a flow adjustment valve. The flow meter should be installed in a straight section of hard piping of sufficient length to avoid meter distortion caused by turbulence (typically about 10 pipe diameters on either side of the meter). In low-flow pumping tests, flow rate can be calculated by measuring the exact time required to fill a known-sized container (bucket and stop watch) several times throughout the testing period. The bucket and stop watch method of estimating flow should also be used to back up and check the flow meter data.

Precise and frequent water-level measurements (to the nearest 0.01 feet) and time denotations before, during, and after pumping tests are critical to achieving accurate test results. In terms of prioritization, data loggers should be utilized in at least the pumping well and observation wells closest to the pumping well. Wells further from the pumping well may be manually monitored, due to the reduced likelihood that early-time drawdown will be critical at distal locations. Back-up manual measurements should be collected at least hourly during the first 8 hours of the test, and then at least every 3 hours, to verify data logger measurements. Readings from the transducers are not completely reliable until they have been submerged for at least 30 minutes (sensor equilibration period). All field personnel should have watches with a second hand, and they should all be calibrated to the same time. Liquid level measurements should be obtained using an optical oil/water interface probe with a graduated measuring tape to 0.01 foot accuracy for those wells with floating product. For wells without product, a water-level meter may be sufficient. All non-dedicated probes must be properly decontaminated after each level reading to prevent any possibility of cross- contamination between wells.

Data loggers should be deployed in each selected well to a depth that will maintain submergence through the test period. Data loggers selected should be capable of being

submerged to that anticipated depth (typically noted on the instrument body). The transducer cable should be secured at the wellhead (manufacturer supplied hangers, well caps, or electrical tape/cable ties) to minimize any movement of the sensor. Care must be taken that the transducer cable is not damaged from rough edges at the well head, and that no vehicles run over the cable. The data logger installed in the pumping well will need to be installed at a depth that will maintain submergence through the test, but also remain clear of the submersible pump (and pump noise if possible). In addition, wells with floating product may require an inner PVC stilling well surrounding the data logger cable to prevent damage from contact with the product. A stilling well may also eliminate the need for any water-level corrections for product thickness.

10.3.4 Running the Test

Once the data loggers have been deployed and secured, tests should be set up in each device and each device either started or “future” started to begin logging when the pump is turned on. The data logger in the pumping well should be set to logarithmic logging mode to capture sub-second data during the early portion of the test. If possible, the pump discharge control valve should be have been pre-set (based on the step test or mini pump test) to the desired flow rate prior to turning on the pump. However, depending on the test pumps performance curves, minor flow rate adjustments are generally needed during the first hour or two of the test to correct for the additional lift required by the pump due to increasing drawdown. In addition, movement of the discharge hose after the test has been started should be avoided, since any change in the elevation of the discharge will affect the pumping rate. All changes in flow rate should be recorded and time stamped.

A minimum of two field personnel are needed to run a pumping test, with additional personnel required for tests with multiple observations wells or additional complexity. One person should be designated to turn on the pump, monitor and adjust flow rate, maintain discharge and treatment, maintain the generator, etc. The second person should be responsible for data logger management and manual water-level measurements. As a rule of thumb regarding the frequency of manual well gauging, one measurement every half minute during the first 5 to 10 minutes, followed by one measurement every 3 to 5 minutes during the first hour, one measurement every 10 to 20 minutes for the second hour, and one hourly measurement thereafter is acceptable.

Throughout the test, data loggers should be downloaded in real time through use of direct-read, vented cables (or non-vented with a barometric logger for compensation) to monitor water-level conditions. It is essential that some data reduction be accomplished in the field, so that major water level trends are recognized during the test. At a minimum, drawdown trends from the pumping well and two of the nearest monitoring wells need to be semi-log plotted against time so that deviations indicative of boundary conditions can be discerned before pumping is ceased. This will allow decisions to be made about whether the test should run longer than planned.

Generally, water quality samples are collected during a pumping test for laboratory analysis of constituents of concern. These are generally collected after the first hour of pumping and just prior to pump shutdown. If the test is of more than 24 hours duration, it is advisable to collect additional samples during the testing period. All groundwater samples should be collected following Evergreen Field Procedures.

10.3.5 Post-test Recovery

At the conclusion of the test, water level recovery data should be collected until near-static conditions are re-established. This requires the installation of a check valve in the discharge line above the submersible pump to prevent backflow. The recovery data has the advantage in that there are no variations in the curve produced due to variations in pumping rate and is independent of test length. In water-table aquifers, however, the effects of formation de-watering can cause the recovery trends to be substantially different from drawdown trends. Consequently, recovery (residual drawdown) data should be used in conjunction with drawdown data where possible.

10.3.6 Data Analysis

The data collected during pumping tests are analyzed to estimate aquifer hydraulic properties, such as transmissivity, conductivity, and storage. Data collected by transducers must be downloaded and transformed (dimensionless drawdown or displacement from static) prior to analysis. Analysis typically involves curve matching of site data to type curves established in literature for particular flow regimes. Curve matching is commonly performed utilizing computer software, such as HydroSOLV's AQTESOLV program, along with diagnostic methods and derivative analysis to best estimate aquifer properties through identification of flow regimes and conditions.

It is noted that the mathematical solutions used in pumping test analysis include many assumptions that must be considered in the context of each test area (e.g., the formation is of uniform thickness and of infinite areal extent). In addition, some of the values incorporated into typical pumping test solutions are not actually measured, but are educated estimates (e.g., porosity based on lithology, etc.). Many problems associated with pumping test data evaluation are due to not recognizing, and/or correcting for, deviations from the theoretical solution employed. Some of the more common analytical errors occur due to: partial well penetration effects, formation de-watering effects, casing storage effects, poor pumping well efficiency and/or the application of incorrect equations or units. Consequently, a thorough understanding of the underlying assumptions inherent to the solution employed is required before the validity of the results can be trusted.

ATTACHMENT F

Forensics Reports

ChemQuants™
ENVIRONMENTAL FORENSICS

Client: Stantec Consulting Services, Inc.

ATTN: Andrew Klingbeil

CQ Project#: 0186

Project name: Evergreen PHRO AOI 8 Maiden Lane Area Forensics

Laboratory#: L2113097

Advisor

ChemQuants™
ENVIRONMENTAL FORENSICS

CQ Quote # 0186

CQ PM: Mark Cejas

Dear Andrew,

ChemQuants is pleased to deliver this CQ Advisor package that consists of a simple petroleum characterization, a data visualization summary of the chemistry, methods strategy summary, and the chemistry data deliverable. The CQ Interpreter workstream will be quoted and invoiced separately.

Date of Delivery: 5/10/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Company Address: 1060 Andrew Drive Suite 140

Email: Andrew.klingbeil@stantec.com

Project Name: CQ Project # 0186

Client Project Name: Evergreen PHRO AOI 8 Maiden Lane Area Forensics

Laboratory#: L2113097

CQ Methods Summary

Phase 1 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
1	TPH (ORO) w/ Chroms EPA 8015	Water	2
1	Alkylated PAHs (w/ Scan) EPA 8270D(M)	Water	2
1	PIANO VOCs EPA 8260D (M)	Water	2
1	Whole Oil GC/FID	Product	1

Phase 2 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
2	Alkylated PAHs (w/ Scan) EPA 8270D(M)	Product	1
2	TEL and TML in Water or Soil	Water	1
2	Organic Lead EPA 8270D (M)	Product	1

CQ Interpreter Stage

CQ Interpreter Authorized (check if yes)?: ∨

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor

Phase 1 Basic Characterization # 0186

Dear Andrew,

Please find below a basic characterization of petroleum in the project samples. The following characterization was supported by the chromatographic results from three analytical methods – 1) VOC range PIANO 8260B (M), 2) GC/FID SVOC chromatograms, and 3) Whole Oil GC/FID chromatograms were produced from these data and included to support a basic characterization of the petroleum in the water sample.

Phase 1 Data Delivery: 4/1/2021

Contact Name: Andrew Klingbeil

Email: Andrew.klingbeil@stantec.com

Company Name: Stantec Consulting Services, Inc.

Client Project Name: Evergreen PHRO AOI 8 Maiden Lane Area Forensics

Water Sample - L2113097-01 (N-163-W-LF-20210316)

This project sample exhibits gasoline range petroleum. The VOC PIANO distribution shows that the petroleum is likely not a gasoline. The most enriched constituents are naphthene's and isoparaffins (figures 1 and 4). Also, the sample is enriched in benzene.

Product Sample - L2113097-03 (N-161-P-G-20210316)

This project sample exhibits petroleum that spans the gasoline range to the naphtha range (figure 2).

Water Sample - L2113097-04 (N-161-W-LF-20210316)

This project sample exhibits petroleum that spans the gasoline range to the naphtha range. (figures 3 and 5).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Recommendation for Phase 2

CQ Quote #0186 lists the analytical methods that were tentatively recommended for phase 2 forensics. Alkylated PAHs and CQ Scans would help gain insights on the distributions of light distillate range biomarkers and overall decalins enrichments in all of the samples (L2113097-01), (L2113097-03), and (L2113097-04). Also, the water samples could bolster the CSIA data set – lets discuss. In particular, isopentane, methylcyclopentane, and benzene for (L2113097-01) and isopentane, methylcyclopentane, and BTEX for (L2113097-04). The naphtha range signatures in (L2113097-03) and (L2113097-04) may be associated to a severely weathered gasoline although this interpretation could be supported with organic lead isomer determinations. A final invoice will be delivered to you along with the complete chemistry data package, if an interpretive report and the CQ Interpreter phase is not desired – please advise ASAP.

Mark J. Cejas
Principal



[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

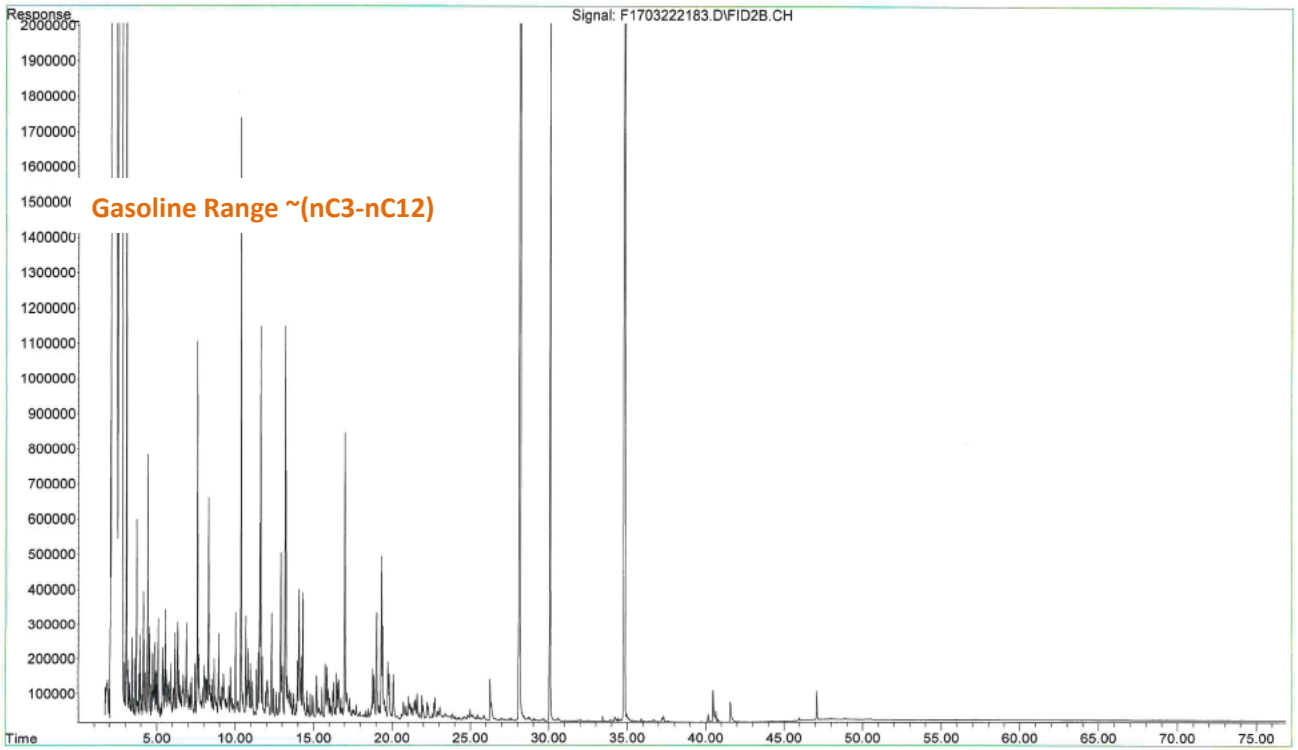

Figure 1- SVOC GC/FID chromatogram of (L2113097-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

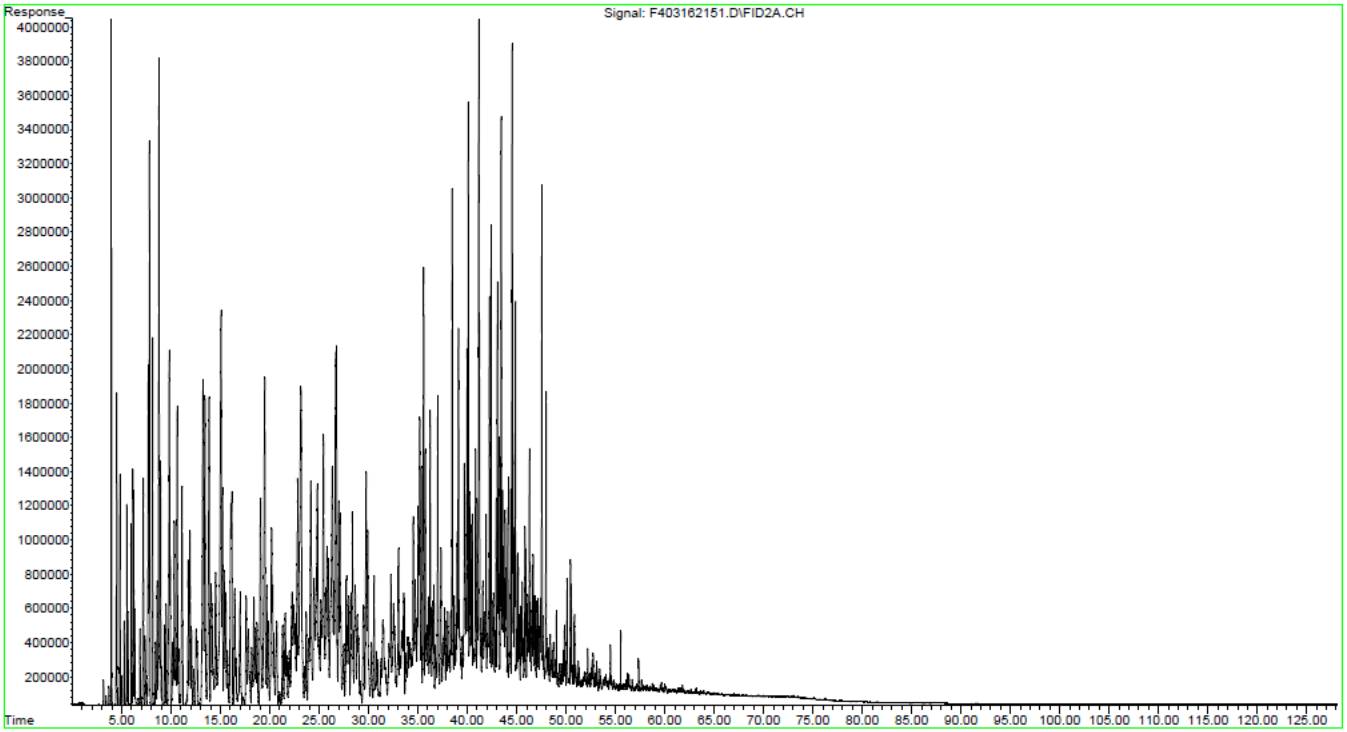

Figure 2 – Whole Oil GC/FID chromatogram of (L2113097-03).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

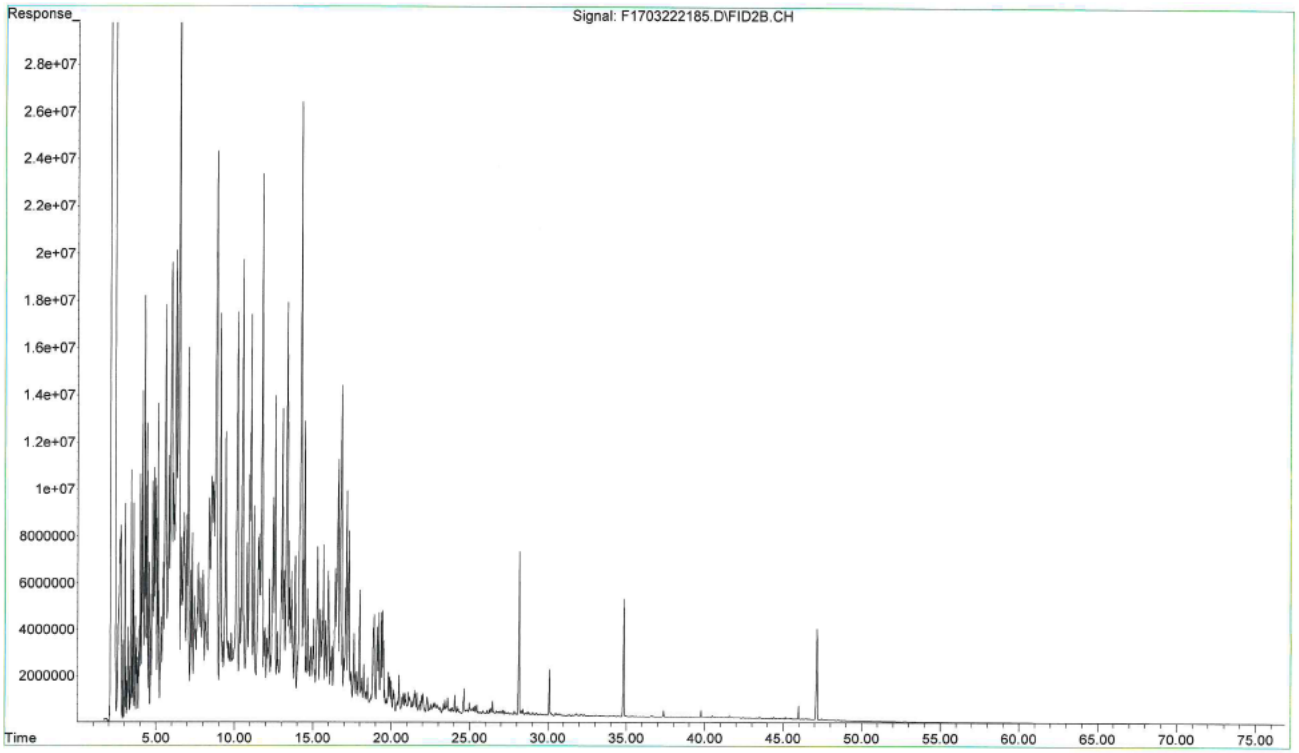

Figure 3 – SVOC GC/FID chromatogram of (L2113097-04).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

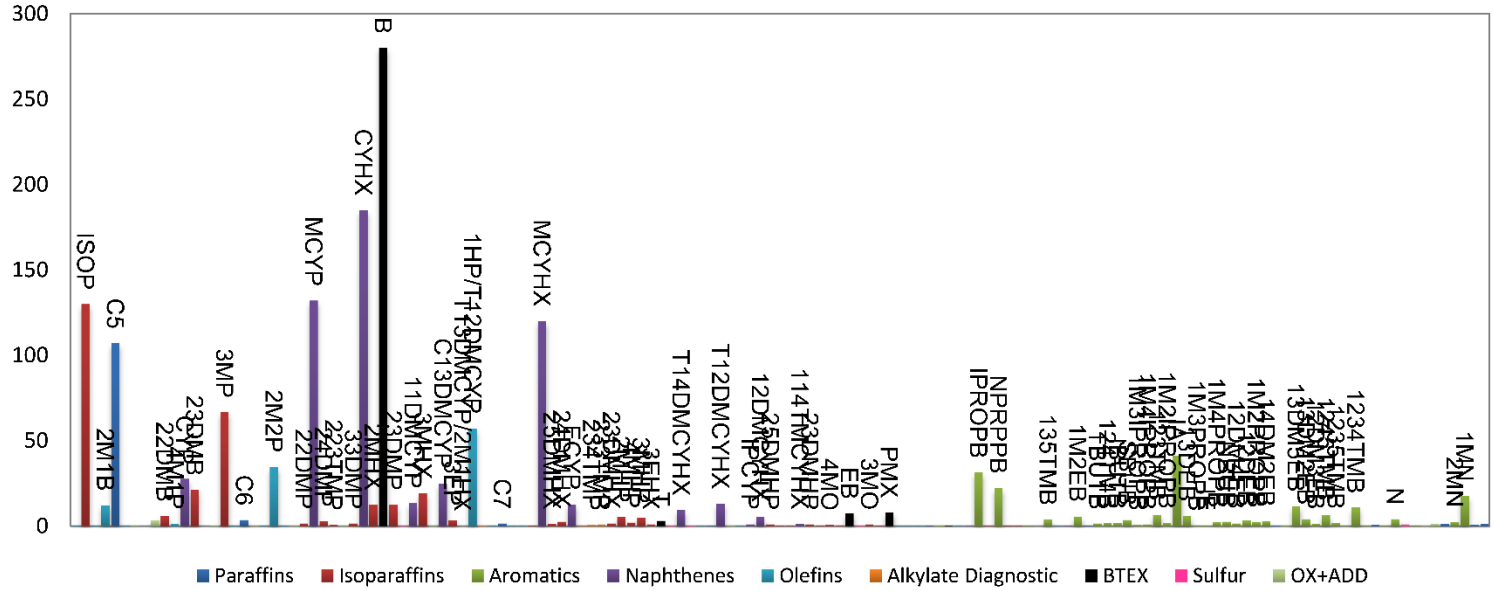

Figure 4 – Bar Graph of VOC PIANO constituents (L2113097-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

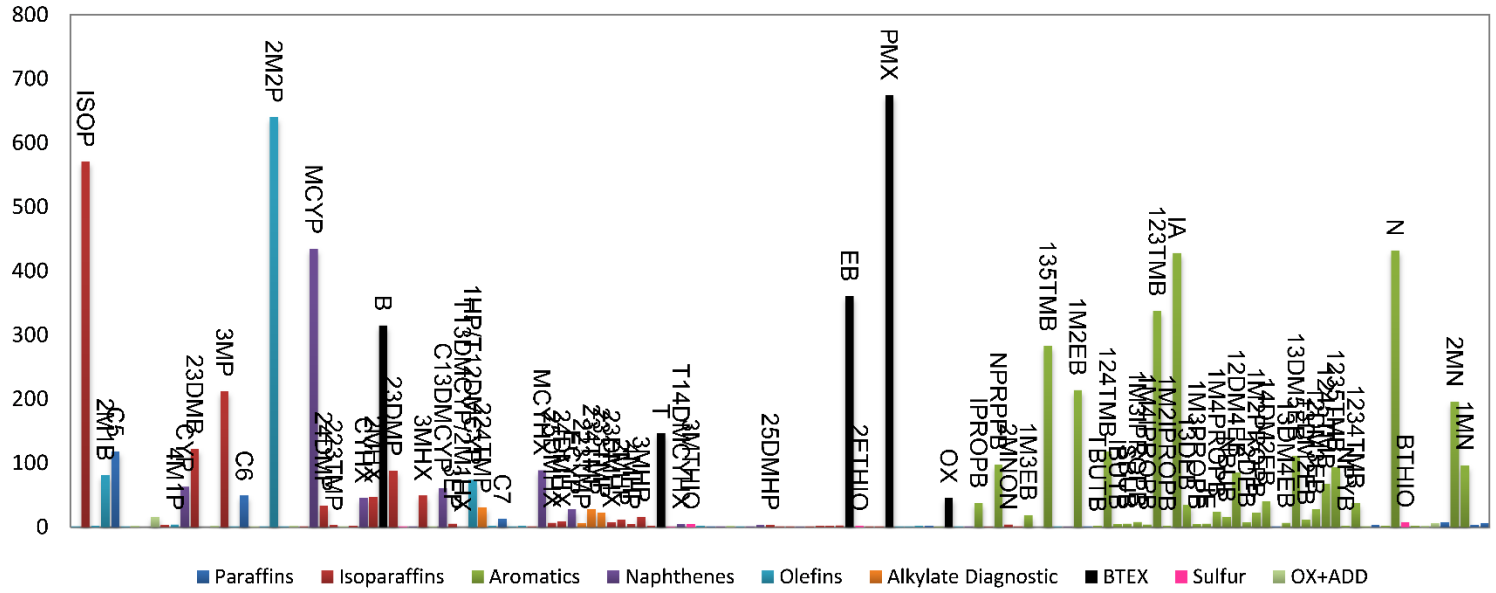

Figure 5 – Bar Graph of VOC PIANO constituents (L2113097-04).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

ANALYTICAL REPORT

Lab Number:	L2113097
Client:	ChemQuants, LLC 1338 Kenwood Rd. Santa Barbara, CA 93109
ATTN:	Mark Cejas
Phone:	(305) 342-2250
Project Name:	PHRO AOI 8 MAIDEN LANE
Project Number:	0186
Report Date:	05/05/21

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186

Lab Number: L2113097
Report Date: 05/05/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2113097-01	N-163-W-LF-20210316	WATER	FORMER PES REFINERY, PHILADELPHIA	03/16/21 13:05	03/16/21
L2113097-02	TRIP BLANK	WATER	FORMER PES REFINERY, PHILADELPHIA	03/02/21 11:40	03/16/21
L2113097-03	N-161-P-G-20210316	OIL	FORMER PES REFINERY, PHILADELPHIA	03/16/21 13:50	03/16/21
L2113097-04	N-161-W-LF-20210316	WATER	FORMER PES REFINERY, PHILADELPHIA	03/16/21 15:00	03/16/21

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2113097
Project Number:	0186	**Report Date:**	05/05/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2113097
Project Number:	0186	**Report Date:**	05/05/21

Case Narrative (continued)

Report Submission

May 5, 2021: This final report includes the results of all requested analyses with the exception of sub-contracted CSIA analyses. CSIA results will be reported under separate cover.

The analysis of organic lead in water was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

March 30, 2021: This is a preliminary report pending the decision regarding phase 2 analyses.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

PIANO Volatile Organics

L2113097-01D: The sample was re-analyzed on dilution in order to quantiitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L2113097-01D: The surrogate recovery for dibromofluoromethane (132%) is outside the acceptance criteria in the dilution, but within criteria in the original analysis. Both runs are reported.

L2113097-04D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

Alkylated PAHs

L2113097-03 and -04D: The sample was re-analyzed on dilution in order to quantiitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L2113097-04D: The sample has elevated detection limits due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 05/05/21

ORGANICS

VOLATILES

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01
Client ID: N-163-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 13:05
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260B
Analytical Date: 03/19/21 04:10
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		ug/l	2.00	0.297	1
Isopentane	256	E	ug/l	2.00	0.366	1
1-Pentene	ND		ug/l	2.00	0.365	1
2-Methyl-1-Butene	12.2		ug/l	2.00	0.311	1
Pentane	107		ug/l	2.00	0.624	1
trans-2-Pentene	ND		ug/l	2.00	0.270	1
Isoprene	ND		ug/l	2.00	0.357	1
cis-2-Pentene	ND		ug/l	2.00	0.322	1
Tertiary Butanol	ND		ug/l	25.0	3.24	1
2,2-Dimethylbutane	5.73		ug/l	2.00	0.617	1
4-Methyl-1-pentene	1.33	J	ug/l	2.00	0.311	1
Cyclopentane	27.6		ug/l	2.00	0.519	1
2,3-Dimethylbutane	21.2		ug/l	2.00	0.826	1
2-Methylpentane	67.2		ug/l	2.00	0.542	1
Methyl tert butyl ether	ND		ug/l	2.00	0.412	1
3-Methylpentane	66.6		ug/l	2.00	0.317	1
1-Hexene	ND		ug/l	2.00	0.281	1
n-Hexane	3.56		ug/l	2.00	0.329	1
Isopropyl Ether	ND		ug/l	2.00	0.242	1
trans-2-Hexene	ND		ug/l	2.00	0.261	1
2-Methyl-2-pentene	34.6		ug/l	2.00	0.306	1
cis-2-Hexene	ND		ug/l	2.00	0.271	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303	1
2,2-Dimethylpentane	1.48	J	ug/l	2.00	0.269	1
Methylcyclopentane	211	E	ug/l	2.00	0.268	1
2,4-Dimethylpentane	2.77		ug/l	2.00	0.247	1
2,2,3-Trimethylbutane	0.688	J	ug/l	2.00	0.270	1
1,2-Dichloroethane	ND		ug/l	2.00	0.295	1

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01 Date Collected: 03/16/21 13:05

Client ID: N-163-W-LF-20210316 Date Received: 03/16/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	1.48	J	ug/l	2.00	0.372	1
Cyclohexane	185		ug/l	2.00	0.247	1
2-Methylhexane	12.4		ug/l	2.00	0.315	1
Benzene	268	E	ug/l	2.00	0.305	1
2,3-Dimethylpentane	12.4		ug/l	2.00	0.265	1
Thiophene	ND		ug/l	2.00	0.284	1
1,1-Dimethylcyclopentane	13.4		ug/l	2.00	0.240	1
3-Methylhexane	19.1		ug/l	2.00	0.320	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246	1
1,3-Dimethylcyclopentane (cis)	25.0		ug/l	2.00	0.301	1
3-Ethylpentane	3.38		ug/l	2.00	0.289	1
1-Heptene/1,2-DMCP (trans)	57.2		ug/l	4.00	0.585	1
Isooctane	ND		ug/l	2.00	0.218	1
trans-3-Heptene	ND		ug/l	2.00	0.311	1
Heptane	1.46	J	ug/l	2.00	0.348	1
trans-2-Heptene	ND		ug/l	2.00	0.256	1
cis-2-Heptene	ND		ug/l	2.00	0.387	1
2,2-Dimethylhexane	ND		ug/l	2.00	0.290	1
Methylcyclohexane	120		ug/l	2.00	0.270	1
2,5-Dimethylhexane	1.23	J	ug/l	2.00	0.348	1
2,4-Dimethylhexane	2.44		ug/l	2.00	0.243	1
Ethylcyclopentane	12.7		ug/l	2.00	0.265	1
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347	1
2,3,4-Trimethylpentane	0.693	J	ug/l	2.00	0.261	1
2,3,3-Trimethylpentane	1.04	J	ug/l	2.00	0.397	1
Xylene (Total)[1]	7.97		ug/l	2.00	0.209	1
2,3-Dimethylhexane	1.56	J	ug/l	2.00	0.485	1
2-Methylheptane	5.38		ug/l	2.00	0.338	1
4-Methylheptane	2.06		ug/l	2.00	0.344	1
3-Methylheptane	4.86		ug/l	2.00	0.385	1
3-Ethylhexane	1.04	J	ug/l	2.00	0.358	1
Toluene	3.01		ug/l	2.00	0.271	1
2-Methylthiophene	ND		ug/l	2.00	0.170	1
1,4-Dimethylcyclohexane (trans)	9.26		ug/l	2.00	0.260	1
3-Methylthiophene	ND		ug/l	2.00	0.234	1
1-Octene	ND		ug/l	5.00	0.307	1
Octane	ND		ug/l	2.00	0.235	1

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01 Date Collected: 03/16/21 13:05

Client ID: N-163-W-LF-20210316 Date Received: 03/16/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dimethylcyclohexane (trans)	13.2		ug/l	2.00	0.294	1
1,2-Dibromoethane	ND		ug/l	2.00	0.320	1
cis-2-Octene	ND		ug/l	2.00	0.229	1
Isopropylcyclopentane	0.993	J	ug/l	2.00	0.293	1
1,2-Dimethylcyclohexane (cis)	5.22		ug/l	2.00	0.581	1
2,5-Dimethylheptane	0.954	J	ug/l	2.00	0.335	1
3,5-Dimethylheptane	ND		ug/l	2.00	0.282	1
3,3-Dimethylheptane	ND		ug/l	2.00	0.242	1
1,1,4-Trimethylcyclohexane	1.16	J	ug/l	2.00	0.199	1
2,3-Dimethylheptane	0.967	J	ug/l	2.00	0.228	1
3,4-Dimethylheptane	ND		ug/l	2.00	0.340	1
4-Methyloctane	0.578	J	ug/l	2.00	0.334	1
2-Methyloctane	ND		ug/l	2.00	0.512	1
Ethylbenzene	7.38		ug/l	2.00	0.216	1
2-Ethylthiophene	ND		ug/l	2.00	0.176	1
3-Methyloctane	1.00	J	ug/l	2.00	0.224	1
3,3-Diethylpentane	ND		ug/l	2.00	0.233	1
p/m-Xylene	7.97		ug/l	4.00	0.381	1
1-Nonene	ND		ug/l	5.00	0.270	1
trans-3-Nonene	ND		ug/l	2.00	0.237	1
cis-3-Nonene	ND		ug/l	2.00	0.374	1
Nonane (C9)	ND		ug/l	2.00	0.311	1
Styrene	ND		ug/l	2.00	0.202	1
o-Xylene	ND		ug/l	2.00	0.209	1
2-Nonene	ND		ug/l	5.00	0.254	1
Isopropylcyclohexane	ND		ug/l	2.00	0.212	1
Isopropylbenzene	31.3		ug/l	2.00	0.187	1
3,3-Dimethyloctane	ND		ug/l	2.00	0.202	1
n-Propylbenzene	22.2		ug/l	2.00	0.177	1
2-Methylnonane	ND		ug/l	2.00	0.283	1
3-Methylnonane	ND		ug/l	2.00	0.279	1
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316	1
1-Methyl-4-Ethylbenzene	3.02		ug/l	2.00	0.282	1
1,3,5-Trimethylbenzene	3.83		ug/l	2.00	0.230	1
1-Decene	ND		ug/l	2.00	0.260	1
Isobutylcyclohexane	ND		ug/l	2.00	0.163	1
1-Methyl-2-Ethylbenzene	5.65		ug/l	2.00	0.170	1

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01 Date Collected: 03/16/21 13:05

Client ID: N-163-W-LF-20210316 Date Received: 03/16/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Decane (C10)	ND		ug/l	2.00	0.271	1
tert-Butylbenzene	1.46	J	ug/l	2.00	0.211	1
1,2,4-Trimethylbenzene	1.63	J	ug/l	2.00	0.207	1
Isobutylbenzene	1.72	J	ug/l	2.00	0.270	1
sec-Butylbenzene	3.56		ug/l	2.00	0.259	1
1-Methyl-3-Isopropylbenzene	0.654	J	ug/l	2.00	0.258	1
1-Methyl-4-Isopropylbenzene	0.977	J	ug/l	2.00	0.212	1
1,2,3-Trimethylbenzene	6.54		ug/l	2.00	0.223	1
1-Methyl-2-Isopropylbenzene	1.67	J	ug/l	2.00	0.217	1
Indane	41.3		ug/l	2.00	0.123	1
1,3-Diethylbenzene	6.00		ug/l	2.00	0.249	1
1-Methyl-3-N-Propylbenzene	0.317	J	ug/l	2.00	0.202	1
Indene	0.463	J	ug/l	2.00	0.116	1
1-Methyl-4-N-Propylbenzene	2.15		ug/l	2.00	0.250	1
n-Butylbenzene	2.53		ug/l	2.00	0.197	1
1,2-Dimethyl-4-Ethylbenzene	1.47	J	ug/l	2.00	0.245	1
1,2-Diethylbenzene	3.14		ug/l	2.00	0.296	1
1-Methyl-2-N-Propylbenzene	2.21		ug/l	2.00	0.249	1
1,4-Dimethyl-2-Ethylbenzene	2.91		ug/l	2.00	0.187	1
Undecane	ND		ug/l	2.00	0.222	1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194	1
1,3-Dimethyl-5-Ethylbenzene	11.5		ug/l	2.00	0.236	1
1,3-Dimethyl-2-Ethylbenzene	3.98		ug/l	2.00	0.149	1
1,2-Dimethyl-3-Ethylbenzene	1.25	J	ug/l	2.00	0.127	1
1,2,4,5-Tetramethylbenzene	6.50		ug/l	2.00	0.155	1
1,2,3,5-Tetramethylbenzene	1.72	J	ug/l	2.00	0.152	1
N-Pentylbenzene	ND		ug/l	2.00	0.249	1
1,2,3,4-Tetramethylbenzene	10.8		ug/l	2.00	0.214	1
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285	1
Dodecane (C12)	ND		ug/l	5.00	0.657	1
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380	1
Naphthalene	4.03		ug/l	2.00	0.835	1
Benzothiophene	ND		ug/l	2.00	1.06	1
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340	1
Hexylbenzene	ND		ug/l	2.00	0.385	1
MMT	ND		ug/l	5.00	1.29	1
Tridecane	ND		ug/l	5.00	1.39	1

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01 Date Collected: 03/16/21 13:05

Client ID: N-163-W-LF-20210316 Date Received: 03/16/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
2-Methylnaphthalene	2.42	J	ug/l	5.00	1.32	1
1-Methylnaphthalene	17.6		ug/l	5.00	1.47	1
Tetradecane (C14)	ND		ug/l	5.00	0.612	1
Pentadecane	ND		ug/l	5.00	1.12	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	130		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	89		70-130

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01 D
Client ID: N-163-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 13:05
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260B
Analytical Date: 03/19/21 18:02
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Isopentane	130		ug/l	5.00	0.915	2.5
Methylcyclopentane	132		ug/l	5.00	0.670	2.5
Benzene	280		ug/l	5.00	0.762	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	**132**	Q	70-130
Toluene-d8	116		70-130
4-Bromofluorobenzene	87		70-130

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260B
Analytical Date: 03/19/21 05:22
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		ug/l	10.0	1.48	5
Isopentane	571		ug/l	10.0	1.83	5
1-Pentene	ND		ug/l	10.0	1.82	5
2-Methyl-1-Butene	81.0		ug/l	10.0	1.56	5
Pentane	118		ug/l	10.0	3.12	5
trans-2-Pentene	ND		ug/l	10.0	1.35	5
Isoprene	ND		ug/l	10.0	1.78	5
cis-2-Pentene	ND		ug/l	10.0	1.61	5
Tertiary Butanol	ND		ug/l	125	16.2	5
2,2-Dimethylbutane	ND		ug/l	10.0	3.08	5
4-Methyl-1-pentene	3.86	J	ug/l	10.0	1.56	5
Cyclopentane	62.8		ug/l	10.0	2.60	5
2,3-Dimethylbutane	122		ug/l	10.0	4.13	5
2-Methylpentane	273		ug/l	10.0	2.71	5
Methyl tert butyl ether	ND		ug/l	10.0	2.06	5
3-Methylpentane	212		ug/l	10.0	1.58	5
1-Hexene	ND		ug/l	10.0	1.40	5
n-Hexane	49.3		ug/l	10.0	1.64	5
Isopropyl Ether	ND		ug/l	10.0	1.21	5
trans-2-Hexene	ND		ug/l	10.0	1.30	5
2-Methyl-2-pentene	640		ug/l	10.0	1.53	5
cis-2-Hexene	ND		ug/l	10.0	1.36	5
Ethyl-Tert-Butyl-Ether	ND		ug/l	10.0	1.52	5
2,2-Dimethylpentane	ND		ug/l	10.0	1.34	5
Methylcyclopentane	435		ug/l	10.0	1.34	5
2,4-Dimethylpentane	33.2		ug/l	10.0	1.24	5
2,2,3-Trimethylbutane	3.08	J	ug/l	10.0	1.35	5
1,2-Dichloroethane	ND		ug/l	10.0	1.48	5

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	ND		ug/l	10.0	1.86	5
Cyclohexane	45.5		ug/l	10.0	1.24	5
2-Methylhexane	47.4		ug/l	10.0	1.58	5
Benzene	315		ug/l	10.0	1.52	5
2,3-Dimethylpentane	88.4		ug/l	10.0	1.32	5
Thiophene	ND		ug/l	10.0	1.42	5
1,1-Dimethylcyclopentane	ND		ug/l	10.0	1.20	5
3-Methylhexane	49.4		ug/l	10.0	1.60	5
Tertiary-Amyl Methyl Ether	ND		ug/l	10.0	1.23	5
1,3-Dimethylcyclopentane (cis)	61.2		ug/l	10.0	1.50	5
3-Ethylpentane	5.26	J	ug/l	10.0	1.44	5
1-Heptene/1,2-DMCP (trans)	73.7		ug/l	20.0	2.92	5
Isooctane	30.5		ug/l	10.0	1.09	5
trans-3-Heptene	ND		ug/l	10.0	1.56	5
Heptane	12.8		ug/l	10.0	1.74	5
trans-2-Heptene	ND		ug/l	10.0	1.28	5
cis-2-Heptene	ND		ug/l	10.0	1.94	5
2,2-Dimethylhexane	ND		ug/l	10.0	1.45	5
Methylcyclohexane	88.8		ug/l	10.0	1.35	5
2,5-Dimethylhexane	6.56	J	ug/l	10.0	1.74	5
2,4-Dimethylhexane	8.40	J	ug/l	10.0	1.22	5
Ethylcyclopentane	27.4		ug/l	10.0	1.32	5
2,2,3-Trimethylpentane	5.60	J	ug/l	10.0	1.74	5
2,3,4-Trimethylpentane	27.9		ug/l	10.0	1.30	5
2,3,3-Trimethylpentane	22.6		ug/l	10.0	1.98	5
Xylene (Total)[1]	721		ug/l	10.0	1.04	5
2,3-Dimethylhexane	7.74	J	ug/l	10.0	2.42	5
2-Methylheptane	11.2		ug/l	10.0	1.69	5
4-Methylheptane	5.02	J	ug/l	10.0	1.72	5
3-Methylheptane	16.0		ug/l	10.0	1.92	5
3-Ethylhexane	ND		ug/l	10.0	1.79	5
Toluene	147		ug/l	10.0	1.36	5
2-Methylthiophene	ND		ug/l	10.0	0.850	5
1,4-Dimethylcyclohexane (trans)	4.86	J	ug/l	10.0	1.30	5
3-Methylthiophene	4.51	J	ug/l	10.0	1.17	5
1-Octene	ND		ug/l	25.0	1.54	5
Octane	ND		ug/l	10.0	1.18	5

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dimethylcyclohexane (trans)	ND		ug/l	10.0	1.47	5
1,2-Dibromoethane	ND		ug/l	10.0	1.60	5
cis-2-Octene	ND		ug/l	10.0	1.14	5
Isopropylcyclopentane	ND		ug/l	10.0	1.46	5
1,2-Dimethylcyclohexane (cis)	ND		ug/l	10.0	2.90	5
2,5-Dimethylheptane	3.47	J	ug/l	10.0	1.68	5
3,5-Dimethylheptane	ND		ug/l	10.0	1.41	5
3,3-Dimethylheptane	ND		ug/l	10.0	1.21	5
1,1,4-Trimethylcyclohexane	ND		ug/l	10.0	0.995	5
2,3-Dimethylheptane	ND		ug/l	10.0	1.14	5
3,4-Dimethylheptane	ND		ug/l	10.0	1.70	5
4-Methyloctane	ND		ug/l	10.0	1.67	5
2-Methyloctane	ND		ug/l	10.0	2.56	5
Ethylbenzene	361		ug/l	10.0	1.08	5
2-Ethylthiophene	2.14	J	ug/l	10.0	0.880	5
3-Methyloctane	ND		ug/l	10.0	1.12	5
3,3-Diethylpentane	ND		ug/l	10.0	1.16	5
p/m-Xylene	675		ug/l	20.0	1.90	5
1-Nonene	ND		ug/l	25.0	1.35	5
trans-3-Nonene	ND		ug/l	10.0	1.18	5
cis-3-Nonene	ND		ug/l	10.0	1.87	5
Nonane (C9)	ND		ug/l	10.0	1.56	5
Styrene	ND		ug/l	10.0	1.01	5
o-Xylene	45.8		ug/l	10.0	1.04	5
2-Nonene	ND		ug/l	25.0	1.27	5
Isopropylcyclohexane	ND		ug/l	10.0	1.06	5
Isopropylbenzene	37.9		ug/l	10.0	0.935	5
3,3-Dimethyloctane	ND		ug/l	10.0	1.01	5
n-Propylbenzene	97.1		ug/l	10.0	0.885	5
2-Methylnonane	3.86	J	ug/l	10.0	1.42	5
3-Methylnonane	ND		ug/l	10.0	1.40	5
1-Methyl-3-Ethylbenzene	18.3		ug/l	10.0	1.58	5
1-Methyl-4-Ethylbenzene	121		ug/l	10.0	1.41	5
1,3,5-Trimethylbenzene	283		ug/l	10.0	1.15	5
1-Decene	ND		ug/l	10.0	1.30	5
Isobutylcyclohexane	ND		ug/l	10.0	0.815	5
1-Methyl-2-Ethylbenzene	214		ug/l	10.0	0.850	5

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Decane (C10)	ND		ug/l	10.0	1.36	5
tert-Butylbenzene	1.62	J	ug/l	10.0	1.06	5
1,2,4-Trimethylbenzene	118		ug/l	10.0	1.04	5
Isobutylbenzene	4.54	J	ug/l	10.0	1.35	5
sec-Butylbenzene	5.14	J	ug/l	10.0	1.30	5
1-Methyl-3-Isopropylbenzene	8.22	J	ug/l	10.0	1.29	5
1-Methyl-4-Isopropylbenzene	3.80	J	ug/l	10.0	1.06	5
1,2,3-Trimethylbenzene	338		ug/l	10.0	1.12	5
1-Methyl-2-Isopropylbenzene	1.59	J	ug/l	10.0	1.08	5
Indane	428		ug/l	10.0	0.615	5
1,3-Diethylbenzene	34.4		ug/l	10.0	1.24	5
1-Methyl-3-N-Propylbenzene	4.51	J	ug/l	10.0	1.01	5
Indene	5.17	J	ug/l	10.0	0.580	5
1-Methyl-4-N-Propylbenzene	23.4		ug/l	10.0	1.25	5
n-Butylbenzene	16.2		ug/l	10.0	0.985	5
1,2-Dimethyl-4-Ethylbenzene	85.3		ug/l	10.0	1.22	5
1,2-Diethylbenzene	7.59	J	ug/l	10.0	1.48	5
1-Methyl-2-N-Propylbenzene	22.5		ug/l	10.0	1.24	5
1,4-Dimethyl-2-Ethylbenzene	40.8		ug/l	10.0	0.935	5
Undecane	ND		ug/l	10.0	1.11	5
1,3-Dimethyl-4-Ethylbenzene	6.57	J	ug/l	10.0	0.970	5
1,3-Dimethyl-5-Ethylbenzene	111		ug/l	10.0	1.18	5
1,3-Dimethyl-2-Ethylbenzene	11.3		ug/l	10.0	0.745	5
1,2-Dimethyl-3-Ethylbenzene	27.5		ug/l	10.0	0.635	5
1,2,4,5-Tetramethylbenzene	67.7		ug/l	10.0	0.775	5
1,2,3,5-Tetramethylbenzene	93.5		ug/l	10.0	0.760	5
N-Pentylbenzene	1.68	J	ug/l	10.0	1.24	5
1,2,3,4-Tetramethylbenzene	37.4		ug/l	10.0	1.07	5
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	10.0	1.42	5
Dodecane (C12)	ND		ug/l	25.0	3.28	5
1,3,5-Triethylbenzene	ND		ug/l	10.0	1.90	5
Naphthalene	432		ug/l	10.0	4.18	5
Benzothiophene	7.34	J	ug/l	10.0	5.28	5
1,2,4-Triethylbenzene	ND		ug/l	10.0	1.70	5
Hexylbenzene	ND		ug/l	10.0	1.92	5
MMT	ND		ug/l	25.0	6.43	5
Tridecane	ND		ug/l	25.0	6.96	5

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
2-Methylnaphthalene	196		ug/l	25.0	6.61	5
1-Methylnaphthalene	96.2		ug/l	25.0	7.34	5
Tetradecane (C14)	ND		ug/l	25.0	3.06	5
Pentadecane	ND		ug/l	25.0	5.58	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	128		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	87		70-130

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 03/15/21 17:15
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01,04 Batch: WG1475977-5					
3-Methyl-1-butene	ND		ug/l	2.00	0.297
Isopentane	ND		ug/l	2.00	0.366
1-Pentene	ND		ug/l	2.00	0.365
2-Methyl-1-Butene	ND		ug/l	2.00	0.311
Pentane	ND		ug/l	2.00	0.624
trans-2-Pentene	ND		ug/l	2.00	0.270
Isoprene	ND		ug/l	2.00	0.357
cis-2-Pentene	ND		ug/l	2.00	0.322
Tertiary Butanol	ND		ug/l	25.0	3.24
2,2-Dimethylbutane	ND		ug/l	2.00	0.617
4-Methyl-1-pentene	ND		ug/l	2.00	0.311
Cyclopentane	ND		ug/l	2.00	0.519
2,3-Dimethylbutane	ND		ug/l	2.00	0.826
2-Methylpentane	ND		ug/l	2.00	0.542
Methyl tert butyl ether	ND		ug/l	2.00	0.412
3-Methylpentane	ND		ug/l	2.00	0.317
1-Hexene	ND		ug/l	2.00	0.281
n-Hexane	ND		ug/l	2.00	0.329
Isopropyl Ether	ND		ug/l	2.00	0.242
trans-2-Hexene	ND		ug/l	2.00	0.261
2-Methyl-2-pentene	ND		ug/l	2.00	0.306
cis-2-Hexene	ND		ug/l	2.00	0.271
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.00	0.303
2,2-Dimethylpentane	ND		ug/l	2.00	0.269
Methylcyclopentane	ND		ug/l	2.00	0.268
2,4-Dimethylpentane	ND		ug/l	2.00	0.247
2,2,3-Trimethylbutane	ND		ug/l	2.00	0.270
1,2-Dichloroethane	ND		ug/l	2.00	0.295
3,3-Dimethylpentane	ND		ug/l	2.00	0.372

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 03/15/21 17:15
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01,04 Batch: WG1475977-5					
Cyclohexane	ND		ug/l	2.00	0.247
2-Methylhexane	ND		ug/l	2.00	0.315
Benzene	ND		ug/l	2.00	0.305
2,3-Dimethylpentane	ND		ug/l	2.00	0.265
Thiophene	ND		ug/l	2.00	0.284
1,1-Dimethylcyclopentane	ND		ug/l	2.00	0.240
3-Methylhexane	ND		ug/l	2.00	0.320
Tertiary-Amyl Methyl Ether	ND		ug/l	2.00	0.246
1,3-Dimethylcyclopentane (cis)	ND		ug/l	2.00	0.301
3-Ethylpentane	ND		ug/l	2.00	0.289
1-Heptene/1,2-DMCP (trans)	ND		ug/l	4.00	0.585
Isooctane	ND		ug/l	2.00	0.218
trans-3-Heptene	ND		ug/l	2.00	0.311
Heptane	ND		ug/l	2.00	0.348
trans-2-Heptene	ND		ug/l	2.00	0.256
cis-2-Heptene	ND		ug/l	2.00	0.387
2,2-Dimethylhexane	ND		ug/l	2.00	0.290
Methylcyclohexane	ND		ug/l	2.00	0.270
2,5-Dimethylhexane	ND		ug/l	2.00	0.348
2,4-Dimethylhexane	ND		ug/l	2.00	0.243
Ethylcyclopentane	ND		ug/l	2.00	0.265
2,2,3-Trimethylpentane	ND		ug/l	2.00	0.347
2,3,4-Trimethylpentane	ND		ug/l	2.00	0.261
2,3,3-Trimethylpentane	ND		ug/l	2.00	0.397
Xylene (Total)[1]	ND		ug/l	2.00	0.209
2,3-Dimethylhexane	ND		ug/l	2.00	0.485
2-Methylheptane	ND		ug/l	2.00	0.338
4-Methylheptane	ND		ug/l	2.00	0.344
3-Methylheptane	ND		ug/l	2.00	0.385

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 03/15/21 17:15
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01,04 Batch: WG1475977-5					
3-Ethylhexane	ND		ug/l	2.00	0.358
Toluene	ND		ug/l	2.00	0.271
2-Methylthiophene	ND		ug/l	2.00	0.170
1,4-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.260
3-Methylthiophene	ND		ug/l	2.00	0.234
1-Octene	ND		ug/l	5.00	0.307
Octane	ND		ug/l	2.00	0.235
1,2-Dimethylcyclohexane (trans)	ND		ug/l	2.00	0.294
1,2-Dibromoethane	ND		ug/l	2.00	0.320
cis-2-Octene	ND		ug/l	2.00	0.229
Isopropylcyclopentane	ND		ug/l	2.00	0.293
1,2-Dimethylcyclohexane (cis)	ND		ug/l	2.00	0.581
2,5-Dimethylheptane	ND		ug/l	2.00	0.335
3,5-Dimethylheptane	ND		ug/l	2.00	0.282
3,3-Dimethylheptane	ND		ug/l	2.00	0.242
1,1,4-Trimethylcyclohexane	ND		ug/l	2.00	0.199
2,3-Dimethylheptane	ND		ug/l	2.00	0.228
3,4-Dimethylheptane	ND		ug/l	2.00	0.340
4-Methyloctane	ND		ug/l	2.00	0.334
2-Methyloctane	ND		ug/l	2.00	0.512
Ethylbenzene	ND		ug/l	2.00	0.216
2-Ethylthiophene	ND		ug/l	2.00	0.176
3-Methyloctane	ND		ug/l	2.00	0.224
3,3-Diethylpentane	ND		ug/l	2.00	0.233
p/m-Xylene	ND		ug/l	4.00	0.381
1-Nonene	ND		ug/l	5.00	0.270
trans-3-Nonene	ND		ug/l	2.00	0.237
cis-3-Nonene	ND		ug/l	2.00	0.374
Nonane (C9)	ND		ug/l	2.00	0.311

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 03/15/21 17:15
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01,04 Batch: WG1475977-5					
Styrene	ND		ug/l	2.00	0.202
o-Xylene	ND		ug/l	2.00	0.209
2-Nonene	ND		ug/l	5.00	0.254
Isopropylcyclohexane	ND		ug/l	2.00	0.212
Isopropylbenzene	ND		ug/l	2.00	0.187
3,3-Dimethyloctane	ND		ug/l	2.00	0.202
n-Propylbenzene	ND		ug/l	2.00	0.177
2-Methylnonane	ND		ug/l	2.00	0.283
3-Methylnonane	ND		ug/l	2.00	0.279
1-Methyl-3-Ethylbenzene	ND		ug/l	2.00	0.316
1-Methyl-4-Ethylbenzene	ND		ug/l	2.00	0.282
1,3,5-Trimethylbenzene	ND		ug/l	2.00	0.230
1-Decene	ND		ug/l	2.00	0.260
Isobutylcyclohexane	ND		ug/l	2.00	0.163
1-Methyl-2-Ethylbenzene	ND		ug/l	2.00	0.170
Decane (C10)	ND		ug/l	2.00	0.271
tert-Butylbenzene	ND		ug/l	2.00	0.211
1,2,4-Trimethylbenzene	ND		ug/l	2.00	0.207
Isobutylbenzene	ND		ug/l	2.00	0.270
sec-Butylbenzene	ND		ug/l	2.00	0.259
1-Methyl-3-Isopropylbenzene	ND		ug/l	2.00	0.258
1-Methyl-4-Isopropylbenzene	ND		ug/l	2.00	0.212
1,2,3-Trimethylbenzene	ND		ug/l	2.00	0.223
1-Methyl-2-Isopropylbenzene	ND		ug/l	2.00	0.217
Indane	ND		ug/l	2.00	0.123
1,3-Diethylbenzene	ND		ug/l	2.00	0.249
1-Methyl-3-N-Propylbenzene	ND		ug/l	2.00	0.202
Indene	ND		ug/l	2.00	0.116
1-Methyl-4-N-Propylbenzene	ND		ug/l	2.00	0.250

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 03/15/21 17:15
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01,04 Batch: WG1475977-5					
n-Butylbenzene	ND		ug/l	2.00	0.197
1,2-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.245
1,2-Diethylbenzene	ND		ug/l	2.00	0.296
1-Methyl-2-N-Propylbenzene	ND		ug/l	2.00	0.249
1,4-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.187
Undecane	ND		ug/l	2.00	0.222
1,3-Dimethyl-4-Ethylbenzene	ND		ug/l	2.00	0.194
1,3-Dimethyl-5-Ethylbenzene	ND		ug/l	2.00	0.236
1,3-Dimethyl-2-Ethylbenzene	ND		ug/l	2.00	0.149
1,2-Dimethyl-3-Ethylbenzene	ND		ug/l	2.00	0.127
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.00	0.155
1,2,3,5-Tetramethylbenzene	ND		ug/l	2.00	0.152
N-Pentylbenzene	ND		ug/l	2.00	0.249
1,2,3,4-Tetramethylbenzene	ND		ug/l	2.00	0.214
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/l	2.00	0.285
Dodecane (C12)	ND		ug/l	5.00	0.657
1,3,5-Triethylbenzene	ND		ug/l	2.00	0.380
Naphthalene	ND		ug/l	2.00	0.835
Benzothiophene	ND		ug/l	2.00	1.06
1,2,4-Triethylbenzene	ND		ug/l	2.00	0.340
Hexylbenzene	ND		ug/l	2.00	0.385
MMT	ND		ug/l	5.00	1.29
Tridecane	ND		ug/l	5.00	1.39
2-Methylnaphthalene	ND		ug/l	5.00	1.32
1-Methylnaphthalene	ND		ug/l	5.00	1.47
Tetradecane (C14)	ND		ug/l	5.00	0.612
Pentadecane	ND		ug/l	5.00	1.12

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 03/15/21 17:15
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01,04 Batch: WG1475977-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	119		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	87		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2113097

Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01,04 Batch: WG1475977-3 WG1475977-4								
1-Pentene	94		88		50-130	7		30
Pentane	87		84		50-130	4		30
Tertiary Butanol	78		76		50-130	3		30
Cyclopentane	88		84		50-130	5		30
2-Methylpentane	85		80		50-130	6		30
Methyl tert butyl ether	90		88		50-130	2		30
3-Methylpentane	91		87		50-130	4		30
1-Hexene	90		86		50-130	5		30
n-Hexane	88		84		50-130	5		30
Isopropyl Ether	94		92		50-130	2		30
Ethyl-Tert-Butyl-Ether	88		86		50-130	2		30
Methylcyclopentane	93		91		50-130	2		30
2,4-Dimethylpentane	93		90		50-130	3		30
Cyclohexane	96		94		50-130	2		30
2-Methylhexane	91		89		50-130	2		30
Benzene	102		100		50-130	2		30
2,3-Dimethylpentane	96		94		50-130	2		30
3-Methylhexane	82		80		50-130	2		30
Tertiary-Amyl Methyl Ether	86		85		50-130	1		30
Isooctane	96		96		50-130	0		30
Heptane	94		93		50-130	1		30
Methylcyclohexane	90		87		50-130	3		30
2-Methylheptane	86		85		50-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2113097

Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01,04 Batch: WG1475977-3 WG1475977-4								
3-Methylheptane	91		90		50-130	1		30
Toluene	93		93		50-130	0		30
Octane	92		90		50-130	2		30
Ethylbenzene	89		88		50-130	1		30
p/m-Xylene	93		93		50-130	0		30
Nonane (C9)	82		82		50-130	0		30
o-Xylene	90		90		50-130	0		30
Isopropylbenzene	92		91		50-130	1		30
n-Propylbenzene	87		87		50-130	0		30
1-Methyl-3-Ethylbenzene	88		88		50-130	0		30
1-Methyl-4-Ethylbenzene	94		93		50-130	1		30
1,3,5-Trimethylbenzene	88		86		50-130	2		30
1-Decene	72		73		50-130	1		30
1-Methyl-2-Ethylbenzene	92		90		50-130	2		30
Decane (C10)	104		102		50-130	2		30
1,2,4-Trimethylbenzene	86		85		50-130	1		30
sec-Butylbenzene	93		93		50-130	0		30
1-Methyl-4-N-Propylbenzene	84		83		50-130	1		30
n-Butylbenzene	90		90		50-130	0		30
1,2-Diethylbenzene	86		86		50-130	0		30
Undecane	104		102		50-130	2		30
N-Pentylbenzene	90		88		50-130	2		30
Dodecane (C12)	118		116		50-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2113097

Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01,04 Batch: WG1475977-3 WG1475977-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	111		113		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	95		94		70-130

SEMIVOLATILES

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2113097
Project Number: 0186
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01
Client ID: N-163-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 13:05
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/26/21 22:00
Analyst: CC

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	1180		ng/l	4.85	2.39	1
C1-Decalins	338.		ng/l	9.71	2.39	1
C2-Decalins	160.		ng/l	9.71	2.39	1
C3-Decalins	78.1		ng/l	9.71	2.39	1
C4-Decalins	86.4		ng/l	9.71	2.39	1
Naphthalene	3910		ng/l	9.71	1.91	1
C1-Naphthalenes	12600		ng/l	9.71	1.91	1
C2-Naphthalenes	21200		ng/l	9.71	1.91	1
C3-Naphthalenes	7490		ng/l	9.71	1.91	1
C4-Naphthalenes	1790		ng/l	9.71	1.91	1
2-Methylnaphthalene	2550		ng/l	9.71	2.23	1
1-Methylnaphthalene	17700		ng/l	9.71	1.89	1
Benzothiophene	144.		ng/l	9.71	1.48	1
C1-Benzo(b)thiophenes	6220		ng/l	9.71	1.48	1
C2-Benzo(b)thiophenes	3730		ng/l	9.71	1.48	1
C3-Benzo(b)thiophenes	1460		ng/l	9.71	1.48	1
C4-Benzo(b)thiophenes	452.		ng/l	9.71	1.48	1
Biphenyl	32.5		ng/l	9.71	2.26	1
2,6-Dimethylnaphthalene	9520		ng/l	9.71	2.26	1
Dibenzofuran	748.		ng/l	9.71	1.77	1
Acenaphthylene	63.4		ng/l	9.71	1.94	1
Acenaphthene	1060		ng/l	9.71	1.24	1
2,3,5-Trimethylnaphthalene	1010		ng/l	9.71	1.47	1
Fluorene	1410		ng/l	9.71	1.72	1
C1-Fluorenes	1300		ng/l	9.71	1.72	1
C2-Fluorenes	714.		ng/l	9.71	1.72	1
C3-Fluorenes	240.		ng/l	9.71	1.72	1
Dibenzothiophene	616.		ng/l	9.71	1.42	1

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01 Date Collected: 03/16/21 13:05

Client ID: N-163-W-LF-20210316 Date Received: 03/16/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	248.		ng/l	9.71	1.42	1
2/3-Methyldibenzothiophene(2MDT)	280.		ng/l	9.71	1.42	1
1-Methyldibenzothiophene(1MDT)	96.1		ng/l	9.71	1.42	1
C1-Dibenzothiophenes BS	641.		ng/l	9.71	1.42	1
C2-Dibenzothiophenes	295.		ng/l	9.71	1.42	1
C3-Dibenzothiophenes	86.1		ng/l	9.71	1.42	1
C4-Dibenzothiophenes	25.2		ng/l	9.71	1.42	1
Phenanthrene	1330		ng/l	9.71	1.16	1
3-Methylphenanthrene (3MP)	215.		ng/l	9.71	1.16	1
2-Methylphenanthrene (2MP)	218.		ng/l	9.71	1.16	1
2-Methylanthracene (2MA)	67.4		ng/l	9.71	1.16	1
9/4-Methylphenanthrene (9MP)	220.		ng/l	9.71	1.16	1
1-Methylphenanthrene (1MP)	171.		ng/l	9.71	1.16	1
C1-Phenanthrenes/Anthracenes	897.		ng/l	9.71	1.16	1
C2-Phenanthrenes/Anthr BS	330.		ng/l	9.71	1.16	1
C3-Phenanthrenes/Anthracenes	80.2		ng/l	9.71	1.16	1
C4-Phenanthrenes/Anthracenes	29.4		ng/l	9.71	1.16	1
Retene	ND		ng/l	9.71	2.72	1
Anthracene	271.		ng/l	9.71	1.76	1
Carbazole	40.3		ng/l	9.71	1.50	1
1-Methylphenanthrene	259.		ng/l	9.71	1.23	1
Fluoranthene	35.0		ng/l	9.71	1.73	1
Benzo(b)fluorene	8.03	J	ng/l	9.71	2.57	1
7H-Benzo(c)fluorene	6.52	J	ng/l	9.71	2.57	1
2-Methylpyrene[1]	18.8		ng/l	9.71	1.77	1
4-Methylpyrene[1]	21.9		ng/l	9.71	1.77	1
1-Methylpyrene[1]	18.2		ng/l	9.71	1.77	1
Pyrene	161.		ng/l	9.71	1.77	1
C1-Fluoranthenes/Pyrenes	97.4		ng/l	9.71	1.77	1
C2-Fluoranthenes/Pyrenes	30.9		ng/l	9.71	1.77	1
C3-Fluoranthenes/Pyrenes	18.0		ng/l	9.71	1.77	1
C4-Fluoranthenes/Pyrenes	ND		ng/l	9.71	1.77	1
Naphthobenzothiophenes	10.6	J	ng/l	9.71	1.59	1
C1-Naphthobenzothiophenes	8.96	J	ng/l	9.71	1.59	1
C2-Naphthobenzothiophenes	ND		ng/l	9.71	1.59	1
C3-Naphthobenzothiophenes	ND		ng/l	9.71	1.59	1
C4-Naphthobenzothiophenes	ND		ng/l	9.71	1.59	1

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01 Date Collected: 03/16/21 13:05

Client ID: N-163-W-LF-20210316 Date Received: 03/16/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
Benz(a)anthracene	6.81	J	ng/l	9.71	1.13	1
Chrysene/Triphenylene	9.97		ng/l	9.71	1.22	1
C1-Chrysenes	8.61	J	ng/l	9.71	1.22	1
C2-Chrysenes BS	ND		ng/l	9.71	1.22	1
C3-Chrysenes	ND		ng/l	9.71	1.22	1
C4-Chrysenes	ND		ng/l	9.71	1.22	1
Benzo(b)fluoranthene	2.88	J	ng/l	9.71	1.43	1
Benzo(j)+(k)fluoranthene	1.78	J	ng/l	9.71	1.45	1
Benzo(a)fluoranthene	ND		ng/l	9.71	1.45	1
Benzo(e)pyrene	2.30	J	ng/l	9.71	1.27	1
Benzo(a)pyrene	2.74	J	ng/l	9.71	2.09	1
Perylene	ND		ng/l	9.71	1.78	1
Indeno(1,2,3-cd)pyrene	ND		ng/l	9.71	2.39	1
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	9.71	2.85	1
Benzo(g,h,i)perylene	ND		ng/l	9.71	2.57	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	72		50-130
Phenanthrene-d10	92		50-130
Benzo(a)pyrene-d12	109		50-130

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-03
Client ID: N-161-P-G-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 13:50
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/30/21 21:01
Analyst: CC
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 04/29/21 13:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	442		mg/kg	1.47	0.738	1
C1-Decalins	755		mg/kg	2.94	0.738	1
C2-Decalins	754		mg/kg	2.94	0.738	1
C3-Decalins	326		mg/kg	2.94	0.738	1
C4-Decalins	345		mg/kg	2.94	0.738	1
Naphthalene	3980	E	mg/kg	2.94	0.844	1
C1-Naphthalenes	6270	E	mg/kg	2.94	0.844	1
C2-Naphthalenes	2320		mg/kg	2.94	0.844	1
C3-Naphthalenes	1080		mg/kg	2.94	0.844	1
C4-Naphthalenes	522		mg/kg	2.94	0.844	1
2-Methylnaphthalene	6680	E	mg/kg	2.94	0.758	1
1-Methylnaphthalene	2730		mg/kg	2.94	0.926	1
Benzothiophene	96.1		mg/kg	2.94	0.920	1
C1-Benzo(b)thiophenes	826		mg/kg	2.94	0.920	1
C2-Benzo(b)thiophenes	275		mg/kg	2.94	0.920	1
C3-Benzo(b)thiophenes	148		mg/kg	2.94	0.920	1
C4-Benzo(b)thiophenes	95.5		mg/kg	2.94	0.920	1
Biphenyl	33.0		mg/kg	2.94	0.908	1
2,6-Dimethylnaphthalene	1170		mg/kg	2.94	0.698	1
Dibenzofuran	24.0		mg/kg	2.94	0.925	1
Acenaphthylene	6.53		mg/kg	2.94	0.561	1
Acenaphthene	40.0		mg/kg	2.94	0.518	1
2,3,5-Trimethylnaphthalene	97.2		mg/kg	2.94	0.480	1
Fluorene	44.1		mg/kg	2.94	0.784	1
C1-Fluorenes	97.8		mg/kg	2.94	0.784	1
C2-Fluorenes	156		mg/kg	2.94	0.784	1
C3-Fluorenes	139		mg/kg	2.94	0.784	1
Dibenzothiophene	17.9		mg/kg	2.94	0.810	1

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-03 Date Collected: 03/16/21 13:50

Client ID: N-161-P-G-20210316 Date Received: 03/16/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	40.1		mg/kg	2.94	0.810	1
2/3-Methyldibenzothiophene(2MDT)	42.2		mg/kg	2.94	0.810	1
1-Methyldibenzothiophene(1MDT)	12.6		mg/kg	2.94	0.810	1
C1-Dibenzothiophenes BS	100		mg/kg	2.94	0.810	1
C2-Dibenzothiophenes	154		mg/kg	2.94	0.810	1
C3-Dibenzothiophenes	123		mg/kg	2.94	0.810	1
C4-Dibenzothiophenes	69.4		mg/kg	2.94	0.810	1
Phenanthrene	97.4		mg/kg	2.94	0.974	1
3-Methylphenanthrene (3MP)	46.4		mg/kg	2.94	0.974	1
2-Methylphenanthrene (2MP)	52.8		mg/kg	2.94	0.974	1
2-Methylanthracene (2MA)	16.4		mg/kg	2.94	0.974	1
9/4-Methylphenanthrene (9MP)	46.7		mg/kg	2.94	0.974	1
1-Methylphenanthrene (1MP)	33.0		mg/kg	2.94	0.974	1
C1-Phenanthrenes/Anthracenes	200		mg/kg	2.94	0.974	1
C2-Phenanthrenes/Anthr BS	214		mg/kg	2.94	0.974	1
C3-Phenanthrenes/Anthracenes	120		mg/kg	2.94	0.974	1
C4-Phenanthrenes/Anthracenes	53.3		mg/kg	2.94	0.974	1
Retene	ND		mg/kg	2.94	0.721	1
Anthracene	20.8		mg/kg	2.94	0.606	1
Carbazole	1.67	J	mg/kg	2.94	0.961	1
1-Methylphenanthrene	45.8		mg/kg	2.94	0.776	1
Fluoranthene	17.1		mg/kg	2.94	0.934	1
Benzo(b)fluorene	4.62		mg/kg	2.94	0.851	1
7H-Benzo(c)fluorene	3.28		mg/kg	2.94	0.851	1
2-Methylpyrene[1]	13.1		mg/kg	2.94	0.773	1
4-Methylpyrene[1]	13.9		mg/kg	2.94	0.773	1
1-Methylpyrene[1]	11.2		mg/kg	2.94	0.773	1
Pyrene	40.1		mg/kg	2.94	0.773	1
C1-Fluoranthenes/Pyrenes	63.7		mg/kg	2.94	0.773	1
C2-Fluoranthenes/Pyrenes	54.0		mg/kg	2.94	0.773	1
C3-Fluoranthenes/Pyrenes	45.5		mg/kg	2.94	0.773	1
C4-Fluoranthenes/Pyrenes	30.3		mg/kg	2.94	0.773	1
Naphthobenzothiophenes	9.22	J	mg/kg	2.94	0.822	1
C1-Naphthobenzothiophenes	21.3		mg/kg	2.94	0.822	1
C2-Naphthobenzothiophenes	27.8		mg/kg	2.94	0.822	1
C3-Naphthobenzothiophenes	22.5		mg/kg	2.94	0.822	1
C4-Naphthobenzothiophenes	16.7		mg/kg	2.94	0.822	1

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-03 Date Collected: 03/16/21 13:50

Client ID: N-161-P-G-20210316 Date Received: 03/16/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
Benz(a)anthracene	10.1		mg/kg	2.94	0.599	1
Chrysene/Triphenylene	11.0		mg/kg	2.94	0.594	1
C1-Chrysenes	22.8		mg/kg	2.94	0.594	1
C2-Chrysenes BS	27.3		mg/kg	2.94	0.594	1
C3-Chrysenes	26.3		mg/kg	2.94	0.594	1
C4-Chrysenes	17.2		mg/kg	2.94	0.594	1
Benzo(b)fluoranthene	4.75		mg/kg	2.94	0.764	1
Benzo(j)+(k)fluoranthene	3.69		mg/kg	2.94	0.583	1
Benzo(a)fluoranthene	1.00	J	mg/kg	2.94	0.583	1
Benzo(e)pyrene	6.07		mg/kg	2.94	0.606	1
Benzo(a)pyrene	6.24		mg/kg	2.94	0.839	1
Perylene	1.06	J	mg/kg	2.94	0.567	1
Indeno(1,2,3-cd)pyrene	2.83	J	mg/kg	2.94	0.797	1
Dibenz(a,h)+(a,c)anthracene	1.33	J	mg/kg	2.94	0.794	1
Benzo(g,h,i)perylene	4.01		mg/kg	2.94	0.781	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	95		50-130
Phenanthrene-d10	99		50-130
Benzo(a)pyrene-d12	98		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2113097
Project Number: 0186
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-03
Client ID: N-161-P-G-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 13:50
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 05/04/21 17:36
Analyst: CC
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 04/30/21 13:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab						
Tetraethyl Lead	ND		mg/kg	0.986	0.303	1
Tetramethyl Lead	ND		mg/kg	0.986	0.303	1
Trimethyl Ethyl Lead	ND		mg/kg	0.986	0.303	1
Diethyl Dimethyl Lead	ND		mg/kg	0.986	0.303	1
Methyl Triethyl Lead	ND		mg/kg	0.986	0.303	1

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2113097
Project Number: 0186
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-03 D
Client ID: N-161-P-G-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 13:50
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 05/03/21 14:51
Analyst: CC
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
Extraction Date: 04/29/21 13:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
Naphthalene	4200		mg/kg	11.8	3.38	4
C1-Naphthalenes	6780		mg/kg	11.8	3.38	4
2-Methylnaphthalene	7070		mg/kg	11.8	3.03	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	104		50-130
Phenanthrene-d10	97		50-130
Benzo(a)pyrene-d12	97		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2113097
Project Number: 0186
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D2
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/27/21 09:00
Analyst: CC

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
Naphthalene	539000		ng/l	980	193.	100
C1-Naphthalenes	461000		ng/l	980	193.	100
2-Methylnaphthalene	488000		ng/l	980	225.	100
1-Methylnaphthalene	232000		ng/l	980	191.	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	67		50-130
Phenanthrene-d10	77		50-130
Benzo(a)pyrene-d12	84		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2113097
Project Number: 0186
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/27/21 10:24
Analyst: CC

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	19600		ng/l	49.0	24.1	10
C1-Decalins	29200		ng/l	98.0	24.1	10
C2-Decalins	32500		ng/l	98.0	24.1	10
C3-Decalins	11700		ng/l	98.0	24.1	10
C4-Decalins	13800		ng/l	98.0	24.1	10
Naphthalene	534000	E	ng/l	98.0	19.3	10
C1-Naphthalenes	451000	E	ng/l	98.0	19.3	10
C2-Naphthalenes	147000		ng/l	98.0	19.3	10
C3-Naphthalenes	53200		ng/l	98.0	19.3	10
C4-Naphthalenes	22400		ng/l	98.0	19.3	10
2-Methylnaphthalene	480000	E	ng/l	98.0	22.5	10
1-Methylnaphthalene	228000	E	ng/l	98.0	19.1	10
Benzothiophene	13100		ng/l	98.0	14.9	10
C1-Benzo(b)thiophenes	79100		ng/l	98.0	14.9	10
C2-Benzo(b)thiophenes	21900		ng/l	98.0	14.9	10
C3-Benzo(b)thiophenes	8990		ng/l	98.0	14.9	10
C4-Benzo(b)thiophenes	4050		ng/l	98.0	14.9	10
Biphenyl	3210		ng/l	98.0	22.8	10
2,6-Dimethylnaphthalene	82100		ng/l	98.0	22.8	10
Dibenzofuran	1670		ng/l	98.0	17.8	10
Acenaphthylene	319.		ng/l	98.0	19.6	10
Acenaphthene	3060		ng/l	98.0	12.5	10
2,3,5-Trimethylnaphthalene	6270		ng/l	98.0	14.8	10
Fluorene	3110		ng/l	98.0	17.4	10
C1-Fluorenes	4760		ng/l	98.0	17.4	10
C2-Fluorenes	7320		ng/l	98.0	17.4	10
C3-Fluorenes	6200		ng/l	98.0	17.4	10
Dibenzothiophene	1100		ng/l	98.0	14.3	10

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	1880		ng/l	98.0	14.3	10
2/3-Methyldibenzothiophene(2MDT)	1960		ng/l	98.0	14.3	10
1-Methyldibenzothiophene(1MDT)	616.		ng/l	98.0	14.3	10
C1-Dibenzothiophenes BS	4740		ng/l	98.0	14.3	10
C2-Dibenzothiophenes	6600		ng/l	98.0	14.3	10
C3-Dibenzothiophenes	5400		ng/l	98.0	14.3	10
C4-Dibenzothiophenes	2790		ng/l	98.0	14.3	10
Phenanthrene	5320		ng/l	98.0	11.8	10
3-Methylphenanthrene (3MP)	2140		ng/l	98.0	11.8	10
2-Methylphenanthrene (2MP)	2360		ng/l	98.0	11.8	10
2-Methylanthracene (2MA)	752.		ng/l	98.0	11.8	10
9/4-Methylphenanthrene (9MP)	2150		ng/l	98.0	11.8	10
1-Methylphenanthrene (1MP)	1500		ng/l	98.0	11.8	10
C1-Phenanthrenes/Anthracenes	9100		ng/l	98.0	11.8	10
C2-Phenanthrenes/Anthr BS	9020		ng/l	98.0	11.8	10
C3-Phenanthrenes/Anthracenes	4950		ng/l	98.0	11.8	10
C4-Phenanthrenes/Anthracenes	2290		ng/l	98.0	11.8	10
Retene	ND		ng/l	98.0	27.4	10
Anthracene	1080		ng/l	98.0	17.7	10
Carbazole	170.		ng/l	98.0	15.1	10
1-Methylphenanthrene	2270		ng/l	98.0	12.4	10
Fluoranthene	848.		ng/l	98.0	17.4	10
Benzo(b)fluorene	249.		ng/l	98.0	26.0	10
7H-Benzo(c)fluorene	172.		ng/l	98.0	26.0	10
2-Methylpyrene[1]	593.		ng/l	98.0	17.8	10
4-Methylpyrene[1]	620.		ng/l	98.0	17.8	10
1-Methylpyrene[1]	486.		ng/l	98.0	17.8	10
Pyrene	1820		ng/l	98.0	17.8	10
C1-Fluoranthenes/Pyrenes	2770		ng/l	98.0	17.8	10
C2-Fluoranthenes/Pyrenes	2330		ng/l	98.0	17.8	10
C3-Fluoranthenes/Pyrenes	2040		ng/l	98.0	17.8	10
C4-Fluoranthenes/Pyrenes	1440		ng/l	98.0	17.8	10
Naphthobenzothiophenes	467.	J	ng/l	98.0	16.1	10
C1-Naphthobenzothiophenes	1100		ng/l	98.0	16.1	10
C2-Naphthobenzothiophenes	1840		ng/l	98.0	16.1	10
C3-Naphthobenzothiophenes	1160		ng/l	98.0	16.1	10
C4-Naphthobenzothiophenes	1130		ng/l	98.0	16.1	10

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2113097

Project Number: 0186 **Report Date:** 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
Benz(a)anthracene	471.		ng/l	98.0	11.4	10
Chrysene/Triphenylene	567.		ng/l	98.0	12.4	10
C1-Chrysenes	1080		ng/l	98.0	12.4	10
C2-Chrysenes BS	1260		ng/l	98.0	12.4	10
C3-Chrysenes	1410		ng/l	98.0	12.4	10
C4-Chrysenes	962.		ng/l	98.0	12.4	10
Benzo(b)fluoranthene	283.		ng/l	98.0	14.4	10
Benzo(j)+(k)fluoranthene	212.		ng/l	98.0	14.6	10
Benzo(a)fluoranthene	66.3	J	ng/l	98.0	14.6	10
Benzo(e)pyrene	349.		ng/l	98.0	12.8	10
Benzo(a)pyrene	362.		ng/l	98.0	21.1	10
Perylene	66.2	J	ng/l	98.0	17.9	10
Indeno(1,2,3-cd)pyrene	205.		ng/l	98.0	24.1	10
Dibenz(a,h)+(a,c)anthracene	80.8	J	ng/l	98.0	28.8	10
Benzo(g,h,i)perylene	276.		ng/l	98.0	26.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	66		50-130
Phenanthrene-d10	82		50-130
Benzo(a)pyrene-d12	93		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/26/21 17:44
Analyst: CC

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01,04 Batch: WG1477512-1					
cis/trans-Decalin	ND		ng/l	5.00	2.46
C1-Decalins	ND		ng/l	10.0	2.46
C2-Decalins	ND		ng/l	10.0	2.46
C3-Decalins	ND		ng/l	10.0	2.46
C4-Decalins	ND		ng/l	10.0	2.46
Naphthalene	ND		ng/l	10.0	1.97
C1-Naphthalenes	ND		ng/l	10.0	1.97
C2-Naphthalenes	ND		ng/l	10.0	1.97
C3-Naphthalenes	ND		ng/l	10.0	1.97
C4-Naphthalenes	ND		ng/l	10.0	1.97
2-Methylnaphthalene	ND		ng/l	10.0	2.30
1-Methylnaphthalene	ND		ng/l	10.0	1.95
Benzothiophene	ND		ng/l	10.0	1.52
C1-Benzo(b)thiophenes	ND		ng/l	10.0	1.52
C2-Benzo(b)thiophenes	ND		ng/l	10.0	1.52
C3-Benzo(b)thiophenes	ND		ng/l	10.0	1.52
C4-Benzo(b)thiophenes	ND		ng/l	10.0	1.52
Biphenyl	ND		ng/l	10.0	2.33
2,6-Dimethylnaphthalene	ND		ng/l	10.0	2.33
Dibenzofuran	ND		ng/l	10.0	1.82
Acenaphthylene	ND		ng/l	10.0	2.00
Acenaphthene	ND		ng/l	10.0	1.28
2,3,5-Trimethylnaphthalene	ND		ng/l	10.0	1.51
Fluorene	ND		ng/l	10.0	1.77
C1-Fluorenes	ND		ng/l	10.0	1.77
C2-Fluorenes	ND		ng/l	10.0	1.77
C3-Fluorenes	ND		ng/l	10.0	1.77
Dibenzothiophene	ND		ng/l	10.0	1.46
4-Methyldibenzothiophene(4MDT)	ND		ng/l	10.0	1.46

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/26/21 17:44
Analyst: CC

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01,04 Batch: WG1477512-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ng/l	10.0	1.46
1-Methyldibenzothiophene(1MDT)	ND		ng/l	10.0	1.46
C1-Dibenzothiophenes BS	ND		ng/l	10.0	1.46
C2-Dibenzothiophenes	ND		ng/l	10.0	1.46
C3-Dibenzothiophenes	ND		ng/l	10.0	1.46
C4-Dibenzothiophenes	ND		ng/l	10.0	1.46
Phenanthrene	2.11	J	ng/l	10.0	1.20
3-Methylphenanthrene (3MP)	ND		ng/l	10.0	1.20
2-Methylphenanthrene (2MP)	ND		ng/l	10.0	1.20
2-Methylanthracene (2MA)	ND		ng/l	10.0	1.20
9/4-Methylphenanthrene (9MP)	ND		ng/l	10.0	1.20
1-Methylphenanthrene (1MP)	ND		ng/l	10.0	1.20
C1-Phenanthrenes/Anthracenes	ND		ng/l	10.0	1.20
C2-Phenanthrenes/Anthr BS	ND		ng/l	10.0	1.20
C3-Phenanthrenes/Anthracenes	ND		ng/l	10.0	1.20
C4-Phenanthrenes/Anthracenes	ND		ng/l	10.0	1.20
Retene	ND		ng/l	10.0	2.80
Anthracene	ND		ng/l	10.0	1.81
Carbazole	ND		ng/l	10.0	1.54
1-Methylphenanthrene	ND		ng/l	10.0	1.27
Fluoranthene	ND		ng/l	10.0	1.78
Benzo(b)fluorene	ND		ng/l	10.0	2.65
7H-Benzo(c)fluorene	ND		ng/l	10.0	2.65
2-Methylpyrene[1]	ND		ng/l	10.0	1.82
4-Methylpyrene[1]	ND		ng/l	10.0	1.82
1-Methylpyrene[1]	ND		ng/l	10.0	1.82
Pyrene	ND		ng/l	10.0	1.82
C1-Fluoranthenes/Pyrenes	ND		ng/l	10.0	1.82
C2-Fluoranthenes/Pyrenes	ND		ng/l	10.0	1.82

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/26/21 17:44
Analyst: CC

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01,04 Batch: WG1477512-1					
C3-Fluoranthenes/Pyrenes	ND		ng/l	10.0	1.82
C4-Fluoranthenes/Pyrenes	ND		ng/l	10.0	1.82
Naphthobenzothiophenes	ND		ng/l	10.0	1.64
C1-Naphthobenzothiophenes	ND		ng/l	10.0	1.64
C2-Naphthobenzothiophenes	ND		ng/l	10.0	1.64
C3-Naphthobenzothiophenes	ND		ng/l	10.0	1.64
C4-Naphthobenzothiophenes	ND		ng/l	10.0	1.64
Benz(a)anthracene	ND		ng/l	10.0	1.16
Chrysene/Triphenylene	ND		ng/l	10.0	1.26
C1-Chrysenes	ND		ng/l	10.0	1.26
C2-Chrysenes BS	ND		ng/l	10.0	1.26
C3-Chrysenes	ND		ng/l	10.0	1.26
C4-Chrysenes	ND		ng/l	10.0	1.26
Benzo(b)fluoranthene	ND		ng/l	10.0	1.47
Benzo(j)+(k)fluoranthene	ND		ng/l	10.0	1.49
Benzo(a)fluoranthene	ND		ng/l	10.0	1.49
Benzo(e)pyrene	ND		ng/l	10.0	1.31
Benzo(a)pyrene	ND		ng/l	10.0	2.15
Perylene	ND		ng/l	10.0	1.83
Indeno(1,2,3-cd)pyrene	ND		ng/l	10.0	2.46
Dibenz(a,h)+(a,c)anthracene	ND		ng/l	10.0	2.94
Benzo(g,h,i)perylene	ND		ng/l	10.0	2.65

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	79		50-130
Phenanthrene-d10	95		50-130
Benzo(a)pyrene-d12	99		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/30/21 16:48
Analyst: CC

Extraction Method: EPA 3580A
Extraction Date: 04/29/21 13:13

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 03 Batch: WG1492368-1					
cis/trans-Decalin	ND		mg/kg	1.50	0.753
C1-Decalins	ND		mg/kg	3.00	0.753
C2-Decalins	ND		mg/kg	3.00	0.753
C3-Decalins	ND		mg/kg	3.00	0.753
C4-Decalins	ND		mg/kg	3.00	0.753
Naphthalene	ND		mg/kg	3.00	0.862
C1-Naphthalenes	ND		mg/kg	3.00	0.862
C2-Naphthalenes	ND		mg/kg	3.00	0.862
C3-Naphthalenes	ND		mg/kg	3.00	0.862
C4-Naphthalenes	ND		mg/kg	3.00	0.862
2-Methylnaphthalene	ND		mg/kg	3.00	0.774
1-Methylnaphthalene	ND		mg/kg	3.00	0.945
Benzothiophene	ND		mg/kg	3.00	0.940
C1-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C2-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C3-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C4-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
Biphenyl	ND		mg/kg	3.00	0.927
2,6-Dimethylnaphthalene	ND		mg/kg	3.00	0.713
Dibenzofuran	ND		mg/kg	3.00	0.945
Acenaphthylene	ND		mg/kg	3.00	0.572
Acenaphthene	ND		mg/kg	3.00	0.529
2,3,5-Trimethylnaphthalene	ND		mg/kg	3.00	0.491
Fluorene	ND		mg/kg	3.00	0.800
C1-Fluorenes	ND		mg/kg	3.00	0.800
C2-Fluorenes	ND		mg/kg	3.00	0.800
C3-Fluorenes	ND		mg/kg	3.00	0.800
Dibenzothiophene	ND		mg/kg	3.00	0.827
4-Methyldibenzothiophene(4MDT)	ND		mg/kg	3.00	0.827

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/30/21 16:48
Analyst: CC

Extraction Method: EPA 3580A
Extraction Date: 04/29/21 13:13

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 03 Batch: WG1492368-1					
2/3-Methyldibenzothiophene(2MDT)	ND		mg/kg	3.00	0.827
1-Methyldibenzothiophene(1MDT)	ND		mg/kg	3.00	0.827
C1-Dibenzothiophenes BS	ND		mg/kg	3.00	0.827
C2-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C3-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C4-Dibenzothiophenes	ND		mg/kg	3.00	0.827
Phenanthrene	ND		mg/kg	3.00	0.994
3-Methylphenanthrene (3MP)	ND		mg/kg	3.00	0.994
2-Methylphenanthrene (2MP)	ND		mg/kg	3.00	0.994
2-Methylanthracene (2MA)	ND		mg/kg	3.00	0.994
9/4-Methylphenanthrene (9MP)	ND		mg/kg	3.00	0.994
1-Methylphenanthrene (1MP)	ND		mg/kg	3.00	0.994
C1-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C2-Phenanthrenes/Anthr BS	ND		mg/kg	3.00	0.994
C3-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C4-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
Retene	ND		mg/kg	3.00	0.736
Anthracene	ND		mg/kg	3.00	0.618
Carbazole	ND		mg/kg	3.00	0.981
1-Methylphenanthrene	ND		mg/kg	3.00	0.792
Fluoranthene	ND		mg/kg	3.00	0.953
Benzo(b)fluorene	ND		mg/kg	3.00	0.869
7H-Benzo(c)fluorene	ND		mg/kg	3.00	0.869
2-Methylpyrene[1]	ND		mg/kg	3.00	0.789
4-Methylpyrene[1]	ND		mg/kg	3.00	0.789
1-Methylpyrene[1]	ND		mg/kg	3.00	0.789
Pyrene	ND		mg/kg	3.00	0.789
C1-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C2-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 04/30/21 16:48
Analyst: CC

Extraction Method: EPA 3580A
Extraction Date: 04/29/21 13:13

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 03 Batch: WG1492368-1					
C3-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C4-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C1-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C2-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C3-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C4-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
Benz(a)anthracene	ND		mg/kg	3.00	0.612
Chrysene/Triphenylene	ND		mg/kg	3.00	0.606
C1-Chrysenes	ND		mg/kg	3.00	0.606
C2-Chrysenes BS	ND		mg/kg	3.00	0.606
C3-Chrysenes	ND		mg/kg	3.00	0.606
C4-Chrysenes	ND		mg/kg	3.00	0.606
Benzo(b)fluoranthene	ND		mg/kg	3.00	0.780
Benzo(j)+(k)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(a)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(e)pyrene	ND		mg/kg	3.00	0.619
Benzo(a)pyrene	ND		mg/kg	3.00	0.856
Perylene	ND		mg/kg	3.00	0.579
Indeno(1,2,3-cd)pyrene	ND		mg/kg	3.00	0.814
Dibenz(a,h)+(a,c)anthracene	ND		mg/kg	3.00	0.810
Benzo(g,h,i)perylene	ND		mg/kg	3.00	0.797

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	96		50-130
Phenanthrene-d10	89		50-130
Benzo(a)pyrene-d12	96		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 05/04/21 15:21
Analyst: CC

Extraction Method: EPA 3580A
Extraction Date: 04/30/21 13:48

Parameter	Result	Qualifier	Units	RL	MDL
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab for sample(s): 03 Batch: WG1492880-1					
Tetraethyl Lead	ND		mg/kg	1.00	0.307
Tetramethyl Lead	ND		mg/kg	1.00	0.307
Trimethyl Ethyl Lead	ND		mg/kg	1.00	0.307
Diethyl Dimethyl Lead	ND		mg/kg	1.00	0.307
Methyl Triethyl Lead	ND		mg/kg	1.00	0.307

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2113097

Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01,04 Batch: WG1477512-2 WG1477512-3								
Naphthalene	90		93		50-130	3		30
2-Methylnaphthalene	95		98		50-130	3		30
Acenaphthylene	92		95		50-130	3		30
Acenaphthene	92		95		50-130	3		30
Fluorene	98		102		50-130	4		30
Phenanthrene	98		102		50-130	4		30
Anthracene	104		109		50-130	5		30
Fluoranthene	101		105		50-130	4		30
Pyrene	98		102		50-130	4		30
Benz(a)anthracene	92		92		50-130	0		30
Chrysene/Triphenylene	88		89		50-130	1		30
Benzo(b)fluoranthene	106		104		50-130	2		30
Benzo(j)+(k)fluoranthene	101		104		50-130	3		30
Benzo(a)pyrene	108		109		50-130	1		30
Indeno(1,2,3-cd)pyrene	108		108		50-130	0		30
Dibenz(a,h)+(a,c)anthracene	110		110		50-130	0		30
Benzo(g,h,i)perylene	111		111		50-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2113097

Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01,04 Batch: WG1477512-2 WG1477512-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	88		89		50-130
Phenanthrene-d10	102		104		50-130
Benzo(a)pyrene-d12	105		104		50-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186

Lab Number: L2113097
Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 03 Batch: WG1492368-2 WG1492368-3								
Naphthalene	102		98		50-130	4		30
2-Methylnaphthalene	99		97		50-130	2		30
Acenaphthylene	96		94		50-130	2		30
Acenaphthene	93		92		50-130	1		30
Fluorene	96		95		50-130	1		30
Phenanthrene	93		95		50-130	2		30
Anthracene	97		99		50-130	2		30
Fluoranthene	89		90		50-130	1		30
Pyrene	86		88		50-130	2		30
Benz(a)anthracene	94		92		50-130	2		30
Chrysene/Triphenylene	97		95		50-130	2		30
Benzo(b)fluoranthene	101		100		50-130	1		30
Benzo(j)+(k)fluoranthene	100		96		50-130	4		30
Benzo(a)pyrene	105		102		50-130	3		30
Indeno(1,2,3-cd)pyrene	87		83		50-130	5		30
Dibenz(a,h)+(a,c)anthracene	92		90		50-130	2		30
Benzo(g,h,i)perylene	96		94		50-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2113097

Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 03 Batch: WG1492368-2 WG1492368-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	96		89		50-130
Phenanthrene-d10	93		92		50-130
Benzo(a)pyrene-d12	94		89		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2113097

Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organic Lead Analysis by GC/MS-SIM - Mansfield Lab Associated sample(s): 03 Batch: WG1492880-2 WG1492880-3								
Tetraethyl Lead	70		65		50-130	7		30

PETROLEUM HYDROCARBONS

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2113097
Project Number: 0186
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-01
Client ID: N-163-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 13:05
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 03/25/21 00:14
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel/Other Range Organics by GC-FID - Mansfield Lab						
C9-C44 Total Petroleu BS	871		ug/l	32.0	5.40	1
C28-C40 ORO BS	9.13	J	ug/l	10.7	1.58	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	92		50-130
d50-Tetracosane	91		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2113097
Project Number: 0186
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-03
Client ID: N-161-P-G-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA
Date Collected: 03/16/21 13:50
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Oil
Extraction Method: N/A
Analytical Method: 1,8015D(M)
Analytical Date: 03/21/19 00:00
Analyst: AC
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Whole Oil Analysis - Mansfield Lab						
Refer To Case Narrative/Chromatograms			-	-	1.00	1

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2113097
Project Number: 0186
Report Date: 05/05/21

SAMPLE RESULTS

Lab ID: L2113097-04 D
Client ID: N-161-W-LF-20210316
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 03/16/21 15:00
Date Received: 03/16/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 03/29/21 17:02
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel/Other Range Organics by GC-FID - Mansfield Lab						
C9-C44 Total Petroleu BS	1830		ug/l	647	109.	20
C28-C40 ORO BS	439		ug/l	216	31.9	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	89		50-130
d50-Tetracosane	88		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2113097
Report Date: 05/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 03/24/21 18:18
Analyst: WR

Extraction Method: EPA 3510C
Extraction Date: 03/23/21 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Diesel/Other Range Organics by GC-FID - Mansfield Lab for sample(s): 01,04 Batch: WG1477512-1					
C9-C44 Total Petroleu BS	ND		ug/l	33.0	5.56
C28-C40 ORO BS	ND		ug/l	11.0	1.62

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	93		50-130
d50-Tetracosane	92		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2113097

Report Date: 05/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Diesel/Other Range Organics by GC-FID - Mansfield Lab Associated sample(s): 01,04 Batch: WG1477512-2 WG1477512-3								
Nonane (C9)	66		63		50-130	5		30
Decane (C10)	81		80		50-130	1		30
Dodecane (C12)	95		97		50-130	2		30
Tetradecane (C14)	93		94		50-130	1		30
Hexadecane (C16)	101		103		50-130	2		30
Octadecane (C18)	105		106		50-130	1		30
Nonadecane (C19)	96		97		50-130	1		30
Eicosane (C20)	96		97		50-130	1		30
Docosane (C22)	97		98		50-130	1		30
Tetracosane (C24)	99		100		50-130	1		30
Hexacosane (C26)	98		99		50-130	1		30
Octacosane (C28)	100		100		50-130	0		30
Triacontane (C30)	98		99		50-130	1		30
Hexatriacontane (C36)	89		91		50-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	97		96		50-130
d50-Tetracosane	95		95		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186

Lab Number: L2113097
Report Date: 05/05/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2113097-01A	Vial HCl preserved	C	NA		2.7	Y	Absent		A2-PIANO8260(14)
L2113097-01B	Vial HCl preserved	C	NA		2.7	Y	Absent		A2-PIANO8260(14)
L2113097-01C	Vial HCl preserved	C	NA		2.7	Y	Absent		A2-PIANO8260(14)
L2113097-01D	Amber 1000ml unpreserved	C	7	7	2.7	Y	Absent		A2-TPHDRO/ORO(7),A2-ALKPAH(7)
L2113097-01E	Amber 1000ml unpreserved	C	7	7	2.7	Y	Absent		A2-TPHDRO/ORO(7),A2-ALKPAH(7)
L2113097-01F	Vial unpreserved	C	NA		2.7	Y	Absent		ARCHIVE()
L2113097-01G	Vial unpreserved	C	NA		2.7	Y	Absent		ARCHIVE()
L2113097-01H	Vial unpreserved	C	NA		2.7	Y	Absent		ARCHIVE()
L2113097-01I	Vial unpreserved	C	NA		2.7	Y	Absent		ARCHIVE()
L2113097-02A	Vial HCl preserved	C	NA		2.7	Y	Absent		HOLD-8260(14)
L2113097-02B	Vial HCl preserved	C	NA		2.7	Y	Absent		HOLD-8260(14)
L2113097-03A	Vial unpreserved 20ml hard-cap	C	NA		2.7	Y	Absent		A2-WHOLEOIL(365),A2-ORGLEAD(365),A2-ALKPAH(365)
L2113097-03B	Vial unpreserved 20ml hard-cap	C	NA		2.7	Y	Absent		A2-WHOLEOIL(365),A2-ORGLEAD(365),A2-ALKPAH(365)
L2113097-03C	Vial unpreserved 20ml hard-cap	C	NA		2.7	Y	Absent		A2-WHOLEOIL(365),A2-ORGLEAD(365),A2-ALKPAH(365)
L2113097-04A	Vial HCl preserved	C	NA		2.7	Y	Absent		A2-PIANO8260(14)
L2113097-04B	Vial HCl preserved	C	NA		2.7	Y	Absent		A2-PIANO8260(14)
L2113097-04C	Vial HCl preserved	C	NA		2.7	Y	Absent		A2-PIANO8260(14)
L2113097-04D	Amber 1000ml unpreserved	C	7	7	2.7	Y	Absent		A2-ALKPAH(7),A2-TPHDRO/ORO(7)
L2113097-04E	Amber 1000ml unpreserved	C	7	7	2.7	Y	Absent		A2-ALKPAH(7),A2-TPHDRO/ORO(7)
L2113097-04F	Vial unpreserved	C	NA		2.7	Y	Absent		SUB-ORGLEAD()
L2113097-04G	Vial unpreserved	C	NA		2.7	Y	Absent		SUB-ORGLEAD()
L2113097-04H	Vial unpreserved	C	NA		2.7	Y	Absent		ARCHIVE()

*Values in parentheses indicate holding time in days

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186

Lab Number: L2113097
Report Date: 05/05/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2113097-04I	Vial unpreserved	C	NA		2.7	Y	Absent		ARCHIVE()

*Values in parentheses indicate holding time in days

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2113097
Project Number:	0186	**Report Date:**	05/05/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2113097
Project Number:	0186	**Report Date:**	05/05/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2113097
Project Number:	0186	**Report Date:**	05/05/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2113097
Project Number:	0186	**Report Date:**	05/05/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 3/17/21

ALPHA Job #: L2113097

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Dr, Ste 140
West Chester, PA
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.klingbeil@stantec.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: (PA01-8 Malden Lane) Former PES Forensic GWS
Project Location: Philadelphia, PA Former PES Refinery
Project #: 2134033603
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 2134033603

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

CQ Project # 01810

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PIANO VOCs 8260 D(M)	TPH (GRO) w/ chromatograms	TEL/TML and Ethanol	VOC 8260	Whole Oil EC/FID	Sulfur in Petroleum	Organic Lead 8270D(M)	Ethanol	Sample Specific Comments
13097-01	N-163-W-LF-20210316	3/16/21	1305	GW	DPH	x	x	x						
-02	TRIP BLANK	3/2/21	1140	TB	DPH				x					
-03	N-161[redacted]-P-G-20210316	3/16/21	1350	Product + GW	DPH	x				x	x	x	x	LNAPL Sample
-04	N-161-W-LF-20210316	3/16/21	1500	GW	DPH	x	x	x						

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
Dave	3/16/21 1635		3/16/21 1635
[illegible]	3/16/21 1730	[illegible]	3/16/21 1730
[illegible] AAL	3/16/21 2033	[illegible] AAL	3/16/21 21:00
[illegible]	3/17/21 0115	[illegible]	3/17/21 0115

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Kurt Klingbeil 3/17/21 1605
Mark 3/17/21 1605
3/17/21 15:00
Mark 3/17/21 1500

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File       :O:\Forensics\Data\PAH12\2021\APR21\APR26\F1204262111.D
Operator   : PAH12:CC
Acquired   : 26 Apr 2021  10:00 pm using AcqMethod FRNC12ALT.M
Instrument :   PAH12
Sample Name: l2113097-01,32,,
Misc Info  : WG1491192,wg1477512,ICAL17737
Vial Number: 11
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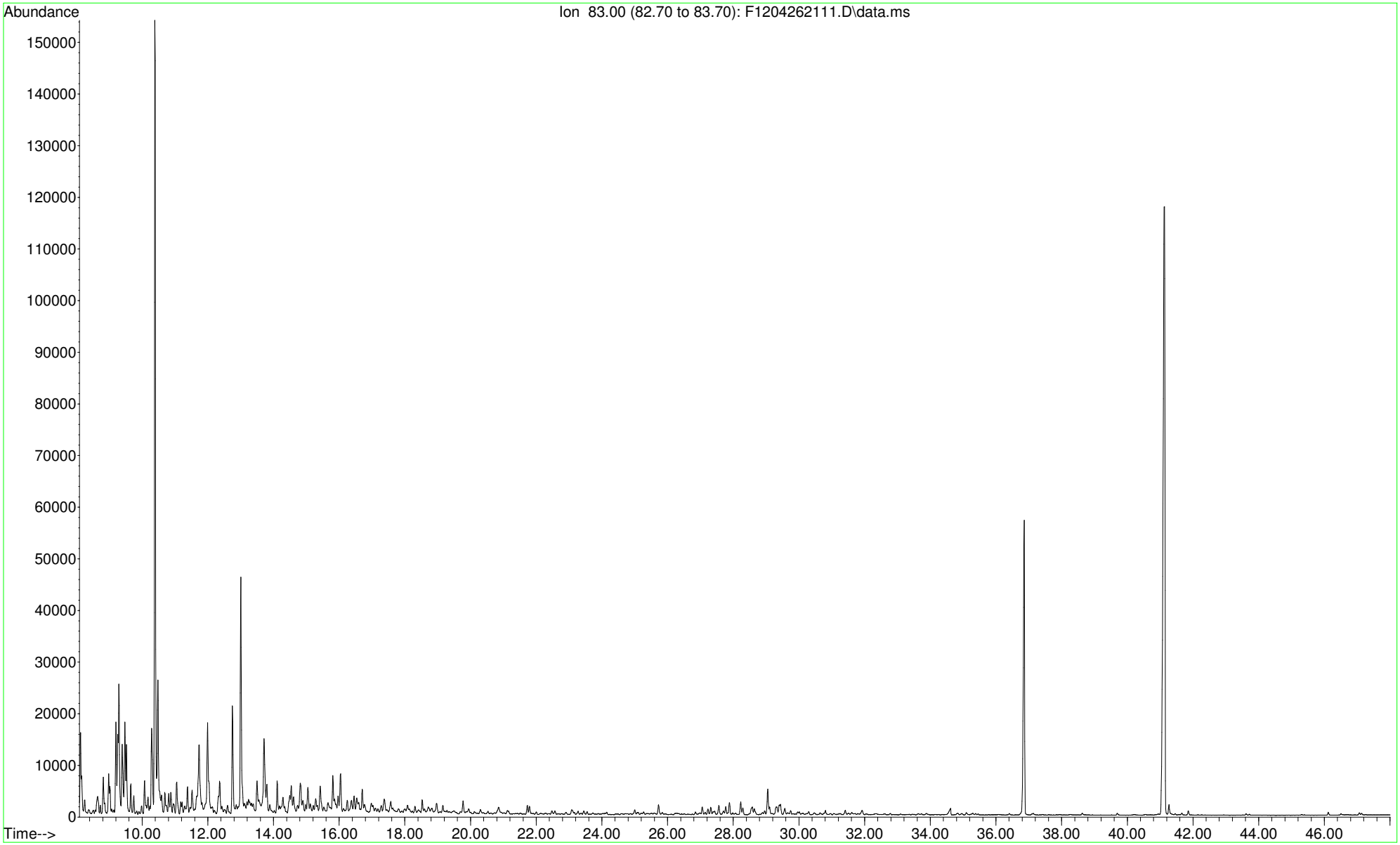

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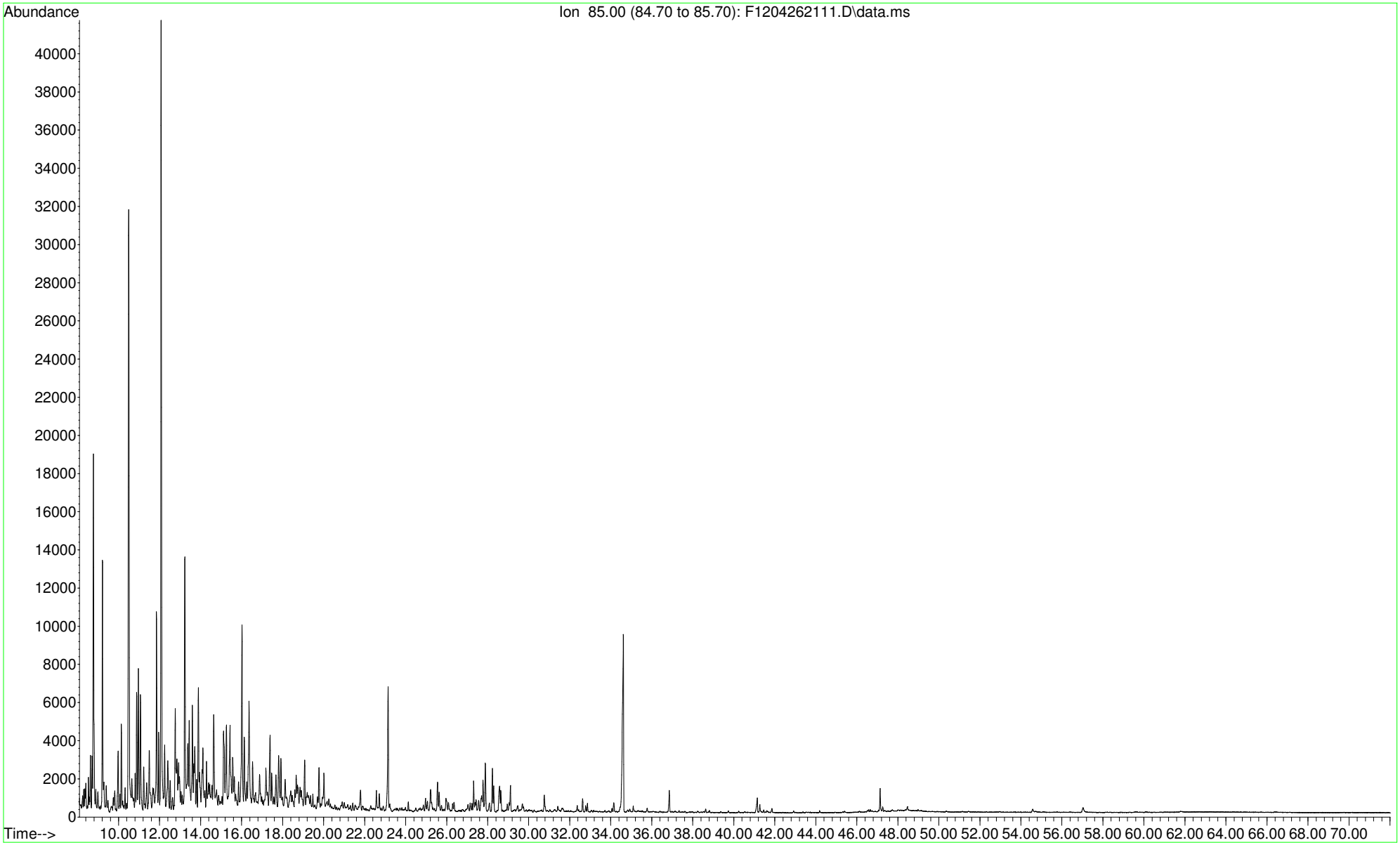

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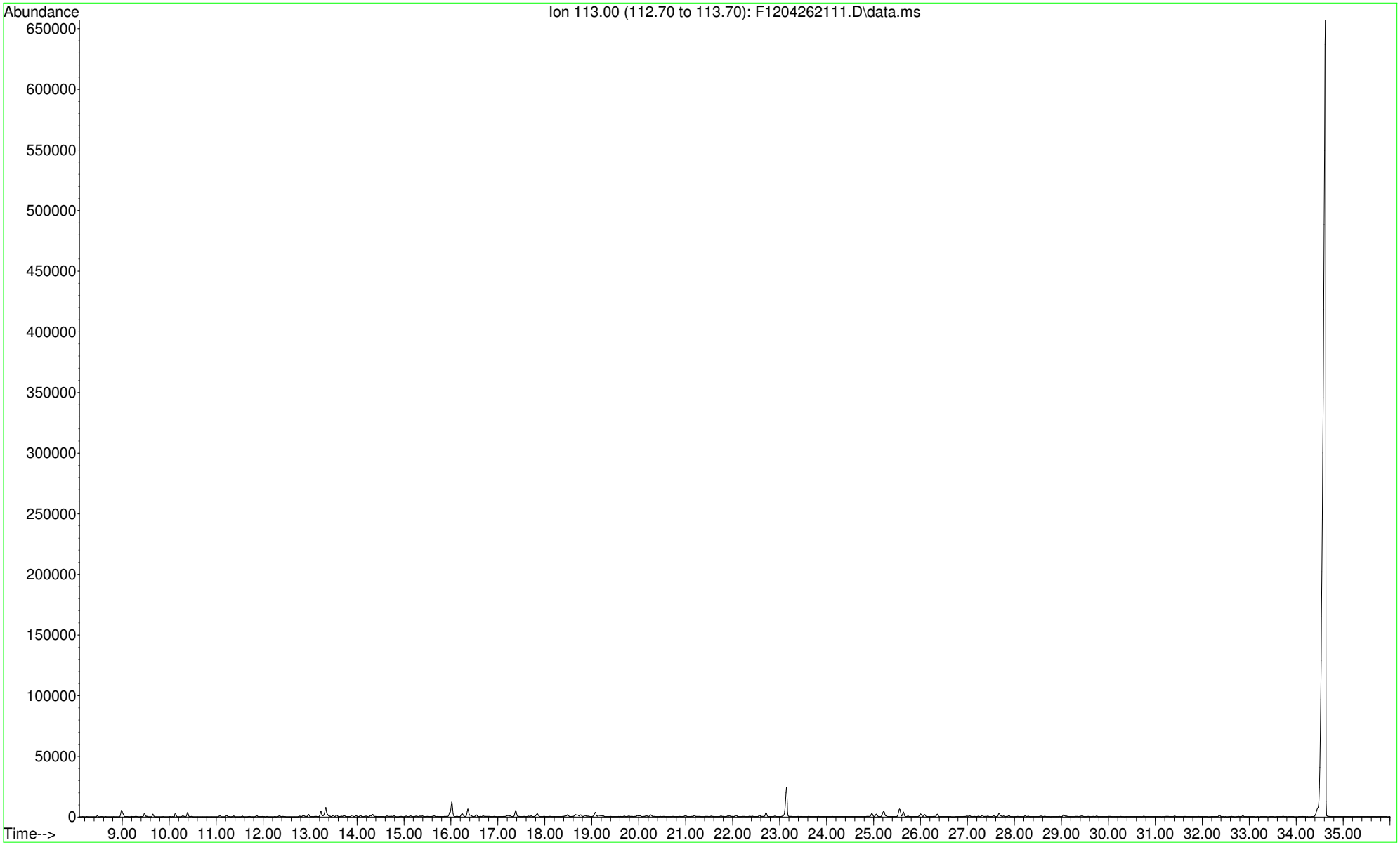
Vial Number: 11



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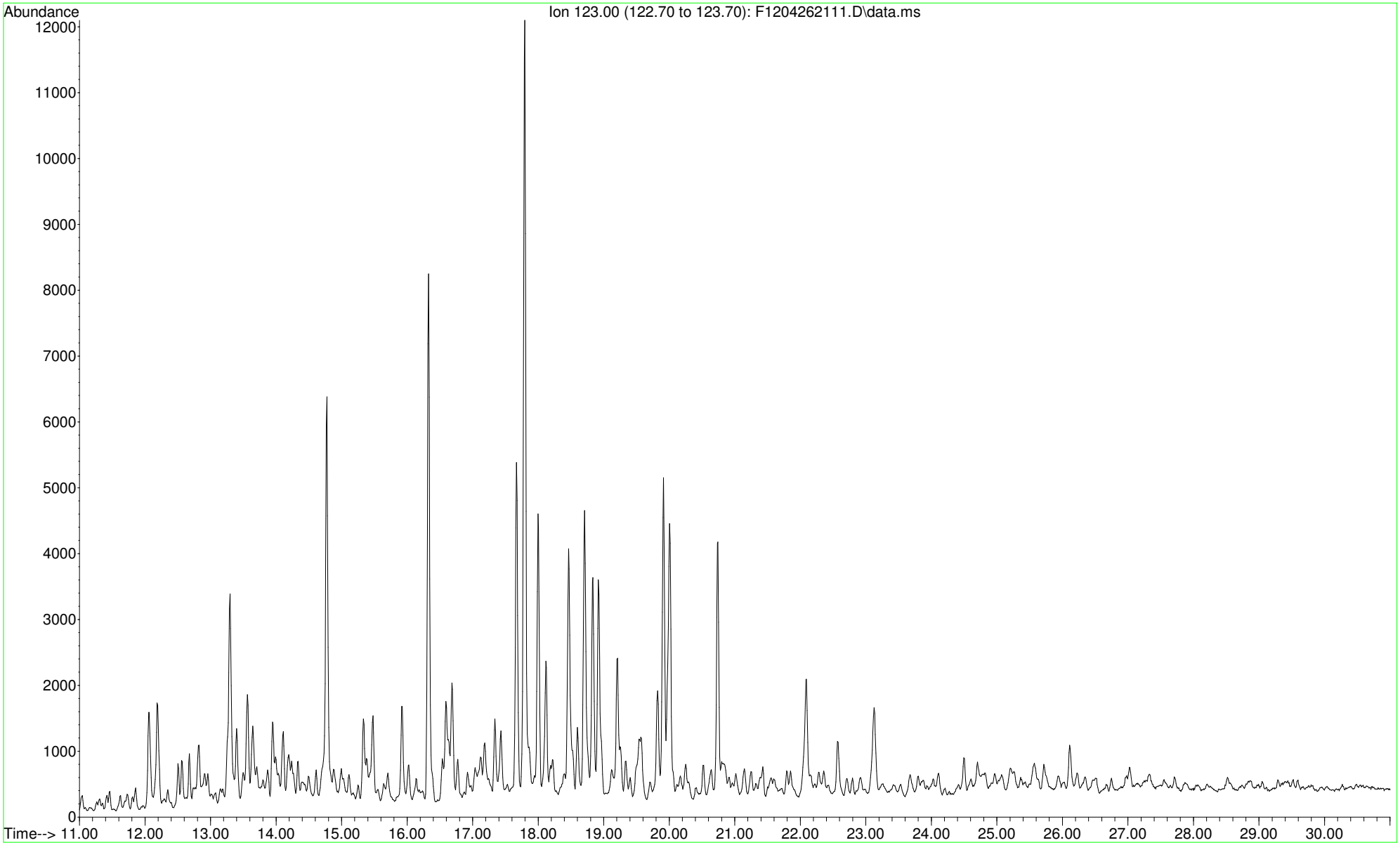

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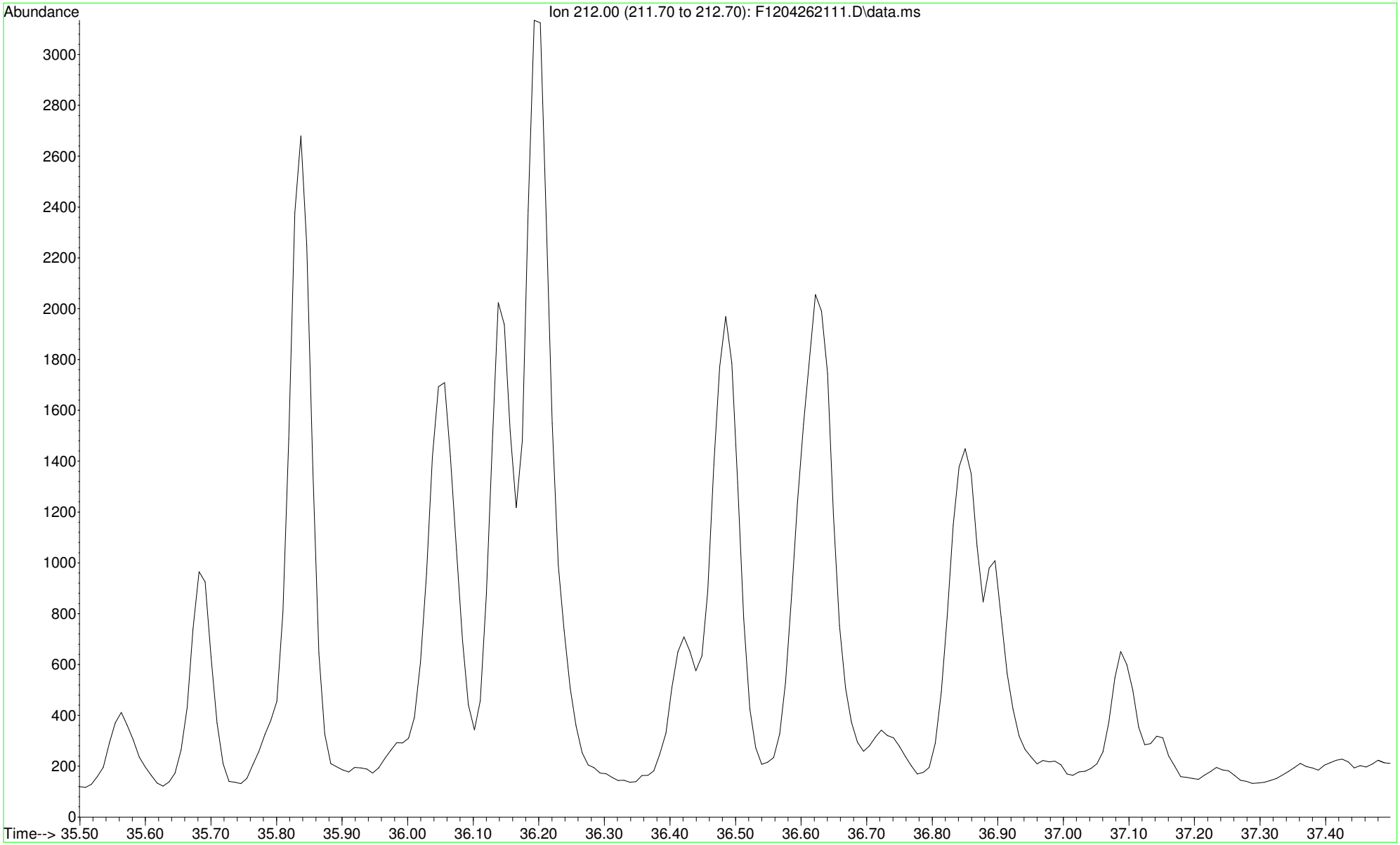
Vial Number: 11



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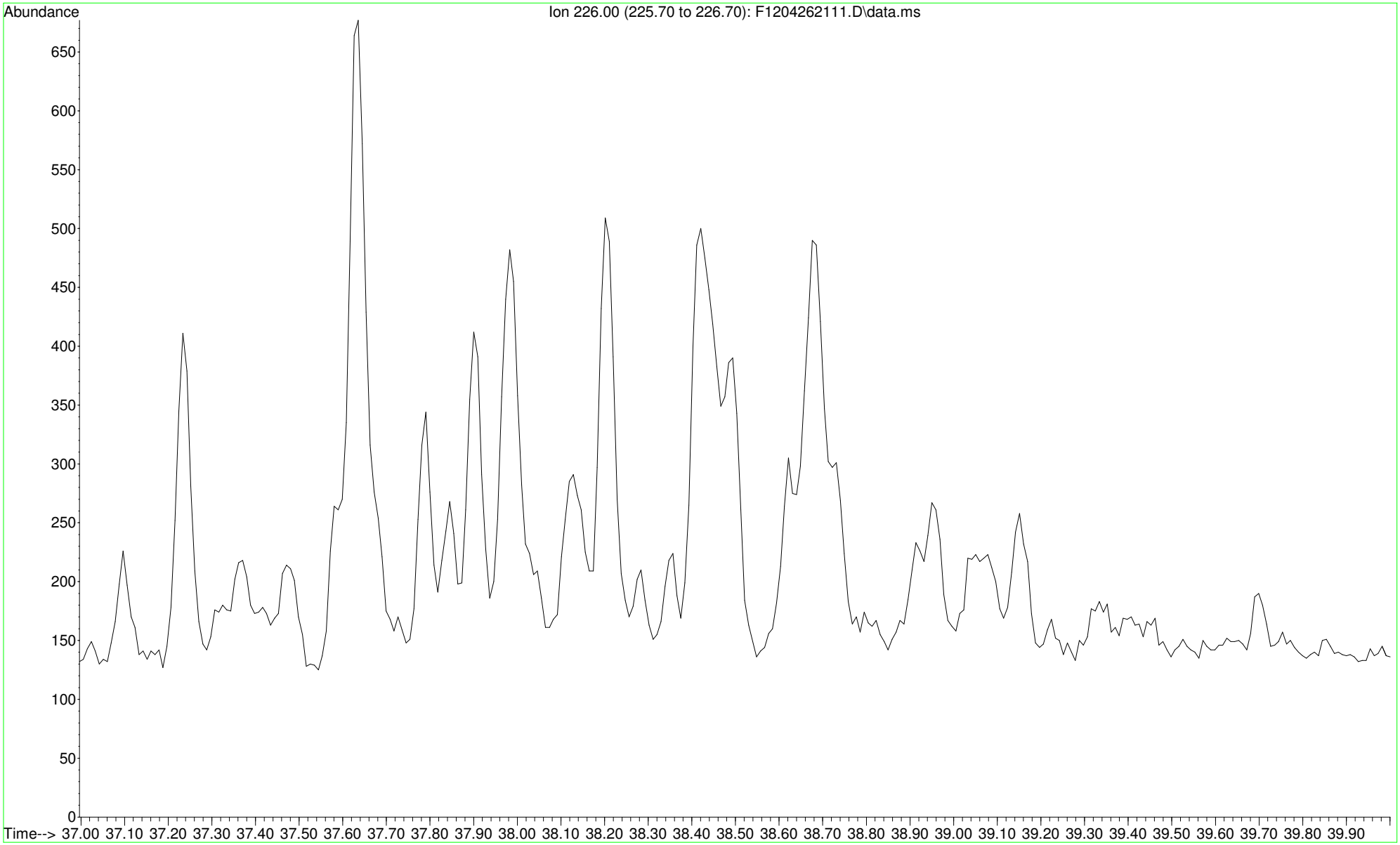

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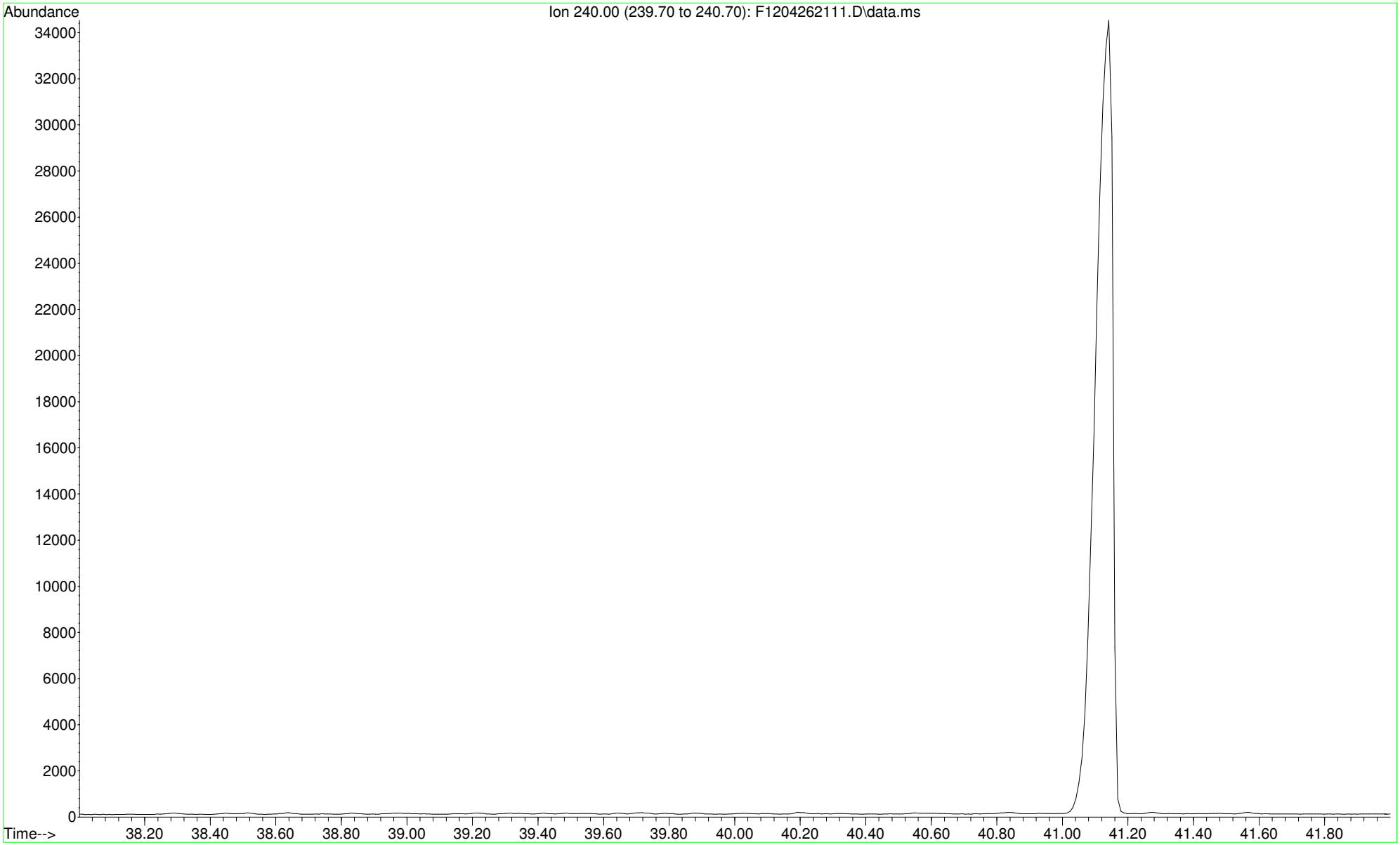

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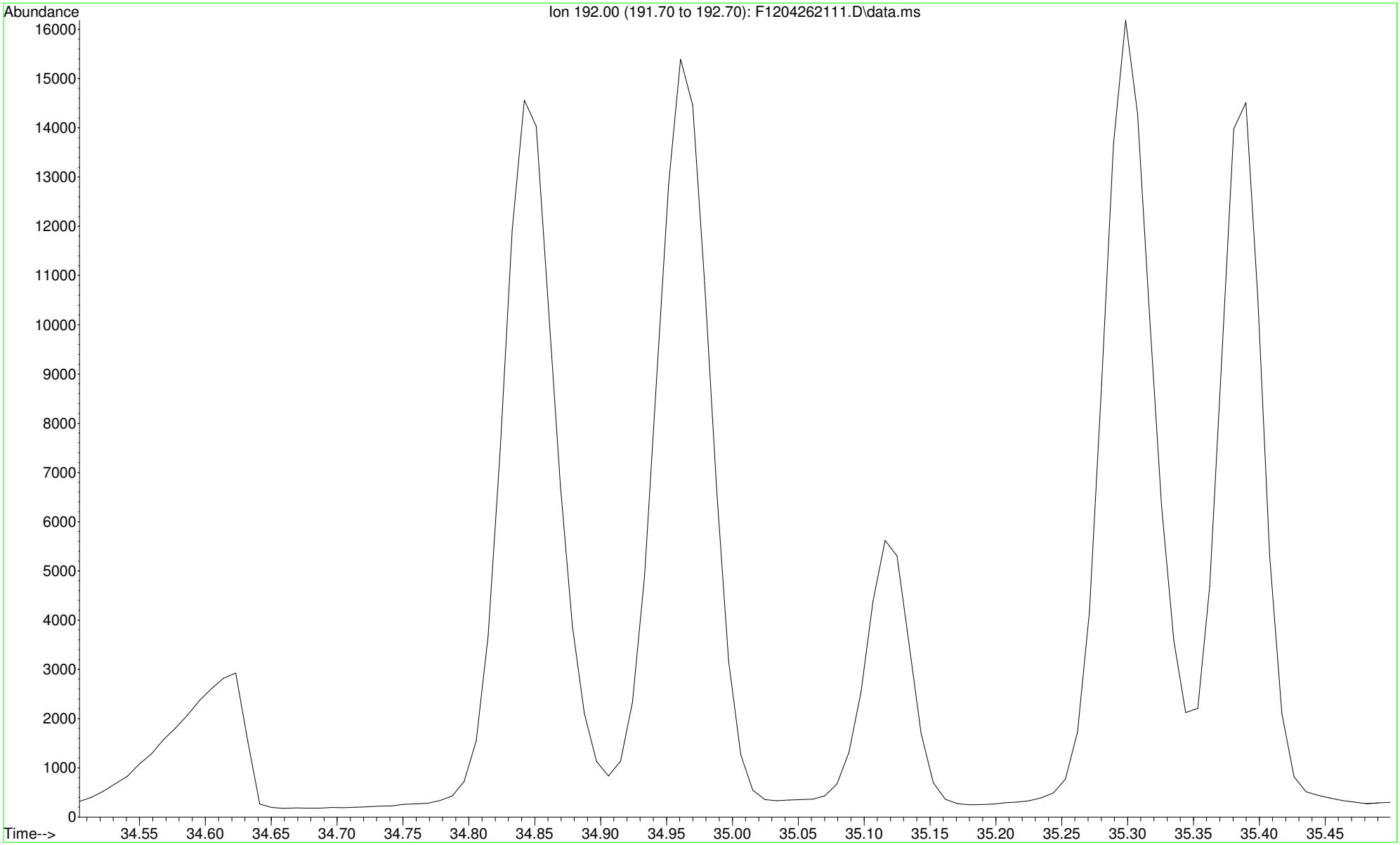

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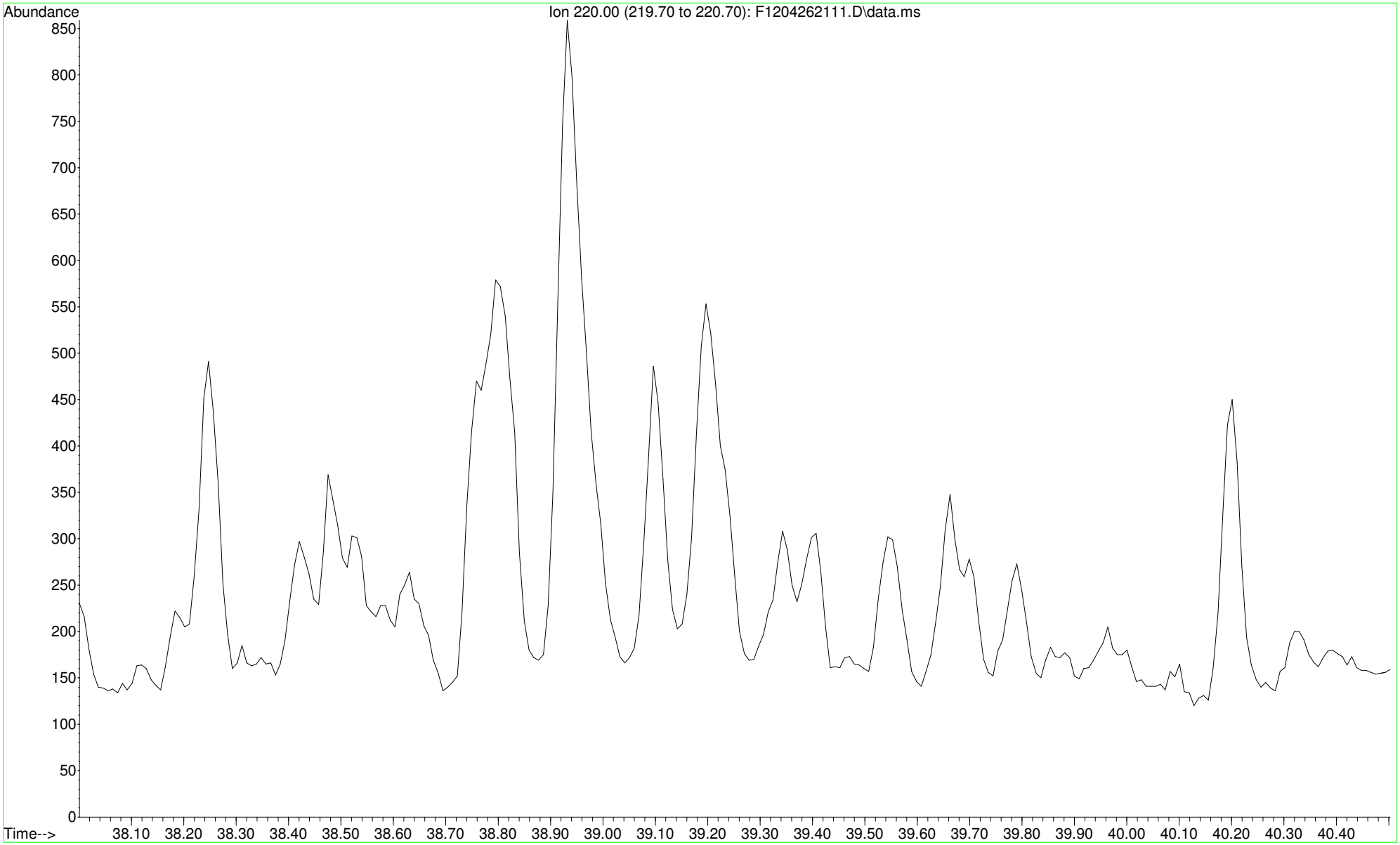

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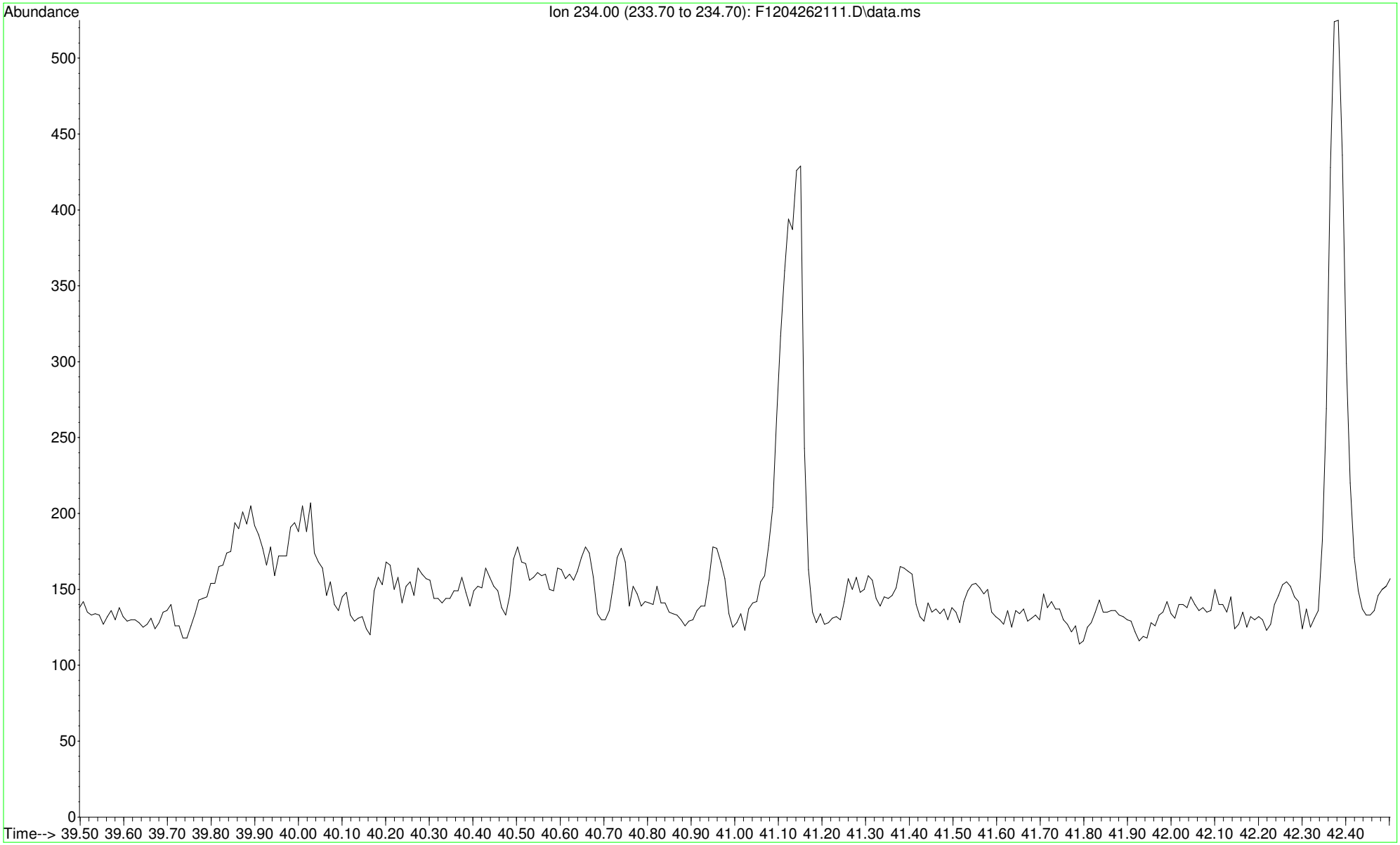

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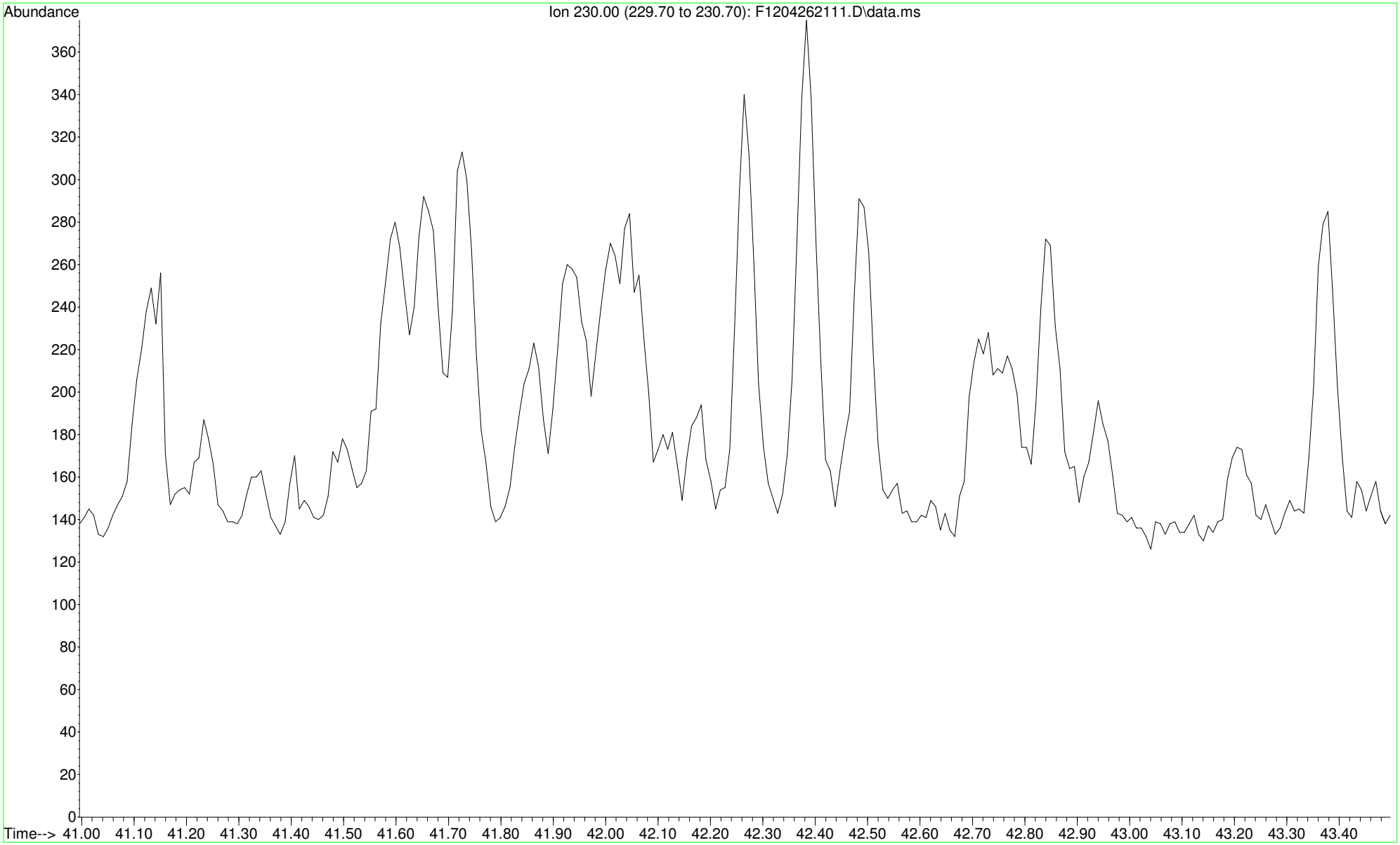

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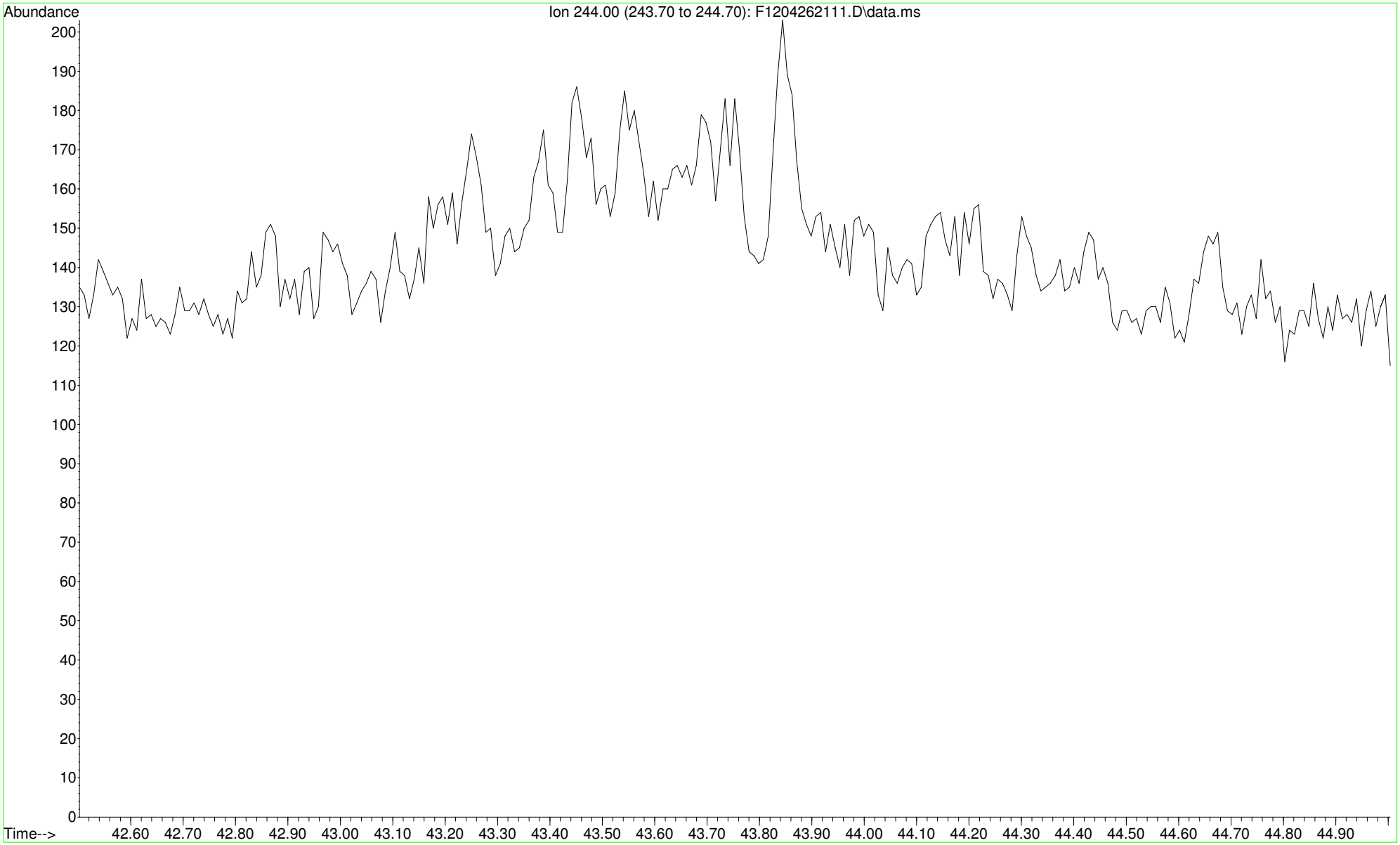

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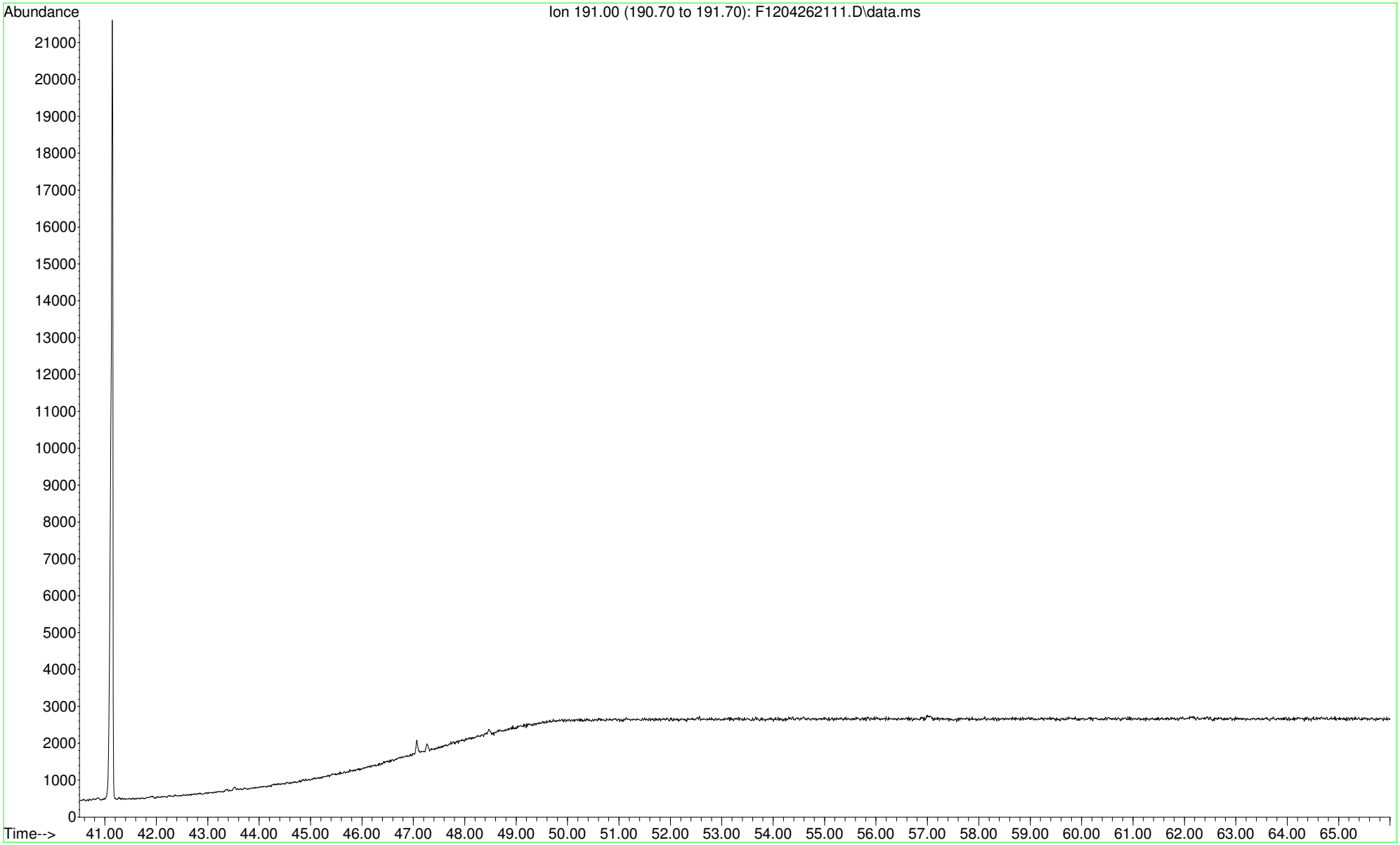

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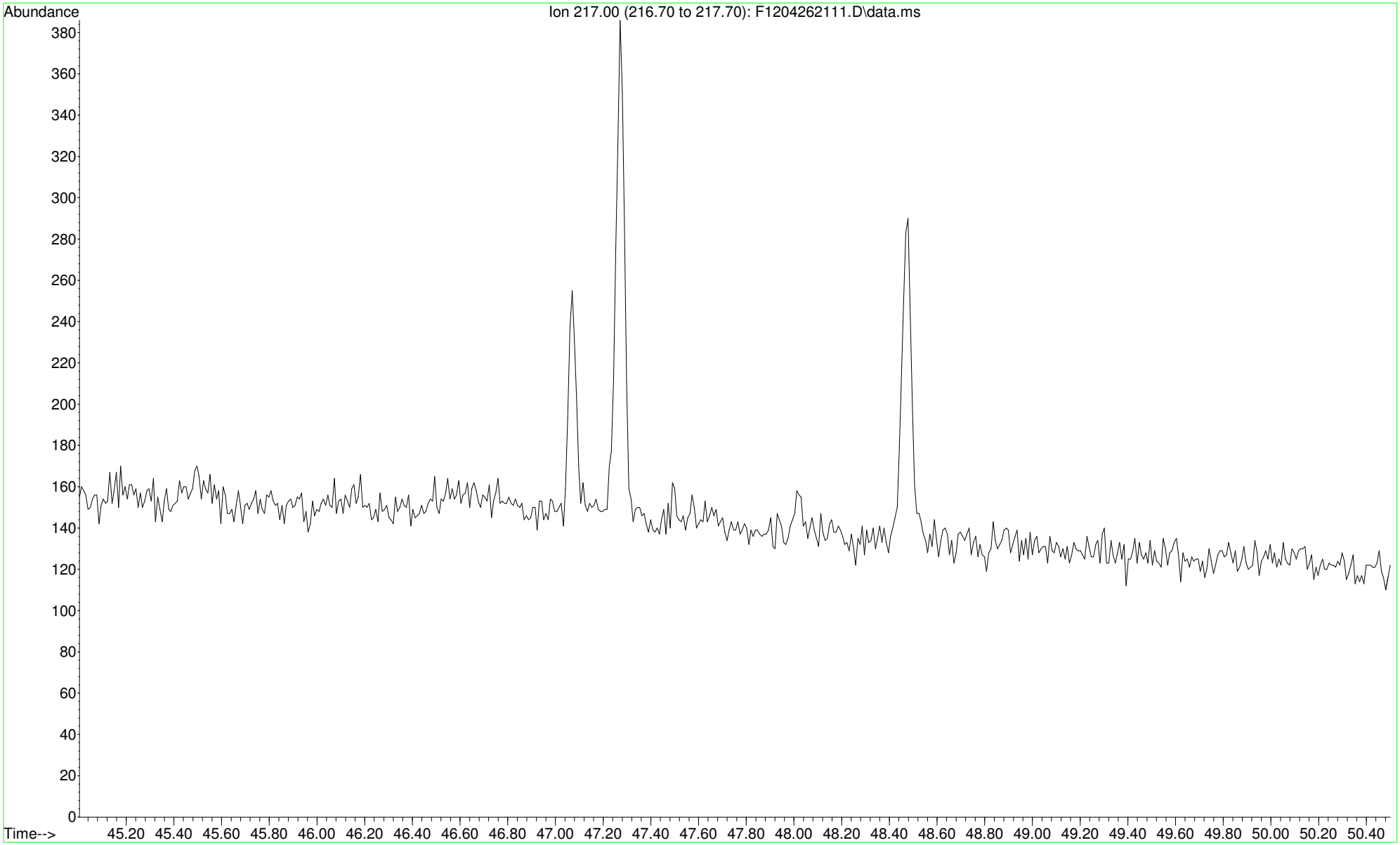

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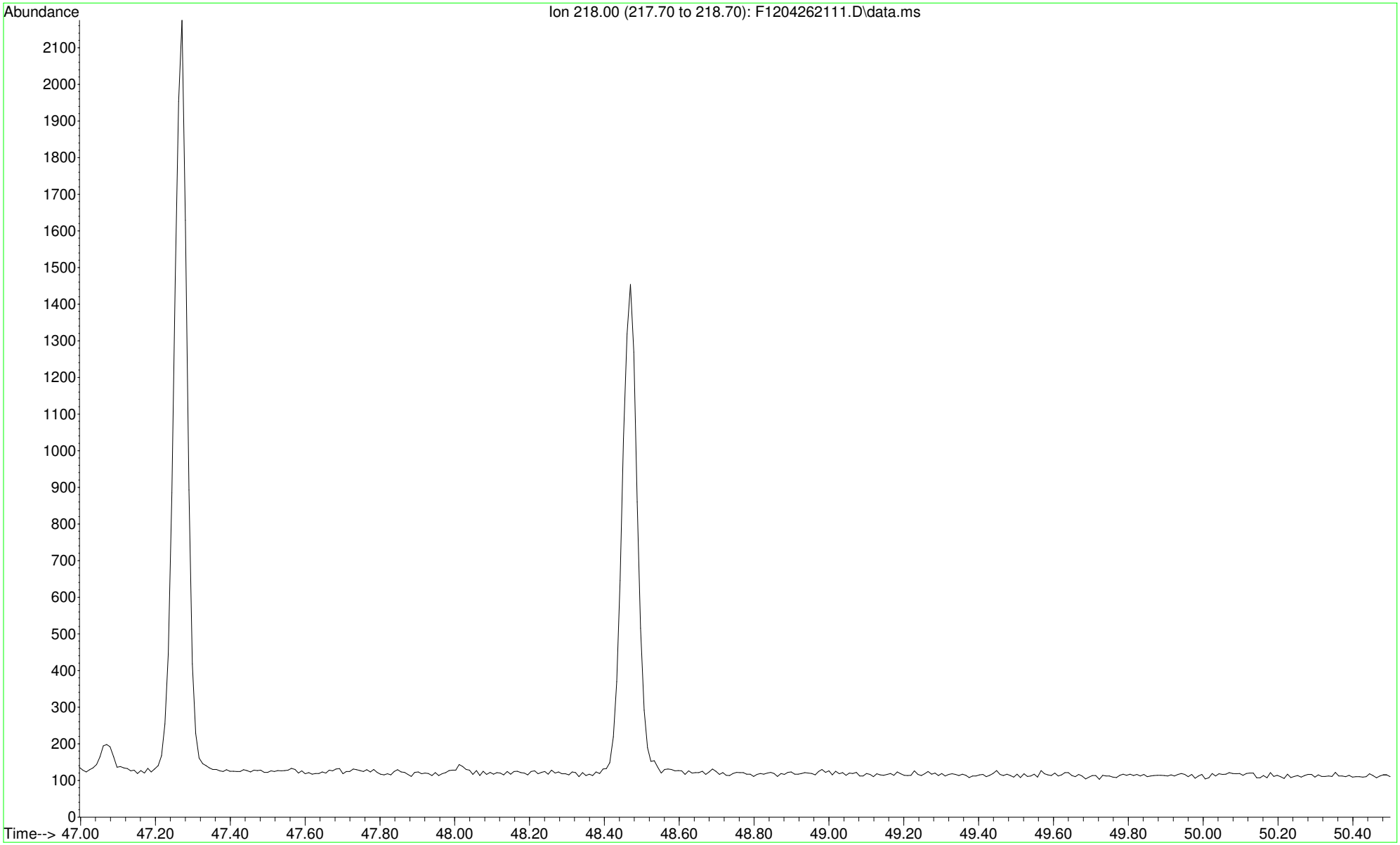

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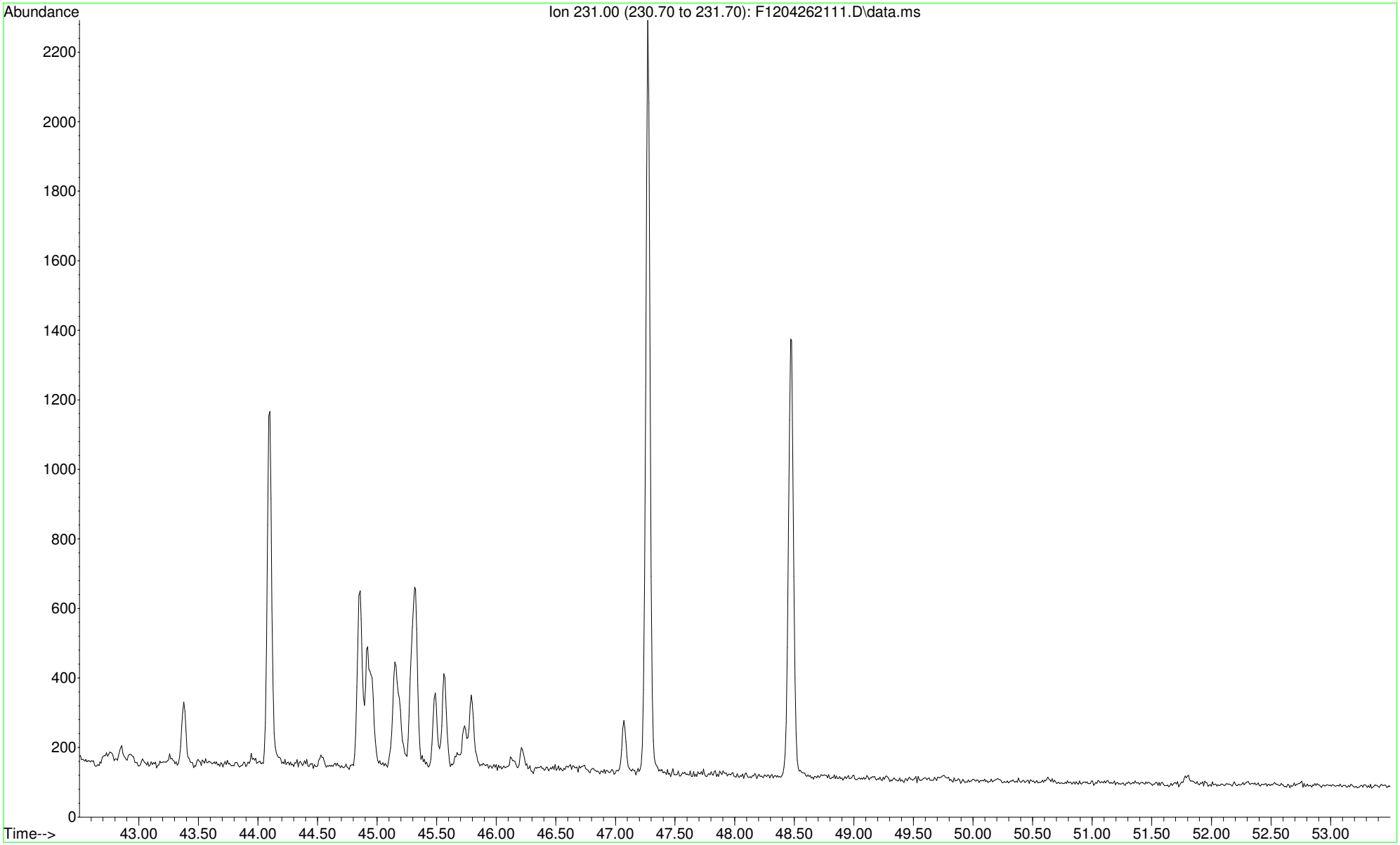

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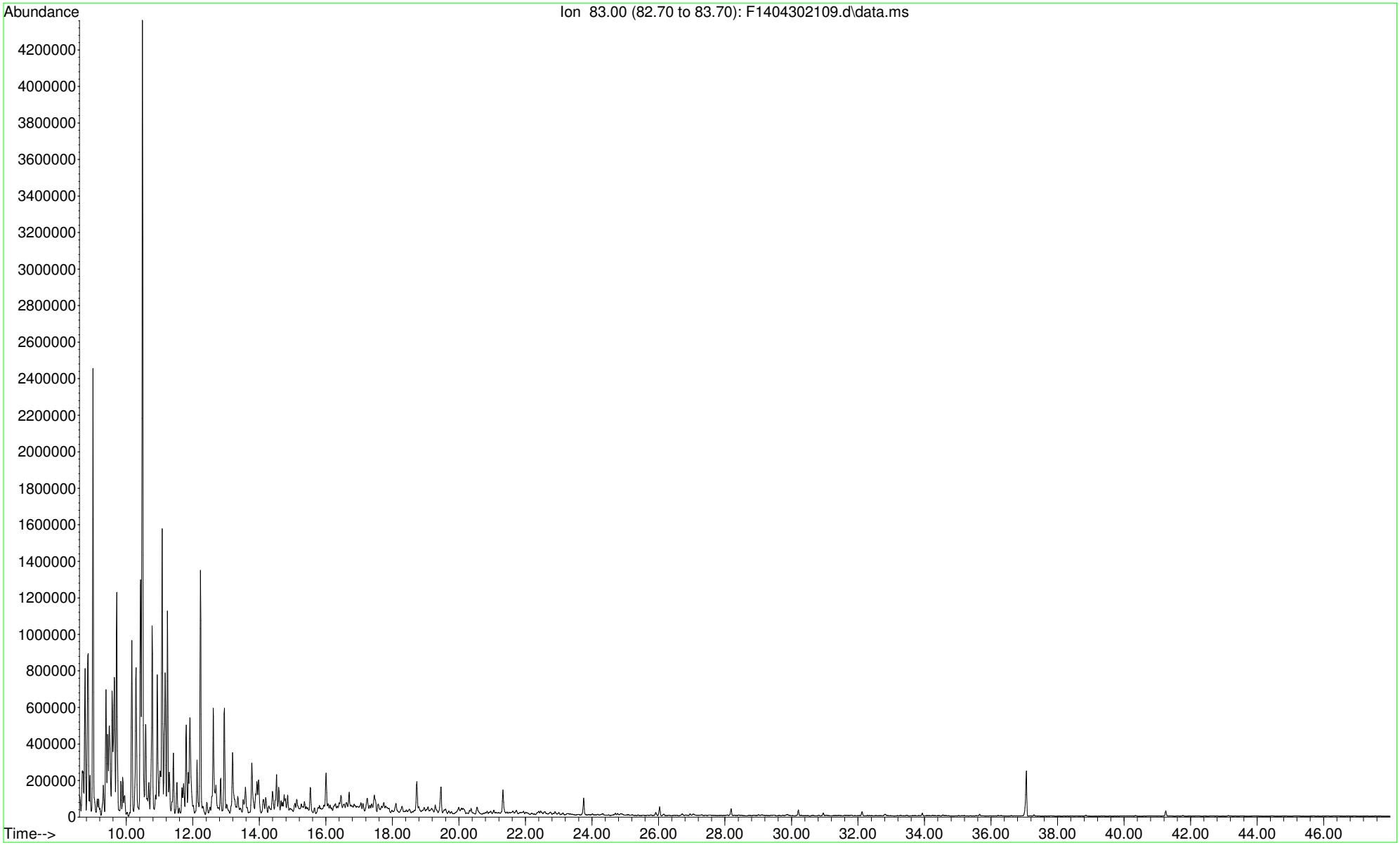

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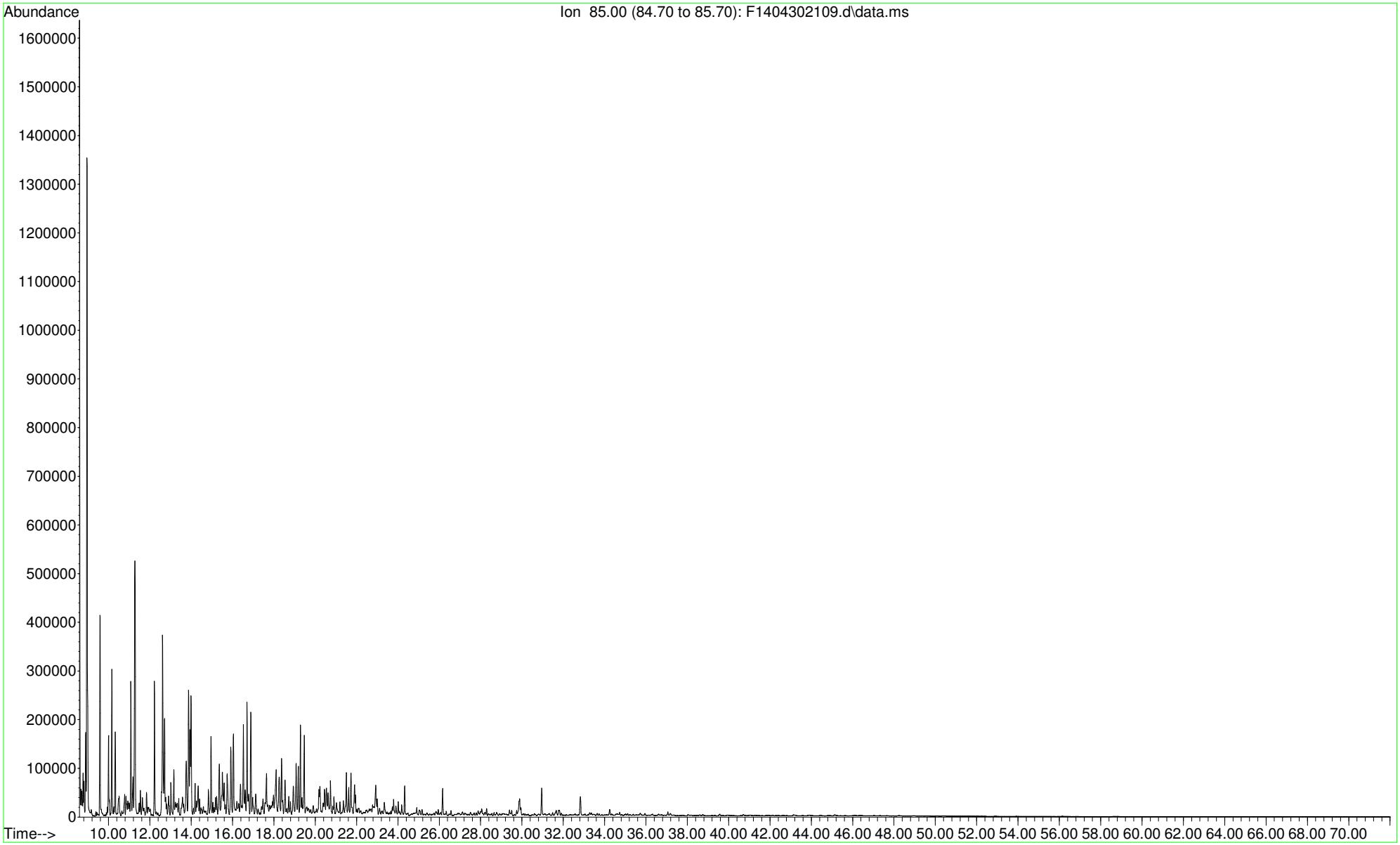

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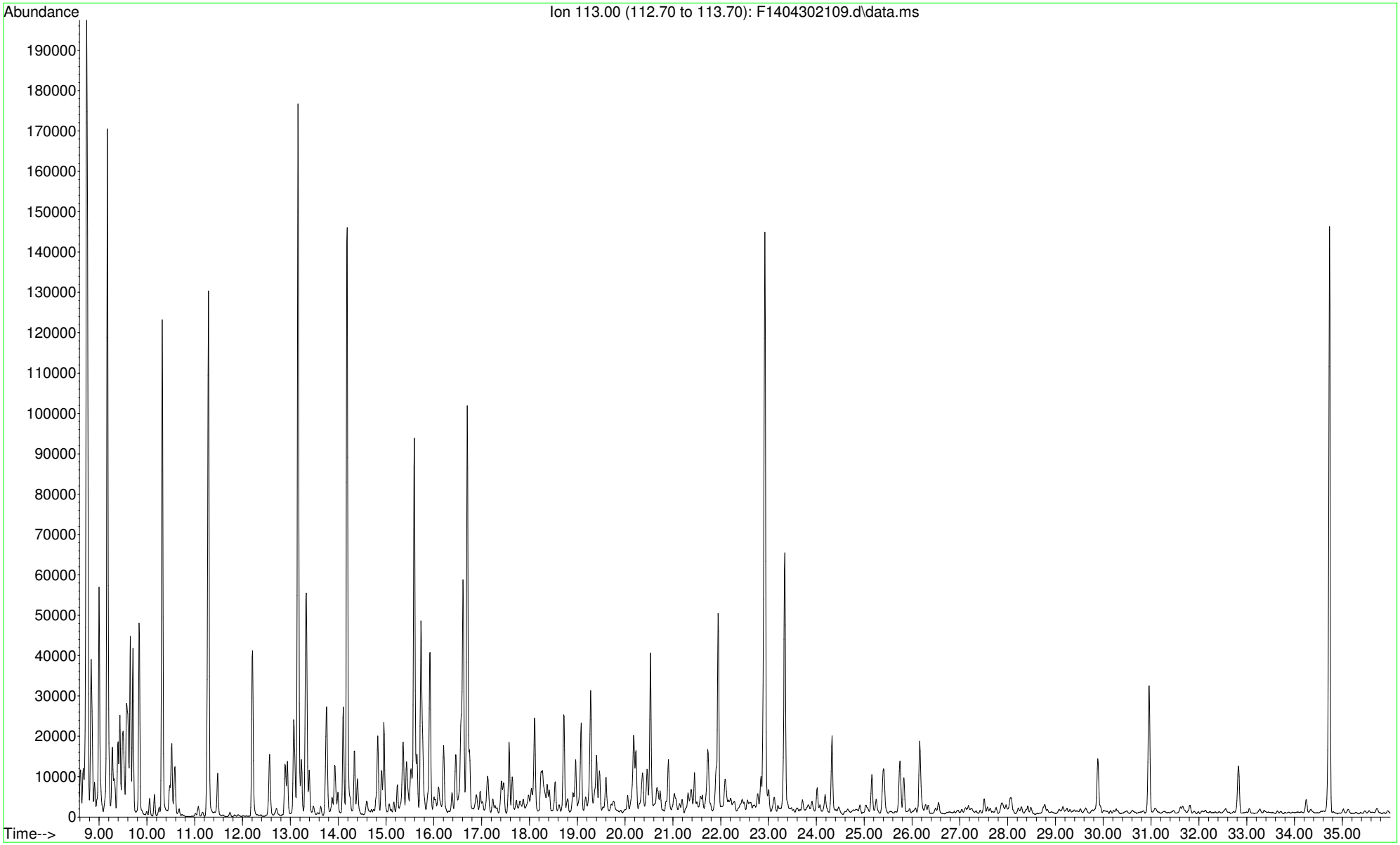

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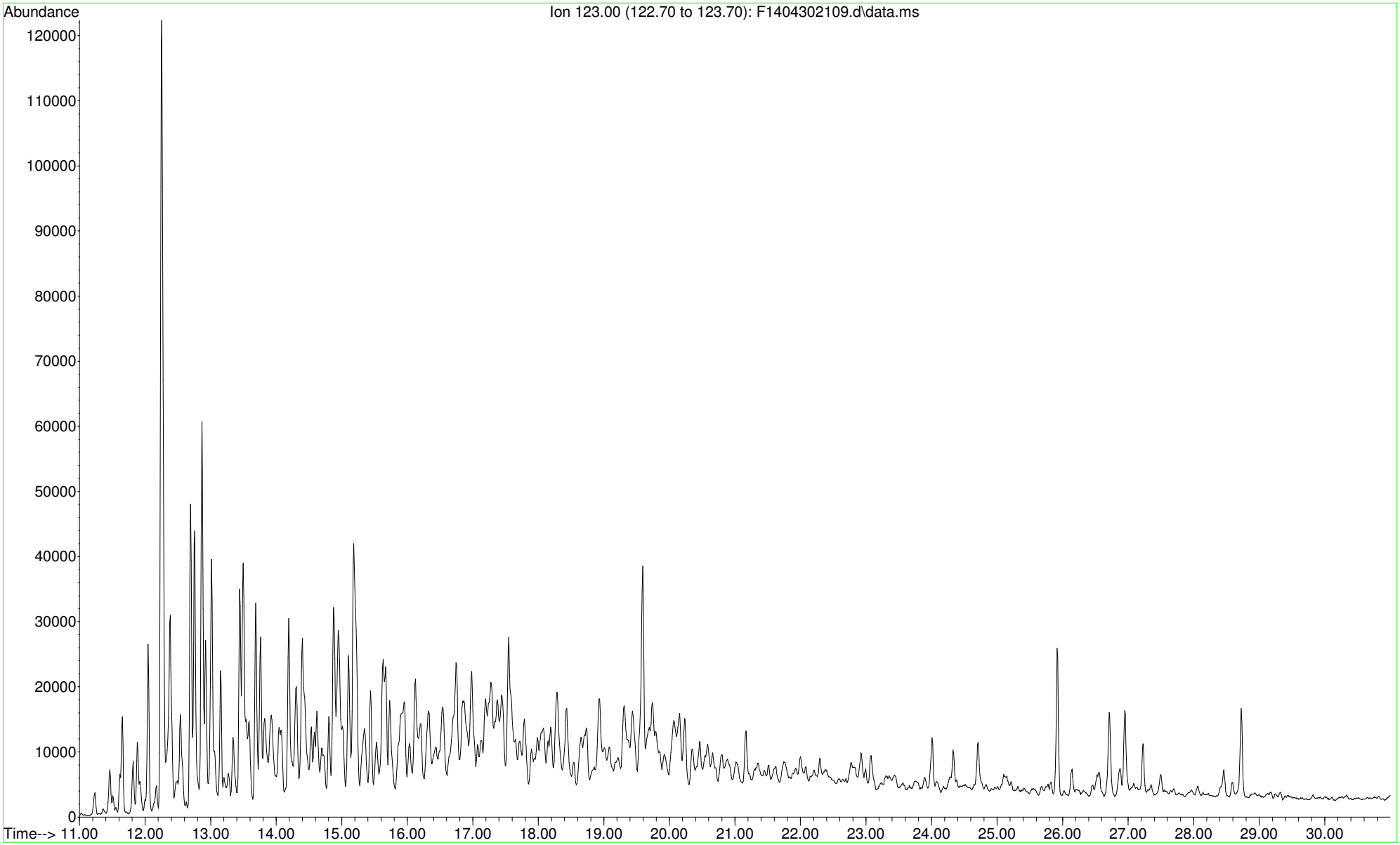

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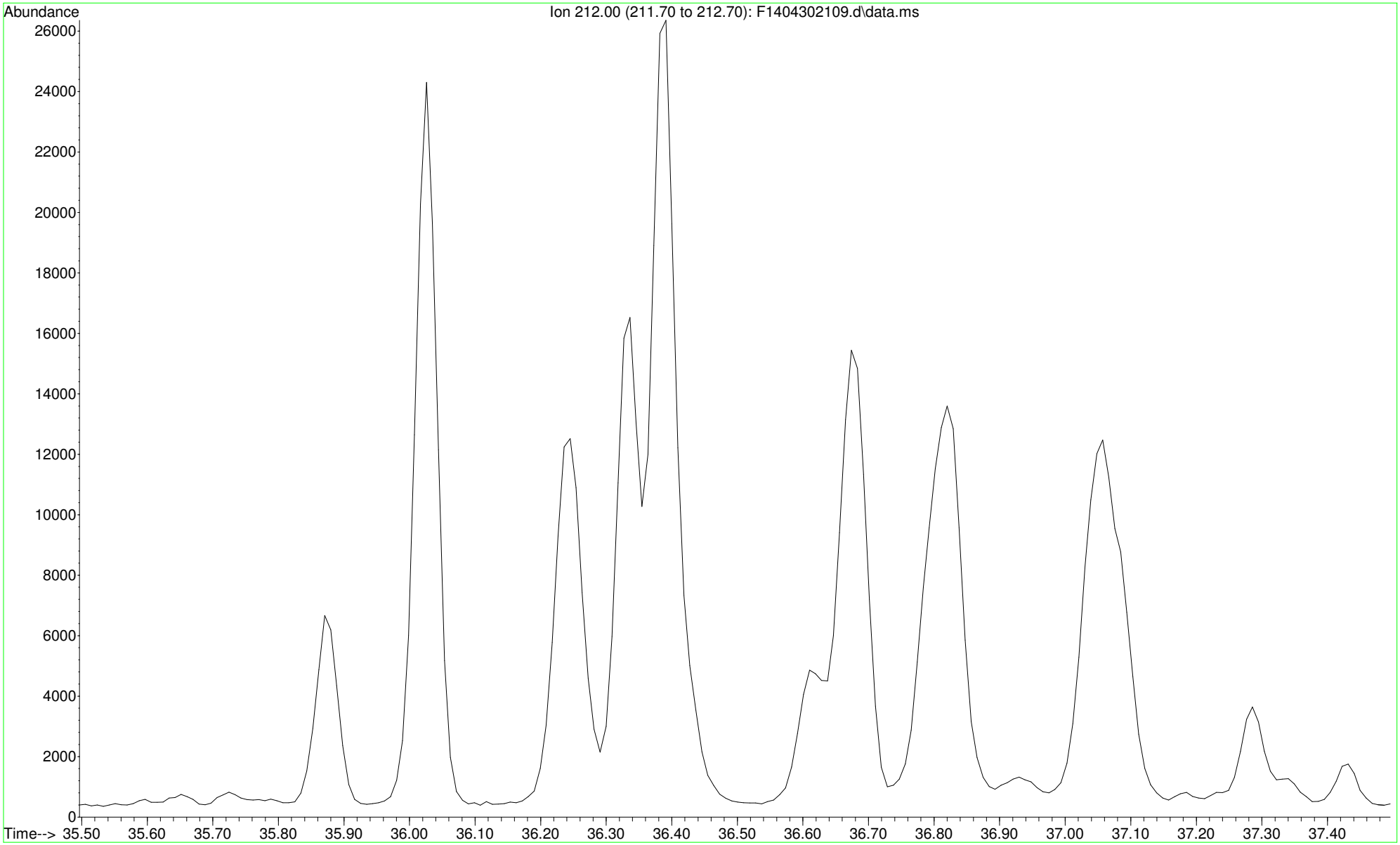
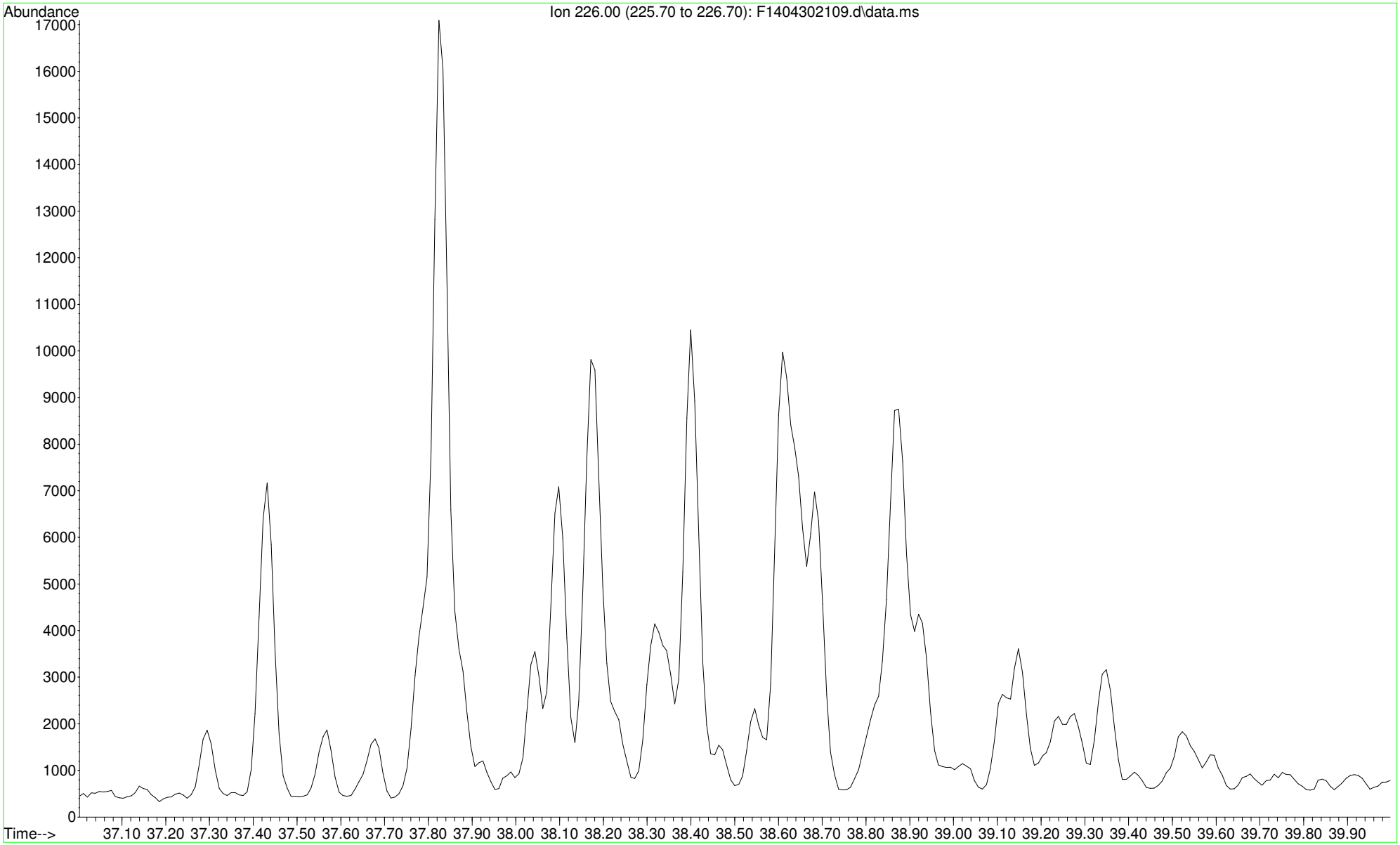
Vial Number: 9



File :O:\Forensics\Data\PAH14\2021\APR21\apr30\F1404302109.d
Operator : PAH14:CC
Acquired : 30 Apr 2021 9:01 pm using AcqMethod FRNC14A.M
Instrument : PAH14
Sample Name: l2113097-03,32
Misc Info : WG1492694,WG1492368,ICAL17859
Vial Number: 9



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Instrument :   PAH14
Sample Name: l2113097-03,32
Misc Info  : WG1492694,WG1492368,ICAL17859
Vial Number: 9
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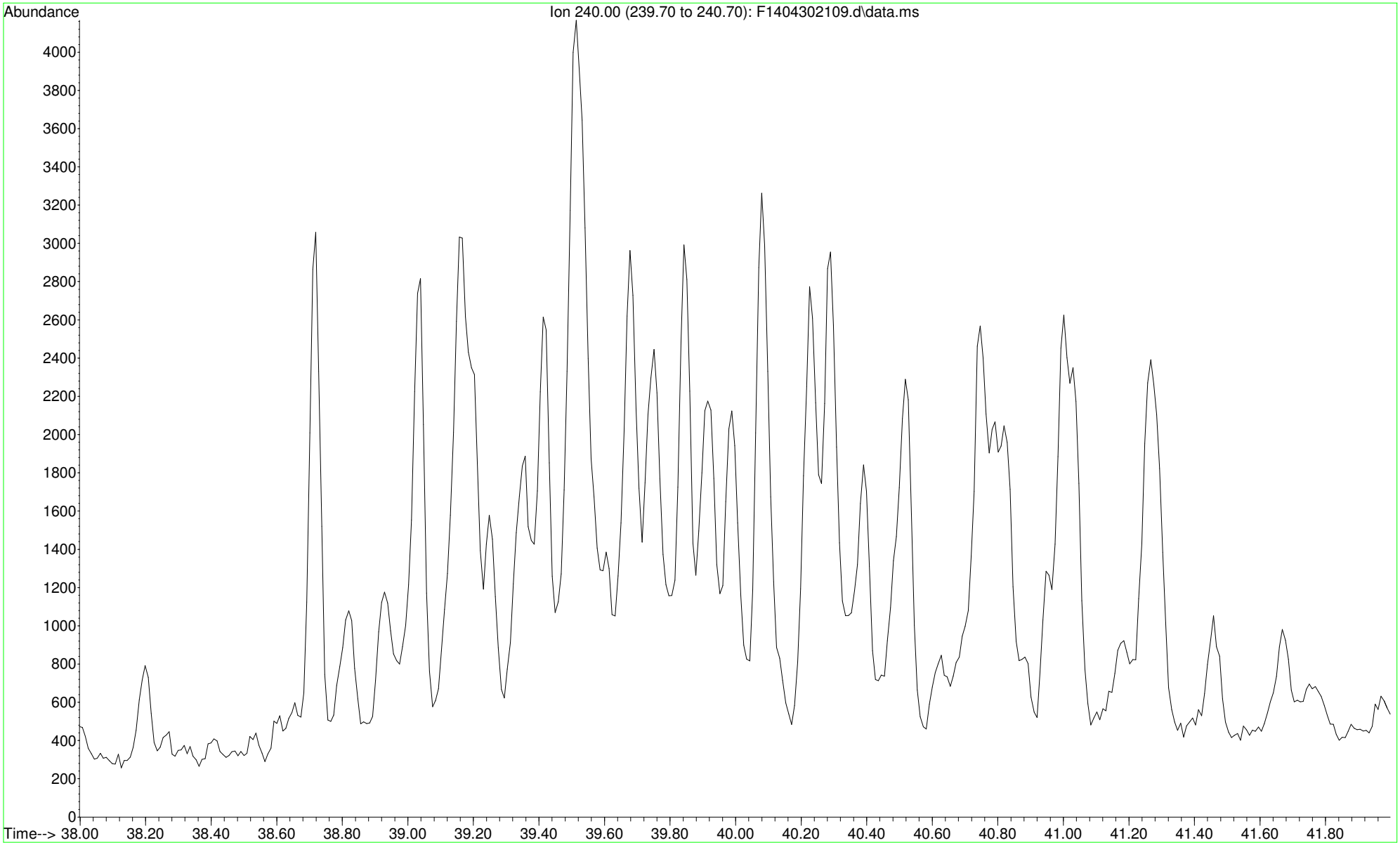

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Instrument : PAH14
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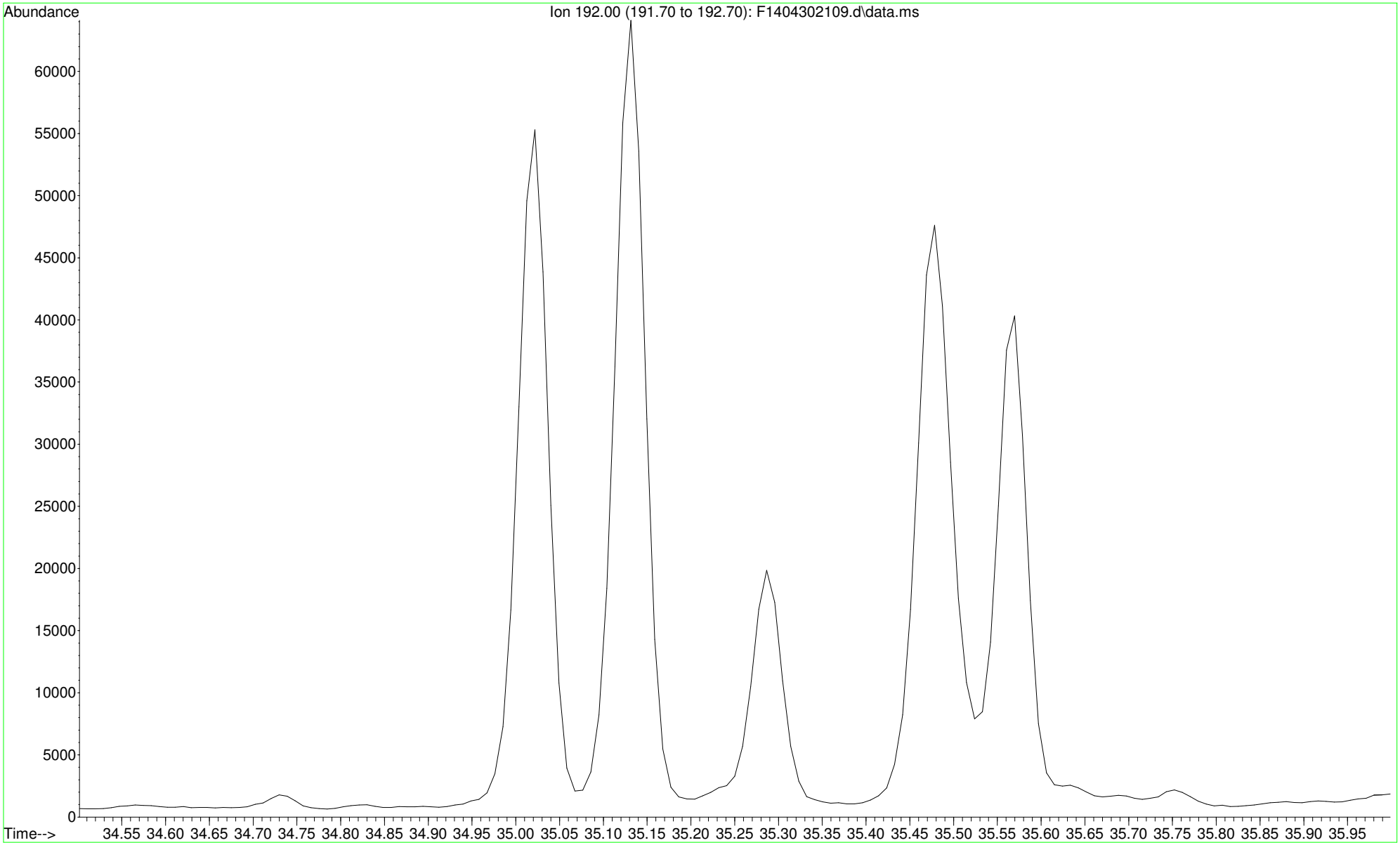
Vial Number: 9



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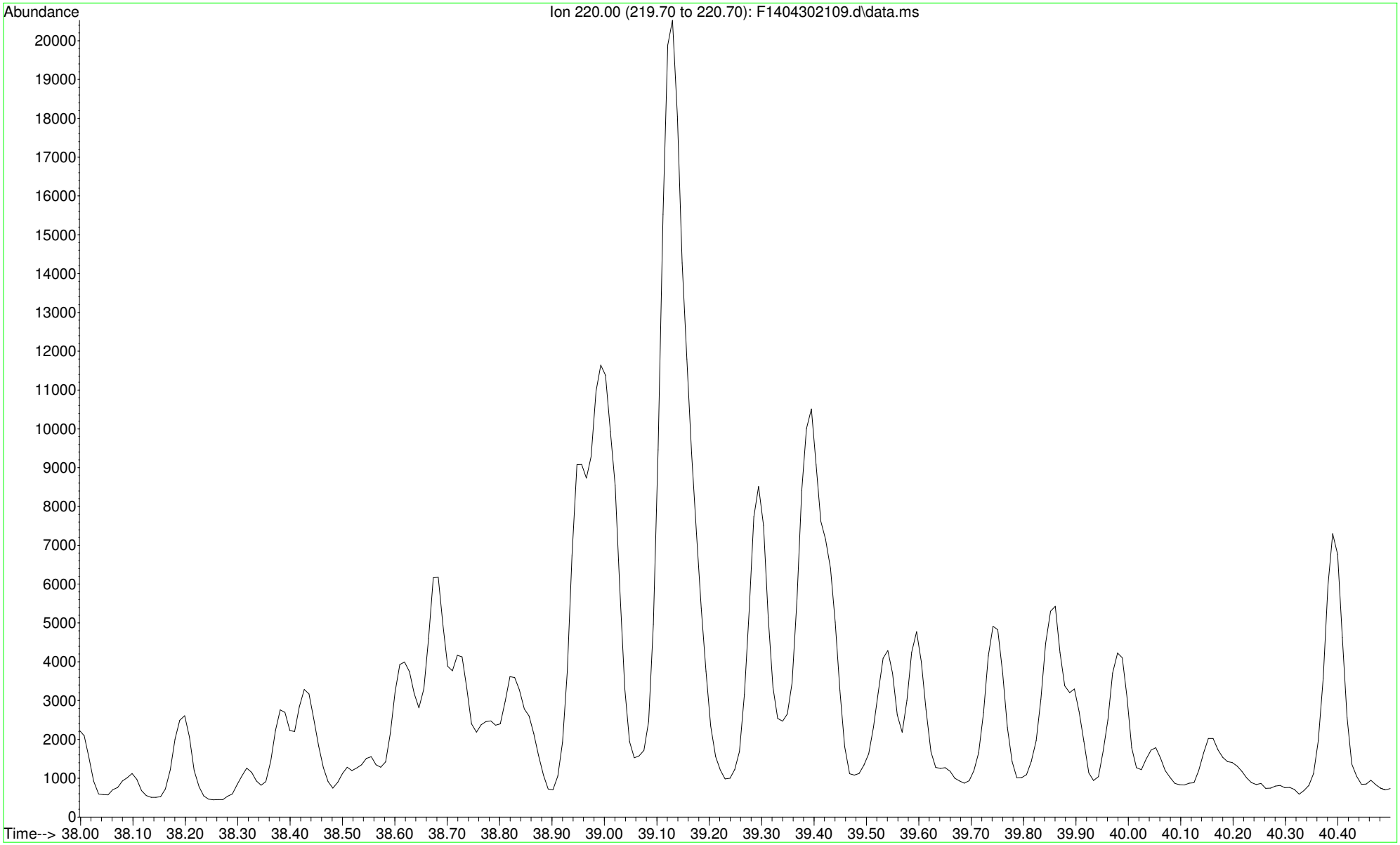
Vial Number: 9



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Operator : PAH14:CC
Acquired : 30 Apr 2021 9:01 pm using AcqMethod FRNC14A.M
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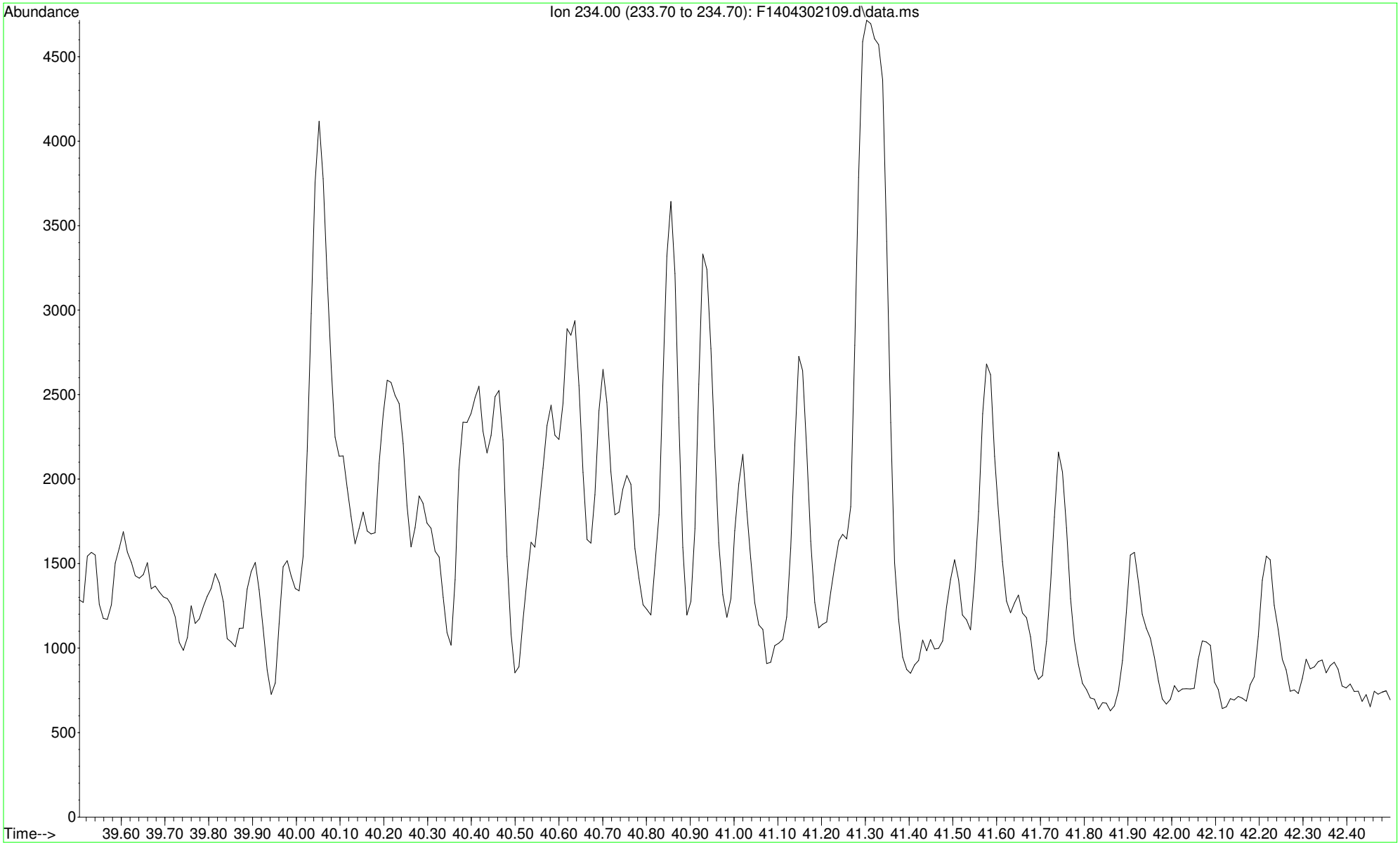
Vial Number: 9



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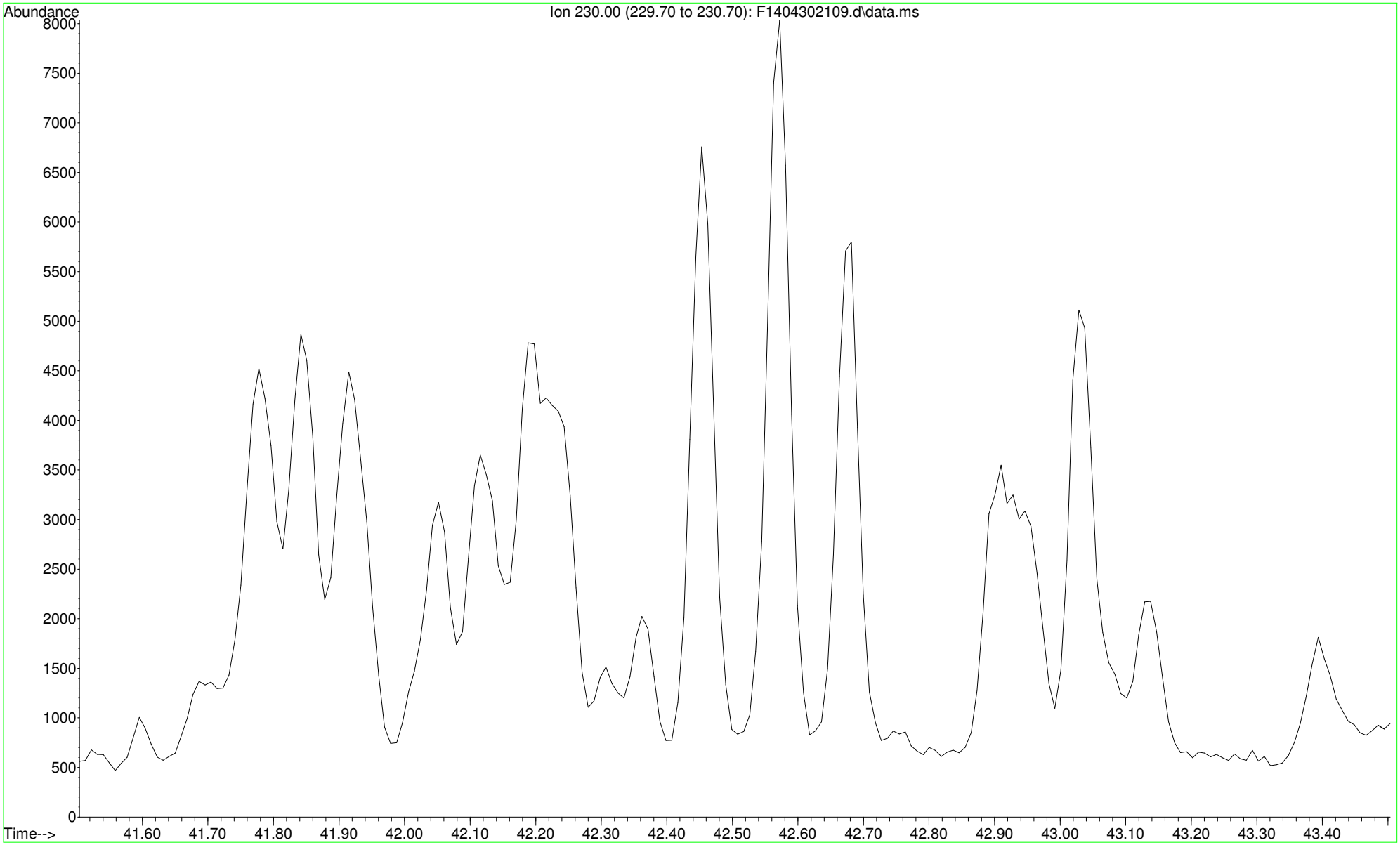

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Operator : PAH14:CC
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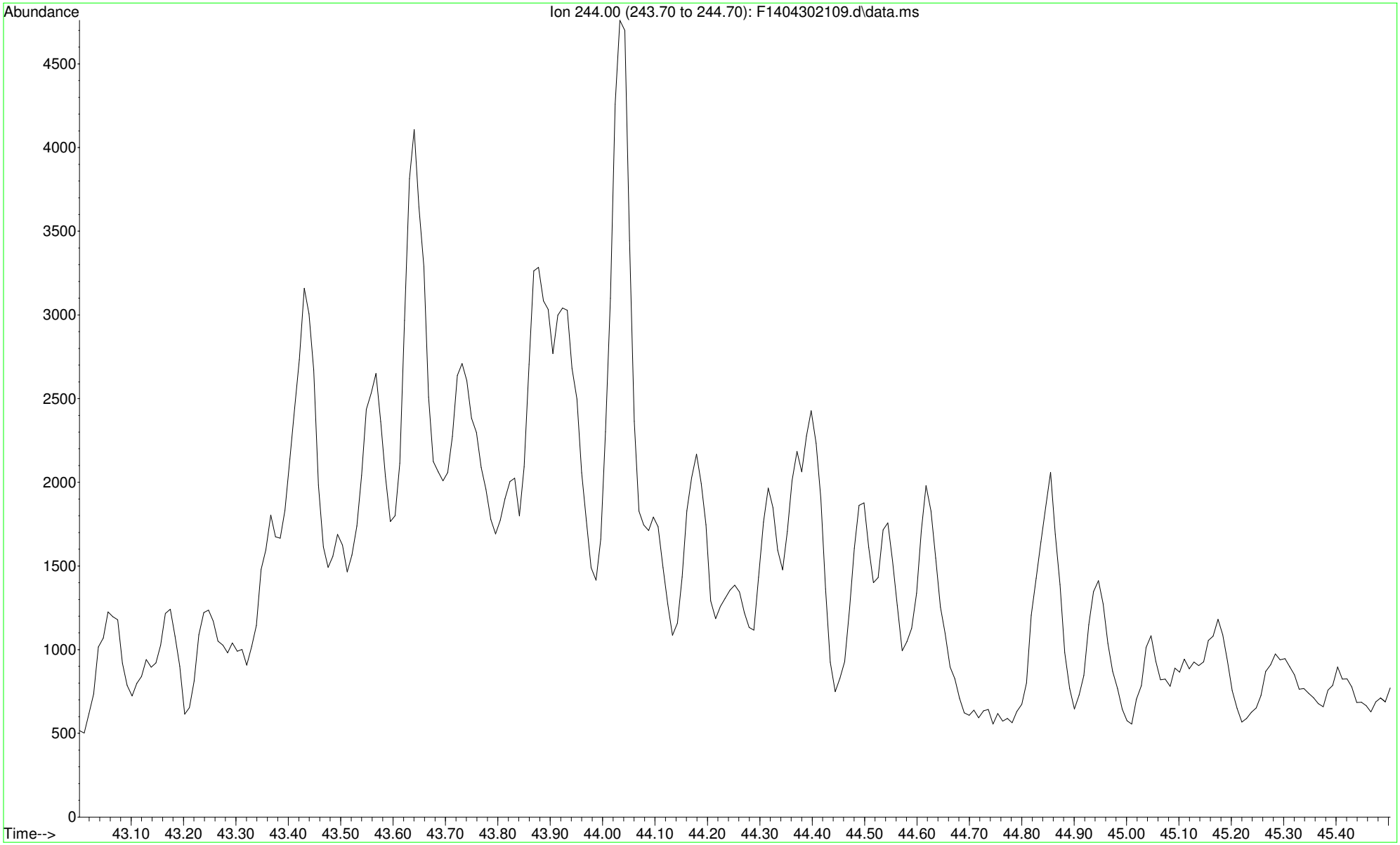
Vial Number: 9



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Operator : PAH14:CC
Acquired : 30 Apr 2021 9:01 pm using AcqMethod FRNC14A.M
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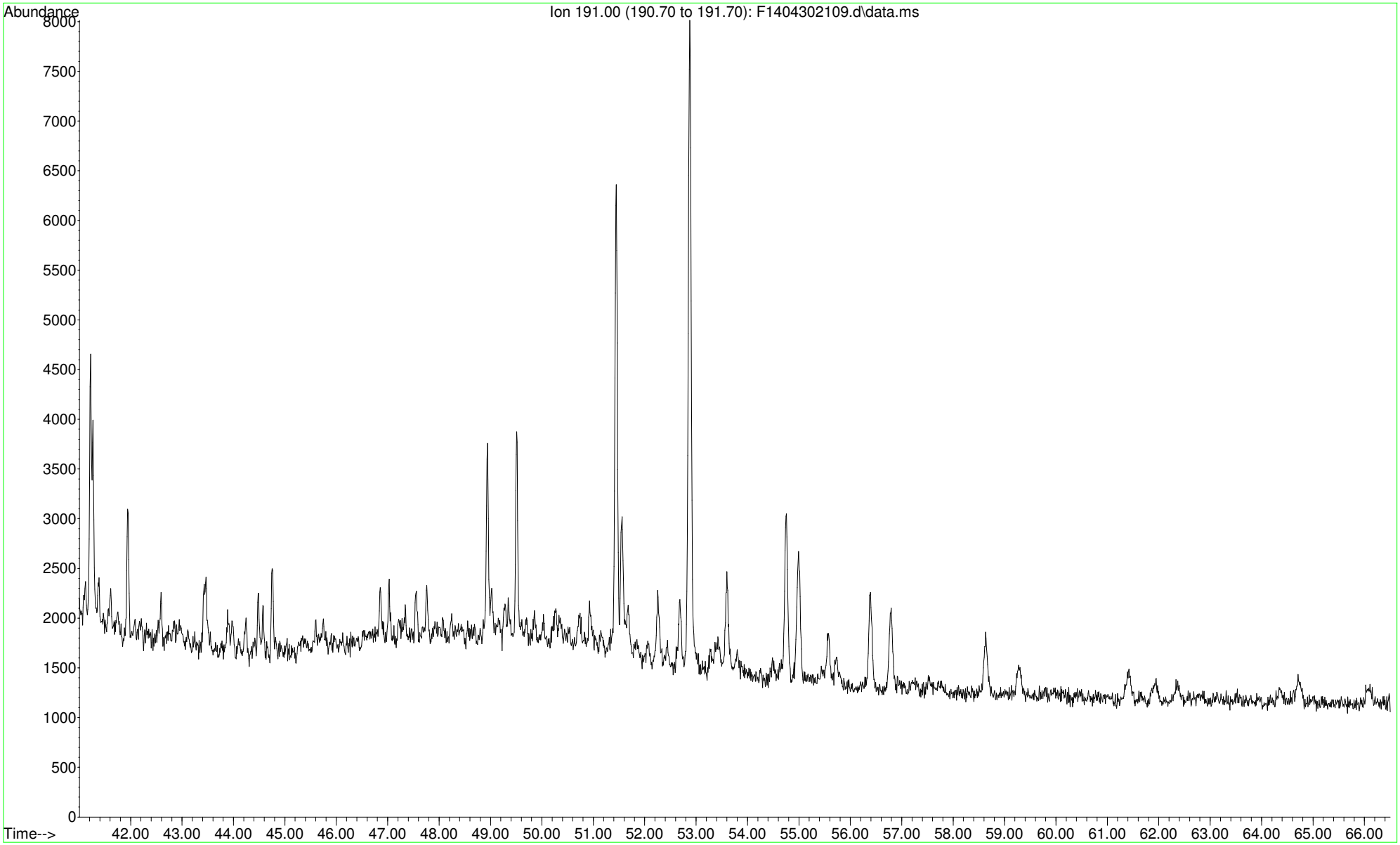

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File       :O:\Forensics\Data\PAH14\2021\APR21\apr30\F1404302109.d
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Instrument :   PAH14
Sample Name: l2113097-03,32
Misc Info  : WG1492694,WG1492368,ICAL17859
Vial Number: 9
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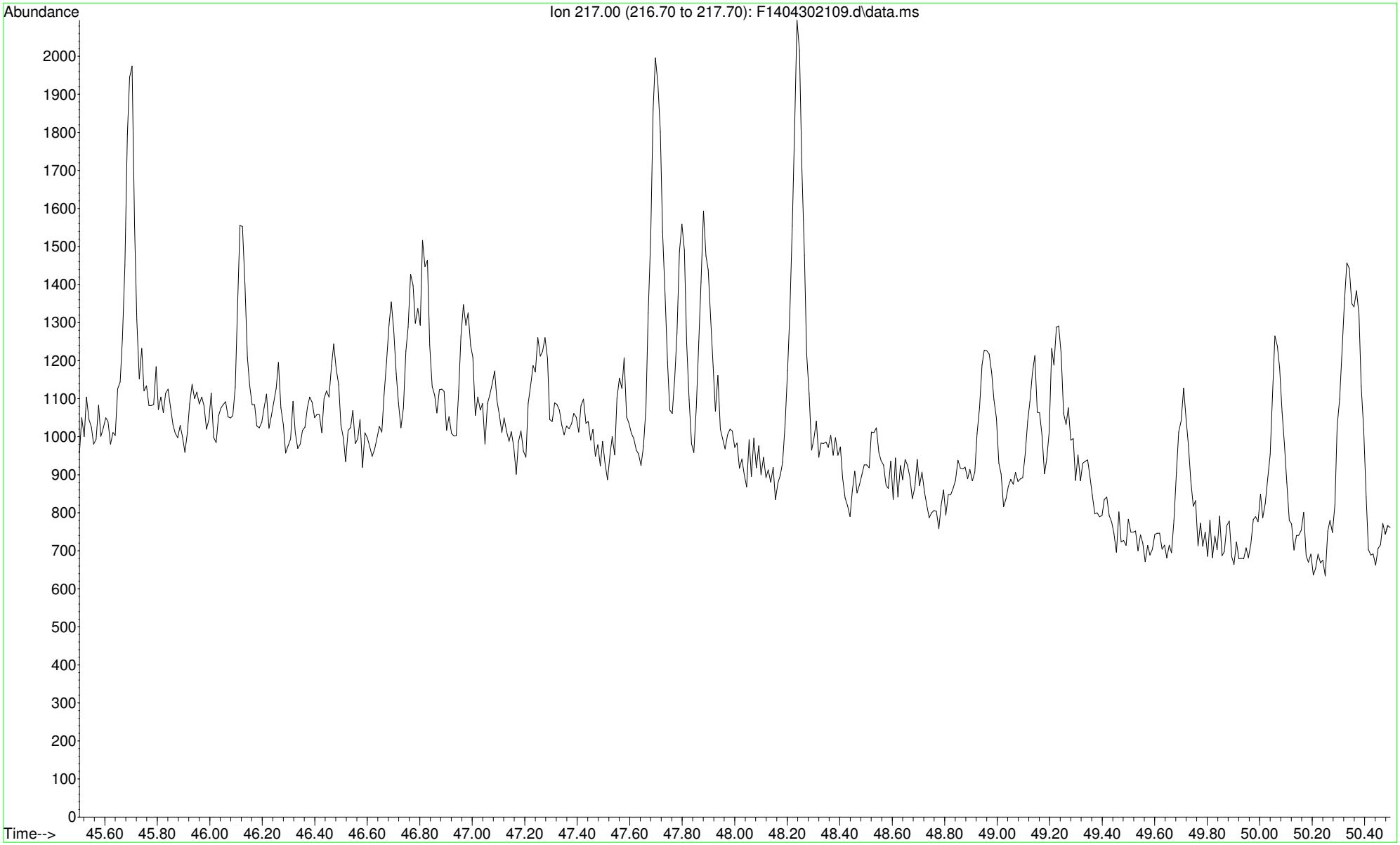

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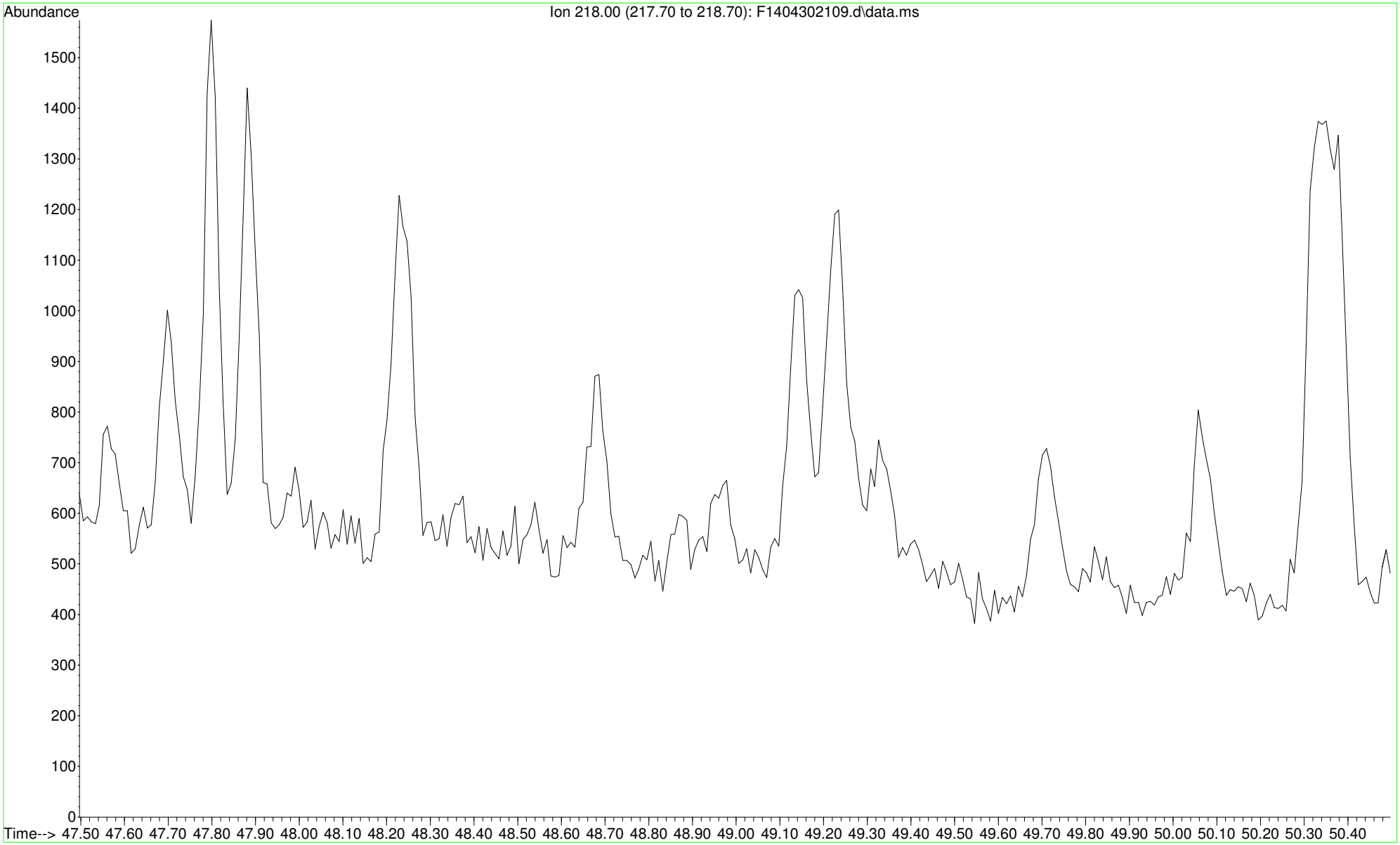

File :O:\Forensics\Data\PAH14\2021\APR21\apr30\F1404302109.d
Operator : PAH14:CC
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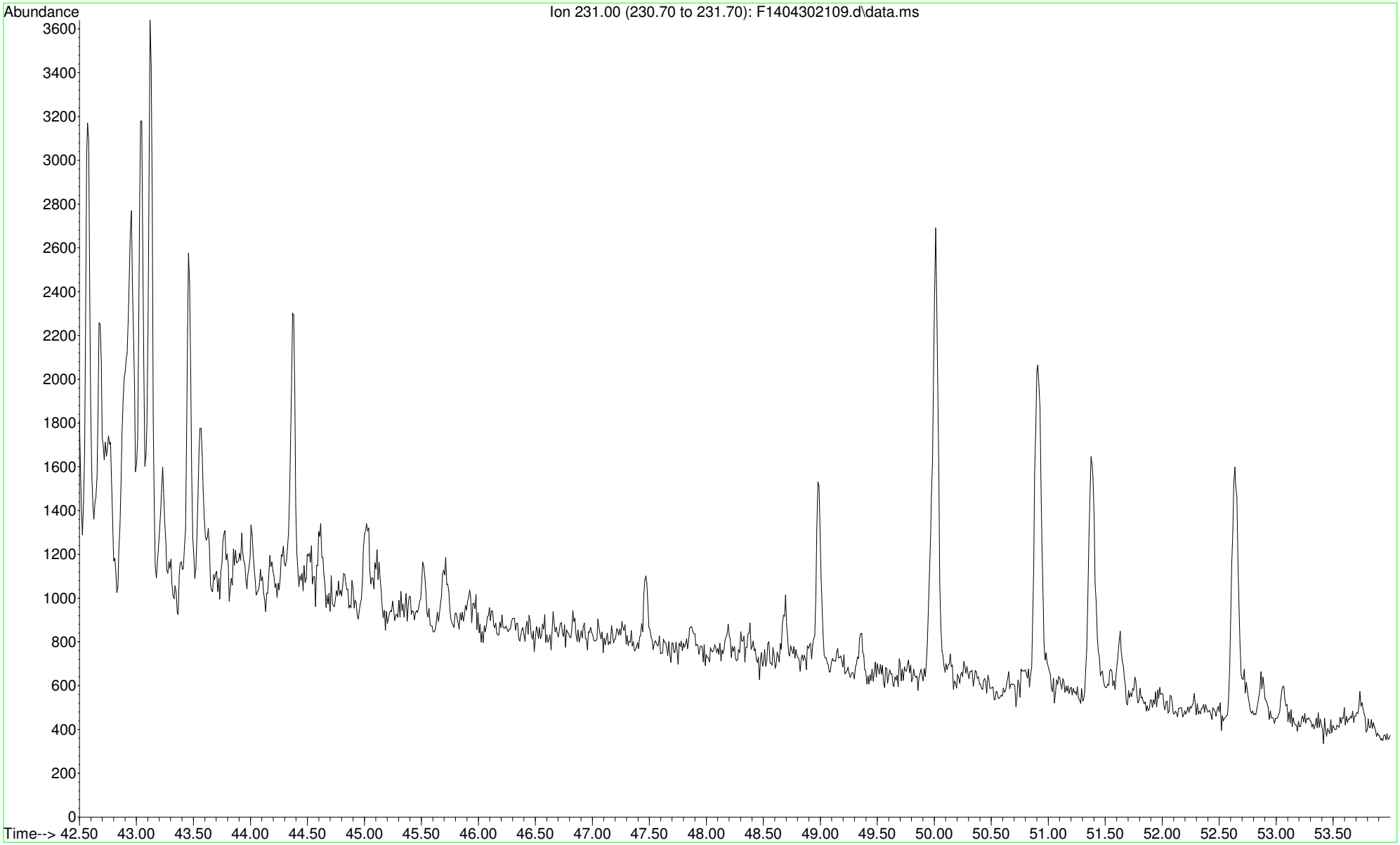
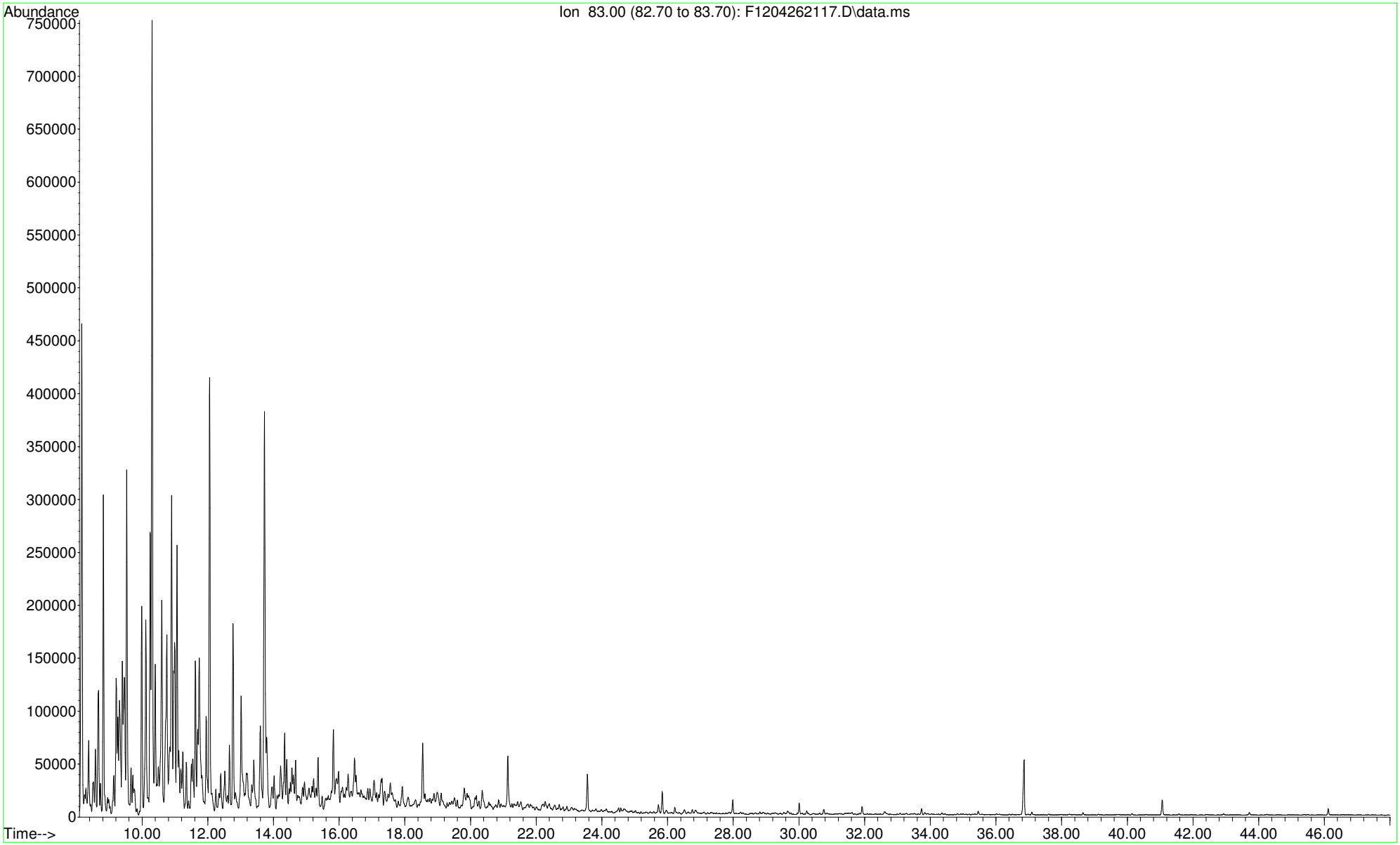
Vial Number: 9



File :O:\Forensics\Data\PAH12\2021\APR21\APR26\F1204262117.D
Operator : PAH12:CC
Acquired : 27 Apr 2021 10:24 am using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: l2113097-04D,32,,10
Misc Info : WG1491192,wg1477512,ICAL17737
Vial Number: 17



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Operator   : PAH12:CC
Acquired   : 27 Apr 2021  10:24 am using AcqMethod FRNC12ALT.M
Instrument :   PAH12
Sample Name: l2113097-04D,32,,10
Misc Info  : WG1491192,wg1477512,ICAL17737
Vial Number: 17
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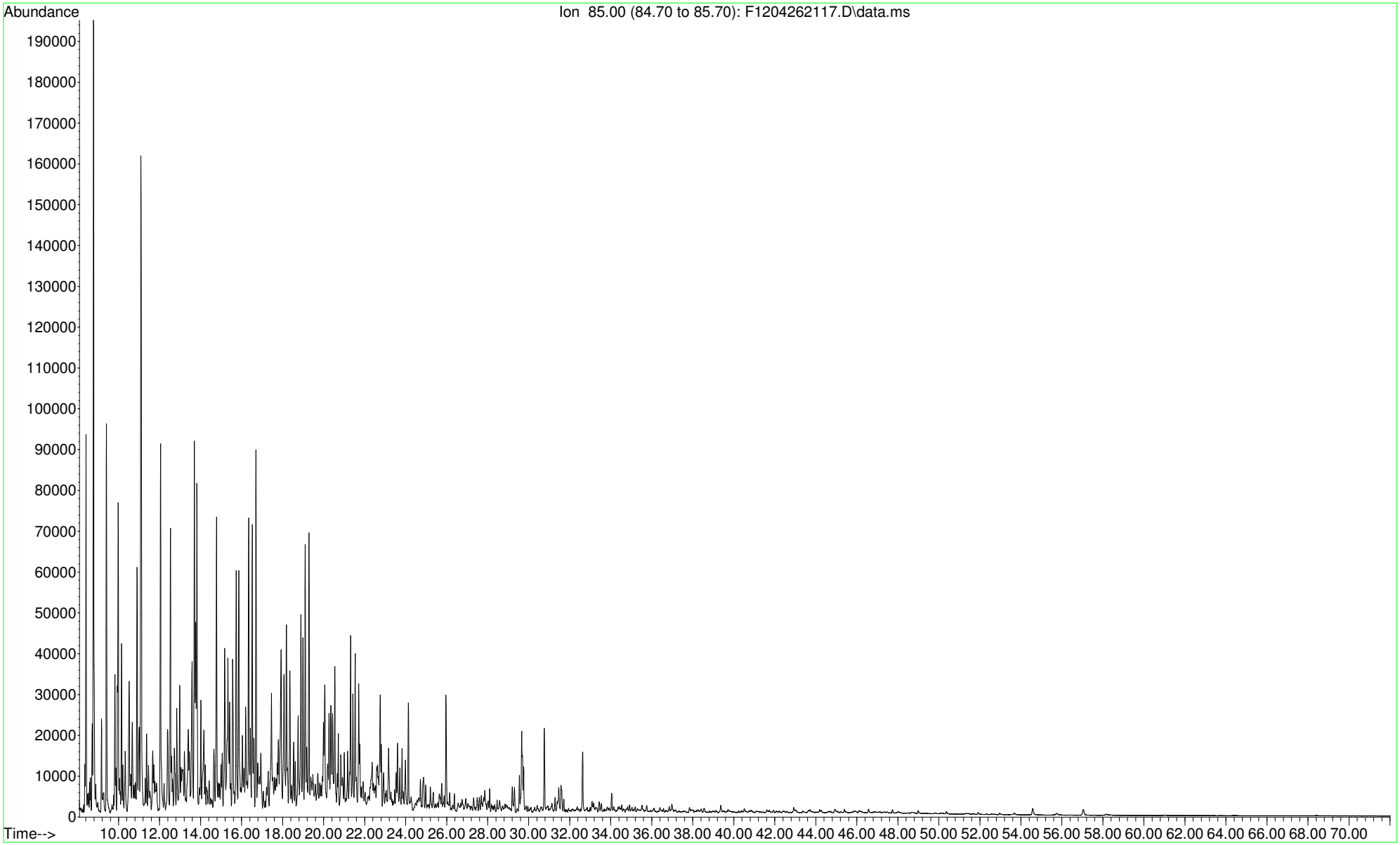

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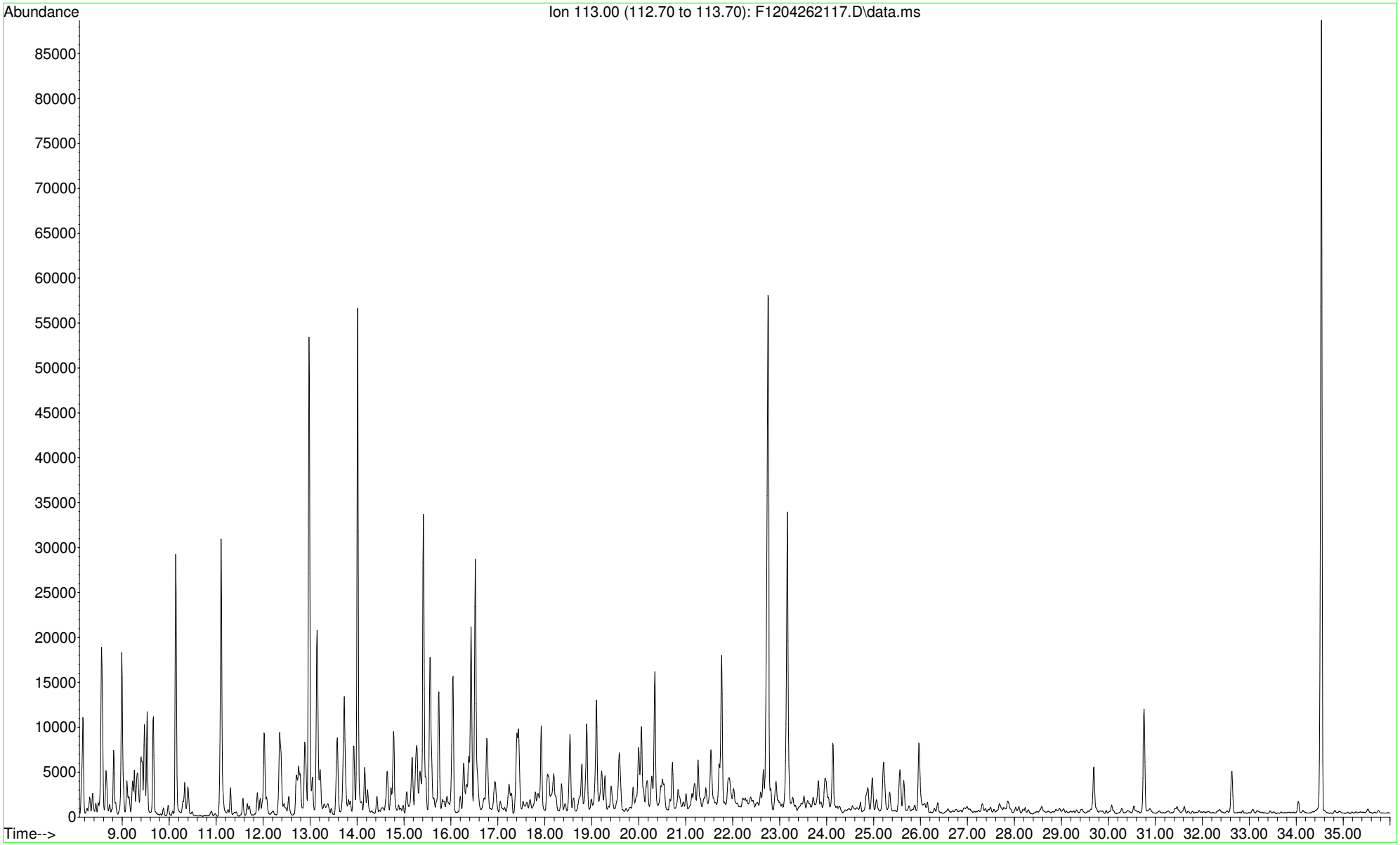
Acquired : 27 Apr 2021 10:24 am using AcqMethod FRNC12ALT.M
Instrument : PAH12
Sample Name: l2113097-04D,32,,10
Misc Info : WG1491192,wg1477512,ICAL17737
Vial Number: 17



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Instrument :   PAH12
Sample Name: l2113097-04D,32,,10
Misc Info  : WG1491192,wg1477512,ICAL17737
Vial Number: 17
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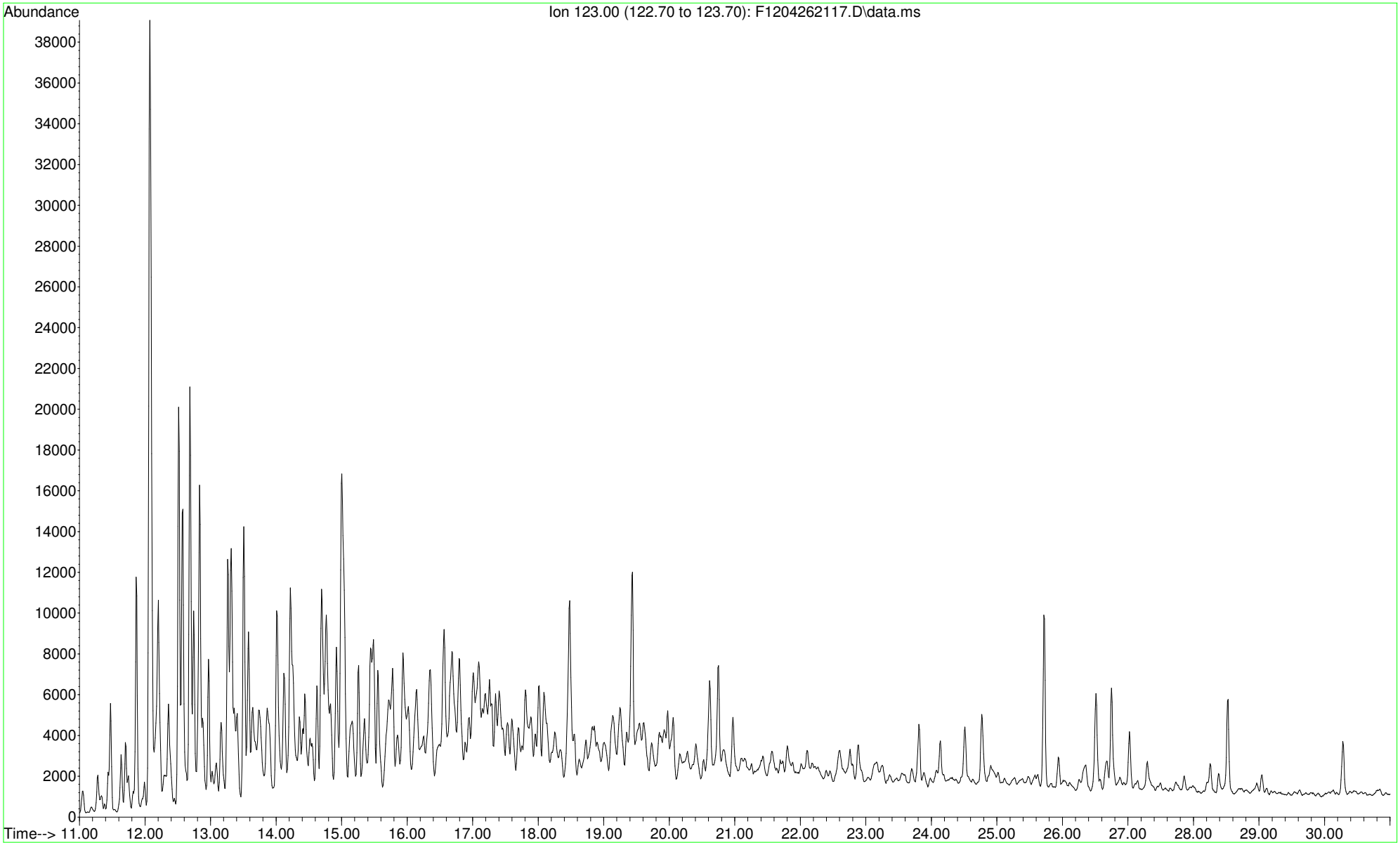

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Instrument :   PAH12
Sample Name: l2113097-04D,32,,10
Misc Info  : WG1491192,wg1477512,ICAL17737
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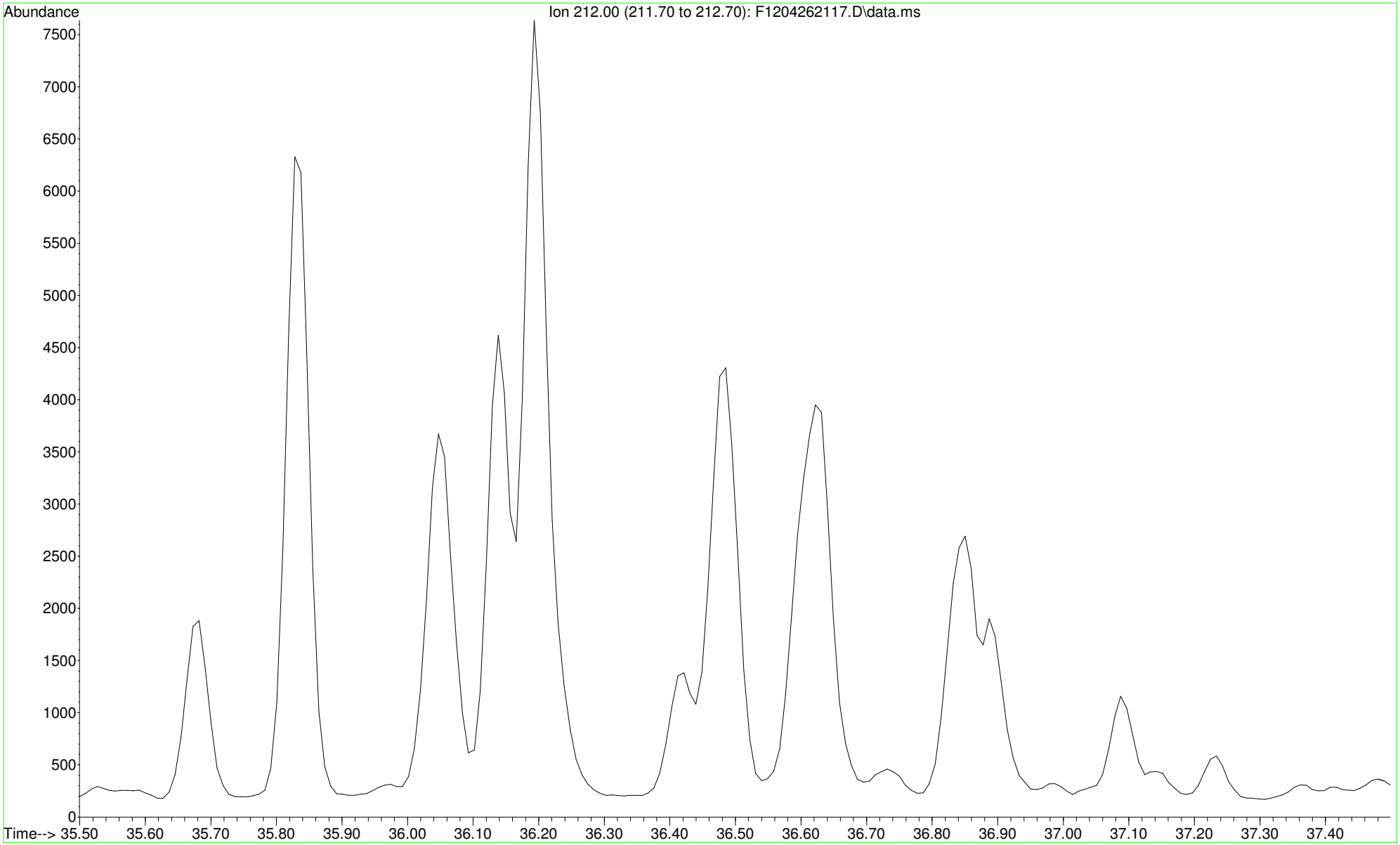

File :O:\Forensics\Data\PAH12\2021\APR21\APR26\F1204262117.D
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Acquired : 27 Apr 2021 10:24 am using AcqMethod FRNC12ALT.M
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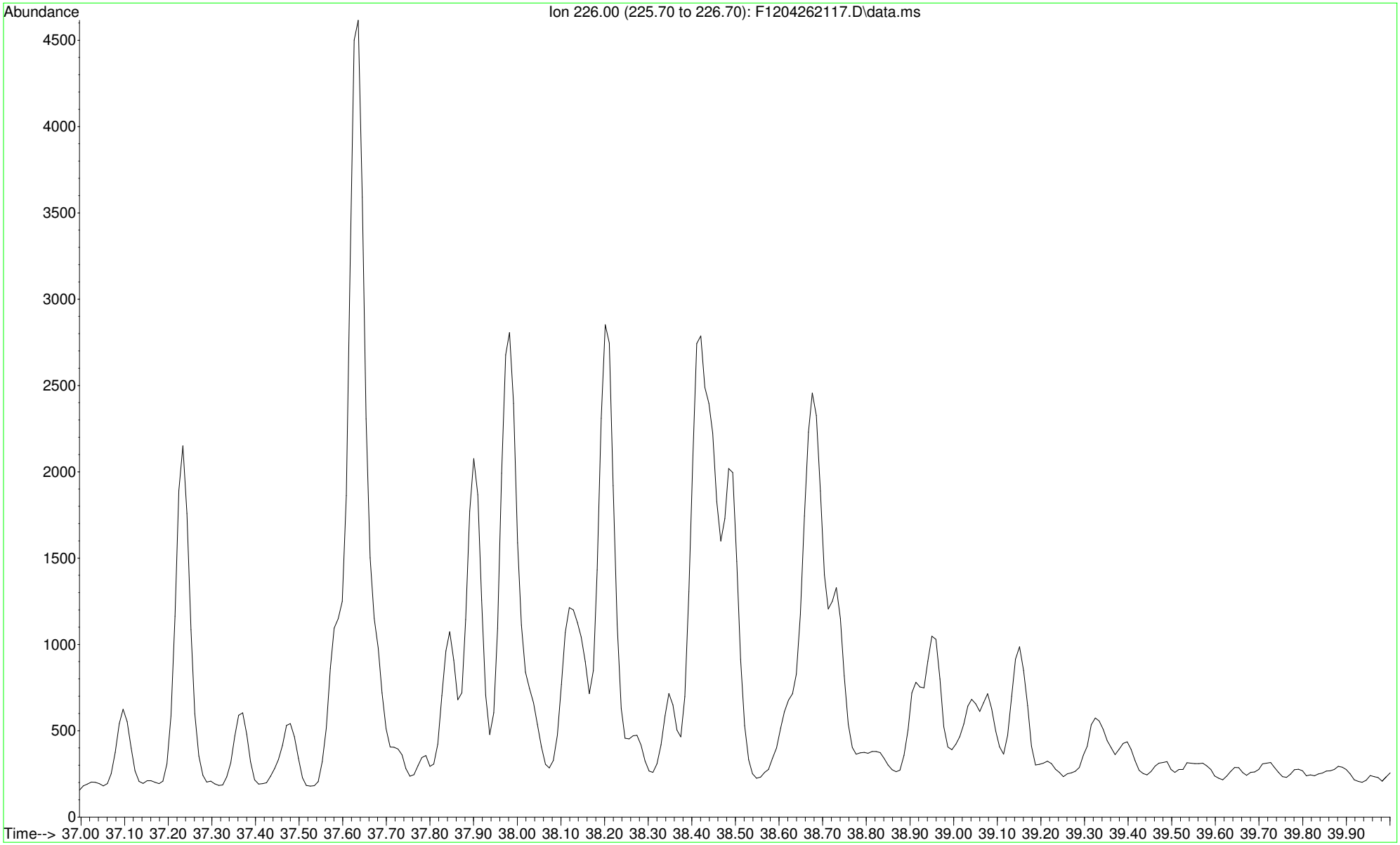
Vial Number: 17



File :O:\Forensics\Data\PAH12\2021\APR21\APR26\F1204262117.D
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Acquired : 27 Apr 2021 10:24 am using AcqMethod FRNC12ALT.M
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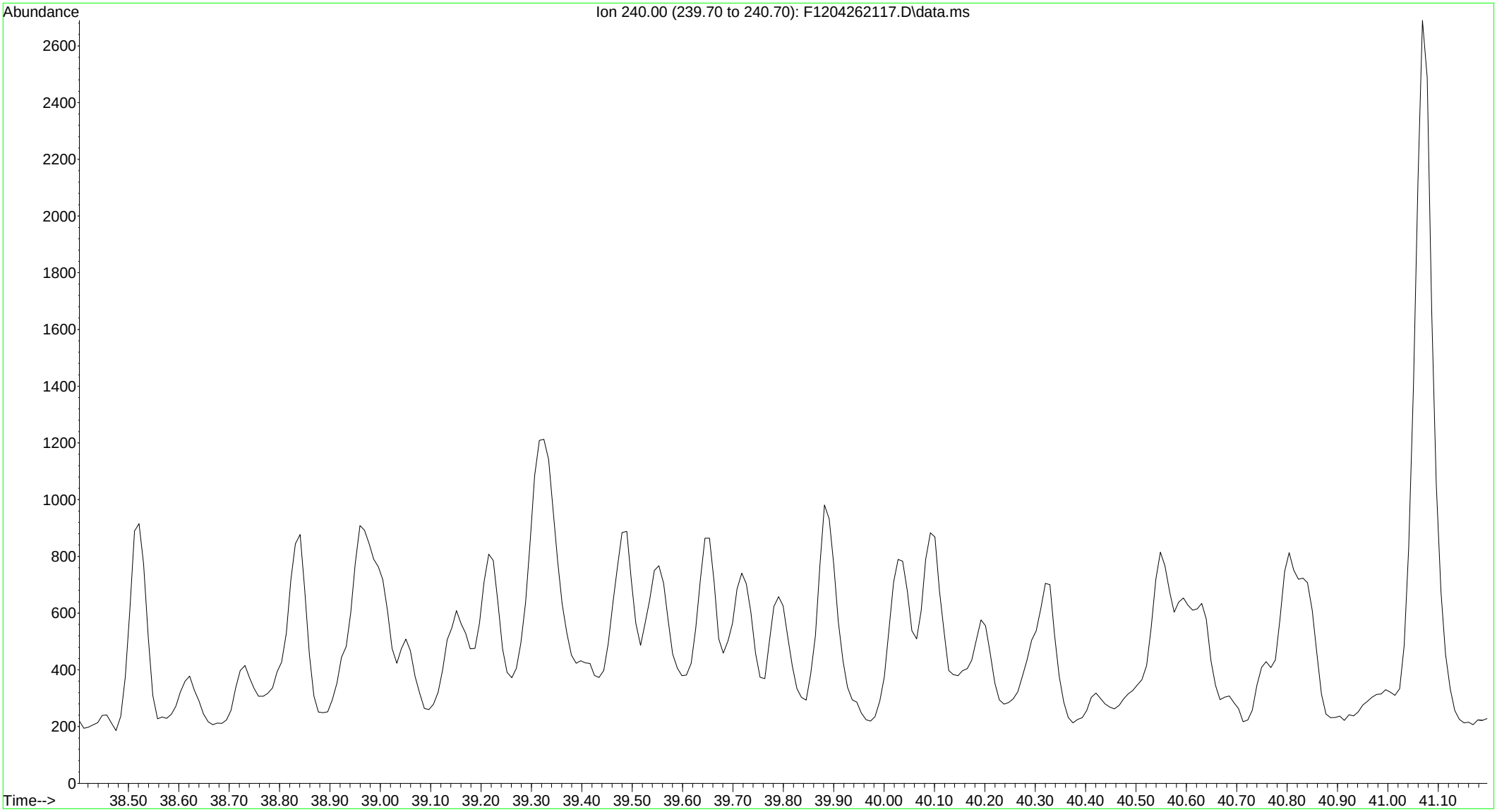
Sample Name: l2113097-04D,32,10
Misc Info : WG1491192,wg1477512,ICAL17737
Vial Number: 17



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Acquired : 27 Apr 2021 10:24 am using AcqMethod FRNC12ALT.M
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Sample Name: l2113097-04D,32,,10
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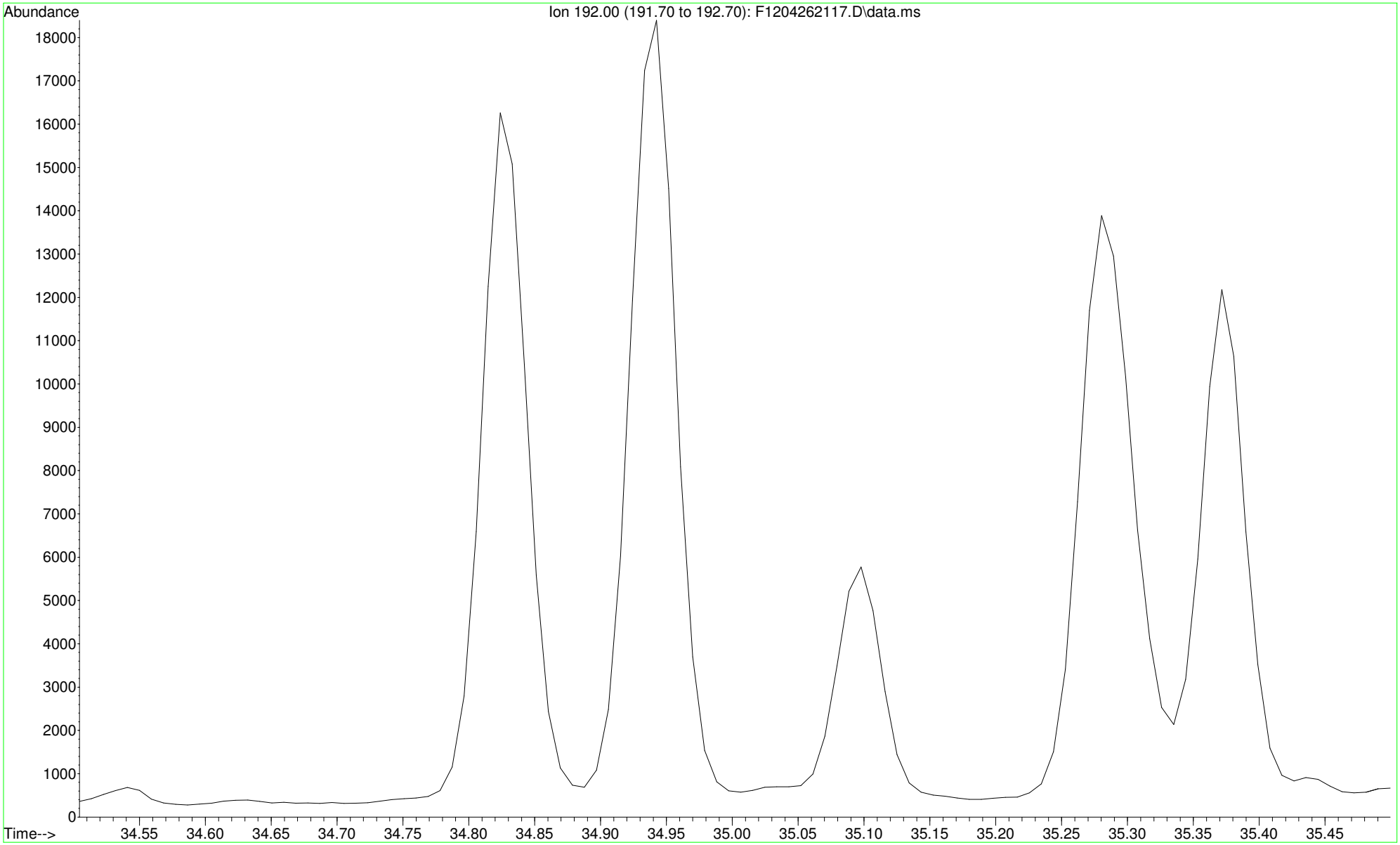
Vial Number: 17



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Instrument :   PAH12
Sample Name: l2113097-04D,32,,10
Misc Info  : WG1491192,wg1477512,ICAL17737
Vial Number: 17
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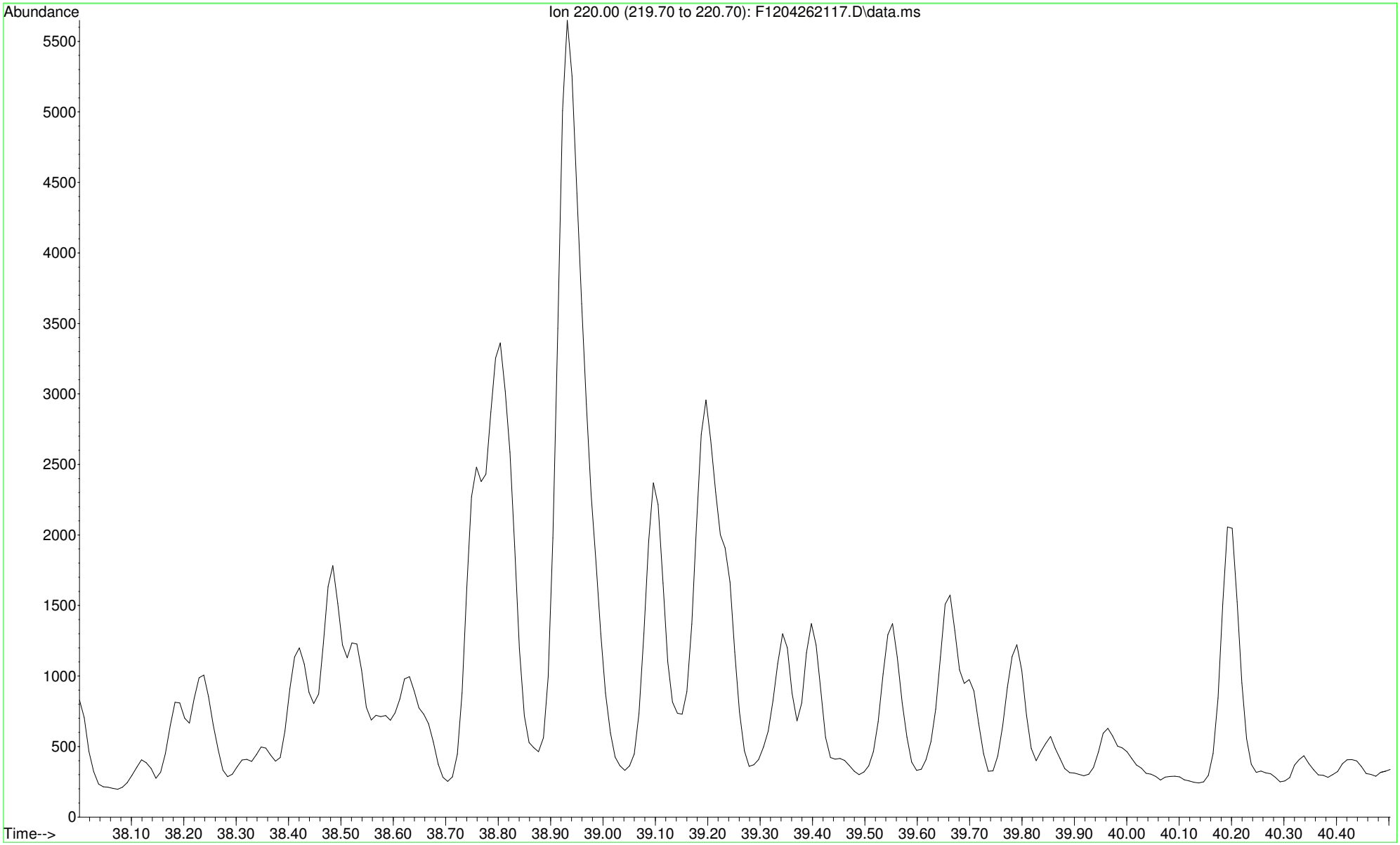

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Acquired : 27 Apr 2021 10:24 am using AcqMethod FRNC12ALT.M
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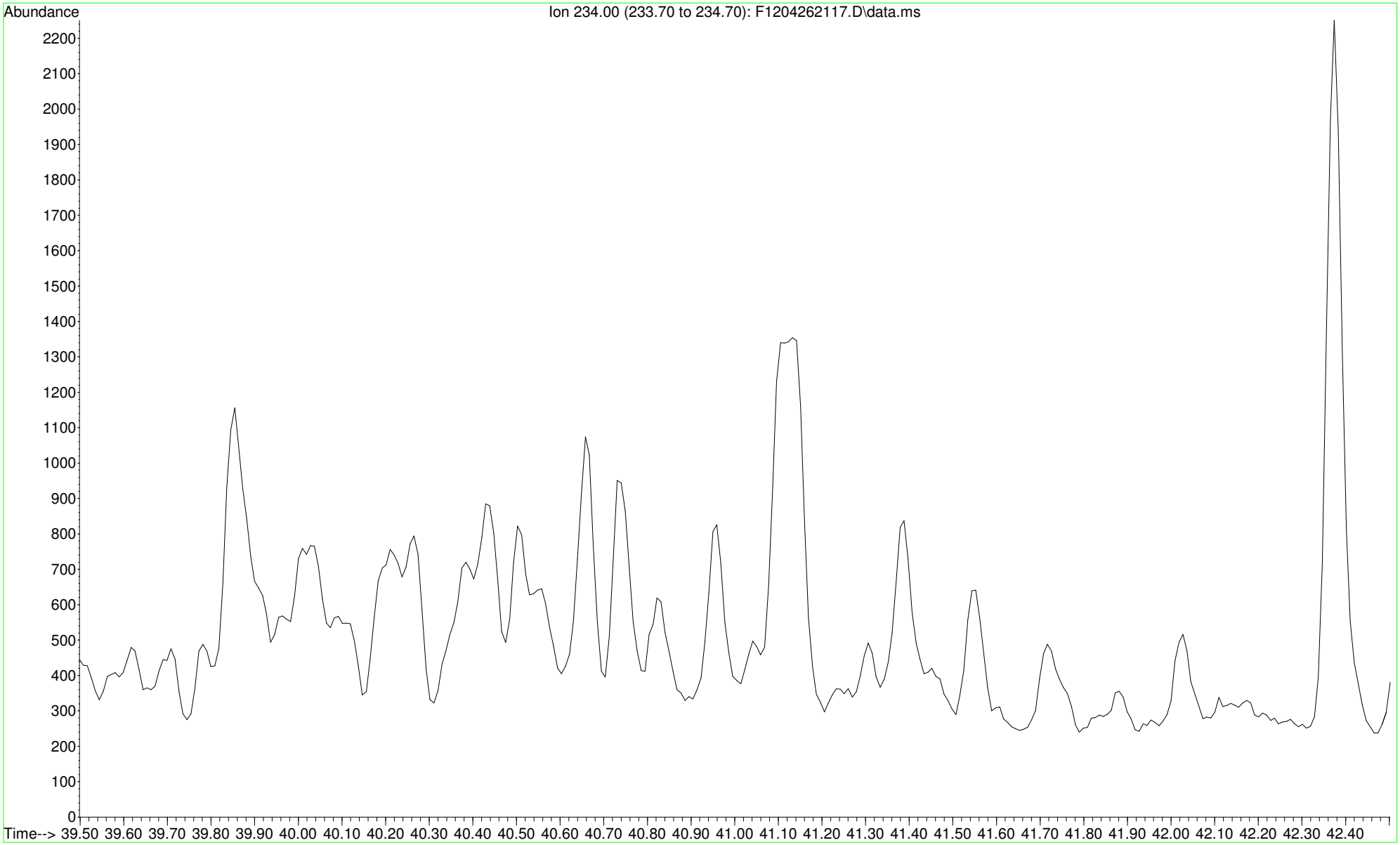
Misc Info : WG1491192,wg1477512,ICAL17737
Vial Number: 17



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Acquired   : 27 Apr 2021  10:24 am using AcqMethod FRNC12ALT.M
Instrument :   PAH12
Sample Name: l2113097-04D,32,,10
Misc Info  : WG1491192,wg1477512,ICAL17737
Vial Number: 17
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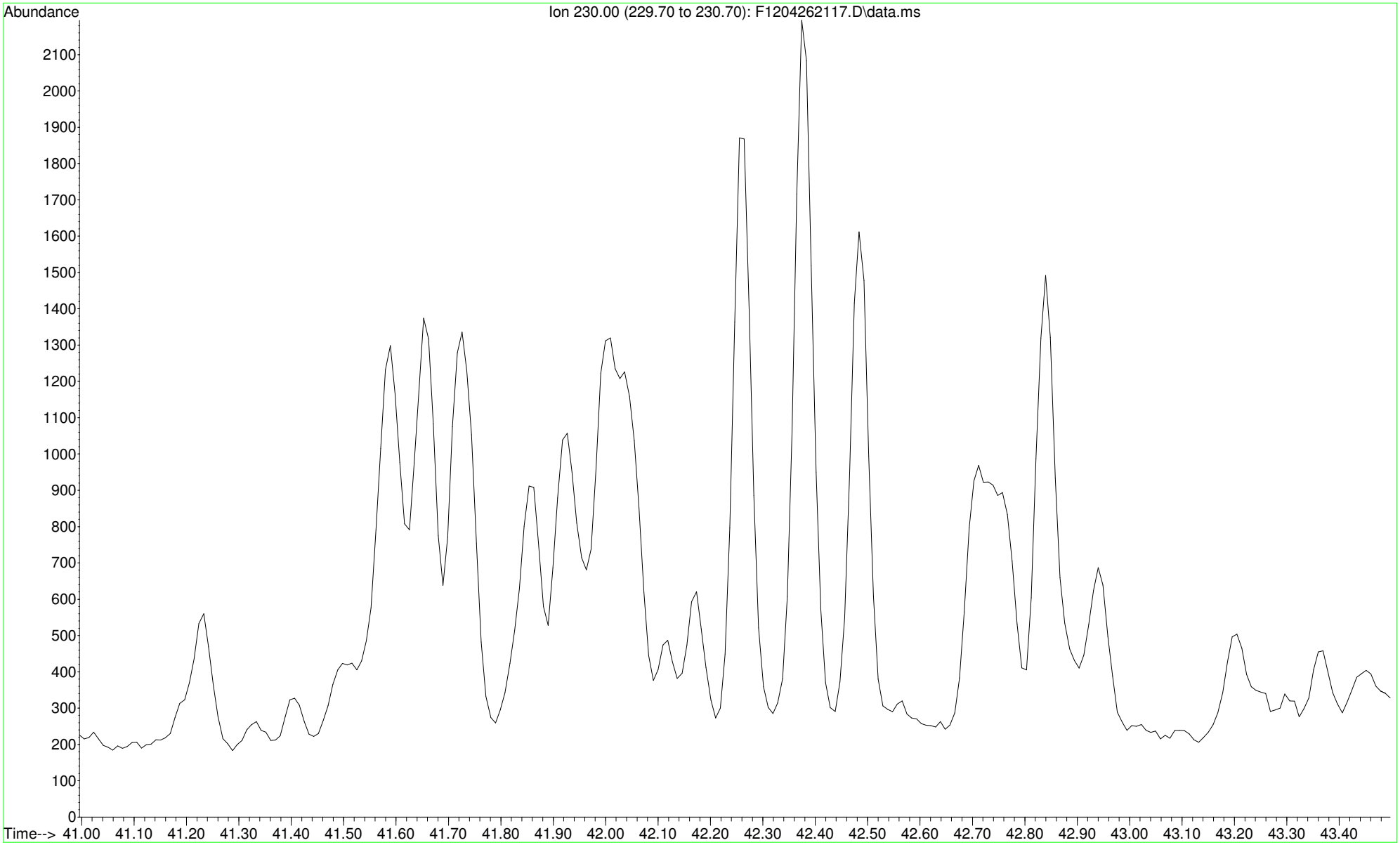

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Instrument :   PAH12
Sample Name: l2113097-04D,32,,10
Misc Info  : WG1491192,wg1477512,ICAL17737
Vial Number: 17
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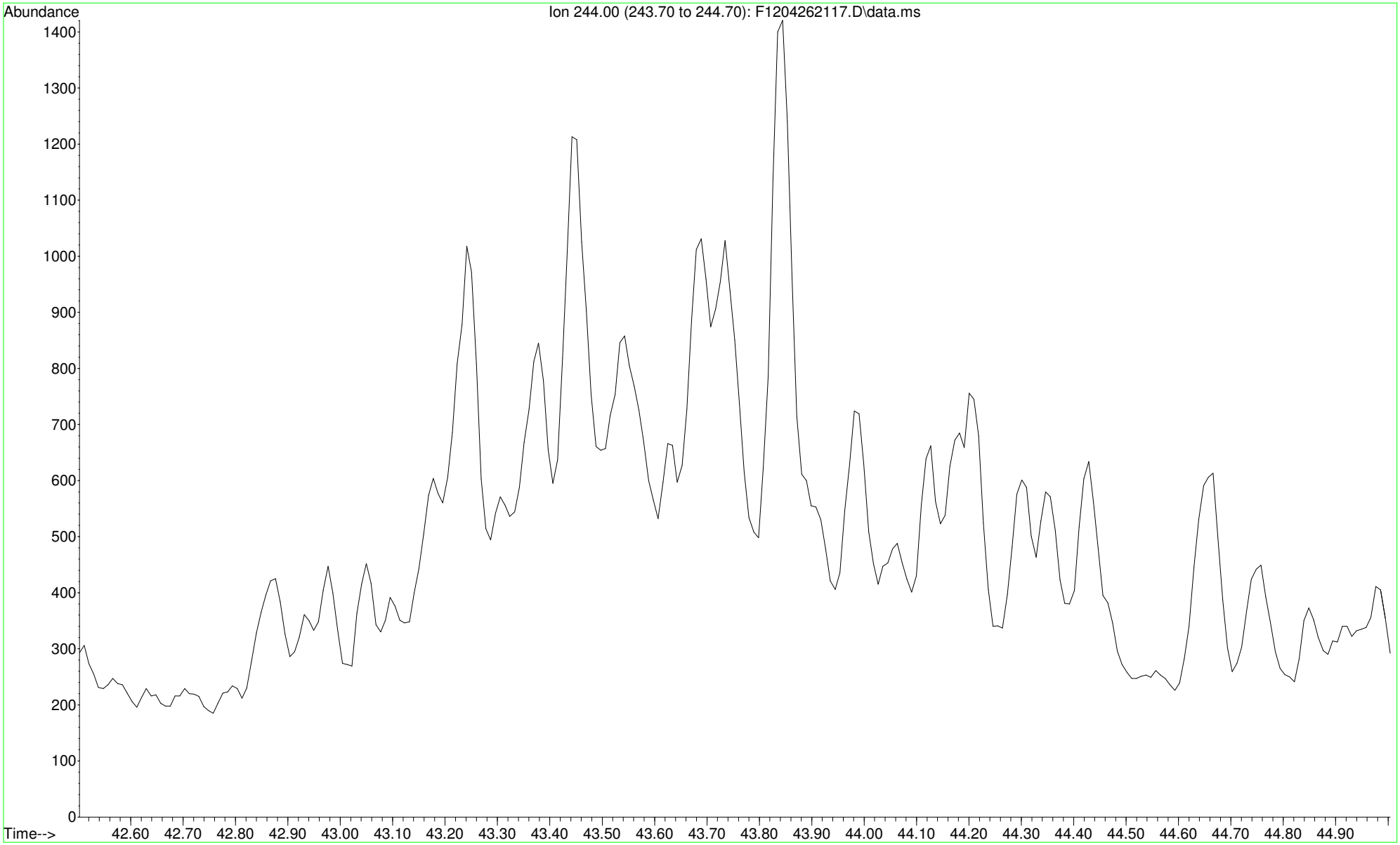

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Sample Name: l2113097-04D,32,,10
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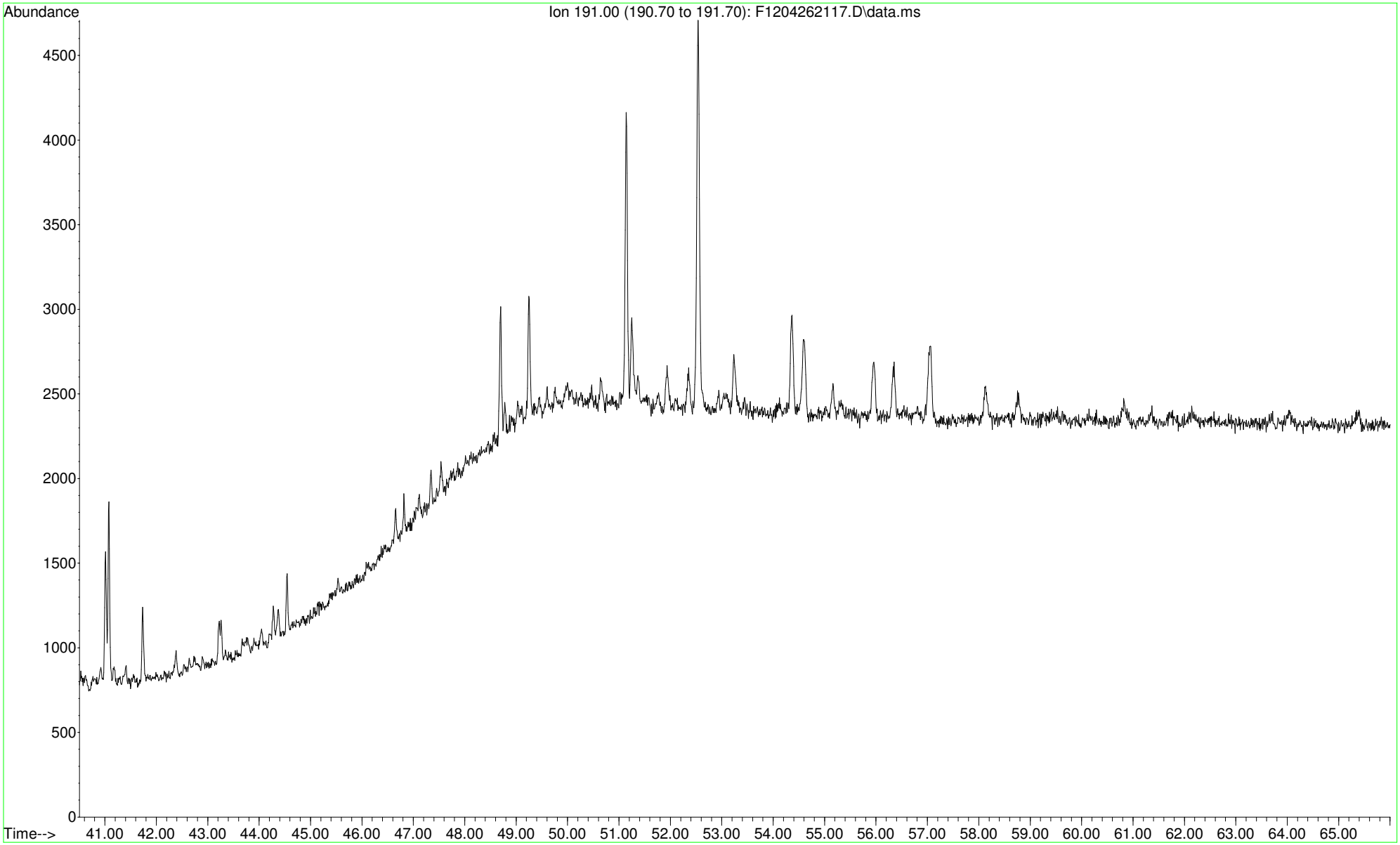
Vial Number: 17



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Acquired : 27 Apr 2021 10:24 am using AcqMethod FRNC12ALT.M
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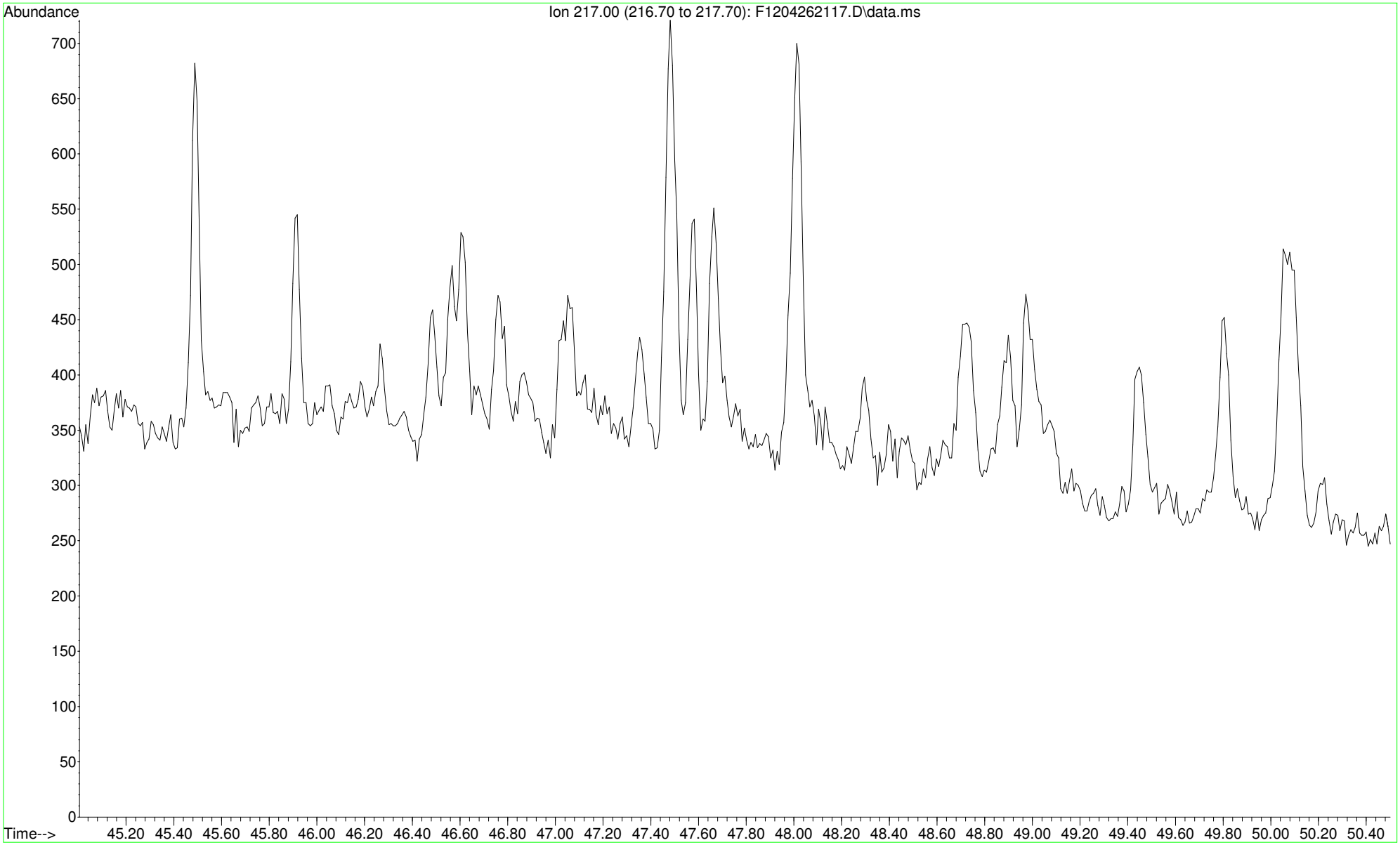

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Misc Info  : WG1491192,wg1477512,ICAL17737
Vial Number: 17
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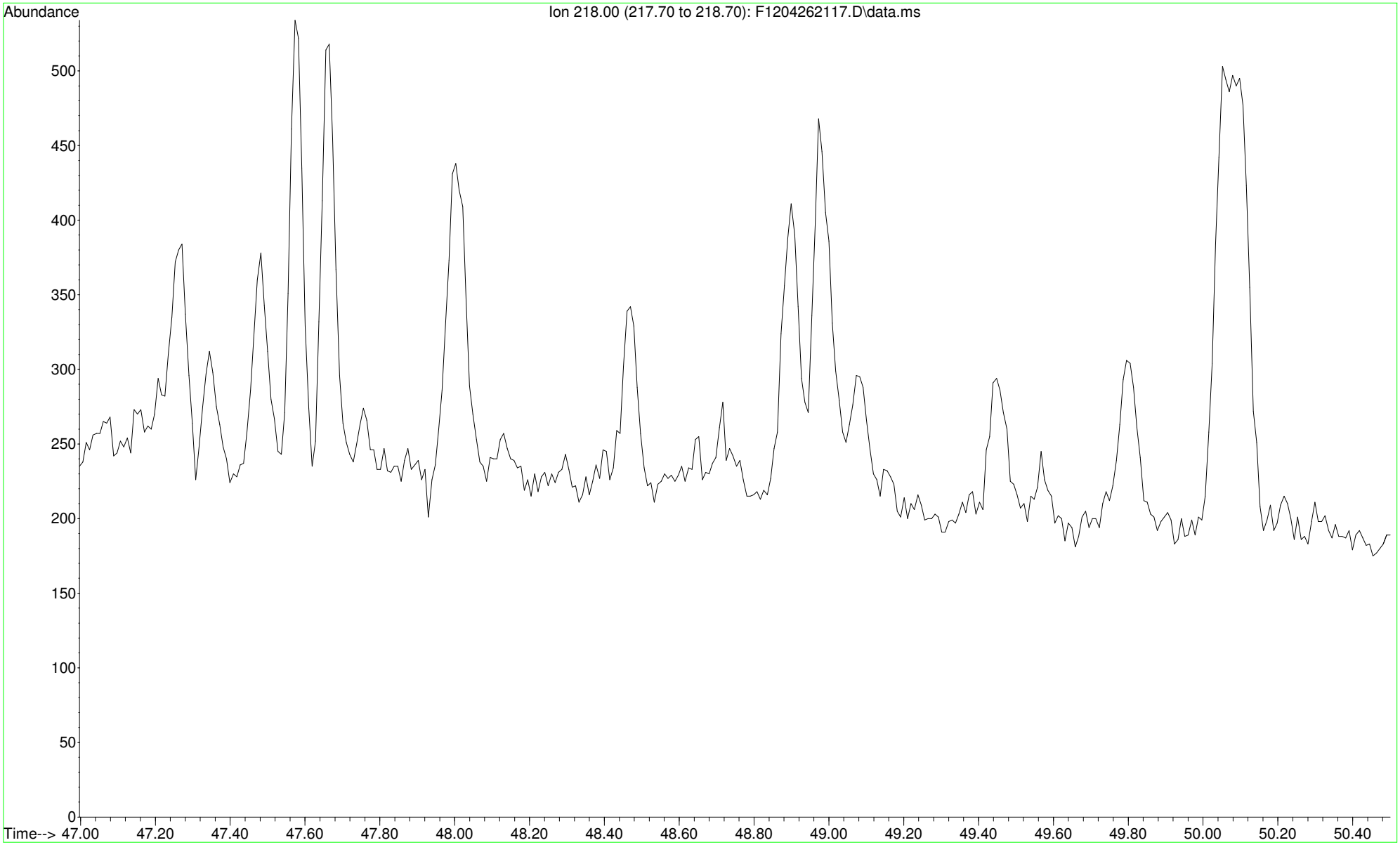

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Instrument :   PAH12
Sample Name: l2113097-04D,32,,10
Misc Info  : WG1491192,wg1477512,ICAL17737
Vial Number: 17
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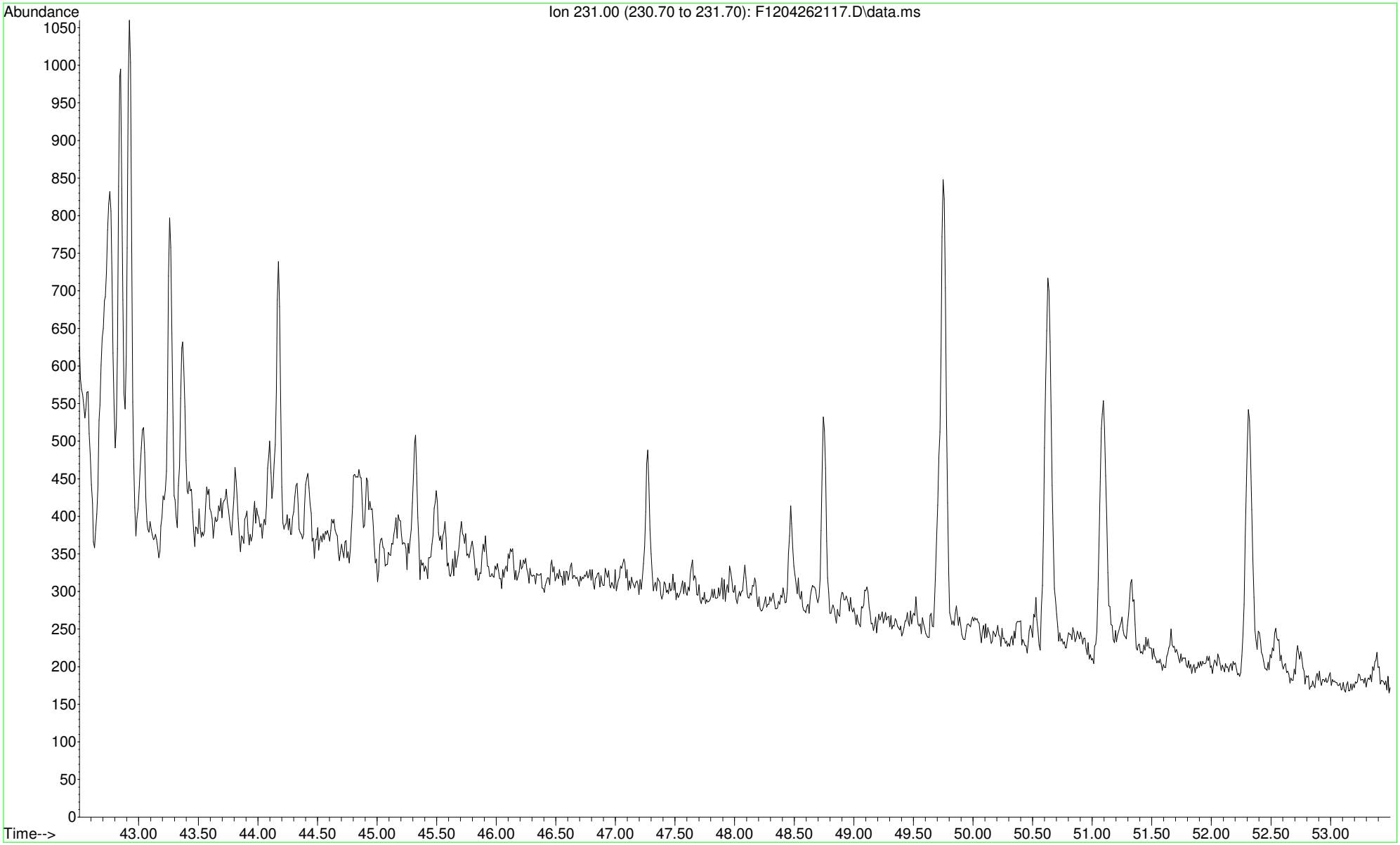

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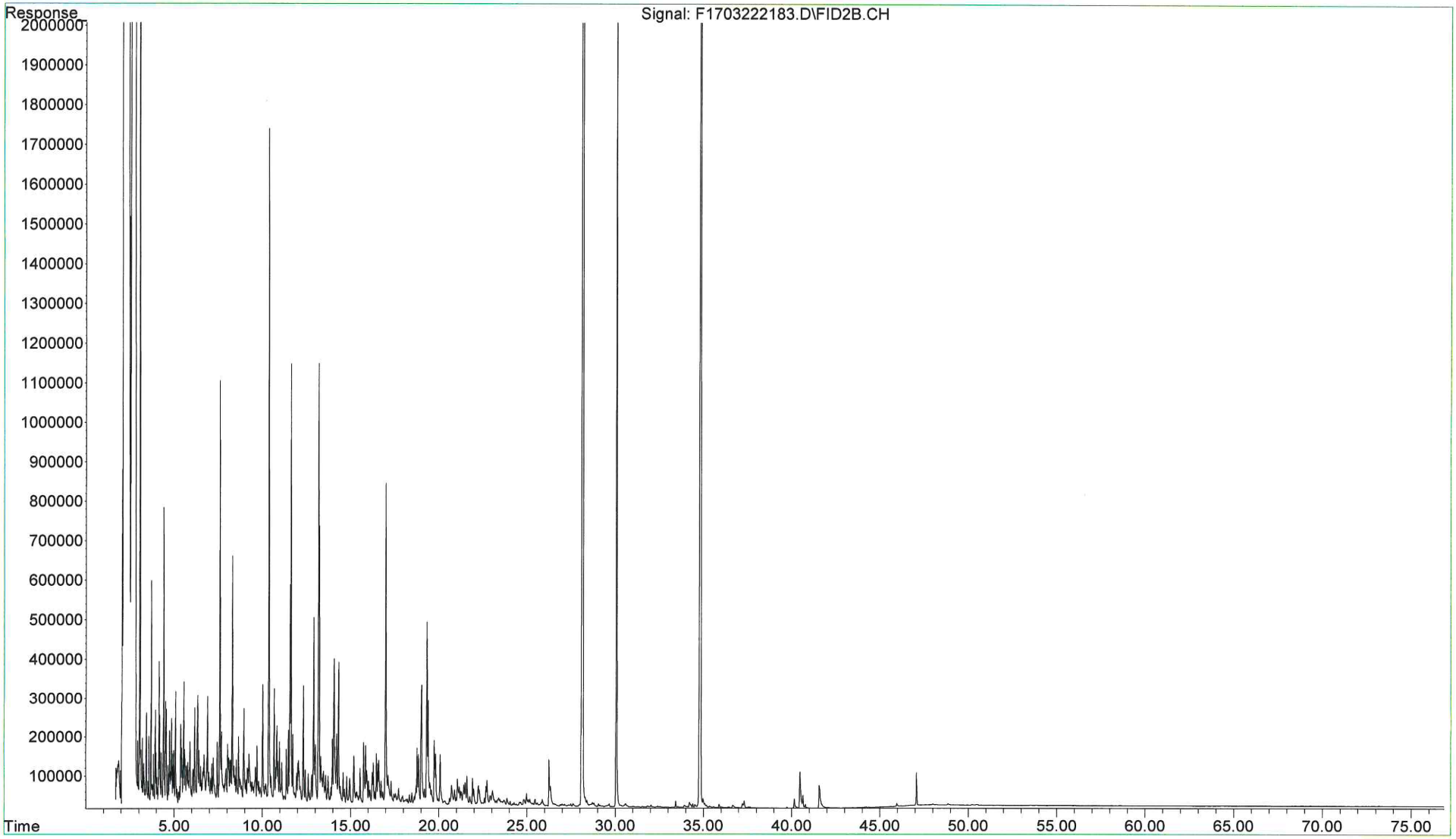
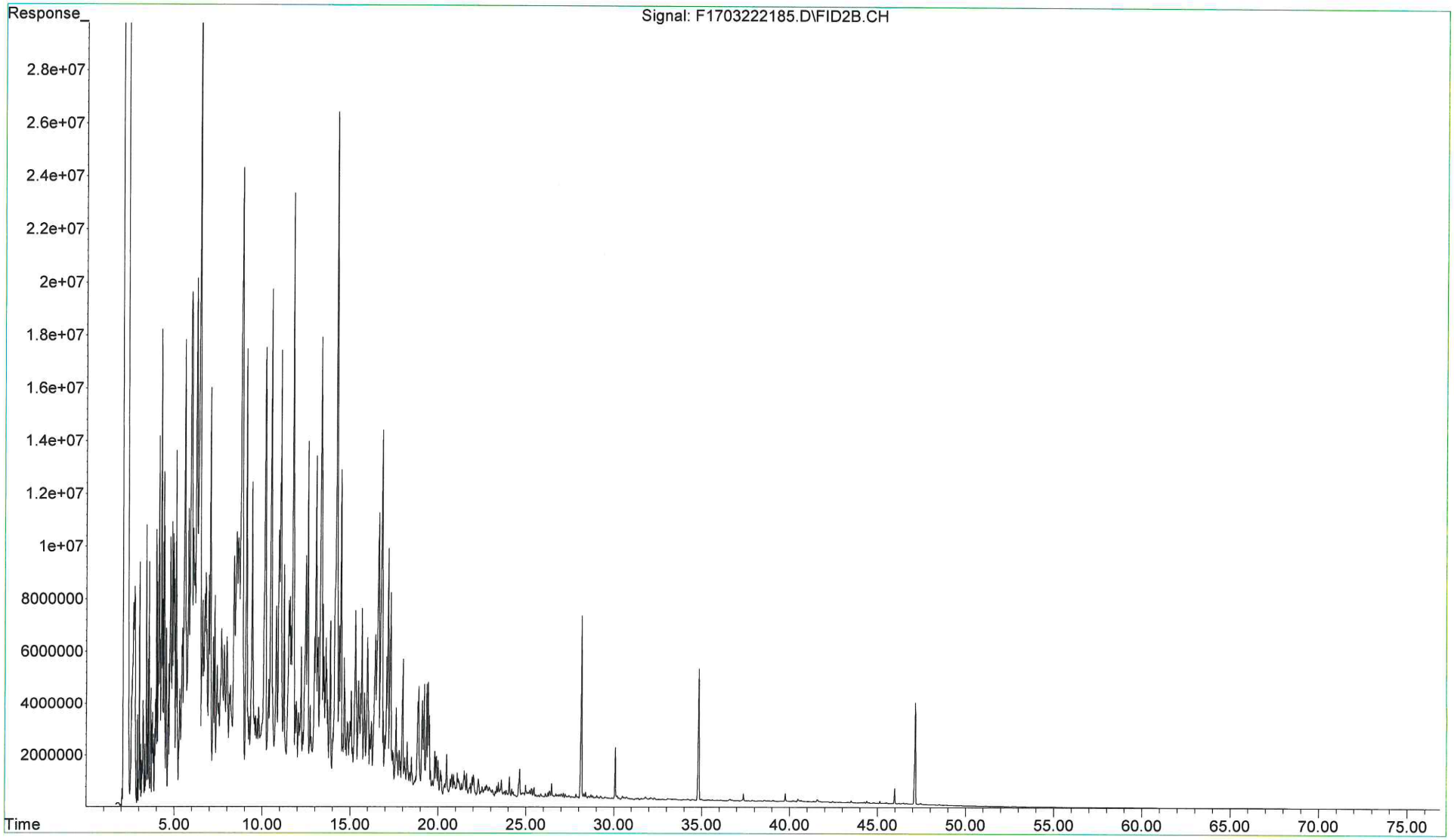
Operator : FID17:WR
Acquired : 25 Mar 2021 12:14 am using AcqMethod FID17A.M
Instrument : FID17
Sample Name: 12113097-01,42,,
Misc Info :
Vial Number: 60



File :O:\Forensics\Data\FID17\2021\MAR\MAR22.SEC\F1703222185.D
Operator : FID17:WR
Acquired : 25 Mar 2021 1:44 am using AcqMethod FID17A.M
Instrument : FID17
Sample Name: l2113097-04,42,,
Misc Info :
Vial Number: 61



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File       :O:\Forensics\Data\FID17\2021\MAR\MAR28\F1703282126.D
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Acquired   : 29 Mar 2021  17:02     using AcqMethod FID17A.M
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Misc Info  :
Vial Number: 13
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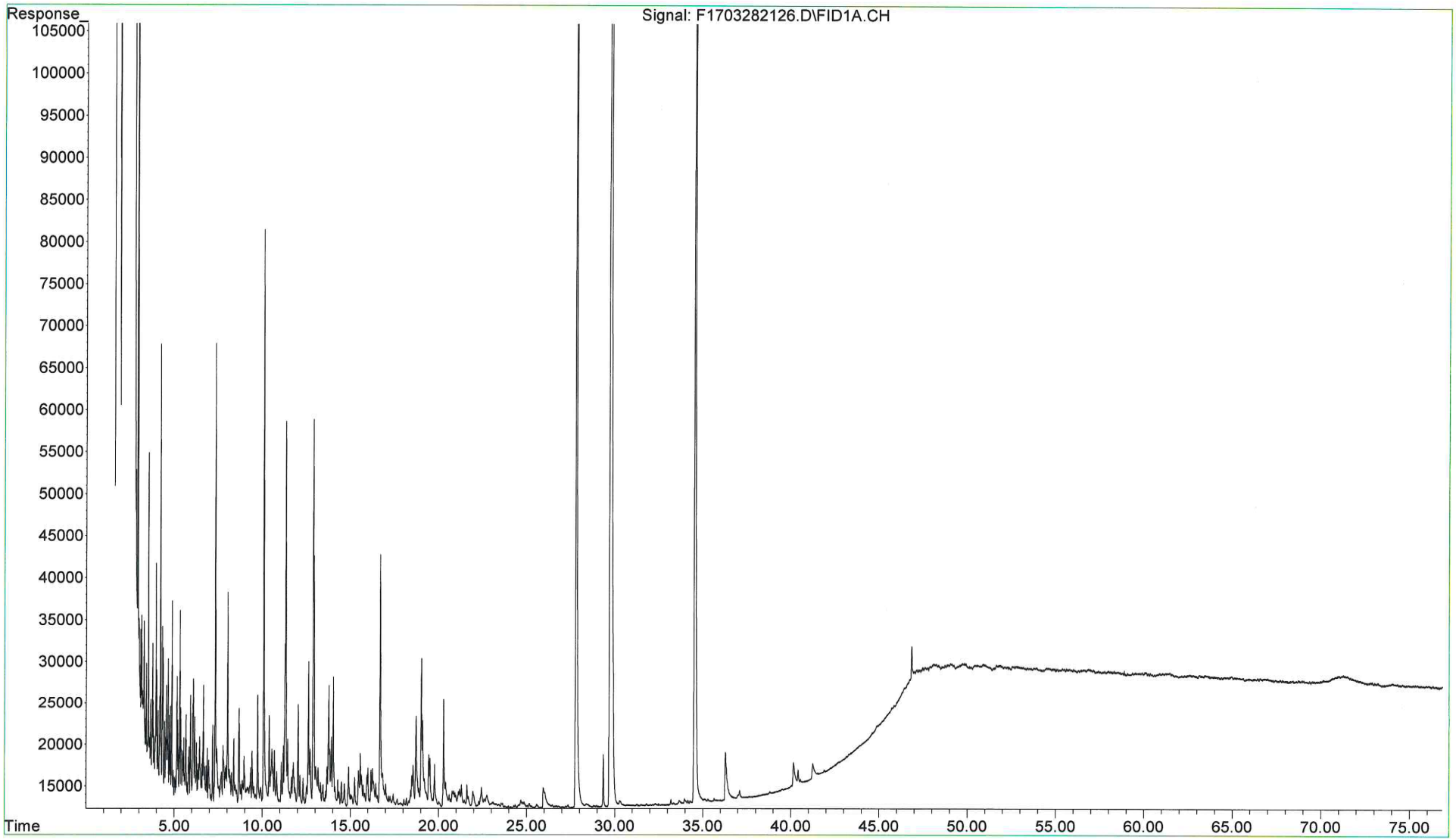

Whole Oil by GC-FID Chromatograms

File   :O:\Forensics\Data\PAH4\2021\MAR21\MAR16.SEC\F403162151.D
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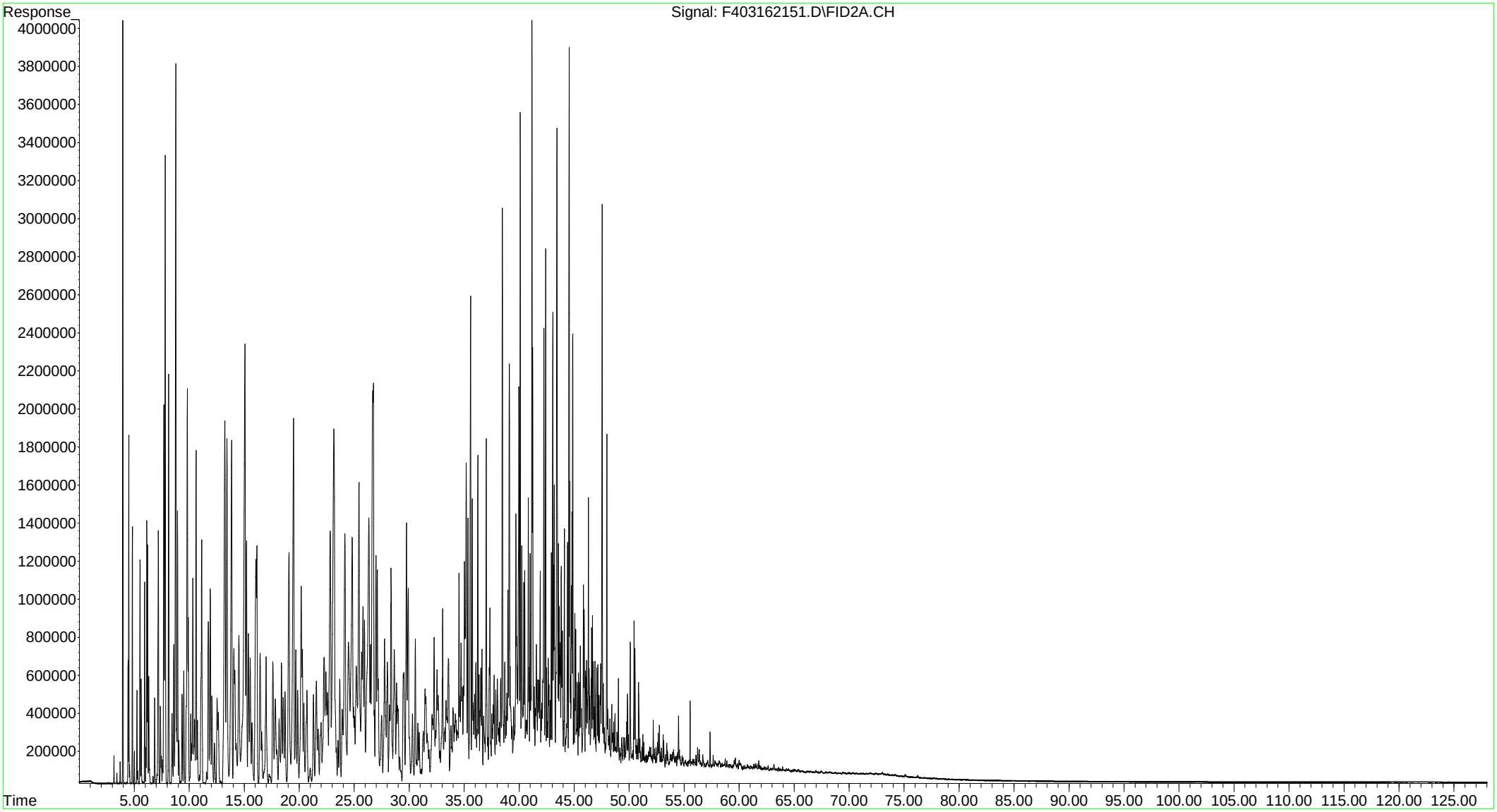
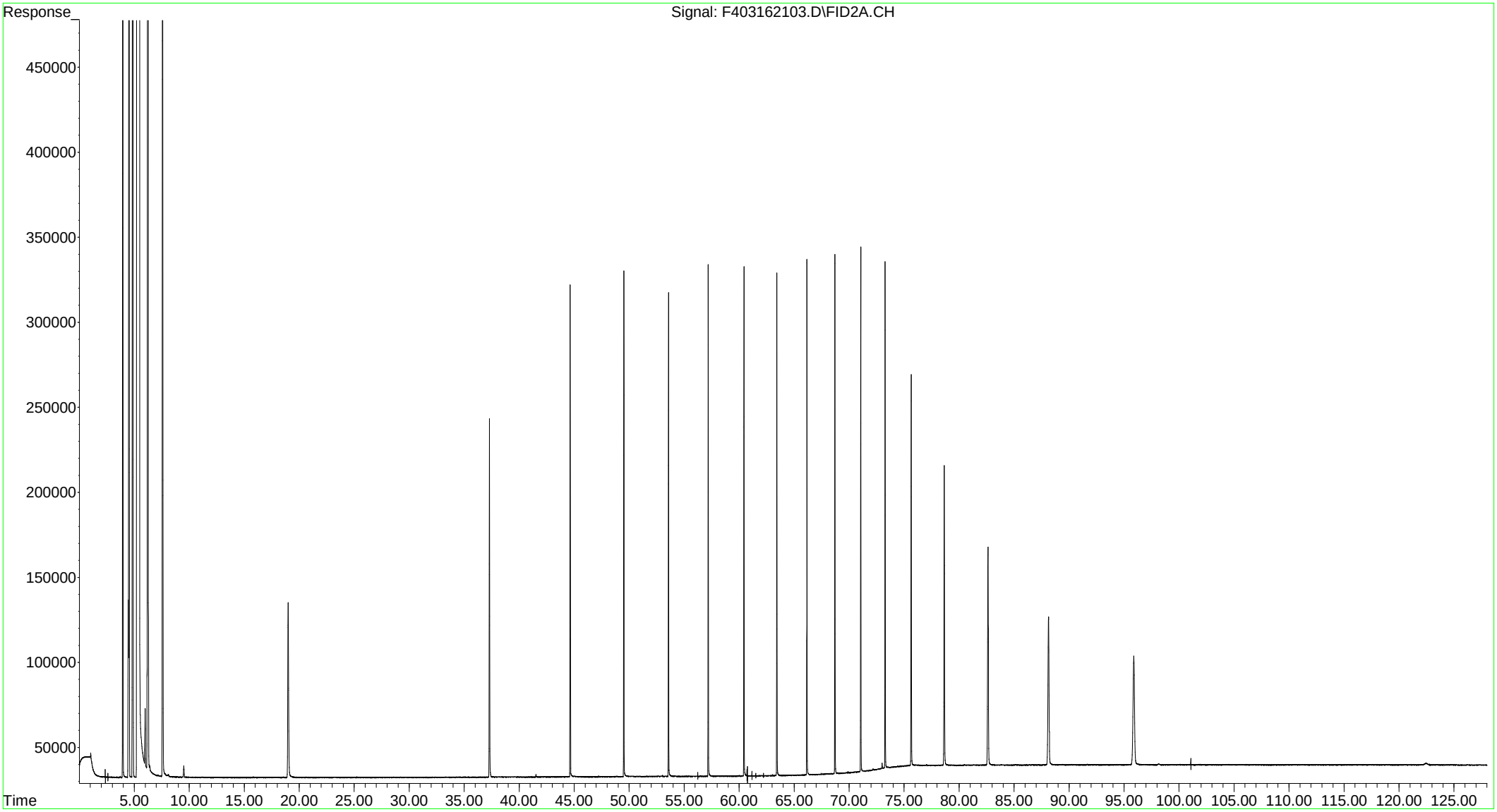
Acquired : 19 Mar 2021   3:23 pm using AcqMethod WHOIL4A.M
Instrument :   PAH 4
Sample   : l2113097-03
Misc Info : CCV
ALS Vial : 24

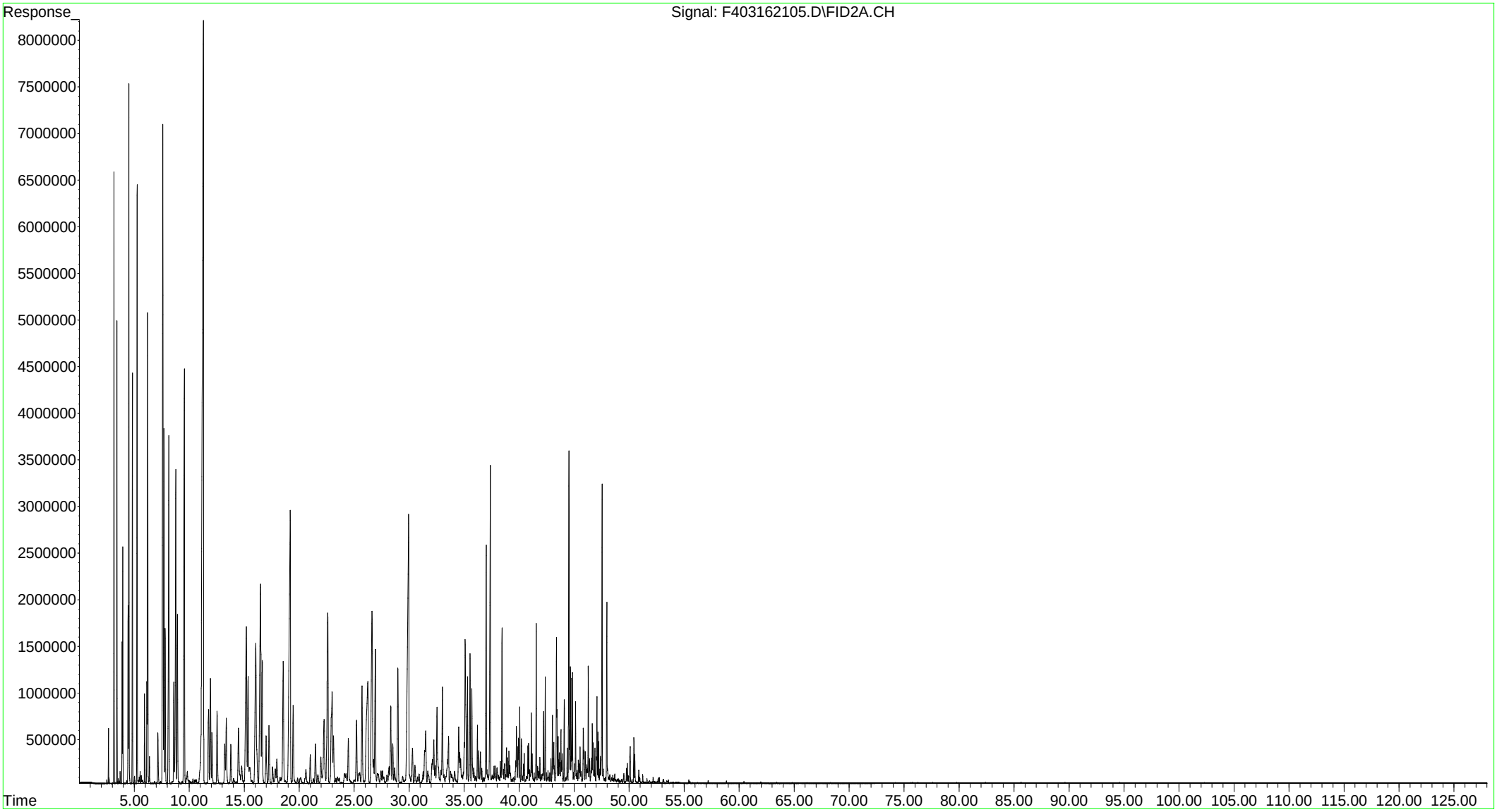


Whole Oil Reference Oils

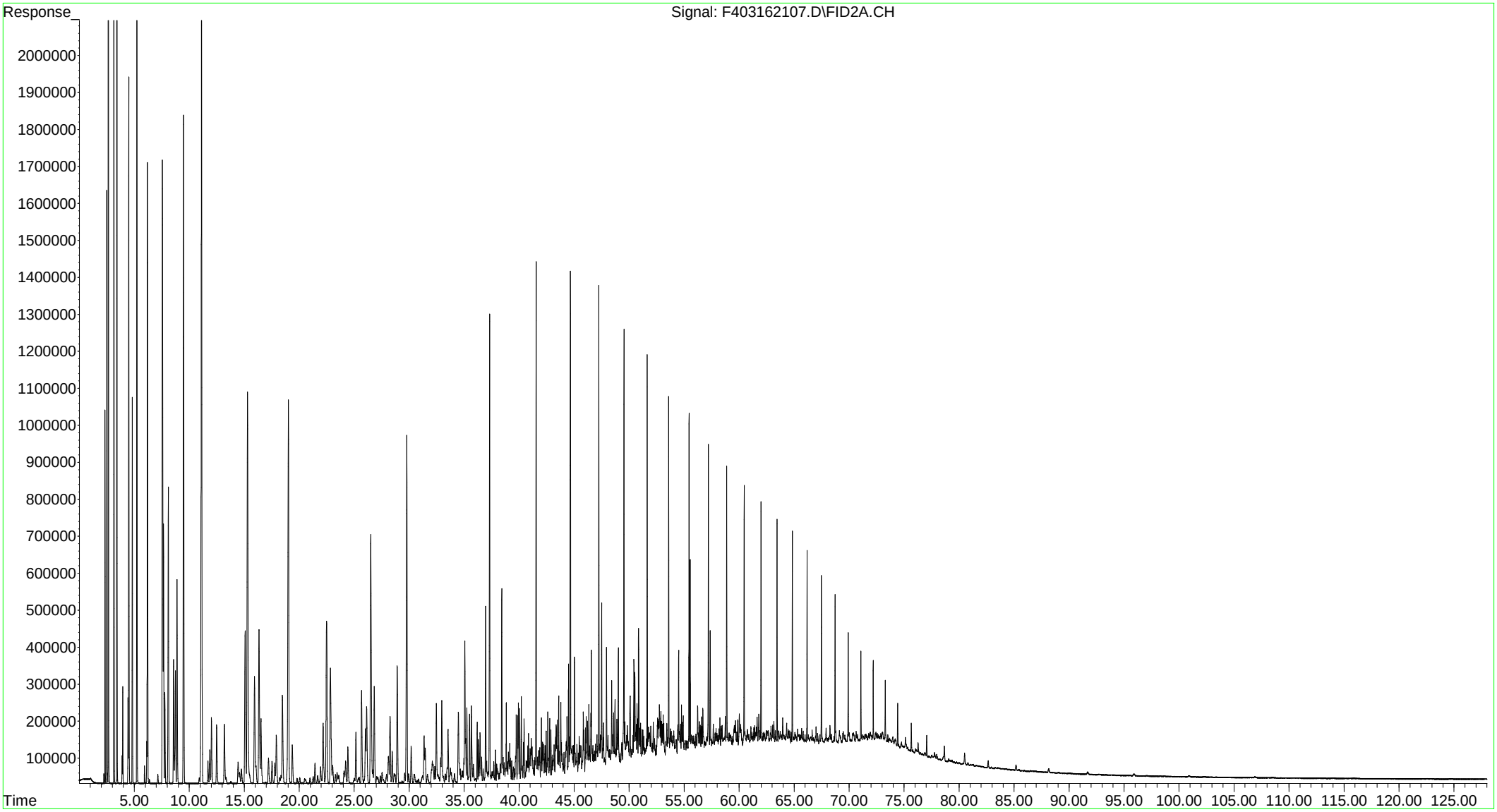
File   :O:\Forensics\Data\PAH4\2021\MAR21\MAR16.SEC\F403162103.D
Operator : AC
Acquired : 16 Mar 2021 11:13 am using AcqMethod WHOIL4A.M
Instrument :   PAH 4
Sample   : C403162101
Misc Info : F081913i
ALS Vial : 52



File :O:\Forensics\Data\PAH4\2021\MAR21\MAR16.SEC\F403162105.D
Operator : AC
Acquired : 16 Mar 2021 1:36 pm using AcqMethod WHOIL4A.M
Instrument : PAH 4
Sample : LD703162101
Misc Info : F1012605B
ALS Vial : 53



File   :O:\Forensics\Data\PAH4\2021\MAR21\MAR16.SEC\F403162107.D
Operator : AC
Acquired : 16 Mar 2021   4:00 pm using AcqMethod WHOIL4A.M
Instrument :   PAH 4
Sample   : ANS03162101
Misc Info : F021208A
ALS Vial : 54



McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2104F48

Report Created for: Alpha Analytical, Inc.

320 Forbes Blvd
Mansfield, MA 02048

Project Contact: Susan O'Neil
Project P.O.:
Project: L2113097

Project Received: 04/27/2021

Analytical Report reviewed & approved for release on 05/04/2021 by:

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033 ORELAP

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Alpha Analytical, Inc.
Project: L2113097
WorkOrder: 2104F48

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: Alpha Analytical, Inc.
Project: L2113097
WorkOrder: 2104F48

Analytical Qualifiers

b1	Aqueous sample that contains greater than ~1 vol. % sediment

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Analytical Report

Client:	Alpha Analytical, Inc.	**WorkOrder:**	2104F48
Date Received:	04/27/2021 10:03	**Extraction Method:**	SW3510C
Date Prepared:	04/27/2021	**Analytical Method:**	SW8270C
Project:	L2113097	**Unit:**	µg/L

Organic Lead (speciated) by GC-MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
N-161-W-LF-20210316	2104F48-001A	Water	03/16/2021 15:00	GC46 F0428210308.D	220314

Analytes	Result	MDL	RL	DF	Date Analyzed
Tetraethyl Lead	ND	0.037	0.050	1	04/28/2021 18:31
Tetramethyl Lead	ND	0.039	0.050	1	04/28/2021 18:31

Surrogates	REC (%)	Limits	
2-Fluorobiphenyl	99	50-150	04/28/2021 18:31

Analyst(s): TD Analytical Comments: b1

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Quality Control Report

Client:	Alpha Analytical, Inc.	**WorkOrder:**	2104F48
Date Prepared:	04/27/2021	**BatchID:**	220314
Date Analyzed:	04/27/2021	**Extraction Method:**	SW3510C
Instrument:	GC46	**Analytical Method:**	SW8270C
Matrix:	Water	**Unit:**	µg/L
Project:	L2113097	**Sample ID:**	MB/LCS/LCSD-220314

QC Summary Report for Organic Lead by GC-MS

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Tetraethyl Lead	ND	0.0370	0.0500	-	-	-
Tetramethyl Lead	ND	0.0390	0.0500	-	-	-
Surrogate Recovery						
2-Fluorobiphenyl	5.51			5	110	50-150

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Tetraethyl Lead	2.99	2.29	2.5	120	92	50-150	26.7	30
Tetramethyl Lead	2.56	2.37	2.5	102	95	50-150	7.57	30
Surrogate Recovery								
2-Fluorobiphenyl	5.19	5.10	5	104	102	50-150	1.67	30

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2104F48 **ClientCode: AAMA**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ EQuIS ☑ Dry-Weight ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Excel

Report to:
Susan O'Neil
Alpha Analytical, Inc.
320 Forbes Blvd
Mansfield, MA 02048
(508) 844-4117 FAX:
Email: #Error
cc/3rd Party:
PO:
Project: L2113097

Bill to:
Finance
Alpha Analytical, Inc.
320 Forbes Blvd
Mansfield, MA 02048
ap@alphalab.com

Requested TAT: 5 days;

Date Received: **04/27/2021**
Date Logged: **04/27/2021**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2104F48-001	N-161-W-LF-20210316	Water	3/16/2021 15:00	☐	A	A										

Test Legend:

1	MAI_OPBMS_W [J]	2	PRDisposal Fee	3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Angela Rydelius

Prepared by: Valerie Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: ALPHA ANALYTICAL, INC. **Project:** L2113097 **Work Order:** 2104F48
Client Contact: Susan O'Neil **QC Level:** LEVEL 2
Contact's Email: #Error **Comments:** **Date Logged:** 4/27/2021

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001A	N-161-W-LF-20210316	Water	SW8270C - Organic Lead (speciated)	2	VOA, Unpres	☐	☐	3/16/2021 15:00	5 days	5/4/2021	1%+	☐	

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

2104F48

Subcontract Chain of Custody

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburg, CA 94565

Alpha Job Number
L2113097

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 508.844.4117
Email: soneil@alphalab.com

Project Information

Project Location: PA
Project Manager: Susan O'Neil

Turnaround & Deliverables Information

Due Date: 05/04/21
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:

Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2113097

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com TEL and TML in water

X1

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	N-161-W-LF-20210316	03-16-21 15:00	WATER	Organic Lead by Method 8270	

5.8°C net MM.

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature] UPS	4/26/21 1700	UPS [signature]	
		4/27/21 1003	[signature]	4/27/21 1003
Form No: AL_subcoc				

TN: 12 19E 18E 01 9741 9745

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Sample Receipt Checklist

Client Name:	**Alpha Analytical, Inc.**	Date and Time Received:	**4/27/2021 10:03**
Project:	**L2113097**	Date Logged:	**4/27/2021**
		Received by:	
WorkOrder №:	**2104F48** Matrix:	Logged by:	Valerie Alfaro
Carrier:	UPS		

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☑	No	☐		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☑	No	☐	NA	☐
Custody seals intact on sample bottles?	Yes	☐	No	☐	NA	☑
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
	(Ice Type: OTHERS)					
Sample/Temp Blank temperature	Temp: 5.8°C				NA	☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA	☑
UCMR Samples:						
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA	☑

Comments:

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 3/17/21

ALPHA Job #: L2113097

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Dr, Ste 140 West Chester, PA
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.klingbeil@stantec.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: (A01-8 / Maiden Lane) Former PES Forensic GWS
Project Location: Philadelphia, PA Former PES Refinery
Project #: 213403363
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 213403363

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

CQ Project # 0186

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PIANO VOCs 8260 D(M)	TPH (ORD) w/ chromatograms	TEL/TML and Ethanol	VOC 8260	Whole Oil GC/FID	Sulfur in Petroleum	Organic Lead 8270D(M)	Ethanol	Sample Specific Comments
13097-01	N-163-W-LF-20210316	3/16/21	1305	GW	DPH	x	x	x						
-02	TRIP BLANK	3/2/21	1140	TB	DPH				x					
-03	N-161[redacted]-P-G-20210316	3/16/21	1350	Product + GW	DPH	x				x	x	x	x	LNAPL Sample
-04	N-161-W-LF-20210316	3/16/21	1500	GW	DPH	x	x	x						

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	3/16/21 1635	[signature]	3/16/21 1635
[signature]	3/16/21 1730	[signature]	3/16/21 1730
[signature]	3/16/21 2030	[signature] AAL	3/16/21 21:00
[signature] AAL	3/17/21 01:15	[signature]	3/17/21 01:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

[signature] 3/17/21 1605
[signature] 3/17/21 1605
[signature] 3/17/21 15:00
[signature] 3/17/21 1500

FORM NO: 01-01 (rev. 14-OCT-07)

ChemQuants™
ENVIRONMENTAL FORENSICS

Client: Stantec Consulting Services, Inc.

ATTN: Andrew Klingbeil

CQ Project#: 0186

Project name: Evergreen PHRO AOI 8 Maiden Lane Area Forensics

Laboratory#: L2116654

Advisor

ChemQuants™
ENVIRONMENTAL FORENSICS

CQ Quote # 0186

CQ PM: Mark Cejas

Dear Andrew,

ChemQuants is pleased to deliver this CQ Advisor package that consists of a simple petroleum characterization, a data visualization summary of the chemistry, methods strategy summary, and the chemistry data deliverable. The CQ Interpreter workstream will be quoted and invoiced separately.

Date of Delivery: 5/10/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Company Address: 1060 Andrew Drive Suite 140

Email: Andrew.klingbeil@stantec.com

Project Name: CQ Project # 0186

Client Project Name: Evergreen PHRO AOI 8 Maiden Lane Area Forensics

Laboratory#: L2116654

CQ Methods Summary

Phase 1 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
1	TPH (ORO) w/ Chroms EPA 8015	Soil	1
1	PIANO VOCs EPA 8260D (M)	Soil	1

Phase 2 Forensic Method(s)

Phase	Parameter	Matrix	# of Samples
2	Alkylated PAHs (w/ Scan) EPA 8270D(M)	Soil	1
2	TEL and TML in Water or Soil	Soil	1

CQ Interpreter Stage

CQ Interpreter Authorized (check if yes)?: ∨

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

Advisor

Phase 1 Basic Characterization # 0186

Dear Andrew,

Please find below a basic characterization of petroleum in the project samples. The following characterization was supported by the chromatographic results from three analytical methods – 1) VOC range PIANO 8260B (M) and 2) GC/FID SVOC chromatograms were produced from these data and included to support a basic characterization of the petroleum in the water sample.

Phase 1 Data Delivery: 4/16/2021

Contact Name: Andrew Klingbeil

Company Name: Stantec Consulting Services, Inc.

Email: Andrew.klingbeil@stantec.com

Client Project Name: Evergreen PHRO AOI 8 Maiden Lane Area Forensics

Soil Sample - L2116654-01 (N-164-18-20-20210401)

This project sample exhibits petroleum that spans the gasoline range to the naphtha range (figure 2).

Recommendation for Phase 2

CQ Quote #0186 lists the analytical methods that were tentatively recommended for phase 2 forensics. Alkylated PAHs and CQ Scans would help gain insights on the distributions of light distillate range biomarkers and overall decalins enrichments in all of the sample. The naphtha range signatures in the sample may be associated to a severely weathered gasoline although this interpretation could be supported with organic lead isomer determinations. A final invoice will be delivered to you along with the complete chemistry data package, if an interpretive report and the CQ Interpreter phase is not desired – please advise ASAP.

Mark J. Cejas
Principal



[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

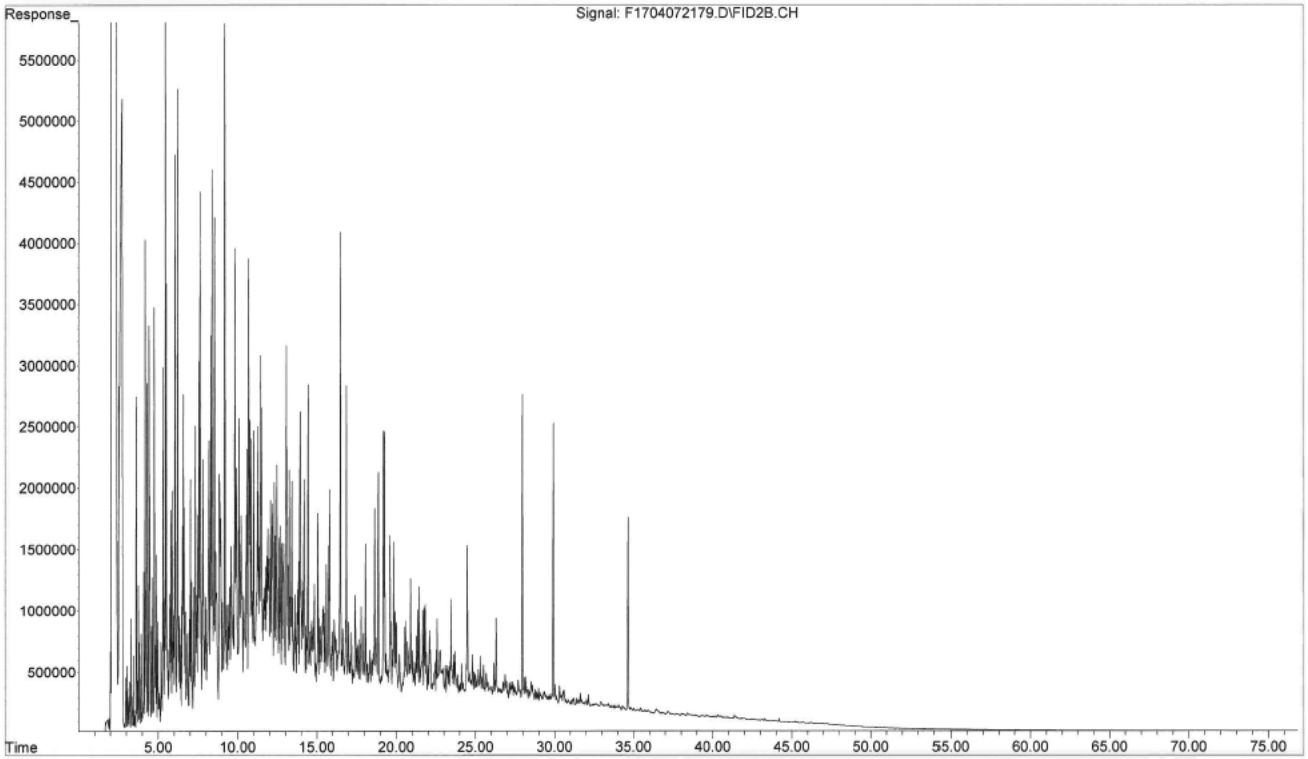


Figure 1- SVOC GC/FID chromatogram of (L2116654-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

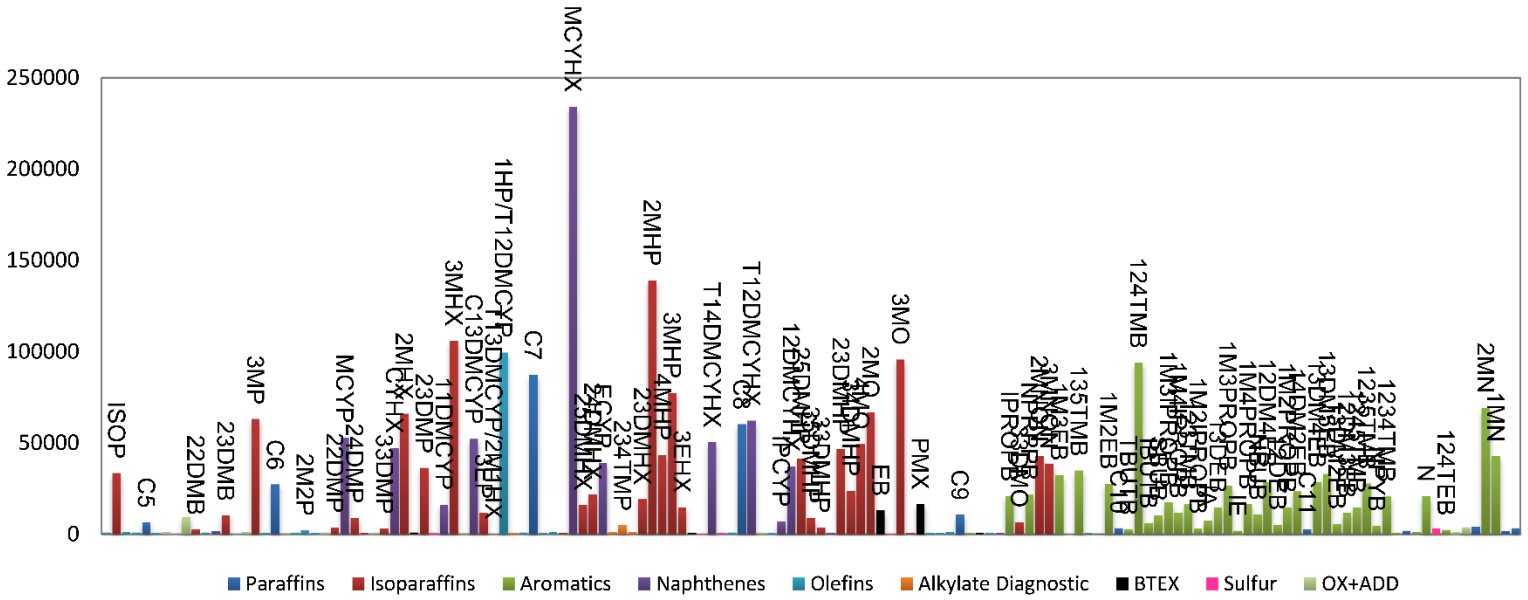


Figure 4 – Bar Graph of VOC PIANO constituents (L2116654-01).

[C] 305-342-2250
markcejas@chemquants.com
ChemQuants,LLC
Santa Barbara, CA 93109

ANALYTICAL REPORT

Lab Number:	L2116654
Client:	ChemQuants, LLC 1338 Kenwood Rd. Santa Barbara, CA 93109
ATTN:	Mark Cejas
Phone:	(305) 342-2250
Project Name:	PHRO AOI 8 MAIDEN LANE
Project Number:	0186
Report Date:	05/07/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186

Lab Number: L2116654
Report Date: 05/07/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2116654-01	N-164-18-20-20210401	SOIL	FORMER PES REFINERY, PHILADELPHIA	04/01/21 14:00	04/02/21

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2116654
Project Number:	0186	**Report Date:**	05/07/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2116654
Project Number:	0186	**Report Date:**	05/07/21

Case Narrative (continued)

Report Submission

May 7, 2021: This final report includes the results of all requested analyses. The analysis of organic lead was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

April 15, 2021: This is a preliminary report pending a decision regarding phase 2 analyses.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

PIANO Volatile Organics

L2116654-01D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

Alkylated PAHs

L2116654-01D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2116654-01D2: The sample was re-analyzed on dilution in order to quantiitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 05/07/21

ORGANICS

VOLATILES

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D
Client ID: N-164-18-20-20210401
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 04/01/21 14:00
Date Received: 04/02/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260B
Analytical Date: 04/10/21 03:51
Analyst: RY
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3-Methyl-1-butene	ND		ug/kg	5810	863.	50
Isopentane	33400		ug/kg	5810	1060	50
1-Pentene	ND		ug/kg	5810	1060	50
2-Methyl-1-Butene	ND		ug/kg	5810	904.	50
Pentane	6520		ug/kg	5810	1810	50
trans-2-Pentene	ND		ug/kg	5810	785.	50
Isoprene	ND		ug/kg	5810	1040	50
cis-2-Pentene	ND		ug/kg	5810	936.	50
Tertiary Butanol	ND		ug/kg	72600	9420	50
2,2-Dimethylbutane	2570	J	ug/kg	5810	1790	50
4-Methyl-1-pentene	ND		ug/kg	5810	904.	50
Cyclopentane	ND		ug/kg	5810	1510	50
2,3-Dimethylbutane	10300		ug/kg	5810	2400	50
2-Methylpentane	66700		ug/kg	5810	1580	50
Methyl tert butyl ether	ND		ug/kg	5810	1200	50
3-Methylpentane	63100		ug/kg	5810	921.	50
1-Hexene	ND		ug/kg	5810	816.	50
n-Hexane	27200		ug/kg	5810	956.	50
Isopropyl Ether	ND		ug/kg	5810	703.	50
trans-2-Hexene	ND		ug/kg	5810	758.	50
2-Methyl-2-pentene	2080	J	ug/kg	5810	889.	50
cis-2-Hexene	ND		ug/kg	5810	788.	50
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5810	880.	50
2,2-Dimethylpentane	3690	J	ug/kg	5810	782.	50
Methylcyclopentane	52800		ug/kg	5810	779.	50
2,4-Dimethylpentane	8930		ug/kg	5810	718.	50
2,2,3-Trimethylbutane	ND		ug/kg	5810	785.	50
1,2-Dichloroethane	ND		ug/kg	5810	857.	50

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D Date Collected: 04/01/21 14:00

Client ID: N-164-18-20-20210401 Date Received: 04/02/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
3,3-Dimethylpentane	3080	J	ug/kg	5810	1080	50
Cyclohexane	47300		ug/kg	5810	718.	50
2-Methylhexane	65900		ug/kg	5810	915.	50
Benzene	ND		ug/kg	5810	886.	50
2,3-Dimethylpentane	36300		ug/kg	5810	770.	50
Thiophene	ND		ug/kg	5810	825.	50
1,1-Dimethylcyclopentane	16200		ug/kg	5810	697.	50
3-Methylhexane	106000		ug/kg	5810	930.	50
Tertiary-Amyl Methyl Ether	ND		ug/kg	5810	715.	50
1,3-Dimethylcyclopentane (cis)	52100		ug/kg	5810	875.	50
3-Ethylpentane	11500		ug/kg	5810	840.	50
1-Heptene/1,2-DMCP (trans)	99500		ug/kg	11600	1700	50
Isooctane	ND		ug/kg	5810	634.	50
trans-3-Heptene	ND		ug/kg	5810	904.	50
Heptane	87300		ug/kg	5810	1010	50
trans-2-Heptene	ND		ug/kg	5810	744.	50
cis-2-Heptene	ND		ug/kg	5810	1120	50
2,2-Dimethylhexane	ND		ug/kg	5810	843.	50
Methylcyclohexane	234000		ug/kg	5810	785.	50
2,5-Dimethylhexane	16000		ug/kg	5810	1010	50
2,4-Dimethylhexane	21700		ug/kg	5810	706.	50
Ethylcyclopentane	38900		ug/kg	5810	770.	50
2,2,3-Trimethylpentane	ND		ug/kg	5810	1010	50
2,3,4-Trimethylpentane	4900	J	ug/kg	5810	758.	50
Xylene (Total)[1]	16600		ug/kg	5810	607.	50
2,3,3-Trimethylpentane	ND		ug/kg	5810	1150	50
2,3-Dimethylhexane	19100		ug/kg	5810	1410	50
2-Methylheptane	139000		ug/kg	5810	982.	50
4-Methylheptane	43500		ug/kg	5810	1000	50
3-Methylheptane	77400		ug/kg	5810	828.	50
3-Ethylhexane	14700		ug/kg	5810	1040	50
Toluene	ND		ug/kg	5810	788.	50
2-Methylthiophene	ND		ug/kg	5810	494.	50
1,4-Dimethylcyclohexane (trans)	50400		ug/kg	5810	756.	50
3-Methylthiophene	ND		ug/kg	5810	680.	50
1-Octene	ND		ug/kg	14500	892.	50
Octane	60300		ug/kg	5810	683.	50

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D Date Collected: 04/01/21 14:00

Client ID: N-164-18-20-20210401 Date Received: 04/02/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
1,2-Dimethylcyclohexane (trans)	62100		ug/kg	5810	854.	50
1,2-Dibromoethane	ND		ug/kg	5810	930.	50
cis-2-Octene	ND		ug/kg	5810	665.	50
Isopropylcyclopentane	6900		ug/kg	5810	851.	50
1,2-Dimethylcyclohexane (cis)	36900		ug/kg	5810	1690	50
2,5-Dimethylheptane	41300		ug/kg	5810	973.	50
3,5-Dimethylheptane	8840		ug/kg	5810	819.	50
3,3-Dimethylheptane	3560	J	ug/kg	5810	703.	50
1,1,4-Trimethylcyclohexane	ND		ug/kg	5810	578.	50
2,3-Dimethylheptane	46600		ug/kg	5810	662.	50
3,4-Dimethylheptane	23800		ug/kg	5810	988.	50
4-Methyloctane	49300		ug/kg	5810	970.	50
2-Methyloctane	66600		ug/kg	5810	1490	50
Ethylbenzene	13000		ug/kg	5810	628.	50
2-Ethylthiophene	ND		ug/kg	5810	511.	50
3-Methyloctane	95700		ug/kg	5810	651.	50
3,3-Diethylpentane	ND		ug/kg	5810	677.	50
p/m-Xylene	16600		ug/kg	11600	1110	50
1-Nonene	ND		ug/kg	14500	785.	50
trans-3-Nonene	ND		ug/kg	5810	689.	50
cis-3-Nonene	ND		ug/kg	5810	1090	50
Nonane (C9)	10700		ug/kg	5810	904.	50
Styrene	ND		ug/kg	5810	587.	50
o-Xylene	ND		ug/kg	5810	607.	50
2-Nonene	ND		ug/kg	14500	738.	50
Isopropylcyclohexane	ND		ug/kg	5810	616.	50
Isopropylbenzene	20900		ug/kg	5810	543.	50
3,3-Dimethyloctane	6640		ug/kg	5810	587.	50
n-Propylbenzene	21600		ug/kg	5810	514.	50
2-Methylnonane	42600		ug/kg	5810	822.	50
3-Methylnonane	38700		ug/kg	5810	811.	50
1-Methyl-3-Ethylbenzene	32300		ug/kg	5810	918.	50
1-Methyl-4-Ethylbenzene	31800		ug/kg	5810	819.	50
1,3,5-Trimethylbenzene	34800		ug/kg	5810	668.	50
1-Decene	ND		ug/kg	5810	756.	50
Isobutylcyclohexane	ND		ug/kg	5810	474.	50
1-Methyl-2-Ethylbenzene	27500		ug/kg	5810	494.	50

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D
Client ID: N-164-18-20-20210401
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 04/01/21 14:00
Date Received: 04/02/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
Decane (C10)	3270	J	ug/kg	5810	788.	50
tert-Butylbenzene	2720	J	ug/kg	5810	613.	50
1,2,4-Trimethylbenzene	94000		ug/kg	5810	602.	50
Isobutylbenzene	6140		ug/kg	5810	785.	50
sec-Butylbenzene	10100		ug/kg	5810	753.	50
1-Methyl-3-Isopropylbenzene	17500		ug/kg	5810	750.	50
1-Methyl-4-Isopropylbenzene	11600		ug/kg	5810	616.	50
1,2,3-Trimethylbenzene	16300		ug/kg	5810	648.	50
1-Methyl-2-Isopropylbenzene	3030	J	ug/kg	5810	630.	50
Indane	7230		ug/kg	5810	357.	50
1,3-Diethylbenzene	14700		ug/kg	5810	724.	50
1-Methyl-3-N-Propylbenzene	26600		ug/kg	5810	587.	50
Indene	1820	J	ug/kg	5810	337.	50
1-Methyl-4-N-Propylbenzene	16400		ug/kg	5810	726.	50
n-Butylbenzene	10700		ug/kg	5810	572.	50
1,2-Dimethyl-4-Ethylbenzene	28500		ug/kg	5810	712.	50
1,2-Diethylbenzene	5260	J	ug/kg	5810	860.	50
1-Methyl-2-N-Propylbenzene	14600		ug/kg	5810	724.	50
1,4-Dimethyl-2-Ethylbenzene	23400		ug/kg	5810	543.	50
Undecane	2460	J	ug/kg	5810	645.	50
1,3-Dimethyl-4-Ethylbenzene	28300		ug/kg	5810	564.	50
1,3-Dimethyl-5-Ethylbenzene	33000		ug/kg	5810	686.	50
1,3-Dimethyl-2-Ethylbenzene	5640	J	ug/kg	5810	433.	50
1,2-Dimethyl-3-Ethylbenzene	11700		ug/kg	5810	369.	50
1,2,4,5-Tetramethylbenzene	14600		ug/kg	5810	450.	50
1,2,3,5-Tetramethylbenzene	27800		ug/kg	5810	442.	50
N-Pentylbenzene	4490	J	ug/kg	5810	724.	50
1,2,3,4-Tetramethylbenzene	20600		ug/kg	5810	622.	50
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	5810	828.	50
Dodecane (C12)	ND		ug/kg	14500	1910	50
1,3,5-Triethylbenzene	ND		ug/kg	5810	1100	50
Naphthalene	20800		ug/kg	5810	2430	50
Benzothiophene	ND		ug/kg	5810	3070	50
1,2,4-Triethylbenzene	2370	J	ug/kg	5810	988.	50
Hexylbenzene	ND		ug/kg	5810	1120	50
MMT	ND		ug/kg	14500	3740	50
Tridecane	ND		ug/kg	14500	4050	50

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D
Client ID: N-164-18-20-20210401
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 04/01/21 14:00
Date Received: 04/02/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab						
2-Methylnaphthalene	69200		ug/kg	14500	3840	50
1-Methylnaphthalene	42600		ug/kg	14500	4260	50
Tetradecane (C14)	ND		ug/kg	14500	1780	50
Pentadecane	ND		ug/kg	14500	3240	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	101		70-130

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 04/09/21 01:55
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1484441-5					
3-Methyl-1-butene	ND		ug/kg	100	14.8
Isopentane	ND		ug/kg	100	18.3
1-Pentene	ND		ug/kg	100	18.2
2-Methyl-1-Butene	ND		ug/kg	100	15.6
Pentane	ND		ug/kg	100	31.2
trans-2-Pentene	ND		ug/kg	100	13.5
Isoprene	ND		ug/kg	100	17.8
cis-2-Pentene	ND		ug/kg	100	16.1
Tertiary Butanol	ND		ug/kg	1250	162.
2,2-Dimethylbutane	ND		ug/kg	100	30.8
4-Methyl-1-pentene	ND		ug/kg	100	15.6
Cyclopentane	ND		ug/kg	100	26.0
2,3-Dimethylbutane	ND		ug/kg	100	41.3
2-Methylpentane	ND		ug/kg	100	27.1
Methyl tert butyl ether	ND		ug/kg	100	20.6
3-Methylpentane	ND		ug/kg	100	15.8
1-Hexene	ND		ug/kg	100	14.0
n-Hexane	ND		ug/kg	100	16.4
Isopropyl Ether	ND		ug/kg	100	12.1
trans-2-Hexene	ND		ug/kg	100	13.0
2-Methyl-2-pentene	ND		ug/kg	100	15.3
cis-2-Hexene	ND		ug/kg	100	13.6
Ethyl-Tert-Butyl-Ether	ND		ug/kg	100	15.2
2,2-Dimethylpentane	ND		ug/kg	100	13.4
Methylcyclopentane	ND		ug/kg	100	13.4
2,4-Dimethylpentane	ND		ug/kg	100	12.4
2,2,3-Trimethylbutane	ND		ug/kg	100	13.5
1,2-Dichloroethane	ND		ug/kg	100	14.8
3,3-Dimethylpentane	ND		ug/kg	100	18.6

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 04/09/21 01:55
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1484441-5					
Cyclohexane	ND		ug/kg	100	12.4
2-Methylhexane	ND		ug/kg	100	15.8
Benzene	ND		ug/kg	100	15.2
2,3-Dimethylpentane	ND		ug/kg	100	13.2
Thiophene	ND		ug/kg	100	14.2
1,1-Dimethylcyclopentane	ND		ug/kg	100	12.0
3-Methylhexane	ND		ug/kg	100	16.0
Tertiary-Amyl Methyl Ether	ND		ug/kg	100	12.3
1,3-Dimethylcyclopentane (cis)	ND		ug/kg	100	15.0
3-Ethylpentane	ND		ug/kg	100	14.4
1-Heptene/1,2-DMCP (trans)	ND		ug/kg	200	29.2
Isooctane	ND		ug/kg	100	10.9
trans-3-Heptene	ND		ug/kg	100	15.6
Heptane	ND		ug/kg	100	17.4
trans-2-Heptene	ND		ug/kg	100	12.8
cis-2-Heptene	ND		ug/kg	100	19.4
2,2-Dimethylhexane	ND		ug/kg	100	14.5
Methylcyclohexane	ND		ug/kg	100	13.5
2,5-Dimethylhexane	ND		ug/kg	100	17.4
2,4-Dimethylhexane	ND		ug/kg	100	12.2
Ethylcyclopentane	ND		ug/kg	100	13.2
2,2,3-Trimethylpentane	ND		ug/kg	100	17.4
2,3,4-Trimethylpentane	ND		ug/kg	100	13.0
Xylene (Total)[1]	ND		ug/kg	100	10.4
2,3,3-Trimethylpentane	ND		ug/kg	100	19.8
2,3-Dimethylhexane	ND		ug/kg	100	24.2
2-Methylheptane	ND		ug/kg	100	16.9
4-Methylheptane	ND		ug/kg	100	17.2
3-Methylheptane	ND		ug/kg	100	14.2

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 04/09/21 01:55
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1484441-5					
3-Ethylhexane	ND		ug/kg	100	17.9
Toluene	ND		ug/kg	100	13.6
2-Methylthiophene	ND		ug/kg	100	8.50
1,4-Dimethylcyclohexane (trans)	ND		ug/kg	100	13.0
3-Methylthiophene	ND		ug/kg	100	11.7
1-Octene	ND		ug/kg	250	15.4
Octane	ND		ug/kg	100	11.8
1,2-Dimethylcyclohexane (trans)	ND		ug/kg	100	14.7
1,2-Dibromoethane	ND		ug/kg	100	16.0
cis-2-Octene	ND		ug/kg	100	11.4
Isopropylcyclopentane	ND		ug/kg	100	14.6
1,2-Dimethylcyclohexane (cis)	ND		ug/kg	100	29.0
2,5-Dimethylheptane	ND		ug/kg	100	16.8
3,5-Dimethylheptane	ND		ug/kg	100	14.1
3,3-Dimethylheptane	ND		ug/kg	100	12.1
1,1,4-Trimethylcyclohexane	ND		ug/kg	100	9.95
2,3-Dimethylheptane	ND		ug/kg	100	11.4
3,4-Dimethylheptane	ND		ug/kg	100	17.0
4-Methyloctane	ND		ug/kg	100	16.7
2-Methyloctane	ND		ug/kg	100	25.6
Ethylbenzene	ND		ug/kg	100	10.8
2-Ethylthiophene	ND		ug/kg	100	8.80
3-Methyloctane	ND		ug/kg	100	11.2
3,3-Diethylpentane	ND		ug/kg	100	11.6
p/m-Xylene	ND		ug/kg	200	19.0
1-Nonene	ND		ug/kg	250	13.5
trans-3-Nonene	ND		ug/kg	100	11.8
cis-3-Nonene	ND		ug/kg	100	18.7
Nonane (C9)	ND		ug/kg	100	15.6

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 04/09/21 01:55
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1484441-5					
Styrene	ND		ug/kg	100	10.1
o-Xylene	ND		ug/kg	100	10.4
2-Nonene	ND		ug/kg	250	12.7
Isopropylcyclohexane	ND		ug/kg	100	10.6
Isopropylbenzene	ND		ug/kg	100	9.35
3,3-Dimethyloctane	ND		ug/kg	100	10.1
n-Propylbenzene	ND		ug/kg	100	8.85
2-Methylnonane	ND		ug/kg	100	14.2
3-Methylnonane	ND		ug/kg	100	14.0
1-Methyl-3-Ethylbenzene	ND		ug/kg	100	15.8
1-Methyl-4-Ethylbenzene	ND		ug/kg	100	14.1
1,3,5-Trimethylbenzene	ND		ug/kg	100	11.5
1-Decene	ND		ug/kg	100	13.0
Isobutylcyclohexane	ND		ug/kg	100	8.15
1-Methyl-2-Ethylbenzene	ND		ug/kg	100	8.50
Decane (C10)	ND		ug/kg	100	13.6
tert-Butylbenzene	ND		ug/kg	100	10.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	10.4
Isobutylbenzene	ND		ug/kg	100	13.5
sec-Butylbenzene	ND		ug/kg	100	13.0
1-Methyl-3-Isopropylbenzene	ND		ug/kg	100	12.9
1-Methyl-4-Isopropylbenzene	ND		ug/kg	100	10.6
1,2,3-Trimethylbenzene	ND		ug/kg	100	11.2
1-Methyl-2-Isopropylbenzene	ND		ug/kg	100	10.8
Indane	ND		ug/kg	100	6.15
1,3-Diethylbenzene	ND		ug/kg	100	12.4
1-Methyl-3-N-Propylbenzene	ND		ug/kg	100	10.1
Indene	ND		ug/kg	100	5.80
1-Methyl-4-N-Propylbenzene	ND		ug/kg	100	12.5

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 04/09/21 01:55
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1484441-5					
n-Butylbenzene	ND		ug/kg	100	9.85
1,2-Dimethyl-4-Ethylbenzene	ND		ug/kg	100	12.2
1,2-Diethylbenzene	ND		ug/kg	100	14.8
1-Methyl-2-N-Propylbenzene	ND		ug/kg	100	12.4
1,4-Dimethyl-2-Ethylbenzene	ND		ug/kg	100	9.35
Undecane	ND		ug/kg	100	11.1
1,3-Dimethyl-4-Ethylbenzene	ND		ug/kg	100	9.70
1,3-Dimethyl-5-Ethylbenzene	ND		ug/kg	100	11.8
1,3-Dimethyl-2-Ethylbenzene	ND		ug/kg	100	7.45
1,2-Dimethyl-3-Ethylbenzene	ND		ug/kg	100	6.35
1,2,4,5-Tetramethylbenzene	ND		ug/kg	100	7.75
1,2,3,5-Tetramethylbenzene	ND		ug/kg	100	7.60
N-Pentylbenzene	ND		ug/kg	100	12.4
1,2,3,4-Tetramethylbenzene	ND		ug/kg	100	10.7
1,3-Dimethyl-5-tert-Butylbenzene	ND		ug/kg	100	14.2
Dodecane (C12)	ND		ug/kg	250	32.8
1,3,5-Triethylbenzene	ND		ug/kg	100	19.0
Naphthalene	ND		ug/kg	100	41.8
Benzothiophene	ND		ug/kg	100	52.8
1,2,4-Triethylbenzene	ND		ug/kg	100	17.0
Hexylbenzene	ND		ug/kg	100	19.2
MMT	ND		ug/kg	250	64.3
Tridecane	ND		ug/kg	250	69.6
2-Methylnaphthalene	ND		ug/kg	250	66.1
1-Methylnaphthalene	ND		ug/kg	250	73.4
Tetradecane (C14)	ND		ug/kg	250	30.6
Pentadecane	ND		ug/kg	250	55.8

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2116654
Report Date: 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 04/09/21 01:55
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab for sample(s): 01 Batch: WG1484441-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	101		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2116654

Report Date: 05/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1484441-3 WG1484441-4								
1-Pentene	95		95		50-130	0		30
Pentane	77		77		50-130	0		30
Tertiary Butanol	94		90		50-130	4		30
Cyclopentane	90		88		50-130	2		30
2-Methylpentane	90		90		50-130	0		30
Methyl tert butyl ether	98		97		50-130	1		30
3-Methylpentane	95		93		50-130	2		30
1-Hexene	100		100		50-130	0		30
n-Hexane	91		90		50-130	1		30
Isopropyl Ether	102		100		50-130	2		30
Ethyl-Tert-Butyl-Ether	95		94		50-130	1		30
Methylcyclopentane	102		100		50-130	2		30
2,4-Dimethylpentane	99		98		50-130	1		30
Cyclohexane	104		103		50-130	1		30
2-Methylhexane	102		99		50-130	3		30
Benzene	105		105		50-130	0		30
2,3-Dimethylpentane	104		103		50-130	1		30
3-Methylhexane	90		90		50-130	0		30
Tertiary-Amyl Methyl Ether	91		91		50-130	0		30
Isooctane	102		100		50-130	2		30
Heptane	105		102		50-130	3		30
Methylcyclohexane	95		95		50-130	0		30
2-Methylheptane	96		93		50-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2116654

Report Date: 05/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1484441-3 WG1484441-4								
3-Methylheptane	98		96		50-130	2		30
Toluene	98		97		50-130	1		30
Octane	105		102		50-130	3		30
Ethylbenzene	95		94		50-130	1		30
p/m-Xylene	103		103		50-130	0		30
Nonane (C9)	91		90		50-130	1		30
o-Xylene	101		100		50-130	1		30
Isopropylbenzene	100		101		50-130	1		30
n-Propylbenzene	99		98		50-130	1		30
1-Methyl-3-Ethylbenzene	99		99		50-130	0		30
1-Methyl-4-Ethylbenzene	108		107		50-130	1		30
1,3,5-Trimethylbenzene	102		102		50-130	0		30
1-Decene	90		90		50-130	0		30
1-Methyl-2-Ethylbenzene	102		101		50-130	1		30
Decane (C10)	116		116		50-130	0		30
1,2,4-Trimethylbenzene	98		98		50-130	0		30
sec-Butylbenzene	106		105		50-130	1		30
1-Methyl-4-N-Propylbenzene	93		94		50-130	1		30
n-Butylbenzene	98		99		50-130	1		30
1,2-Diethylbenzene	100		100		50-130	0		30
Undecane	108		110		50-130	2		30
N-Pentylbenzene	100		100		50-130	0		30
Dodecane (C12)	128		129		50-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186

Lab Number: L2116654
Report Date: 05/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by EPA 5035 High - Mansfield Lab Associated sample(s): 01 Batch: WG1484441-3 WG1484441-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Dibromofluoromethane	101		102		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	101		101		70-130

SEMIVOLATILES

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2116654
Project Number: 0186
Report Date: 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D2
Client ID: N-164-18-20-20210401
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 04/01/21 14:00
Date Received: 04/02/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 05/06/21 19:10
Analyst: MJS
Percent Solids: 84%

Extraction Method: ALPHA OP-013
Extraction Date: 04/07/21 13:54
Cleanup Method: EPA 3611B
Cleanup Date: 05/05/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	11600		ug/kg	15.9	8.01	10
C1-Naphthalenes	32100		ug/kg	31.9	9.17	10
2-Methylnaphthalene	30300		ug/kg	31.9	8.22	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	105		50-130
Phenanthrene-d10	91		50-130
Benzo(a)pyrene-d12	85		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2116654
Project Number: 0186
Report Date: 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D
Client ID: N-164-18-20-20210401
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 04/01/21 14:00
Date Received: 04/02/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D-SIM(M)
Analytical Date: 05/05/21 21:56
Analyst: CC
Percent Solids: 84%

Extraction Method: ALPHA OP-013
Extraction Date: 04/07/21 13:54
Cleanup Method: EPA 3611B
Cleanup Date: 05/05/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	13400	E	ug/kg	7.97	4.00	5
C1-Decalins	19900		ug/kg	15.9	4.00	5
C2-Decalins	16600		ug/kg	15.9	4.00	5
C3-Decalins	6860		ug/kg	15.9	4.00	5
C4-Decalins	7720		ug/kg	15.9	4.00	5
Naphthalene	12800		ug/kg	15.9	4.58	5
C1-Naphthalenes	34700	E	ug/kg	15.9	4.58	5
C2-Naphthalenes	39700		ug/kg	15.9	4.58	5
C3-Naphthalenes	26000		ug/kg	15.9	4.58	5
C4-Naphthalenes	13200		ug/kg	15.9	4.58	5
2-Methylnaphthalene	33000	E	ug/kg	15.9	4.11	5
1-Methylnaphthalene	19100		ug/kg	15.9	5.02	5
Benzothiophene	476.		ug/kg	15.9	5.00	5
C1-Benzo(b)thiophenes	2730		ug/kg	15.9	5.00	5
C2-Benzo(b)thiophenes	3230		ug/kg	15.9	5.00	5
C3-Benzo(b)thiophenes	3480		ug/kg	15.9	5.00	5
C4-Benzo(b)thiophenes	2480		ug/kg	15.9	5.00	5
Biphenyl	1100		ug/kg	15.9	4.93	5
2,6-Dimethylnaphthalene	17700		ug/kg	15.9	3.79	5
Dibenzofuran	625.		ug/kg	15.9	5.02	5
Acenaphthylene	250.		ug/kg	15.9	3.04	5
Acenaphthene	657.		ug/kg	15.9	2.81	5
2,3,5-Trimethylnaphthalene	2290		ug/kg	15.9	2.61	5
Fluorene	1040		ug/kg	15.9	4.25	5
C1-Fluorenes	2420		ug/kg	15.9	4.25	5
C2-Fluorenes	3570		ug/kg	15.9	4.25	5
C3-Fluorenes	2920		ug/kg	15.9	4.25	5
Dibenzothiophene	872.		ug/kg	15.9	4.40	5

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D Date Collected: 04/01/21 14:00

Client ID: N-164-18-20-20210401 Date Received: 04/02/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	1060		ug/kg	15.9	4.40	5
2/3-Methyldibenzothiophene(2MDT)	997.		ug/kg	15.9	4.40	5
1-Methyldibenzothiophene(1MDT)	323.		ug/kg	15.9	4.40	5
C1-Dibenzothiophenes BS	2470		ug/kg	15.9	4.40	5
C2-Dibenzothiophenes	3340		ug/kg	15.9	4.40	5
C3-Dibenzothiophenes	2510		ug/kg	15.9	4.40	5
C4-Dibenzothiophenes	1280		ug/kg	15.9	4.40	5
Phenanthrene	2360		ug/kg	15.9	5.28	5
3-Methylphenanthrene (3MP)	1030		ug/kg	15.9	5.28	5
2-Methylphenanthrene (2MP)	1160		ug/kg	15.9	5.28	5
2-Methylanthracene (2MA)	388.		ug/kg	15.9	5.28	5
9/4-Methylphenanthrene (9MP)	1100		ug/kg	15.9	5.28	5
1-Methylphenanthrene (1MP)	738.		ug/kg	15.9	5.28	5
C1-Phenanthrenes/Anthracenes	4440		ug/kg	15.9	5.28	5
C2-Phenanthrenes/Anthr BS	4040		ug/kg	15.9	5.28	5
C3-Phenanthrenes/Anthracenes	2110		ug/kg	15.9	5.28	5
C4-Phenanthrenes/Anthracenes	933.		ug/kg	15.9	5.28	5
Retene	ND		ug/kg	15.9	3.91	5
Anthracene	453.		ug/kg	15.9	3.29	5
Carbazole	45.7		ug/kg	15.9	5.22	5
1-Methylphenanthrene	1030		ug/kg	15.9	4.21	5
Fluoranthene	122.		ug/kg	15.9	5.07	5
Benzo(b)fluorene	69.0		ug/kg	15.9	4.62	5
7H-Benzo(c)fluorene	49.0		ug/kg	15.9	4.62	5
2-Methylpyrene[1]	293.		ug/kg	15.9	4.19	5
4-Methylpyrene[1]	298.		ug/kg	15.9	4.19	5
1-Methylpyrene[1]	244.		ug/kg	15.9	4.19	5
Pyrene	732.		ug/kg	15.9	4.19	5
C1-Fluoranthenes/Pyrenes	1250		ug/kg	15.9	4.19	5
C2-Fluoranthenes/Pyrenes	1030		ug/kg	15.9	4.19	5
C3-Fluoranthenes/Pyrenes	713.		ug/kg	15.9	4.19	5
C4-Fluoranthenes/Pyrenes	504.		ug/kg	15.9	4.19	5
Naphthobenzothiophenes	182.		ug/kg	15.9	4.46	5
C1-Naphthobenzothiophenes	407.		ug/kg	15.9	4.46	5
C2-Naphthobenzothiophenes	471.		ug/kg	15.9	4.46	5
C3-Naphthobenzothiophenes	348.		ug/kg	15.9	4.46	5
C4-Naphthobenzothiophenes	235.		ug/kg	15.9	4.46	5

Project Name: PHRO AOI 8 MAIDEN LANE **Lab Number:** L2116654

Project Number: 0186 **Report Date:** 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01 D Date Collected: 04/01/21 14:00

Client ID: N-164-18-20-20210401 Date Received: 04/02/21

Sample Location: FORMER PES REFINERY, PHILADELPHIA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
Benz(a)anthracene	112.		ug/kg	15.9	3.25	5
Chrysene/Triphenylene	146.		ug/kg	15.9	3.22	5
C1-Chrysenes	379.		ug/kg	15.9	3.22	5
C2-Chrysenes BS	409.		ug/kg	15.9	3.22	5
C3-Chrysenes	376.		ug/kg	15.9	3.22	5
C4-Chrysenes	248.		ug/kg	15.9	3.22	5
Benzo(b)fluoranthene	41.8		ug/kg	15.9	4.15	5
Benzo(j)+(k)fluoranthene	25.7		ug/kg	15.9	3.16	5
Benzo(a)fluoranthene	5.15	J	ug/kg	15.9	3.16	5
Benzo(e)pyrene	85.2		ug/kg	15.9	3.29	5
Benzo(a)pyrene	72.8		ug/kg	15.9	4.55	5
Perylene	6.50	J	ug/kg	15.9	3.08	5
Indeno(1,2,3-cd)pyrene	31.1		ug/kg	15.9	4.33	5
Dibenz(a,h)+(a,c)anthracene	25.4		ug/kg	15.9	4.31	5
Benzo(g,h,i)perylene	57.7		ug/kg	15.9	4.24	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	112		50-130
Phenanthrene-d10	99		50-130
Benzo(a)pyrene-d12	92		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2116654
Report Date: 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 05/05/21 16:15
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 04/07/21 13:54
Cleanup Method: EPA 3611B
Cleanup Date: 05/05/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01 Batch: WG1495253-1					
cis/trans-Decalin	ND		ug/kg	0.500	0.251
C1-Decalins	ND		ug/kg	1.00	0.251
C2-Decalins	ND		ug/kg	1.00	0.251
C3-Decalins	ND		ug/kg	1.00	0.251
C4-Decalins	ND		ug/kg	1.00	0.251
Naphthalene	ND		ug/kg	1.00	0.287
C1-Naphthalenes	ND		ug/kg	1.00	0.287
C2-Naphthalenes	ND		ug/kg	1.00	0.287
C3-Naphthalenes	ND		ug/kg	1.00	0.287
C4-Naphthalenes	ND		ug/kg	1.00	0.287
2-Methylnaphthalene	ND		ug/kg	1.00	0.258
1-Methylnaphthalene	ND		ug/kg	1.00	0.315
Benzothiophene	ND		ug/kg	1.00	0.313
C1-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C2-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C3-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
C4-Benzo(b)thiophenes	ND		ug/kg	1.00	0.313
Biphenyl	ND		ug/kg	1.00	0.309
2,6-Dimethylnaphthalene	ND		ug/kg	1.00	0.238
Dibenzofuran	ND		ug/kg	1.00	0.315
Acenaphthylene	ND		ug/kg	1.00	0.191
Acenaphthene	ND		ug/kg	1.00	0.176
2,3,5-Trimethylnaphthalene	ND		ug/kg	1.00	0.164
Fluorene	ND		ug/kg	1.00	0.267
C1-Fluorenes	ND		ug/kg	1.00	0.267
C2-Fluorenes	ND		ug/kg	1.00	0.267
C3-Fluorenes	ND		ug/kg	1.00	0.267
Dibenzothiophene	ND		ug/kg	1.00	0.276
4-Methyldibenzothiophene(4MDT)	ND		ug/kg	1.00	0.276

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2116654
Report Date: 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 05/05/21 16:15
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 04/07/21 13:54
Cleanup Method: EPA 3611B
Cleanup Date: 05/05/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01 Batch: WG1495253-1					
2/3-Methyldibenzothiophene(2MDT)	ND		ug/kg	1.00	0.276
1-Methyldibenzothiophene(1MDT)	ND		ug/kg	1.00	0.276
C1-Dibenzothiophenes BS	ND		ug/kg	1.00	0.276
C2-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C3-Dibenzothiophenes	ND		ug/kg	1.00	0.276
C4-Dibenzothiophenes	ND		ug/kg	1.00	0.276
Phenanthrene	ND		ug/kg	1.00	0.331
3-Methylphenanthrene (3MP)	ND		ug/kg	1.00	0.331
2-Methylphenanthrene (2MP)	ND		ug/kg	1.00	0.331
2-Methylanthracene (2MA)	ND		ug/kg	1.00	0.331
9/4-Methylphenanthrene (9MP)	ND		ug/kg	1.00	0.331
1-Methylphenanthrene (1MP)	ND		ug/kg	1.00	0.331
C1-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C2-Phenanthrenes/Anthr BS	ND		ug/kg	1.00	0.331
C3-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
C4-Phenanthrenes/Anthracenes	ND		ug/kg	1.00	0.331
Retene	ND		ug/kg	1.00	0.245
Anthracene	ND		ug/kg	1.00	0.206
Carbazole	ND		ug/kg	1.00	0.327
1-Methylphenanthrene	ND		ug/kg	1.00	0.264
Fluoranthene	ND		ug/kg	1.00	0.318
Benzo(b)fluorene	ND		ug/kg	1.00	0.290
7H-Benzo(c)fluorene	ND		ug/kg	1.00	0.290
2-Methylpyrene[1]	ND		ug/kg	1.00	0.263
4-Methylpyrene[1]	ND		ug/kg	1.00	0.263
1-Methylpyrene[1]	ND		ug/kg	1.00	0.263
Pyrene	ND		ug/kg	1.00	0.263
C1-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C2-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2116654
Report Date: 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 05/05/21 16:15
Analyst: CC

Extraction Method: ALPHA OP-013
Extraction Date: 04/07/21 13:54
Cleanup Method: EPA 3611B
Cleanup Date: 05/05/21

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01 Batch: WG1495253-1					
C3-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
C4-Fluoranthenes/Pyrenes	ND		ug/kg	1.00	0.263
Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C1-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C2-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C3-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
C4-Naphthobenzothiophenes	ND		ug/kg	1.00	0.280
Benz(a)anthracene	ND		ug/kg	1.00	0.204
Chrysene/Triphenylene	ND		ug/kg	1.00	0.202
C1-Chrysenes	ND		ug/kg	1.00	0.202
C2-Chrysenes BS	ND		ug/kg	1.00	0.202
C3-Chrysenes	ND		ug/kg	1.00	0.202
C4-Chrysenes	ND		ug/kg	1.00	0.202
Benzo(b)fluoranthene	ND		ug/kg	1.00	0.260
Benzo(j)+(k)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(a)fluoranthene	ND		ug/kg	1.00	0.198
Benzo(e)pyrene	ND		ug/kg	1.00	0.206
Benzo(a)pyrene	ND		ug/kg	1.00	0.285
Perylene	ND		ug/kg	1.00	0.193
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1.00	0.271
Dibenz(a,h)+(a,c)anthracene	ND		ug/kg	1.00	0.270
Benzo(g,h,i)perylene	ND		ug/kg	1.00	0.266

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	97		50-130
Phenanthrene-d10	98		50-130
Benzo(a)pyrene-d12	97		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2116654

Report Date: 05/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01 Batch: WG1495253-2 WG1495253-3								
Naphthalene	101		95		50-130	6		30
2-Methylnaphthalene	96		89		50-130	8		30
Acenaphthylene	91		90		50-130	1		30
Acenaphthene	87		86		50-130	1		30
Fluorene	91		88		50-130	3		30
Phenanthrene	90		89		50-130	1		30
Anthracene	94		93		50-130	1		30
Fluoranthene	85		84		50-130	1		30
Pyrene	82		82		50-130	0		30
Benz(a)anthracene	92		90		50-130	2		30
Chrysene/Triphenylene	93		91		50-130	2		30
Benzo(b)fluoranthene	99		96		50-130	3		30
Benzo(j)+(k)fluoranthene	94		93		50-130	1		30
Benzo(a)pyrene	98		96		50-130	2		30
Indeno(1,2,3-cd)pyrene	84		80		50-130	5		30
Dibenz(a,h)+(a,c)anthracene	85		82		50-130	4		30
Benzo(g,h,i)perylene	91		89		50-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2116654

Report Date: 05/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01 Batch: WG1495253-2 WG1495253-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Naphthalene-d8	108		98		50-130
Phenanthrene-d10	102		98		50-130
Benzo(a)pyrene-d12	102		97		50-130

PETROLEUM HYDROCARBONS

Project Name: PHRO AOI 8 MAIDEN LANE
Lab Number: L2116654
Project Number: 0186
Report Date: 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01
Client ID: N-164-18-20-20210401
Sample Location: FORMER PES REFINERY, PHILADELPHIA

Date Collected: 04/01/21 14:00
Date Received: 04/02/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 04/10/21 01:07
Analyst: WR
Percent Solids: 84%

Extraction Method: ALPHA OP-013
Extraction Date: 04/07/21 13:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Diesel/Other Range Organics by GC-FID - Mansfield Lab						
C9-C44 Total Petroleu BS	4540		mg/kg	13.2	2.89	1
C28-C40 ORO BS	193		mg/kg	4.38	0.997	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	93		50-130
d50-Tetracosane	92		50-130

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2116654
Report Date: 05/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 04/09/21 19:13
Analyst: WR

Extraction Method: ALPHA OP-013
Extraction Date: 04/07/21 13:54

Parameter	Result	Qualifier	Units	RL	MDL
Diesel/Other Range Organics by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1483370-1					
C9-C44 Total Petroleu BS	ND		mg/kg	2.20	0.484
C28-C40 ORO BS	ND		mg/kg	0.733	0.167

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	97		50-130
d50-Tetracosane	97		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE

Project Number: 0186

Lab Number: L2116654

Report Date: 05/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Diesel/Other Range Organics by GC-FID - Mansfield Lab Associated sample(s): 01 Batch: WG1483370-2 WG1483370-3								
Nonane (C9)	71		72		50-130	1		30
Decane (C10)	76		76		50-130	0		30
Dodecane (C12)	83		82		50-130	1		30
Tetradecane (C14)	79		84		50-130	6		30
Hexadecane (C16)	91		92		50-130	1		30
Octadecane (C18)	93		94		50-130	1		30
Nonadecane (C19)	84		85		50-130	1		30
Eicosane (C20)	88		89		50-130	1		30
Docosane (C22)	87		88		50-130	1		30
Tetracosane (C24)	88		89		50-130	1		30
Hexacosane (C26)	87		89		50-130	2		30
Octacosane (C28)	87		88		50-130	1		30
Triacontane (C30)	87		88		50-130	1		30
Hexatriacontane (C36)	77		78		50-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
ortho-terphenyl	97		97		50-130
d50-Tetracosane	95		94		50-130

INORGANICS
&
MISCELLANEOUS

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186
Lab Number: L2116654
Report Date: 05/07/21

SAMPLE RESULTS

Lab ID: L2116654-01
Client ID: N-164-18-20-20210401
Sample Location: FORMER PES REFINERY, PHILADELPHIA
Sample Depth:
Matrix: Soil
Date Collected: 04/01/21 14:00
Date Received: 04/02/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	83.6		%	0.100	0.100	1	-	04/06/21 13:55	121,2540G	NB

Lab Duplicate Analysis
Batch Quality Control

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186

Lab Number: L2116654
Report Date: 05/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1483002-1 QC Sample: L2116978-01 Client ID: DUP Sample						
Solids, Total	77.2	78.2	%	1		10

Project Name: PHRO AOI 8 MAIDEN LANE
Project Number: 0186

Lab Number: L2116654
Report Date: 05/07/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2116654-01A	Vial MeOH preserved	A	NA		5.4	Y	Absent		A2-PIANO8260H(14)
L2116654-01B	Vial water preserved	A	NA		5.4	Y	Absent	**03-APR-21 14:09**	A2-PIANO8260H(14)
L2116654-01C	Vial water preserved	A	NA		5.4	Y	Absent	**03-APR-21 14:09**	A2-PIANO8260H(14)
L2116654-01D	Glass 250ml/8oz unpreserved	A	NA		5.4	Y	Absent		A2-ALKPAH(14),A2-TPHDRO/ORO(14)
L2116654-01E	Plastic 2oz unpreserved for TS	A	NA		5.4	Y	Absent		A2-TS(7)
L2116654-01X	Glass 120ml unpreserved split	A	NA		5.4	Y	Absent		SUB-ORGLEAD()

*Values in parentheses indicate holding time in days

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2116654
Project Number:	0186	**Report Date:**	05/07/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2116654
Project Number:	0186	**Report Date:**	05/07/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2116654
Project Number:	0186	**Report Date:**	05/07/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PHRO AOI 8 MAIDEN LANE	**Lab Number:**	L2116654
Project Number:	0186	**Report Date:**	05/07/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 4/3/21

ALPHA Job #: L2116654

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Drive Suite 140
West Chester, PA 19380
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.klingbeil@stantec.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Evergreen PHRO AOI 8 Forensics
Project Location: Philadelphia, PA
Project #: 213403364
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 213403364

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ChemQuants Quote #0186

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PIANO VOCs 8260	TPH (ORO) with Chromatograms												Sample Specific Comments	TOTAL # BOTTLES
16654-01	N-164-18-20-20210401	4/1/2021	1400	S	JK	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Container Type						G	G	-	-	-	-	-	-	-	-	-	-	-		
Preservative						F	A	-	-	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING

Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

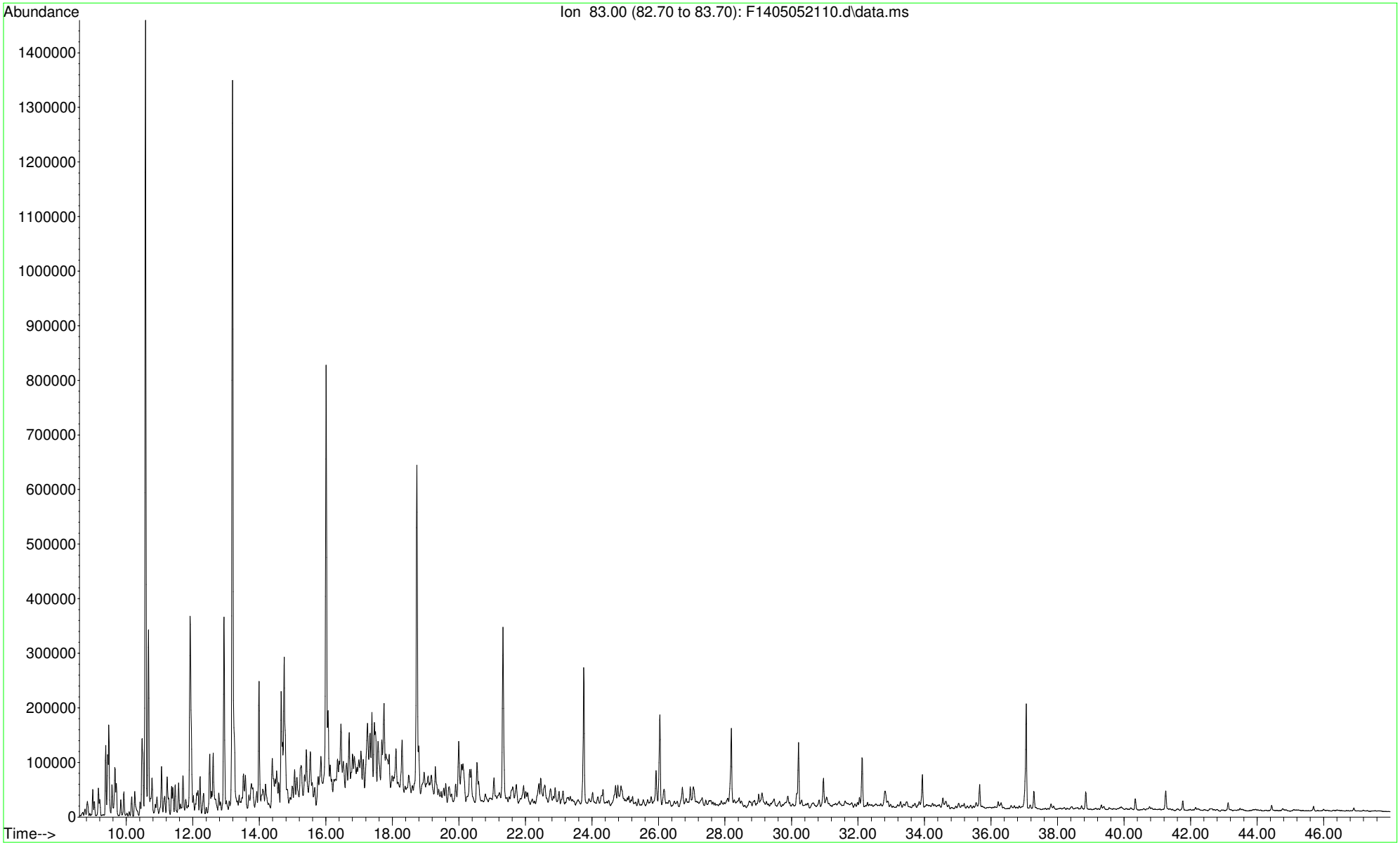
ANC - AAC 4/3/21 10:05

Relinquished By:	Date/Time	Received By:	Date/Time
[signature] BAL	4/2/21 1135	[signature] BAL	4/2/21 1135
RVB	4/2/21 4-2	RVB	4-2
AAC	4/3/21 0205	AAC	4/2/21 2205

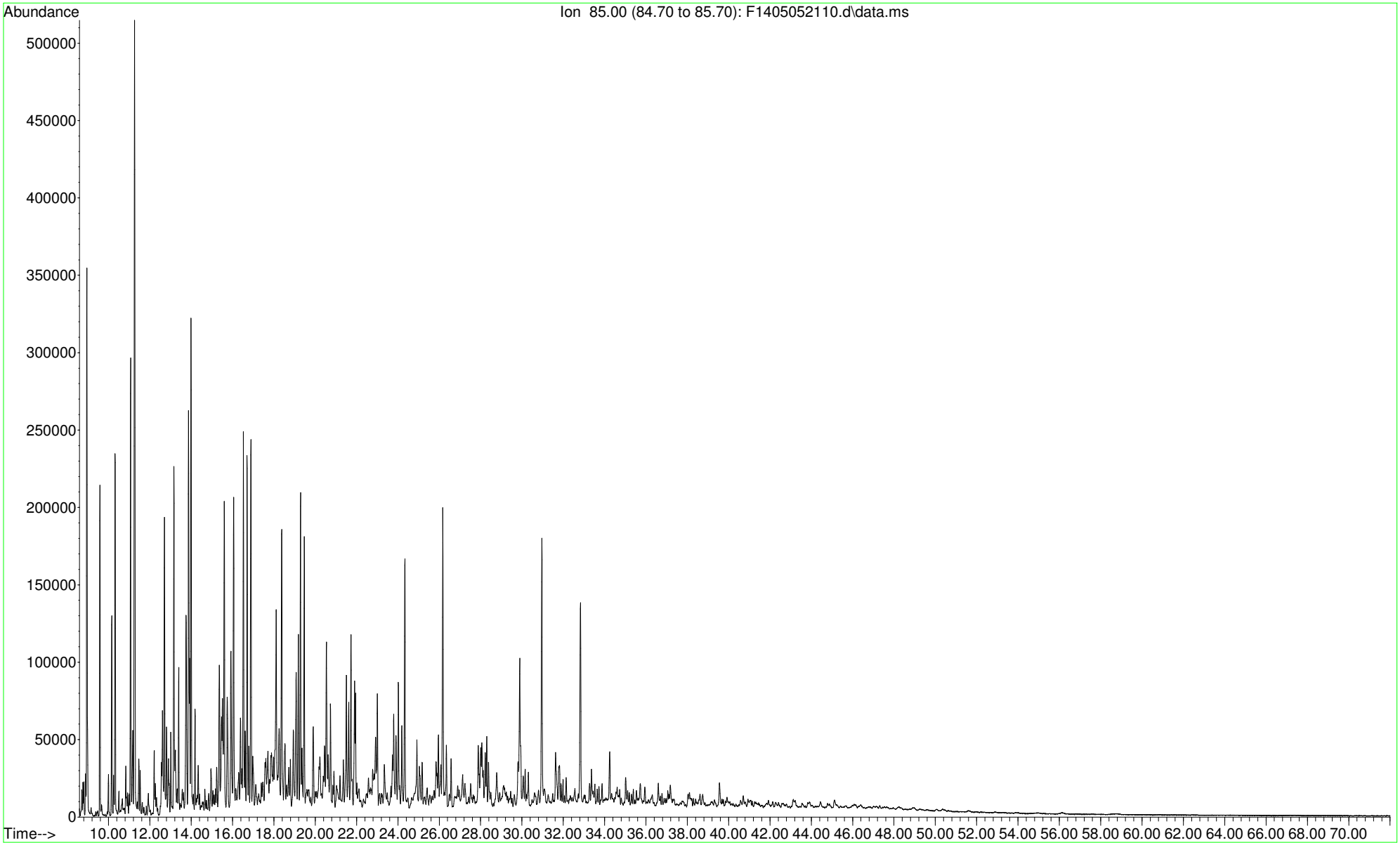
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

File :O:\Forensics\Data\PAH14\2021\MAY21\may05\F1405052110.d
Operator :
Acquired : 5 May 2021 9:56 pm using AcqMethod FRNC14A.M
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



File :O:\Forensics\Data\PAH14\2021\MAY21\may05\F1405052110.d
Operator :
Acquired : 5 May 2021 9:56 pm using AcqMethod FRNC14A.M
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



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Operator :
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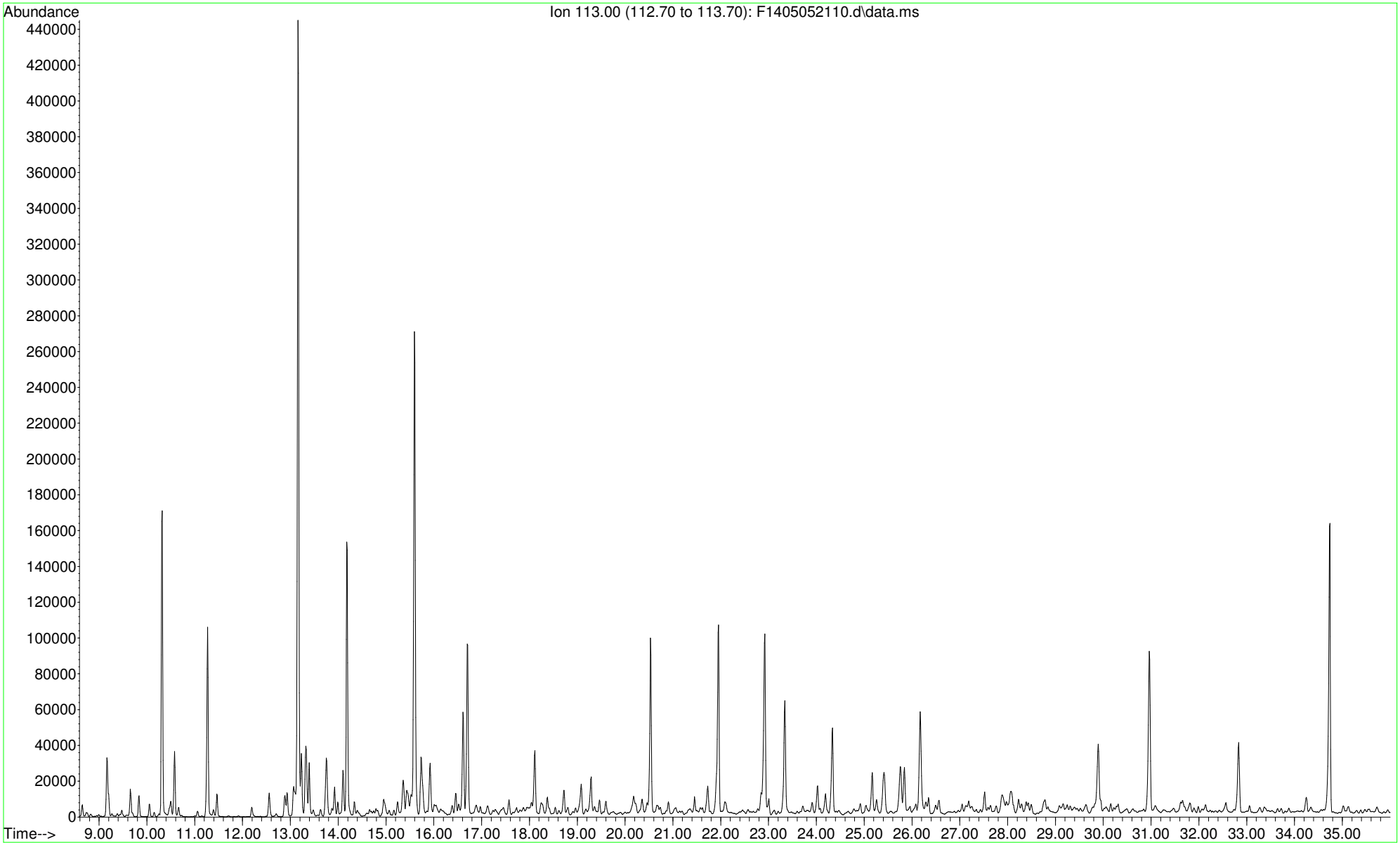

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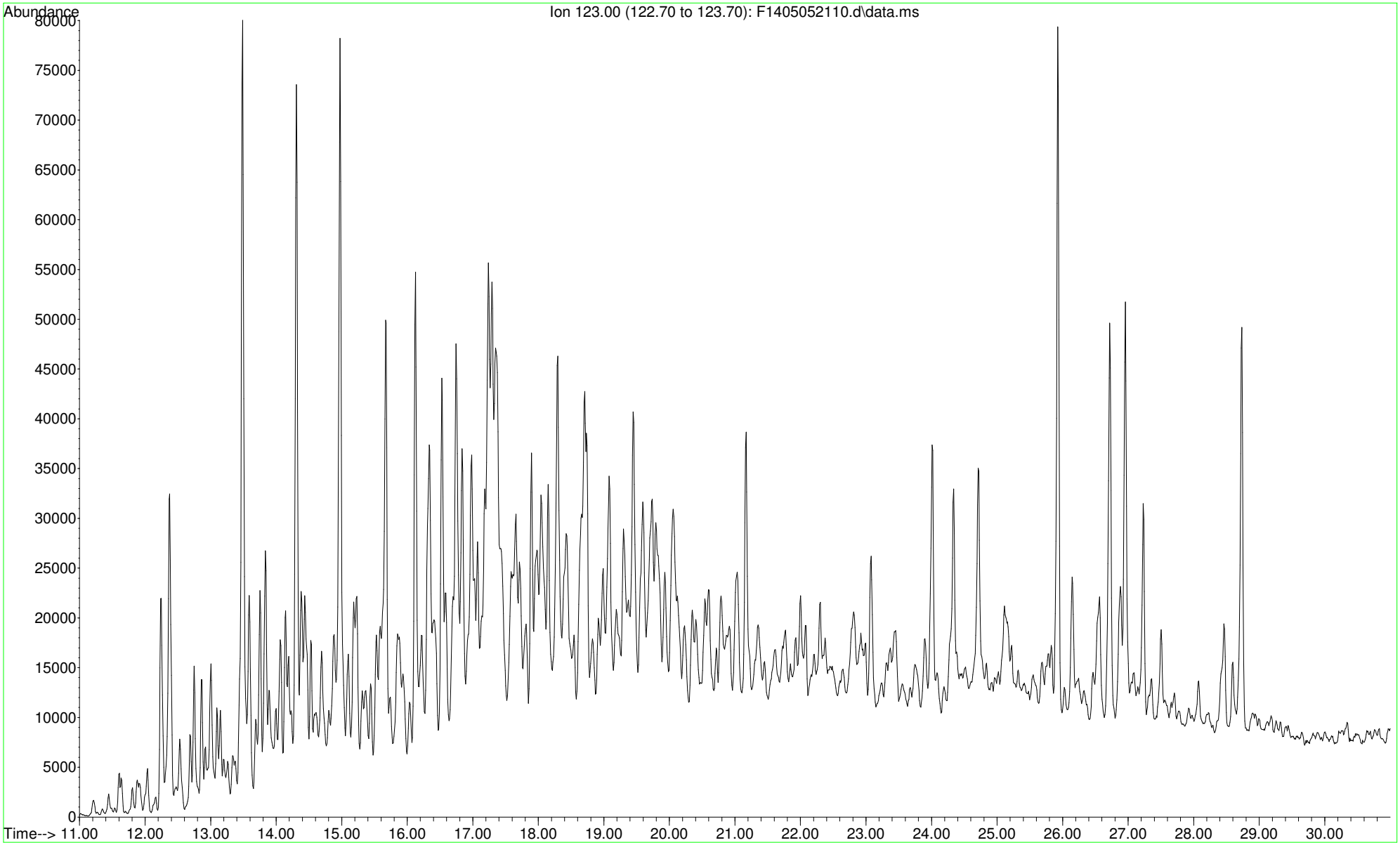

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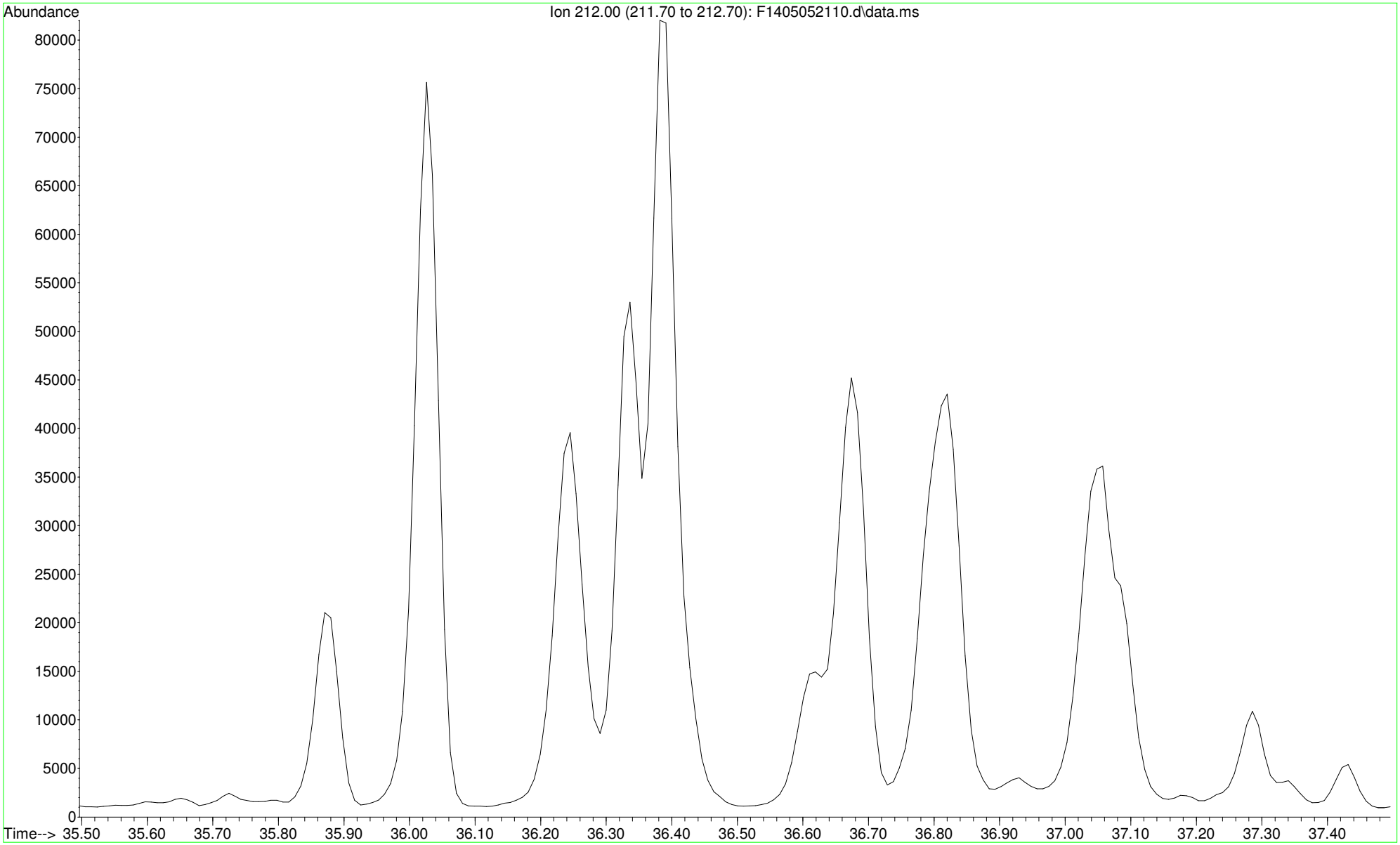
Operator :
Acquired : 5 May 2021 9:56 pm using AcqMethod FRNC14A.M
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



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Operator :
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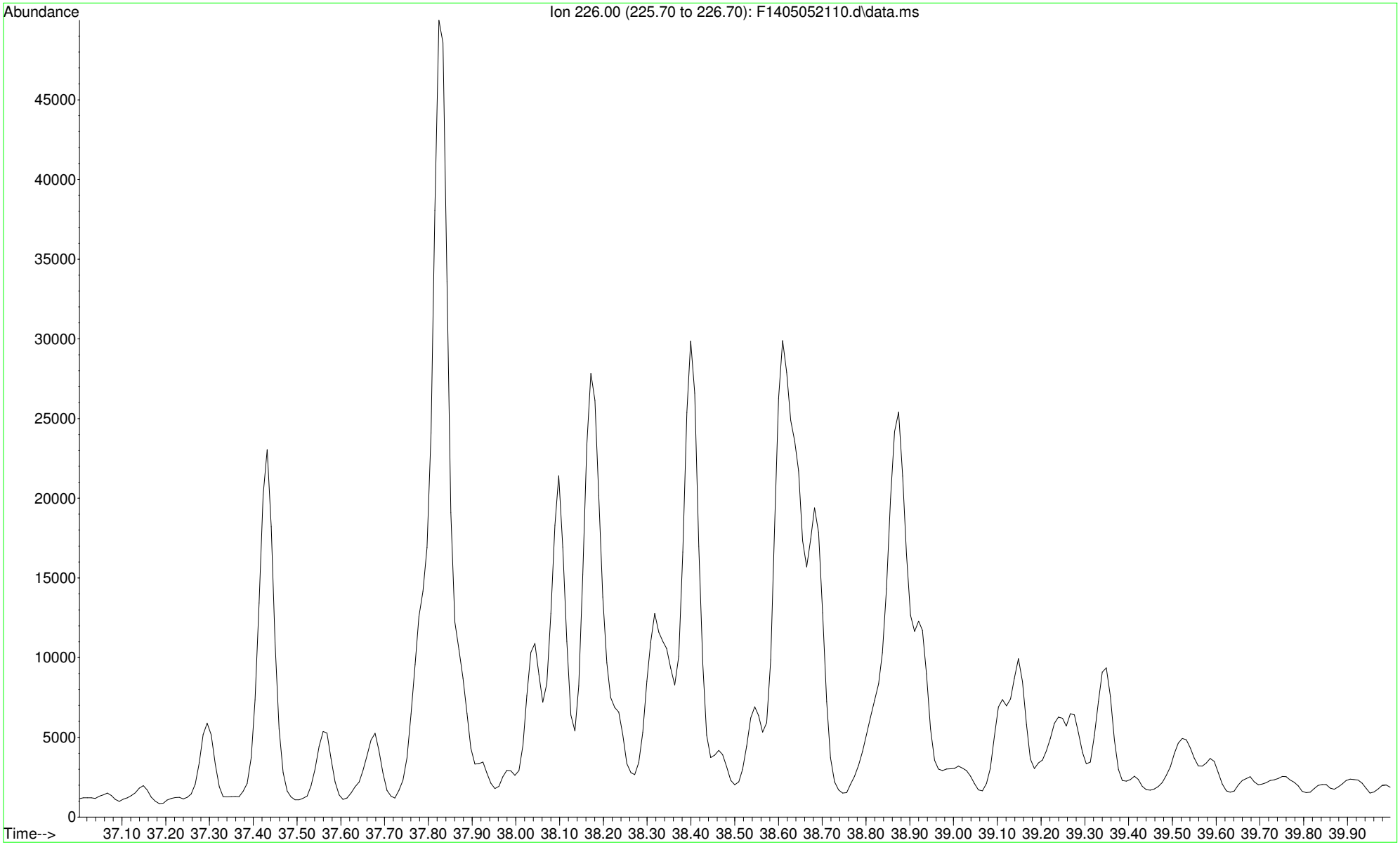
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



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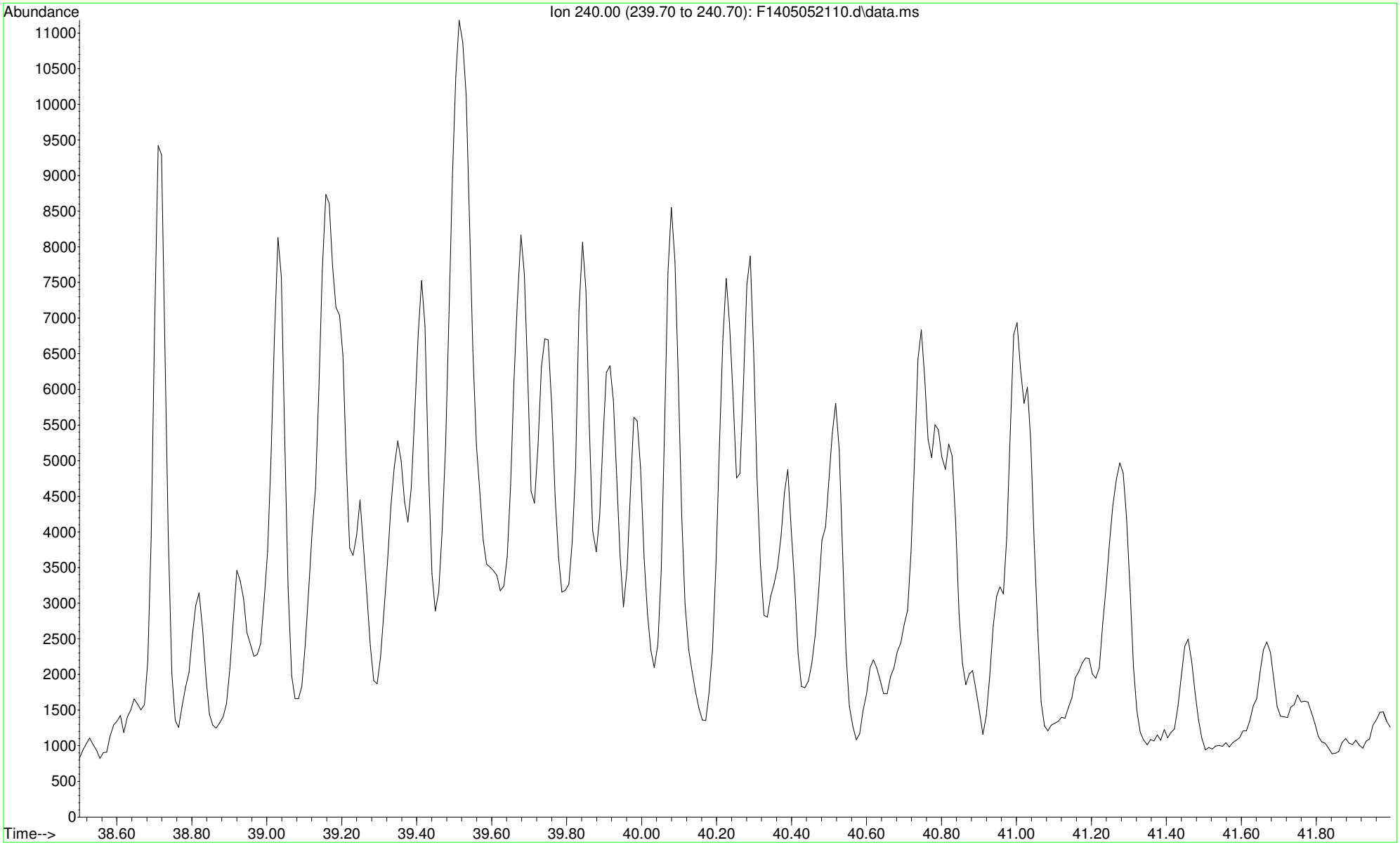
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



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Operator :
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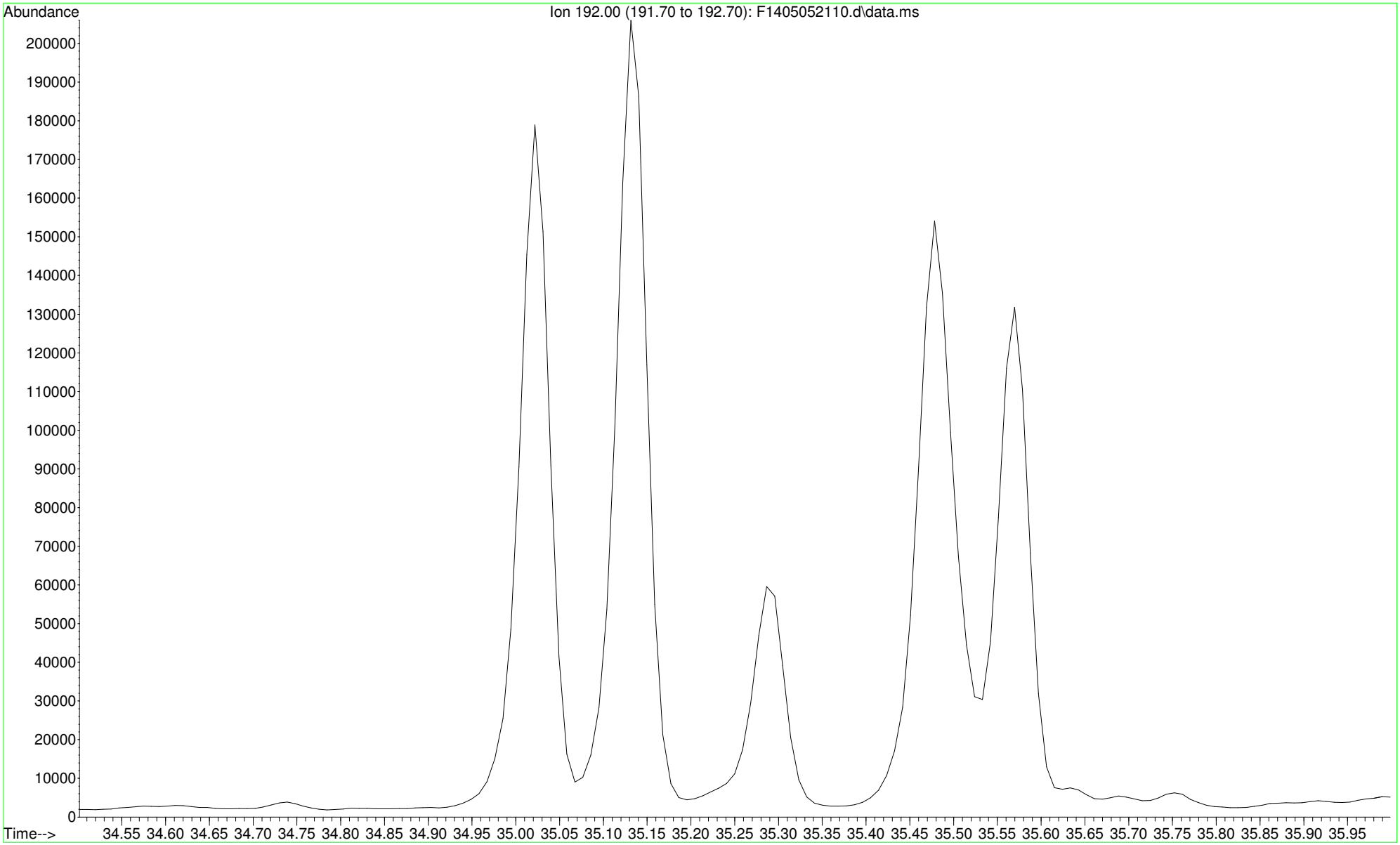
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



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Operator :
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Instrument : PAH14
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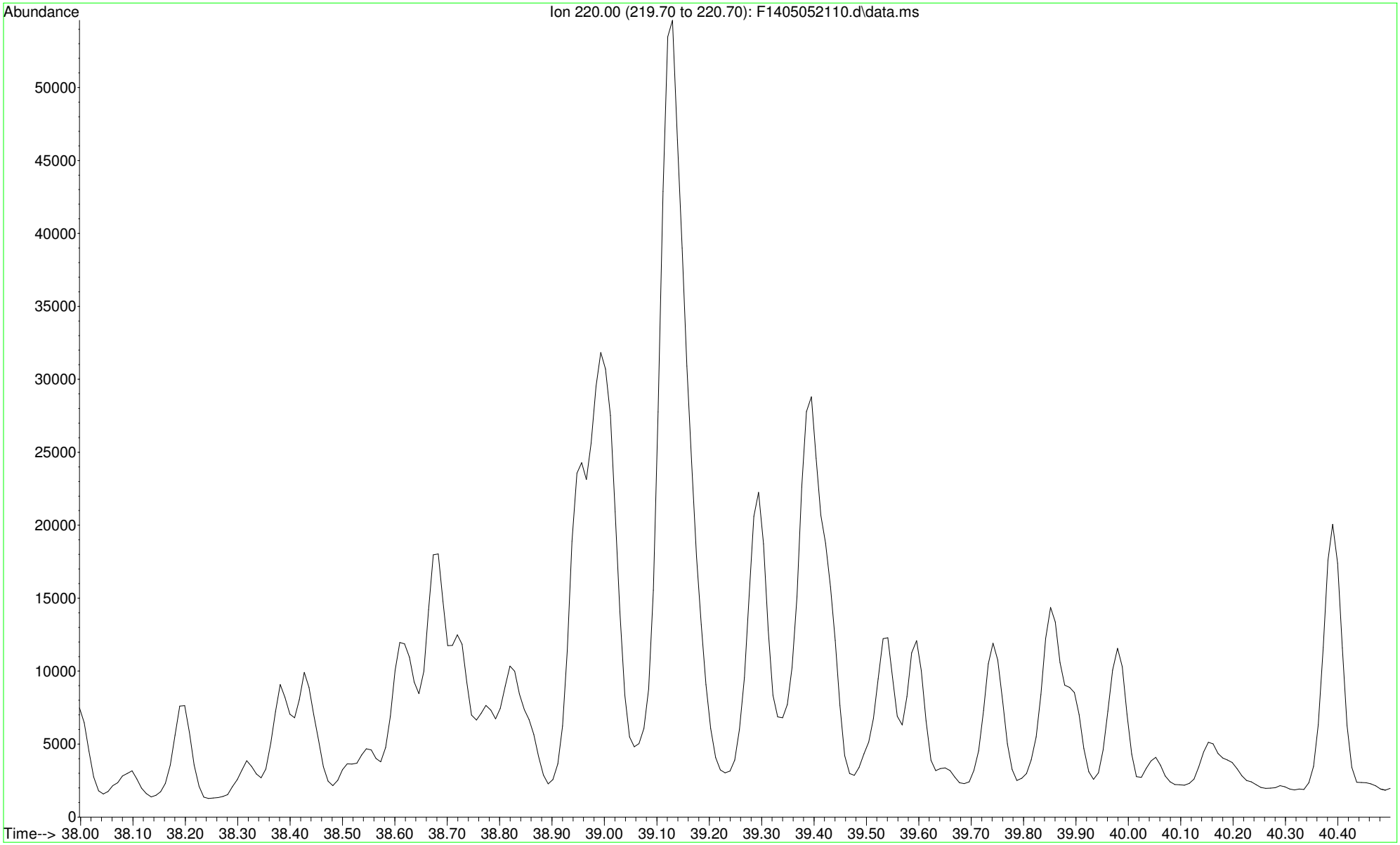
Misc Info : wg
Vial Number: 10



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Operator :
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Instrument : PAH14
Sample Name: L2116654-01D,32,5
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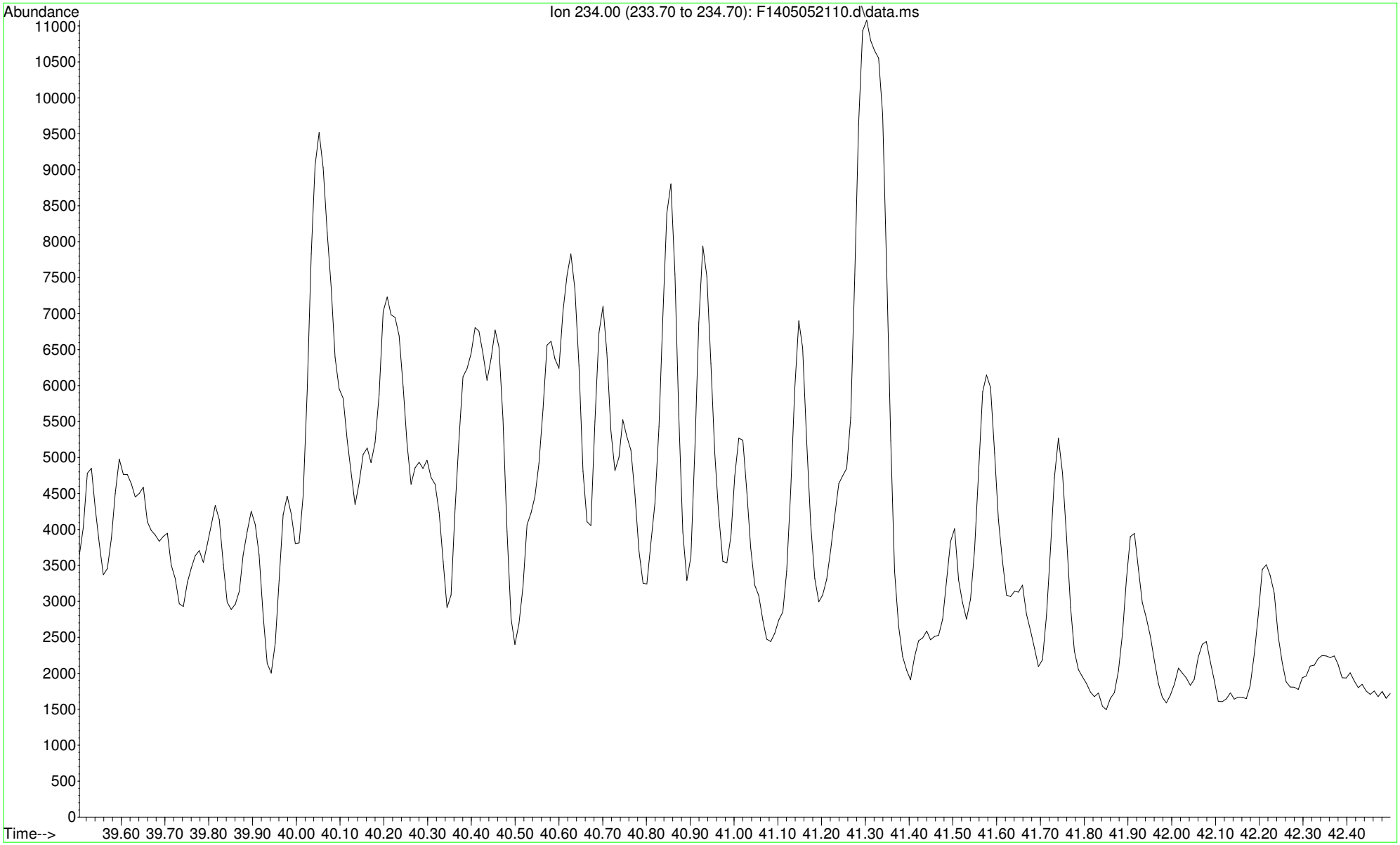

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Operator :
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Instrument : PAH14
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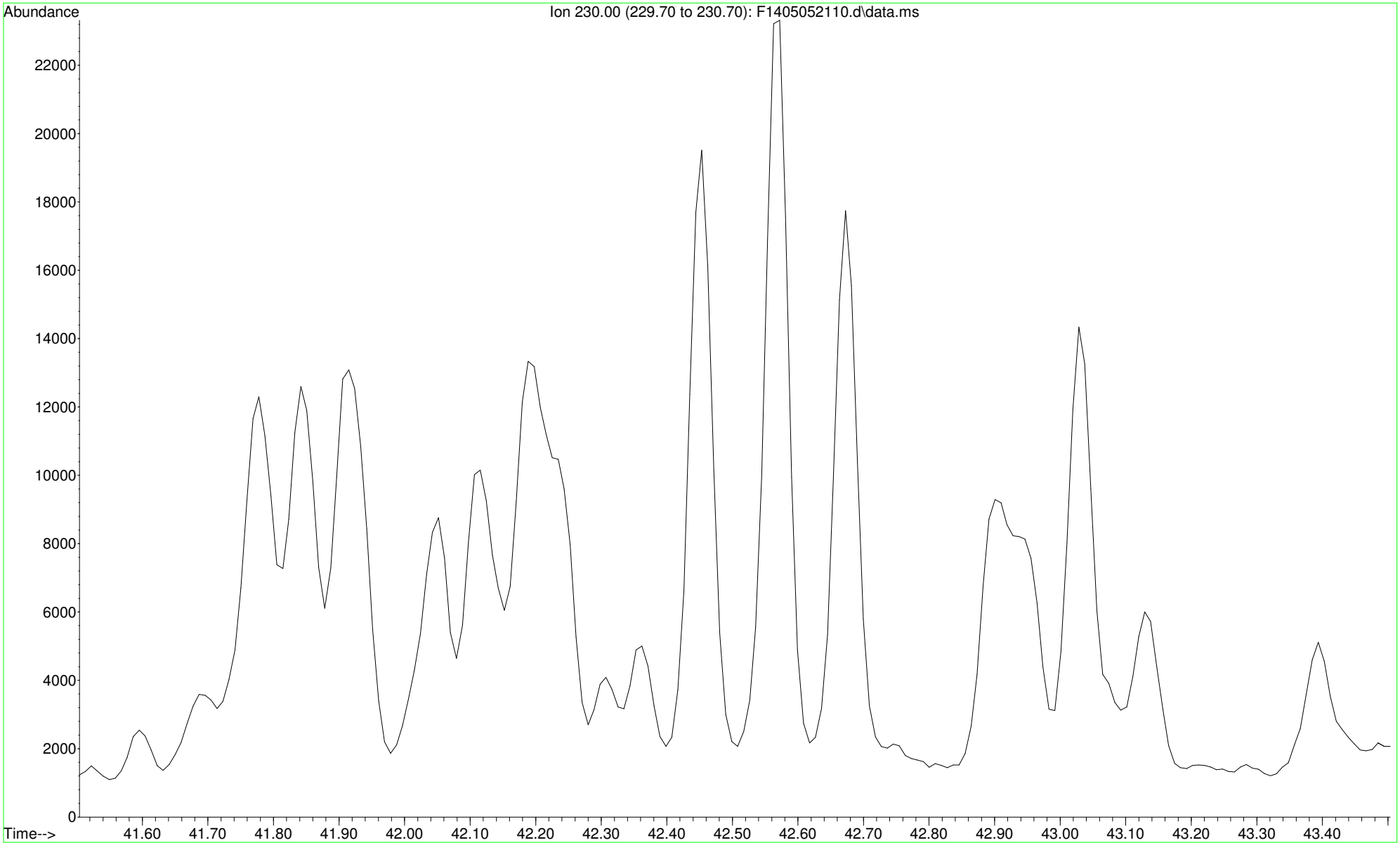
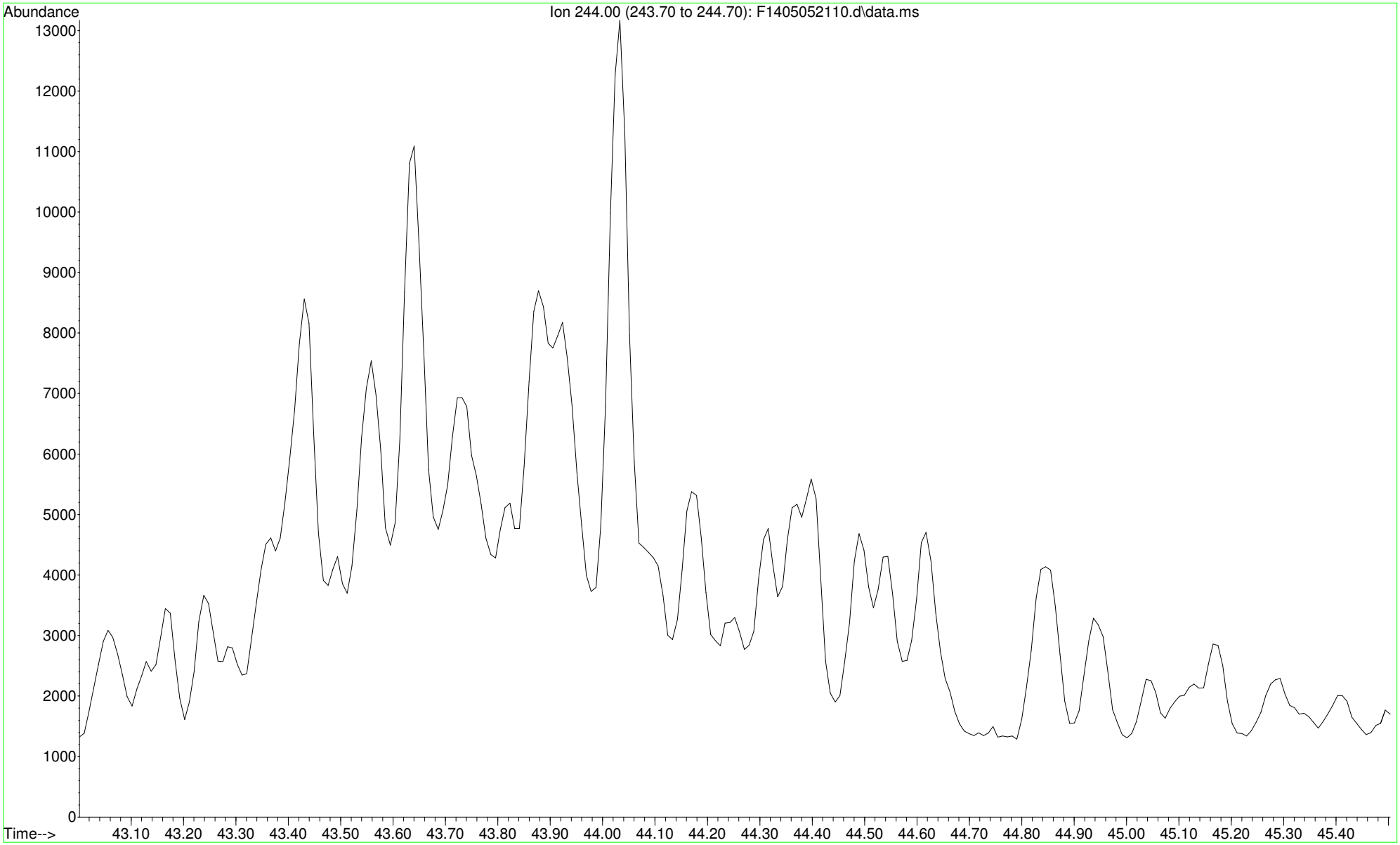
Vial Number: 10



File :O:\Forensics\Data\PAH14\2021\MAY21\may05\F1405052110.d
Operator :
Acquired : 5 May 2021 9:56 pm using AcqMethod FRNC14A.M
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



File :O:\Forensics\Data\PAH14\2021\MAY21\may05\F1405052110.d
Operator :
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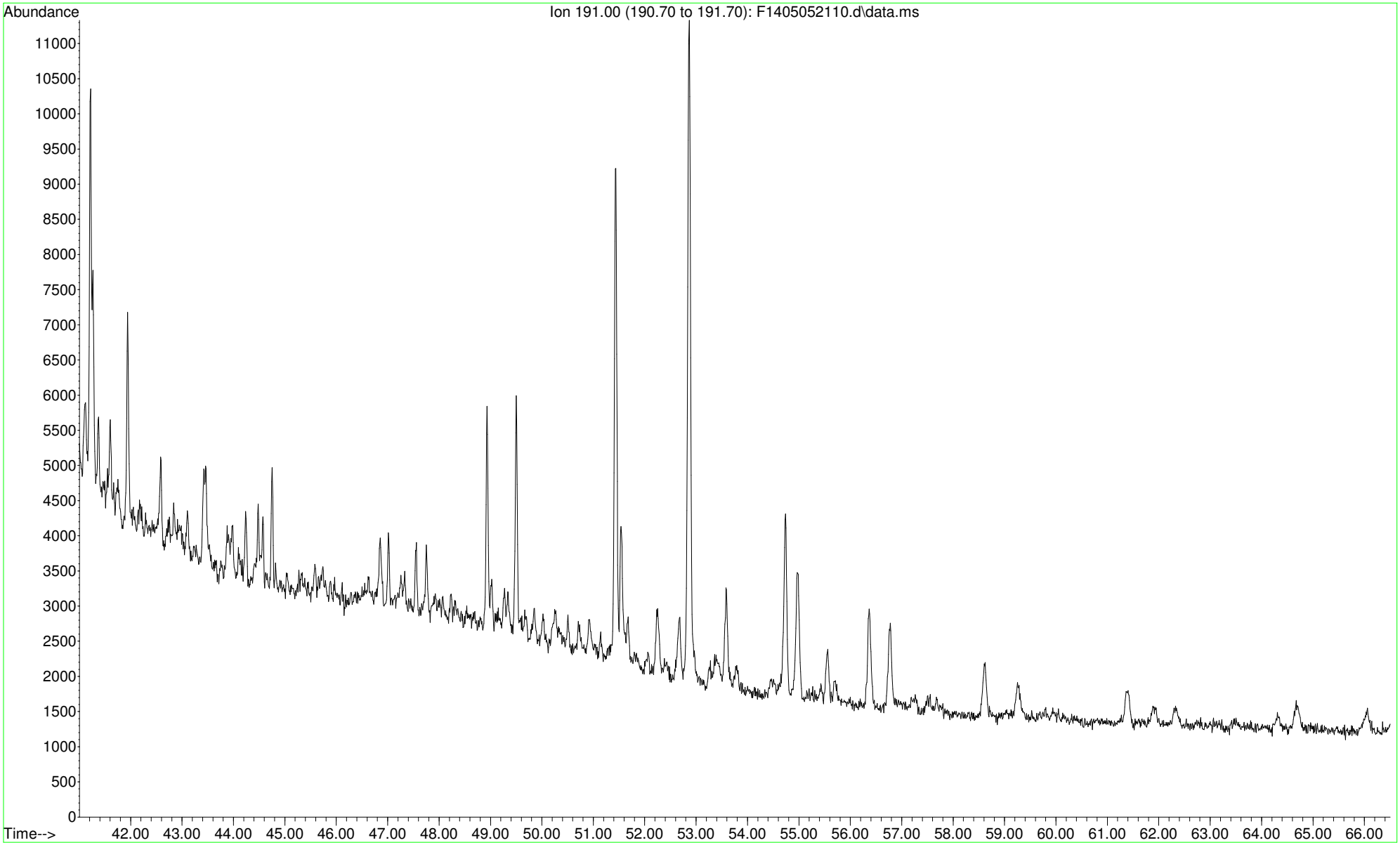
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



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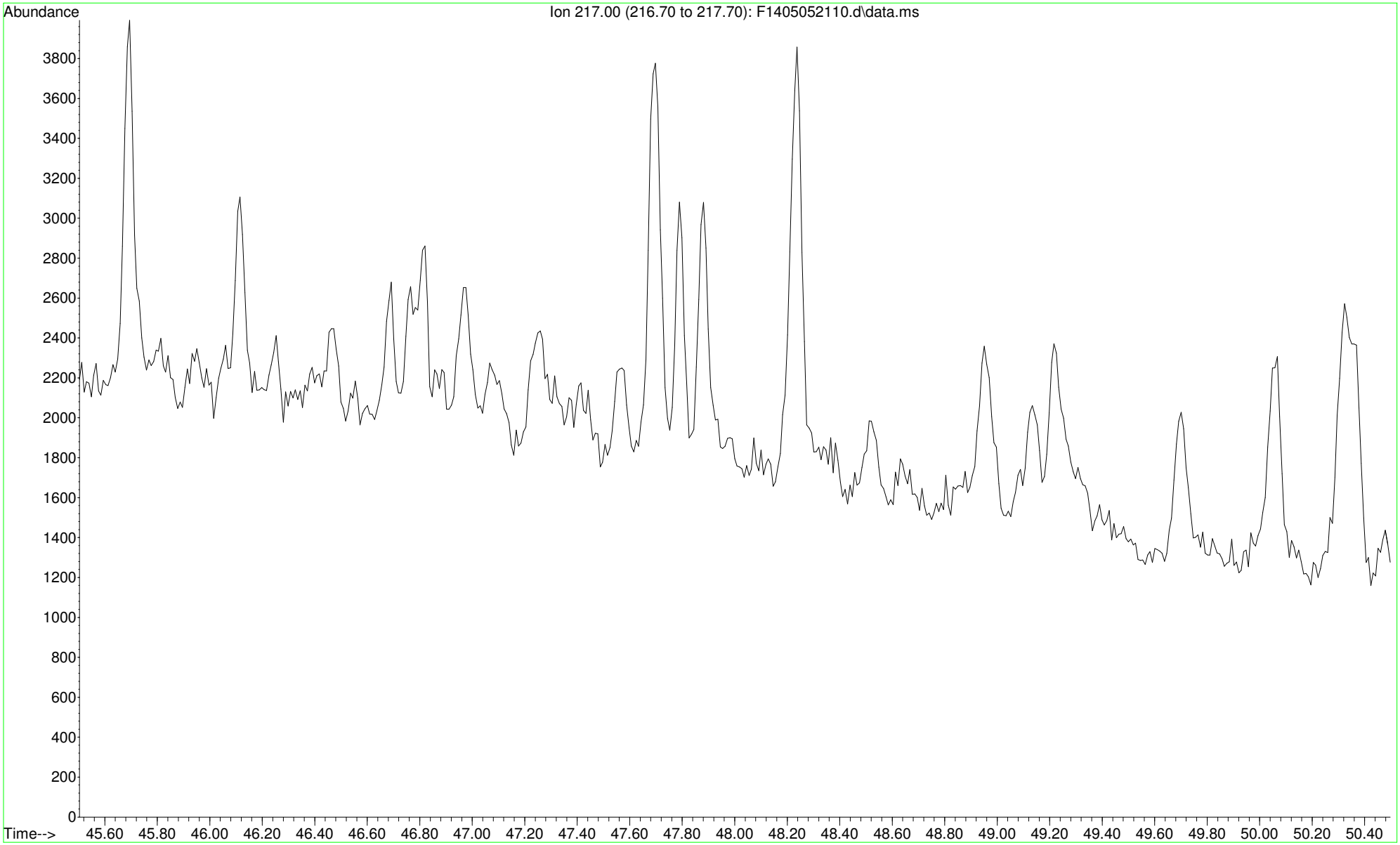
Operator :
Acquired : 5 May 2021 9:56 pm using AcqMethod FRNC14A.M
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



File :O:\Forensics\Data\PAH14\2021\MAY21\may05\F1405052110.d
Operator :
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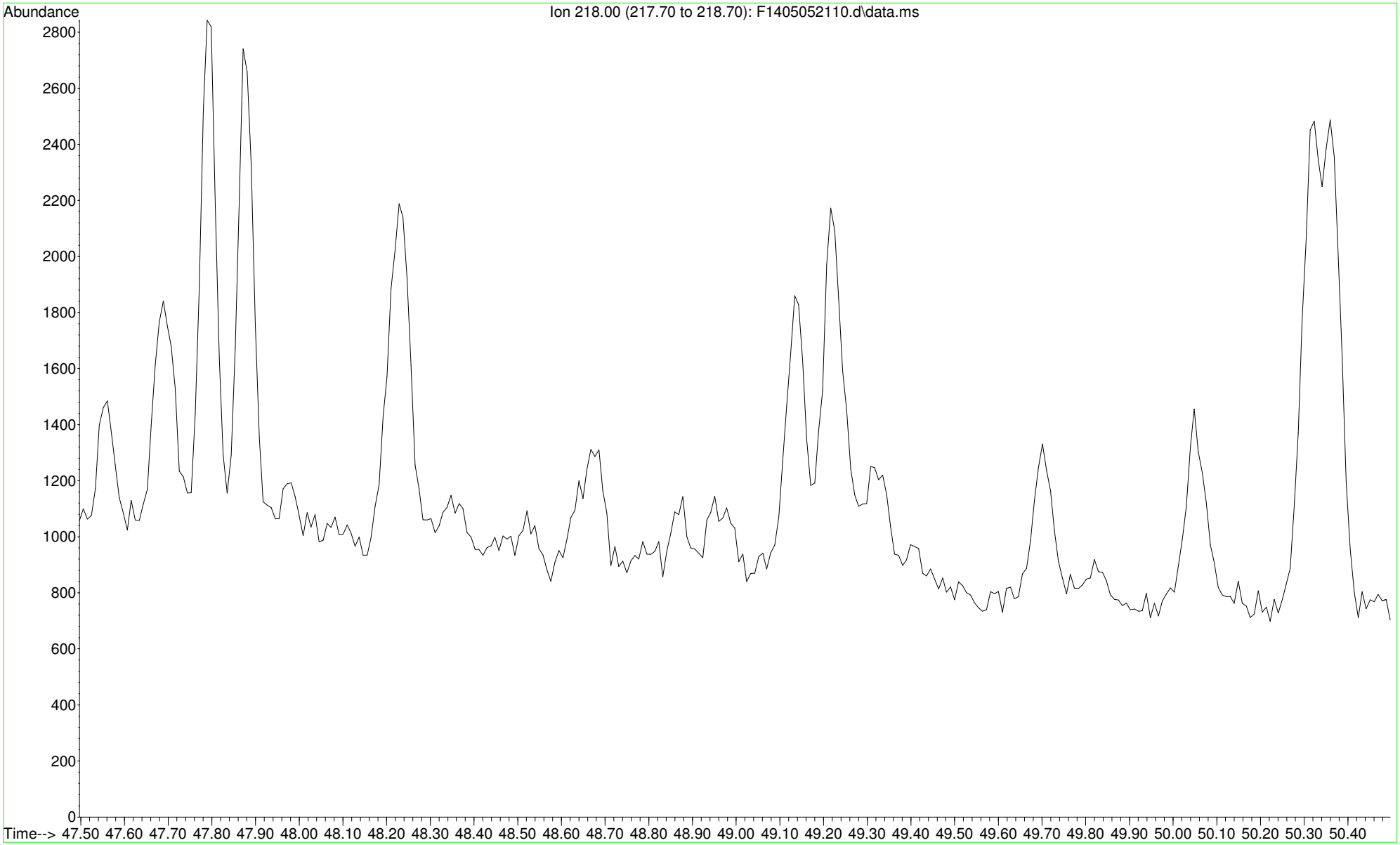
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



File :O:\Forensics\Data\PAH14\2021\MAY21\may05\F1405052110.d
Operator :
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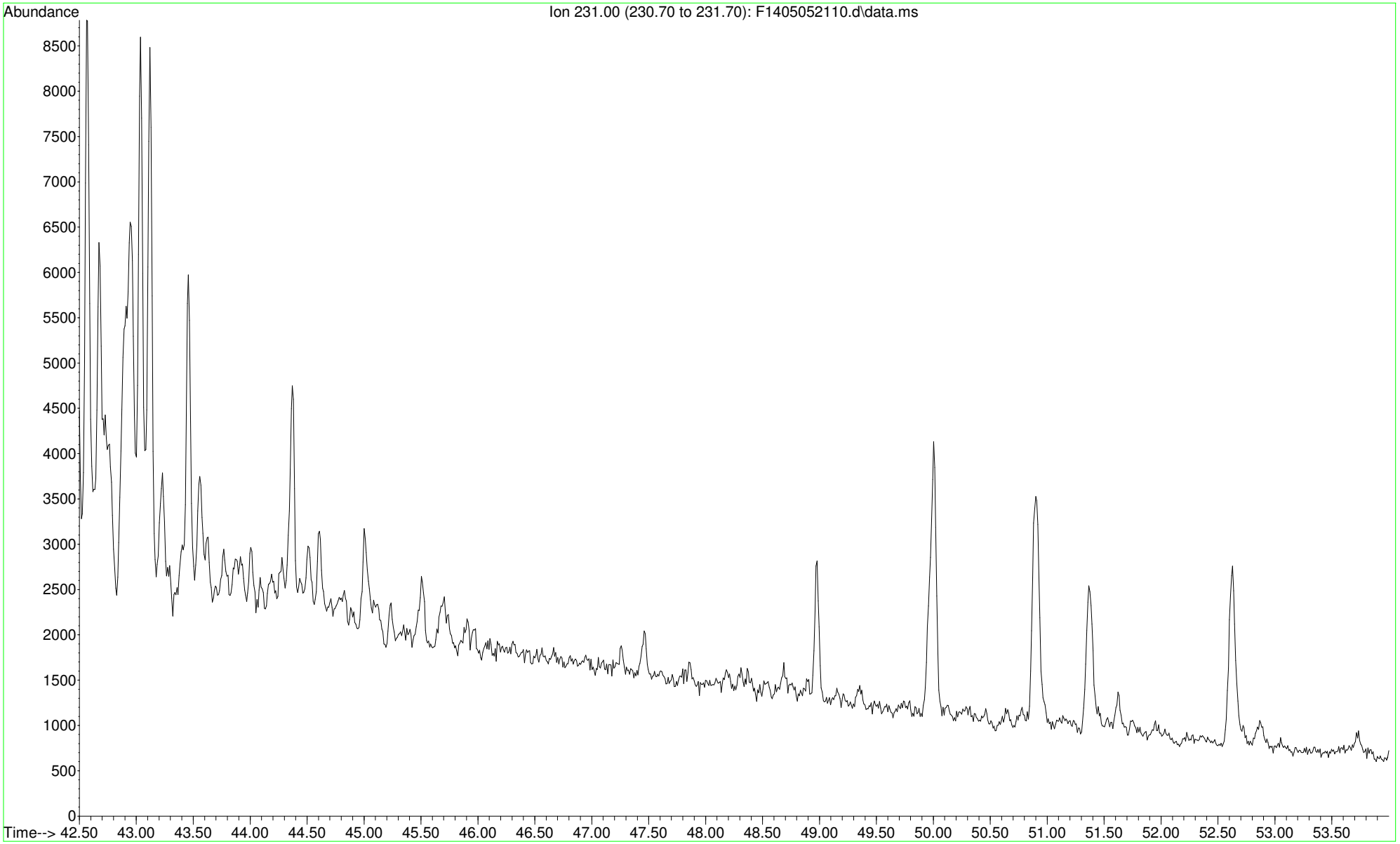
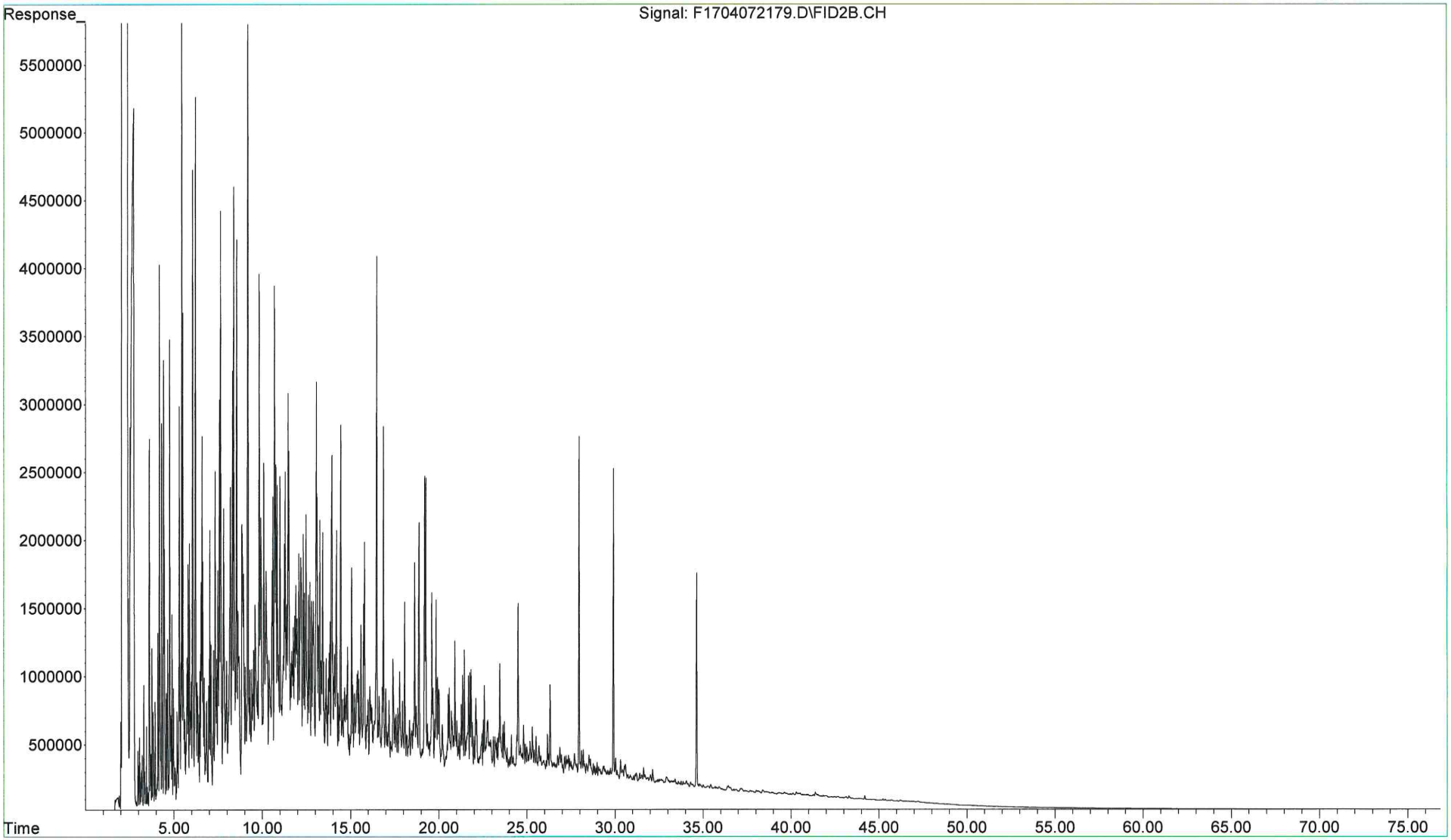
Instrument : PAH14
Sample Name: L2116654-01D,32,5
Misc Info : wg
Vial Number: 10



```
File       :O:\Forensics\Data\FID17\2021\APR\APR07.SEC\F1704072179.D
Operator   : FID17:WR
Acquired   : 10 Apr 2021   1:07 am using AcqMethod FID17A.M
Instrument :   FID17
Sample Name: 12116654-01,42,,
Misc Info  : WG1484489,WG1483370,ICAL17288
Vial Number: 86
```



McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2104F47

Report Created for: Alpha Analytical, Inc.

320 Forbes Blvd
Mansfield, MA 02048

Project Contact: Susan O'Neil
Project P.O.:
Project: L2116654

Project Received: 04/27/2021

Analytical Report reviewed & approved for release on 05/04/2021 by:

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033 ORELAP

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"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Alpha Analytical, Inc.
Project: L2116654
WorkOrder: 2104F47

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Analytical Report

Client:	Alpha Analytical, Inc.	**WorkOrder:**	2104F47
Date Received:	04/27/2021 10:03	**Extraction Method:**	SW3550B
Date Prepared:	04/28/2021	**Analytical Method:**	SW8270C
Project:	L2116654	**Unit:**	mg/Kg

Organic Lead (speciated) by GC-MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
N-164-18-20-20210401	2104F47-001A	Soil	04/01/2021 14:00	GC46 F0428210305.D	220416

Analytes	Result	MDL	RL	DF	Date Analyzed
Tetraethyl Lead	ND	0.0012	0.0020	1	04/28/2021 17:07
Tetramethyl Lead	ND	0.00059	0.0020	1	04/28/2021 17:07

Surrogates	REC (%)	Limits	
2-Fluorobiphenyl	93	50-150	04/28/2021 17:07

Analyst(s): TD

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	Alpha Analytical, Inc.	**WorkOrder:**	2104F47
Date Prepared:	04/28/2021	**BatchID:**	220416
Date Analyzed:	04/28/2021	**Extraction Method:**	SW3550B
Instrument:	GC46	**Analytical Method:**	SW8270C
Matrix:	Soil	**Unit:**	mg/Kg
Project:	L2116654	**Sample ID:**	MB/LCS/LCSD-220416 2104F47-001AMS/MSD

QC Summary Report for Organic Lead by GC-MS

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Tetraethyl Lead	ND	0.00120	0.00200	-	-	-
Tetramethyl Lead	ND	0.000590	0.00200	-	-	-
Surrogate Recovery						
2-Fluorobiphenyl	0.204			0.2	102	30-150

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Tetraethyl Lead	0.0975	0.104	0.10	97	104	50-150	6.36	30
Tetramethyl Lead	0.0928	0.0865	0.10	93	86	50-150	7.09	30
Surrogate Recovery								
2-Fluorobiphenyl	0.199	0.194	0.20	100	97	50-150	2.93	30

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Tetraethyl Lead	1	0.135	0.136	0.10	ND	135	136	50-150	0.392	30
Tetramethyl Lead	1	0.109	0.117	0.10	ND	109	117	50-150	6.94	30
Surrogate Recovery										
2-Fluorobiphenyl	1	0.186	0.183	0.20		93	91	50-150	1.70	30

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2104F47 **ClientCode: AAMA**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ EQuIS ☑ Dry-Weight ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Excel

Report to:
Susan O'Neil
Alpha Analytical, Inc.
320 Forbes Blvd
Mansfield, MA 02048
(508) 844-4117 FAX:
Email: #Error
cc/3rd Party:
PO:
Project: L2116654

Bill to:
Finance
Alpha Analytical, Inc.
320 Forbes Blvd
Mansfield, MA 02048
ap@alphalab.com

Requested TAT: 5 days;

Date Received: **04/27/2021**
Date Logged: **04/27/2021**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
2104F47-001	N-164-18-20-20210401	Soil	4/1/2021 14:00	☐	A	A										

Test Legend:

1	MAI_OPBMS_S [J]	2	PRDisposal Fee	3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Angela Rydelius

Prepared by: Valerie Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: ALPHA ANALYTICAL, INC. **Project:** L2116654 **Work Order:** 2104F47
Client Contact: Susan O'Neil **QC Level:** LEVEL 2
Contact's Email: #Error **Comments:** **Date Logged:** 4/27/2021

☐WaterTrax ☐WriteOn ☐EDF ☐Excel ☐EQuIS ☐Email ☐HardCopy ☐ThirdParty ☐J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001A	N-164-18-20-20210401	Soil	SW8270C - Organic Lead (speciated)	1	4OZ GJ, Unpres	☐	☐	4/1/2021 14:00	5 days	5/4/2021		☐	

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

2104F47

Subcontract Chain of Custody

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburg, CA 94565

Alpha Job Number
L2116654

Client Information

Client: Alpha Analytical Labs
Address: 320 Forbes Boulevard
Mansfield, MA 02048-1806

Phone: 508.844.4117
Email: soneil@alphalab.com

Project Information

Project Location: PA
Project Manager: Susan O'Neil

Turnaround & Deliverables Information

Due Date: 05/04/21
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:

Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2116654

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com TEL and TML in Soil

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	N-164-18-20-20210401	04-01-21 14:00	SOIL	Organic Lead by Method 8270	

5.8" wet VA.

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature] UPS	4/26/21 17:00	UPS [signature]	
		4/27/21 1003		4/27/21 1003
Form No: AL_subcoc				

TN: 12 19E 18E 01 9741 9745

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**Alpha Analytical, Inc.**	Date and Time Received:	**4/27/2021 10:03**
Project:	**L2116654**	Date Logged:	**4/27/2021**
		Received by:	
WorkOrder №:	**2104F47** Matrix:	Logged by:	Valerie Alfaro
Carrier:	UPS		

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Sample IDs noted by Client on COC?	Yes ☑	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐	
Sampler's name noted on COC?	Yes ☑	No ☐	
COC agrees with Quote?	Yes ☐	No ☐	NA ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	NA ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	NA ☐
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: WET ICE)		
Sample/Temp Blank temperature	Temp: 5.8°C		NA ☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	Yes ☐	No ☐	NA ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☑
UCMR Samples:			
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes ☐	No ☐	NA ☑

Comments:

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 4/3/21

ALPHA Job #: L2116654

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: Evergreen c/o Stantec
Address: 1060 Andrew Drive Suite 140
West Chester, PA 19380
Phone: 610-840-2500
Fax: 610-840-2501
Email: andrew.klingbeil@stantec.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: Evergreen PHRO AOI 8 Forensics
Project Location: Philadelphia, PA
Project #: 213403364
Project Manager: Andrew Klingbeil
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information – Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 213403364

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ChemQuants Quote #0186

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PIANO VOCs 8260	TPH (ORO) with Chromatograms												Sample Specific Comments	TOTAL # BOTTLES
16654-01	N-164-18-20-20210401	4/1/2021	1400	S	JK	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			1
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐			

Container Type	G	G	-	-	-	-	-	-	-	-	-	-		
Preservative	F	A	-	-	-	-	-	-	-	-	-	-		

SAMPLE HANDLING
Filtration
☐ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANC - AAC 4/3/21 10:05

Relinquished By:	Date/Time	Received By:	Date/Time
[signature] BAL	4/2/21 1135	[signature] BAL	4/2/21 1135
RVB	4/2/21 4-2	RVB	4-2
[signature] AAC	4/3/21 0205	[signature] AAC	4/3/21 0205

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ)
(rev. 5-JAN-12)

Relinquished 4/3/21 10:05